PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District 1

SR 70

from Lorraine Road to CR 675/Waterbury Road

Manatee, Florida

Financial Management Number: 414506-2-22-01

ETDM Number: 14263

November 2020

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

PROFESSIONAL ENGINEER CERTIFICATION

PRELIMINARY ENGINEERING REPORT

Project: SR 70 from Lorraine Road to CR 675/Waterbury Road

ETDM Number: 14263

Financial Project ID: 414506-2-22-01

Federal Aid Project Number: TBD

This preliminary engineering report contains engineering information that fulfills the purpose and need for the SR 70 Project Development & Environment Study from Lorraine Road to CR 675/Waterbury Road in Manatee, 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 Kisinger Campo & Associates, Corp., and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice for this project.

This item has been digitally signed and sealed by Michael Campo, P.E. 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.

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1.0 PROJECT SUMMARY

1.1 Project Description

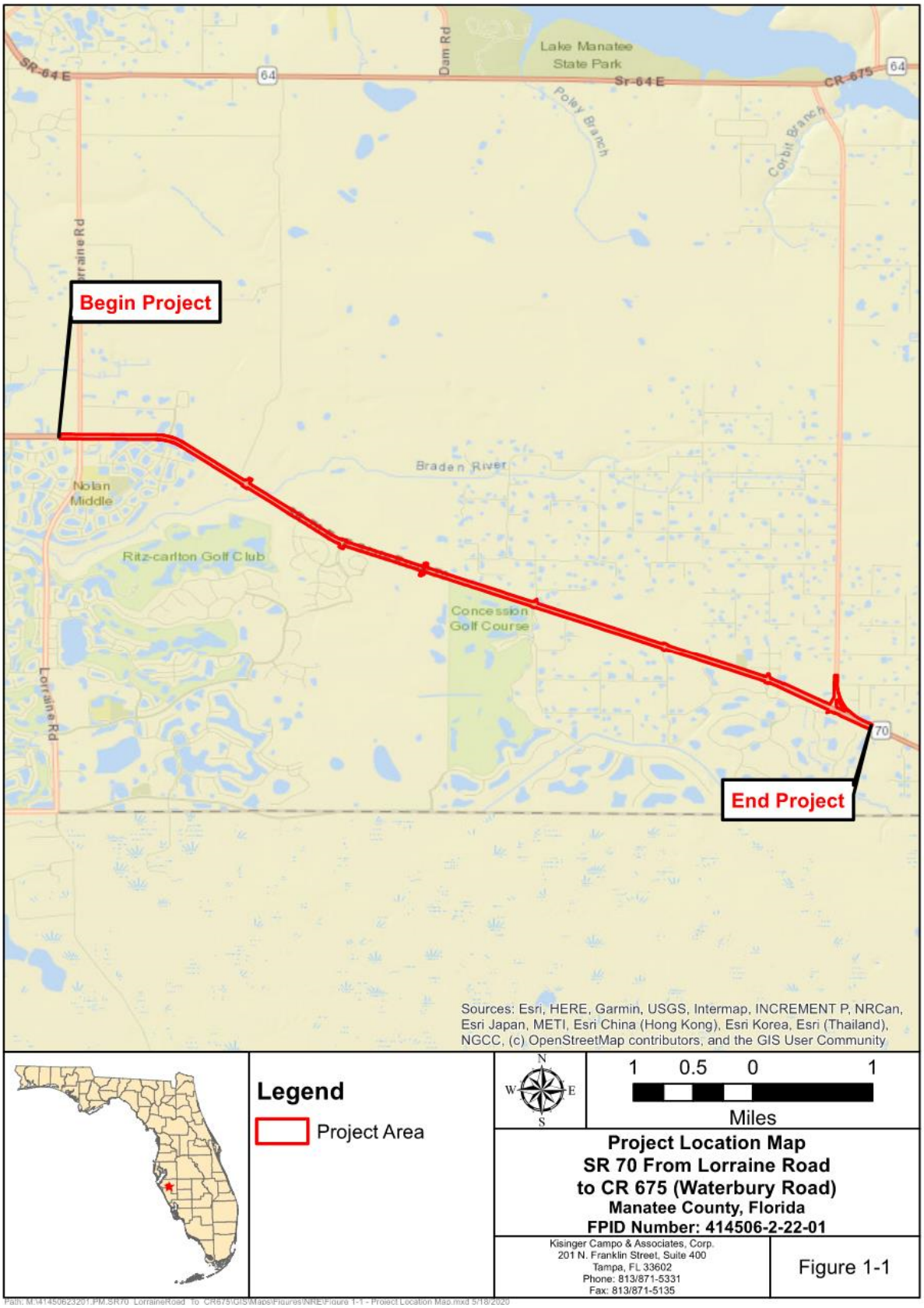
The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to evaluate the proposed widening of 6.1 miles of SR 70 from Lorraine Road (MP 9.478) to CR 675/Waterbury Road (MP 15.567) in Manatee County, as depicted in **Figure 1.1**. Design development up to 60% plans is also being conducted concurrent with this PD&E study.

This study evaluates the need for capacity improvements and provides engineering and environmental documentation and analysis to establish the optimal type and location of improvements to SR 70. The results of the study will aid Manatee County, FDOT District One, and the FDOT Office of Environmental Management (OEM) in determining the type, preliminary design and location of the proposed improvements. The proposed improvements will increase the capacity of the existing two-lane undivided roadway by widening it to a four or six-lane divided roadway to improve traffic operational conditions and to accommodate forecasted travel demand along SR 70.

The project was evaluated through FDOT's Efficient Transportation Decision Making (ETDM) process as project #14263. An *ETDM Programming Screen Summary Report* (April 2018) containing comments from the Environmental Technical Advisory Team (ETAT) was published under separate cover. The ETAT evaluated the project's effects on natural, physical, cultural, social and economic resources.

Upon completion, this study will meet all requirements of the National Environmental Policy Act of 1969 (NEPA) as amended and administered by the Florida Department of Transportation – Office of Environmental Management (OEM) and the requirements of other federal and state laws so as to qualify the proposed project for federal-aid funding.

Figure 1.1: Project Location Map



1.2 Purpose & Need

The purpose of this project is to improve traffic operational conditions along the SR 70 corridor from Lorraine Road to CR 675/Waterbury Road to accommodate projected travel demand, specifically increased commuter and freight traffic. Traffic flow within the corridor is of particular concern given the high percentage of heavy trucks mixed with non-truck traffic. The unique acceleration and deceleration characteristics of the trucks cause vehicular travel delay and, ultimately, impact the movement of commuter and freight traffic on the two-lane undivided roadway. The need for the project is based on the following primary and secondary criteria:

PRIMARY CRITERIA

CAPACITY/TRANSPORTATION DEMAND: Improve Operational Conditions

This project is anticipated to improve traffic operations and preserve operational capacity along SR 70 to address increased travel demand as a result of projected growth along the corridor and higher volumes of heavy trucks on the corridor due to agricultural and ranching activities in the area.

According to "2012 - 2035 How Will We Grow? A Conversation with the Community" (2013) prepared by Manatee County, the SR 70 corridor is identified as a growing activity center of the county due to the number of Planned Developments approved along the corridor. Two Developments of Regional Impact (Cypress Banks and Northwest Sector) surround the western project terminus. Of the five Planned Unit Developments that are present, two are located at the western project terminus and three surround the eastern portion of the project corridor (two of these three are Panther Trace and Concession). Del Webb Lakewood Ranch is additionally present south of SR 70 near Uihlein Road. The corridor further abuts a master planned community, Lakewood Ranch, to the west. Lakewood Ranch is also identified by Manatee County as one of four major growth and focus areas of the county.

Based on 2010 U.S. Census Bureau data and projections developed for Manatee County as part of the Sarasota/Manatee Metropolitan Planning Organization's (MPO) 2040 Long Range Transportation Plan (LRTP), population within Manatee County is projected to grow from 322,833 in 2010 to 469,100 in 2040 (1.5% annual growth rate); Manatee County employment is projected to grow from 153,000 in 2010 to 229,000 in 2040 (1.7% annual growth rate). While employment growth will be minimal within the Traffic Analysis Zones (TAZs) encompassing the project corridor (according to socioeconomic data derived from the District One Regional Model), population is projected to grow from 16,376 in 2010 to 39,560 in 2040 (4.7% annual growth rate). Growth along the project corridor is anticipated to occur most heavily within the area surrounding the western half of the corridor as the area will continue to support residential and mixed use community

activities with commercial uses concentrated at the intersection of SR 70 and Lorraine Road. Although the area surrounding the eastern portion of the project corridor is intended to continue to support agricultural uses, the Manatee County Zoning Map shows land designated for Planned Development Residential and Planned Development Agricultural south of SR 70; land north of SR 70 remains designated for agricultural activities.

As stated within the Manatee County Freight & Logistics Overview (2013) prepared by the Florida Department of Transportation, farm products serve as one of the top exports of the county. In addition, Tropicana Products, Inc. is a major private sector employer of the county. Further, the agriculture, forestry, fishing, and hunting industry is one of the top five growing industries of Manatee County. Beginning at US 41 in Manatee County and terminating at US 1 in St. Lucie County, SR 70 traverses extensive agricultural land throughout the above-noted counties and the additional counties of DeSoto, Highlands, and Okeechobee. Due to the fact that it provides regional access to agriculture and ranching operations, industrial/commercial areas, and freight distribution facilities throughout central Florida, particularly with its connections to several major transportation facilities (such as I-75, US 17, US 27, US 441, Florida's Turnpike, and I-95), SR 70 has been designated as part of Florida's emerging Strategic Intermodal System (SIS) network. The SIS network includes the state's most significant transportation facilities as these facilities carry the highest volumes of freight and commuter traffic. Accordingly, the project segment of SR 70 currently carries significant truck traffic (10.3% of 2014 traffic volumes are composed of trucks).

The proposed roadway improvements are anticipated to serve the mobility demands of the area by:

-Improving traffic operations and preserving operational capacity to accommodate projected travel demand spurred by increased development as well as commuter and freight traffic, and

-Supporting Manatee County growth initiatives.

SAFETY CONDITIONS: Enhance Safety along the Corridor

The five-year average crash rate (i.e., crashes per million vehicle miles traveled) for this project corridor was obtained from the Florida Department of Transportation Safety Office. During the five-year period from 2010 to 2014, 116 crashes occurred on the corridor with two fatalities and 92 injuries. This data indicates that the five-year average crash rate for the SR 70 project corridor (0.833) greatly exceeds the five-year statewide average crash rate for similar facilities (0.626).

According to the data, rear-end and angle crashes were the most common crash types recorded along the project segment. The high percentage of heavy trucks on the corridor and their unique acceleration and deceleration characteristics mixed with non-truck traffic may have contributed to the reported crash types. It should be noted that as the volume of traffic increases along the

corridor, the opportunity for vehicle movement conflict is expected to increase. The proposed project is anticipated to improve safety characteristics of the facility, which are particularly exacerbated by the high truck percentages, by enhancing overall traffic operations.

SECONDARY CRITERIA

AREA WIDE NETWORK/SYSTEM LINKAGE: Improve Connectivity to the Regional Transportation Network

SR 70 serves as a principal east-west facility of the central portion of the state as it runs from US 41 in Manatee County (west coast) to US 1 in St. Lucie County (east coast). It also connects to several major north-south transportation facilities of the state including: US 41, I-75, US 17, US 27, US 441, Florida's Turnpike, I-95, and US 1. The proposed roadway improvements are anticipated to:

-Provide a continuous four-lane connection and enhance east-west regional access between I-75 and CR 675, including areas targeted for growth to the east within Manatee County;

-Alleviate a traffic bottleneck (for eastbound traffic) that is anticipated to occur as development continues along the corridor, and

-Complement planned SR 70 widening improvements identified in the 2024 - 2040 SIS Long Range Cost Feasible Plan [including the First Five-Year Plan (FY 2016/2017 - FY 2020/2021)] which propose the widening of SR 70 to four lanes from Lorraine Road in Manatee County to US 98 in Highlands County.

SOCIAL AND ECONOMIC DEMAND: Enhance Freight Mobility and Economic Competitiveness

SR 70 is classified as a Regional Freight Mobility Corridor by the Sarasota/Manatee MPO as it serves regional through movements for long-haul truck volumes, as well as provides freight access to agriculture and ranching operations, industrial/commercial areas, and other intensive freight activity centers within central Florida. According to the Freight & Logistics Overviews (2013) prepared by the Florida Department of Transportation for all five counties encompassing the SR 70 corridor [which includes Manatee, DeSoto, Highlands, Okeechobee, and St. Lucie Counties], farm products serve as a top export of each county. Given the fact that SR 70 has been designated as part of Florida's emerging SIS network and serves as one of the only major east-west roadways traversing all of central Florida and connecting to other recognized freight facilities of the state, it is critical to sustaining several regional economies. As travel demand along the corridor is

expected to continue to increase, improvements to traffic operational conditions along the corridor will enhance overall access to local and regional freight distribution centers and the circulation of goods.

1.3 Commitments

Based on the field and literature reviews outlined in this report, federal- or state-listed protected species have the potential to occur within the project study area. In order to assure that the proposed project will not adversely impacts these species, the FDOT will make the following commitments:

- Impacts to suitable foraging habitat for the federally-protected wood stork will be mitigated through the purchase of credits from a U.S. Fish and Wildlife Service-approved mitigation bank pursuant to Section 373.4137, F.S. or as otherwise agreed to by the FDOT and the appropriate regulatory agencies.
- The U.S. Fish and Wildlife Service (USFWS) *Standard Protection Measures for the Eastern Indigo Snake* will be implemented to assure that the Eastern indigo snake will not be adversely impacted by the project.

1.4 Alternatives Analysis Summary

FDOT is considering one project Build Alternative along the limits of this study for three continuous project segments. A single Build Alternative was evaluated due to right-of-way constraints and the need to reuse existing pavement within the project limits for cost savings. The three segments are being analyzed based on forecasted traffic volumes while also considering a no-build (no-action) alternative. All three segments are explained in the succeeding sections of this report.

1.5 Description of Preferred Alternative

Within the limits of this study, FDOT is evaluating one project Build Alternative and three project segments. The proposed action of this alternative is to increase capacity of the existing two-lane undivided roadway by widening it to a four or six-lane divided roadway to accomplish the purpose and need described in the previous section. The three segments are separated for analysis so this study can best address the local transportation needs. Segment A extends from Lorraine Road to east of Greenbrook Boulevard, Segment B extends from east of Greenbrook Boulevard to Bourneside Boulevard, and Segment C extends from Bourneside Boulevard to the eastern project limit at CR 675.

The typical section of the Preferred Alternative varies from Segment A to Segment C. The proposed build improvements for each of the three project segments includes the following:

Segment A: The design speed for this segment is 45 mph (miles per hour). The proposed design provides a curbed roadway with three 11-foot travel lanes in each direction, seven-foot buffered bicycle lanes, a 22-foot wide median, a closed drainage system with curbs and gutters, and 8-foot sidewalks in both directions as depicted in **Figure 1.2**. The proposed improvements in this segment are anticipated to be accomplished within the existing 200 foot right-of-way.

Segment B: The design speed for this segment is 50 mph. The proposed design provides a high-speed curbed roadway with two 12-foot travel lanes in each direction, five-foot paved outside shoulders, a closed drainage system with curbs and gutters, and 8-foot sidewalks in both directions. The proposed roadway includes a 54-foot wide median designed to accommodate a six-lane section in the future when traffic needs merit an expansion. The future widening will be accomplished by adding a 12-foot travel lane in each direction within the median as depicted in **Figure 1.3**. The proposed improvements in this segment are anticipated to be accomplished primarily within the existing 200-foot right-of-way; minimal right-of-way will be needed to construct proposed roundabouts at Uihlein Road, Del Webb Boulevard, and Bourneside Boulevard.

Segment C: The design speed for this segment is 50 mph. The proposed design provides a high-speed roadway with two 12-foot travel lanes in each direction, five-foot paved outside shoulders, a 30-foot raised median with adjacent Type E curb and gutter, and an open drainage system as depicted in **Figure 1.4**. The proposed improvements in this segment are anticipated to be accomplished primarily within the existing 200 foot right-of-way; minimal right-of-way will be needed to construct proposed roundabouts at 197th Street East / Lindrick Lane, 213th Street East, 225th Street East / Panther Ridge Trail, and CR 675.

Figure 1.2: Segment A Proposed Typical Section

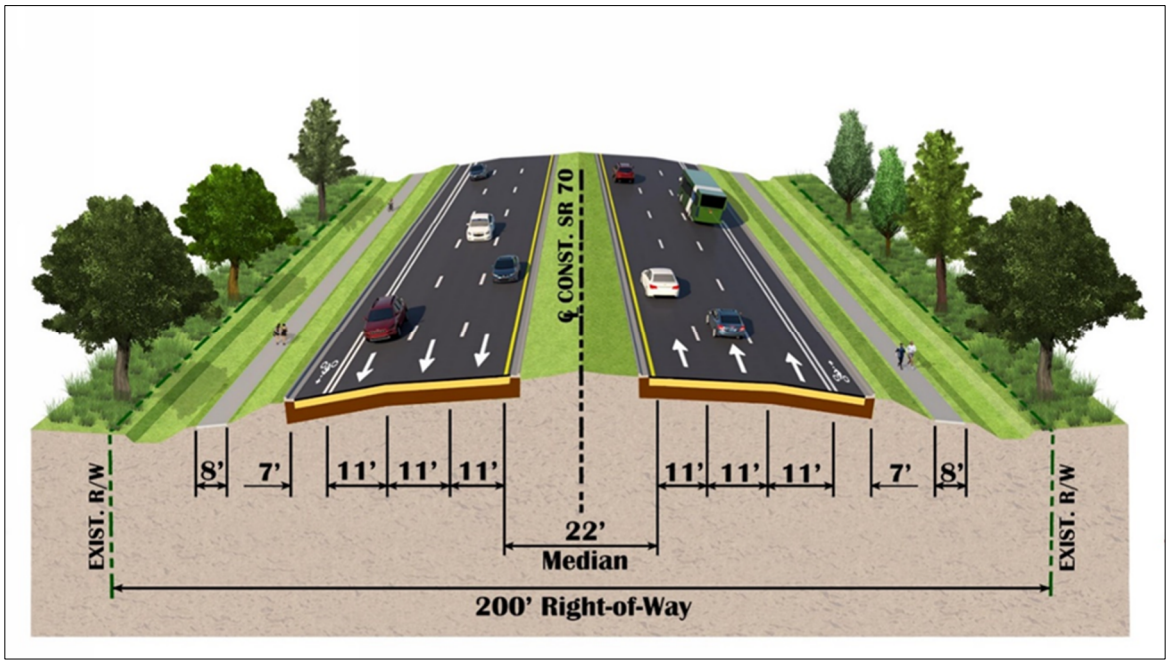


Figure 1.3: Segment B Proposed Typical Section

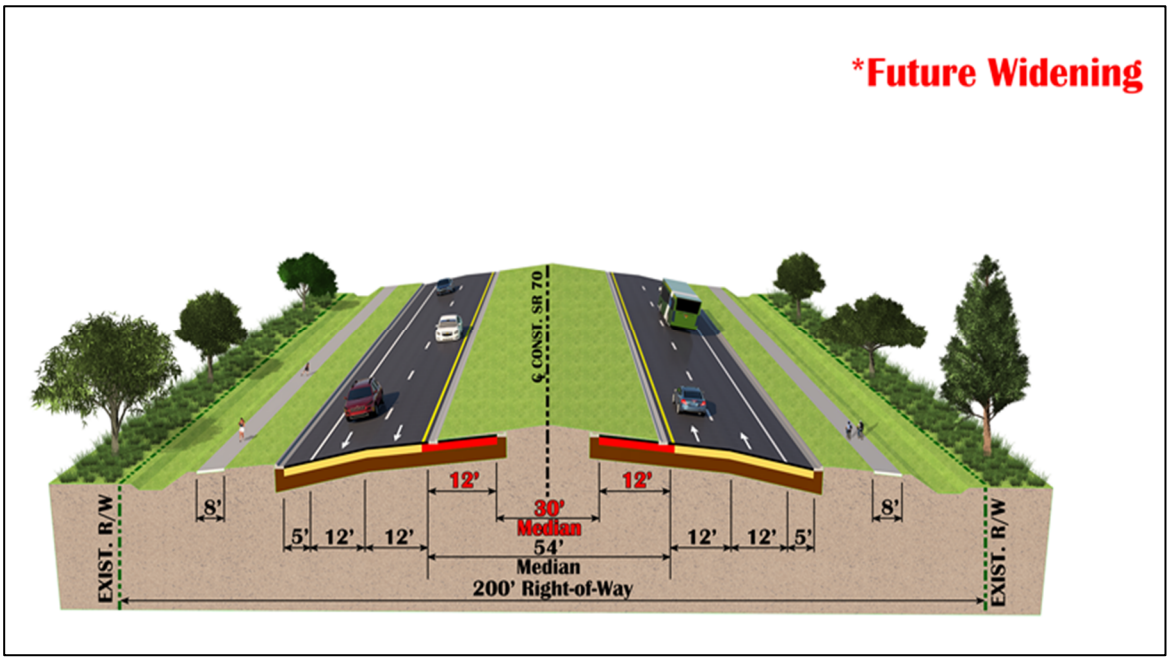
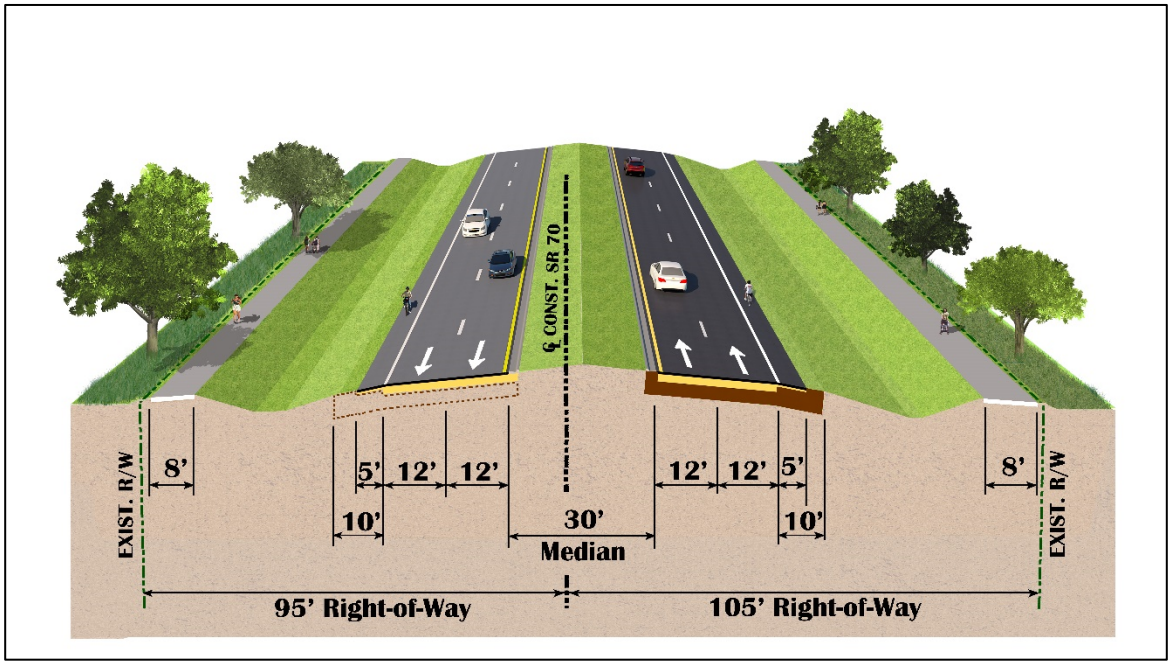


Figure 1.4: Segment C Proposed Typical Section



The evaluation matrix is based on environmental effects, right-of-way needs, project costs, and engineering factors. It also quantifies considerations such as potential business and residential relocations, impacts to environmental resources, and the area of right-of-way needed for the roadway improvements and stormwater facilities. The potential for the proposed widening to impact archaeological/historic sites, noise sensitive sites, and threatened and endangered species were also included in the matrix. The bottom portion of the matrix details cost estimates for wetland mitigation, right-of-way acquisition, construction, design, and construction engineering and inspection. Construction costs were estimated using the FDOT Long Range Estimates (LRE) provided in **Appendix A**.

1.6 List of Technical Documents

The purpose of the PD&E study is to evaluate engineering and environmental data and record information that will help the Florida Department of Transportation Office of Environmental Management (OEM) in determining the type, preliminary design, and location of the proposed improvements. The study was conducted to meet requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules, and regulations. The technical reports that have been completed during this study can be find below in **Table 1-1**.

Table 1.1: List of Technical Reports

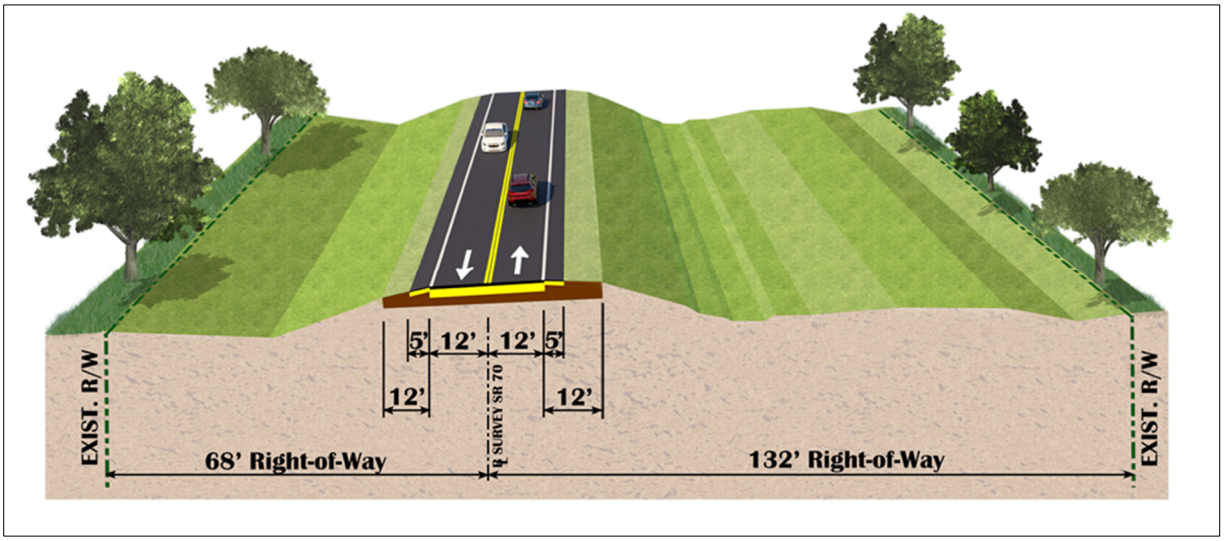
Public Involvement	Dated
Public Hearing Transcript	August, 2019
Advance Notification Package	August, 2016
Public Involvement Plan	February, 2017
Comments and Coordination Report	May, 2020
Engineering	
Geotechnical Technical Memorandum	March, 2019
Project Traffic Report	October, 2018
Location Hydraulic Report	January, 2019
Pond Siting Report	January, 2019
Pond Siting Report Addendum	March, 2020
Typical Section Package	May, 2019
Utility Assessment Package	March, 2020
Context Classification Memo	November, 2018
Environmental	
Type 2 Categorical Exclusion	Pending
Contamination Screening Evaluation Report	March, 2019
Contamination Screening Evaluation Report (Ponds) Addendum	March, 2020
Cultural Resource Assessment Survey	April, 2019
Cultural Resource Assessment Survey Technical Memorandum Addendum	March, 2020
Natural Resources Evaluation	May, 2019
Natural Resource Evaluation Addendum	March, 2020
Noise Study Report	October, 2019
Water Quality Impact Evaluation	April, 2019
Farmlands No Use Determination	July, 2019
Air Quality Technical Memorandum	April, 2019
Sociocultural Data Report	April, 2019
ETDM Programming Screen Summary Report	April, 2018

2.0 EXISTING CONDITIONS

2.1 Roadway

The existing SR 70 corridor consists of a two-lane undivided roadway with 12-foot travel lanes (one in each direction) and 12-foot shoulders (5 feet paved). See **Figure 2.1** for the existing typical section along the project corridor.

Figure 2.1: Existing Typical Roadway Section



2.2 Right-of-Way

Within the study limits the existing right-of-way width is approximately 200 feet throughout most of the project corridor and approximately 250 feet near the intersection of SR 70 and CR 675/Waterbury Road. **Table 2-1** summarizes the existing right-of-way for the project limits with stationing and offsets based on the baseline shown on plan sheets.

Table 2.1: Existing Right-of-Way

Mile Post (MP)	Baseline Station	Offset from Baseline of Survey		Total (ft)
		Left	Right	
From 9.476 to 15.331	From Sta. 519+39 to Sta. 828+71	68	132	200
From 15.331 to 15.677	From Sta. 828+71 to Sta. 847+00	98	132	230
From 15.677 to 15.809	From Sta. 847+00 to Sta. 854+51	115	132	247
From 15.809 to 15.998	From Sta. 854+51 to Sta. 890+71	115	148	263
From 15.998 to 16.074	From Sta. 890+71 to Sta. 894+70	70	148	218
From 16.074 to 16.078	From Sta. 894+70 to Sta. 894+93	70	132	202

2.3 Roadway Classification & Context Classification

According to the Straight Line Diagrams of Road Inventory, SR 70 is designated as a "Rural Other Principal Arterial" highway within the project limits. It is also designated as a Strategic Intermodal System (SIS) highway and evacuation route. The context classification for the project limits of SR 70 is C3R – Suburban Residential as defined in the approved Context Classification Memo.

2.4 Adjacent Land Use

The project limits are located within Manatee County. The surrounding project corridor consists predominantly of low-density residential with some commercial, agricultural and conservation lands. The existing land uses adjacent to SR 70 consist primarily of residential uses with multiple housing subdivisions along the project corridor including Greenbrook Village, Lakewood National, Polo Run, Del Webb, and Preserve at Panther Trace. Southwest Florida Water Management District (SWFWMD) holds and monitors a conservation easement on south side of SR 70 within the project limits. The vacant land east of the Greenbrook subdivision is privately owned and is used as a mitigation bank referred to as the Braden River Mitigation Bank. It is a 349-acre mitigation bank. There are some agricultural lands north and south of the project corridor.

2.5 Access Management Classification

The access management classification for this project is Class 3. For this classification, the State Highway Access Management Classification System and Standards (Rule 14-97) allows for full median openings and signalized intersections spaced at 2,640 feet, and directional median openings spaced at 1,320 feet.

2.6 Design and Posted Speeds

The existing design speed is 65 mph per original as-built roadway plans dated December 1976. The current posted speed is 50 mph along SR 70 from the beginning of the project to approximately 0.25 miles east of Greenbook Boulevard and 60 mph for the remainder of the project.

2.7 Vertical and Horizontal Alignment

The existing horizontal SR 70 alignment within the project limits is comprised of three horizontal curves and two deflections. The degree of curvature for the existing horizontal curves ranges from 1° 00' 00" to 3° 00' 00" as shown in **Table 2-2**. **Table 2-3** shows the existing vertical alignment along the limits of the project.

Table 2.2: Horizontal Alignment

Baseline PI Station	Bearing		Degree of Curvature	Radius (ft)	Length (ft)
	Back	Ahead			
563+04.25	S 89° 20' 59.38" E	S 54° 57' 24.93" E	3° 00' 00"	1,909.86	1,146
642+77.50	S 54° 57' 24.93" E	S 69° 55' 31.60" E	2° 00' 00"	2,864.79	748
823+69.14	S 69° 53' 57.98" E	S 62° 32' 54.26" E	1° 00' 00"	5,729.58	735
852+02.55	S 62° 32' 54.26" E	S 62° 36' 54.32" E	-	-	-
862+71.36	S 62° 36' 54.32" E	S 62° 46' 20.33" E	-	-	-

Table 2.3: Vertical Alignment

Baseline VIP Station	Longitudinal Grade (%)		Length (FT)
	Back	Ahead	
540+50	(-) 1.891	(+) 0.682	300
566+00	(+) 0.682	(-) 2.137	1800
642+50	(-) 1.293	(-) 0.185	550

The lowest point along the existing SR 70 alignment within the project limits is at 41 feet (North American Vertical Datum of 1988 [NAVD 88]) at the beginning of the project. The vertical alignment gradually climbs at an average grade of 0.2% to elevation 47 feet at Sta. 561+70 near the Greenbrook Boulevard intersection. The vertical alignment descends to 38 feet around the Braden River crossing between Sta 579+90 and Sta 585+26. The vertical alignment climbs at an average grade of 0.15% to 86 feet at the end project limit at CR 675.

2.8 Pedestrian Accommodations

There are two segments of existing sidewalk within the project limits of SR 70. The first segment is 675 feet long and located on the south side of SR 70 east of the Lorraine Road intersection. The second sidewalk segment is 0.9 miles long and located on the south side of SR 70 east and west of Lindrick Lane.

2.9 Bicycle Facilities

There are existing five-foot paved shoulders which function as undesignated bicycle lanes throughout this stretch of SR 70. In addition, five-foot existing keyholes are delineated in between travel and right turn lanes at the main intersection approaches to accommodate bicycle traffic.

2.10 Transit Facilities

There are no existing transit facilities within the project limits. Manatee County Area Transit does not provide (bus) service along SR 70 within the project limits.

2.11 Pavement Condition

SR 70 between Lorraine Road and CR 675 was resurfaced in 2014. The *FDOT Pavement Condition Report* shows cracking and ride ratings of 9.0 and 8.0 respectively for 2019. The existing pavement is generally in good condition with no signs of base failure. The pavement and base are anticipated to be in acceptable condition for reuse with milling and resurfacing as part of the Preferred Alternative for Segment C but should be evaluated further during final design.

2.12 Traffic Volumes and Operational Conditions

This section provides a summary of the existing traffic conditions information that can be found in the SR 70 Design Traffic Technical Memorandum (DTTM) (2018). An analysis was performed as a part of this study for the existing year (2016) and future years: opening year (2025) and design year (2045). A more detailed analysis of the traffic data collected in support of this project is provided in the SR 70 DTTM.

SR 70 is a component of the Strategic Intermodal System within the limits of this project. SR 70 exhibits a high volume of truck traffic along the project limits and will benefit from the safety and Level of Service (LOS) improvements that will be accomplished by widening the roadway.

A seventy-two (72)-hour classification count was conducted at one location on SR 70 just east of Lorraine Road. Twenty-four (24)-hour bi-directional volume counts were conducted at the following eighteen (18) locations in April 2016:

- SR 70 west of Lorraine Road
- Lorraine Road north of SR 70
- Lorraine Road south of SR 70
- SR 70 east of Greenbrook Boulevard
- Greenbrook Boulevard north of SR 70
- Greenbrook Boulevard south of SR 70
- Lindrick Lane north of SR 70
- Lindrick Lane south of SR 70
- CR 675/Waterbury Road north of SR 70
- SR 70 between Lindrick Lane and 213th Street East
- 213th Street East south of SR 70
- SR 70 between 213th Street East and TreeUmph!
- TreeUmph! north of SR 70
- 225th Street East north of SR 70
- 225th Street East south of SR 70
- SR 70 between 225th Street E. and CR 675/Waterbury Road
- Meadow Dove Lane south of SR 70
- SR 70 east of CR 675/Waterbury Road

Four (4)-hour intersection turning movement counts for AM and PM peak hours were conducted at following seven (7) intersections:

- SR 70 at Lorraine Road
- SR 70 at Greenbrook Boulevard
- SR 70 at Lindrick Lane
- SR 70 at 213th Street East
- SR 70 at TreeUmph!
- SR 70 at 225th Street East
- SR 70 at CR 675/Waterbury Road

The 24-hour truck percentage has been calculated at 14.2% for the SR 70 corridor. The weekday turning movement counts were collected for the intersections between the peak hours of 7:00 - 9:00 AM and 4:00-6:00 PM. The traffic count data (72-hour volume and classification) collected were adjusted utilizing the FDOT axle and seasonal adjustment factors for Manatee County to provide 2016 annual average conditions and peak hour traffic volumes.

As shown in **Figure 2.2**, the 2016 AADT volumes on the SR 70 mainline between Lorraine Road and CR 675 range from 22,000 vehicles per day (vpd) to 10,000 vpd. **Figure 2.3** shows the existing a.m. and p.m. peak hour turning movement volumes for the study corridor.

A summary of the LOS analysis for the study intersections is included in **Table 2-4**. This table shows that during the year 2016 AM peak hour conditions, the signalized intersection on SR 70 at Lorraine Road was found to operate below the standard FDOT LOS D. Additionally, the minor street approaches for the unsignalized intersections at Greenbrook Boulevard / Post Boulevard at SR 70 were found to operate below the standard C during the AM peak hour.

Table 2.4: Existing Year (2016) Intersection LOS Analysis Summary

No.	Study Intersection	Control Type	FDOT Adopted LOS	AM Peak Hour		PM Peak Hour	
				Delay (s)	LOS	Delay (s)	LOS
1	Lorraine Rd.	Signal	D	68.7	E	33.1	C
2	Greenbrook Blvd./Post	Stop	C	25.6	D	22.1	C
3	Lindrick Ln./197th St. E.	Stop	C	18.5	C	20.1	C
4	213th St. E.	Stop	C	16.4	C	17.5	C
5	TreeUmph! Park	Stop	C	12.5	B	0.0	A
6	225th St. E.	Stop	C	15.9	C	14.4	B
7	Meadow Dove Ln./CR 675	Stop	C	12.9	B	15.9	C

Notes:
1. HCM 2010 based outputs are presented in this table for both the signalized and unsignalized intersections
2. Overall intersection delay and LOS results are reported for the signalized intersection
3. In case of unsignalized intersections, minor street worst case results (approach delay and LOS) are reported
4. Result shown in color exceeds the adopted LOS standards

Figure 2.2: Existing Year 2016 Annual Average Daily Traffic (AADT)

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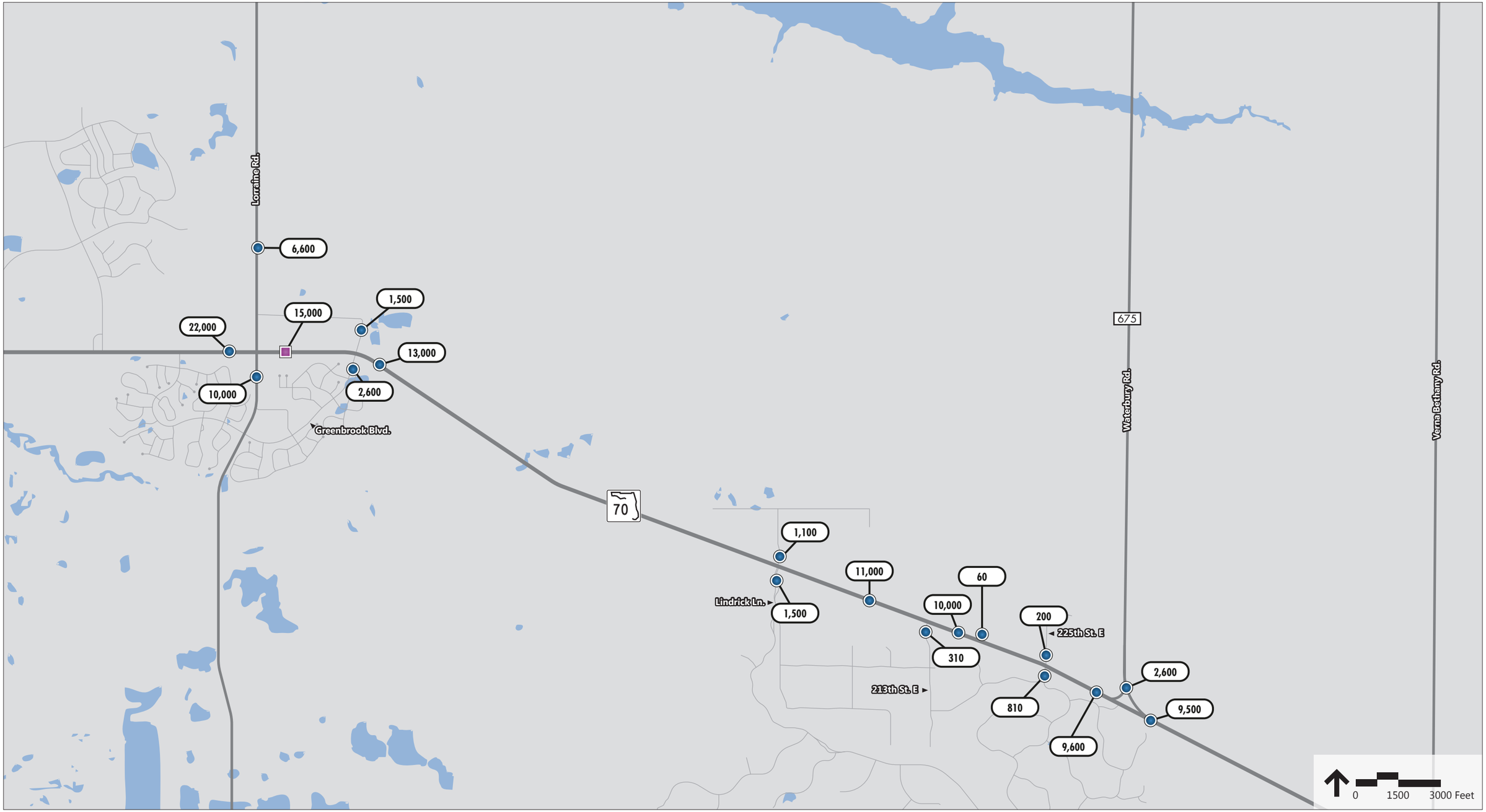

Volume Count Location

Class Count Location

X,XXX Annual Average Daily Traffic (AADT)

Figure 2.3: Existing Year 2016 Turning Movement Volumes

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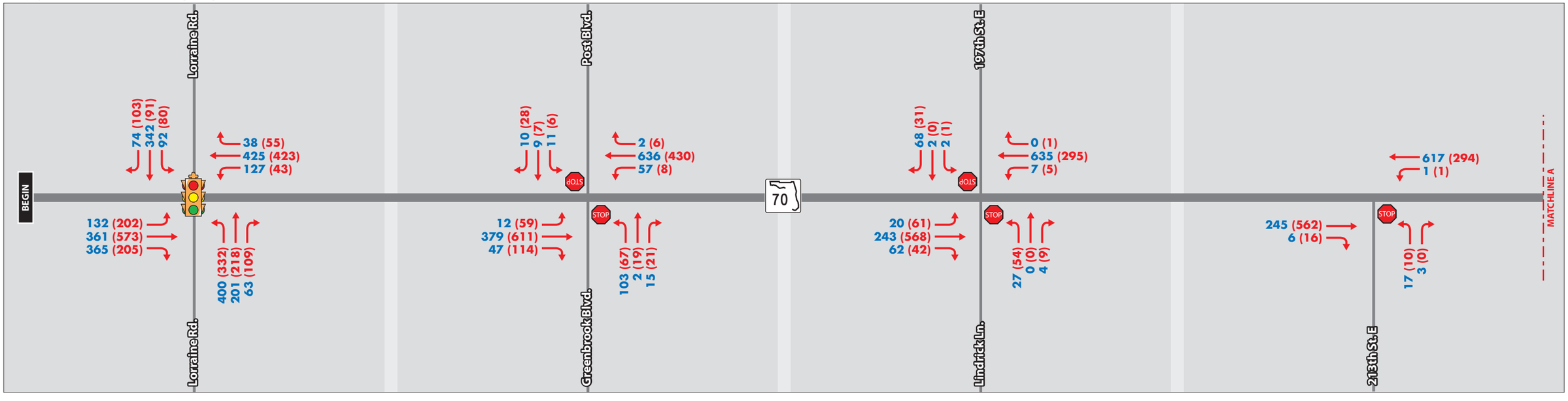

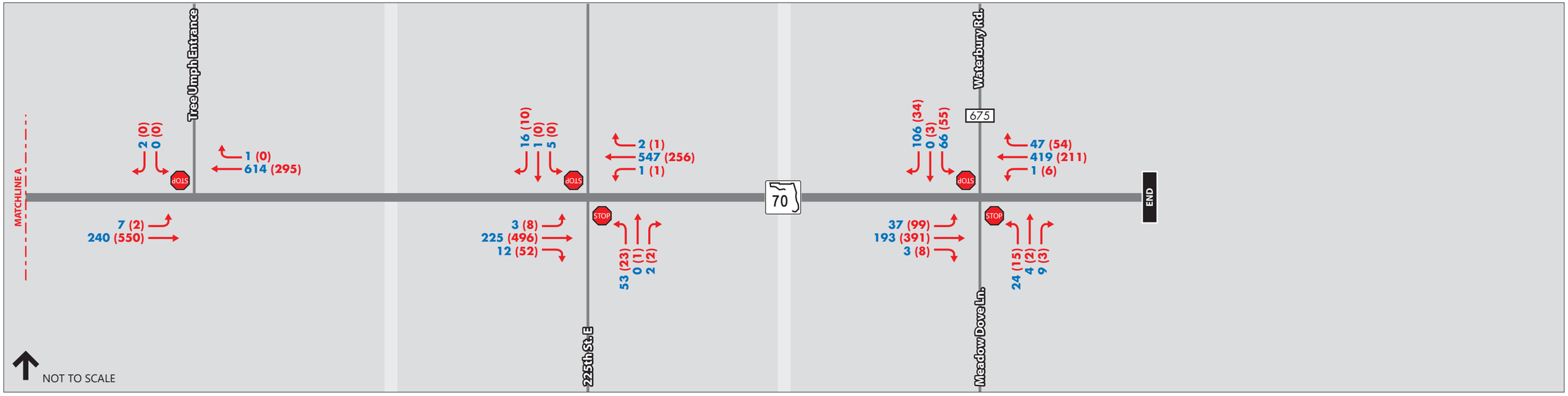

Traffic Movement

AM (PM) Traffic Volumes

Stop-Controlled Intersection

Signalized Intersection

2.13 Intersection Layout and Traffic Control

There is a total of five major roadways that intersect SR 70 within the project limits. Major roadways were distinguished by turning movement volumes. The five major roadways are listed in **Table 2-5**.

Table 2.5: Major Cross Streets

Highlands County			
Cross Street	**Station**	**Configuration**	**Traffic Control**
Lorraine Rd.	527+40	Four-Way Intersection	Signalized
Greenbrook Blvd.	562+30	Four-Way Intersection	Two-Way Stop
Uihlein Rd.	599+00	T-Intersection	One-Way Stop
Del Webb Blvd.	645+00	T-Intersection	One-Way Stop
CR 675	850+40	Four-Way Intersection	Two-Way Stop

2.14 Railroad Crossings

There are no existing railroads within the project corridor.

2.15 Crash Data and Safety Analysis

Based on a review of the five-year crash data, a total of 146 crashes occurred within the study limits. The most recent five-year crash history available at the beginning of this PD&E was for the period from January 1, 2011 to December 31, 2015. This data was obtained using Signal Four Analytics for SR 70 from Lorraine Road to CR 675.

On average, about 29 crashes occurred per year within the study limits. Three of them were fatal crashes and 53 were crashes that resulted in injury. The three fatal crashes did not occur at any intersection but rather along roadway segments within the project limits. Two of the three fatal crashes occurred between Greenbrook Boulevard and 197th Street East, and the other fatal crash occurred along the roadway segment between Lindrick Lane and 213th Street East. The causes of these fatalities were: rollover, opposing sideswipe, and the third crash type is unknown.

A total of 45 crashes were reported to have occurred during dark conditions (at night, dawn, or dusk) while 24 crashes were reported to have occurred in wet conditions. Other details for these crashes may be found in **Appendix G** of the DTTM. **Table 2-6** summarizes the crashes by severity and conditions.

Table 2.6: Crash Summary by Severity and Conditions (2011-2015)

Year	Total No. of Crashes	No. of Fatality Crashes	No. of Injury Crashes	Dark Conditions Crashes	Wet Conditions Crashes
2011	22	1	7	7	5
2012	20	1	5	7	5
2013	29	0	12	10	1
2014	34	1	14	10	7
2015	41	0	15	11	6
5-Year	**146**	**3**	**53**	**45**	**24**
Average	29.2	0.6	10.6	9	4.8
Percent	-	2.05%	36.30%	30.82%	16.44%

The crash data below is summarized by intersection. As shown in **Table 2-6**, the intersection of SR 70 and Lorraine Road (signalized) experienced the highest number of crashes (51 total crashes) among the analyzed intersections within the study corridor. This intersection alone is responsible for 35% of the entire study corridor's crashes. The other intersection along SR 70 with more than 15 crashes for the last five (5) years is Greenbrook Boulevard / Post Boulevard at 29 crashes. The Greenbrook Boulevard / Post Boulevard intersection is stop controlled.

Uihlein Road, Polo Club Lane, Del Webb Boulevard, and Bourneside Boulevard are all new roads and do not have crash data available. No fatal crashes were reported to have occurred at any intersection within the project limits. **Table 2-7** shows the number of crashes by intersection for years 2011 through 2015. None of the seven analyzed intersections have lighting present.

Table 2.7: Crash Summary by Intersection (2011-2015)

Intersection	Total	Fatal	Injury	Property Damage Only	Night	Wet
Lorraine Rd. (signal)	**51**	0	19	32	9	9
Post Blvd./Greenbrook Blvd. (stop)	**29**	0	17	12	1	4
197th St. E./Lindrick Ln. (stop)	**6**	0	2	4	5	1
213th St. E. (stop)	**3**	0	0	3	3	0
TreeUmph! Adventure Park (stop)	**0**	0	0	0	0	0
225th St. E./Panther Ridge Trail	**1**	0	0	1	0	0
CR 675/Waterbury Rd. (stop)	**7**	0	2	5	3	3
Total	**97**	**0**	**40**	**57**	**21**	**17**

Table 2-8 summarizes the types of crashes that occurred within the project limits between the years 2011 through 2015. According to the summary, rear-end crashes account for the majority of the crashes at about 32% of the total amount of crashes within the study corridor. 16% of the total crashes were left-turn type crashes followed by animal crashes at 14% of total, and angle type crashes at 12% of the total. No bicycle or pedestrian related crashes were reported in the last five years within the project limits.

Table 2.8: Crash Summary for Project Limits

Crash Type	2011	2012	2013	2014	2015	2011-2015	Per Year	Percent
Angle	3	4	2	5	4	18	3.6	12.33%
Animal	5	2	5	2	6	20	4.0	13.70%
Rear End	7	5	8	10	16	46	9.2	31.51%
Head On	0	2	0	0	0	2	0.4	1.37%
Left Turn	1	1	7	9	5	23	4.6	15.75%
Sideswipe	3	1	2	2	3	11	2.2	7.53%
Right Turn	0	0	2	0	0	2	0.4	1.37%
Off Road	3	2	1	4	4	14	2.8	9.59%
Other	0	1	1	1	0	3	0.6	2.05%
Rollover	0	2	1	1	3	7	1.4	4.80%
Total	**22**	**20**	**29**	**34**	**41**	**146**	**29**	**100.00%**

2.16 Drainage

The project is located within the Braden River and Cow Pen Slough watersheds and within the jurisdiction of the Southwest Florida Water Management District (SWFWMD). The existing drainage patterns were determined using United States Geological Survey (USGS) quadrangle maps, existing plans, and LiDAR contours where available. The existing drainage basins can be found in **Table 2-9**. This project contains "open" drainage basins and flow is generally from north to south. The roadway drains through roadside ditches to twelve cross drains and two bridge culverts within the project limits There are no SWFWMD permitted stormwater management facilities within the project limits. The two bridge culverts within the project are located at the Braden River. Bridge 130113 is a triple 12'x5' box culvert at MP 10.526 (Sta. 182+87), and Bridge 130114 is a quadruple 10'x7' box culvert at MP 10.976 (Sta. 206+57). Both culverts were built in the year 1970. The existing cross drain summary for this study can be found in the *Location*

Hydraulic Report (LHR) (January 2019) completed under separate cover. The existing roadway has no known flooding issues.

Table 2.9: Existing Drainage Basins

Basin Name	From Mile Post (MP)	To Mile Post (MP)
A	9.476	10.128
B	10.128	10.697
C	10.697	11.595
D	11.595	12.151
E	12.151	12.538
F	12.538	12.926
G	12.926	13.201
H	13.201	14.224
I	14.224	15.043

The project site is located on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community-Panel Numbers 12081C0345E, 12081C0365E, and 12081C0370E (dated March 14, 2014) in Manatee County. The project crosses the Braden River, which is designated as Zone A north of SR 70 and Zone AE and a FEMA floodway south of SR 70. Zone AE are areas of the 100-year floodplain where the base flood elevation has been determined. The floodway elevation is 36 feet (NAVD 88) on the south side of SR 70. The proposed alignment also impacts several areas designated as Zone A, which are areas of the 100-year floodplain where the base elevation has not been determined.

The SWFWMD has modeled the Braden River watershed to revise the 100-year floodplain elevations in Manatee County and to update the FEMA Federal Insurance Rate Maps (FIRM). The Braden River Watershed model was approved by the SWFWMD Governing Board on May 21, 2013. It is the most accurate available information and will be used to determine floodplain elevations within the project area west of Lorraine Road to west of CR 675. The remaining area of the project is located within the Cow Pen Slough Watershed. Sarasota County is presently in the process of updating the watershed model for this basin.

SR 70 is a designated hurricane evacuation route. It was agreed during a drainage and pond site coordination meeting with FDOT on February 19, 2018 to place the roadway edge of pavement above the 100 year floodplain elevation. The proposed roadway profiles were raised in the area of the Braden River to meet these conditions.

2.17 Soils and Geotechnical Data

The *Soil Survey of Manatee County* classifies the majority of soils within the project area as Myakka fine sand (30), Floridana-Immokalee-Okeelanta association (26) and Palmetto sand (38) (see **Table 2-10)**. Myakka fine sand (30) is a poorly drained soil with a seasonal high water table (SHWT) at a depth of six to eighteen inches below the ground surface and is classified as Hydrologic Soil Group (HSG) Type A/D. Floridana-Immokalee-Okeelanta association (26) is a very poorly drained soil with a SHWT two feet above the ground surface to one foot below and is classified as HSG Type C/D. Palmetto sand (38) is poorly drained soil with a SHWT at the ground surface to a depth of one foot below and is classified as HSG Type A/D.

A geotechnical field study was conducted using hand auger borings, Standard Penetration Test (SPT) borings, subsurface sampling for the *Pond Siting Report* (PSR) (January 2019) prepared under separate cover. Hand auger borings were performed in each of the proposed alternative pond sites to determine the depth to groundwater and estimate the SHWT. The hand auger borings were performed manually twisting and advancing a bucket auger into the ground. As the hand auger was slowly advanced, representative samples were obtained for classification of the soils.

Table 2.10: Manatee County USDA NRCS Soil Survey Information

Map No.	Soil Name	Hydrologic Soil Group	Depth to High Water Table (ft)	Typical Soil Types (Profile from Ground Surface to depth of approximately 80 inches)
11	Cassia Fine Sand	C	1.5 - 3.5	Fine Sand to Loamy Sand
26	Floridana-Immokalee-Okeelanta	D	0.0	Fine Sand to Sandy Clay Loam
30	Myakka Fine Sand	B/D	0.0 – 1.5	Fine Sand to Loamy Fine Sand
38	Palmetto Sand	B/D	0.0	Fine Sand to Sandy Clay Loam
40	Pinellas Fine Sand	B/D	0.0 – 1.5	Fine Sand to Sandy Clay Loam

Table 2.10: Manatee County USDA NRCS Soil Survey Information (cont.*)

USDA Map Symbol and Soil Name	Soil Classification			
	Depth (in)	USCS	AASHTO	Permeability (in/hr)
(11) Cassia	0-3	SP, SP-SM	A-3	6.0 - 20.0
	3-24	SP, SP-SM	A-3	6.0 - 20.0
	24-33	SM, SP-SM	A-2-4, A-3	0.6 - 6.0
	33-80	SP, SP-SM	A-3	6.0 - 20.0
(26) Floridana, depressional - Immokalee- Okeelanta	0-19	SM, SP-SM	A-2-4, A-3	6.0 - 20.0
	19-36	SP, SP-SM	A-3	6.0 - 20.0
	36-63	SC, SC-SM	A-2-4, A-2-6	0.1 - 0.2
	63-80	SM, SP-SM	A-2-4, A-3	6.0 - 20.0
	0-10	SP, SP-SM	A-3	6.0 - 20.0
	10-34	SP, SP-SM	A-3	6.0 - 20.0
	34-43	SM, SP-SM	A-2-4, A-3	0.6 - 2.0
	43-80	SP, SP-SM	A-3	6.0 - 20.0
	0-20	**PT**	**A-8**	6.0 - 20.0
	20-54	SM, SP, SP-SM	A-2-4, A-3	6.0 - 20.0

USDA Map Symbol and Soil Name	Soil Classification			
	Depth (in)	USCS	AASHTO	Permeability (in/hr)
(30) Myakka, non-hydric - Myakka, hydric	0-5	SP, SP-SM	A-3	6.0 - 20.0
	5-23	SP, SP-SM	A-3	6.0 - 20.0
	23-37	SM, SP-SM	A-2-4, A-3	0.6 - 6.0
	37-61	SP, SP-SM	A-3	6.0 - 20.0
	61-75	SM, SP-SM	A-2-4, A-3	0.6 - 6.0
	0-5	SP, SP-SM	A-3	6.0 - 20.0
	5-23	SP, SP-SM	A-3	6.0 - 20.0
	23-37	SM, SP-SM	A-2-4, A-3	0.6 - 6.0
	37-61	SP, SP-SM	A-3	6.0 - 20.0
	61-75	SM, SP-SM	A-2-4, A-3	0.6 - 6.0
(38) Palmetto	0-8	SP, SP-SM	A-2-4, A-3	6.0 - 20.0
	8-25	SP, SP-SM	A-2-4, A-3	6.0 - 20.0
	25-45	SP-SM	A-2-4, A-3	6.0 - 20.0
	45-64	SC, SC-SM, SM	A-2-4, A-2-6	0.2 - 0.6
	64-68	SM, SP-SM	A-2-4, A-3	2.0 - 6.0
(40) Pinellas, non-hydric - Pinellas, hydric	0-5	SP	A-3	6.0 - 20.0
	5-11	SP	A-3	6.0 - 20.0
	11-33	SP-SM	A-2-4, A-3	6.0 - 20.0
	33-45	SC, SC-SM	A-2-4, A-2-6	0.6 - 2.0
	45-60	SP, SP-SM	A-2-4, A-3	6.0 - 20.0
	0-5	SP	A-3	6.0 - 20.0
	5-11	SP	A-3	6.0 - 20.0
	11-33	SP-SM	A-2-4, A-3	6.0 - 20.0
	33-45	SC, SC-SM	A-2-4, A-2-6	0.6 - 2.0
	45-60	SP, SP-SM	A-2-4, A-3	6.0 - 20.0

2.18 Utilities

Eleven utility companies were identified along the project corridor from a Sunshine 811 design tickets. The utilities include; AT&T Transmission, Braden River Utilities, Bright House Networks, Frontier Communications, Lakewood Ranch Community Development Districts, Level 3 Communications (Now CenturyLink), Manatee County Utility Operations, Myakka Communications, Peace River Electric Cooperation, TECO Peoples Gas, and Uniti Fiber.

The utility owners were contacted to identify the locations and types of utilities within the project limits. Plan sheets were sent to the utility companies with a request to identify the locations and types of utility conflicts within the existing facility and the planned facility. The utility information used in the Utility Assessment Package was obtained from field reviews, as-built plan information from previous projects in the area, as well as information provided by the utility companies. The list of existing utility owners within the project corridor and their facilities can be found in **Appendix B**.

One utility company, Myakka Communications, indicated that they do not have conflicts with the proposed improvements within the study limits. Braden River Utilities and Lakewood Ranch Development Districts were unresponsive to the requests for facility information within the limits of the PD&E study.

2.19 Lighting

There is no existing lighting within the study limits.

2.20 Signs

Most ground mounted signs within the study limits are in good condition. There are several single-post signs within the study limits. There are regulatory signs at multiple locations within the study limits that inform drivers of the speed limit. There are two multi-post signs within the study limits. There is one multi-post next signal sign along the SR 70 westbound approach at Lorraine Road. There is one multi-post destination direction sign along the SR 70 eastbound approach at CR 675/Waterbury Road.

2.21 Aesthetics Features

There are no existing aesthetics features located within the study limits.

2.22 Bridges and Structures

There are two existing bridge culverts within the project which are located at the Braden River. Bridge 130113 is a triple 12'x5' box culvert at MP 10.526 (Sta. 182+87), and Bridge 130114 is a quadruple 10'x7' box culvert at MP 10.976 (Sta. 206+57). Both structures were built in 1970.

2.23 Existing Environmental Features

This project was screened through the ETDM process as ETDM Project Number 14263. An *ETDM Programming Screen Summary Report* containing comments from the ETAT was published under separate cover.

The Premier Sports Campus at Lakewood Ranch, recently acquired by Manatee County, is an existing recreation/park complex located along SR 70 at the Greenbrook Blvd/Post Blvd intersection. This existing park resource is considered under Section 4(f) of the U.S. Department of Transportation Act of 1966.

The historical resources survey of the project area revealed an absence of historic buildings or structures within the Area of Potential Effect (APE). However, one linear resource, SR 70, was located within the APE and recorded. Additionally, portions of three other linear resources including a segment of abandoned East & West Coast Railway railbed, the Lakewood Ranch Canal #2, and the Lakewood Ranch Canal #3, are located within the APE. Portions of the railbed have been determined eligible for listing in the National Register of Historic Places (NRHP) by the State Historic Preservation Office (SHPO). However, the portions of the railbed within the APE have been determined not to be eligible. The Lakewood Ranch Canal #2 and Lakewood Ranch Canal #3 were also determined not to be eligible. Portions of SR 70 have been recorded within Manatee County but also determined not to be eligible for listing in the NRHP.

3.0 PROJECT DESIGN CONTROLS & CRITERIA

3.1 Roadway Context Classification

The context classification for the project limits of SR 70 was determined to be C3R – Suburban Residential as defined in the approved FDOT Context Classification Document and per FDM Table 200.4.1.

3.2 Design Control and Criteria

The design criteria for the proposed improvements to SR 70 adhere to the FDM. The design year for the proposed improvements is 2045. The design criteria used for each of the segments in this PD&E study are listed in **Table 3-1**, **Table 3-2** and **Table 3-3** respectively.

Table 3.1: Design Criteria Used for Segment A

Design Element			Value	Source (FDM 2020)
Typical Section	Roadway Type		C3R – Suburban Residential	Table 200.4.1
	Design Speed		45*	Table 201.5.1
	Lane Widths (ft)		11	Table 210.2.1
	Sidewalk Width (ft)		8	Table 222.1.1
	Bicycle Lane Width (ft)		7	Ch. 223.2.1.1
	Minimum Median Width (ft)		22	Table 210.3.1
	Border Width (curbed) (ft)		14	Table 210.7.1
	Clear Zone Width (ft)		24	Table 215.2.1
Horizontal	Min. Stopping Sight Distance (ft)		360	Table 210.11.1
	Max. Deflection Without Curve		1° 00′ 00″	Ch. 210.8.1
	Length of Curve	Desirable (ft)	675	Table 210.8.1
		Minimum (ft)	400	Table 210.8.1
	Max. Superelevation (%)		5	Table 210.9.2
	Max Curvature (e = NC)		2° 45′ 00″	Table 210.9.2
	Max. Curvature (e max = 0.05)		8° 15′ 00″	Table 210.9.2
Vertical	Max. Grade (Flat Terrain) (%)		6	Table 210.10.1
	Max. Change in Grade without Vertical Curve (%)		0.7	Table 210.10.2
	Base Course Clearance Above Water Elevation (ft)		3	Ch. 210.10.3 (2)
	Crest Curve	K Value	98	Table 210.10.3
		Min. Length (ft)	135	Table 210.10.4
	Sag Curve	K Value	79	Table 210.10.3
		Min. Length (ft)	135	Table 210.10.4

*The SIS minimum design speed is 50 mph. SIS Minimum Design Speed may be reduced to 45 mph for curbed roadways within C3 Context Classification.

Table 3.2: Design Criteria Used for Segment B

Design Element			Value	Source (FDM 2020)
Typical Section	Roadway Type		C3R – Suburban Residential	Table 200.4.1
	Design Speed		50	Table 201.5.1
	Lane Widths (ft)		12	Table 210.2.1
	Sidewalk Width (ft)		8	Table 222.1.1
	Bicycle Lane Width (ft)		5	Ch. 223.2.1.1
	Minimum Median Width (ft)		30	Table 210.3.1
	Border Width (curbed) (ft)		29	Table 210.7.1
	Clear Zone Width (ft)		24	Table 215.2.1
Horizontal	Min. Stopping Sight Distance (ft)		360	Table 210.11.1
	Max. Deflection Without Curve		0° 45′ 00″	Ch. 210.8.1
	Length of Curve	Desirable (ft)	750	Table 210.8.1
		Minimum (ft)	400	Table 210.8.1
	Max. Superelevation (%)		10	Table 210.9.1
	Max Curvature (e = NC)		0° 30′ 00″	Table 210.9.1
	Max. Curvature (e max = 0.10)		8° 15′ 00″	Table 210.9.1
Vertical	Max. Grade (Flat Terrain) (%)		6	Table 210.10.1
	Max. Change in Grade without Vertical Curve (%)		0.6	Table 210.10.2
	Base Course Clearance Above Water Elevation (ft)		3	Ch. 210.10.3 (2)
	Crest Curve	K Value	136	Table 210.10.3
		Min. Length (ft)	300	Table 210.10.4
	Sag Curve	K Value	96	Table 210.10.3
		Min. Length (ft)	200	Table 210.10.4

Table 3.3: Design Criteria Used for Segment C

Design Element				Value	Source (FDM 2020)
Typical Section	Roadway Type			C3R – Suburban Residential	Table 200.4.1
	Design Speed			50	Table 201.5.1
	Lane Widths (ft)			12	Table 210.2.1
	Sidewalk Width (ft)			8	Table 222.1.1
	Bicycle Lane Width (ft)			5	Ch. 223.2.1.1
	Minimum Median Width (ft)			30	Table 210.3.1
	Shoulder Width	Outside	Full	10	Table 210.4.1
			Paved	5	Table 210.4.1
	Border Width (flush shoulder) (ft)			40	Table 210.7.1
	Clear Zone Width (ft)			24	Table 215.2.1
Horizontal	Min. Stopping Sight Distance (ft)			360	Table 210.11.1
	Max. Deflection Without Curve			0° 45′ 00″	Ch. 210.8.1
	Length of Curve	Desirable (ft)		750	Table 210.8.1
		Minimum (ft)		400	Table 210.8.1
	Max. Superelevation (%)			10	Table 210.9.1
	Max Curvature (e = NC)			0° 30′ 00″	Table 210.9.1
	Max. Curvature (e max = 0.10)			8° 15′ 00″	Table 210.9.1
Vertical	Max. Grade (Flat Terrain) (%)			6	Table 210.10.1
	Max. Change in Grade without Vertical Curve (%)			0.6	Table 210.10.2
	Base Course Clearance Above Water Elevation (ft)			3	Ch. 210.10.3 (2)
	Crest Curve	K Value		136	Table 210.10.3
		Min. Length (ft)		300	Table 210.10.4
	Sag Curve	K Value		96	Table 210.10.3
		Min. Length (ft)		200	Table 210.10.4

4.0 ALTERNATIVES ANALYSIS

The purpose of the alternatives analysis process is to identify technical and environmentally sound alternatives that meet the needs of the project, are cost-effective, and are acceptable to the community. This section describes the alternatives being considered and the results of these alternatives.

4.1 Previous Planning Studies

There were no previous planning studies prepared for this project.

4.2 No-Build (No-Action) Alternative

The No-Build Alternative assumes that SR 70 will remain as a two-lane undivided roadway through the design year 2045, with only routine maintenance being performed during this time. The traffic analysis conducted for the No-Build Alternative indicates that SR 70 will operate at LOS E for the AM and PM design hour conditions by 2025. This is below the targeted LOS C for this type of a facility.

However, the No-Build Alternative remains a viable alternative throughout the study process. The following are advantages and disadvantages associated with the No-Build Alternative:

Advantages of the No-Build Alternative

- No additional right-of-way needed to acquire
- No design, right-of-way, or construction costs
- No delays to motorists or inconveniences to property owners due to construction
- No construction impacts to the adjacent natural, physical and social environment

Disadvantages of the No-Build Alternative

- Increased potential for crashes due to congestion
- Increased traffic congestion and user costs associated with increased delays and reduced level of service at intersections
- Increased emergency vehicle response times
- Increased evacuation travel times
- Incompatibility with the adopted Manatee County Comprehensive Plan
- Increased vehicle emission pollutants due to higher levels of traffic congestion

4.3 Transportation Systems Management and Operations Alternative (TSM&O)

The objective of Transportation Systems Management and Operations (TSM&O) is to identify strategies that reduce existing traffic congestion and prevent its occurrence in areas that are currently congested. These strategies are designed to modify travel behavior and increase system efficiency without costly infrastructure improvements.

TSM&O options generally include traffic signal and intersection improvements, access management, and transit improvements. The additional capacity required to meet the projected traffic volumes along SR 70 cannot be provided solely through the implementation of TSM&O improvements. Therefore the TSM&O alternative does not meet the purpose and need of this project.

4.4 Future Conditions

The traffic analysis findings conducted during the PD&E Study are documented in the *Design Traffic Technical Memorandum-Future Traffic Reevaluation* (DTTM) (October 2018) and prepared under separate cover.

Design year (2045) AADT volumes were developed for this study using the District 1 Regional Planning Model (D1RPM) provided by FDOT. The roadway network included in this travel demand model included the Northeast sector development- a multi-project, approximately 2,700 acre, mixed-use development that was approved in December 2017 with a proposed build out year of 2032. Based on this information, the 2040 model volumes were grown by 0.66% (The Bureau of Economic and Business Research [BEBR] estimated annual low growth rate for Manatee County) to calculate the design year 2045 AADTs for SR 70.

The same assumption was made for the side streets including Lorraine Road, Greenbrook Boulevard / Post Boulevard, Uihlein Road, Bourneside Boulevard, and CR 675, which will be influenced by the Northeast Sector traffic. **Figure 4.1** provides the opening year 2025, mid-design year 2035 and design year 2045 AADT volumes based on the recommended growth rate for the Build scenario. **Figure 4.2** provides the design year 2045 design hour volumes for the Build Alternative.

Figure 4.3 shows the recommended intersection lane geometry for the Build Alternative. The roadway segment LOS analysis was performed for the Build Alternative for both AM and PM design hours for SR 70 using the later HIGHPLAN 2012 software. A summary of the HIGHPLAN 2012 analysis is shown in **Table 4-1**. The results show that under the Build Alternative, the entire study corridor operates within target LOS through the design year 2045 during both the AM and PM design hour conditions. Due to the presence of two closely spaced signalized intersections (existing signal at Lorraine Road and proposed signal at Greenbrook Blvd/Post Blvd) near the

western end of the study corridor, the roadway analysis was performed on SR 70 only for the following segments between Greenbrook Blvd/Post Blvd and Meadow Dove Ln/ CR 675.

Table 4.1: Build Arterial LOS Analysis Summary

SR 70 Segment	Year	Number of Lanes	FDOT Target LOS	AM LOS	PM LOS
Greenbrook Blvd. / Post Blvd. to Bourneside Blvd.	2025	4	C	B	B
	2035			C	C
	2045			C	C
Bourneside Blvd. to Lindrick Ln. / 197th St. E.	2025	4	C	B	B
	2035			B	B
	2045			B	B
Lindrick Ln. / 197th St. E. to CR 675 / Meadow Dove Ln.	2025	4	C	B	B
	2035			B	B
	2045			B	B

Figure 4.1: Future Year Annual Average Daily Traffic (AADT) (Build)

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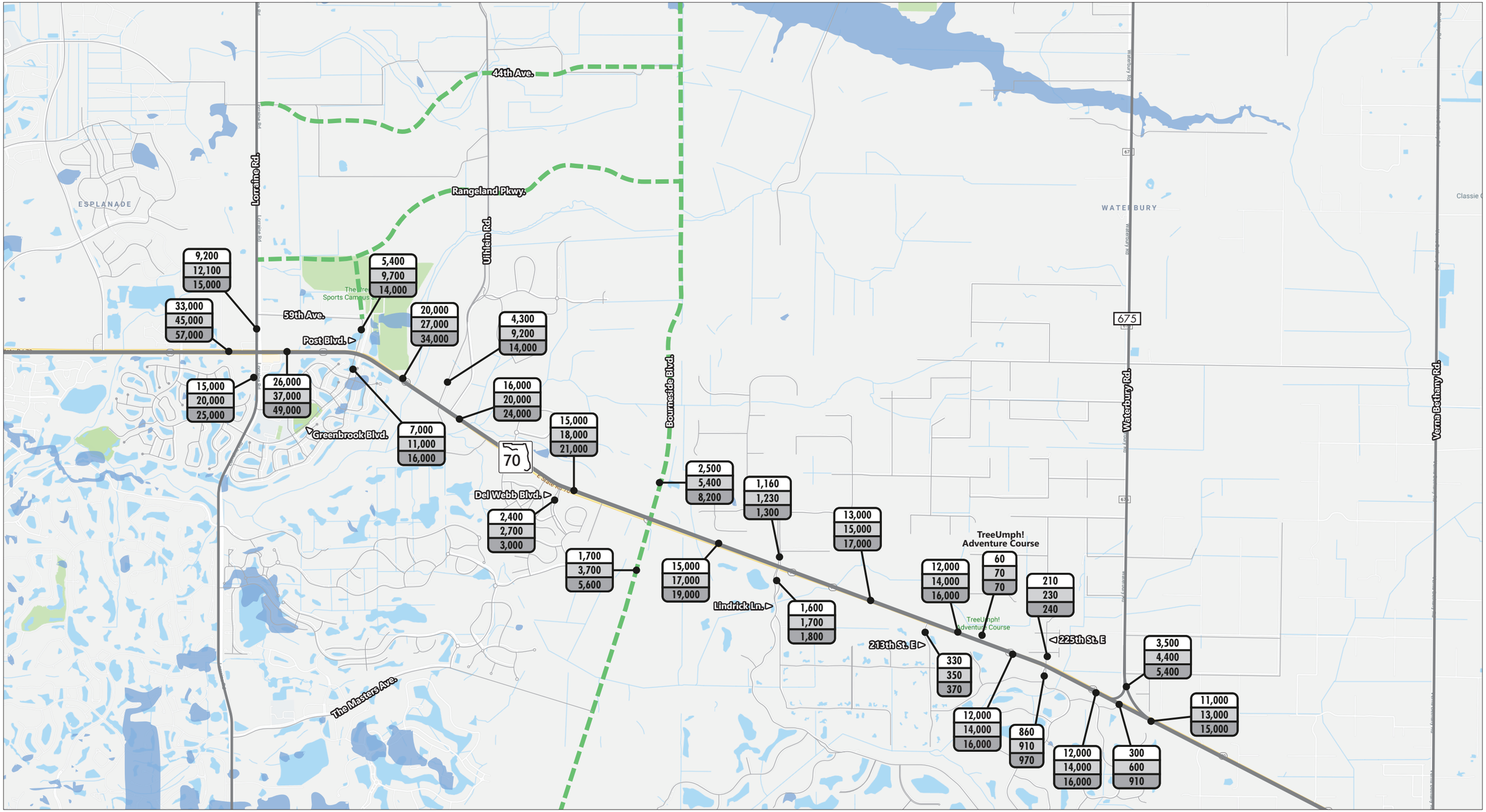

Proposed Roadways

Year 2025
Year 2035
Year 2045

Annual Average Daily Traffic (AADT)

N.T.S.

Figure 4.2: Year 2045 Build Turning Movement Volumes

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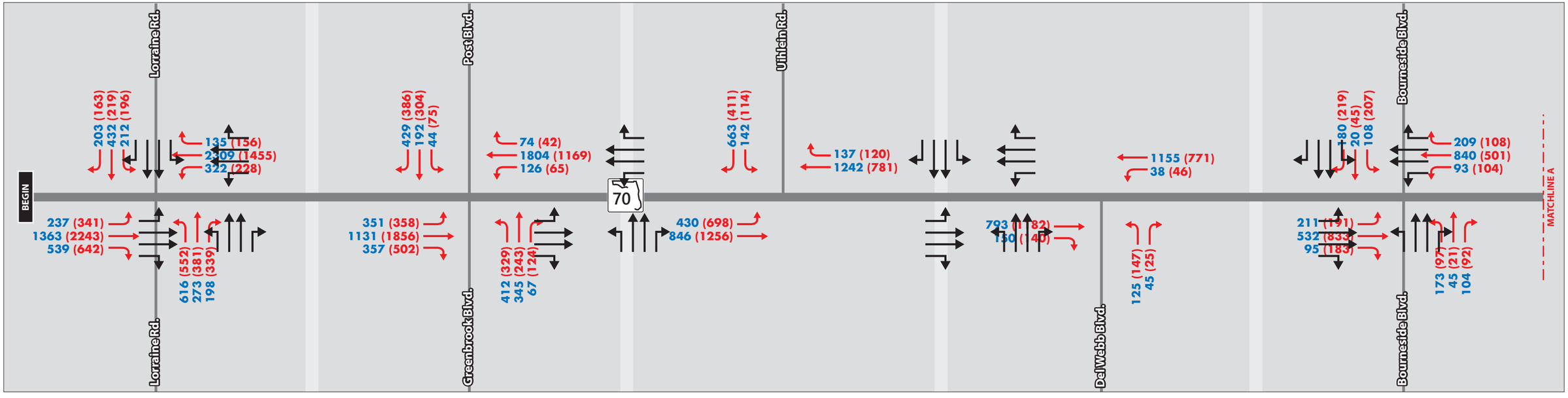
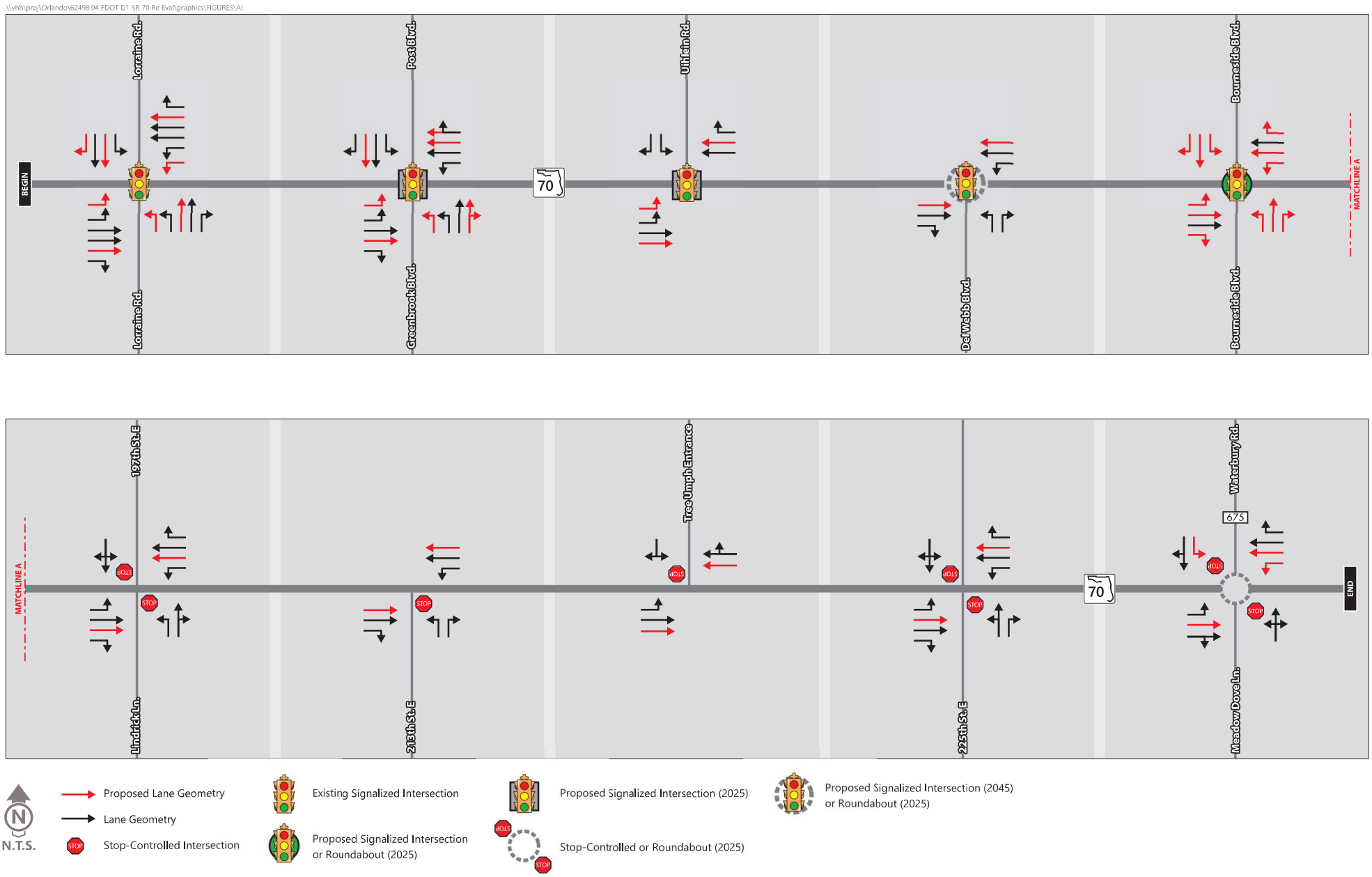


N.T.S.

→ Traffic Movement

AM (PM) Traffic Volumes

Figure 4.3: Future Build Recommended Geometry



4.5 Preferred Alternative

Within the limits of this study, FDOT is evaluating one project Build Alternative for three project segments based on forecasted traffic volumes. A single Build Alternative was evaluated that minimized proposed right-of-way impacts. The existing roadway was originally constructed within the northern half of the existing right-of-way corridor to accommodate future widening. The proposed build alternative maximizes the use of this available existing right-of-way while providing the vehicular, bicycle, and pedestrian improvements that address the corridor needs previously discussed. Segment A extends from Lorraine Road to east of Greenbrook Boulevard, Segment B extends from east of Greenbrook Boulevard to Bourneside Boulevard, and Segment C extends from Bourneside Boulevard to the eastern project limit at CR 675. **Table 4-2** defines the limits of the three segments. Proposed build improvements for each of the three project segments are listed in the sections below. Intersection improvements were assessed using FDOT's Intersection Control Evaluation (ICE) process. The evaluation recommended implementing roundabouts at the Uihlein Road, Del Webb Boulevard, Bourneside Boulevard, and CR 675 intersections. The intersection improvements were evaluated in conjunction with the Build Alternative. These improvements were presented to the public at the Public Hearing and will be further evaluated during the design phase. ICE results are provided in **Appendix F**.

Table 4.2: Evaluation Segments

Segment	Begin Segment	End Segment	Begin Station	End Station	Segment Length (mi)
A	Lorraine Rd.	Greenbrook Blvd.	127+56.59	168+40.40	0.773
B	Greenbrook Blvd.	Bourneside Blvd.	168+40.40	278+50.05	2.085
C	Bourneside Blvd.	CR 675	278+50.05	450+38.97	3.267

4.5.1 Segment A Typical Section

The proposed typical section for Segment A will provide a curbed roadway design with three 11-foot travel lanes in each direction, seven-foot buffered bicycle lanes, a closed drainage system with curbs and gutters, and eight-foot sidewalks in both directions (**Figure 4.4**). The divided roadway is separated by a 22-foot raised median with adjacent Type E curb and gutter. The proposed improvements in this segment are anticipated to be accomplished within the existing 200 foot right-of-way.

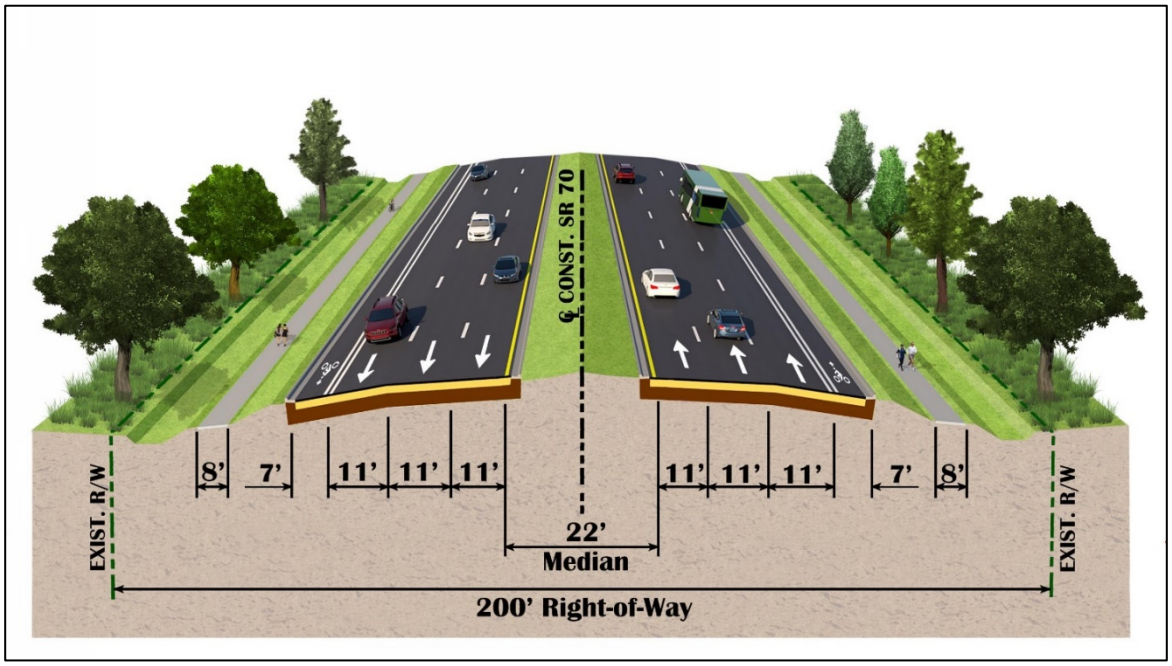
The curbed typical section was proposed in Segment A to balance the local residential traffic with the truck traffic that utilizes the SR 70 SIS facility within the project's suburban residential context.

Several configurations of six-lane curbed typical sections were considered. A high speed curbed typical section was initially shown during the public workshop with six 12-foot through travel lanes and five-foot bicycle lanes. The typical section included a 30-foot raised median with curb and gutter offset 6.5 feet from the inside edge of travel. Stormwater was conveyed along outside curb and gutter to a closed storm sewer system. Six-foot sidewalks were provided on each side of the roadway near the right-of-way line.

Following the public workshop additional configurations of high speed curbed typical sections were evaluated. Variations in median curb offset, bicycle lane width, travel lane widths, and sidewalk widths were considered to control operating speed and enhance the multi-modal safety along the corridor.

A change to flush outside shoulders with stormwater conveyed along an open drainage system was also considered. It was determined that a high speed curbed typical section with flush shoulders and open ditches could not be provided within the existing right-of-way. The flush shoulders and open drainage resulted in significantly higher right-of-way impacts and compensatory utility impacts to the adjacent Peace River electric transmission lines.

Figure 4.4: Segment A Proposed Typical Roadway Section



4.5.2 Segment B Typical Section

The proposed typical section for Segment B will provide a high-speed curbed roadway design with two 12-foot lanes in each direction, five-foot paved outside shoulders, curb and gutter

draining to a closed storm sewer system, and eight-foot sidewalks in both directions (**Figure 4.5**). The divided roadway is separated by a 54-foot wide raised median adjacent Type E curb and gutter. The 54-foot median design can accommodate expansion to a six-lane section in the future, when traffic needs merit an expansion, by adding a 12-foot lane in each direction on the inside. The proposed improvements in this segment are anticipated to be accomplished primarily within the existing 200-foot right-of-way; minimal right-of-way will be needed to construct proposed roundabouts at Uihlein Road, Del Webb Boulevard, and Bourneside Boulevard.

Similar to Segment A, a high speed curbed typical section was proposed in Segment B to balance local residential traffic with the truck traffic that utilizes the SR 70 SIS facility within the project's suburban residential context.

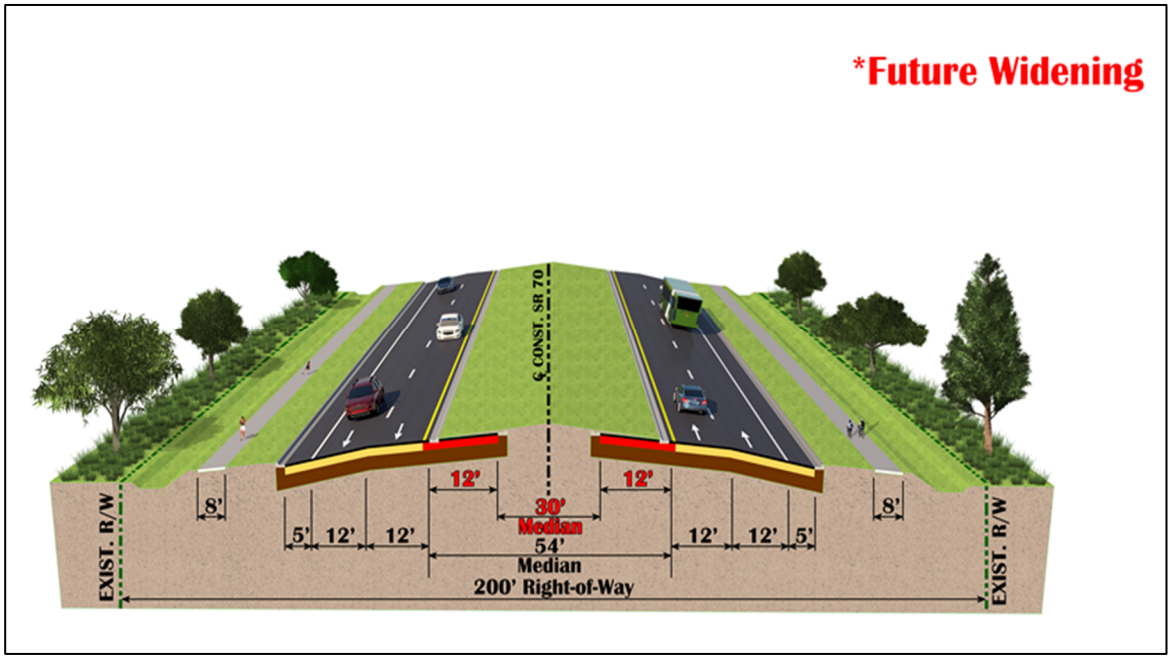
Several configurations of high speed, curbed, four-lane (expandable to six-lane), typical sections were considered. A high speed curbed typical section was initially shown during the public workshop with four twelve-foot through travel lanes and five-foot paved shoulders. The typical section included a 54-foot raised median with curb and gutter offset 4 feet from the inside edge of travel. The median was designed to accommodate one future 12-foot travel lane in each direction. Stormwater was conveyed along outside curb and gutter to a closed storm sewer system. Six-foot sidewalks were provided on each side of the roadway near the right-of-way line.

Following the public workshop additional configurations of high speed curbed typical sections were evaluated. Variations in median curb offset, bicycle lane width, travel lane widths, and sidewalk widths were considered to control operating speed and enhance the multi-modal safety along the corridor.

The use of flush outside shoulders with stormwater conveyed along an open drainage system was also considered. Similar to Segment A, it was also determined that there is insufficient existing right-of-way width to accommodate flush outside shoulders and open ditches after the roadway is widened to six-lanes in the future.

The benefits of accommodating future expandability to six-lanes by widening the roadway within the 54-foot median were compared to the benefits of expansion by future widening on the outside of the roadway after initially constructing the roadway with a more narrow 30-foot median. Future outside widening provided a lower upfront cost to construct the initial four-lane roadway because there was sufficient border width to accommodate less costly flush outside shoulders and open ditches. However, future outside widening then required reconstruction of driveways and replacement of shoulders and ditches with curb and gutter and a closed storm sewer system. As a result, it was determined that future inside widening within the median provided a lower total construction cost.

Figure 4.5: Segment B Proposed Typical Roadway Section



4.5.3 Segment C Typical Section

The proposed typical section for Segment C will provide a high-speed roadway design with two 12-foot lanes in each direction, ten-foot outside shoulders (five feet paved), an open drainage system, and eight-foot sidewalks in both directions (**Figure 4.6**). The divided roadway is separated by a 30-foot raised median with adjacent Type E curb and gutter. The proposed improvements in this segment are anticipated to be accomplished primarily within the existing 200 foot right-of-way; minimal right-of-way will be needed to construct proposed roundabouts at 197th Street East / Lindrick Lane, 213th Street East, 225th Street East / Panther Ridge Trail, and CR 675.

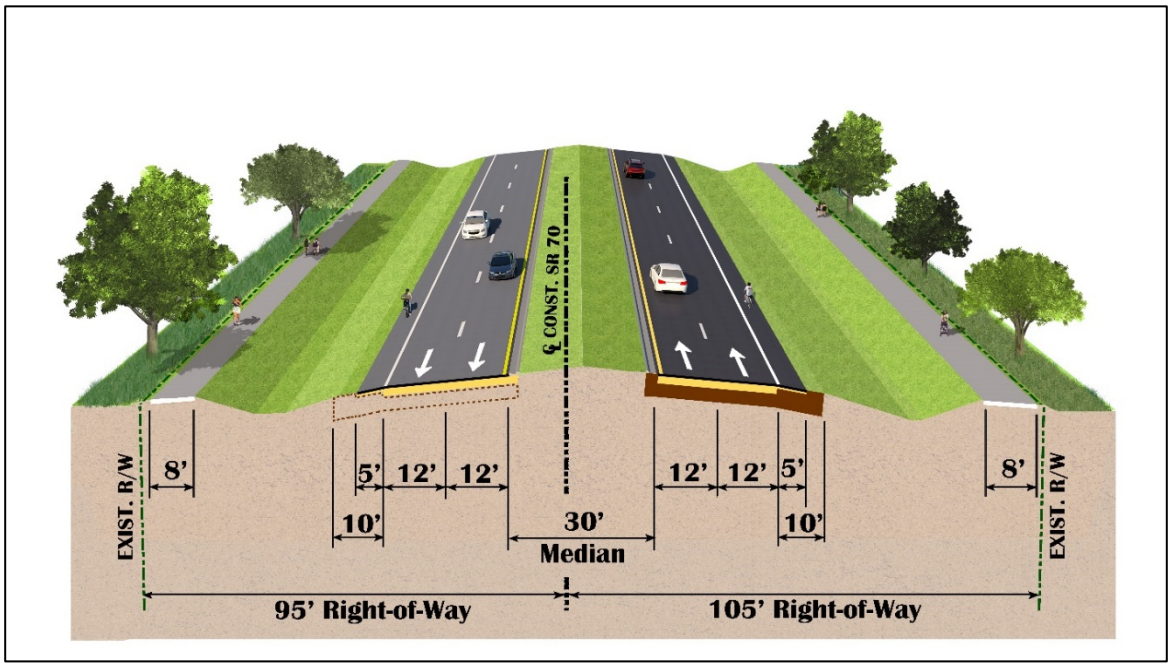
The high speed curbed typical section was proposed to balance local residential traffic with the truck traffic that utilizes the SR 70 SIS facility within the project's suburban residential context.

Several configurations of four-lane high speed curbed typical sections were considered. A high speed curbed typical section was initially shown during the public workshop with four twelve-foot through travel lanes and five-foot bicycle lanes. The typical section included a 30-foot raised median with curb and gutter offset 4 feet from the inside edge of travel. Ten-foot (five foot paved) flush outside shoulders drained to open ditches. Six-foot sidewalks were provided on each side of the roadway near the right-of-way line.

Other configurations of high speed curbed typical sections were evaluated after the public workshop. Changes in median curb offset, outside shoulder width, travel lane widths, and sidewalk

widths were considered and implemented in the typical section to control operating speed and enhance the multi-modal safety along the corridor.

Figure 4.6: Segment C Proposed Typical Roadway Section



4.6 Comparative Alternatives Evaluation

The evaluation matrix is based on environmental effects, right-of-way needs, project costs, and engineering factors. The evaluation matrix can be found in **Table 4-3**. The matrix quantifies considerations such as potential business and residential relocations, impacts to environmental resources, and the acres of right-of-way needed for roadway improvements and stormwater facilities. The matrix also quantifies potential impacts to archaeological/historical sites, noise sensitive sites, and threatened and endangered species due to the road widening.

The bottom portion of the evaluation matrix details cost of estimates for wetland mitigation, right-of-way acquisition, construction, design, and construction engineering and inspection. These estimates were based on the year 2018 unit costs.

Table 4.3: Alternatives Evaluation Matrix

Evaluation Criteria	No-Build Alternative	Build Alternative
Centerline Length of Improvement (feet)	**N/A**	**32,161**
Centerline Length of Improvement (miles)	**N/A**	**6.1**
Business Impacts		
Number of business relocations	0	0
Residential Impacts		
Number of residential relocations	0	0
Environmental Effects		
Archaeological/Historical sites (potential)	None (0)	Low
Public parks, recreation areas, or wildlife refuges (acres)	None (0)	None (0)
Noise (impacted receptors)	0	0
Wetland (acres)	0.0	9.57
Floodplains (acres)	0.0	42.20
Threatened and endangered species (potential)	None (0)	Low
Contamination sites (high / medium)	0	5/2
Right-of-Way Needs		
Right-of-way to be acquired for roadway (acres)	0.0	0.77
Right-of-way to be acquired for stormwater facilities (acres)	0.0	66.19
Right-of-way to be acquired for floodplain compensation (acres)	0.0	44.30
Total right-of-way acres	0.0	111.26
Estimated Total Project Costs (2019 Cost)		
Wetland Mitigation Cost	**$0**	**$1,131,605**
Utility Relocation Cost	**$0**	**$0**
Right-of-way acquisition for roadway	$0	$915,000
Right-of-way acquisition for stormwater facilities	$0	$1,515,000
Right-of-way acquisition for floodplain compensation	$0	$7,780,000
Total Right-of-Way Cost	**$0**	**$10,210,000**
Construction cost for roadway	$0	$54,854,188
Construction cost for stormwater facilities	$0	$5,222,466
Construction cost for floodplain compensation	$0	$7,256,758
Total Construction Cost	**$0**	**$67,333,412**
Design	$0	$4,713,339
Construction Engineering & Inspection (10% of the Total Construction Cost)	$0	$6,733,341
Preliminary Estimate of Engineering Cost	**$0**	**$11,446,680**
Preliminary Estimate of Total Project Cost	**$0**	**$90,121,697**

4.7 Selection of the Preferred Alternative

Segments A, B and C were selected as the Preferred Alternative.

Soon after the public workshop had been conducted, several configurations of curbed typical sections for Segment A had been analyzed in order to provide the best possible section to accommodate drainage and certain roadway features within the existing and limited right-of-way. The curbed typical section that was selected in Segment A provides balance of the local residential traffic with the truck traffic that operates along the SR 70 SIS facility and meets the project's suburban residential context. The typical section along Segment A will consist of a curbed roadway design with three 11-foot travel lanes in each direction, seven-foot buffered bike lanes, a closed drainage system with curbs and gutters and eight-foot sidewalks in both directions. The divided roadway will be separated by a 22-foot raised median with adjacent Type E curb and gutter. The proposed improvements in this segment are anticipated to be accomplished within the existing 200 foot right-of-way.

Similarly, there were several configurations for Segment B that were analyzed in order to balance local residential traffic with truck traffic and to provide a typical section that would accommodate drainage and roadway features within the existing right-of-way. Outside flushed shoulders with open ditches were determined to not be a viable alternative for future widening due to right-of-way constraints. With this, the proposed typical section for Segment B will consist of a high-speed curbed roadway design with two 12-foot lanes in each direction, five-foot paved outside shoulders, curb and gutter draining to a closed storm sewer system, eight-foot sidewalks in both directions and a 54-foot wide raised median adjacent with Type E curb and gutter. The 54-foot median design will accommodate expansion to a six-lane section in the future, when traffic needs merit an expansion, by adding a 12-foot lane in each direction on the inside. The proposed improvements in this segment are anticipated to be accomplished primarily within the existing 200-foot right-of-way; minimal right-of-way will be needed to construct proposed roundabouts at Uihlein Road, Del Webb Boulevard, and Bourneside Boulevard.

Segment C, as in Segments A and B, was configured to balance local residential traffic with truck traffic within the project's suburban residential context. After the public workshop was held, several other high speed typical sections were considered after adjusting median curb offsets, travel lane and paved shoulder widths and sidewalk widths. The selected alternative for Segment C that would best accommodate roadway, drainage and roundabout features will include a high-speed roadway design with two 12-foot lanes in each direction, ten-foot outside shoulders (five feet paved), an open drainage system, and eight-foot sidewalks in both directions. The divided roadway is separated by a 30-foot raised median with adjacent Type E curb and gutter. The proposed improvements will be accommodated within the existing 200 foot right-of-way and minimal right-of-way will be needed to construct proposed roundabouts at 197th Street East / Lindrick Lane, 213th Street East, 225th Street East / Panther Ridge Trail, and CR 675.

5.0 PROJECT COORDINATION & PUBLIC INVOLVEMENT

A comprehensive *Public Involvement Program* (PIP) (February 2017) was developed for this project and prepared under separate cover. The PIP outlines the strategies used to address public involvement and outreach over the course of the study. A *Comments and Coordination Report* prepared under separate cover documents the public involvement associated with this project.

5.1 Agency Coordination

There are many local, regional, state, and federal agencies identified that have an interest in this project due to jurisdictional review or expressed interest. These agencies have been identified and contacted directly by the FDOT through the Advance Notification (AN) process at the outset of the project in accordance with the *PD&E Manual, Part 1, Chapter 3, Preliminary Environmental Discussion and Advance Notification*. As other concerned public agencies are identified throughout the study, they also will be listed and contacted by the FDOT.

A pond coordination meeting was held with Lakewood Ranch on August 16, 2019. Floodplain Compensation site (FPC) 2A is located in a proposed commercial area by Uihlein Road and the Lakewood Ranch sign would not be impacted. SMR requested that FPC 1B be moved away from the SR 70 frontage and east away from Bourneside Boulevard. The Regional pond site is located on land owned by SMR in a joint venture with a third party. The FDOT asked if they could purchase an easement over the land to construct the pond and SMR agreed that was possible. A joint use pond was also discussed.

A meeting was held on September 18, 2019 with Lakewood Ranch. SMR is agreeable to the location of FPC A and is willing for early right-of-way acquisition. Two potential locations for FPC B were discussed. SMR prefers the shape where the FPC wraps around the existing pond. The FDOT stated that they are open to a joint use pond for the regional pond site anb this will be discussed with the SWFWMD in November 2020. The proposed right-of-way at Bourneside Boulevard, Uihlein Road and Del Webb Boulevard was also discussed.

On October 3, 2019, SMR related to the FDOT that they were not willing to encumber the regional site without knowing if a joint use pond would be feasible. SMR requested that the regional pond be relocated to the northeast outside the area slated for development but owned by SMR. In January 2020, the FDOT agreed to relocate FPC B and the regional pond as requested by SMR.

5.2 Public Involvement

A SR 70 Pond Siting coordination meeting with the Lakewood Ranch master developer, Schroeder Manatee Ranch (SMR), took place April 16, 2018. The purpose of this meeting was to discuss

potential stormwater pond and floodplain compensation sites affecting Stormwater Management Facility (SMF) properties by the proposed widening. Aerials overlaid with sketches of the preliminary pond sites were presented. The location of SMF 1A and SMF 2A were limited. It was brought up in this meeting that the proposed location of SMF 1A has been sold to Publix. The recommended solution was to utilize the two existing ponds that are already hydraulically connected via a pipe, flanking Post Boulevard / Greenbrook Boulevard north of SR 70. Another recommendation from this meeting was considering using a joint-use pond at the location where SMF-D-J is being proposed. The pond site locations were updated following this meeting.

A pond coordination follow-up meeting was conducted October 1, 2018 in Lakewood Ranch. The purpose of this meeting was to discuss the updates in land available for pond sites. During the meeting SMR expressed that it is willing to work with FDOT on pond sites that can be identified on land that SMR controls. There are multiple vacant parcels that could be acquired for a pond location. FDOT will make a decision by March 2019 which parcel, if any, to acquire for the pond site as funds for acquisition become available in the summer of 2019 and the transaction could be complete by early 2020.

A public information workshop was held December 18, 2018 from 5pm to 7pm at the Risen Savior Lutheran Church, 14605 59th Avenue East in Bradenton, Florida. A total of 71 attendees signed in at the registration table. Members of the public were provided a project newsletter and a comment form. A looping slide show provided an overview of the project and played for attendees throughout the evening. Display boards illustrating the alternatives and other project information were available for review.

The public was also able to submit their comments either by phone or online until January 4, 2019 to the email address or phone number provided on the comment forms. A total of 22 written comments were received at the workshop. Some concerns received through the comments were in regards to the anticipated increased noise due to the road widening, incorporating a safe passage for equestrians to safely cross SR 70 to access equestrian paths on either side of the roadway, adding turns lane at various intersections, adding additional signs for bike lanes, and minimizing environmental and wildlife impacts. Additional public comments are included in the *Comments and Coordination Report*.

A public meeting was held with the Del Webb Homeowners Association (HOA) on April 25, 2019 where in excess of 100 residents gathered to obtain information about the project and to ask questions. Many residents showed support of the proposed roundabouts, but still posed a concern of how trucks would maneuver through them. There were concerns about the noise level of the truck traffic and if the project improvements would increase the truck traffic along SR 70. Residents brought up issues with the existing traffic signal and existing speed limits that would need to be addressed with Manatee County's Traffic Operations Department.

5.2.1 Public Hearing

A public hearing was held August 6, 2019 from 5 pm to 7 pm at the Risen Savior Lutheran Church, 14605 59th Avenue East, Bradenton, FL 34211. A total of 46 attendees signed in at the registration table. Details of the Public Hearing are documented in the *Comments and Coordination Report*.

The public was generally supportive of the project. A total of 20 comments were received for the Public Hearing in the form of verbal testimony, comment forms, and emails. The formal comments submitted all addressed specific issues relating to the improvements being considered. Three of those comments also expressed general support for the improvements being considered in the study and none expressed general opposition to the improvements.

Eleven comments related to roundabouts with most of those expressing general opposition to roundabouts or in favor of fewer proposed roundabouts. Two comments received were in support of roundabouts including a comment that referenced a unanimous resolution in support of roundabouts from The Concessions neighborhood HOA.

Six comments related to a request for an equestrian crossing near 197th Street East. and the Panther Ridge neighborhoods which includes private horse trails and equestrian facilities. Three comments expressed concern over an increase in noise as a result of the road widening and trucks using engine brakes. One comment related the bicycle and sidewalk widths and locations, and one comment requested a merge lane onto SR 70 from the Polo Run neighborhood.

6.0 DESIGN FEATURES OF THE PREFERRED ALTERNATIVE

Based on the evaluation of the Build Alternative and No Build Alternatives described in **Section 4**, the Build Alternative is the Preferred Alternative. Concept plans illustrating the Preferred Alternative can be found in **Appendix C**.

6.1 Engineering Details of the Preferred Alternative

The following section addresses the engineering details of the Preferred Alternative.

6.1.1 Typical Sections

The SR 70 alignment will have varying design and posted speeds ranging from 45 mph to 50 mph along the three segments. Controlling speeds for vehicles traveling through roundabouts were analyzed following fastest speed path criteria and FDOT Design Manual (FDM) 213. A separate Roundabout submittal to Central Office was completed and reviewed as required. All roundabout approaches will have advisory posted signs of 25 mph based on this analysis and after concurrence received from Central Office.

The proposed roadway typical sections for the Preferred Alternative are described in **Section 4.5.** The Typical Section Package is included in **Appendix D**.

6.1.2 Bridges and Structures

It was determined that bridge culvert 130113 at MP 10.526 (Sta. 182+87) and bridge culvert 130114 at MP 10.976 (Sta. 206+57) should be replaced as flat slab bridges instead of box culverts to lower cost, reduce floodplain impacts, and minimize maintenance efforts. A 75-foot long bridge will be constructed to replace existing bridge culvert 130113. Similarly, a 98-foot long bridge will be constructed to replace bridge culvert 130114.

6.1.3 Right-of-Way and Relocations

Within the study limits, the existing right-of-way width is approximately 200 feet throughout most of the project corridor and approximately 250 feet near the intersection of SR 70 and CR 675. The project has been divided into three segments. Segment A extends from Lorraine Road to east of Greenbrook Boulevard, Segment B extends from east of Greenbrook Boulevard to Bourneside Boulevard, and Segment C extends from Bourneside Boulevard to the eastern project limit at CR 675. The proposed improvements for Segment A are anticipated to be accomplished within the

existing 200-foot right-of-way. The proposed improvements for Segment B are also expected to be accomplished primarily within the existing 200-foot right-of-way, but minimal right-of-way will be needed to construct proposed roundabouts at Uihlein Road, Del Webb Boulevard, and Bourneside Boulevard. Segment C is also expected to accomplish primarily within existing right-of-way. Minimal right-of-way will be needed to construct proposed roundabouts at 197th Street East / Lindrick Lane, 213th Street East / Panther Ridge Trail, and CR 675.

Additional right-of-way will be acquired for the regional pond which will be a 64.6 acre partial take of one 2,137 acre agricultural parcel. There is no right-of-way take that will result in any residential or business relocations. The proposed right-of-way are shown on the concept plans included in **Appendix C**.

6.1.4 Horizontal and Vertical Geometry

The horizontal alignment for the Preferred Alternative contains three horizontal curves and three deflection points. The horizontal alignment for the Preferred Alternative is described in **Table 6-1**. Plan sheets illustrating the Preferred Alternative are included in **Appendix C**.

Table 6.1: Horizontal Alignment – Preferred Alternative

Centerline PI Station	Bearing		Degree of Curvature	Radius (ft)	Length (ft)
	Back	Ahead			
162+94.35	S 89° 20′ 59.38″ E	S 54° 57′ 24.93″ E	3° 03'	1,877.86	1,127
242+50.61	S 54° 57' 24.93" E	S 69° 55' 31.60" E	1° 58'	2,896.79	757
290+18.45	S 69° 55' 31.60" E	S 70° 40' 31.83" E	-	-	-
294+00.40	S 70° 40' 31.83" E	S 69° 55' 31.60" E	-	-	-
359+87.56	S 69° 55' 31.60" E	S 69° 53' 57.98" E	-	-	-
423+41.26	S 69° 53' 57.98" E	S 62° 32' 54.26" E	1° 00'	5,702.58	732

The Preferred Alternative generally follows the existing SR 70 horizontal and vertical alignment. However, the Preferred Alternative is typically about one foot higher than the existing roadway to allow for additional base clearance over the seasonal high groundwater level. Additionally, within Segment A and Segment B, the Preferred Alternative provides minimum vertical grades over 0.3% to allow stormwater to be conveyed along the proposed gutters.

6.1.5 Bicycle and Pedestrian Accommodations

The proposed typical section for all three segments of this project has an eight-foot sidewalk in both directions. In addition, Segment A will provide seven-foot buffered bicycle lanes along both sides of the road.

6.1.6 Multi-Modal Accommodations

There are no new railroad or transit route accommodations along this project. SR 70 is a truck route within the project limits and special design modifications will be accommodated to meet FDM roundabout criteria using design vehicles WB-62L for all mainline turning movements and WB-62L and SU-40 for all sidestreet turning movements.

6.1.7 Access Management

SR 70 in Manatee County is designated as Access Class 3 from Lorraine Road (MP 9.478) to County Road (CR) 675/Waterbury Road (MP 15.567). This classification allows for full median openings and signalized intersections spaced at 2,640 feet, and directional median openings spaced at 1,320 feet. The proposed median openings have been designed to provide a balance between access to adjacent properties and safety based on Access Class 3 standards. This criteria is compliant with the Department's State Highway Access Management Classification System and Standards (Rule 14-97).

Table 6-2 below provides the final recommended access management plan for the proposed median openings for the future SR 70 and has been incorporated into the Preferred Alternative concept plans included in **Appendix C**.

Table 6.2: Final Recommended Access Management Plan for Future SR 70

			Adjacent Spacing		Full Spacing		
Median Opening #	**Type**	**Location [Station]**	**Back [ft]**	**Ahead [ft]**	**Back [ft]**	**Ahead [ft]**	**Comments**
-	Directional	115+40		1,217		-	Outside Project: Exist. Opening; private drive (ag land); 1-way inbound (EB-to-NB)
1	Full	127+57	1,217	3,464	12,757	3,464	Lorraine Rd. (existing signalized) intersection)
2	Full	162+21	3,464	3,639	3,464	3,639	Greenbrook Blvd. (proposed signalized intersection)
3	Full	198+60	3,639	2,460	3,639	4,589	Uihein Rd. (proposed replacement)
4	Directional	223+20	2,460	2,129	-	-	Lennar Subdivision Entrance 1
5	Full	244+49	2,129	3,371	4,589	3,371	Del Webb Blvd.
6	Full	278+20	3,371	4,620	3,371	4,620	Bourneside Blvd.
7	Full	324+40	4,620	5,450	4,620	5,450	Lindrick Ln.
8	Full	378+90	5,450	1,830	5,450	4,290	213th St. E.
9	Directional	397+20	1,830	2,460	-	-	TreeUmph!
10	Full	421+80	2,460	2,810	4,290	2,810	225th St. E. (Panther Ridge)
11	Full	449+90	2,810		2,810		CR 675

6.1.8 Intersection and Interchange Concepts

An ICE was used for this PD&E study to evaluate an optimal geometric and control solution for intersections within the SR 70 project corridor. The ICE is the process followed by the Department. Based on the ICE results, roundabouts were recommended at the Uihlein Road, Del Webb Boulevard, Bourneside Boulevard, and CR 675 intersections along SR 70. ICE results are provided in **Appendix F**.

6.1.9 Intelligent Transportation System and TSMO Strategies

There are no existing Intelligent Transportation Systems within the project limits. The existing fiberoptic cables along SR 70 to the west of Lorraine Road will be extended from the Lorraine Road intersection to the Greenbrook Boulevard intersection at the new proposed signalization. A new CCTV camera and a Bluetooth Reader are being proposed at the new Greenbrook Boulevard signalization.

6.1.10 Utilities

As a result of the data collected and design tickets from Sunshine 811, eleven utility companies were identified that operate utilities within the project corridor. These utilities are shown in **Appendix B**. Myakka Communications indicated they do not have any conflicts within the limits of the PD&E study. Braden River Utilities and Lakewood Ranch Development Districts were unresponsive to the utility requests sent out.

Depending on the type of approved improvements being made as a result of the PD&E study, any work being done to the roadway would involve adjustments being made to several of the utilities, mostly Manatee County Utility Operations and TECO Peoples Gas, with potential conflicts involving road and sidewalk, light poles, power poles, among other conflicts which are all prevalent throughout the project and would require relocation for construction. Relocations within the limits of the project would be at the expense of the utility owners because their facilities are within the FDOT right-of-way permit.

6.1.11 Drainage and Stormwater Management Facilities

A PSR was completed and prepared as part of the PD&E study.

The purpose of the PSR is to discuss the stormwater management plan for the project. The report identifies alternative pond locations, discusses right-of-way requirements, and documents possible environmental impacts associated with the alternative pond sites. All ponds are located outside the FDOT right-of-way and right-of-way acquisition is required. Basins were combined where possible to minimize the additional right-of-way needed. The report identifies two

alternative pond sites for each basin and a regional pond site alternative. The Preferred Alternative is the regional pond site, which is a 64.4 acre wet detention pond.

Stormwater runoff from SR 70 will be collected and conveyed to crossdrains by curb and gutter and roadside ditches. Attenuation will be provided prior to discharging to the crossdrains. Stormwater management will be provided using the regional pond. The regional pond will use pollutant loading analysis to show a net improvement by converting the existing agricultural land use to a pond. The size of the ponds was estimated using a variety of sources including, not limited to, the *FDOT Drainage Manual, FDOT Drainage Design Guide, and SWFWMD ERP Applicants Handbook, Volume I & II*.

6.1.12 Floodplain Analysis

A LHR was completed and prepared as part of the PD&E study.

The purpose of the LHR is to address base floodplain encroachments resulting from the roadway improvements evaluated in the PD&E Study. The intent is to avoid or minimize highway encroachment within the 100-year floodplains and to avoid supporting land use development incompatible with floodplain values. The Preferred Alternative will result in an estimated 18.83 acres-ft of potential floodplain impacts, which increased to 22.6 acres-ft with a 20% contingency (added as a conservative measure to address uncertainty in the early stages of concept development). The proposed stormwater ponds locations were selected to minimize impacts to the FEMA floodplain. All floodplain impacts are compensated for using either offsite floodplain compensation ponds and/or a longer bridge at the Braden River, as well as providing right-of-way ditches for floodplain compensation with the existing right-of-way. The final sizes and locations of the floodplain compensation sites will be determined during the design phase of this project. **Table 6-3** shows the proposed cross drains.

The proposed cross drains and floodplain compensation areas will perform hydraulically in a manner equal to or greater than the existing condition, and backwater surface elevations are not expected to increase. As a result, there will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or in emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

Table 6.3: Proposed Crossdrain Summary

Number	MP	Sta.	Size	Description
S-200	9.706	140+15	2-42″	Replace
S-210	10.460	179+60	2-30″	Replace
BR 130113 (S-220)	10.526	182+87	4-10′x5′	Replace
S-230	10.667	190+49	30″	Replace
BR 130114 (S-240)	10.976	206+58	4-12′x7′	Replace
S-250	11.924	257+01	2-36″	Replace
S-260	12.052	263+55	36″	Replace
S-270	12.254	274+02	3-42″	Replace
S-280	12.629	294+09	2-48″	Replace
S-290	13.028	315+05	30″	Replace
S-300	13.595	344+85	2-10′x6′	Replace
S-310	13.851	358+49	24″	Replace
S-320	14.764	406+56	2-30″	Replace
S-330	15.172	428+46	2-8′x7′	Replace

The two bridge culverts at the Braden River (BR 130113 and BR 130114) will be replaced with 90-foot long bridges. The construction of bridges will avoid impacts to the FEMA floodway located south of SR 70. A *Bridge Hydraulic Report* was completed to show no impact to the upstream stages.

Floodplain compensation sites will be required for the floodplain impacts located along the project corridor. These sites were sized using the 100-year elevations from the SWFWMD Braden River Watershed model. Impacts to the 100-year floodplain will occur in three ways:

1. Transverse impacts from the cross drain extensions.
2. Longitudinal impacts resulting from the road widening in areas of 100-year floodplain.
3. Impacts due to stormwater management facilities located adjacent to wetland and storage areas.

The floodplain compensation sites are shown in **Table 6-4.**

Table 6.4: Floodplain Compensation Sites

Compensation Site	STA Start	STA End	Size (acres)
1A	172+49	185+17	20.0
2A	180+60	197+55	20.0
1B	279+49	289+30	12.9
2B	289+97	306+08	12.8
1C	340+16	355+11	11.4
2C	337+78	351+02	10.6

6.1.13 Transportation Management Plan

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

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

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

6.1.13.1 Construction Impacts

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

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

Noise and vibrations effects will come from heavy equipment movement and construction activities. It will be minimized by adherence to noise control measures also found in the FDOT's *Standard Specifications for Road and Bridge Construction*. Specific noise level issues that might arise during the construction will be addressed by the Construction Engineer in cooperation with the appropriate environmental scientist.

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with FDOT's *Standard Specification for Road and Bridge Construction*, "Prevention, Control, and Abatement of Erosion and Water Pollution," and through the use of Best Management Practices (BMP).

Short-term construction related wetland impacts will be minimized by adhering to FDOT's *Standard Specifications for Road and Bridge Construction*. These specifications include measures known as BMPs, which include the use of siltation barriers, dewatering structures, and containment devices that will be implemented for controlling turbid water discharges outside of the construction limits.

6.1.13.2 Construction Phases and Traffic Maintenance

The proposed improvements will be constructed as follows:

- Phase I: The eastbound lanes will be constructed in this phase. Pavement markings will be installed to accommodate phase II traffic.
- Phase II: Traffic will be shifted to the newly constructed eastbound roadway. Westbound lanes will be constructed during this phase. Striping will be installed for westbound lanes.
- Phase III: Westbound traffic will be shifted to the new outside lane to allow construction of median.
- Phase IV: Final striping will be installed. Any remaining widening and milling will be completed during this final phase.

6.1.14 Special Features

The proposed vertical alignment requires the use of retaining walls at certain locations to facilitate design of drainage ditches as well as enable the toe of slope to remain inside the right-of-way. These retaining walls will be utilized at the two bridge locations due to the raised vertical profile to allow for a two feet drift clearance under the bridges. The retaining walls used will be gravity walls and will not exceed an exposed height of five feet. A five-foot berm at the front face of wall

will be required before a typical 2:1 slope can be utilized to tie into the right-of-way or the drainage ditches.

6.1.15 Design Variations and Design Exceptions

The design criteria for this project is provided in **Table 3-1**, **Table 3-2** and **Table 3-3**. For SIS facilities with a C3R context classification a minimum design speed of 50 mph is required. However, within the C3R context classification, if curbed roadways are proposed the design speed may be reduced to 45 mph. As designed, the proposed curbed typical section proposed for Segment A meets the FDM criteria with a 45 mph design speed. No variation for design speed is required.

A design variation for roadside slopes is needed along this project. The proposed roadside slopes along SR 70, while not standard, are traversable and recoverable. 1:4 front slopes are acceptable inside clear zone and the proposed ditch bottoms and 1:2 back slopes are outside of clear zone. This variation will allow construction to be completed within the existing right-of-way without causing any foreseeable danger to the traveling public. Based on these justifications, a design variation for roadside slopes was recommended along the limits of the project.

A design variation for inside shoulder width (curb offset) is required throughout the project. It was determined by the District Design Engineer in a Context Committee meeting on January 11, 2019 that no offset to median curb was preferable to the 4-foot and 6.5-foot FDM criteria for four and six lane roadways respectively. The adjacent curb was preferred as a means to calm traffic and reduce the operating speed of the roadway.

6.1.16 Cost Estimates

The total estimated project costs for the Preferred Alternative is summarized below in **Table 6-5**. The projects Long Range Estimate has been included in **Appendix A** which summarizes the construction cost for the Preferred Alternative.

Table 6.5: Total Estimated Project Cost

Evaluation Criteria – Estimated Total Project Costs (2019 Cost)	Build Alternative
Wetland Mitigation Cost	**$1,131,605**
Utility Relocation Cost	**$0**
Right-of-way acquisition for roadway	$915,000
Right-of-way acquisition for stormwater facilities	$1,515,000
Right-of-way acquisition for floodplain	$7,780,000
Total Right-of-Way Cost	**$10,210,000**
Construction cost for roadway	$54,854,188
Construction cost for stormwater facilities	$5,222,466
Construction cost for floodplain compensation	$7,256,758
Total Construction Cost	**$67,333,412**
Design	$4,713,339
Construction Engineering & Inspection (10% of the Total Construction Cost)	$6,733,341
Preliminary Estimate of Engineering Cost	**$11,446,680**
Preliminary Estimate of Total Project Cost	**$90,121,697**

6.2 Summary of Environmental Impacts of the Preferred Alternative

This project was screened through the ETDM process as ETDM Number 14263, and the *Programming Screen Summary Report* was published on April 3, 2018 under separate cover. The approved Class of Action was determined to be a Type 2 Categorical Exclusion. The ETAT evaluated the project's effects on natural, physical, cultural, social, and economic resources. Upon completion, this study will meet all requirements of NEPA as administered by the Florida Department of Transportation-Office of Environmental Management (OEM) and the requirements of other federal and state laws so as to qualify the proposed project for federal-aid funding.

Of the 21 examined issues, none received a Degree of Effect (DOE) determination of "5" for Dispute Resolution. The only category that received a DOE of "4-Substantial" was Wetlands and Surface Waters. However, six categories received a DOE of "3-Moderate" including: Social, Farmlands, Historic and Archaeological Sites, Water Quality and Quantity, Floodplains, and Wildlife and Habitat. The public and officials (elected and appointed) have been kept informed about the project through the use of meetings, newsletters, and a project website.

The Preferred Alternative has been evaluated for its impact on social and cultural makeup of the surrounding area, impacts to the environment, and its ability to meet the purpose and need of this project. The Preferred Alternative Matrix shows the impacts and costs associated with the Preferred Alternative as well as the No-Build Alternative. Because this study has only one alternative, the Preferred Alternative is the same as the Alternative Evaluation Matrix found in **Table 4-3**.

6.2.1 Future Land Use

Based on 2010 U.S. Census Bureau data and projections developed for Manatee County as part of the Sarasota/Manatee Metropolitan Planning Organization's (MPO) 2040 Long Range Transportation Plan (LRTP), population within Manatee County is projected to grow from 322,833 in 2010 to 469,100 in 2040. Growth along the project corridor is anticipated to occur most heavily within the area surrounding the western half of the corridor. That area will continue to support residential and mixed use community activities with commercial uses concentrated at the intersection of SR 70 and Lorraine Road. Although the area surrounding the eastern portion of the project corridor is intended to support agricultural uses, the Manatee County Zoning Map shows land designated for Planned Development Residential and Planned Development Agricultural south of SR 70; land north of SR 70 remains designated for agricultural activities.

6.2.2 Section 4(f)

The Premier Sports Campus at Lakewood Ranch, recently acquired by Manatee County, is an existing recreation/park complex located along SR 70 at the Greenbrook Boulevard / Post

Boulevard intersection. This existing park resource is considered under Section 4(f) the U.S. Department of Transportation Act of 1966. No right-of way will be acquired from this location. A Section 4(f) no use determination was made for the Premier Sports Campus at Lakewood Ranch. The Preferred Alternative is anticipated to have no impact on the Premier Sports Campus or any other public resources protected under Section 4(f).

6.2.3 Cultural Resources

The historical resources survey of the project area revealed an absence of historic buildings or structures within the Area of Potential Effect (APE). One linear resource, SR 70, is located within the APE and recorded. Additionally, portions of three other linear resources are located within the APE. Portions of SR 70 have been recorded within Manatee County but also determined not to be eligible for listing in the NRHP. The Florida Master Site File has been updated for the segment of SR 70 located within the current APE. Based on the data in the *Cultural Resource Assessment Survey* (CRAS) (April 2019) prepared under separate cover, it was determined there are no archaeological sites or historic resources that are listed, determined eligible, or that appear to be eligible for listing in the National Register of Historic Places within the APE. SHPO found the CRAS complete and sufficient and provides concurrence May 29, 2019. Due to a change in pond site locations for FPC 1B and Regional Pond to reduce right-of-way costs, a CRAS Technical Memorandum Addendum was prepared under separate cover (March 2020) for the project, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and concurrence was granted by the SHPO on April 1, 2020.

6.2.4 Wetlands

A Natural Resources Evaluation (NRE) (April 2019) report was prepared under separate cover for this project. The purpose of the evaluation, in part, was to assure the protection, preservation, and enhancement of wetlands to the fullest extent practicable.

Field reviews identified a total of 16 wetlands and 21 surface water habitats within the project area.

There is only one Build Alternative for this project, and this alternative is the Preferred Alternative. Impacts resulting from the Preferred Alternative totaled 9.57 acres and include 5.64 acres of wetlands and 3.94 acres of surface waters. Although unavoidable wetland impacts will occur as a result of the Proposed Build Alternative, these wetlands are located adjacent to, and/or within the existing right-of-way and were previously disturbed by agricultural and residential development, roadway construction, maintenance activities, and the invasion of nuisance and exotic species.

The Uniform Mitigation Assessment Methodology (UMAM) analysis was performed on proposed wetland impact areas. Functional loss was calculated for the Preferred Alternative. Construction of the Preferred Alternative results in a loss of 5.46 functional units. The exact type of mitigation

used to offset wetland impacts from the proposed SR 70 roadway improvements will be coordinated with the United States Army Corps of Engineers (USACE) and the SWFWMD during the permitting phase(s) of this project.

Both the USACE and SWFWMD regulate impacts to wetlands within the project area. Other agencies, including the U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA), and the Florida Fish and Wildlife Conservation Commission (FWC), review and comment on wetland permit applications. The FWC also issues permits for gopher tortoise relocation activities and nest take. In addition, the Florida Department of Environmental Protection (FDEP) regulates stormwater discharges from construction sites. The complexity of the permitting process will depend on the degree of the impact to jurisdictional areas. It is anticipated that the permits shown in **Table 6-6** will be required for this project:

Table 6.6: Required Permits

Permit	Issuing Agency
Section 404 Dredge and Fill Permit	USACE
Environmental Resource Permit (ERP)	SWFWMD
National Pollutant Discharge Elimination System (NPDES)	FDEP
Gopher Tortoise Conservation Permit (as necessary)	FWC
Listed Species Incidental Take Permit (as necessary)	FWC

Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements.

6.2.5 Protected Species and Habitat

An NRE report was prepared to document and evaluate the effects of the Preferred Alternative on protected species within the project corridor.

Environmental scientists familiar with Florida natural communities conducted field reviews of the project area in April and June 2017, October 2018, and January 2019. For the purposes of this study, the project study area includes the existing and proposed right-of-way of the preferred project alignment, and proposed stormwater management pond sites. Field reviews consisted of pedestrian transects throughout the natural habitat types located within the study area. The purpose of the reviews was to verify and/or refine preliminary habitat boundaries and classification codes established through in-office literature reviews and aerial photo

interpretation. During field investigations, upland and wetland communities within the study area were visually inspected. Attention was given to identifying dominant plant species composition for each community. Additional attention was given to identifying potential wildlife and signs of wildlife usage in each wetland and upland community within the study area. An effect determination was made for each of these federal- and state-species. A concurrence letter for federal and state protected species was received from USFWS, dated July 25, 2019, and FWC, dated July 10, 2019. Due to a change to pond sites for FPC 1B and Regional Pond, an NRE Addendum (March 2020) was prepared for the new pond locations. NRE Addendum federal concurrence was received from USFWS, dated April 22, 2020, and a concurrence letter for state species was received from FWC, dated April 22, 2020. A summary of the determinations is shown in **Table 6-7, Table 6-8 and Table 6-9**.

Table 6.7: Federal Protected Species Effect Determinations

Project Impact Determination	Federal Listed Species
"No effect"	Crested caracara *(Caracara cheriway)*
	Florida grasshopper sparrow (*Ammodramus savannarum floridanus*)
	Florida scrub jay *(Aphelocoma coerulescens)*
"May affect, but is not likely to adversely affect"	American alligator (*Alligator mississippiensis*)
	Eastern indigo snake (*Drymarchon couperi*)
	Wood stork *(Mycteria americana)*

Table 6.8: State Protected Species Effect Determinations

Project Impact Determination	State Listed Species
"No effect anticipated"	Many-flowered grasspink (*Calopogon multiflorus*)
	Tampa vervain *(Glandularia tampensis)*
	Lowland loosestrife *(Lythrum flagellare)*
	Florida spiny-pod *(Matelea floridana)*
	Giant orchid (*Pteroglossaspis ecristata*)
	Toothed maiden fern *(Thelypteris serrata)*
	Broad-leaved nodding-caps *(Triphora amazonica)*
"No adverse effect anticipated"	Gopher tortoise (*Gopherus polyphemus)*
	Florida sandhill crane (*Grus canadensis pratensis*)
	Southeastern American kestrel (*Falco sparverius paulus*)
	Little blue heron (*Egretta caerulea*)
	Roseate spoonbill *(Platalea ajaja)*
	Tricolored heron (*Egretta tricolor*)

Table 6.9: Other Protected Species Effect Determinations

Project Impact Determination	Additional Protected Species
"May affect, but is not likely to adversely affect"	Bald eagle (*Haliaeetus leucocephalus*)
"No adverse effect anticipated"	Florida black bear (*Ursus americanus floridanus*)
	Southern fox squirrel (*Sciurus niger niger*)

6.2.6 Essential Fish Habitat

There is no Essential Fish Habitat in the project area.

6.2.7 Highway Traffic Noise

A *Noise Study Report* (NSR) (April 2019) was prepared under separate cover for this project.

A total of ninety-six receptors were evaluated. The receptors were evaluated for eighty-eight residences, three active sports areas, two medical facilities, a place of worship, a recreational area, and a convenience store/gas station. The results of the analysis show that the existing year 2018 exterior traffic noise levels range from 48.6 to 64.5 dB(A), and the interior traffic noise levels at the two medical facilities are predicted to be 40.6 and 40.9 dB(A). In the future year 2045 for the Build Alternative, exterior traffic noise levels are predicted to range from 52.3 to 65.0 dB(A), and the interior levels at the medical facilities are predicted to be 47.4 and 47.7 dB(A).

Based on these results, highway traffic noise levels do not exceed the Noise Abatement Category (NAC) in the future with the proposed project improvements at any of the evaluated receptors. Compared to existing conditions, the proposed improvements are not expected to increase traffic noise levels more than 7.4 dB(A) at any receptor. As such, the project would not substantially increase highway traffic noise. Based on the PD&E Study, there are no highway traffic noise impacted land uses within the project that requires abatement consideration. Implementing the proposed roadway improvements is not expected to have a significant noise or vibration impact on these sites because it is anticipated that application of the *FDOT Standard Specifications for Road and Bridge Construction* will minimize or eliminate the potential for such impacts.

6.2.8 Contamination

A Level 1 contamination evaluation was completed for the study and a *Contamination Screening Evaluation Report* (CSER) (March 2019) was prepared under separate cover to document potential contamination concern along the project corridor.

Based on the methodologies performed as part of this study, 20 potential contamination sites were identified as having the potential for hazardous material or petroleum impacts. Of these 20

sites, four received initial risk rating of Medium or High. Two sites were rated as Medium and they operate as gasoline stations with either discharges that have not been remediated or ongoing fueling operations and must be reviewed again prior to the commencement of construction activities. Two other sites were rated as High and both these sites are box bridge structures (Bridge #130113 and #130114) that have the potential for asbestos or metal based coating. The presence of these materials would require special handling, management, and removal during bridge demolition.

For the Medium and High rated sites, Level II testing is recommended to verify or determine the extent of impacts. For the Medium rated sites, soil and groundwater samples are recommended to evaluate petroleum contamination within the existing or proposed right-of-way. For the High rated bridge structures, a comprehensive survey for asbestos containing materials (ACMs) and metal based coatings (MBCs) should be performed to determine the presence and location of any regulated levels of ACMs and MBCs.

APPENDICES

APPENDIX A

LONG RANGE ESTIMATE (LRE)

Date: 4/9/2019 1:09:22 PM

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

Project: 414506-2-52-01 **Letting Date:** 07/2022

Description: SR 70 FROM LORRAINE RD TO CR 675/WATERBURY ROAD

District: 01	**County:** 13 MANATEE	**Market Area:** 10	**Units:** English
Contract Class: 7	**Lump Sum Project:** N	**Design/Build:** N	**Project Length:** 6.596 MI

Project Manager: JMK-MJB-DCT

Version 12
Project Grand Total **$67,333,412.10**
Description: April 2019 Unit Cost Update with markups per PM from Version 11 - 4/4/19

Sequence: 1 RSD - Resurfacing, Divided **Net Length:** 0.167 MI 884 LF

Description: Mill and resurface existing 6 lane section from sta. 119+39 to sta 128+23.00 - segment west of the Lorraine Road intersection

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ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	8
Roadway Pavement Width L/R	48.00 / 48.00
Structural Spread Rate	220
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	9,427.97 SY	$3.75	$35,354.89
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,037.08 TN	$118.98	$123,391.78
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	377.12 TN	$149.67	$56,443.55

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	6

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	158.00 EA	$3.10	$489.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.67 GM	$1,190.19	$797.43
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.00 GM	$420.88	$420.88
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.67 GM	$4,730.20	$3,169.23
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	1.00 GM	$1,066.52	$1,066.52
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.67 GM	$4,736.17	$3,173.23
	Roadway Component Total			$224,307.31

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.00 / 12.00
Total Outside Shoulder Perf. Turf Width L/R	2.67 / 2.67
Paved Outside Shoulder Width L/R	5.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80

Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	982.08 SY	$3.29	$3,231.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	54.01 TN	$118.98	$6,426.11
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	39.28 TN	$149.67	$5,879.04
570-1-1	PERFORMANCE TURF	524.43 SY	$2.44	$1,279.61

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-11	FLOATING TURBIDITY BARRIER	16.74 LF	$8.63	$144.47
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	16.74 LF	$5.46	$91.40
107-1	LITTER REMOVAL	1.22 AC	$49.16	$59.98
107-2	MOWING	1.22 AC	$70.72	$86.28
	Shoulder Component Total			$17,197.93

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	0.00
Total Median Shoulder Width L/R	4.00 / 4.00
Paved Median Shoulder Width L/R	4.00 / 4.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	785.66 SY	$3.75	$2,946.23
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	43.21 TN	$118.98	$5,141.13
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	31.43 TN	$149.67	$4,704.13
	Median Component Total			$12,791.49

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00 AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	4.00 AS	$1,382.97	$5,531.88
700-1-50	SINGLE POST SIGN, RELOCATE	1.00 AS	$188.08	$188.08
700-1-60	SINGLE POST SIGN, REMOVE	3.00 AS	$27.11	$81.33
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00 AS	$4,683.31	$4,683.31
700-2-60	MULTI- POST SIGN, REMOVE	1.00 AS	$869.53	$869.53
	Signing Component Total			$12,667.93

Sequence 1 Total $266,964.66

Sequence: 2 NDU - New Construction, Divided, Urban

Net Length: 0.912 MI, 4,817 LF

Description: New 6 lane, from sta 128+23.00 to 176+40.00 - from the Lorraine Road intersection to East of Greenbrook Blvd with type E curb on the outside.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.912
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	22.11	AC	$10,000.00	$221,100.00
120-6	EMBANKMENT	113,050.39	CY	$8.14	$920,230.17
	Earthwork Component Total				$1,141,330.17

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	40.00 / 40.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	48,340.71	SY	$7.34	$354,820.81
285-709	OPTIONAL BASE,BASE GROUP 09	42,817.28	SY	$13.55	$580,174.14
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	7,064.85	TN	$118.98	$840,575.85
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,712.69	TN	$127.07	$217,631.52

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	3.54	GM	$1,071.22	$3,792.12

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	15.00
Stabilization Code	Y
Base Code	Y
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	7,251.11	SY	$7.34	$53,223.15
285-709	OPTIONAL BASE,BASE GROUP 09	6,422.59	SY	$13.55	$87,026.09
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,059.73	TN	$118.98	$126,086.68
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	256.90	TN	$127.07	$32,644.28

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt

Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	616.00	EA	$3.10	$1,909.60
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	3.65	GM	$1,190.19	$4,344.19
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	3.65	GM	$420.88	$1,536.21
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	3.65	GM	$4,730.20	$17,265.23
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	3.65	GM	$1,066.52	$3,892.80
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	3.65	GM	$4,736.17	$17,287.02
	Roadway Component Total				$2,342,209.69

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	4,816.94	LF	$23.14	$111,463.99
520-1-10	CONCRETE CURB & GUTTER, TYPE F	4,816.94	LF	$23.14	$111,463.99

522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	8,563.46 SY	$35.46	$303,660.29

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	9,633.89 LF	$1.69	$16,281.27
104-11	FLOATING TURBIDITY BARRIER	228.08 LF	$8.63	$1,968.33
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	228.08 LF	$5.46	$1,245.32
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	47.00 EA	$144.25	$6,779.75
107-1	LITTER REMOVAL	23.22 AC	$49.16	$1,141.50
107-2	MOWING	23.22 AC	$70.72	$1,642.12
	Shoulder Component Total			$558,347.10

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	17.50

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	9,633.89 LF	$17.89	$172,350.29
570-1-1	PERFORMANCE TURF	9,366.28 SY	$2.44	$22,853.72
	Median Component Total			$195,204.01

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	16.42	CY	$1,237.24	$20,315.48
425-1-351	INLETS, CURB, TYPE P-5, <10'	33.00	EA	$4,859.08	$160,349.64
425-1-451	INLETS, CURB, TYPE J-5, <10'	10.00	EA	$6,003.96	$60,039.60
425-1-521	INLETS, DT BOT, TYPE C, <10'	5.00	EA	$4,248.39	$21,241.95
425-2-41	MANHOLES, P-7, <10'	5.00	EA	$4,388.64	$21,943.20
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	2,416.00	LF	$95.00	$229,520.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	216.00	LF	$132.23	$28,561.68
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	4,568.00	LF	$198.63	$907,341.84
570-1-1	PERFORMANCE TURF	277.34	SY	$2.44	$676.71

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-2-72	MANHOLES, J-7, >10'	4.00	EA	$9,846.67	$39,386.68
430-175-118	PIPE CULV, OPT MATL, ROUND, 18"S/CD	3,840.00	LF	$79.95	$307,008.00
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	2,992.00	LF	$160.22	$479,378.24
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,984.00	LF	$198.63	$394,081.92
430-175-154	PIPE CULV, OPT MATL, ROUND, 54"S/CD	1,984.00	LF	$263.36	$522,506.24
	Drainage Component Total				$3,192,351.18

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	22.00	AS	$328.45	$7,225.90
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	2.00	AS	$1,382.97	$2,765.94

700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	2.00 AS	$5,932.07	$11,864.14
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	2.00 AS	$11,053.87	$22,107.74
	Signing Component Total			$43,963.72

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	4,816.94	LF	$7.28	$35,067.32
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	956.09	LF	$21.66	$20,708.91
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	32.00	EA	$709.74	$22,711.68
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	17,592.79	LF	$2.35	$41,343.06
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	32.00	EA	$5,707.60	$182,643.20
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	32.00	EA	$555.10	$17,763.20
	Subcomponent Total				$320,237.37
	Lighting Component Total				$320,237.37

Sequence 2 Total $7,793,643.24

Sequence: 3 NDU - New Construction, Divided, Urban

Net Length: 1.513 MI, 7,988 LF

Description: New 4 lane, from sta 176+40.00 to 279+08.00

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	1.513
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	36.68	AC	$10,000.00	$366,800.00
120-6	EMBANKMENT	230,268.11	CY	$8.14	$1,874,382.42
	Earthwork Component Total				$2,241,182.42

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	29.00 / 29.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	60,638.65	SY	$7.34	$445,087.69
285-709	OPTIONAL BASE,BASE GROUP 09	51,478.94	SY	$13.55	$697,539.64
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	8,494.03	TN	$118.98	$1,010,619.69
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	2,059.16	TN	$127.07	$261,657.46

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
339-1	MISCELLANEOUS ASPHALT PAVEMENT	30.80	TN	$225.95	$6,959.26
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	7.88	GM	$1,071.22	$8,441.21

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	5.00
Stabilization Code	Y
Base Code	Y
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,031.93	SY	$7.34	$22,254.37
285-709	OPTIONAL BASE,BASE GROUP 09	2,573.95	SY	$13.55	$34,877.02
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	424.70	TN	$118.98	$50,530.81
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	102.96	TN	$127.07	$13,083.13

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt

Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	613.00	EA	$3.10	$1,900.30
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	6.05	GM	$1,190.19	$7,200.65
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	3.03	GM	$420.88	$1,275.27
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	6.05	GM	$4,730.20	$28,617.71
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	3.03	GM	$1,066.52	$3,231.56
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	6.05	GM	$4,736.17	$28,653.83

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
536-1-1	GUARDRAIL- ROADWAY, GEN TL-3	720.00	LF	$19.63	$14,133.60
536-85-24	GUARDRAIL END TREATMENT- PARA APP TERM	4.00	EA	$2,595.00	$10,380.00

Roadway Component Total	$2,646,443.20

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	7,988.11	LF	$17.89	$142,907.29
520-1-7	CONCRETE CURB & GUTTER, TYPE E	7,988.11	LF	$17.89	$142,907.29
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	14,201.09	SY	$35.46	$503,570.65

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	15,976.22	LF	$1.69	$26,999.81
104-11	FLOATING TURBIDITY BARRIER	378.22	LF	$8.63	$3,264.04
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	378.22	LF	$5.46	$2,065.08
104-15	SOIL TRACKING PREVENTION DEVICE	2.00	EA	$2,700.54	$5,401.08
104-18	INLET PROTECTION SYSTEM	78.00	EA	$144.25	$11,251.50
107-1	LITTER REMOVAL	38.50	AC	$49.16	$1,892.66
107-2	MOWING	38.50	AC	$70.72	$2,722.72

Shoulder Component Total	$842,982.12

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	54.00
Performance Turf Width	49.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	15,976.22	LF	$17.89	$285,814.58
570-1-1	PERFORMANCE TURF	43,934.62	SY	$2.44	$107,200.47
	Median Component Total				$393,015.05

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	27.23	CY	$1,237.24	$33,690.05
425-1-351	INLETS, CURB, TYPE P-5, <10'	55.00	EA	$4,859.08	$267,249.40
425-1-451	INLETS, CURB, TYPE J-5, <10'	16.00	EA	$6,003.96	$96,063.36
425-1-521	INLETS, DT BOT, TYPE C, <10'	8.00	EA	$4,248.39	$33,987.12
425-2-41	MANHOLES, P-7, <10'	8.00	EA	$4,388.64	$35,109.12
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	4,008.00	LF	$95.00	$380,760.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	360.00	LF	$132.23	$47,602.80
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	7,568.00	LF	$198.63	$1,503,231.84
570-1-1	PERFORMANCE TURF	459.92	SY	$2.44	$1,122.20

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-2-72	MANHOLES, J-7, >10'	28.00	EA	$9,846.67	$275,706.76

430-175-118	PIPE CULV, OPT MATL, ROUND, 18"S/CD	8,328.00 LF	$79.95	$665,823.60
430-175-130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	672.00 LF	$111.52	$74,941.44
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	2,976.00 LF	$132.23	$393,516.48
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	3,272.00 LF	$160.22	$524,239.84
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,984.00 LF	$198.63	$394,081.92
430-175-154	PIPE CULV, OPT MATL, ROUND, 54"S/CD	1,984.00 LF	$263.36	$522,506.24

Retention Basin 1

Description	Value
Size	15 AC
Multiplier	4
Depth	3.50
Description	quantities are for 64 acre (regional pond)

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	60.00	AC	$10,000.00	$600,000.00
120-1	REGULAR EXCAVATION	338,800.00	CY	$7.30	$2,473,240.00
400-2-2	CONC CLASS II, ENDWALLS	192.00	CY	$1,237.24	$237,550.08
425-1-541	INLETS, DT BOT, TYPE D, <10'	8.00	EA	$4,302.35	$34,418.80
425-2-71	MANHOLES, J-7, <10'	12.00	EA	$7,675.46	$92,105.52
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	416.00	LF	$160.22	$66,651.52
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	2,400.00	LF	$310.52	$745,248.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	14,400.00	LF	$16.04	$230,976.00
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	16.00	EA	$2,106.27	$33,700.32
570-1-1	PERFORMANCE TURF	290,400.00	SY	$2.44	$708,576.00

Retention Basin 2

Description	Value
Size	20 AC
Multiplier	1
Depth	2.00
Description	Quantities are for 20 acre (FPC 2A) pond

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	20.00	AC	$10,000.00	$200,000.00
120-1	REGULAR EXCAVATION	64,533.33	CY	$7.30	$471,093.31
400-2-2	CONC CLASS II, ENDWALLS	54.00	CY	$1,237.24	$66,810.96
425-1-541	INLETS, DT BOT, TYPE D, <10'	3.00	EA	$4,302.35	$12,907.05
425-2-71	MANHOLES, J-7, <10'	3.00	EA	$7,675.46	$23,026.38
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	152.00	LF	$160.22	$24,353.44
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	600.00	LF	$310.52	$186,312.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	4,420.00	LF	$16.04	$70,896.80
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	6.00	EA	$2,106.27	$12,637.62
570-1-1	PERFORMANCE TURF	96,800.00	SY	$2.44	$236,192.00
	Drainage Component Total				$11,776,327.97

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	37.00	AS	$328.45	$12,152.65
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	4.00	AS	$1,382.97	$5,531.88
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	4.00	AS	$5,932.07	$23,728.28

700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	4.00 AS	$11,053.87	$44,215.48
	Signing Component Total			$85,628.29

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	7,988.11	LF	$7.28	$58,153.44
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	1,585.52	LF	$21.66	$34,342.36
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	53.00	EA	$709.74	$37,616.22
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	29,174.76	LF	$2.35	$68,560.69
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	53.00	EA	$5,707.60	$302,502.80
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	53.00	EA	$555.10	$29,420.30
	Subcomponent Total				$530,595.81
	Lighting Component Total				$530,595.81

BRIDGES COMPONENT

Bridge A

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	75.00
Width (LF)	61.66
Type	Low Level
Cost Factor	1.25

Structure No.	
Removal of Existing Structures area	2,840.00
Default Cost per SF	$114.00
Factored Cost per SF	$142.50
Final Cost per SF	**$162.69**
Basic Bridge Cost	**$658,991.25**
Description	BRADEN RIVER (NEW WB BRIDGE)

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-3	REMOVAL OF EXISTING STRUCTURES/BRIDGES	2,840.00	SF	$39.96	$113,486.40
400-2-10	CONC CLASS II, APPROACH SLABS	137.02	CY	$508.09	$69,618.49
415-1-9	REINF STEEL- APPROACH SLABS	23,978.50	LB	$0.99	$23,738.72
	Bridge A Total				$865,834.86

Bridge B

Description	**Value**
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	88.00
Width (LF)	61.66
Type	Low Level
Cost Factor	1.25
Structure No.	
Removal of Existing Structures area	2,790.00
Default Cost per SF	$114.00
Factored Cost per SF	$142.50
Final Cost per SF	**$159.71**
Basic Bridge Cost	**$773,216.40**
Description	BRADEN RIVER OVERFLOW (NEW WB BRIDGE)

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

110-3	REMOVAL OF EXISTING STRUCTURES/BRIDGES	2,790.00 SF	$39.96	$111,488.40
400-2-10	CONC CLASS II, APPROACH SLABS	137.02 CY	$508.09	$69,618.49
415-1-9	REINF STEEL- APPROACH SLABS	23,978.50 LB	$0.99	$23,738.72
	Bridge B Total			$978,062.01

Bridge C

Description	**Value**
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	75.00
Width (LF)	61.66
Type	Low Level
Cost Factor	1.25
Structure No.	
Removal of Existing Structures area	0.00
Default Cost per SF	$114.00
Factored Cost per SF	$142.50
Final Cost per SF	**$162.69**
Basic Bridge Cost	**$658,991.25**
Description	BRADEN RIVER (NEW EB BRIDGE)

Bridge Pay Items

Pay item	**Description**	**Quantity**	**Unit**	**Unit Price**	**Extended Amount**
400-2-10	CONC CLASS II, APPROACH SLABS	137.02	CY	$508.09	$69,618.49
415-1-9	REINF STEEL- APPROACH SLABS	23,978.50	LB	$0.99	$23,738.72
	Bridge C Total				$752,348.46

Bridge D

Description	**Value**
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	88.00

Width (LF)	61.66
Type	Low Level
Cost Factor	1.25
Structure No.	
Removal of Existing Structures area	0.00
Default Cost per SF	$114.00
Factored Cost per SF	$142.50
Final Cost per SF	**$159.71**
Basic Bridge Cost	**$773,216.40**
Description	BRADEN RIVER OVERFLOW (NEW EB BRIDGE)

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II, APPROACH SLABS	137.02	CY	$508.09	$69,618.49
415-1-9	REINF STEEL- APPROACH SLABS	23,978.50	LB	$0.99	$23,738.72
	Bridge D Total				$866,573.61
	Bridges Component Total				$3,462,818.94

Sequence 3 Total $21,978,993.80

Sequence: 4 WDR - Widen/Resurface, Divided, Rural **Net Length:** 2.286 MI 12,072 LF

Description: Widen & Resurface from 279+08 to 415+00.00. High Speed Curbed section with Type E curb on the inside only...10 foot shoulder on the outside (5 foot paved). Includes 8-foot wide sidewalks.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	68.00 / 105.00

Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	2.286
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	47.94	AC	$10,000.00	$479,400.00
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	7,197.34	CY	$41.78	$300,704.87
	Earthwork Component Total				$780,104.87

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Existing Roadway Pavement Width L/R	24.00 / 0.00

Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 24.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	67,067.73	SY	$7.34	$492,277.14
285-709	OPTIONAL BASE,BASE GROUP 09	32,635.16	SY	$13.55	$442,206.42
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	32,192.51	SY	$3.75	$120,721.91
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	3,541.18	TN	$118.98	$421,329.60
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	5,311.76	TN	$118.98	$631,993.20
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,287.70	TN	$127.07	$163,628.04
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,287.70	TN	$127.07	$163,628.04

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	5.00
Milling Code	Y
Stabilization Code	Y
Base Code	Y
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,353.39	SY	$7.34	$24,613.88
285-709	OPTIONAL BASE,BASE GROUP 09	1,631.76	SY	$13.55	$22,110.35

327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	1,609.63 SY	$3.75	$6,036.11
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	177.06 TN	$118.98	$21,066.60
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	64.39 TN	$127.07	$8,182.04

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	926.00	EA	$3.10	$2,870.60
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	9.15	GM	$1,190.19	$10,890.24
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	4.57	GM	$420.88	$1,923.42
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	9.15	GM	$4,730.20	$43,281.33
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	4.57	GM	$1,066.52	$4,874.00
	Roadway Component Total				$2,581,632.92

SHOULDER COMPONENT

User Input Data

Description	Value

Existing Total Outside Shoulder Width L/R	10.00 / 0.00
New Total Outside Shoulder Width L/R	0.00 / 10.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 2.67
Existing Paved Outside Shoulder Width L/R	5.00 / 0.00
New Paved Outside Shoulder Width L/R	0.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	7,149.42	SY	$21.65	$154,784.94
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	6,706.77	SY	$3.29	$22,065.27
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	368.87	TN	$118.98	$43,888.15
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	268.27	TN	$149.67	$40,151.97
570-1-1	PERFORMANCE TURF	3,581.42	SY	$2.44	$8,738.66

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	21,461.67	SY	$35.46	$761,030.82

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	27,766.04	LF	$1.69	$46,924.61
104-11	FLOATING TURBIDITY BARRIER	228.64	LF	$8.63	$1,973.16

104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	228.64 LF	$5.46	$1,248.37
104-15	SOIL TRACKING PREVENTION DEVICE	3.00 EA	$2,700.54	$8,101.62
107-1	LITTER REMOVAL	16.62 AC	$49.16	$817.04
107-2	MOWING	16.62 AC	$70.72	$1,175.37
	Shoulder Component Total			$1,090,899.98

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50
New Total Median Shoulder Width L/R	8.00 / 8.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	8.00 / 8.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	34,204.54	SY	$2.44	$83,459.08
	Median Component Total				$83,459.08

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

400-2-2	CONC CLASS II, ENDWALLS	41.16 CY	$1,237.24	$50,924.80
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	1,832.00 LF	$66.75	$122,286.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	184.00 LF	$132.23	$24,330.32
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	92.00 EA	$1,667.87	$153,444.04
570-1-1	PERFORMANCE TURF	1,609.63 SY	$2.44	$3,927.50

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-559	INLETS, DT BOT, TYPE E, MODIFY	20.00	EA	$3,462.04	$69,240.80
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	400.00	LF	$95.00	$38,000.00

Box Culvert 1

Description	Value
Size	10 x 6
Length	161.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-4-1	CONC CLASS IV, CULVERTS	394.10	CY	$1,576.82	$621,424.76
415-1-1	REINF STEEL- ROADWAY	47,733.00	LB	$1.06	$50,596.98

Retention Basin 1

Description	Value
Size	1 AC
Multiplier	13
Depth	4.00
Description	quantities are for 13 acre pond (FBC 1B)

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	13.00	AC	$10,000.00	$130,000.00
120-1	REGULAR EXCAVATION	83,893.29	CY	$7.30	$612,421.02
400-2-2	CONC CLASS II, ENDWALLS	234.00	CY	$1,237.24	$289,514.16
425-1-541	INLETS, DT BOT, TYPE D, <10'	13.00	EA	$4,302.35	$55,930.55
425-2-71	MANHOLES, J-7, <10'	13.00	EA	$7,675.46	$99,780.98
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	728.00	LF	$160.22	$116,640.16
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	2,600.00	LF	$310.52	$807,352.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	10,920.00	LF	$16.04	$175,156.80
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	13.00	EA	$2,106.27	$27,381.51
570-1-1	PERFORMANCE TURF	62,920.00	SY	$2.44	$153,524.80

Retention Basin 2

Description	Value
Size	.5 AC
Multiplier	23
Depth	4.00
Description	quantities are for 11.5 ac (FPC 1C)

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	11.50	AC	$10,000.00	$115,000.00
120-1	REGULAR EXCAVATION	74,213.41	CY	$7.30	$541,757.89
400-2-2	CONC CLASS II, ENDWALLS	414.00	CY	$1,237.24	$512,217.36
425-1-541	INLETS, DT BOT, TYPE D, <10'	23.00	EA	$4,302.35	$98,954.05
425-2-71	MANHOLES, J-7, <10'	23.00	EA	$7,675.46	$176,535.58
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	1,288.00	LF	$160.22	$206,363.36

430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	4,600.00 LF	$310.52	$1,428,392.00
550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	13,800.00 LF	$16.04	$221,352.00
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	23.00 EA	$2,106.27	$48,444.21
570-1-1	PERFORMANCE TURF	55,660.00 SY	$2.44	$135,810.40
	Drainage Component Total			$7,086,704.03

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	5.00	AS	$328.45	$1,642.25
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	55.00	AS	$1,382.97	$76,063.35
700-1-50	SINGLE POST SIGN, RELOCATE	5.00	AS	$188.08	$940.40
700-1-60	SINGLE POST SIGN, REMOVE	55.00	AS	$27.11	$1,491.05
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	5.00	AS	$4,683.31	$23,416.55
700-2-60	MULTI- POST SIGN, REMOVE	5.00	AS	$869.53	$4,347.65
	Signing Component Total				$107,901.25

Sequence 4 Total $11,730,702.13

Sequence: 5 NDS - New, Divided, Suburban (Urban In/Rural Out)

Net Length: 0.235 MI 1,240 LF

Description: New 4 lane, from sta 415+00.00 to 434+98.24

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.235
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	5.70	AC	$10,000.00	$57,000.00
120-6	EMBANKMENT	23,604.61	CY	$8.14	$192,141.53
	Earthwork Component Total				$249,141.53

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

160-4	TYPE B STABILIZATION	10,077.74 SY	$7.34	$73,970.61
285-709	OPTIONAL BASE,BASE GROUP 09	6,793.80 SY	$13.55	$92,055.99
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,090.97 TN	$118.98	$129,803.61
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	264.48 TN	$127.07	$33,607.47

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	0.94	GM	$1,071.22	$1,006.95

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	95.00	EA	$3.10	$294.50
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.94	GM	$1,190.19	$1,118.78
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.47	GM	$420.88	$197.81
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.94	GM	$4,730.20	$4,446.39
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.47	GM	$1,066.52	$501.26
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.94	GM	$4,736.17	$4,452.00

Roadway Component Total	$341,455.37

SHOULDER COMPONENT

User Input Data

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,468.41	SY	$21.65	$31,791.08
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	75.76	TN	$118.98	$9,013.92
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	55.10	TN	$149.67	$8,246.82
570-1-1	PERFORMANCE TURF	735.58	SY	$2.44	$1,794.82

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	3,555.66	SY	$35.46	$126,083.70

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	3,223.33	LF	$1.69	$5,447.43
104-11	FLOATING TURBIDITY BARRIER	58.70	LF	$8.63	$506.58

104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	58.70 LF	$5.46	$320.50
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	2.00 EA	$144.25	$288.50
107-1	LITTER REMOVAL	4.21 AC	$49.16	$206.96
107-2	MOWING	4.21 AC	$70.72	$297.73
	Shoulder Component Total			$186,698.58

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,479.49	LF	$17.89	$44,358.08
570-1-1	PERFORMANCE TURF	3,512.61	SY	$2.44	$8,570.77
	Median Component Total				$52,928.85

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	4.23	CY	$1,237.24	$5,233.53
425-1-551	INLETS, DT BOT, TYPE E, <10'	2.00	EA	$4,069.79	$8,139.58
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	104.00	LF	$95.00	$9,880.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	56.00	LF	$132.23	$7,404.88
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	2.00	EA	$1,667.87	$3,335.74

570-1-1	PERFORMANCE TURF	90.16 SY	$2.44	$219.99

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-559	INLETS, DT BOT, TYPE E, MODIFY	4.00 EA	$3,462.04	$13,848.16
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	104.00 LF	$95.00	$9,880.00
	Drainage Component Total			$57,941.88

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	6.00 AS	$328.45	$1,970.70
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00 AS	$1,382.97	$1,382.97
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00 AS	$4,683.31	$4,683.31
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00 AS	$5,932.07	$5,932.07
	Signing Component Total			$13,969.05

Sequence 5 Total $902,135.26

Sequence: 6 WDR - Widen/Resurface, Divided, Rural **Net Length:** 0.475 MI 2,506 LF

Description: Resurface existing lanes (24 ft) left side - New construction (2 lanes) sta 434+98.24 to sta 467+66.32

EARTHWORK COMPONENT

User Input Data

Description	Value

Standard Clearing and Grubbing Limits L/R	68.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.475
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	9.96	AC	$10,000.00	$99,600.00
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	1,495.51	CY	$41.78	$62,482.41
	Earthwork Component Total				$162,082.41

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4

Existing Roadway Pavement Width L/R	24.00 / 0.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 24.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	13,921.60	SY	$7.34	$102,184.54
285-709	OPTIONAL BASE,BASE GROUP 09	6,774.25	SY	$13.55	$91,791.09
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	6,682.37	SY	$3.75	$25,058.89
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	735.06	TN	$118.98	$87,457.44
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,102.59	TN	$118.98	$131,186.16
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	267.29	TN	$127.07	$33,964.54
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	267.29	TN	$127.07	$33,964.54

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	192.00	EA	$3.10	$595.20
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.90	GM	$1,190.19	$2,261.36
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.95	GM	$420.88	$399.84
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	1.90	GM	$4,730.20	$8,987.38
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.95	GM	$1,066.52	$1,013.19
	Roadway Component Total				$518,864.17

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	10.00 / 0.00
New Total Outside Shoulder Width L/R	0.00 / 10.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 2.67
Existing Paved Outside Shoulder Width L/R	5.00 / 0.00
New Paved Outside Shoulder Width L/R	0.00 / 5.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	1,484.04	SY	$21.65	$32,129.47

327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	1,392.16 SY	$3.29	$4,580.21
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	76.57 TN	$118.98	$9,110.30
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	55.69 TN	$149.67	$8,335.12
570-1-1	PERFORMANCE TURF	743.41 SY	$2.44	$1,813.92

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	4,459.00	SY	$35.46	$158,116.14

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	5,763.54	LF	$1.69	$9,740.38
104-11	FLOATING TURBIDITY BARRIER	47.46	LF	$8.63	$409.58
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	47.46	LF	$5.46	$259.13
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,700.54	$2,700.54
107-1	LITTER REMOVAL	3.45	AC	$49.16	$169.60
107-2	MOWING	3.45	AC	$70.72	$243.98
	Shoulder Component Total				$227,608.37

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50
New Total Median Shoulder Width L/R	8.00 / 8.00
New Paved Median Shoulder Width L/R	0.00 / 0.00

Existing Total Median Shoulder Width L/R	8.00 / 8.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	7,100.02	SY	$2.44	$17,324.05

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	5,011.78	LF	$17.89	$89,660.74
	Median Component Total				$106,984.79

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	8.54	CY	$1,237.24	$10,566.03
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	384.00	LF	$66.75	$25,632.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00	LF	$132.23	$5,289.20
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	19.00	EA	$1,667.87	$31,689.53
570-1-1	PERFORMANCE TURF	334.12	SY	$2.44	$815.25
	Drainage Component Total				$73,992.01

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	$328.45	$328.45
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	12.00	AS	$1,382.97	$16,595.64
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	$188.08	$188.08
700-1-60	SINGLE POST SIGN, REMOVE	12.00	AS	$27.11	$325.32
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$4,683.31	$4,683.31
700-2-60	MULTI- POST SIGN, REMOVE	1.00	AS	$869.53	$869.53
	Signing Component Total				$22,990.33

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	Value
Multiplier (Number of Poles)	22

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	4,400.00	LF	$7.28	$32,032.00
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00	EA	$709.74	$15,614.28
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	13,200.00	LF	$2.35	$31,020.00
715-4-14	LIGHT POLE COMPLETE, F&I- STD, 45'	22.00	EA	$6,899.30	$151,784.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	22.00	EA	$555.10	$12,212.20
	Subcomponent Total				$242,663.08

Lighting Component Total	$242,663.08

Sequence 6 Total	$1,355,185.16

Sequence: 7 NDU - New Construction, Divided, Urban

Net Length: 0.144 MI / 760 LF

Description: New Roundabout at Uihlein Rd.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.144
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.49	AC	$10,000.00	$34,900.00
120-6	EMBANKMENT	16,973.16	CY	$8.14	$138,161.52
	Earthwork Component Total				$173,061.52

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,565.44	SY	$7.34	$62,870.33
285-709	OPTIONAL BASE,BASE GROUP 09	6,826.13	SY	$13.55	$92,494.06
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,126.31	TN	$118.98	$134,008.36
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	563.16	TN	$127.07	$71,560.74

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	58.00	EA	$3.10	$179.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.58	GM	$1,190.19	$690.31
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.29	GM	$420.88	$122.06

711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.58 GM	$4,730.20	$2,743.52
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.29 GM	$1,066.52	$309.29
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.58 GM	$4,736.17	$2,746.98
	Roadway Component Total			$367,725.45

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	1,674.70	LF	$17.89	$29,960.38
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,962.23	LF	$23.14	$45,406.00
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,863.55	SY	$35.46	$66,081.48

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,519.58	LF	$1.69	$2,568.09
104-11	FLOATING TURBIDITY BARRIER	35.98	LF	$8.63	$310.51
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	35.98	LF	$5.46	$196.45
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,700.54	$2,700.54

104-18	INLET PROTECTION SYSTEM	8.00 EA	$144.25	$1,154.00
107-1	LITTER REMOVAL	3.66 AC	$49.16	$179.93
107-2	MOWING	3.66 AC	$70.72	$258.84
	Shoulder Component Total			$148,816.22

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,152.74	SY	$2.44	$5,252.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-2-4	CONCRETE CURB, TYPE D	318.87	LF	$17.47	$5,570.66
520-2-8	CONCRETE CURB, TYPE RA	417.83	LF	$20.67	$8,636.55

EX-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONCRETE PAVEMENT FOR ROUNDABOUT APRON, 12" DEPTH	610.00	SY	$71.80	$43,798.00
	Median Component Total				$63,257.90

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

400-2-2	CONC CLASS II, ENDWALLS	2.59 CY	$1,237.24	$3,204.45
425-1-351	INLETS, CURB, TYPE P-5, <10'	6.00 EA	$4,859.08	$29,154.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00 EA	$6,003.96	$12,007.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00 EA	$4,248.39	$4,248.39
425-2-41	MANHOLES, P-7, <10'	1.00 EA	$4,388.64	$4,388.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	384.00 LF	$95.00	$36,480.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00 LF	$132.23	$5,289.20
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	720.00 LF	$198.63	$143,013.60
570-1-1	PERFORMANCE TURF	43.75 SY	$2.44	$106.75
	Drainage Component Total			$237,893.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,382.97	$1,382.97
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$5,932.07	$5,932.07
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$11,053.87	$11,053.87
	Signing Component Total				$19,682.71

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	759.79	LF	$7.28	$5,531.27
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	150.81	LF	$21.66	$3,266.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$709.74	$4,258.44
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,774.97	LF	$2.35	$6,521.18
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	6.00	EA	$5,707.60	$34,245.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$555.10	$3,330.60
	Subcomponent Total				$57,153.64
	Lighting Component Total				$57,153.63

Sequence 7 Total $1,067,590.86

Sequence: 8 NDU - New Construction, Divided, Urban

Net Length: 0.144 MI / 760 LF

Description: New Roundabout at Del Webb Blvd.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.144
Top of Structural Course For Begin Section	105.00

Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.49	AC	$10,000.00	$34,900.00
120-6	EMBANKMENT	16,973.16	CY	$8.14	$138,161.52
	Earthwork Component Total				$173,061.52

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	7,875.21	SY	$7.34	$57,804.04
285-709	OPTIONAL BASE,BASE GROUP 09	6,239.52	SY	$13.55	$84,545.50
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,029.52	TN	$118.98	$122,492.29
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	514.76	TN	$127.07	$65,410.55

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	58.00	EA	$3.10	$179.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.58	GM	$1,190.19	$690.31
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.29	GM	$420.88	$122.06
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.58	GM	$4,730.20	$2,743.52
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.29	GM	$1,066.52	$309.29
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.58	GM	$4,736.17	$2,746.98
	Roadway Component Total				$337,044.34

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

520-1-7	CONCRETE CURB & GUTTER, TYPE E	1,526.51 LF	$17.89	$27,309.26
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,726.59 LF	$23.14	$39,953.29
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,672.57 SY	$35.46	$59,309.33

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,519.58	LF	$1.69	$2,568.09
104-11	FLOATING TURBIDITY BARRIER	35.98	LF	$8.63	$310.51
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	35.98	LF	$5.46	$196.45
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	8.00	EA	$144.25	$1,154.00
107-1	LITTER REMOVAL	3.66	AC	$49.16	$179.93
107-2	MOWING	3.66	AC	$70.72	$258.84
	Shoulder Component Total				$133,940.24

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,152.74	SY	$2.44	$5,252.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

520-2-4	CONCRETE CURB, TYPE D	318.87 LF	$17.47	$5,570.66
520-2-8	CONCRETE CURB, TYPE RA	417.83 LF	$20.67	$8,636.55

EX-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
350-30-13	CONCRETE PAVEMENT FOR ROUNDABOUT APRON, 12" DEPTH	610.00 SY	$71.80	$43,798.00
	Median Component Total			$63,257.90

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.59 CY	$1,237.24	$3,204.45
425-1-351	INLETS, CURB, TYPE P-5, <10'	6.00 EA	$4,859.08	$29,154.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00 EA	$6,003.96	$12,007.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00 EA	$4,248.39	$4,248.39
425-2-41	MANHOLES, P-7, <10'	1.00 EA	$4,388.64	$4,388.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	384.00 LF	$95.00	$36,480.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00 LF	$132.23	$5,289.20
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	720.00 LF	$198.63	$143,013.60
570-1-1	PERFORMANCE TURF	43.75 SY	$2.44	$106.75
	Drainage Component Total			$237,893.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,382.97	$1,382.97
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$5,932.07	$5,932.07
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$11,053.87	$11,053.87
	Signing Component Total				$19,682.71

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	759.79	LF	$7.28	$5,531.27
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	150.81	LF	$21.66	$3,266.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$709.74	$4,258.44
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,774.97	LF	$2.35	$6,521.18
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	6.00	EA	$5,707.60	$34,245.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$555.10	$3,330.60
	Subcomponent Total				$57,153.64
	Lighting Component Total				$57,153.63

Sequence 8 Total $1,022,033.77

Sequence: 9 NDU - New Construction, Divided, Urban

Net Length: 0.144 MI / 760 LF

Description: New Roundabout at Bourneside Blvd.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.144
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.49	AC	$10,000.00	$34,900.00
120-6	EMBANKMENT	16,973.16	CY	$8.14	$138,161.52
	Earthwork Component Total				$173,061.52

ROADWAY COMPONENT

User Input Data

Description	Value

Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,137.51	SY	$7.34	$59,729.32
285-709	OPTIONAL BASE,BASE GROUP 09	6,171.06	SY	$13.55	$83,617.86
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,018.22	TN	$118.98	$121,147.82
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	509.11	TN	$127.07	$64,692.61

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	58.00	EA	$3.10	$179.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.58	GM	$1,190.19	$690.31
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.29	GM	$420.88	$122.06
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.58	GM	$4,730.20	$2,743.52
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.29	GM	$1,066.52	$309.29

711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.58 GM	$4,736.17	$2,746.98
	Roadway Component Total			$335,979.57

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	224.80	SY	$29.38	$6,604.62
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	18.55	TN	$118.98	$2,207.08
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	18.55	TN	$127.07	$2,357.15
520-1-7	CONCRETE CURB & GUTTER, TYPE E	1,508.53	LF	$17.89	$26,987.60
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,361.10	LF	$23.14	$31,495.85
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,703.31	SY	$35.46	$60,399.37
570-1-2	PERFORMANCE TURF, SOD	205.88	SY	$4.21	$866.75

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,519.58	LF	$1.69	$2,568.09
104-11	FLOATING TURBIDITY BARRIER	35.98	LF	$8.63	$310.51
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	35.98	LF	$5.46	$196.45

104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	8.00 EA	$144.25	$1,154.00
107-1	LITTER REMOVAL	3.66 AC	$49.16	$179.93
107-2	MOWING	3.66 AC	$70.72	$258.84
	Shoulder Component Total			$138,286.78

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,152.74	SY	$2.44	$5,252.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-2-4	CONCRETE CURB, TYPE D	318.87	LF	$17.47	$5,570.66
520-2-8	CONCRETE CURB, TYPE RA	417.83	LF	$20.67	$8,636.55

EX-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONCRETE PAVEMENT FOR ROUNDABOUT APRON, 12" DEPTH	610.00	SY	$71.80	$43,798.00
	Median Component Total				$63,257.90

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.59	CY	$1,237.24	$3,204.45
425-1-351	INLETS, CURB, TYPE P-5, <10'	6.00	EA	$4,859.08	$29,154.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$6,003.96	$12,007.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,248.39	$4,248.39
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,388.64	$4,388.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	384.00	LF	$95.00	$36,480.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00	LF	$132.23	$5,289.20
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	720.00	LF	$198.63	$143,013.60
570-1-1	PERFORMANCE TURF	43.75	SY	$2.44	$106.75
	Drainage Component Total				$237,893.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,382.97	$1,382.97
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$5,932.07	$5,932.07
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$11,053.87	$11,053.87
	Signing Component Total				$19,682.71

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	759.79	LF	$7.28	$5,531.27
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	150.81	LF	$21.66	$3,266.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$709.74	$4,258.44
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,774.97	LF	$2.35	$6,521.18
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	6.00	EA	$5,707.60	$34,245.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$555.10	$3,330.60
	Subcomponent Total				$57,153.64
	Lighting Component Total				$57,153.63

Sequence 9 Total $1,025,315.54

Sequence: 10 NDU - New Construction, Divided, Urban

Net Length: 0.144 MI 760 LF

Description: New Roundabout at Lindrick Ln.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.144

Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.49	AC	$10,000.00	$34,900.00
120-6	EMBANKMENT	16,973.16	CY	$8.14	$138,161.52
	Earthwork Component Total				$173,061.52

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,213.59	SY	$7.34	$60,287.75
285-709	OPTIONAL BASE,BASE GROUP 09	5,768.26	SY	$13.55	$78,159.92
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	951.76	TN	$118.98	$113,240.40
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	475.88	TN	$127.07	$60,470.07

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	58.00	EA	$3.10	$179.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.58	GM	$1,190.19	$690.31
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.29	GM	$420.88	$122.06
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.58	GM	$4,730.20	$2,743.52
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.29	GM	$1,066.52	$309.29
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.58	GM	$4,736.17	$2,746.98
	Roadway Component Total				$318,950.10

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	495.25	SY	$29.38	$14,550.44
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	40.86	TN	$118.98	$4,861.52
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	40.86	TN	$127.07	$5,192.08
520-1-7	CONCRETE CURB & GUTTER, TYPE E	458.59	LF	$17.89	$8,204.18
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,706.66	LF	$23.14	$39,492.11
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	970.95	SY	$35.46	$34,429.89
570-1-2	PERFORMANCE TURF, SOD	1,773.95	SY	$4.21	$7,468.33

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,519.58	LF	$1.69	$2,568.09
104-11	FLOATING TURBIDITY BARRIER	35.98	LF	$8.63	$310.51
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	35.98	LF	$5.46	$196.45
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	8.00	EA	$144.25	$1,154.00
107-1	LITTER REMOVAL	3.66	AC	$49.16	$179.93
107-2	MOWING	3.66	AC	$70.72	$258.84
	Shoulder Component Total				$121,566.92

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00

Performance Turf Width 25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,152.74	SY	$2.44	$5,252.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-2-4	CONCRETE CURB, TYPE D	318.87	LF	$17.47	$5,570.66
520-2-8	CONCRETE CURB, TYPE RA	417.83	LF	$20.67	$8,636.55

EX-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONCRETE PAVEMENT FOR ROUNDABOUT APRON, 12" DEPTH	610.00	SY	$71.80	$43,798.00
	Median Component Total				$63,257.90

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.59	CY	$1,237.24	$3,204.45
425-1-351	INLETS, CURB, TYPE P-5, <10'	6.00	EA	$4,859.08	$29,154.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$6,003.96	$12,007.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,248.39	$4,248.39
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,388.64	$4,388.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	384.00	LF	$95.00	$36,480.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00	LF	$132.23	$5,289.20

430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	720.00 LF	$198.63	$143,013.60
570-1-1	PERFORMANCE TURF	43.75 SY	$2.44	$106.75
	Drainage Component Total			$237,893.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,382.97	$1,382.97
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$5,932.07	$5,932.07
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$11,053.87	$11,053.87
	Signing Component Total				$19,682.71

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	759.79	LF	$7.28	$5,531.27
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	150.81	LF	$21.66	$3,266.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$709.74	$4,258.44
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,774.97	LF	$2.35	$6,521.18

715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	6.00 EA	$5,707.60	$34,245.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00 EA	$555.10	$3,330.60
	Subcomponent Total			$57,153.64
	Lighting Component Total			$57,153.63

Sequence 10 Total $991,566.21

Sequence: 11 NDU - New Construction, Divided, Urban

Net Length: 0.144 MI 760 LF

Description: New Roundabout at 213 St.

EARTHWORK COMPONENT

User Input Data

Description	**Value**
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.144
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.49	AC	$10,000.00	$34,900.00
120-6	EMBANKMENT	16,973.16	CY	$8.14	$138,161.52
	Earthwork Component Total				$173,061.52

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	7,748.98	SY	$7.34	$56,877.51
285-709	OPTIONAL BASE,BASE GROUP 09	5,363.10	SY	$13.55	$72,670.00
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	884.91	TN	$118.98	$105,286.59
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	442.46	TN	$127.07	$56,223.39

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	58.00	EA	$3.10	$179.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.58	GM	$1,190.19	$690.31
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.29	GM	$420.88	$122.06
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.58	GM	$4,730.20	$2,743.52
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.29	GM	$1,066.52	$309.29
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.58	GM	$4,736.17	$2,746.98
	Roadway Component Total				$297,849.46

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	504.26	SY	$29.38	$14,815.16
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	41.60	TN	$118.98	$4,949.57
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	41.60	TN	$127.07	$5,286.11
520-1-7	CONCRETE CURB & GUTTER, TYPE E	464.04	LF	$17.89	$8,301.68
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,512.91	LF	$23.14	$35,008.74

522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	900.37 SY	$35.46	$31,927.12
570-1-2	PERFORMANCE TURF, SOD	1,730.97 SY	$4.21	$7,287.38

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,519.58	LF	$1.69	$2,568.09
104-11	FLOATING TURBIDITY BARRIER	35.98	LF	$8.63	$310.51
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	35.98	LF	$5.46	$196.45
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	8.00	EA	$144.25	$1,154.00
107-1	LITTER REMOVAL	3.66	AC	$49.16	$179.93
107-2	MOWING	3.66	AC	$70.72	$258.84
	Shoulder Component Total				$114,944.12

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,152.74	SY	$2.44	$5,252.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-2-4	CONCRETE CURB, TYPE D	318.87	LF	$17.47	$5,570.66
520-2-8	CONCRETE CURB, TYPE RA	417.83	LF	$20.67	$8,636.55

EX-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONCRETE PAVEMENT FOR ROUNDABOUT APRON, 12" DEPTH	610.00	SY	$71.80	$43,798.00
	Median Component Total				$63,257.90

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.59	CY	$1,237.24	$3,204.45
425-1-351	INLETS, CURB, TYPE P-5, <10'	6.00	EA	$4,859.08	$29,154.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$6,003.96	$12,007.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,248.39	$4,248.39
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,388.64	$4,388.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	384.00	LF	$95.00	$36,480.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00	LF	$132.23	$5,289.20
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	720.00	LF	$198.63	$143,013.60
570-1-1	PERFORMANCE TURF	43.75	SY	$2.44	$106.75
	Drainage Component Total				$237,893.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00 AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00 AS	$1,382.97	$1,382.97
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00 AS	$5,932.07	$5,932.07
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00 AS	$11,053.87	$11,053.87
	Signing Component Total			$19,682.71

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	759.79	LF	$7.28	$5,531.27
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	150.81	LF	$21.66	$3,266.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$709.74	$4,258.44
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,774.97	LF	$2.35	$6,521.18
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	6.00	EA	$5,707.60	$34,245.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$555.10	$3,330.60
	Subcomponent Total				$57,153.64
	Lighting Component Total				$57,153.63

Sequence 11 Total $963,842.77

Sequence: 12 NDU - New Construction, Divided, Urban

Net Length: 0.144 MI / 760 LF

Description: New Roundabout at 225 St.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.144
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.49	AC	$10,000.00	$34,900.00
120-6	EMBANKMENT	16,973.16	CY	$8.14	$138,161.52
	Earthwork Component Total				$173,061.52

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4

Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,287.02	SY	$7.34	$60,826.73
285-709	OPTIONAL BASE,BASE GROUP 09	5,852.10	SY	$13.55	$79,295.96
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	965.60	TN	$118.98	$114,887.09
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	482.80	TN	$127.07	$61,349.40

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	58.00	EA	$3.10	$179.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.58	GM	$1,190.19	$690.31
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.29	GM	$420.88	$122.06
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.58	GM	$4,730.20	$2,743.52
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.29	GM	$1,066.52	$309.29

711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.58 GM	$4,736.17	$2,746.98
	Roadway Component Total			$323,151.14

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	498.93	SY	$29.38	$14,658.56
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	41.16	TN	$118.98	$4,897.22
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	41.16	TN	$127.07	$5,230.20
520-1-7	CONCRETE CURB & GUTTER, TYPE E	461.08	LF	$17.89	$8,248.72
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,668.72	LF	$23.14	$38,614.18
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	948.85	SY	$35.46	$33,646.22
570-1-2	PERFORMANCE TURF, SOD	1,749.41	SY	$4.21	$7,365.02

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,519.58	LF	$1.69	$2,568.09
104-11	FLOATING TURBIDITY BARRIER	35.98	LF	$8.63	$310.51
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	35.98	LF	$5.46	$196.45

104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	8.00 EA	$144.25	$1,154.00
107-1	LITTER REMOVAL	3.66 AC	$49.16	$179.93
107-2	MOWING	3.66 AC	$70.72	$258.84
	Shoulder Component Total			$120,028.48

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00
Performance Turf Width	25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,152.74	SY	$2.44	$5,252.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-2-4	CONCRETE CURB, TYPE D	318.87	LF	$17.47	$5,570.66
520-2-8	CONCRETE CURB, TYPE RA	417.83	LF	$20.67	$8,636.55

EX-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONCRETE PAVEMENT FOR ROUNDABOUT APRON, 12" DEPTH	610.00	SY	$71.80	$43,798.00
	Median Component Total				$63,257.90

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.59	CY	$1,237.24	$3,204.45
425-1-351	INLETS, CURB, TYPE P-5, <10'	6.00	EA	$4,859.08	$29,154.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$6,003.96	$12,007.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,248.39	$4,248.39
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,388.64	$4,388.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	384.00	LF	$95.00	$36,480.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00	LF	$132.23	$5,289.20
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	720.00	LF	$198.63	$143,013.60
570-1-1	PERFORMANCE TURF	43.75	SY	$2.44	$106.75
	Drainage Component Total				$237,893.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,382.97	$1,382.97
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$5,932.07	$5,932.07
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$11,053.87	$11,053.87
	Signing Component Total				$19,682.71

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	759.79	LF	$7.28	$5,531.27
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	150.81	LF	$21.66	$3,266.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$709.74	$4,258.44
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,774.97	LF	$2.35	$6,521.18
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	6.00	EA	$5,707.60	$34,245.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$555.10	$3,330.60
	Subcomponent Total				$57,153.64
	Lighting Component Total				$57,153.63

Sequence 12 Total $994,228.81

Sequence: 13 NDU - New Construction, Divided, Urban

Net Length: 0.144 MI / 760 LF

Description: New Roundabout at CR 675

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	95.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.144

Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.49	AC	$10,000.00	$34,900.00
120-6	EMBANKMENT	16,973.16	CY	$8.14	$138,161.52
	Earthwork Component Total				$173,061.52

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	330
Friction Course Spread Rate	80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	9,229.00	SY	$7.34	$67,740.86
285-709	OPTIONAL BASE,BASE GROUP 09	6,480.04	SY	$13.55	$87,804.54
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,069.21	TN	$118.98	$127,214.61
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	534.60	TN	$127.07	$67,931.62

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	58.00	EA	$3.10	$179.80
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.58	GM	$1,190.19	$690.31
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.29	GM	$420.88	$122.06
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.58	GM	$4,730.20	$2,743.52
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.29	GM	$1,066.52	$309.29
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.58	GM	$4,736.17	$2,746.98
	Roadway Component Total				$357,483.59

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 10.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	8.00 / 8.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-701	OPTIONAL BASE,BASE GROUP 01	445.29	SY	$29.38	$13,082.62
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	36.74	TN	$118.98	$4,371.33
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	36.74	TN	$127.07	$4,668.55
520-1-7	CONCRETE CURB & GUTTER, TYPE E	776.55	LF	$17.89	$13,892.48
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,863.41	LF	$23.14	$43,119.31
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	934.83	SY	$35.46	$33,149.07
570-1-2	PERFORMANCE TURF, SOD	1,327.63	SY	$4.21	$5,589.32

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,519.58	LF	$1.69	$2,568.09
104-11	FLOATING TURBIDITY BARRIER	35.98	LF	$8.63	$310.51
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	35.98	LF	$5.46	$196.45
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$2,700.54	$2,700.54
104-18	INLET PROTECTION SYSTEM	8.00	EA	$144.25	$1,154.00
107-1	LITTER REMOVAL	3.66	AC	$49.16	$179.93
107-2	MOWING	3.66	AC	$70.72	$258.84
	Shoulder Component Total				$125,241.04

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	30.00

Performance Turf Width 25.50

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,152.74	SY	$2.44	$5,252.69

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-2-4	CONCRETE CURB, TYPE D	318.87	LF	$17.47	$5,570.66
520-2-8	CONCRETE CURB, TYPE RA	417.83	LF	$20.67	$8,636.55

EX-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
350-30-13	CONCRETE PAVEMENT FOR ROUNDABOUT APRON, 12" DEPTH	610.00	SY	$71.80	$43,798.00
	Median Component Total				$63,257.90

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.59	CY	$1,237.24	$3,204.45
425-1-351	INLETS, CURB, TYPE P-5, <10'	6.00	EA	$4,859.08	$29,154.48
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$6,003.96	$12,007.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	1.00	EA	$4,248.39	$4,248.39
425-2-41	MANHOLES, P-7, <10'	1.00	EA	$4,388.64	$4,388.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	384.00	LF	$95.00	$36,480.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	40.00	LF	$132.23	$5,289.20

430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	720.00 LF	$198.63	$143,013.60
570-1-1	PERFORMANCE TURF	43.75 SY	$2.44	$106.75
	Drainage Component Total			$237,893.43

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	4.00	AS	$328.45	$1,313.80
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,382.97	$1,382.97
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$5,932.07	$5,932.07
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$11,053.87	$11,053.87
	Signing Component Total				$19,682.71

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	759.79	LF	$7.28	$5,531.27
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	150.81	LF	$21.66	$3,266.54
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$709.74	$4,258.44
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	2,774.97	LF	$2.35	$6,521.18

715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	6.00 EA	$5,707.60	$34,245.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00 EA	$555.10	$3,330.60
	Subcomponent Total			$57,153.64
	Lighting Component Total			$57,153.63

Sequence 13 Total $1,033,773.82

Sequence: 14 MIS - Miscellaneous Construction

Net Length: 0.000 MI 0 LF

Description: MOT

ROADWAY COMPONENT

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
102-2-1	SPECIAL DETOUR 1	1.00 LS	$1,000,000.00	$1,000,000.00
102-71-13	TEMPORARY BARRIER, F&I,LOW PROFILE,CONC	36,727.00 LF	$38.29	$1,406,276.83
102-71-23	TEMPORARY BARRIER, REL,LOW PROFILE CONC	36,727.00 LF	$8.89	$326,503.03
	Roadway Component Total			$2,732,779.86

Sequence 14 Total $2,732,779.86

Date: 4/9/2019 1:09:28 PM

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

Project: 414506-2-52-01 **Letting Date:** 07/2022

Description: SR 70 FROM LORRAINE RD TO CR 675/WATERBURY ROAD

District: 01	**County:** 13 MANATEE	**Market Area:** 10	**Units:** English
Contract Class: 7	**Lump Sum Project:** N	**Design/Build:** N	**Project Length:** 6.596 MI

Project Manager: JMK-MJB-DCT

Version 12 Project Grand Total **$67,333,412.10**

Description: April 2019 Unit Cost Update with markups per PM from Version 11 - 4/4/19

Project Sequences Subtotal					**$53,858,755.89**
102-1	Maintenance of Traffic	10.00 %			$5,385,875.59
101-1	Mobilization	8.00 %			$4,739,570.52
Project Sequences Total					**$63,984,202.00**
Project Unknowns		5.00 %			$3,199,210.10
Design/Build		0.00 %			$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$150,000.00	$150,000.00
Project Non-Bid Subtotal					**$150,000.00**
Version 12 Project Grand Total					**$67,333,412.10**

APPENDIX B

UTILITY AGENCIES AND FACILITIES

INFORMATION RECEIVED FROM UAOs

AT&T Transmission

1. AT&T Transmission has 1-2” HDPE conduit that enters the project from the western limits and continued running east along the south side of SR 70 before it ends in a hand hole on the southeast intersection of SR 70 & Lorraine Rd.

2. AT&T Transmission has a hand hole located on the southeast corner of the SR 70 & Lorraine Rd. intersection.

3. AT&T Transmission has 1-2” HDPE conduit that runs north and south along the east side of Lorraine Rd. where it ends in the hand hole on the southeast corner of the SR 70 & Lorraine Rd. intersection.

Braden River Utilities

1. Braden River Utilities was contacted, but never replied for the PD&E study limits.

Bright House Networks

1. Bright House Networks has an UG facility that enters the project limits from the southwest corner of the SR 70 & Lorraine Rd intersection and runs east, crossing Lorraine Rd before it turns and runs north, crossing SR 70 and tying in to the UG Bright House facilities that came down the PRECO power pole, 300’ east of the SR 70 & Lorraine Rd intersection.

2. Bright House Networks has an UG facility that runs north and south along the east side of Lorraine Rd north of SR 70. This UG facility turns and runs east at the northwest corner of the SR 70 & Lorraine Rd intersection before it ends at the PRECO power pole, 300’ east of the SR 70 & Lorraine Rd intersection.

3. Bright House Networks is an aerial joint user on the PRECO power pole line, which is in an easement. These aerial facilities begin on the PRECO power pole, which is 300’ east of the SR 70 & Lorraine Rd intersection on the north side of SR 70 and runs east before ending in front of the PRECO SR 70 Substation.

4. Bright House Networks has UG facilities that risers down off of the PRECO power pole just north of SR 70 & Del Webb Blvd before it runs south, crossing SR 70 and running along the east side of Del Webb Blvd.

5. Bright House Networks is an aerial joint user on the PRECO power pole line, which is in the state right of way, starting in front of the PRECO SR 70 substation and running east before ending 2400’ west of the SR 70 & Lindrick Ln intersection on the north side of SR 70.

6. Bright House networks aerial facilities become UG, 2400’ west of the SR 70 & Lindrick Ln intersection and runs east along the north side of SR 70 before ending and becoming aerial again on the PRECO power pole line 900’ east of the SR 70 & Lindrick Ln intersection.

7. Bright House Networks has UG facilities that begin on the northwest corner of the SR 70 & 197th St E intersection that run south along the west side of Lindrick Ln, crossing SR 70.

8. Bright House Networks has UG facilities that begin on the northeast corner of the SR 70 & 197th St E intersection that run north along the east side of 197th St E.

9. Bright House Networks has aerial facilities on the PRECO power pole line starting 900’ east of the SR 70 & Lindrick Ln intersection on the north side of SR 70 and runs east along the north side of SR 70 before ending and becoming UG again 500’ west of the SR 70 & 225th St E intersection.

10. Bright House Networks has aerial facilities that become UG, 500’ west of the SR 70 & 225th St E intersection on the north side of SR 70. These facilities run east along the north side of SR

70 before ending and becoming aerial again, on the PRECO power pole line, 250’ east of the SR 70 & 225th St E intersection.

11. Bright House Networks has UG facilities that become aerial, on the PRECO power pole, line starting 250’ east of the SR 70 & 225th St E intersection on the north side of SR 70 and running east before ending on the north side of SR 70 on the west side of the CR 675 off-ramp.

12. Bright House Networks has UG facilities that begin on the north side of SR 70, just west of the CR 675 off ramp that run east, crossing the CR 675 off ramp, before turning and running south, crossing SR 70 and then turning and running east along the south side of SR 70 and out of the project limits.

13. Bright House Networks has an UG facility that begins on the northeast corner of the SR 70 & Meadow Dove Lane intersection and runs south along the east side of Meadow Dove Lane.

Frontier Communications

1. Frontier Communications has 1 – direct buried copper facility that enters the project from the western most limits and runs east along the north side of SR 70 before it ends in a Frontier pull box 1900’ east of Uihlein Rd.

2. Frontier Communications has 1- direct buried copper facility that enters the project from the western most limits and runs east along the south side of SR 70 before it turns south at the intersection of SR 70 & Lorraine Rd and continued south along the east side of Lorraine Rd.

3. Frontier Communications has 2-4” PVC conduit with fiber facilities that enter the project from the western most limits and run east along the south side of SR 70 before it turns south at the intersection of SR 70 & Lorraine Rd and continues south along the east side of Lorraine Rd.

4. Frontier Communications has a 1-4” PVC conduit with fiber facility that begins on the southeast corner of the SR 70 & Lorraine Rd intersection and runs north, crossing SR 70, and continuing north along the east side of Lorraine Rd.

5. Frontier Communications has a 1-4” PVC conduit with fiber facility that begins on the southeast corner of the SR 70 & Lorraine Rd intersection and runs east along the south side of SR 70 before it turn north, crossing SR 70 at the southwest corner of the SR 70 & Arbor Green Trail intersection, and continues east along the north side of SR 70 before it ends in the Frontier pull box 1900’ east of Uihlein Rd.

6. Frontier Communications has a pull box on the north side of SR 70, 1900’ east of Uihlein Rd.

7. Frontier Communications has a 1-1.25” polypipe conduit with fiber facility that begins in the Frontier pull box 1900’ east of Uihlein Rd on the north side of SR 70 and runs east on the north side of SR 70 before it turns at the northwest corner of the SR 70 & Del Webb Blvd and runs south, crossing SR 70 and continuing south along the west side of Del Webb Blvd.

8. Frontier Communications has a pull box on the north side of SR 70 that is 1200’ east of Lindrick Ln.

9. Frontier Communications has 4-4” PVC with fiber and copper cable facilities that begin in the Frontier pull box on the north side of SR 70, 1200’ east of Lindrick Ln, and runs north outside of the project limits.

10. Frontier Communications has 1 – direct buried copper facility that begin in the Frontier pull box on the north side of SR 70, 1200’ east of Lindrick Ln, and runs south, crossing SR 70 and continuing outside of the project limits.

11. Frontier Communications has 1-1.25” polypipe conduit with fiber facilities that begin 1600’ east of Lindrick Ln on the north side of SR 70 and run north outside of the project limits.

12. Frontier Communications has 1 – direct buried copper cable and 3-4” PVC conduit with fiber facilities that begin in the Frontier pull box on the north side of SR 70, 1200’ east of Lindrick Ln, and run east along the north side of SR 70 before it ends in a Frontier pedestal located on the northwest corner of the SR 70 & 225th St E intersection.

13. Frontier Communications has a hand hole on the north side of SR 70, 400’ west of the SR 70 & 213th St intersection.

14. Frontier Communications has a hand hole on the north side of SR 70, 100’ west of the SR 70 & 225th St E intersection.

15. Frontier Communications has a pedestal on the northwest intersection of SR 70 & 225th St E intersection.

16. Frontier Communications has 1 – direct buried copper cable facility, that begins in the Frontier pedestal on the northwest corner of the SR 70 & 225th St E intersection, and runs north along the west side of 225th St E.

17. Frontier Communications has 3 – direct buried copper cable facilities, that begins in the Frontier pedestal on the northwest corner of the SR 70 & 225th St E intersection, and run south, crossing SR 70, and continuing along the west side of 225th St E.

18. Frontier Communications has 3-4” PVC conduits with fiber and 3 buried copper cable facilities that begin in the Frontier pedestal on the northwest corner of the SR 70 & 225th St E intersection, and run east along the north side of SR 70 before ending in a Frontier pedestal on the west side of the CR 675 off-ramp.

19. Frontier Communications has a pedestal on the north side of SR 70, just west of the CR 675 off-ramp.

20. Frontier Communications has a hand hole on the north side of SR 70, just west of the CRF 675 off-ramp.

21. Frontier Communications has 3-4” PVC conduits with fiber and 3 direct buried copper cables that begin in the Frontier hand hole on the north side of SR 70, just west of the CR 675 off-ramp. These facilities run north along the west side of the CR 675 off-ramp and out of the project limits.

22. Frontier Communications has 1 – direct buried copper cable that begins in the Frontier hand hole on the north side of SR 70, just west of the CR 675 off ramp. This facility runs south, crossing SR 70, and continuing south along the west side of Meadow Drive Lane.

23. Frontier Communications has 2-4” PVC conduits with fiber and 2 direct buried copper cable facilities that run east and west along the north side of the CR 675 on-ramp. These facilities continue to run east along the north side of SR 70 and out of the project limits.

Lakewood Ranch Community Development Districts

1. Lakewood Ranch Community Development Districts was contacted, but never replied for the PD&E study limits.

Level 3 Communications – (Now CenturyLink)

1. Level 3 Communications (Now CenturyLink) has facilities, 12 ea. 1.25” HDPE housing FOC, that enters the project from north side of the CR 675 on ramp and those facilities continue to run east along the north side of the CR 675 on ramp until it is outside of the project limits along SR 70.

Manatee County Utility Operations

1. Manatee County has a 36” pipe listed as unknown that enters the project from the western limits and runs east along the north side of SR 70 before it ends at a water valve located on the northwest corner of the SR 70 & Lorraine Rd intersection.

2. Manatee County has 3 water valves located on the northwest corner of the SR 70 and Lorraine Rd Intersection.

3. Manatee County has a 16” PVC water line that enters the project just south of SR 70 and runs north and south along the west side of Lorraine Rd before it ends at a water valve on the northwest corner of the SR 70 & Lorraine Rd intersection.

4. Manatee County has a 36” pipe listed as unknown that enters the project north of SR 70 and runs north and south along the west side of Lorraine Rd before it ends at a water valve on the northwest corner of the SR 70 & Lorraine Rd intersection.

5. Manatee County has a water valve on the southwest corner of SR 70 & Greenbrook Blvd.

6. Manatee County has a 8” PVC water line that begins at the water valve on the southwest corner of the SR 70 & Greenbrook Blvd intersection and runs south along the west side of Greenbook Blvd.

7. Manatee County has water valve on the northwest corner of the SR 70 & Post Blvd intersection.

8. Manatee County has a water valve on the northeast corner of the SR 70 & Post Blvd intersection.

9. Manatee County has a 12” PVC water line that runs from the water valve on the southwest corner of the SR 70 & Greenbrook Blvd intersection to the water valve on the northwest corner of the SR 70 & Post Blvd intersection.

10. Manatee County has a 12” PVC water line that runs from the water valve on the northwest corner of the SR 70 & Post Blvd intersection to the water valve on the northeast corner of the SR 70 & Post Blvd intersection.

11. Manatee County has a 12” PVC water line that starts at the water valve on the northwest corner of the SR 70 & Post Blvd intersection and runs north along the west side of Post Blvd.

12. Manatee County has a water valve on the southwest corner of the SR 70 & Del Webb Blvd intersection. There is an 8” PVC water line that runs from the valve, south along the west side of Del Webb Blvd.

Myakka Communications

1. Myakka Communications was contacted and replied that they do not have any conflicts within the PD&E study limits.

Peace River Electric Coop

1. Peace River Electric Coop (PRECO) has 138kV transmission facilities that are on 115 ft. concrete poles with underbuilt distribution that has a voltage of 14.4kV and resides in a private easement. These pole lines enter the project from the western most limits and run east along the north side of SR 70 before turning north and trying in to the PRECO SR 70 substation.

2. Peace River Electric Coop has 138kV transmission facilities that are on 115 ft. concrete poles with underbuilt distribution that has a voltage of 14.4kV and resides in a private easement. These facilities begin on the northeast corner of the SR 70 & Lorraine Rd intersection where they run north along the east side of Lorraine Rd.

3. Peace River Electric Coop has three phase underground power, with a voltage of 14.4kV, that risers down off of the PRECO pole line 150' east of the SR 70 & Post Blvd intersection on the north side of SR 70 and runs south, crossing SR 70 and continuing south along the east side of Greenbrook Blvd.

4. Peace River Electric Coop has three phase underground power, with a voltage of 14.4kV, that risers down off of the PRECO pole line on the northeast corner of the SR 70 & Del Webb Blvd intersection and runs south, crossing SR 70 and continuing south along the east side of Del Webb Blvd.

5. Peace River Electric Coop has three phase underground power, with a voltage of 14.4kV, that risers down off of the PRECO pole line 1400' east of the SR 70 & Del Webb Blvd intersection, on the north side of SR 70, and runs south, crossing SR 70 and continuing south along the west side of the unnamed dirt road.

6. Peace River Electric Coop (PRECO) has 138kV transmission facilities that are on 115 ft. concrete poles with underbuilt distribution that has a voltage of 14.4kV and resides in a private easement. These pole lines run north and south, crossing SR 70 just east of the PRECO SR 70 substation.

7. Peace River Electric Coop has 14.4kV distribution facilities that are on 45' wooden poles and reside in the state right of way. These facilities begin on the north side of SR 70, directly in front of the PRECO SR 70 substation and run east, along the north side of SR 70 before turning and running south, crossing SR 70, 2400' west of 197th St E.

8. Peace River Electric Coop has 14.4kV distribution facilities that are on 45' wooden poles and reside in the state right of way. These facilities begin on the north side of SR 70, 1400' east of the SR 70 & Lindrick Ln intersection and run east, along the north side of SR 70 until it is outside of the project limits.

9. Peace River Electric Coop has 14.4kV distribution facilities that are on 45’ wooden poles and reside in the state right of way. These facilities run north and south, crossing SR 70, 1400’ east of the SR 70 & Lindrick Ln intersection.

10. Peace River Electric Coop has 14.4kV distribution facilities that are on 45’ wooden poles and reside in the state right of way. These facilities run north and south, crossing SR 70, 1500’ east of the SR 70 & 213th St E intersection.

11. Peace River Electric Coop has three phase underground power, with a voltage of 14.4kV, that comes off of the PRECO pole line on the northwest corner of the SR 70 & 225th St E intersection and runs north along the west side of 225th St E.

12. Peace River Electric Coop has three phase underground power, with a voltage of 14.4kV, that comes off of the PRECO pole line on the northwest corner of the SR 70 & 225th St E intersection and runs south, crossing SR 70, along the west side of 225th St E.

13. Peace River Electric Coop has 14.4kV distribution facilities that are on 45’ wooden poles and reside in the state right of way. These facilities begin on the southwest corner of the SR 70 & Meadow Dove Lane intersection and run north, crossing SR 70, along the west side of the CR 675 off-ramp.

14. Peace River Electric Coop has three phase underground power, with a voltage of 14.4kV, that comes off of the PRECO pole line on the southwest corner of the SR 70 & Meadow Dove Lane intersection and runs south along the west side of Meadow Dove Lane.

TECO Peoples Gas

1. TECO Peoples Gas has an 8” Steel gas line that runs north and south along the west side of Lorraine Rd.

2. TECO Peoples Gas has a 4” PE gas line that enters the project from the western limits and runs east along the south side SR 70, where it ties in to the 8” steel gas line that runs north and south along the west side of Lorraine Rd.

3. TECO Peoples Gas has a 4” PE gas line that runs north along the east side of Greenbrook Blvd. before it enters the project limits and runs east along the south side of SR 70 before it turns north, crosses SR 70, and ends 1,300 ft. west of Uihlein Rd. (Sta. 585+20)

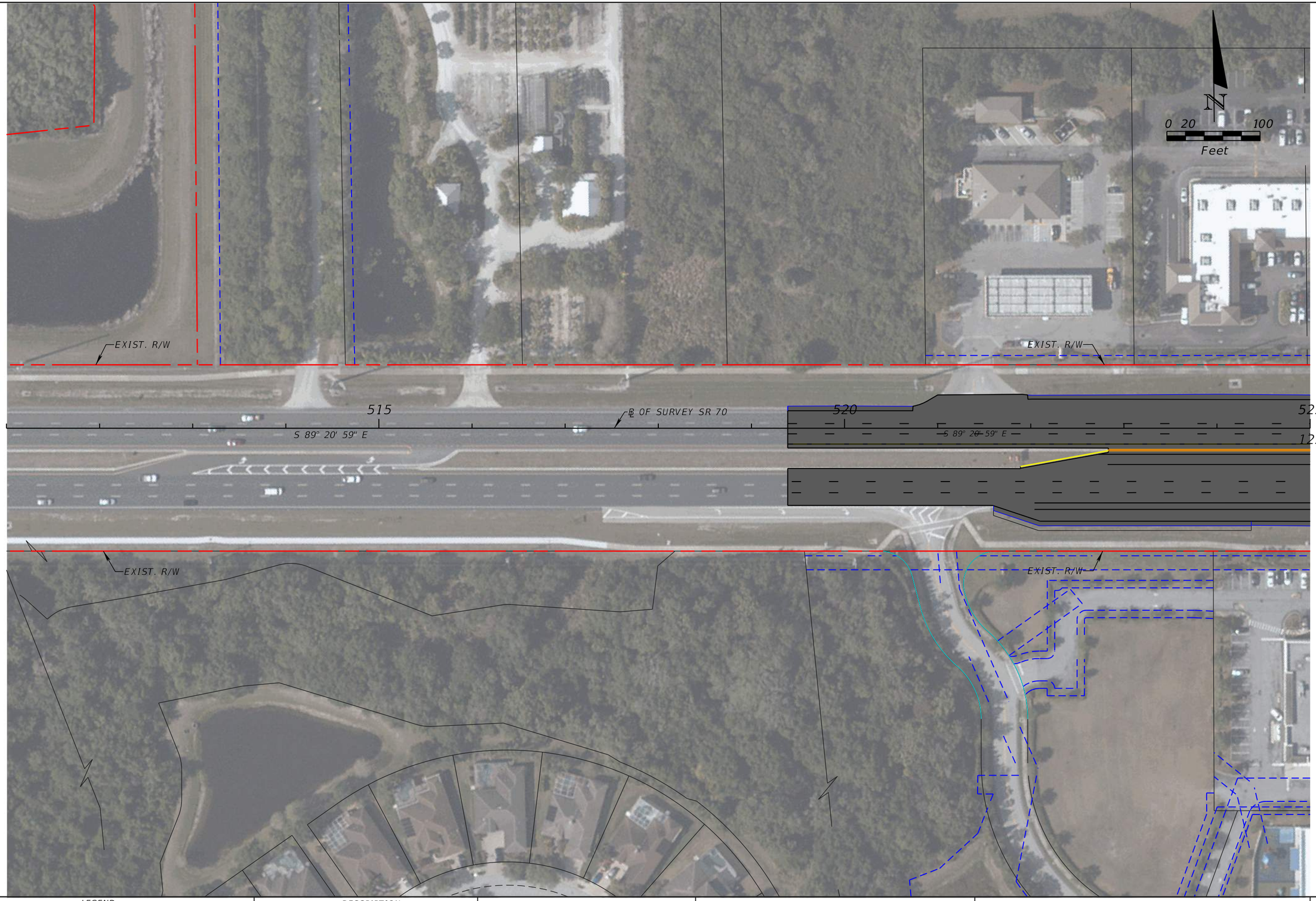
Uniti Fiber

1. Uniti Fiber has 2 – 1.25” HDPE fiber optic cables that run south along the east side of Post Blvd. The fiber optic cables then enter the project site on the northeast corner of the SR 70 & Post Blvd intersection where they turn and run east along the north side of SR 70 before turning and running north along an unnamed road, 1700’ east of Uihlein Rd, and out of the project limits.

APPENDIX C

PREFERRED ALTERNATIVE

CONCEPT PLANS



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

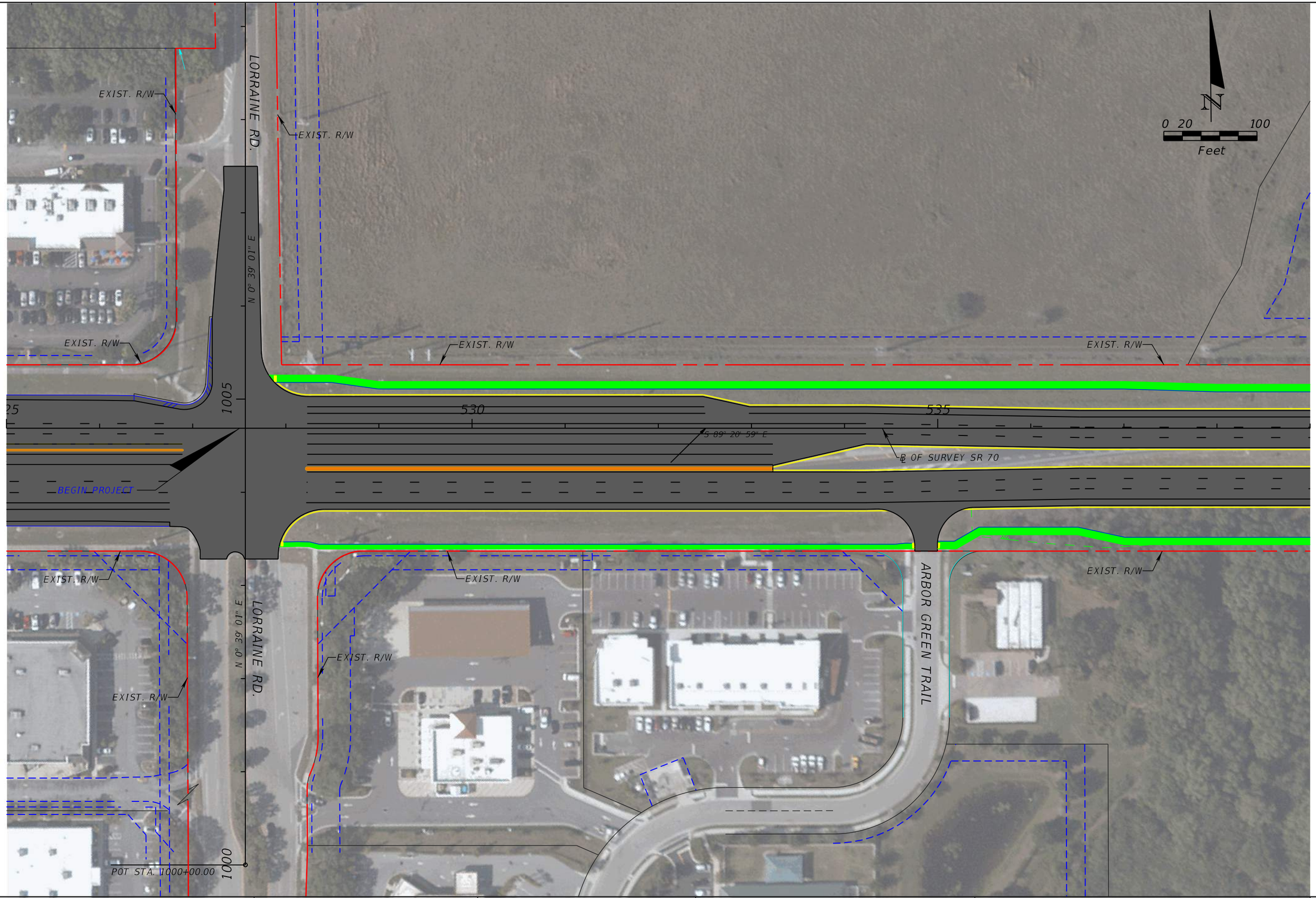
Kisinger Campo & Associates Corp.
201 E. Franklin Street, Suite 400
Tampa, Florida 33602
Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (1)
STA. 119+39 TO STA. 125+00

SHEET NO.



LEGEND		DESCRIPTION
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PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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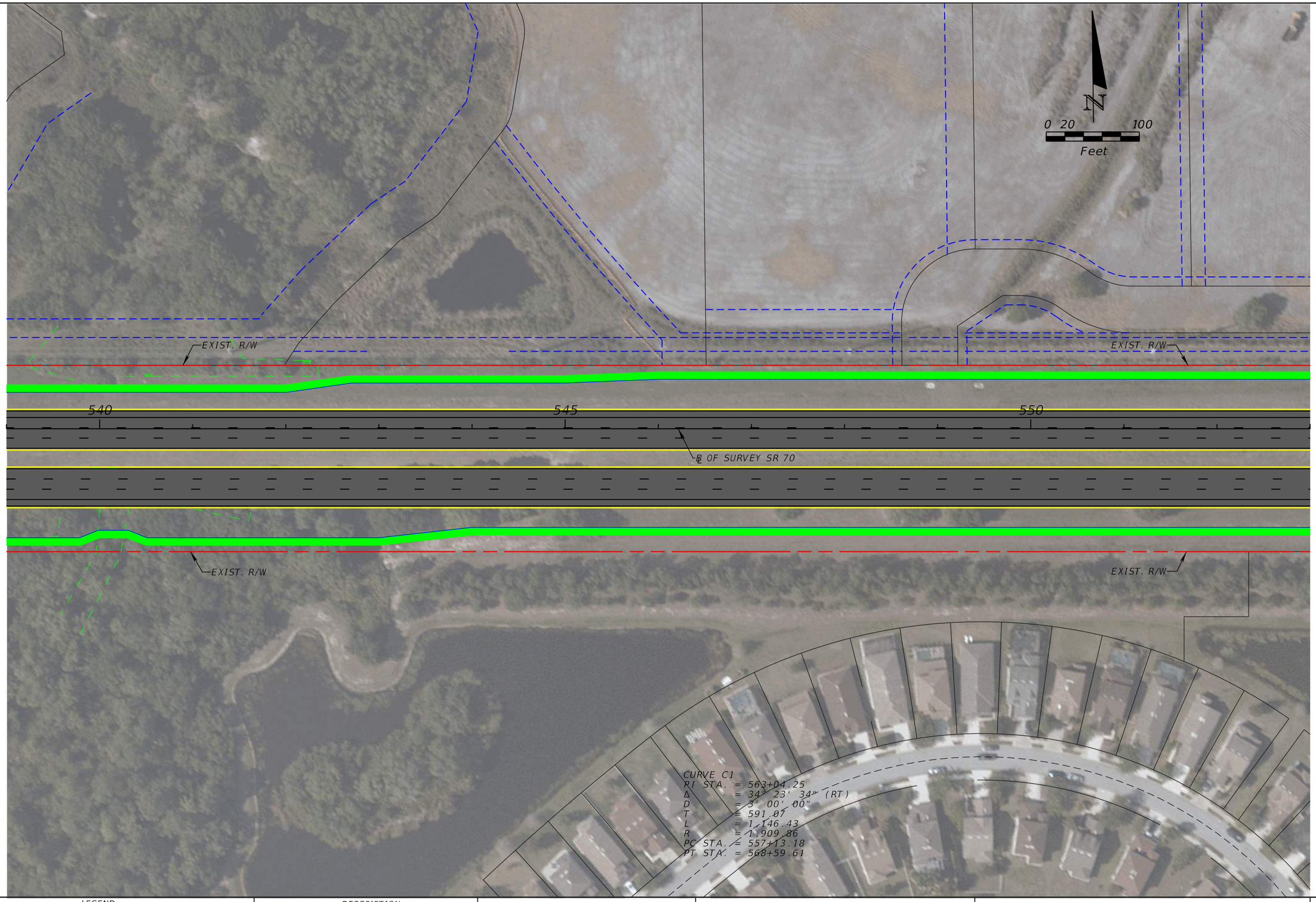
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (2)
STA. 125+00 TO STA. 139+00

SHEET NO.



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EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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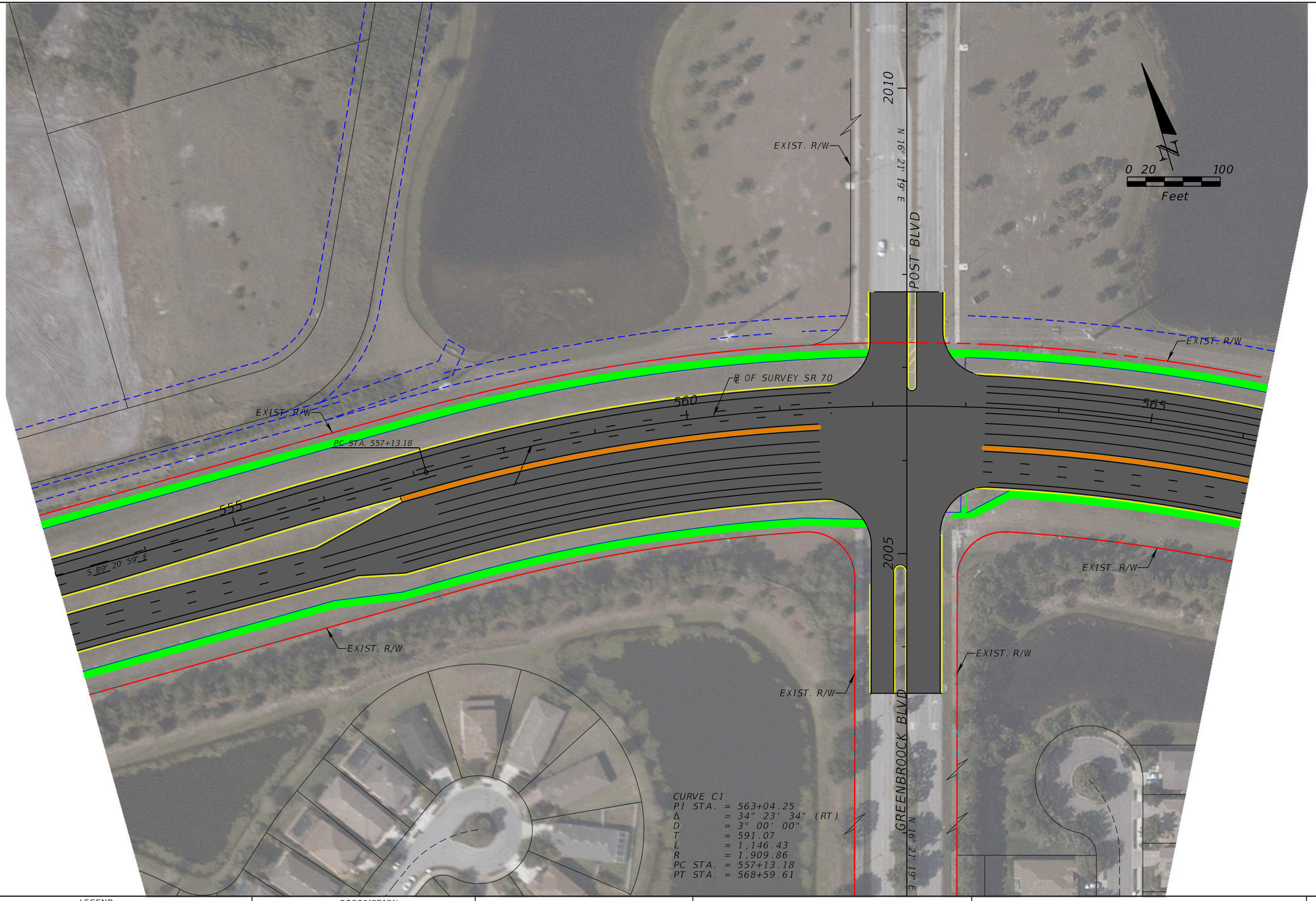
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (3)
STA. 139+00 TO STA. 153+00

SHEET NO.



LEGEND		DESCRIPTION
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PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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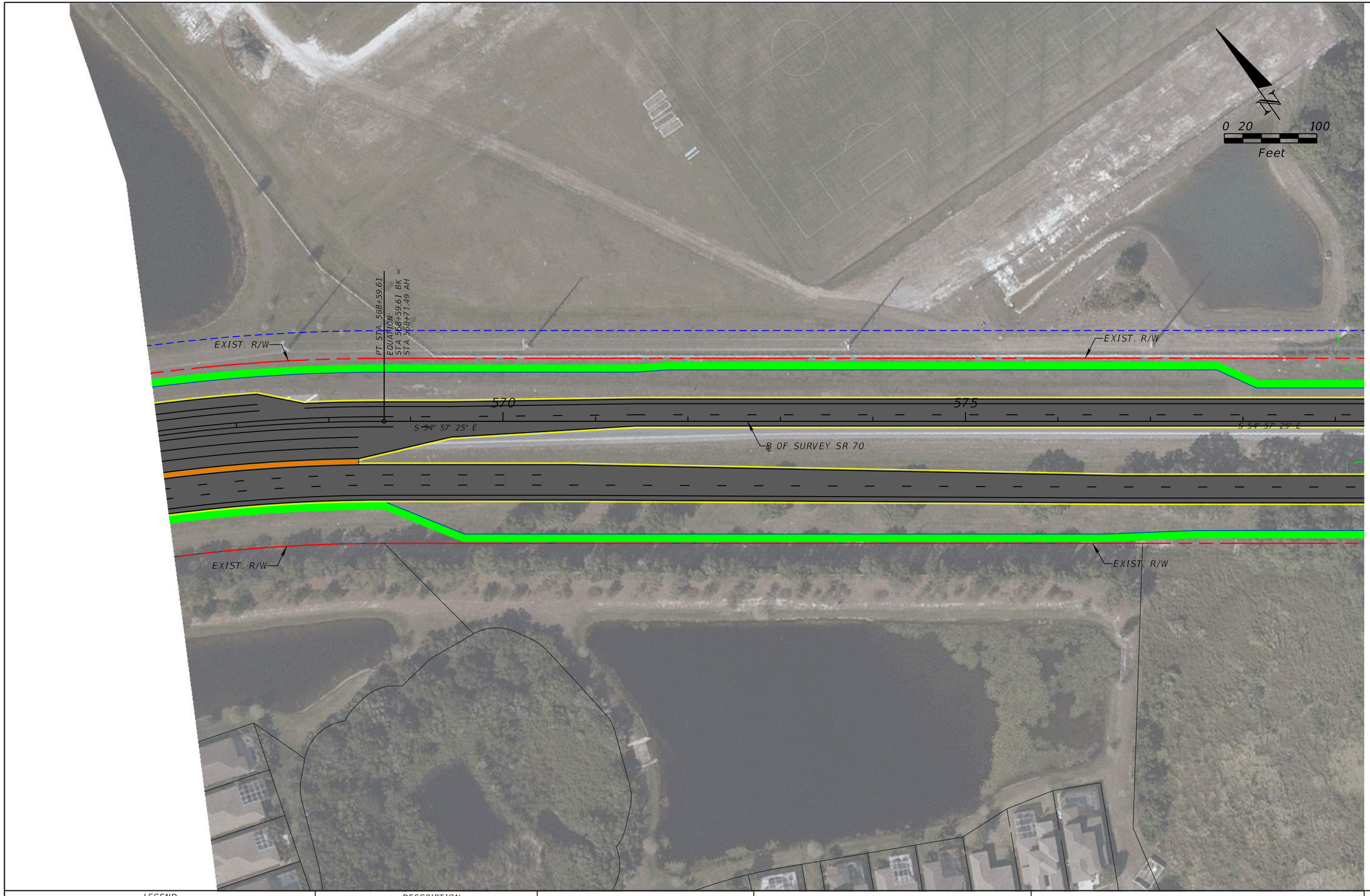
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (4)
STA. 153+00 TO STA. 166+00

SHEET NO.



LEGEND		DESCRIPTION
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PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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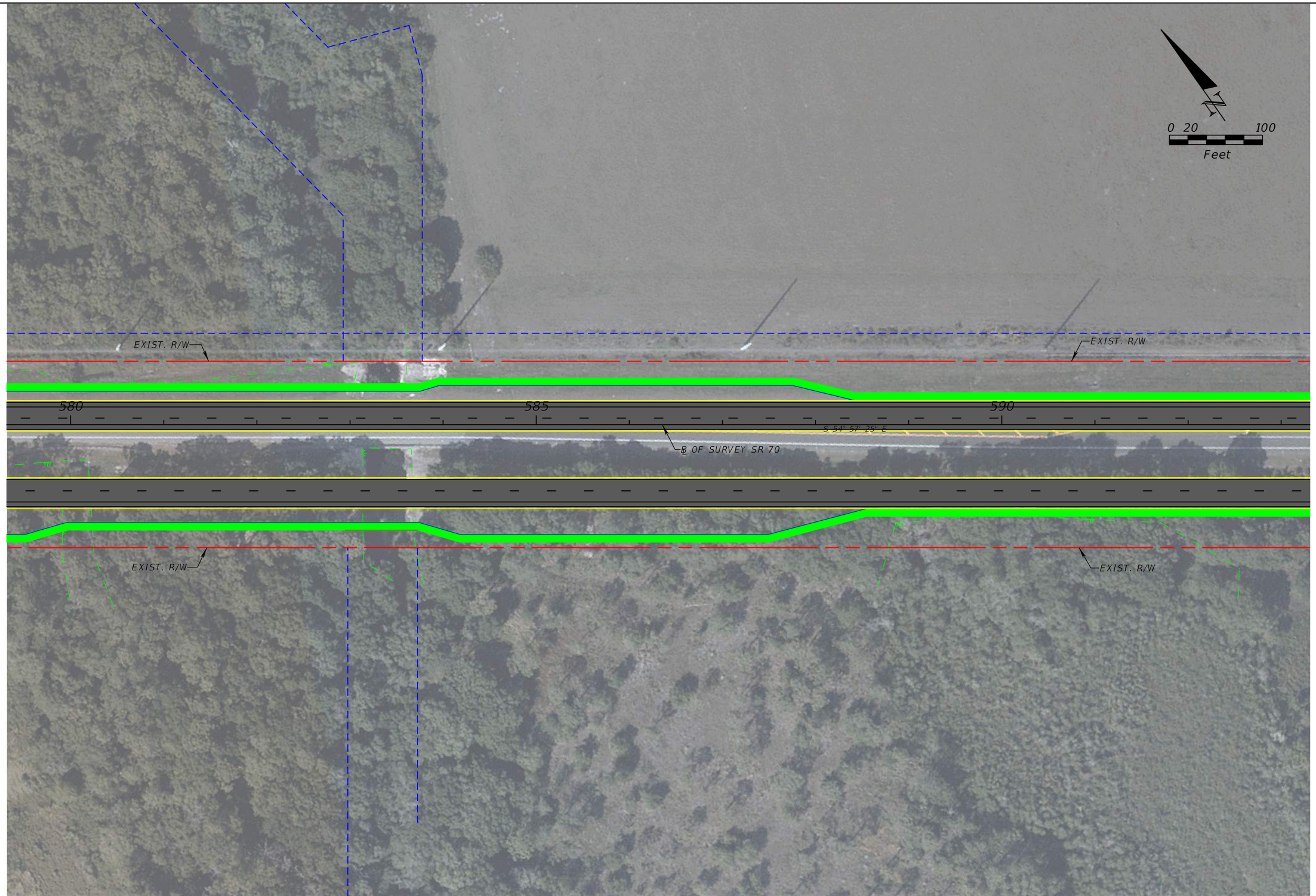
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (5)
STA. 166+00 TO STA. 179+00

SHEET NO.



LEGEND		DESCRIPTION
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PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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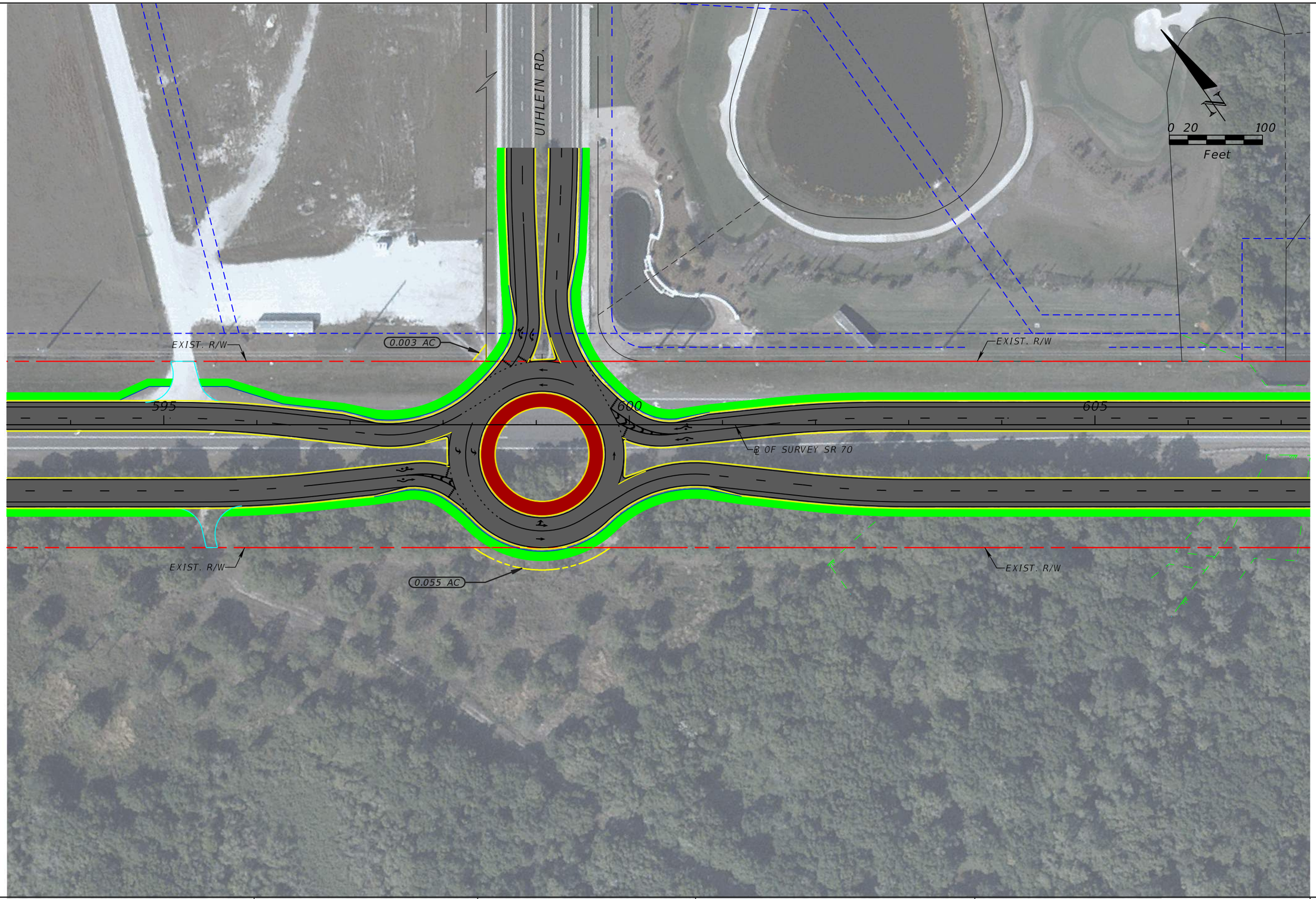
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (6)
STA. 179+00 TO STA. 193+00

SHEET NO.



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PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (7)
STA. 193+00 TO STA. 207+00

SHEET NO.

LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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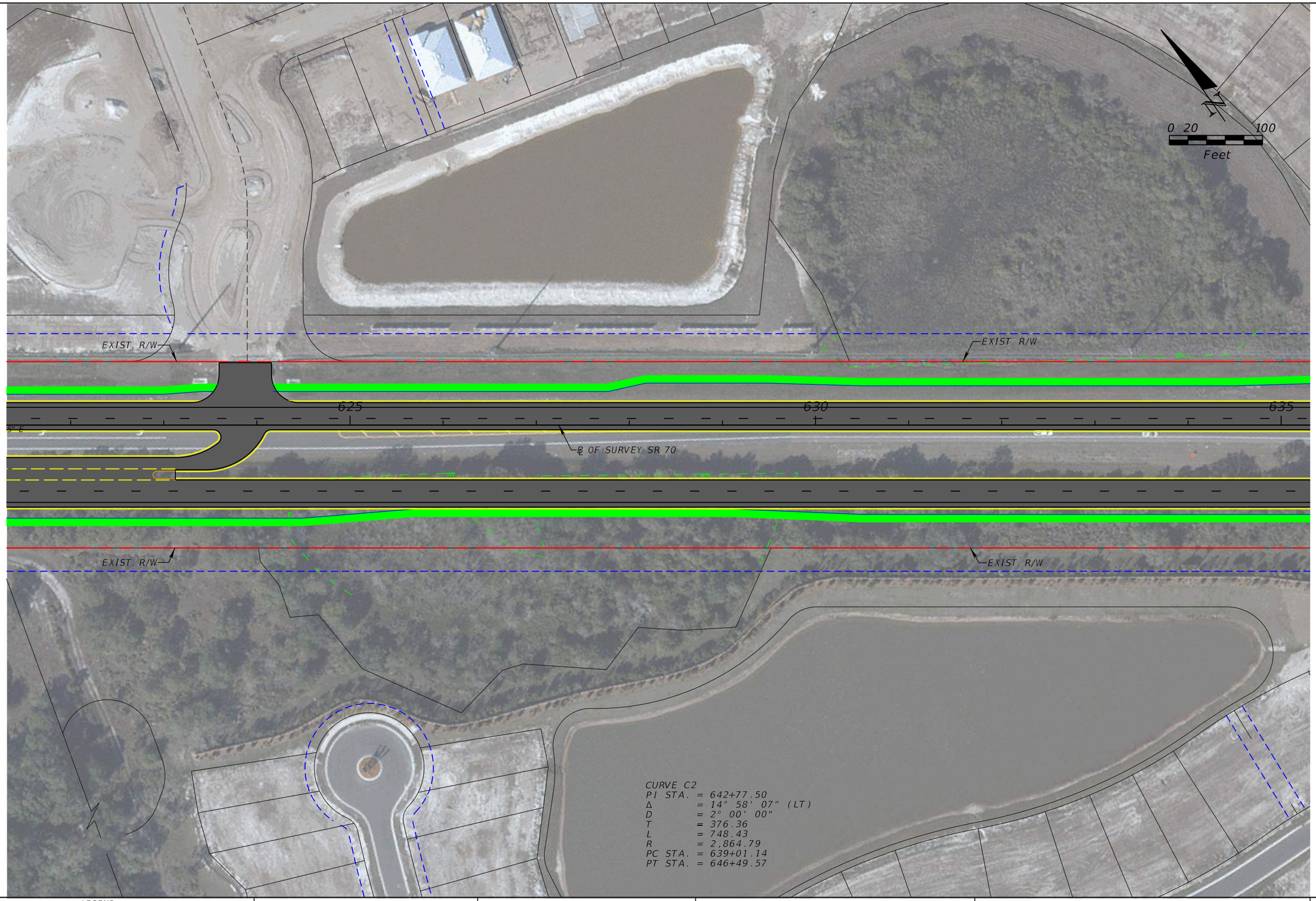
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (8)
STA. 207+00 TO STA. 221+00

SHEET NO.



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PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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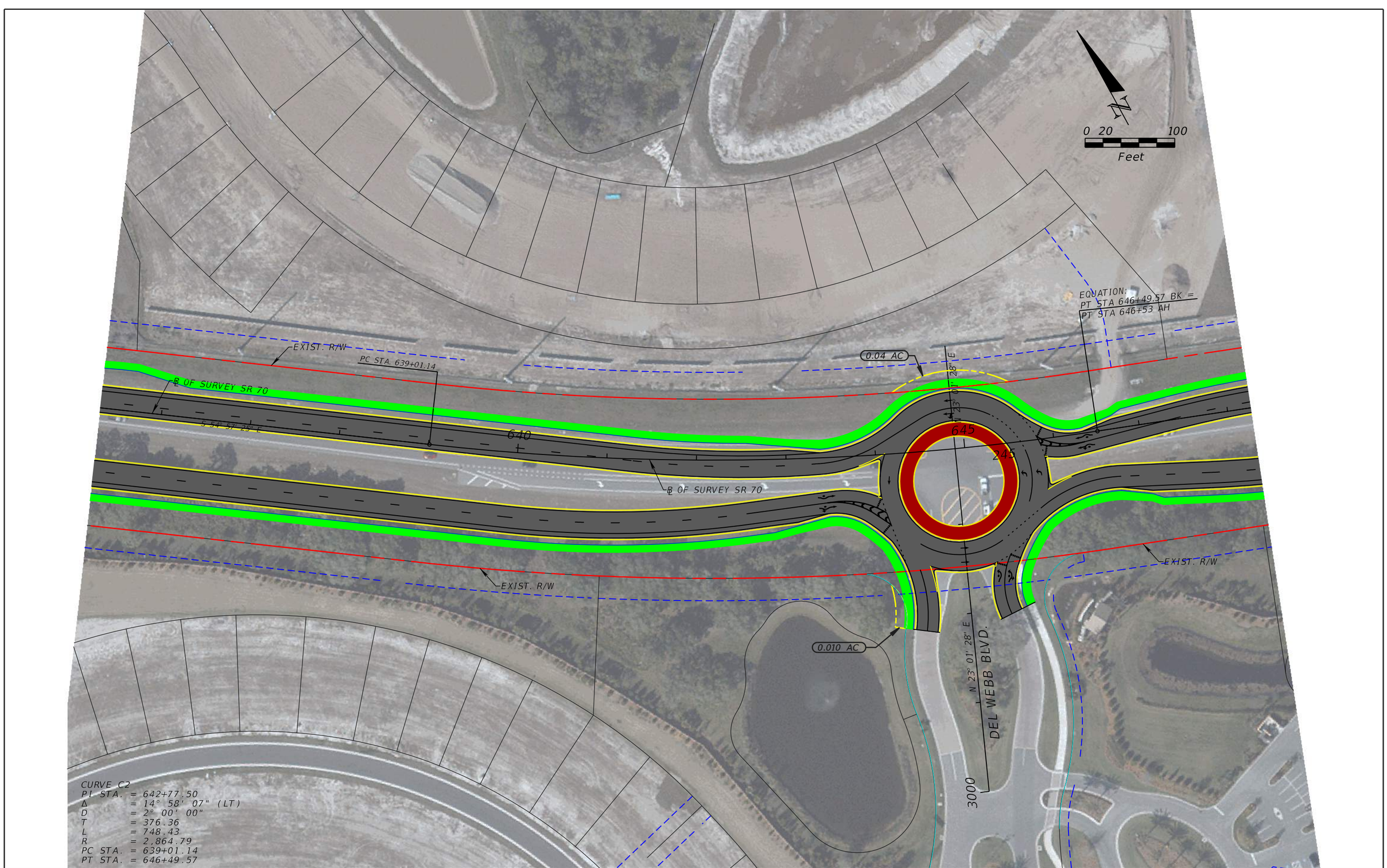
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (9)
STA. 221+00 TO STA. 235+00

SHEET NO.



LEGEND		DESCRIPTION
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PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (10)
STA. 235+00 TO STA. 248+00

SHEET NO.

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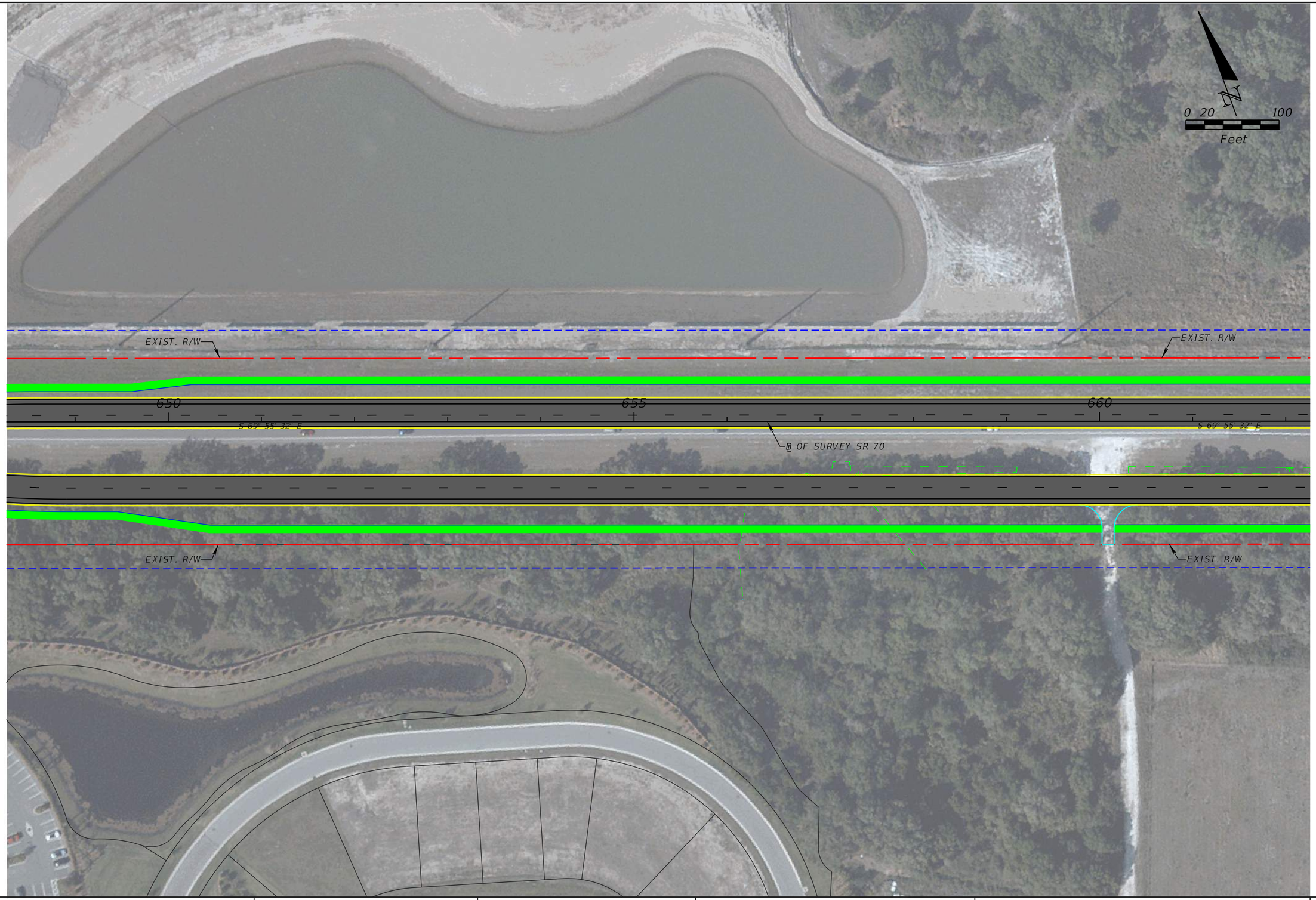

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EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (11)
STA. 248+00 TO STA. 262+00

SHEET NO.

LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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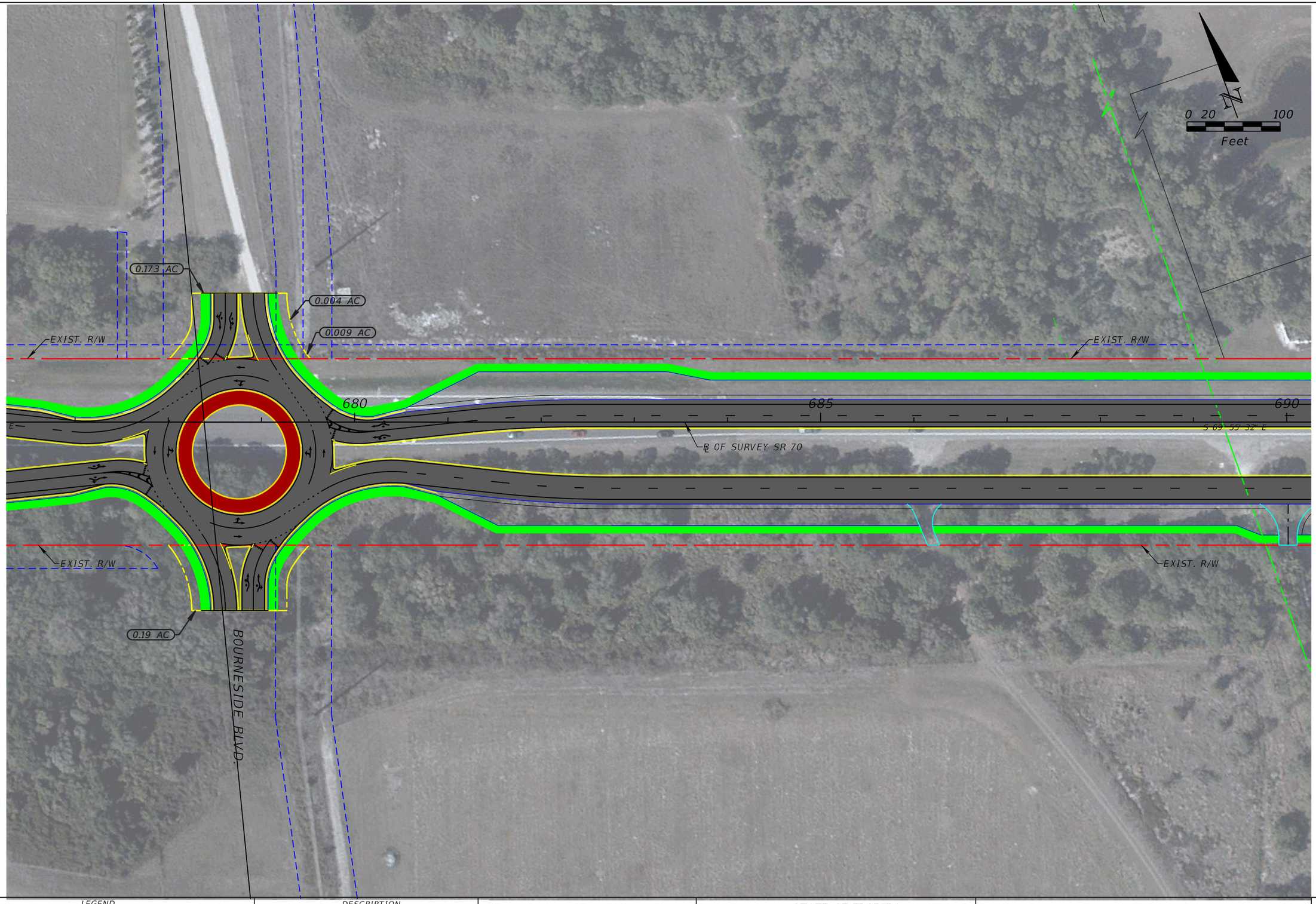
Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (12)
STA. 262+00 TO STA. 276+00

SHEET NO.



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

Kisinger Campo & Associates Corp.
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Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (13)
STA. 276+00 TO STA. 290+00

SHEET NO.

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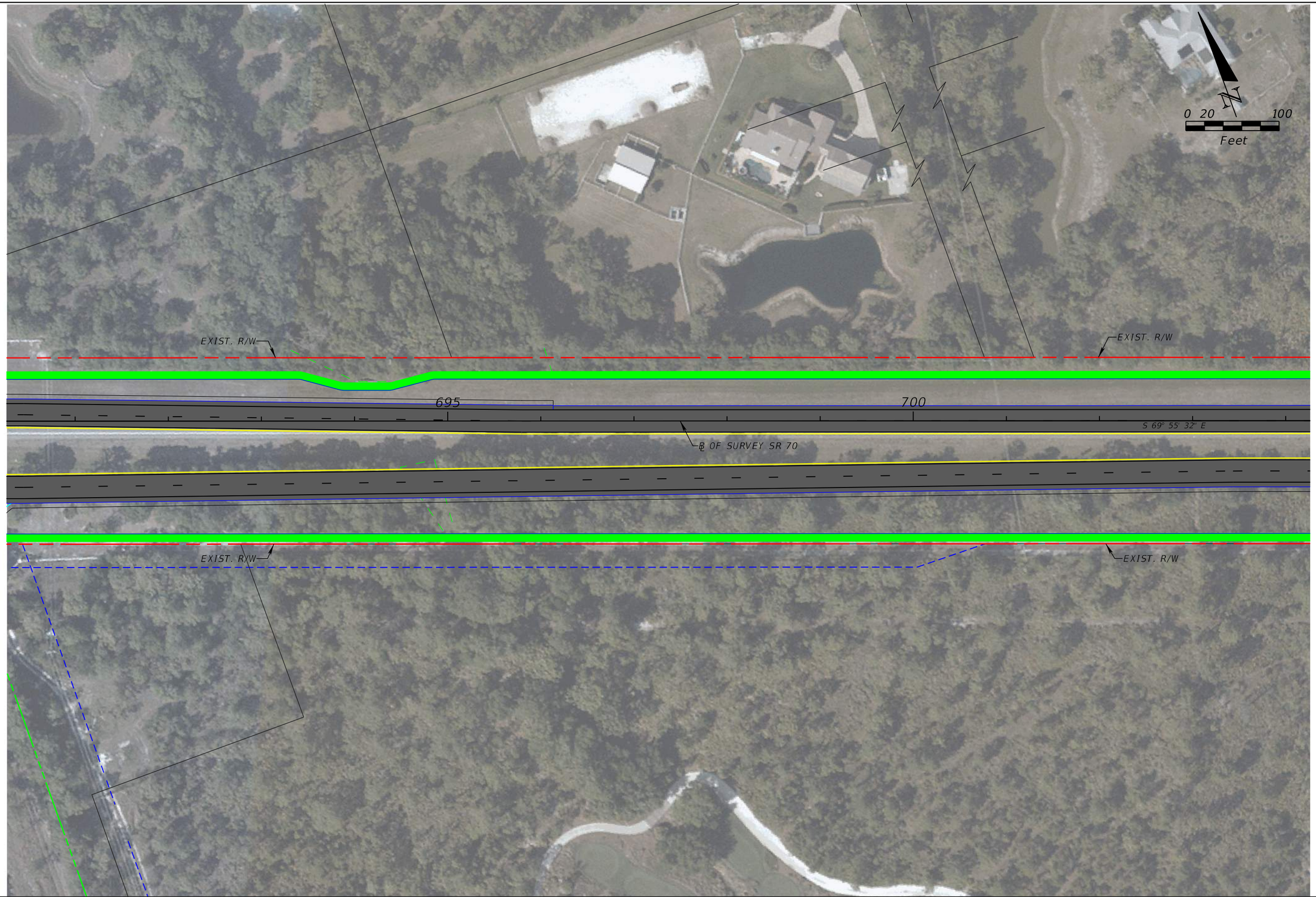

LEGEND

- EXISTING R/W LINE
- PROPOSED R/W LINE
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED ROADWAY
- TRAFFIC SEPARATOR
- ROUNDABOUT APRON
- PROPOSED SIDEWALK

DESCRIPTION

DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.

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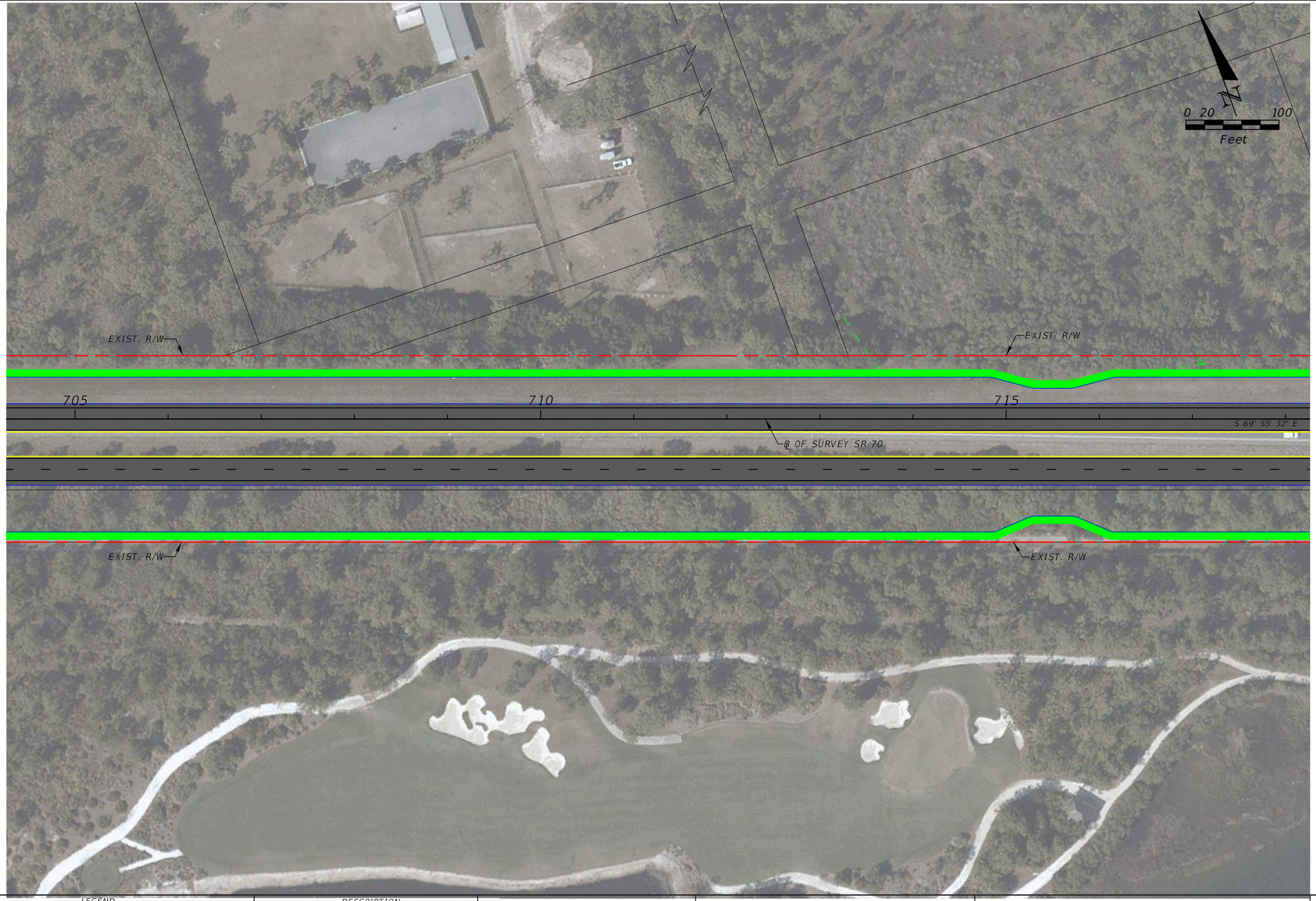
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (14)
STA. 290+00 TO STA. 304+00

SHEET NO.



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (15)
STA. 304+00 TO STA. 318+00

SHEET NO.

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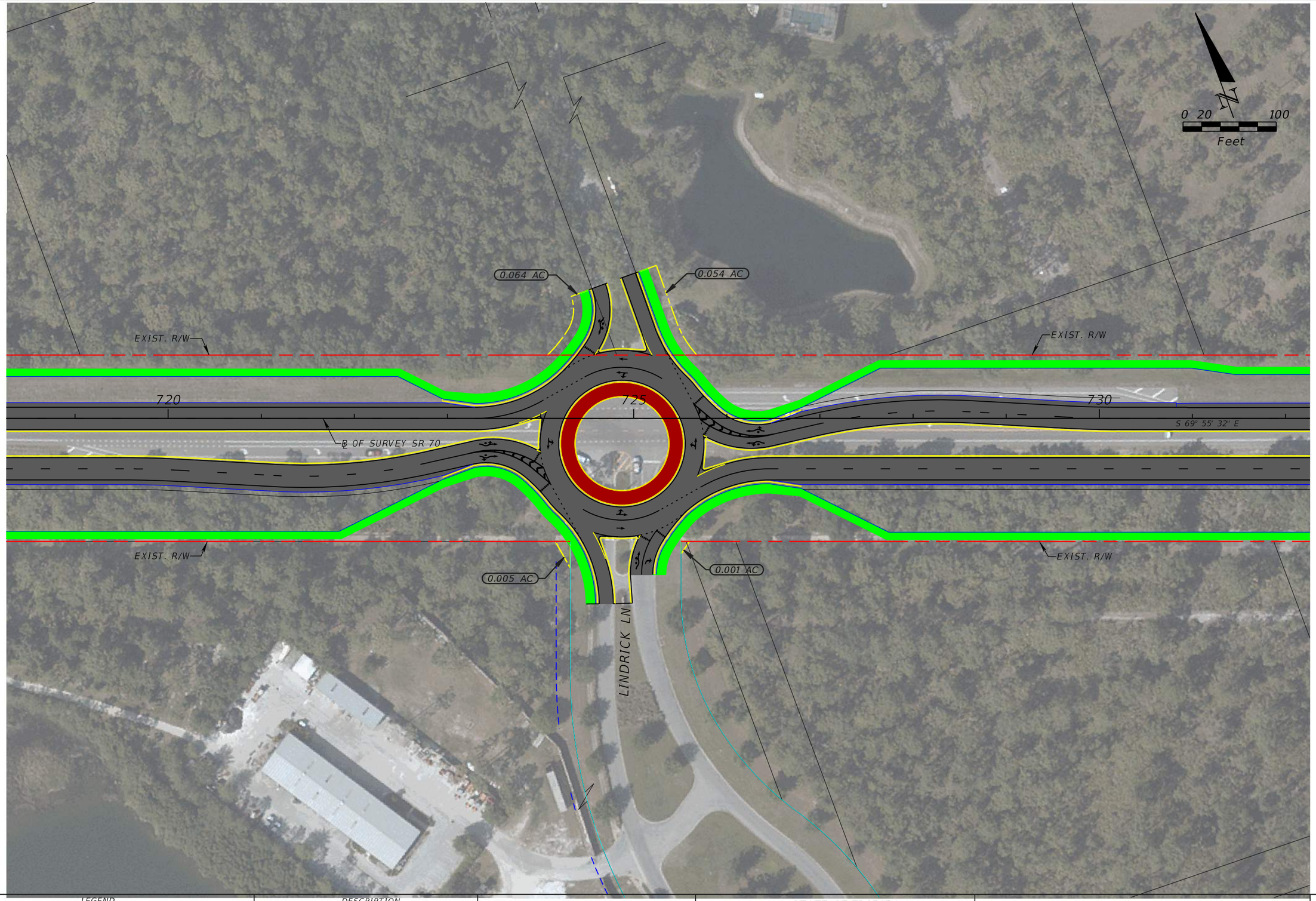

LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (16)
STA. 318+00 TO STA. 332+00

SHEET NO.

LEGEND

- EXISTING R/W LINE
- PROPOSED R/W LINE
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED ROADWAY
- TRAFFIC SEPARATOR
- ROUNDABOUT APRON
- PROPOSED SIDEWALK

DESCRIPTION

DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.

Kisinger Campo & Associates Corp.
201 E. Franklin Street, Suite 400
Tampa, Florida 33602
Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (17)
STA. 332+00 TO STA. 346+00

SHEET NO.

LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

Kisinger Campo & Associates Corp.
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Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

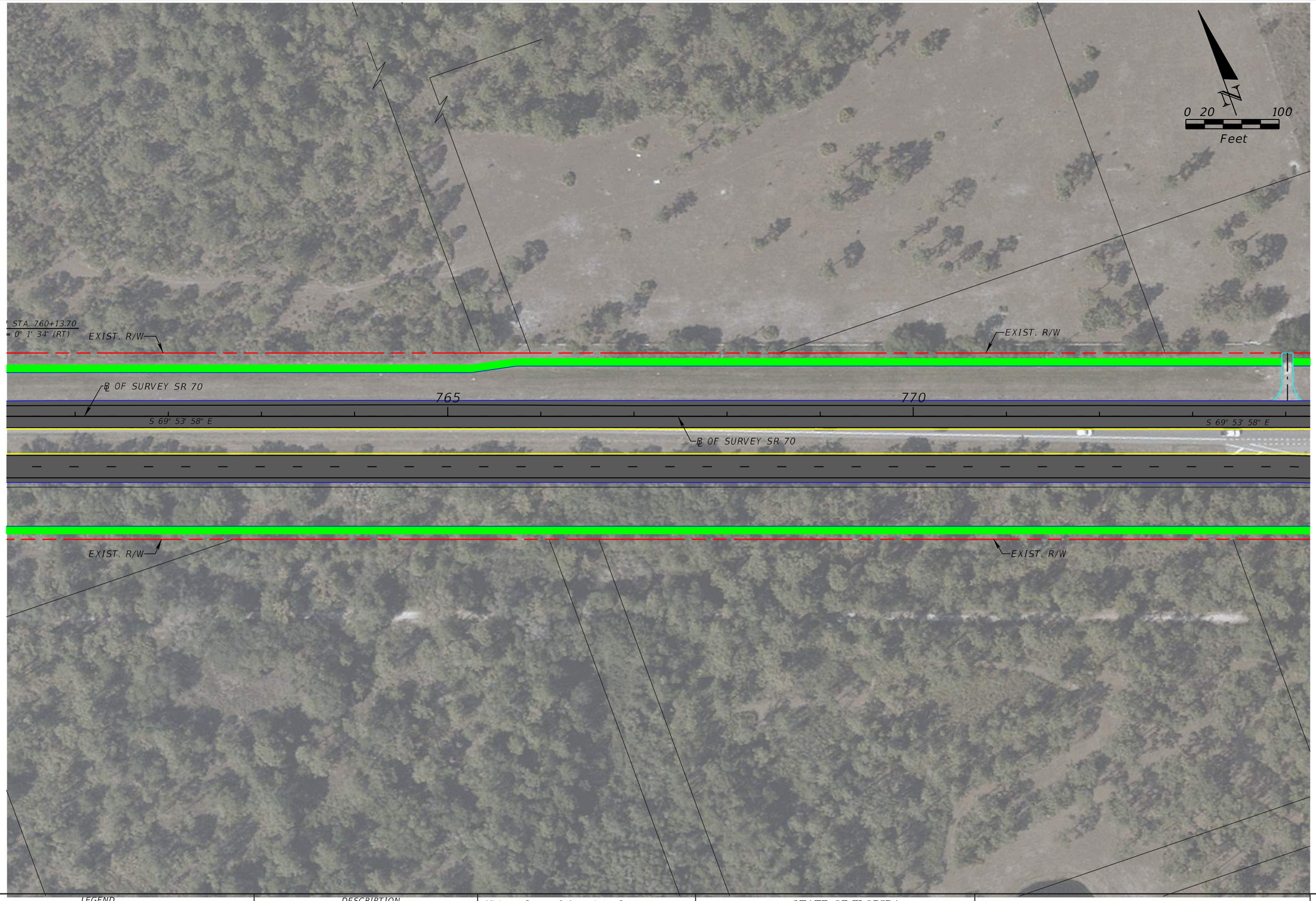
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (18)
STA. 346+00 TO STA. 360+00

SHEET NO.

jmera 4/26/2019 9:45:58 AM M:\414506232O1\roadway\For PD&E-Subs\PLANRD_Subs.dgn



LEGEND		
EXISTING R/W LINE		PROPOSED ROADWAY
PROPOSED R/W LINE		TRAFFIC SEPARATOR
PROPERTY LINE		ROUNDABOUT APRON
EASEMENT LINE		PROPOSED SIDEWALK

DESCRIPTION

DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.

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Tampa, Florida 33602
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Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

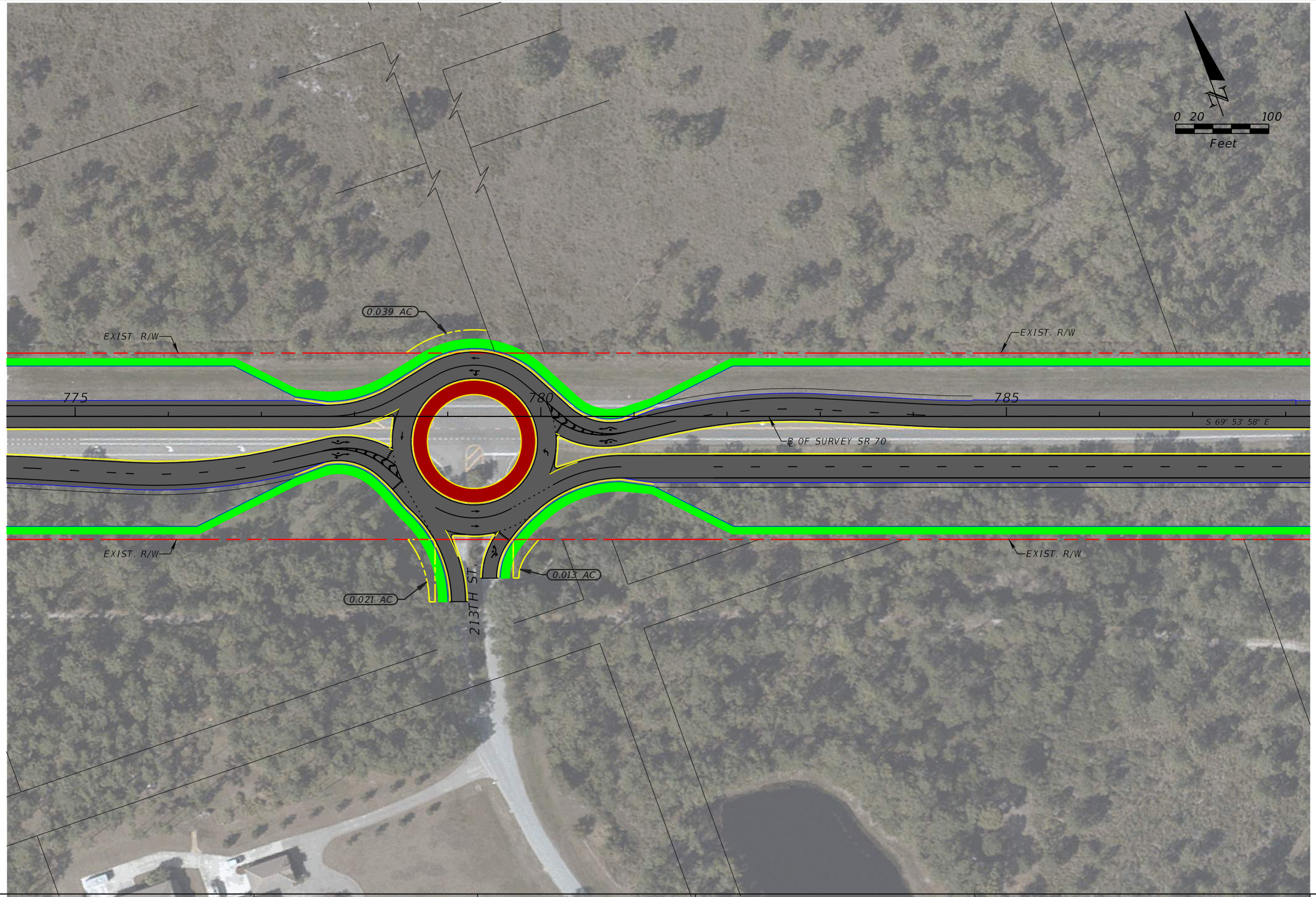
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (19)
STA. 360+00 TO STA. 374+00

SHEET NO.

jmera 4/26/2019 9:46:02 AM M:\41450623201\roadway\For PD&E-Subs\PLANRD_Subs.dgn



LEGEND			DESCRIPTION
EXISTING R/W LINE		PROPOSED ROADWAY	
PROPOSED R/W LINE		TRAFFIC SEPARATOR	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPERTY LINE		ROUNDABOUT APRON	
EASEMENT LINE		PROPOSED SIDEWALK	

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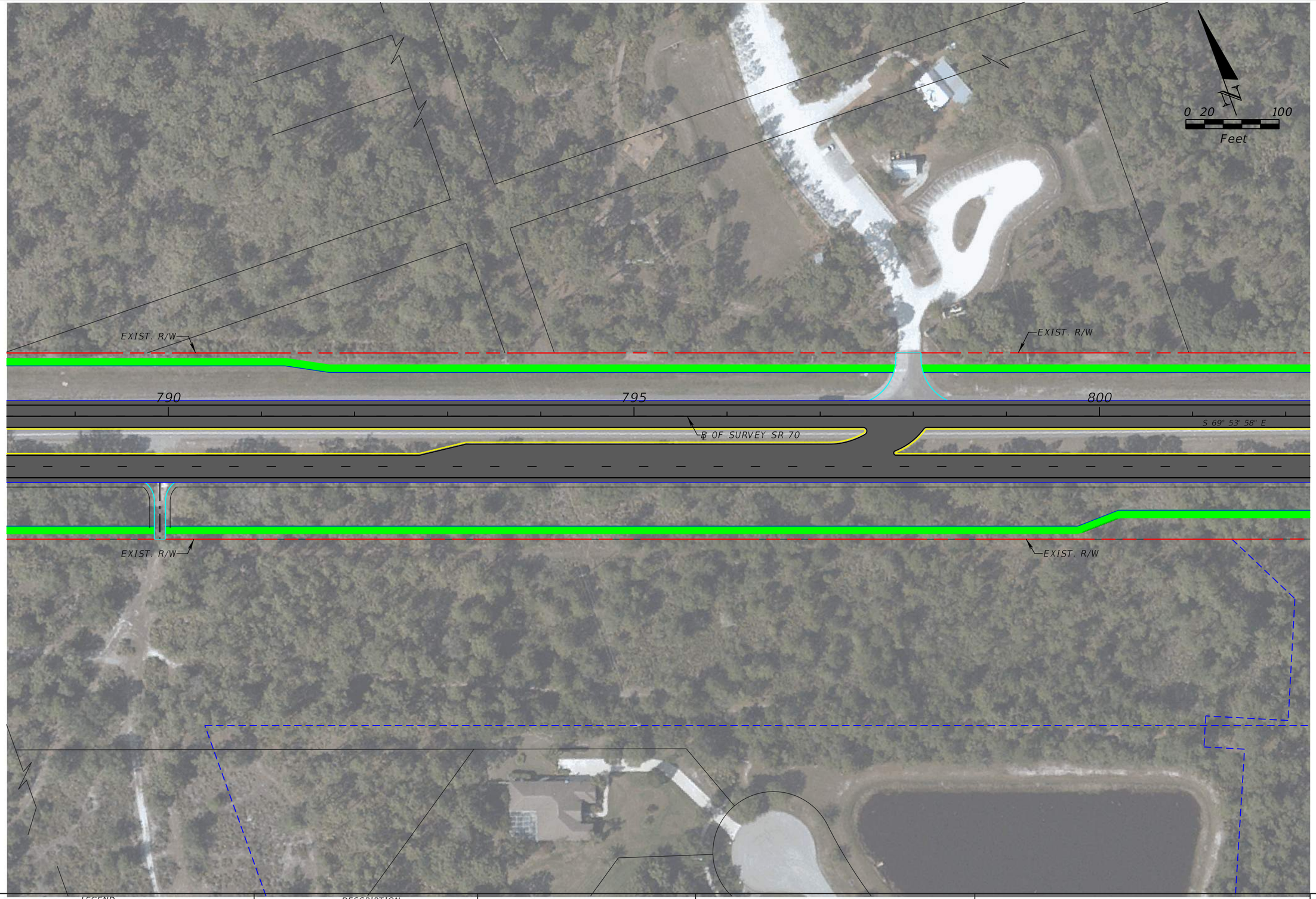
Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (20)
STA. 374+00 TO STA. 388+00

SHEET NO.



LEGEND

- EXISTING R/W LINE
- PROPOSED R/W LINE
- PROPERTY LINE
- EASEMENT LINE
- PROPOSED ROADWAY
- TRAFFIC SEPARATOR
- ROUNDABOUT APRON
- PROPOSED SIDEWALK

DESCRIPTION

DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.

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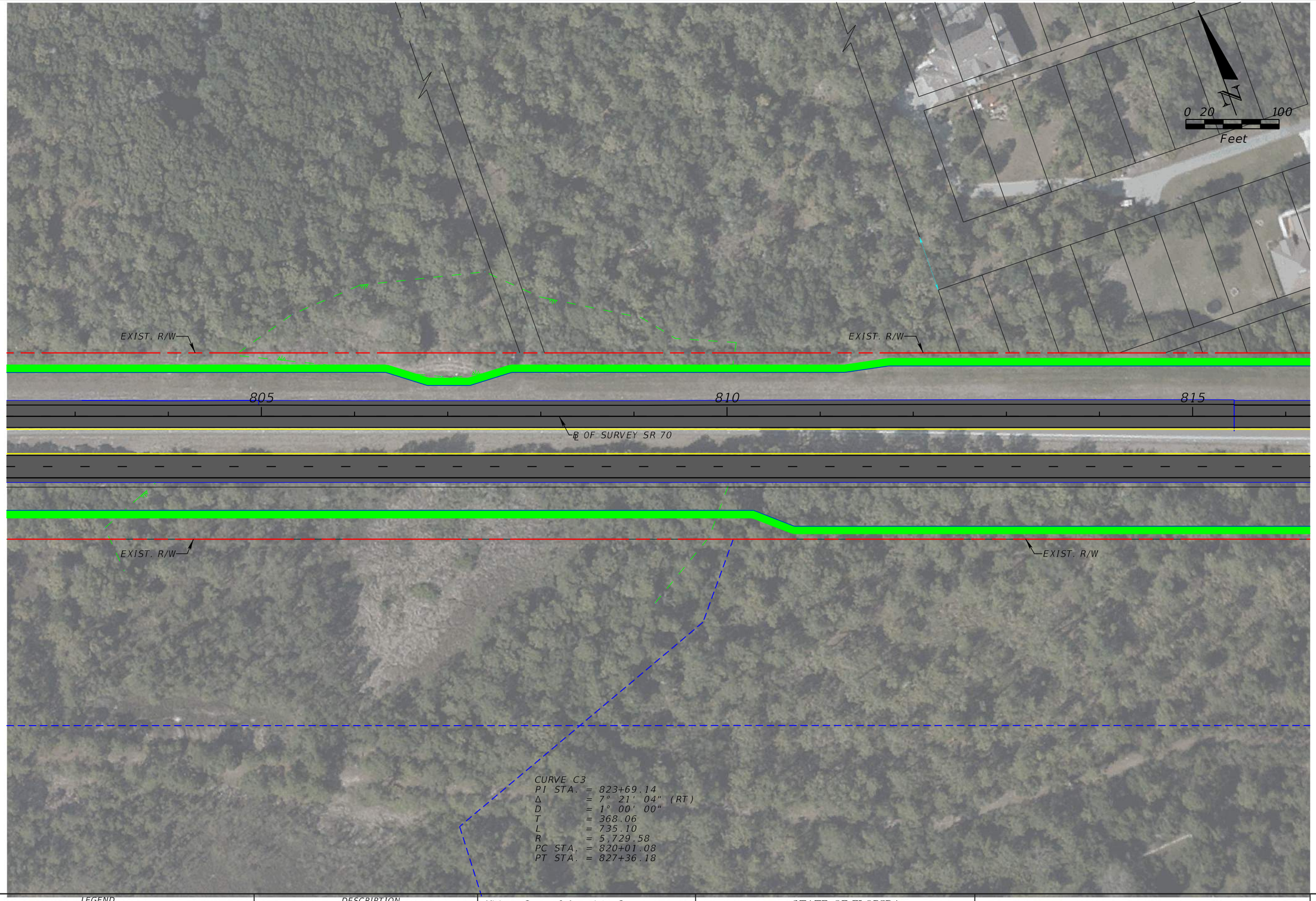
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (21)
STA. 388+00 TO STA. 402+00

SHEET NO.



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

Kisinger Campo & Associates Corp.
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Florida Certificate of Authorization No. 02317
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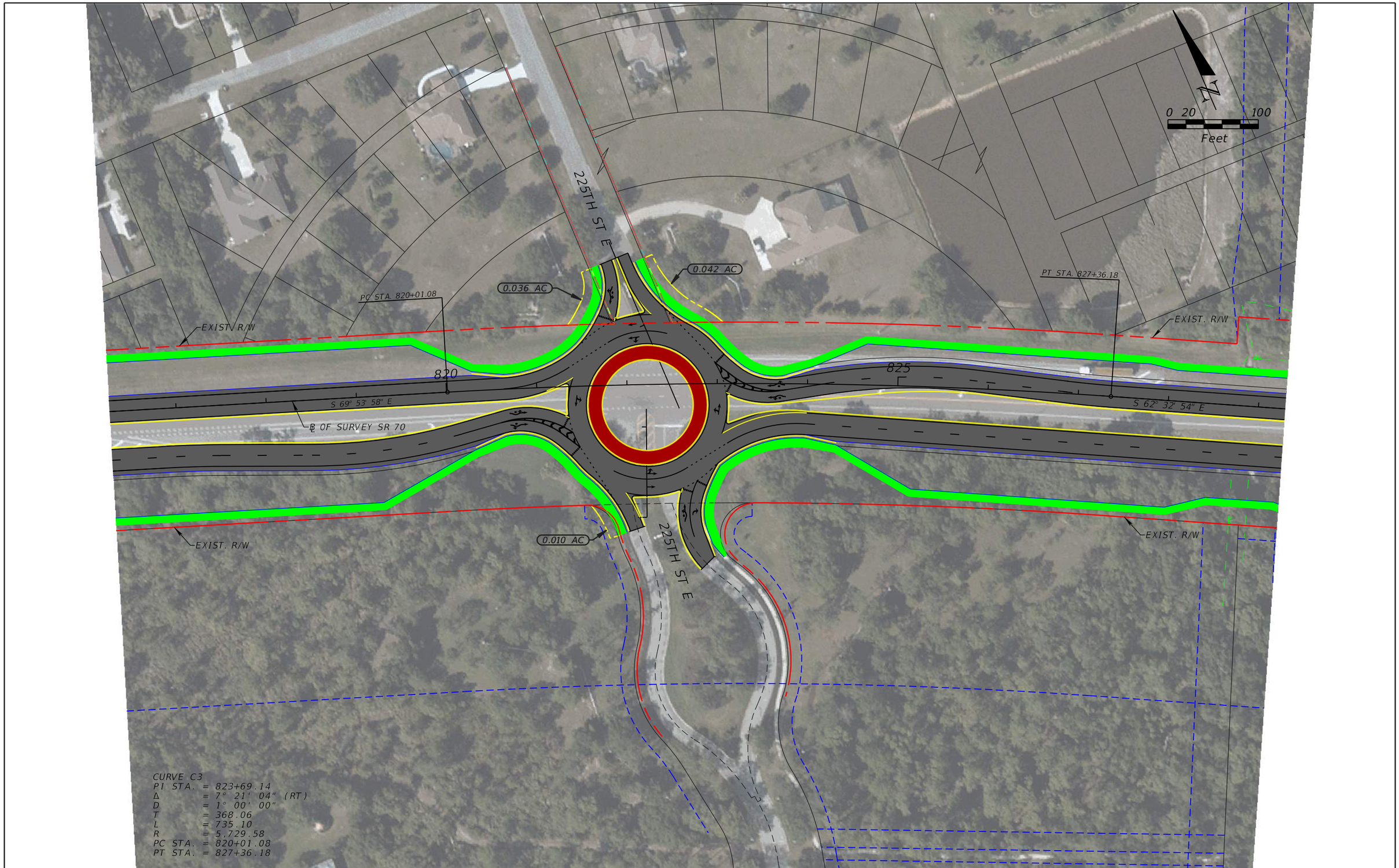
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (22)
STA. 402+00 TO STA. 416+00

SHEET NO.



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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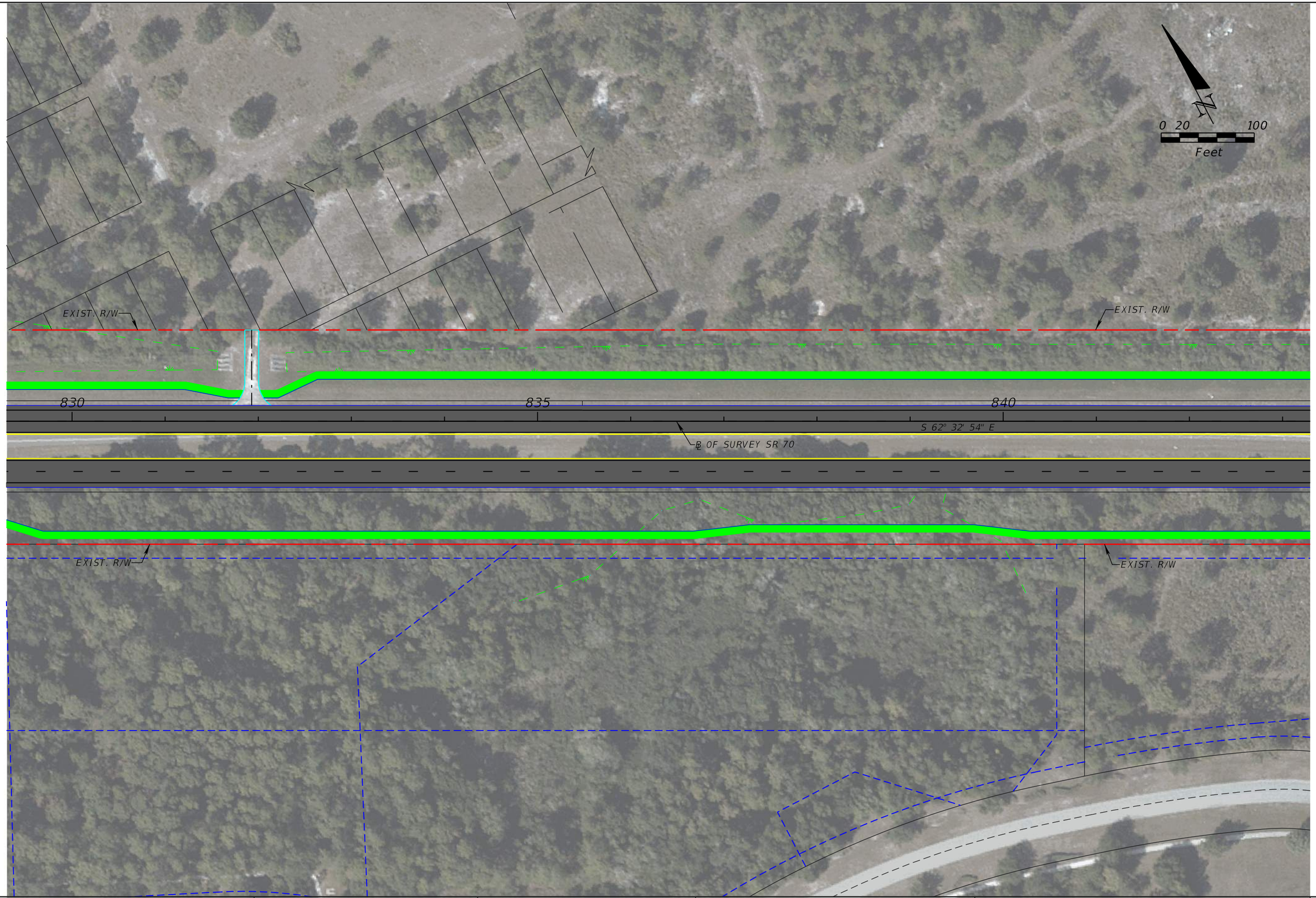
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (23)
STA. 416+00 TO STA. 429+00

SHEET NO.



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

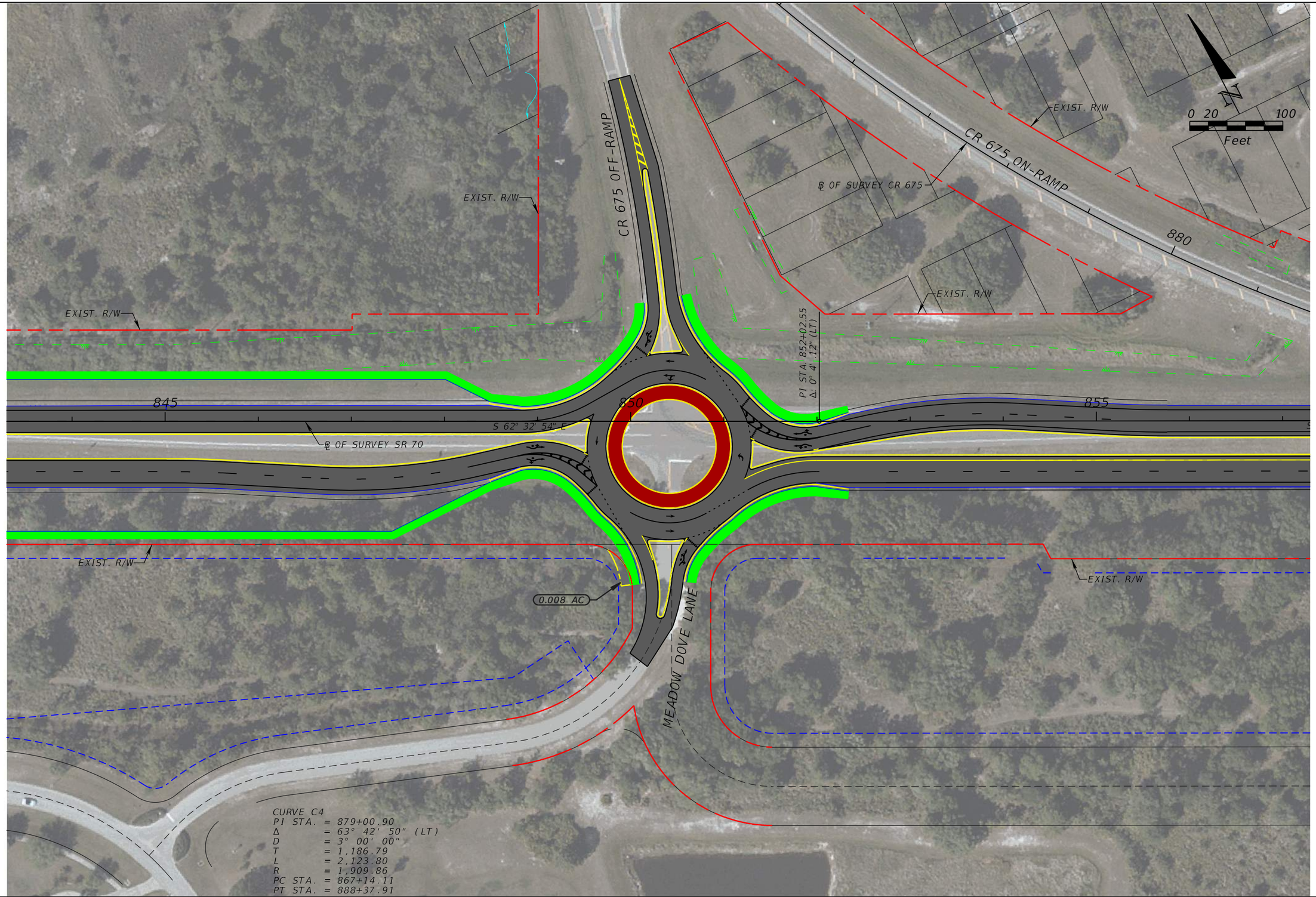
Kisinger Campo & Associates Corp.
201 E. Franklin Street, Suite 400
Tampa, Florida 33602
Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (24)
STA. 429+00 TO STA. 443+00

SHEET NO.



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

Kisinger Campo & Associates Corp.
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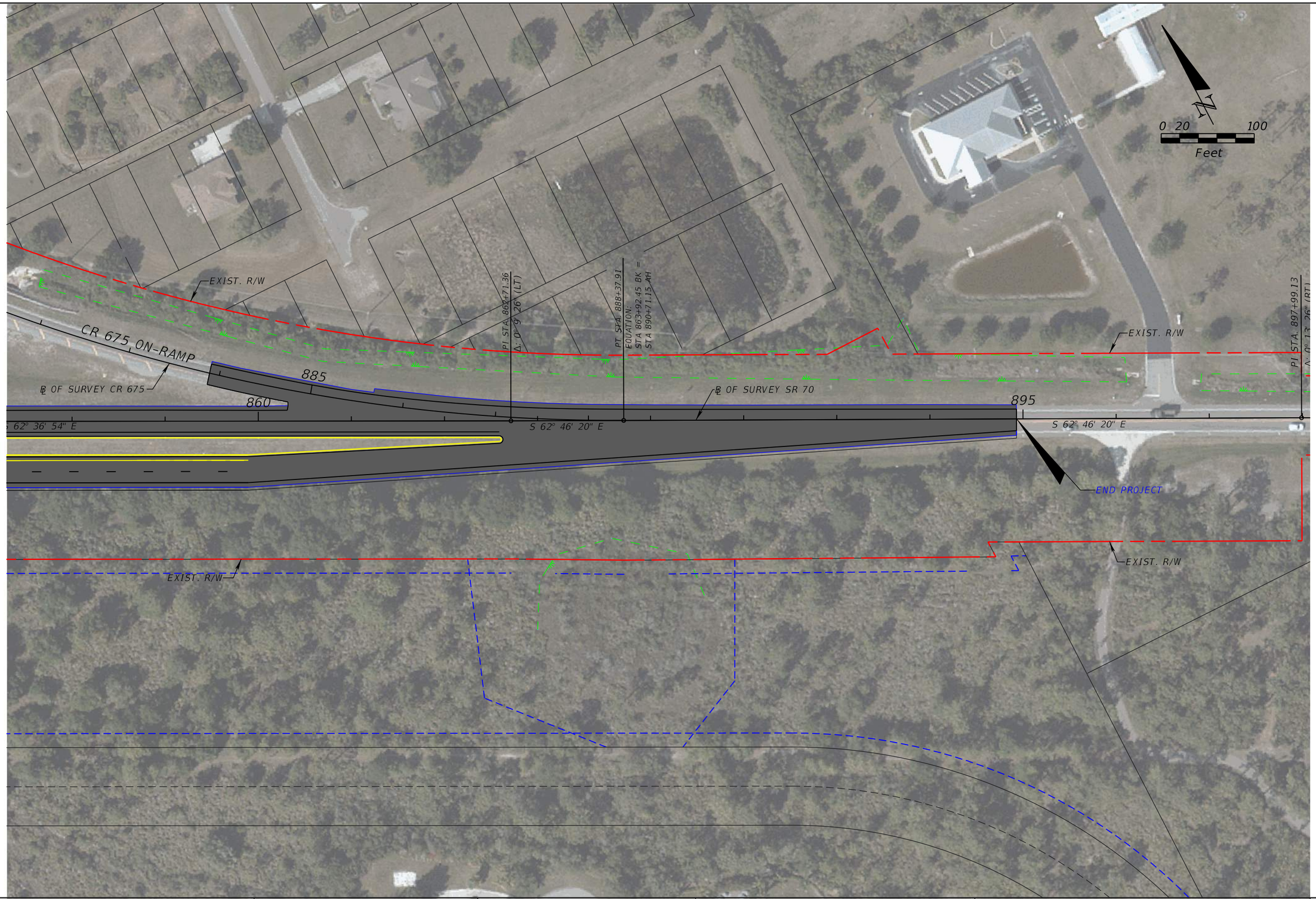
Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez-Cedeno, P.E.
P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (25)
STA. 443+00 TO STA. 457+00

SHEET NO.



LEGEND		DESCRIPTION
EXISTING R/W LINE	PROPOSED ROADWAY	DRAFT- SUBJECT TO CHANGE- CONCEPTUAL LEVEL GRAPHICS FOR PLANNING PURPOSES ONLY. NOT INTENDED FOR DESIGN OR CONSTRUCTION.
PROPOSED R/W LINE	TRAFFIC SEPARATOR	
PROPERTY LINE	ROUNDABOUT APRON	
EASEMENT LINE	PROPOSED SIDEWALK	

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P.E. No.: 74754

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 70	MANATEE	414506-2-32-01

CONCEPT PLAN (26)
STA. 457+00 TO STA. 471+00

SHEET NO.

jmera 4/26/2019 9:46:43 AM M:\41450623201\roadway\For PD&E-Subs\PLANRD_Subs.dgn

APPENDIX D

TYPICAL SECTION PACKAGE

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

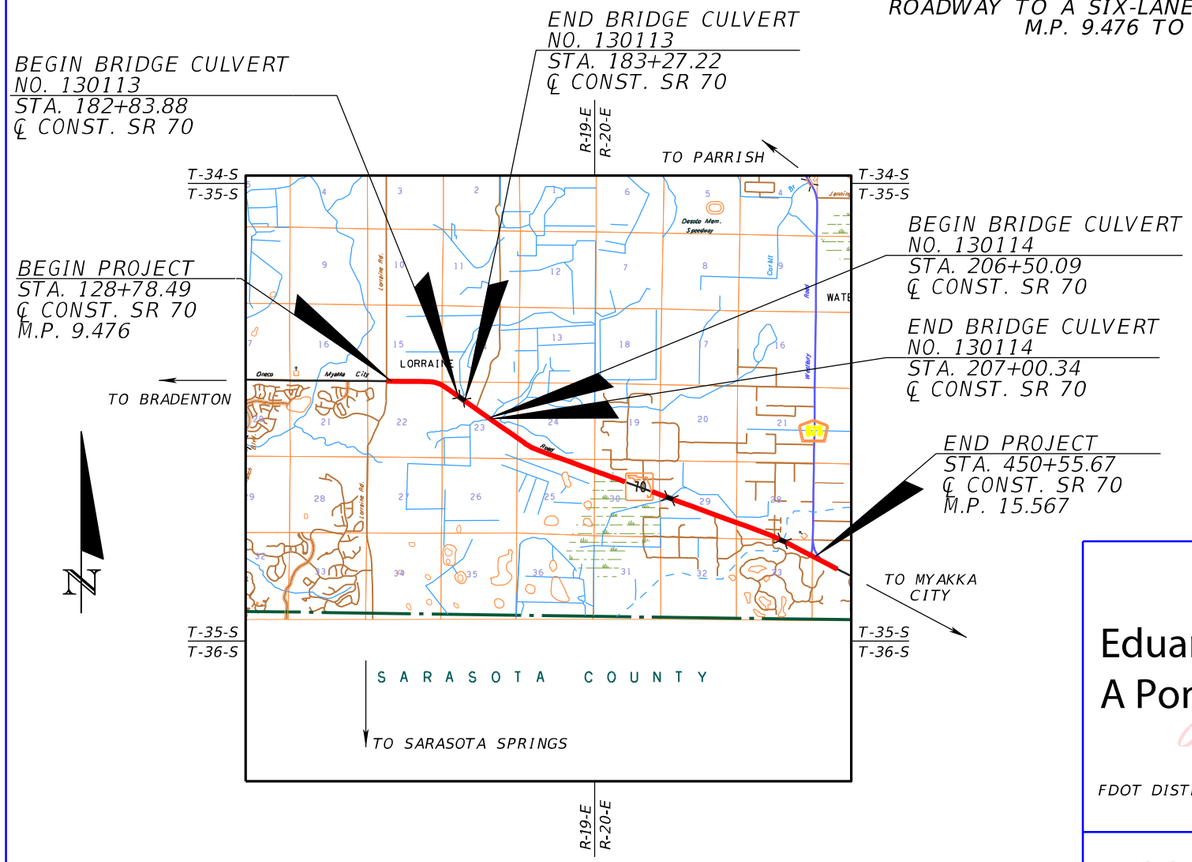
TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 414506-2-32-01

MANATEE COUNTY (13160)

STATE ROAD NO. 70 (ONECO MYAKKA CITY ROAD)

WIDENING OF SR 70 FROM A TWO-LANE RURAL ROADWAY TO A SIX-LANE SUBURBAN ROADWAY
M.P. 9.476 TO M.P. 15.567



APPROVED BY:

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY

DEBORAH HERNANDEZ CEDENO
LICENSE
No 74754
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ON THE DAY ADJACENT TO THE SEAL

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

Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Florida Certificate of Authorization No. 02317
Engineer of Record: Deborah Hernandez Cedeno, P.E.
P.E. No.: 74754

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

Eduardo A Ponce — Digitally signed by Eduardo A Ponce Date: 2019.07.17 14:26:07 -04'00'

FDOT DISTRICT DESIGN ENGINEER | FDOT DISTRICT STRUCTURES DESIGN ENGINEER | FHWA TRANSPORTATION ENGINEER | PD&E ENGINEER

DESIGN SPEED AND POSTED SPEED CONCURRENCE:

Mark Mathes — Digitally signed by: Mark Mathes DN: CN = Mark Mathes email = mark.mathes@dot.state.fl.us C = US Date: 2019.07.11 09:53:51 -04'00'

FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER

Eduardo A Ponce — Digitally signed by Eduardo A Ponce Date: 2019.07.17 14:26:36 -04'00'

FDOT DISTRICT DESIGN ENGINEER

CONTEXT CLASSIFICATION CONCURRENCE:

Nicole E Mills — 2019.05.16 16:44:43 -04'00'

FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

SHEET NO. 1

5/3/2019 12:33:58 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

CRITERIA

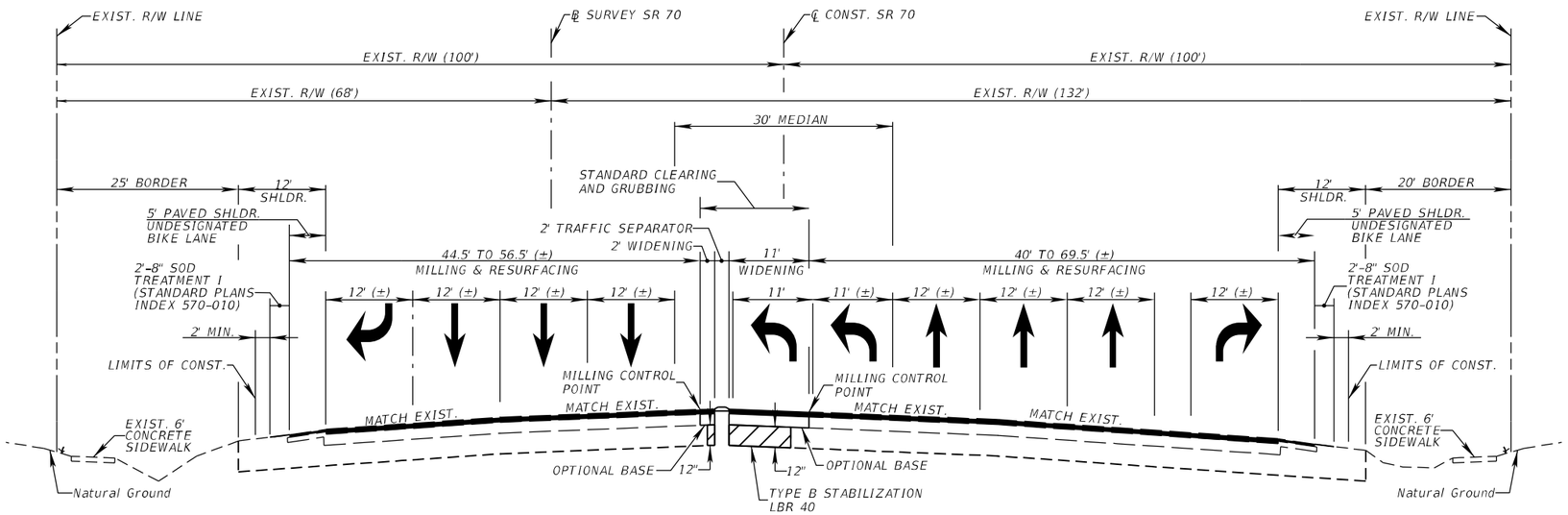
(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN VARIATIONS

1. TRAFFIC SEPARATOR

TYPICAL SECTION No. 1



TYPICAL SECTION SR 70 (1)

N.T.S.

STA. 119+39.00 TO STA. 128+23
℄ OF CONST. SR 70

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 15,000
ESTIMATED OPENING YEAR = 2025 AADT = 33,000
ESTIMATED DESIGN YEAR = 2045 AADT = 57,000
K = 9.5% D = 60.5% T = 14.2% (24 HOUR)
DESIGN HOUR T = 7.1%
DESIGN SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	2

5/3/2019 12:33:59 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

CRITERIA

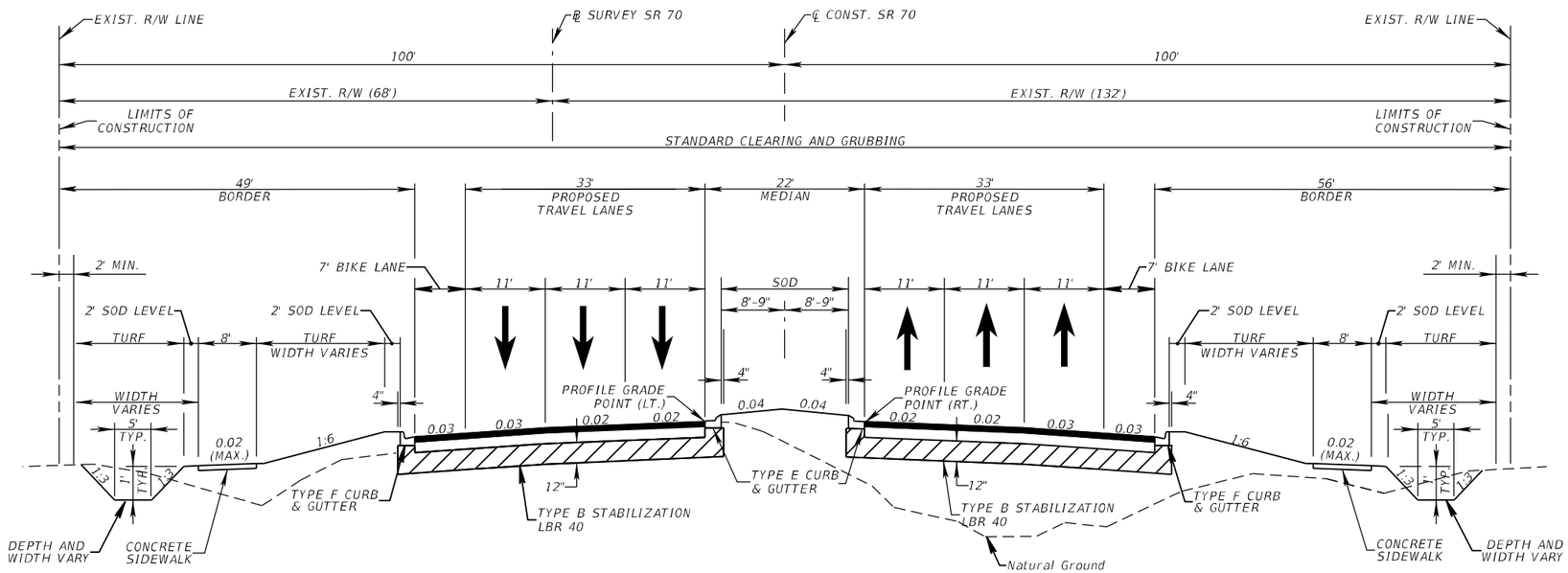
(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN VARIATIONS

1. BASE CLEARANCE

TYPICAL SECTION No. 2



TYPICAL SECTION SR 70 (2)

N.T.S.

STA. 128+23.00 TO STA. 175+00.00
℄ OF CONST. SR 70

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 15,000
ESTIMATED OPENING YEAR = 2025 AADT = 26,000
ESTIMATED DESIGN YEAR = 2045 AADT = 49,000
K = 9.5% D = 60.5% T = 14.2% (24 HOUR)
DESIGN HOUR T = 7.1%
DESIGN SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	3

5/3/2019 12:33:59 PM

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

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

CRITERIA

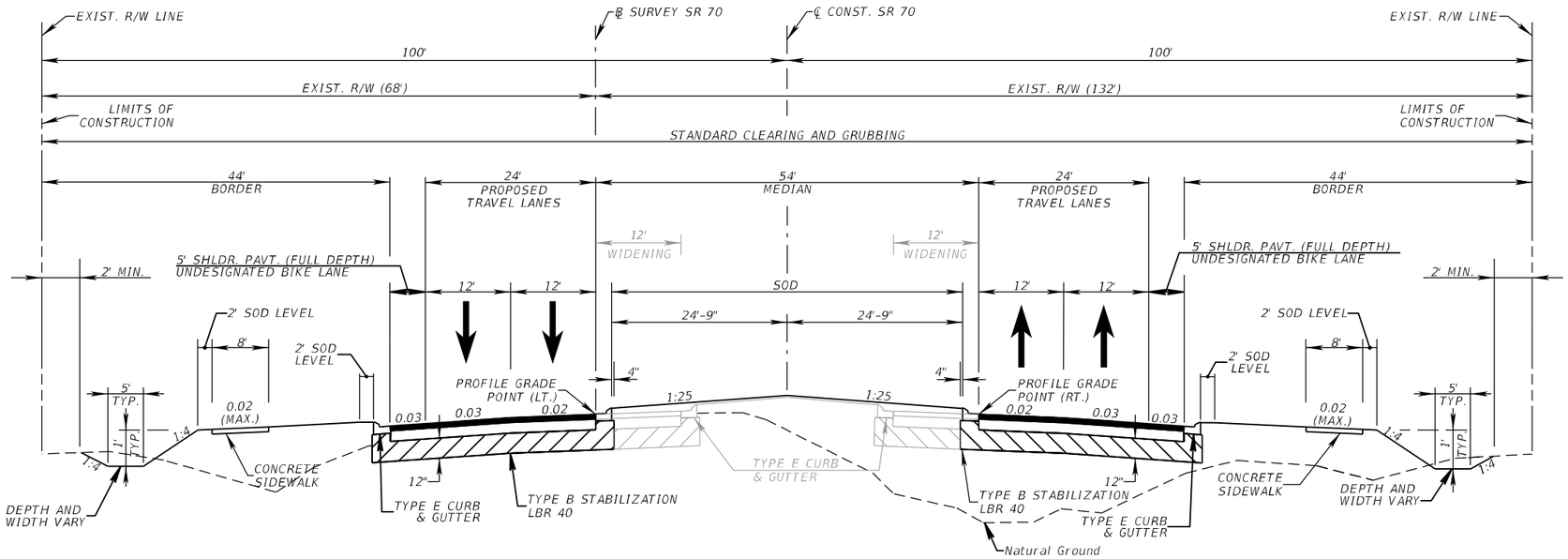
(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN VARIATIONS

1. BASE CLEARANCE
2. MEDIAN SHOULDER WIDTH

TYPICAL SECTION No. 3



TYPICAL SECTION SR 70 (3)

N.T.S.

STA. 175+00.00 TO STA. 274+51.00
℄ OF CONST. SR 70

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 15,000
ESTIMATED OPENING YEAR = 2025 AADT = 20,000
ESTIMATED DESIGN YEAR = 2045 AADT = 34,000
K = 9.5% D = 60.5% T = 14.2% (24 HOUR)
DESIGN HOUR T = 7.1%
DESIGN SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	4

5/3/2019 12:34:00 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
(X)	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY		

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

CRITERIA

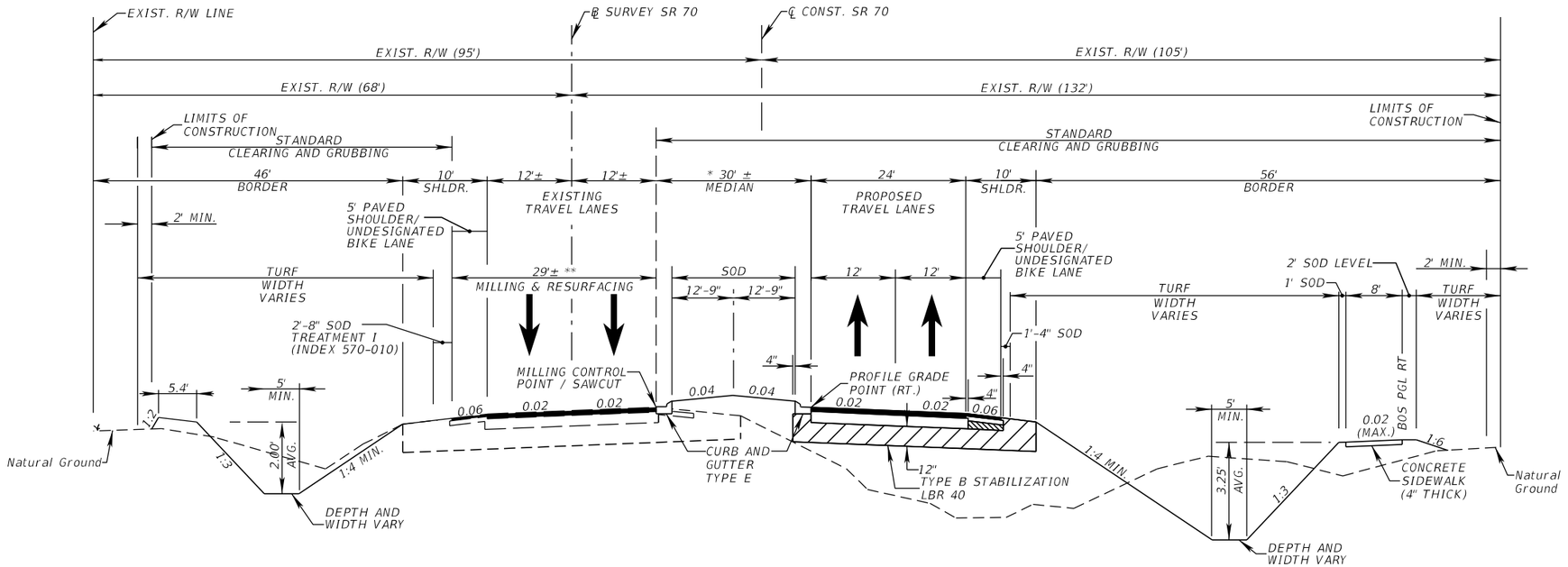
(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN VARIATIONS

1. SHOULDER WIDTH (MEDIAN/INSIDE)

TYPICAL SECTION No. 4



TYPICAL SECTION SR 70 (4)

N.T.S.

℄ CONST. SR 70
STA. 279+26.28 TO STA. 283+70.00
STA. 321+00.00 TO STA. 323+73.26
STA. 325+49.26 TO STA. 329+70.00
STA. 374+00.00 TO STA. 378+14.45
STA. 379+90.45 TO STA. 384+40.00
STA. 417+70.00 TO STA. 421+07.48
STA. 422+83.21 TO STA. 430+00.00
STA. 447+00.00 TO STA. 449+23.66
STA. 450+99.66 TO STA. 455+00.00

TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 10,000
ESTIMATED OPENING YEAR = 2025 AADT = 15,000
ESTIMATED DESIGN YEAR = 2045 AADT = 19,000
K = 12.8% D = 55.9% T = 6.5 % (24 HOUR)
DESIGN HOUR T = 3.25%
DESIGN SPEED = 50 MPH

FINANCIAL PROJECT ID	
414506-2-52-01	5

$DATE$ $TIME$

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

CRITERIA

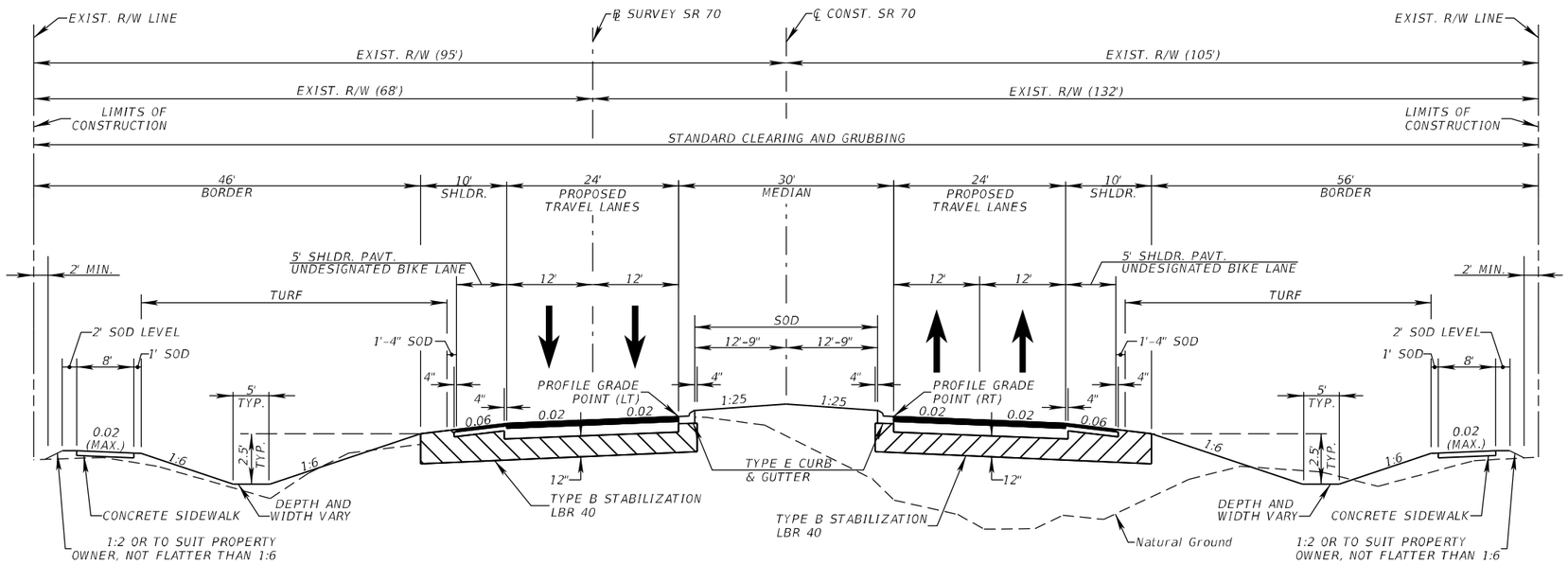
(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN VARIATIONS

1. BASE CLEARANCE
2. MEDIAN SHOULDER WIDTH

TYPICAL SECTION No. 5



TRAFFIC DATA

CURRENT YEAR = 2018 AADT = 10,000
ESTIMATED OPENING YEAR = 2025 AADT = 12,000
ESTIMATED DESIGN YEAR = 2045 AADT = 16,000
K = 12.8% D = 55.9% T = 6.5 % (24 HOUR)
DESIGN HOUR T = 3.25%
DESIGN SPEED = 50 MPH

TYPICAL SECTION SR 70 (5)

N.T.S.

STA. 415+18.48 TO STA. 420+02.00
STA. 427+14.00 TO STA. 435+18.45
℄ OF CONST. SR 70

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	6

5/3/2019 12:34:00 PM

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

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

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

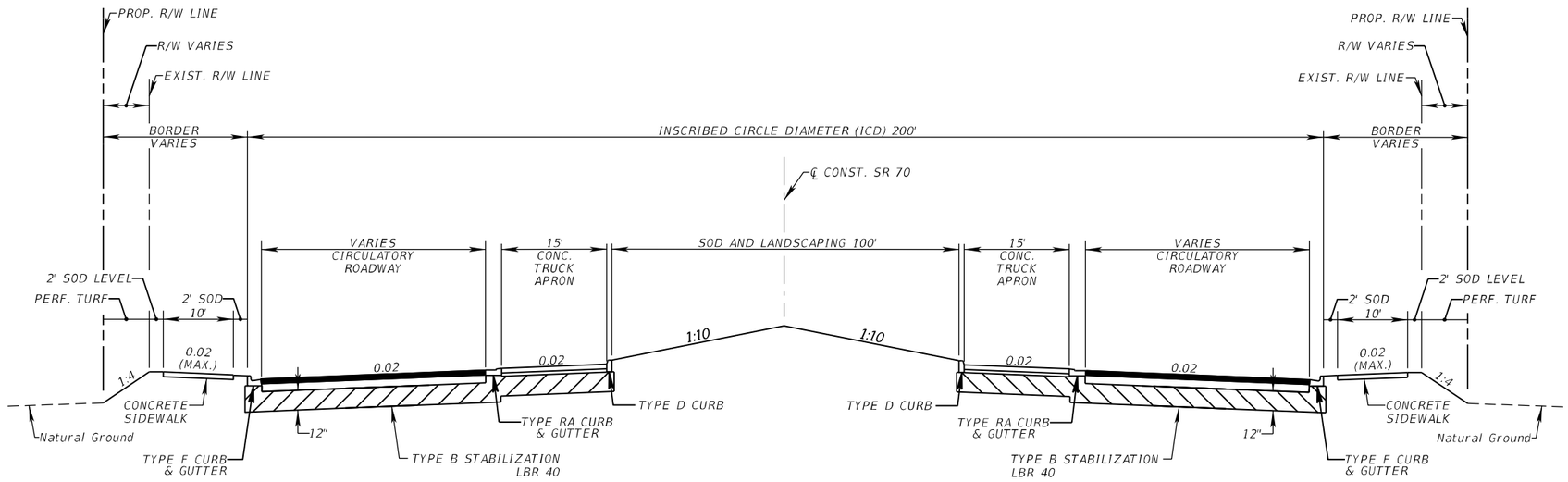
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 6



TYPICAL SECTION SR 70 (6)
N.T.S.

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = N/A
ESTIMATED DESIGN YEAR = 2045 AADT = N/A
K = 9.5% D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 25 MPH

STA. 198+75.12 = UIHLEIN RD.
STA. 244+64.97 = DEL WEBB BLVD.
STA. 278+50.05 = BOURNESIDE BLVD.
STA. 324+61.26 = 197TH ST./LINDRICK LN.
STA. 379+02.45 = 213TH ST.
STA. 421+93.77 = 225TH ST./PANTHER RIDGE TRAIL
STA. 450+11.66 = 79TH AVE. E/MEADOW DOVE LN.
℄ OF CONST. SR 70

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	7

5/3/2019 12:34:01 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

- ( ) 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
- (X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

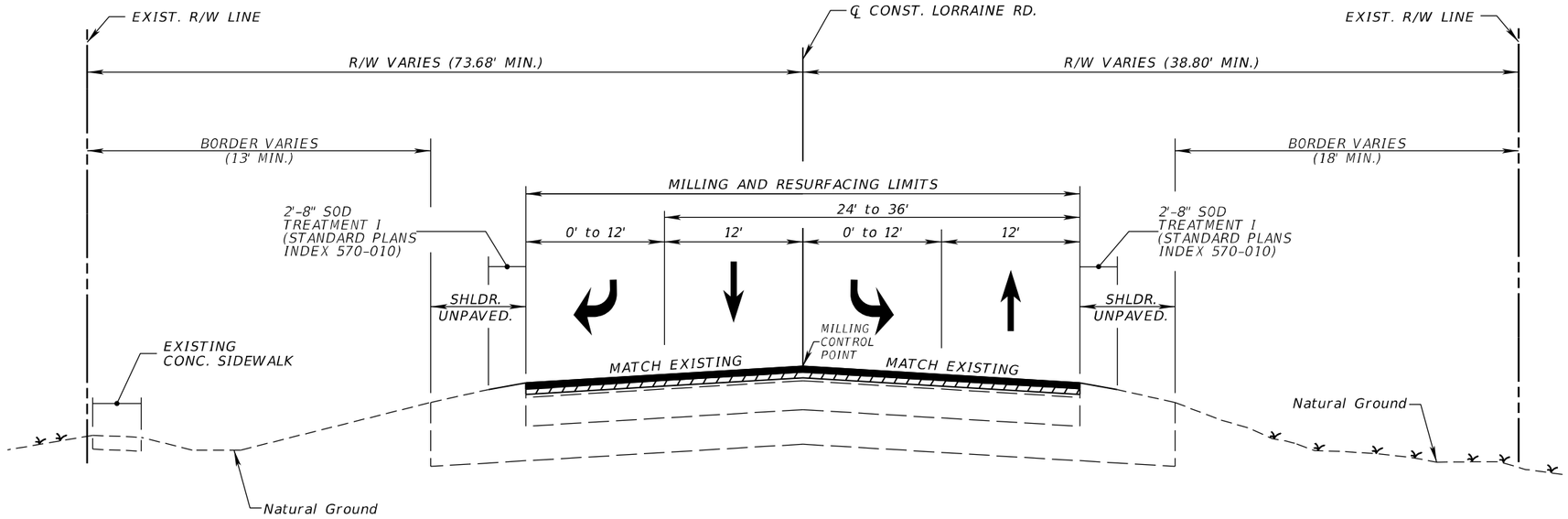
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 7



LORRAINE ROAD
STA. 1005+02.79 TO STA. 1007+49.93

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2016
AADT = 6,600 (N. OF SR 70), 10,000 (S. OF SR 70)
ESTIMATED OPENING YEAR = 2025
AADT = 9,200 (N. OF SR 70), 15,000 (S. OF SR 70)
ESTIMATED DESIGN YEAR = 2045
AADT = 15,000 (N. OF SR 70), 25,000 (S. OF SR 70)
K = 9.5% D = 74.9% T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 55 MPH (ASSSUMED)
POSTED SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	8

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

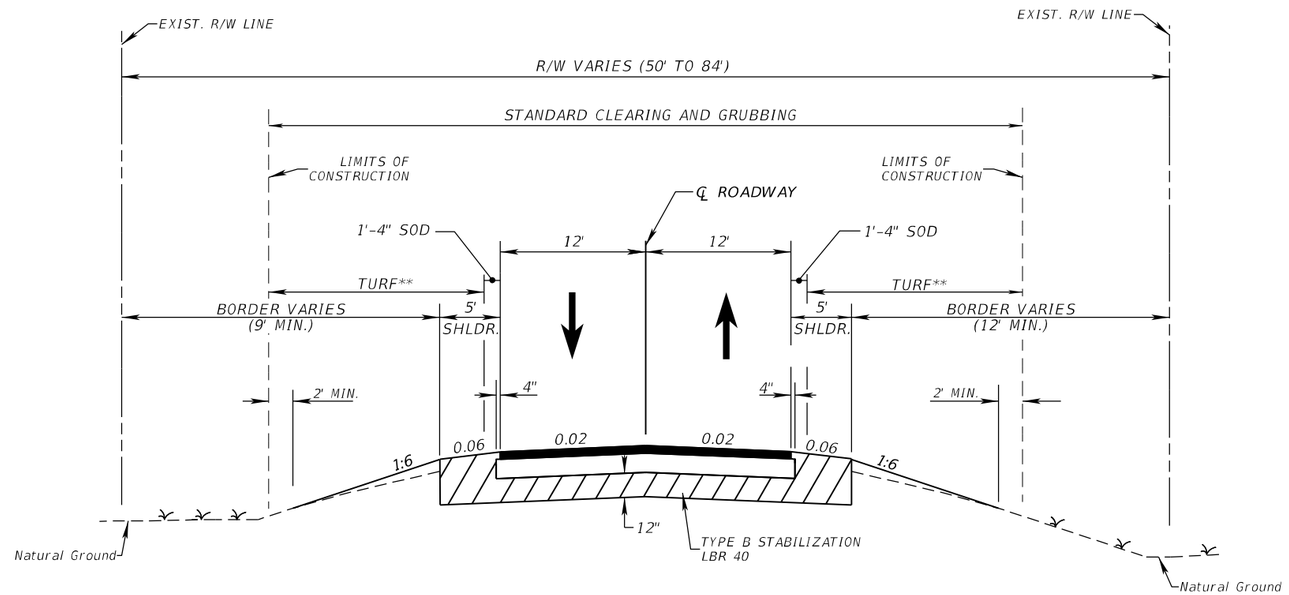
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 8



** SOD SLOPES STEEPER THAN 1:3

ARBOR GREEN TRAIL AND MEADOW DOVE LANE
MINOR ROAD/NO ALIGNMENT PROVIDED

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = N/A
ESTIMATED DESIGN YEAR = 2045 AADT = N/A
K = N/A D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	9

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

- ( ) 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
- (X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

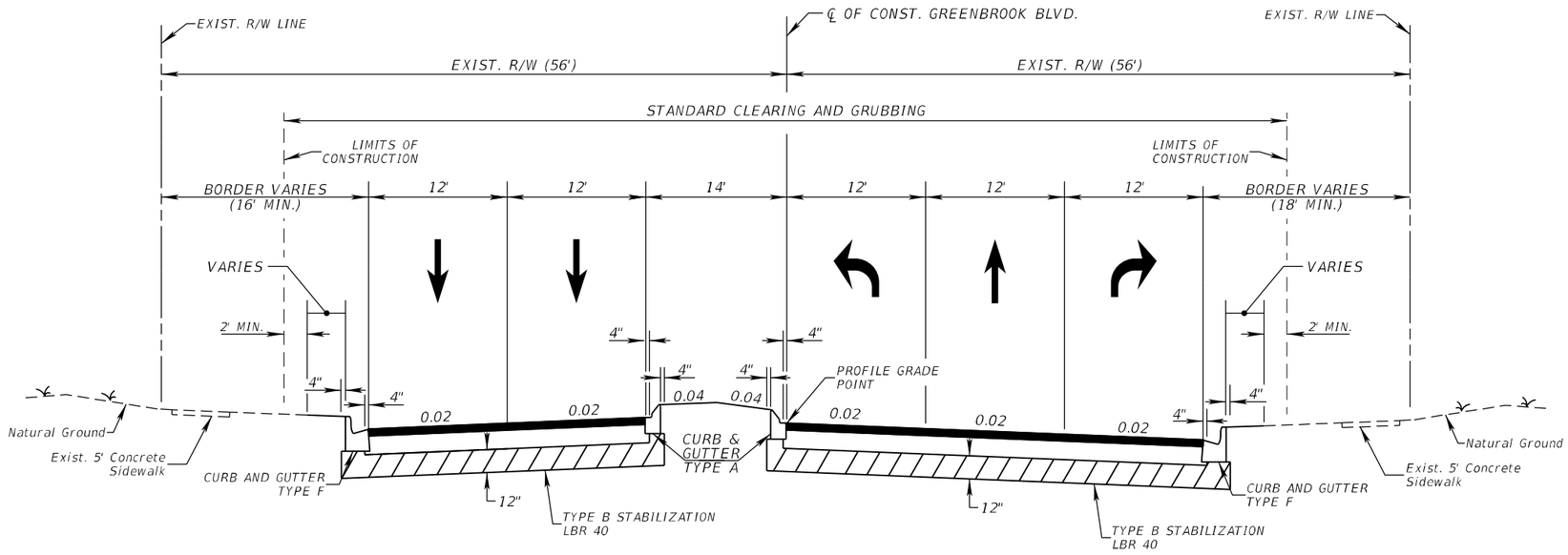
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 9



GREENBROOK BLVD
STA. 2005+27.92 TO STA. 2003+50

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2016 AADT = 2,600
ESTIMATED OPENING YEAR = 2025 AADT = 7,000
ESTIMATED DESIGN YEAR = 2045 AADT = 16,000
K = 9.5% D = 52.3% T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	10

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

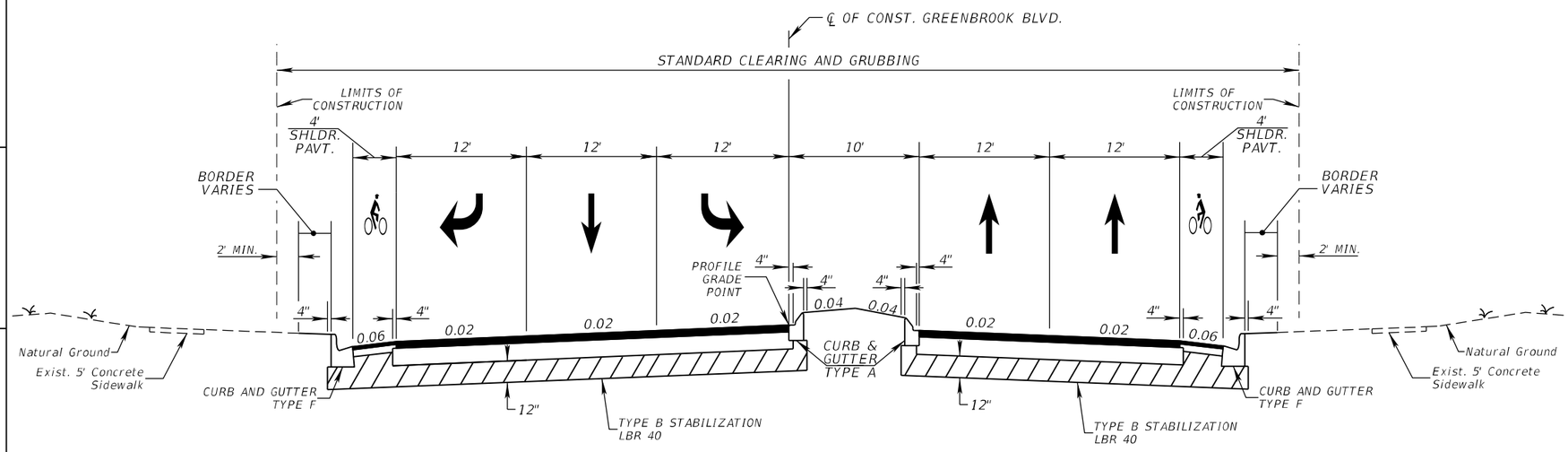
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 10



POST BLVD
STA. 2006+58.66 TO STA. 2007+79.81

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2016 AADT = 1,500
ESTIMATED OPENING YEAR = 2025 AADT = 5,400
ESTIMATED DESIGN YEAR = 2045 AADT = 14,000
K = 9.5% D = 57.5% T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	11

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

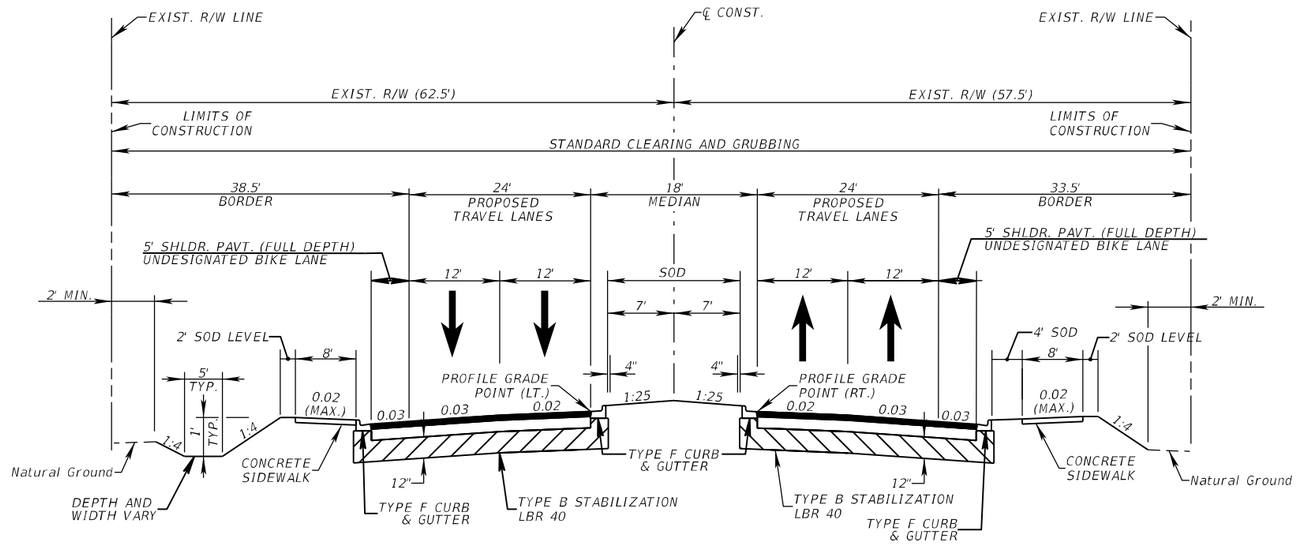
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 11



UIHLEIN ROAD
MINOR ROAD/NO ALIGNMENT PROVIDED

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = 4,300
ESTIMATED DESIGN YEAR = 2045 AADT = 14,000
K = 9.5% D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 35 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	12

5/3/2019 12:34:03 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

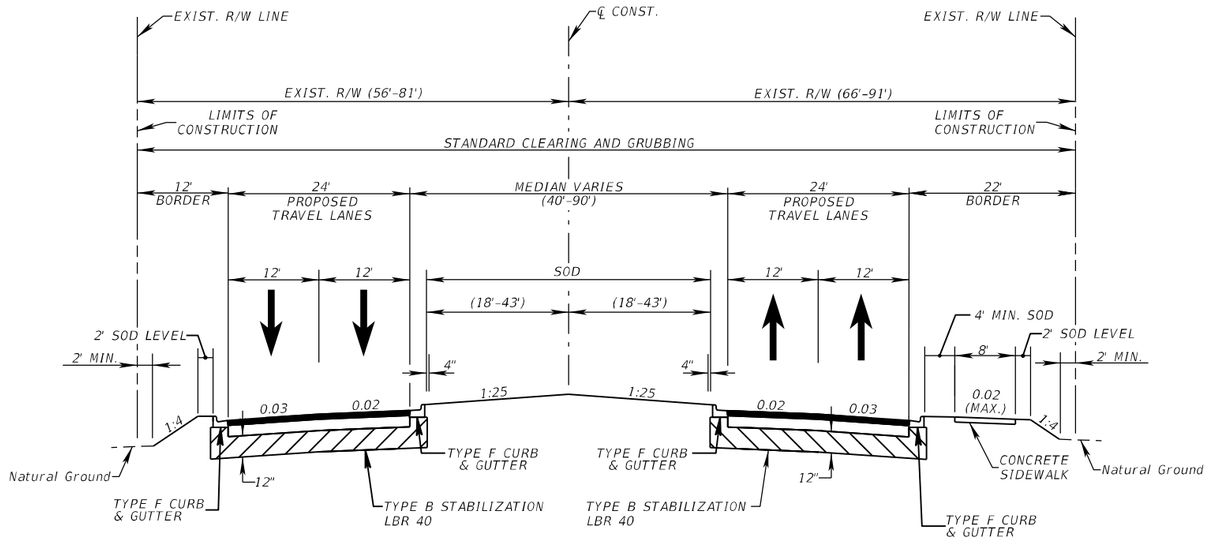
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 12



DEL WEBB BLVD.
STA. 3002+52.65 TO STA. 3002+99.65

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = 2,400
ESTIMATED DESIGN YEAR = 2045 AADT = 3,000
K = 9.5% D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 20 MPH (ASSUMED)
POSTED SPEED = 25 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	13

5/3/2019 12:34:04 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

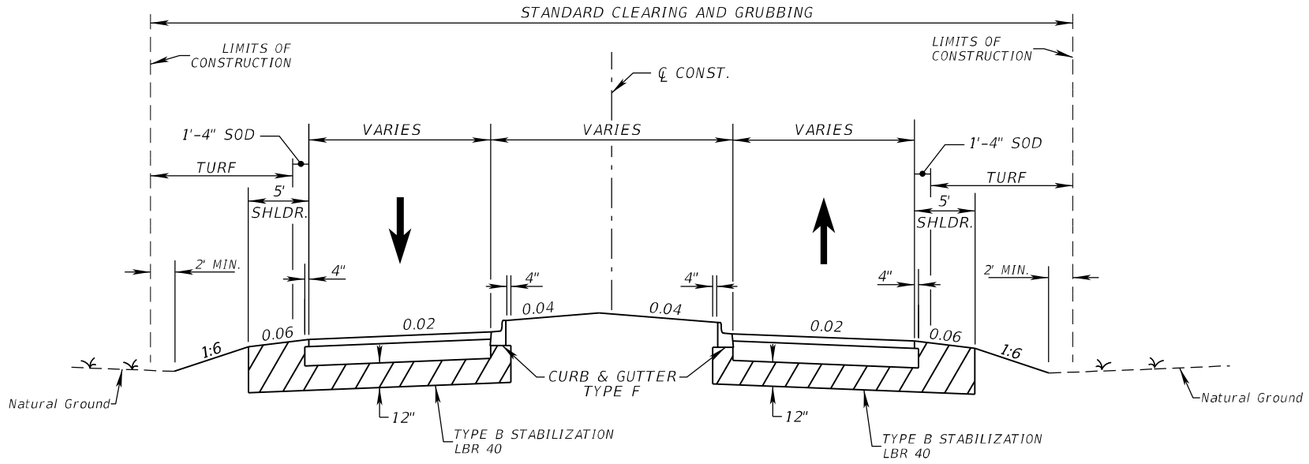
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 13



197TH ST., 213TH ST., AND 225TH ST. E (EB) MINOR ROADS/NO ALIGNMENT PROVIDED

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = N/A
ESTIMATED DESIGN YEAR = 2045 AADT = N/A
K = 9.5% D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 25 to 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	14

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

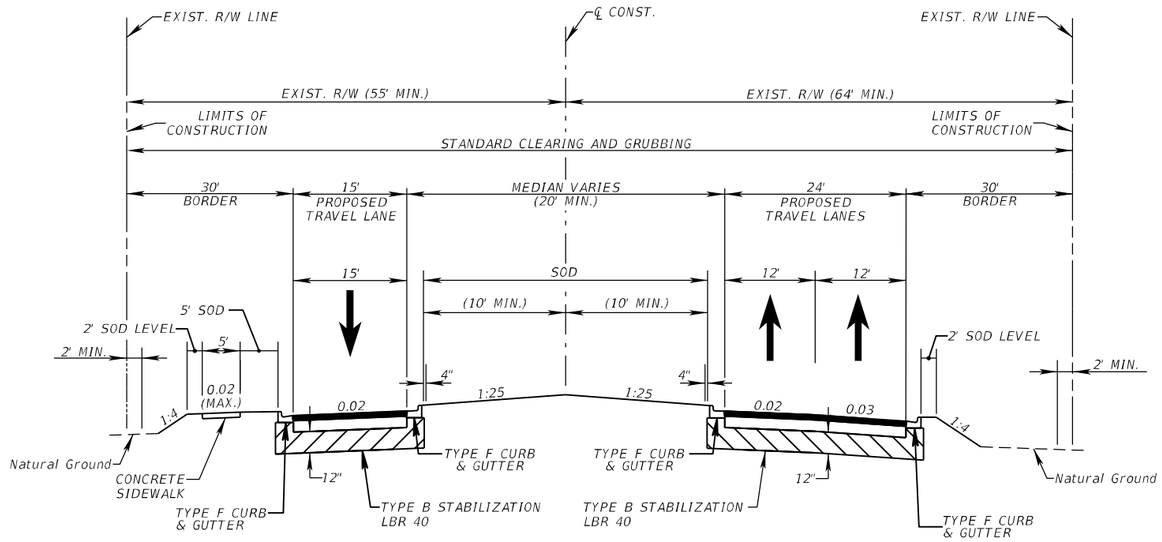
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 14



LINDRICK LN.
MINOR ROADS/NO ALIGNMENT PROVIDED

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = N/A
ESTIMATED DESIGN YEAR = 2045 AADT = N/A
K = 9.5% D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 25 to 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	15

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

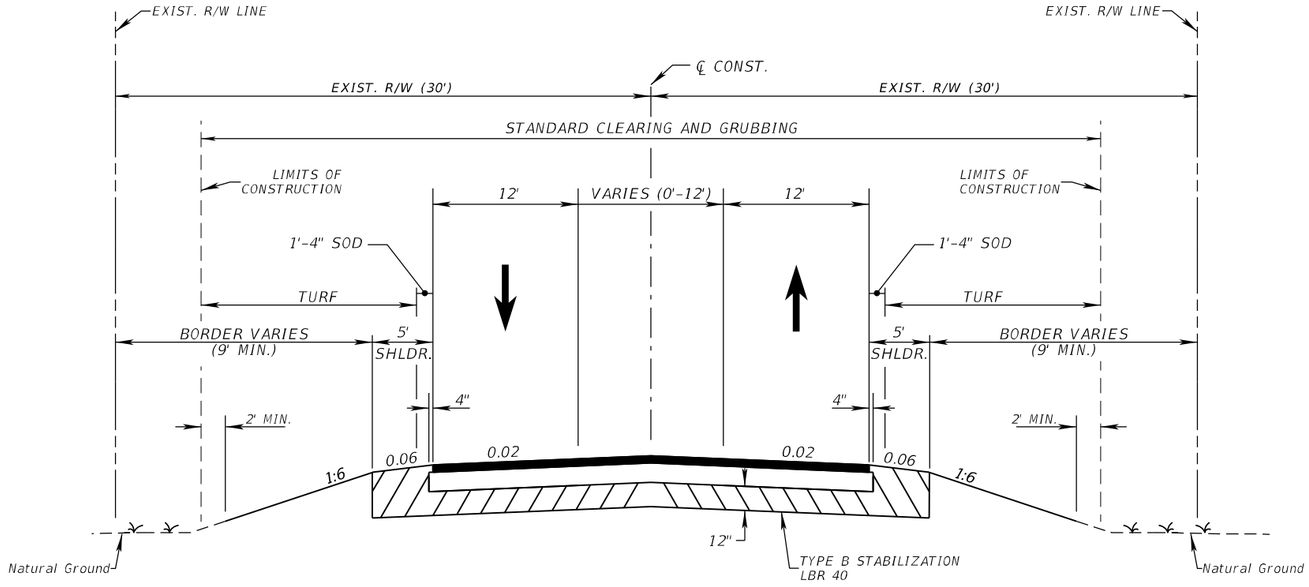
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 15



225TH E (WB)
MINOR ROAD/NO ALIGNMENT PROVIDED

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = N/A
ESTIMATED DESIGN YEAR = 2045 AADT = N/A
K = 9.5% D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 25 to 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	16

5/3/2019 12:34:05 PM

PROJECT CONTROLS

CONTEXT CLASSIFICATION

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

FUNCTIONAL CLASSIFICATION

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

HIGHWAY SYSTEM

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

ACCESS CLASSIFICATION

( ) 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
(X) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

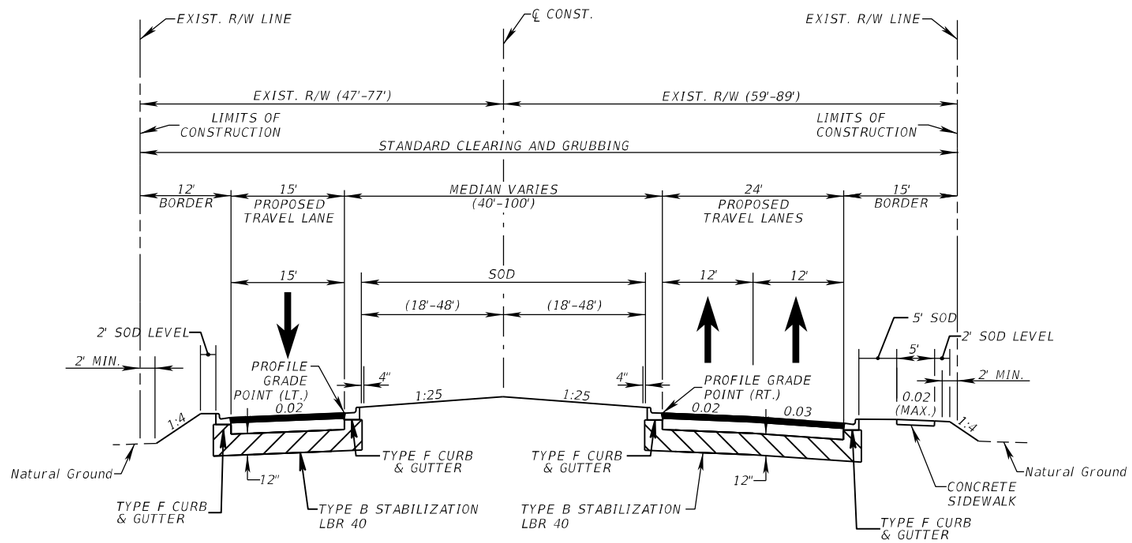
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

N/A

TYPICAL SECTION No. 16



PANTHER RIDGE TRAIL
MINOR ROADS/NO ALIGNMENT PROVIDED

NOT TO SCALE

TRAFFIC DATA

CURRENT YEAR = 2019 AADT = N/A
ESTIMATED OPENING YEAR = 2025 AADT = N/A
ESTIMATED DESIGN YEAR = 2045 AADT = N/A
K = 9.5% D = N/A T = N/A (24 HOUR)
DESIGN HOUR T = N/A
DESIGN SPEED = 40 MPH (ASSUMED)
POSTED SPEED = 25 to 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
414506-2-32-01	17

5/3/2019 12:34:06 PM

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

APPENDIX E

AGENCY COORDINATION

FDOT

Florida Department of Transportation

RON DESANTIS
GOVERNOR

801 North Broadway Avenue
Bartow, FL 33830

KEVIN J. THIBAULT, P.E.
SECRETARY

April 30, 2019

Dr. Timothy Parsons, Director
Florida Division of Historical Resources
Department of State, R.A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

Attn: Transportation Compliance Review Program

RE: Cultural Resource Assessment Survey
Project Development and Environment Study (PD&E)
SR 70 from Lorraine Road to CR 765/Waterbury Road
Manatee County, Florida
FPID No.: 414506-2-22-01; ETDM: 14263

Dear Dr. Parsons:

A Cultural Resource Assessment Survey (CRAS) was performed within the area of potential effect (APE) for the SR 70 project in Manatee County, Florida. This study was performed to evaluate the proposed widening of 6.1 miles of State Road (SR) 70 from Lorraine Road (MP 9.478) to County Road (CR) 675/Waterbury Road (MP 15.567), including one regional pond site, three Floodplain Compensation (FPC) sites, and seven roundabouts. Within the limits of this study, the Florida Department of Transportation (FDOT) is evaluating one project build alternative and three project segments: Segment A extends from Lorraine Road to east of Greenbrook Boulevard, Segment B extends from east of Greenbrook Boulevard to Bourneside Boulevard, and Segment C extends from Bourneside Boulevard to the eastern project limit at CR 675. The proposed action is to increase the capacity of the existing two-lane undivided roadway by widening it to a four or six-lane divided roadway

The archaeological APE was defined as the footprint of the proposed improvements within the existing and proposed right-of-way (ROW) for the SR 70 corridor and the area contained within the one regional pond and three FPC sites; and the historic/architectural APE was defined as the archaeological APE and adjacent parcels.

This CRAS was conducted in accordance with the requirements set forth in the National Historic Preservation Act of 1966 (as amended), which are implemented by the procedures contained in 36 CFR, Part 800, as well as the provisions contained in the revised Chapter 267, *Florida Statutes*. The investigations were carried out in accordance with Part 2, Chapter 8 (Archaeological and Historical Resources) of the FDOT's PD&E Manual, FDOT's Cultural Resources Manual, and the standards contained in the Florida Division of Historical Resources (FDHR) Cultural Resource Management Standards and Operations Manual (FDHR 2003). In addition, this survey meets the specifications set forth in Chapter 1A-46, Florida Administrative Code.

Background research revealed that no archaeological sites were previously recorded within or adjacent to the APE and the background research also suggested the project had a low potential for aboriginal site occurrence. No historic period archaeological sites were expected. In addition, the APE is highly disturbed with ditches, fill, utilities, and pavement; thus, the likelihood of finding intact cultural resources was considered low.

Historical background research indicated that portions of three previously recorded historic linear resources (50 years of age or older) are within the project APE: 8MA01814, a segment of an abandoned rail bed once associated with the East & West Coast Railway, 8MA01815 (the Lakewood Ranch Canal #2), and 8MA01816 (the Lakewood Ranch Canal #3). Portions of 8MA01814 have been determined eligible for listing in the NRHP by the State Historic Preservation Officer (SHPO); however, the portions of railbed adjacent and within the APE was determined not eligible for listing in the National Register of Historic Places (NRHP) by the SHPO. In addition, 8MA01815 and 8MA01816 were also determined not eligible for listing in the NRHP by the SHPO. Background research did reveal that portions of SR 70 have been recorded in Manatee County and determined not eligible for listing in the NRHP; but the segment of SR 70 within the APE has not been recorded. Thus, 8MA01906 was updated to reflect the segment of SR 70 within the APE. This portion of SR 70 also does not appear to be eligible for listing in the NRHP.

Based on the results of the background research and field survey, there are no significant historic or prehistoric archaeological sites or historic resources within the APE. Thus, it appears that the proposed undertaking will have no effect on any NRHP listed, determined eligible, or potentially eligible resources within the APE.

The CRAS Report is provided for your review and comment. If you have any questions, please do not hesitate to call me at 863.519.2805 or vivianne.cross@dot.state.fl.us

Vivianne Cross

Vivianne Cross
Environmental Project Manager

Enclosures: One original copy of the CRAS (April 2019); One FMSF Form, One Completed Survey Log

CC: Mark Easley, KCA
Marion Almy, ACI

The Florida State Historic Preservation Officer (SHPO) finds the attached Cultural Resources Assessment Survey Report complete and sufficient and ✓ concurs/ _____ does not concur with the recommendations and findings provided in this cover letter for SHPO/FDHR Project File Number ~~2019-3278AM~~ 2016-3278 C. Or, the SHPO finds the attached document contains _____ insufficient information.

SHPO Comments:

For Dr. Timothy Parsons, Director
State Historic Preservation Officer
Florida Division of Historical Resources

5/29/2019
Date

APPENDIX F

INTERSECTION CONTROL EVALUATION (ICE)

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 1: Screening

To fulfill the requirements of Stage 1 (Screening) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at Bourneside Blvd	FDOT Project #	414506-2-22-01	Date	03/06/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com
FDOT Context Classification	C3R - Suburban Residential	FDOT District	District 1	County	Manatee
Project Locality (*City/Town/Village*)	Unincorporated Manatee County	Project Type	Corridor Improvement Project		
Project Purpose (*What is the catalyst for this project and why is it being undertaken?*)	A PD&E Study is being completed with the purpose of increasing capacity and improving traffic operational conditions along the SR 70 corridor from Lorraine Road to CR 675/Waterbury Road. The Intersection Control Evaluation (ICE) is based on the future build improvements of the project which widen SR 70 to 4-lanes. This ICE will focus on the intersection with Bourneside Blvd.				
Project Setting Description (*Describe the area surrounding the intersection*)	SR 70 at Bourneside Blvd: Future Land Use is comprised of Mixed Use -Commerical / Residential. There is a major residential development that is changing the setting from rural to suburban/residential.				
Multimodal Context (*Describe the pedestrian, bicycle, and transit activity in the area and the potential for activity based on surrounding land uses and development patterns*)	SR 70, there are proposed sidewalks and paved shoulders on both sides of the road. Bourneside is not currenlty build.				

Major Street Information

Route #:	SR 70	Route Name(s)	SR 70					Milepost	12.324
Existing Control Type	Two-way Stop-Control		Existing AADT	15,000		Design Year AADT			21,000
Design Vehicle	Interstate Semitrailer (WB-62)		Control Vehicle	Interstate Semitrailer (WB-62)					
Primary Functional Classification	Urban Principal Arterial					Design Speed (mph)			55
Secondary Functional Classification (if app.)						Target Speed (mph) [if app.]			

Approach #1	Direction	Eastbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes	
	Sidewalks along	Both sides of the approach	Left-Turn	1					
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak			Weekday PM Peak	
	On-Street Bike Facilities?	Yes	Through	2	Left	211		Left	191
	Multi-Use Path?	No	Left-Through-Right		Through	532		Through	833
	Scheduled Bus Service?	No	Through-Right		Right	95		Right	183
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %			14.0%	
Approach #2	Direction	Westbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes	
	Sidewalks along:	Both sides of the approach	Left-Turn	1					
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak			Weekday PM Peak	
	On-Street Bike Facilities?	Yes	Through	2	Left	93		Left	104
	Multi-Use Path?	No	Left-Through-Right		Through	840		Through	501
	Scheduled Bus Service?	No	Through-Right		Right	209		Right	108
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %			14.0%	

Minor Street Information											
Route #:		Route Name(s)	Bourneside Blvd					Milepost (if app.)	N/A		
Existing Control Type	Two-way Stop-Control		Existing AADT	2,500				Design Year AADT	8,200		
Design Vehicle	Interstate Semitrailer (WB-62)		Control Vehicle	Interstate Semitrailer (WB-62)							
Primary Functional Classification	Urban Local							Design Speed (mph)			
Secondary Functional Classification (if app.)								Target Speed (mph) [if app.]	45		
Approach #1	Direction	Southbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes			
	Sidewalks along:	Neither side of the approach	Left-Turn	1							
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak			Weekday PM Peak			
	On-Street Bike Facilities?	No	Through	1	Left	108		Left	207		
	Multi-Use Path?	No	Left-Through-Right		Through	20		Through	45		
	Scheduled Bus Service?	No	Through-Right		Right	180		Right	219		
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %			4.0%			
Approach #2	Direction	Northbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes			
	Sidewalks along:	Neither side of the approach	Left-Turn	1							
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak			Weekday PM Peak			
	On-Street Bike Facilities?	No	Through	1	Left	173		Left	97		
	Multi-Use Path?	No	Left-Through-Right		Through	45		Through	21		
	Scheduled Bus Service?	No	Through-Right		Right	104		Right	92		
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %			4.0%			
Approach #3	Direction		Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes			
	Sidewalks along:		Left-Turn								
	Crosswalk on Approach?		Left-Through		Weekday AM Peak			Weekday PM Peak			
	On-Street Bike Facilities?		Through		Left			Left			
	Multi-Use Path?		Left-Through-Right		Through			Through			
	Scheduled Bus Service?		Through-Right		Right			Right			
	Bus Stop on Approach?		Right-Turn		Daily Truck %						

Crash History (Existing Intersections Only)
Append the most recent five-years of crash data for the intersection from the CAR System. If the crash data evidences any issues relating to safety performance, discuss briefly here:
The crash history was not included in the analysis since the future conditions of SR 70 changes significantly from a 2 lane undivided to a 4-lane divided. Instead, a predictive crash model was used for the analysis.

Control Strategy Evaluation						
Provide a brief justification as to why each of the following control strategies should be advanced or not. Justification should consider potential environmental impacts.						
	CAP-X Outputs					
	V/C Ratio					
Control Strategy	Weekday AM Peak	Weekday PM Peak	Multimodal Score	SPICE Ranking	Strategy to Be Advanced?	Justification
Two-Way Stop-Controlled	2.54	103.39	N/A	3	No	Future volumes exceed Peak Hour Volume Thresholds based on FDOT ICE Manual, Figure A1
All-Way Stop-Controlled	1.53	1.53	N/A	N/A	No	Future volumes exceed Peak Hour Volume Thresholds based on FDOT ICE Manual, Figure A1
Signalized Control	0.53	0.48	4.8	8	Yes	Base condition
Roundabout	1x2 0.70 2x2 0.70	1x2 0.69 2x2 0.69	5.6	1 & 6	Yes	Move froward to Phase 2 based on SPICE top ranking. This is a reasonable control for the urban/suburban setting.
Median U-Turn	0.62	0.59	6.3	4	No	V/C higher than other intersection control types that are being advanced to stage 2.
RCUT (Signalized)	0.50	0.54	6.3	5	No	V/C higher than other intersection control types that are being advanced to stage 2.
RCUT (Unsignalized)	1.46	1.14	N/A	2	No	V/C above 1
Jughandle					No	Not included in the analysis.
Displaced Left-Turn	Partial EW 0.43 DLT 0.43	DLT 0.37 Partial EW 0.39	4.8	7	Yes	Partial Moved to Phase 2 based on comparable operations to Displaced Left-turn and potential cost impacts.
Continuous Green Tee	N/A	N/A	N/A	N/A	No	Not a T-intersection.
Quadrant Roadway	SW 0.42 SE 0.43	SW 0.45 SE 0.46	4.4		Yes	SW Quad move to Phase 2 based on top v/c ratio
Partial MUT	0.43	0.52	6.30	N/A	No	V/C higher than other intersection control types that are being advanced to stage 2.
Other 2 (Type)	N/A	N/A	N/A	N/A	No	No additional alternative intersection configurations were included in this analysis.

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	Multiple Viable Alternatives Identified: Continue to Stage 2				
Comments					
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 886C0B0008864C0...	Date	4/8/2020 | 10:34
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 1A05B15EEE00A4...	Date	4/8/2020 | 4:29

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 2: Intial Control Strategy Assessment

To fulfill the requirements of Stage 2 (Intersection Control Strategy) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at Bourneside Boulevard	FDOT Project #	414506-2-22-01	Date	03/31/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com

List all viable intersection control strategies identified in Stage 1 (Screening):

Signalized Control	Roundabout	Displaced Left-Turn
Quadrant Roadway		

Operational Analyses

Summarize the results of the peak hour analysis performed for each control strategy. Select analysis year based on guidance in the ICE procedures document. Refer to Exhibit 19-8 of the *Highway Capacity Manual, 6th Edition* (HCM6) to determine the appropriate LOS based on intersection delay (*hover over this cell for Exhibit 19-8*).

Design Vehicle	Interstate Semitrailer (WB-62)	Control Vehicle	Interstate Semitrailer (WB-62)

Opening Year: 2025

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	B	12.5	Yes	B	13.0	Yes			
Roundabout	A	6.1	Yes	A	6.0	Yes			
Displaced Left-Turn	B	14.6	Yes	B	15.7	Yes			
Quadrant Roadway	D	36.3	Yes	D	38.5	Yes			

Design Year: 2045

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	C	22.0	Yes	C	20.2	Yes			
Roundabout	B	11.3	Yes	B	11.1	Yes			
Displaced Left-Turn	C	25.5	Yes	C	25.0	Yes			
Quadrant Roadway	D	41.1	Yes	D	48.8	Yes			

Provide any additional discussion necessary regarding the results of the operational analysis:	Based on the delay calculations, the roundabout had the best operations. The delay that is shown for the Displaced Left-Turn and Quadrant Roadway were recalculated as Experience Travel Time (ETT) based on guidance from the Highway Capacity Manual (HCM) 6th Edition, Chapter 23. Refer to Attachment F for the Delay Calculations.

Safety Performance							
Enter the most recent five (5) years of crash data from the CAR System.					Most recent year of crash data available		2018
Crash Type		2014	2015	2016	2017	2018	Total
Combined	Total						
	Fatal/Injury						
	PDO						
Single-Vehicle	Total	0	0	0	0	0	0
	Fatal/Injury	0	0	0	0	0	0
	PDO	0	0	0	0	0	0
Multi-Vehicle	Total	0	1	0	1	0	2
	Fatal/Injury	0	1	0	1	0	2
	PDO	0	0	0	0	0	0
Vehicle-Pedestrian	Fatal/Injury	0	0	0	0	0	0
Vehicle-Bicycle	Fatal/Injury	0	0	0	0	0	0
Total	All	0	1	0	1	0	2

Apply the FDOT SPICE Tool to model anticipated safety performance of each control strategy. For intersection types not accommodated in the tool, manually apply crash modification factors detailed in the ICE procedures document or qualitatively describe anticipated safety impacts.

Control Strategy	Anticipated Impact on Safety Performance	Opening Year		Design Year	
		Predicted Total Crashes	Predicted Fatal+Injury Crashes	Predicted Total Crashes	Predicted Fatal+Injury Crashes
Signalized Control	Comparable to the quadrant roadway control.	4.04	1.36	7.57	2.58
Roundabout	Lowest predicted fatal + injury crashes.	5.61	0.51	10.08	0.97
Displaced Left-Turn	Comparable to the signalized control.	3.56	1.20	6.66	2.27
Quadrant Roadway	Due to lack of crash experience, the safety performance of a QR is not known (see FHWA Pub. FHWA-HRT-09-060).	N/A	N/A	N/A	N/A

Costs and Benefit/Cost Ratios						
Remaining cognizant of the current level of detail of each control strategy's conceptual design, provide a cost estimate for each. You may want to include costs for preliminary engineering, required right-of-way acquisitions, construction, and a contingency. Apply the FDOT ICE Tool to determine the delay benefit-cost ratio (B/C), safety B/C, overall B/C, and net-present value for each control stratetgy.						
			FDOT ICE Tool Outputs			
Control Strategy	ROW Costs ($)	Construction Costs ($)	Delay B/C	Safety B/C	Overall B/C	Net Present Value
Signalized Control	$0	$2,890,000	Base	Base	Base	Base
Roundabout	$0	$2,760,000	40.87	28.00	68.87	$10,849,218
Displaced Left-Turn	$2,320,000	$4,360,000	-1.13	0.45	-0.68	-$3,487,929
Quadrant Roadway	$52,800,000	$3,970,000	-1.87	N/A	-1.87	-$33,925,166

Multimodal Accomodations								
Note the existing/anticipated level of pedestrian/bicyclist activity at the study intersection during the peak hours of the typical day. See ICE procedures document for activity level thresholds:								
Peak Hour:	Weekday AM Peak		Weekday PM Peak		Saturday Midday Peak		Acitivity Level	
	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Ped.	Bicycles
# of ped. crossings (both approaches, if app.):							Low	Low
# of cyclists (both approaches, if app.):								

Summarize the ability of each viable control strategy to accommodate the exisitng/anticipated level of:

Control Strategy	Pedestrians and Bicyclists	Transit Services	Freight Needs
Signalized Control	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection	This option was designed to accommodate design trucks at the turns.
Roundabout	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection	This option was designed to accommodate design trucks at the turns.
Displaced Left-Turn	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection	This option was designed to accommodate design trucks at the turns.
Quadrant Roadway	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection	This option was designed to accommodate design trucks at the turns.

Environmental, Utility, and Right-of-Way Impacts	
Summarize any issues related to environmental, utility, or right-of-way (including relocation) impacts specific to each control strategy. Be sure to consider the NEPA requirements for each control type.	
Signalized Control	Improvements are within right-of-way and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Roundabout	Improvements are within right-of-way and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Displaced Left-Turn	Right of way acquisition may be needed. Overhead transmission lines on the north side of the roadway may be impacted with westbound displaced left movement.
Quadrant Roadway	Right of way acquisition needed for new quadrant roadway. No impacts are expected to the overhead transmission lines on the north side of the corridor.

Public Input/Feedback (if appropriate)
Summarize any agency or public input regarding the control strategies:
None performed to date.

Control Strategy Evaluation		
Provide a brief justification as to why each of the following is either viable or not viable. If a single control strategy is recommended, select it as the only strategy to be advanced.		
Control Strategy	Strategy to be Advanced?	Justification
Signalized Control	No	Second best option however roundabout is preferred.
Roundabout	Yes	1) B/C analysis tool indicates this as the preferred control strategy; 2) NPV is positive; 3) traffic operations are the best; 4) SPICE analysis shows less severe crashes with this option; and, 5) no ROW impacts
Displaced Left-Turn	No	Control strategy not preferred because benefits are less than the base option (signalized control) and cost is greater than base option (signalized control). Also, this option has a negative NPV compared to the base option (signalized control)
Quadrant Roadway	No	Control strategy not preferred because benefits are less than the base option (signalized control) and cost is greater than base option (signalized control). Also, this option has a negative NPV compared to the base option (signalized control)
	No	
	No	

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	Identified Control Strategy Approved				
Comments	The details of the analysis and results are included in a memorandum on file at the District.				
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 886C0B0008864C9...	Date	4/8/2020 | 10:
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 1A35B45EEE684A4...	Date	4/8/2020 | 4:29

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 1: Screening

To fulfill the requirements of Stage 1 (Screening) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at CR 675	FDOT Project #	414506-2-22-01	Date	03/06/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com
FDOT Context Classification	C3R - Suburban Residential	FDOT District	District 1	County	Manatee
Project Locality (*City/Town/Village*)	Unincorporated Manatee County	Project Type	Corridor Improvement Project		
Project Purpose (*What is the catalyst for this project and why is it being undertaken?*)	A PD&E Study is being completed with the purpose of increasing capacity and improving traffic operational conditions along the SR 70 corridor from Lorraine Road to CR 675/Waterbury Road. The Intersection Control Evaluation (ICE) is based on the future build improvements of the project which widen SR 70 to 4-lanes. This ICE will focus on the intersection with CR 675.				
Project Setting Description (*Describe the area surrounding the intersection*)	SR 70 at CR 675 Future Land Use is comprised ofAgricultutal -Commerical. There is a major residential development that is changing the setting from rural to suburban/residential.				
Multimodal Context (*Describe the pedestrian, bicycle, and transit activity in the area and the potential for activity based on surrounding land uses and development patterns*)	SR 70, there are proposed sidewalks and paved shoulders on both sides of the road. CR 675 does not have sidewalks or paved shoulders.				

Major Street Information

Route #:	SR 70	Route Name(s)	SR 70				Milepost	15.667	
Existing Control Type	Two-way Stop-Control	Existing AADT	12,000			Design Year AADT	16,000		
Design Vehicle	Interstate Semitrailer (WB-62)	Control Vehicle	Interstate Semitrailer (WB-62)						
Primary Functional Classification	Urban Principal Arterial					Design Speed (mph)	55		
Secondary Functional Classification (if app.)						Target Speed (mph) [if app.]			

Approach #1	Direction	Eastbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes	
	Sidewalks along	Both sides of the approach	Left-Turn	1					
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak			Weekday PM Peak	
	On-Street Bike Facilities?	Yes	Through	1	Left	107		Left	181
	Multi-Use Path?	No	Left-Through-Right		Through	493		Through	724
	Scheduled Bus Service?	No	Through-Right	1	Right	26		Right	25
	Bus Stop on Approach?	No	Right-Turn		Daily Truck %			14.0%	
Approach #2	Direction	Westbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes	
	Sidewalks along:	Both sides of the approach	Left-Turn	1					
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak			Weekday PM Peak	
	On-Street Bike Facilities?	Yes	Through	1	Left	51		Left	20
	Multi-Use Path?	No	Left-Through-Right		Through	719		Through	461
	Scheduled Bus Service?	No	Through-Right		Right	92		Right	110
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %			14.0%	

Minor Street Information											
Route #:	CR 675	Route Name(s)	Waterbury Rd.					Milepost (if app.)	N/A		
Existing Control Type	Two-way Stop-Control			Existing AADT	3,500			Design Year AADT	5,400		
Design Vehicle	Interstate Semitrailer (WB-62)			Control Vehicle	Interstate Semitrailer (WB-62)						
Primary Functional Classification	Rural Principal Arterial							Design Speed (mph)			
Secondary Functional Classification (if app.)								Target Speed (mph) [if app.]	45		

Approach #1	Direction	Southbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes			
	Sidewalks along:	Neither side of the approach	Left-Turn								
	Crosswalk on Approach?	Yes	Left-Through	1	Weekday AM Peak			Weekday PM Peak			
	On-Street Bike Facilities?	No	Through		Left	121		Left	110		
	Multi-Use Path?	No	Left-Through-Right		Through	10		Through	6		
	Scheduled Bus Service?	No	Through-Right		Right	193		Right	85		
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %			14.0%			
Approach #2	Direction	Northbound	Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes			
	Sidewalks along:	Neither side of the approach	Left-Turn								
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak			Weekday PM Peak			
	On-Street Bike Facilities?	No	Through		Left	45		Left	40		
	Multi-Use Path?	No	Left-Through-Right	1	Through	10		Through	10		
	Scheduled Bus Service?	No	Through-Right		Right	25		Right	25		
	Bus Stop on Approach?	No	Right-Turn		Daily Truck %			4.0%			
Approach #3	Direction		Number of Lanes		Study Period #1 Traffic Volumes			Study Period #2 Traffic Volumes			
	Sidewalks along:		Left-Turn								
	Crosswalk on Approach?		Left-Through		Weekday AM Peak			Weekday PM Peak			
	On-Street Bike Facilities?		Through		Left			Left			
	Multi-Use Path?		Left-Through-Right		Through			Through			
	Scheduled Bus Service?		Through-Right		Right			Right			
	Bus Stop on Approach?		Right-Turn		Daily Truck %						

Crash History (Existing Intersections Only)
Append the most recent five-years of crash data for the intersection from the CAR System. If the crash data evidences any issues relating to safety performance, discuss briefly here:
The crash history was not included in the analysis since the future conditions of SR 70 changes significantly from a 2 lane undivided to a 4-lane divided. Instead, a predictive crash model was used for the analysis.

Control Strategy Evaluation						
Provide a brief justification as to why each of the following control strategies should be advanced or not. Justification should consider potential environmental impacts.						
	CAP-X Outputs			SPICE Ranking	Strategy to Be Advanced?	Justification
	V/C Ratio		Multimodal Score			
Control Strategy	Weekday AM Peak	Weekday PM Peak				
Two-Way Stop-Controlled	2.06	2.10	N/A	4	No	Future volumes exceed Peak Hour Volume Thresholds based on FDOT ICE Manual, Figure A1
All-Way Stop-Controlled	1.35	1.28	N/A	N/A	No	Future volumes exceed Peak Hour Volume Thresholds based on FDOT ICE Manual, Figure A1
Signalized Control	0.38	0.34	4.8	8	Yes	Base Condition
Roundabout	1x2 0.54 2x2 0.42	1x2 0.44 2x2 0.44	5.6	1 & 7	Yes	The roundabout has a favorable spice ranking. Note that WBR already has a by-pass lane which may benefit control type
Median U-Turn	0.45	0.41	6.3	3	No	V/C higher than other intersection control types that are being advanced to stage 2.
RCUT (Signalized)	0.45	0.36	6.2	5	No	V/C higher than other intersection control types that are being advanced to stage 2.
RCUT (Unsignalized)	1.12	0.45	4.4	2	No	V/c greater than one
Jughandle				N/A	No	Not included in the analysis.
Displaced Left-Turn	Partial 0.30 DLT 0.29	Partial 0.30 DLT 0.29	4.8	6	Yes	Move DLT to Stage 2
Continuous Green Tee	N/A	N/A	N/A	N/A	No	Not a T-intersection.
Quadrant Roadway	NE 0.37	NE 0.33	4.4		Yes	Move SE Quad to Stage 2
Partial MUT	0.37	0.36	6.3	N/A	No	Other intersection control types which showed more favorable V/C ratios were advanced to stage 2
Other 2 (Type)	N/A	N/A	N/A	N/A	No	No additional alternative intersection configurations were included in this analysis.

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	Multiple Viable Alternatives Identified: Continue to Stage 2				
Comments					
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 886C0B0008864C9...	Date	4/9/2020 | 4:20
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 7A35B48FFF564A4...	Date	4/13/2020 | 12

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 2: Intial Control Strategy Assessment

To fulfill the requirements of Stage 2 (Intersection Control Strategy) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at CR 675	FDOT Project #	414506-2-22-01	Date	03/06/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com

List all viable intersection control strategies identified in Stage 1 (Screening):

Signalized Control	Roundabout	Displaced Left-Turn
Quadrant Roadway		

Operational Analyses

Summarize the results of the peak hour analysis performed for each control strategy. Select analysis year based on guidance in the ICE procedures document. Refer to Exhibit 19-8 of the *Highway Capacity Manual, 6th Edition* (HCM6) to determine the appropriate LOS based on intersection delay (*hover over this cell for Exhibit 19-8*).

Design Vehicle	Interstate Semitrailer (WB-62)	Control Vehicle	Interstate Semitrailer (WB-62)

Opening Year: 2025

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	B	14.4	Yes	B	10.9	Yes			
Roundabout	A	6.0	Yes	A	5.6	Yes			
Displaced Left-Turn	B	13.6	Yes	B	17.3	Yes			
Quadrant Roadway	C	20.1	Yes	B	18.3	Yes			

Design Year: 2045

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	B	16.2	Yes	B	13.2	Yes			
Roundabout	A	9.6	Yes	A	7.9	Yes			
Displaced Left-Turn	A	17.2	Yes	B	19.5	Yes			
Quadrant Roadway	D	35.3	Yes	C	31.2	Yes			

Provide any additional discussion necessary regarding the results of the operational analysis:	The results show that the roundabout has the best operations. The signalized control and displaced left-turn are operating at LOS B or better. The Quadrant Roadway design operates at LOS D during the design year AM Peak. The delay that is presented for Displaced Left-Turn and Quadrant were recalculated as Experience Travel Time (ETT) based on guidance from the Highway Capacity Manual (HCM) 6th Edition, Chapter 23. Refer to Attachment F for the Delay Calculations.

Safety Performance							
Enter the most recent five (5) years of crash data from the CAR System.					Most recent year of crash data available		2018
Crash Type		2014	2015	2016	2017	2018	Total
Combined	Total						
	Fatal/Injury						
	PDO						
Single-Vehicle	Total	0	0	0	0	0	0
	Fatal/Injury	0	0	0	0	0	0
	PDO	0	0	0	0	0	0
Multi-Vehicle	Total	0	0	0	0	1	1
	Fatal/Injury	0	0	0	0	1	1
	PDO	0	0	0	0	0	0
Vehicle-Pedestrian	Fatal/Injury	0	0	0	0	0	0
Vehicle-Bicycle	Fatal/Injury	0	0	0	0	0	0
Total	All	0	0	0	0	1	1

Apply the FDOT SPICE Tool to model anticipated safety performance of each control strategy. For intersection types not accommodated in the tool, manually apply crash modification factors detailed in the ICE procedures document or qualitatively describe anticipated safety impacts.

Control Strategy	Anticipated Impact on Safety Performance	Opening Year		Design Year	
		Predicted Total Crashes	Predicted Fatal+Injury Crashes	Predicted Total Crashes	Predicted Fatal+Injury Crashes
Signalized Control	This option had the highest predicted fatal + injury crashes.	1.91	1.05	2.82	1.59
Roundabout	The roundabout has the low predicted fatal + injury crashes which is comparable to the displacd left turn option	5.74	0.96	8.33	1.45
Displaced Left-Turn	This option has a low predicted fatal + injury crashes and the lowest predicted total crashes.	1.68	0.93	2.48	1.40
Quadrant Roadway	Due to a lack of crash experience, the safety performance of a QR is not known (see FHWA Pub. FHWA-HRT-09-060)	N/A	N/A	N/A	N/A

Costs and Benefit/Cost Ratios						
Remaining cognizant of the current level of detail of each control strategy's conceptual design, provide a cost estimate for each. You may want to include costs for preliminary engineering, required right-of-way acquisitions, construction, and a contingency. Apply the FDOT ICE Tool to determine the delay benefit-cost ratio (B/C), safety B/C, overall B/C, and net-present value for each control stratetgy.						
			FDOT ICE Tool Outputs			
Control Strategy	ROW Costs ($)	Construction Costs ($)	Delay B/C	Safety B/C	Overall B/C	Net Present Value
Signalized Control	$0	$1,080,000	Base	Base	Base	Base
Roundabout	$0	$1,030,000	55.83	-0.79	55.03	$4,218,006
Displaced Left-Turn	$0	$2,190,000	-1.68	0.50	-1.18	-$2,723,275
Quadrant Roadway	$10,000	$2,240,000	-3.84	N/A	-3.84	-$6,572,346

Multimodal Accomodations								
Note the existing/anticipated level of pedestrian/bicyclist activity at the study intersection during the peak hours of the typical day. See ICE procedures document for activity level thresholds:								
Peak Hour:	Weekday AM Peak		Weekday PM Peak		Saturday Midday Peak		Acitivity Level	
	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Ped.	Bicycles
# of ped. crossings (both approaches, if app.):							Low	Low
# of cyclists (both approaches, if app.):								

Summarize the ability of each viable control strategy to accommodate the exisitng/anticipated level of:

Control Strategy	Pedestrians and Bicyclists	Transit Services	Freight Needs
Signalized Control	The immediate area does not have significant pedestrian and bicyclist activity.	There is no transit services in the vicinity of the intersection	This should improve the safety and operations of freight activities at the intersection.
Roundabout	The immediate area does not have significant pedestrian and bicyclist activity.	There is no transit services in the vicinity of the intersection	This should improve the safety and operations of freight activities at the intersection.
Displaced Left-Turn	The immediate area does not have significant pedestrian and bicyclist activity.	There is no transit services in the vicinity of the intersection	This should improve the safety and operations of freight activities at the intersection.
Quadrant Roadway	The immediate area does not have significant pedestrian and bicyclist activity.	There is no transit services in the vicinity of the intersection	Although there is no safety data, this improvement should improve the safety freight activities.

Environmental, Utility, and Right-of-Way Impacts	
Summarize any issues related to environmental, utility, or right-of-way (including relocation) impacts specific to each control strategy. Be sure to consider the NEPA requirements for each control type.	
Signalized Control	Improvements are within right-of-way and no environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Roundabout	Improvements are within right-of-way and no environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Displaced Left-Turn	Improvements are within right-of-way and no environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Quadrant Roadway	Right of way will be needed to construct the quadrant roadway at the northeast quadrant of the intersection. The quadrant roadway also has potential for impacting above-ground utility such as overhead transmission lines.

Public Input/Feedback (if appropriate)
Summarize any agency or public input regarding the control strategies:
None performed to date.

Control Strategy Evaluation		
Provide a brief justification as to why each of the following is either viable or not viable. If a single control strategy is recommended, select it as the only strategy to be advanced.		
Control Strategy	Strategy to be Advanced?	Justification
Signalized Control	No	Although the alternative operates at LOS B, the roundabout is a better option since the benefits are greater and the costs are lower.
Roundabout	Yes	1) The B/C analysis tool indicates this is the preferred control strategy; 2) highest NPV; 3) best traffic operations
Displaced Left-Turn	No	The benefits are less than the signalized control (base condition) and cost is greater than the signalized control.
Quadrant Roadway	No	The benefits are less than the signalized control (base condition) and cost is greater than the signalized control.
	No	
	No	

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	Identified Control Strategy Approved				
Comments	The details of the analysis and results are included in a memorandum on file at the District.				
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 896C0B0008864C9...	Date	4/9/2020 | 4:1
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 1A35B45EEE684A4...	Date	4/13/2020 | 12

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 1: Screening

To fulfill the requirements of Stage 1 (Screening) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at Del Webb Boulevard	FDOT Project #	414506-2-22-01	Date	03/06/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com
FDOT Context Classification	C3R - Suburban Residential	FDOT District	District 1	County	Manatee
Project Locality (*City/Town/Village*)	Unincorporated Manatee County	Project Type	Corridor Improvement Project		
Project Purpose (*What is the catalyst for this project and why is it being undertaken?*)	A PD&E Study is being completed with the purpose of increasing capacity and improving traffic operational conditions along the SR 70 corridor from Lorraine Road to CR 675/Waterbury Road. The Intersection Control Evaluation (ICE) is based on the future build improvements of the project which widen SR 70 to 4-lanes. This ICE will focus on the intersection with Del Webb Blvd.				
Project Setting Description (*Describe the area surrounding the intersection*)	SR 70 at Del Webb Blvd. Future Land Use is comprised of Mixed Use -Commerical / Residential. There is a major residential development that is changing the setting from rural to suburban/residential.				
Multimodal Context (*Describe the pedestrian, bicycle, and transit activity in the area and the potential for activity based on surrounding land uses and development patterns*)	There is paved sidewalk on the east side of Del Webb Blvd. For SR 70, there are proposed sidewalks and paved shoulders on both sides of the road.				

Major Street Information

Route #:	SR 70	Route Name(s)	SR 70					Milepost	11.684
Existing Control Type	Two-way Stop-Control		Existing AADT	13,000		Design Year AADT			24,000
Design Vehicle	Interstate Semitrailer (WB-62)		Control Vehicle	Interstate Semitrailer (WB-62)					
Primary Functional Classification	Urban Principal Arterial					Design Speed (mph)			55
Secondary Functional Classification (if app.)						Target Speed (mph) [if app.]			

Approach #1	Direction	Eastbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along	Both sides of the approach	Left-Turn					
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak		Weekday PM Peak	
	On-Street Bike Facilities?	Yes	Through	2	Left		Left	
	Multi-Use Path?	No	Left-Through-Right		Through	793	Through	1,182
	Scheduled Bus Service?	No	Through-Right		Right	150	Right	140
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %		14.0%	
Approach #2	Direction	Westbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:	Both sides of the approach	Left-Turn	1				
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak		Weekday PM Peak	
	On-Street Bike Facilities?	Yes	Through	2	Left	38	Left	46
	Multi-Use Path?	No	Left-Through-Right		Through	1,155	Through	771
	Scheduled Bus Service?	No	Through-Right		Right		Right	
	Bus Stop on Approach?	No	Right-Turn		Daily Truck %		14.0%	

Minor Street Information											
Route #:		Route Name(s)	Del Webb Blvd					Milepost (if app.)	N/A		
Existing Control Type	Two-way Stop-Control		Existing AADT	2,400				Design Year AADT	3,000		
Design Vehicle	Interstate Semitrailer (WB-62)		Control Vehicle	Interstate Semitrailer (WB-62)							
Primary Functional Classification	Urban Local							Design Speed (mph)	40		
Secondary Functional Classification (if app.)								Target Speed (mph) [if app.]			
Approach #1	Direction	Northbound	Number of Lanes					Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:	One side of the approach	Left-Turn	1							
	Crosswalk on Approach?	Yes	Left-Through					Weekday AM Peak		Weekday PM Peak	
	On-Street Bike Facilities?	No	Through					Left	125	Left	147
	Multi-Use Path?	No	Left-Through-Right					Through		Through	
	Scheduled Bus Service?	No	Through-Right					Right	45	Right	25
	Bus Stop on Approach?	No	Right-Turn	1				Daily Truck %		4.0%	
Approach #2	Direction		Number of Lanes					Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:		Left-Turn								
	Crosswalk on Approach?		Left-Through					Weekday AM Peak		Weekday PM Peak	
	On-Street Bike Facilities?		Through					Left		Left	
	Multi-Use Path?		Left-Through-Right					Through		Through	
	Scheduled Bus Service?		Through-Right					Right		Right	
	Bus Stop on Approach?		Right-Turn					Daily Truck %			
Approach #3	Direction		Number of Lanes					Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes	
	Sidewalks along:		Left-Turn								
	Crosswalk on Approach?		Left-Through					Weekday AM Peak		Weekday PM Peak	
	On-Street Bike Facilities?		Through					Left		Left	
	Multi-Use Path?		Left-Through-Right					Through		Through	
	Scheduled Bus Service?		Through-Right					Right		Right	
	Bus Stop on Approach?		Right-Turn					Daily Truck %			

Crash History (Existing Intersections Only)
Append the most recent five-years of crash data for the intersection from the CAR System. If the crash data evidences any issues relating to safety performance, discuss briefly here:
The crash history was not included in the analysis since the future conditions of SR 70 changes significantly from a 2 lane undivided to a 4-lane divided. Instead, a predictive crash model was used for the analysis.

Control Strategy Evaluation						
Provide a brief justification as to why each of the following control strategies should be advanced or not. Justification should consider potential environmental impacts.						
	CAP-X Outputs			SPICE Ranking	Strategy to Be Advanced?	Justification
	V/C Ratio		Multimodal Score			
Control Strategy	Weekday AM Peak	Weekday PM Peak				
Two-Way Stop-Controlled	3.90	4.93	3.70	3	No	V/C capacity ratios are exceeded.
All-Way Stop-Controlled	1.64	1.64	6.7	N/A	No	V/C capacity ratios are exceeded.
Signalized Control	0.43	0.49	4.8	8	Yes	Base condition
Roundabout	1x2 .55 2x2 .55 1x1 1.07	1x2 0.57 2x2 0.57 1x1 1.09	5.6 5.6 6.7	1 & 4	Yes	Move to Stage 2 based on SPICE recommendation
Median U-Turn	N/A	N/A	N/A	N/A	No	Not applicable since this is a T-intersection.
RCUT (Signalized)	0.44	0.47	6.3	5	Yes	Move to Stage 2 based on v/c for am and pm hours
RCUT (Unsignalized)	0.57	1.10	4.4	2	No	V/C ratio exceeded during the PM Peak.
Jughandle				N/A	No	Not included in the analysis.
Displaced Left-Turn	0.43	0.45	4.8	7	Yes	Partial Displaced Left-Turn: Move to Stage 2 based on v/c for am and pm hours
Continuous Green Tee	0.34	0.48	3.0	6	Yes	Move to Stage 2 based on v/c for am and pm hours
Quadrant Roadway	N/A	N/A	N/A		No	Not applicable since this is a T-intersection.
Partial MUT	N/A	N/A	N/A	N/A	No	Not applicable since this is a T-intersection.
Other 2 (Type)	N/A	N/A	N/A	N/A	No	No additional alternative intersection configurations were included in this analysis.

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	Multiple Viable Alternatives Identified: Continue to Stage 2				
Comments					
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 886C9B0008864C0...	Date	4/9/2020 | 4:17
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 1A35B45FFF084A4...	Date	4/13/2020 | 12:2

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 2: Intial Control Strategy Assessment

To fulfill the requirements of Stage 2 (Intersection Control Strategy) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at Del Webb	FDOT Project #	414506-2-22-01	Date	03/06/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com

List all viable intersection control strategies identified in Stage 1 (Screening):

Signalized Control	Roundabout	RCUT (Signalized)
Displaced Left-Turn	Continuous Green Tee	

Operational Analyses

Summarize the results of the peak hour analysis performed for each control strategy. Select analysis year based on guidance in the ICE procedures document. Refer to Exhibit 19-8 of the *Highway Capacity Manual, 6th Edition* (HCM6) to determine the appropriate LOS based on intersection delay (*hover over this cell for Exhibit 19-8*).

Design Vehicle	Interstate Semitrailer (WB-62)	Control Vehicle	Interstate Semitrailer (WB-62)

Opening Year: 2025

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	A	5.9	Yes	A	7.8	Yes			
Roundabout	A	6.1	Yes	A	6.2	Yes			
RCUT (Signalized)	A	7.1	Yes	A	8.1	Yes			
Displaced Left-Turn	A	8.9	Yes	B	11.4	Yes			
Continuous Green Tee	A	4.2	Yes	A	6.4	Yes			

Design Year: 2045

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	A	8.2	Yes	B	10.5	Yes			
Roundabout	A	8.9	Yes	A	9.7	Yes			
RCUT (Signalized)	B	10.3	Yes	B	10.9	Yes			
Displaced Left-Turn	B	12.5	Yes	B	14.5	Yes			
Continuous Green Tee	A	6.4	Yes	A	9.6	Yes			

Provide any additional discussion necessary regarding the results of the operational analysis:	All of the alternative intersection configurations are operating at LOS B or better for both AM and PM Peak hours. The delay that is shown for the RCUT, Displaced Left-Turn, and Continuous Green T were recalculated as Experience Travel Time (ETT) based on guidance from the Highway Capacity Manual (HCM) 6th Edition, Chapter 23. Refer to Attachment F for the Delay Calculations.

Safety Performance							
Enter the most recent five (5) years of crash data from the CAR System.					Most recent year of crash data available		2018
Crash Type		2014	2015	2016	2017	2018	Total
Combined	Total						
	Fatal/Injury						
	PDO						
Single-Vehicle	Total	0	0	1	0	0	1
	Fatal/Injury	0	0	1	0	0	1
	PDO	0	0	0	0	0	0
Multi-Vehicle	Total	0	0	0	2	3	5
	Fatal/Injury	0	0	0	2	2	4
	PDO	0	0	0	0	1	1
Vehicle-Pedestrian	Fatal/Injury	0	0	0	0	0	0
Vehicle-Bicycle	Fatal/Injury	0	0	0	0	0	0
Total	All	0	0	1	2	3	6

Apply the FDOT SPICE Tool to model anticipated safety performance of each control strategy. For intersection types not accommodated in the tool, manually apply crash modification factors detailed in the ICE procedures document or qualitatively describe anticipated safety impacts.

Control Strategy	Anticipated Impact on Safety Performance	Opening Year		Design Year	
		Predicted Total Crashes	Predicted Fatal+Injury Crashes	Predicted Total Crashes	Predicted Fatal+Injury Crashes
Signalized Control	This option has a comparable Predicated Total Crashes for both opening and design year between the other options.	4.61	5.59	4.61	5.59
Roundabout	This option has the lowst Predicted Fatal+Injury crashes for both opening an design years	4.56	0.99	7.19	1.16
RCUT (Signalized)	This option has a comparable Predicated Total Crashes for both opening and design year between the other options.	3.92	4.36	3.92	4.36
Displaced Left-Turn	This option has a comparable Predicated Total Crashes for both opening and design year between the other options.	4.06	4.92	4.06	4.92
Continuous Green Tee	This option has a comparable Predicated Total Crashes for both opening and design year between the other options.	4.43	4.75	4.43	4.75

Costs and Benefit/Cost Ratios						
Remaining cognizant of the current level of detail of each control strategy's conceptual design, provide a cost estimate for each. You may want to include costs for preliminary engineering, required right-of-way acquisitions, construction, and a contingency. Apply the FDOT ICE Tool to determine the delay benefit-cost ratio (B/C), safety B/C, overall B/C, and net-present value for each control stratetgy.						
Control Strategy	ROW Costs ($)	Construction Costs ($)	FDOT ICE Tool Outputs			
			Delay B/C	Safety B/C	Overall B/C	Net Present Value
Signalized Control	-	$2,340,000	Base	Base	Base	Base
Roundabout	-	$2,110,000	3.03	8.14	11.17	$1,910,613
RCUT (Signalized)	-	$2,530,000	-1.62	3.24	1.62	$267,414
Displaced Left-Turn	$410,000	$2,650,000	-5.22	1.41	-3.81	-$2,636,400
Continuous Green Tee	-	$2,400,000	8.41	5.81	14.21	$2,090,554

Multimodal Accomodations								
Note the existing/anticipated level of pedestrian/bicyclist activity at the study intersection during the peak hours of the typical day. See ICE procedures document for activity level thresholds:								
Peak Hour:	Weekday AM Peak		Weekday PM Peak		Saturday Midday Peak		Acitivity Level	
	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Ped.	Bicycles
# of ped. crossings (both approaches, if app.):							Low	Low
# of cyclists (both approaches, if app.):								

Summarize the ability of each viable control strategy to accommodate the exisitng/anticipated level of:

Control Strategy	Pedestrians and Bicyclists	Transit Services	Freight Needs
Signalized Control	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the designs trucks at the turns.
Roundabout	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the designs trucks at the turns.
RCUT (Signalized)	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the designs trucks at the turns.
Displaced Left-Turn	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the designs trucks at the turns.
Continuous Green Tee	Crosswalks and bicycle lanes can be accommodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the designs trucks at the turns.

Environmental, Utility, and Right-of-Way Impacts	
Summarize any issues related to environmental, utility, or right-of-way (including relocation) impacts specific to each control strategy. Be sure to consider the NEPA requirements for each control type.	
Signalized Control	No right of way acquisition required and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Roundabout	No right of way acquisition required and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
RCUT (Signalized)	No right of way acquisition required and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Displaced Left-Turn	Right of way acquisition may be needed to accommodate displaced left turns. Potential for environmental impacts on the south side of SR 70. No impacts to the overhead transmission lines on the north side.
Continuous Green Tee	No right of way acquisition required and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.

Public Input/Feedback (if appropriate)
Summarize any agency or public input regarding the control strategies:
None performed to date.

Control Strategy Evaluation		
Provide a brief justification as to why each of the following is either viable or not viable. If a single control strategy is recommended, select it as the only strategy to be advanced.		
Control Strategy	Strategy to be Advanced?	Justification
Signalized Control	No	This option was analyzed as the base intersection control which is why the B/C ratio is zero. The Roundabout and Continuous Green-Tee have higher benefits relative to their cost.
Roundabout	Yes	1) B/C analysis tool indicates this is the preferred control strategy; 2) 70% less severe crashes compared to others; 3) traffic operations at LOS A; 4) no ROW impacts; 5) enhances the livable communities characteristic by lowering vehicle speeds and providing shorter crosswalk distances.
RCUT (Signalized)	No	Although this option has a high overall B/C ratio, it does not share the traffic operational benefits when compared to the Roundabout and Continuos Green Tee options.
Displaced Left-Turn	No	This option had a negative Net Present Value (NPV) ; therefore, it is not cost feasible compared to the base option of a signalized intersection.
Continuous Green Tee	No	This option has a high B/C ratio and NPV; however, the roundabout is the preferred option for several reasons including its higher safety benefit.
	No	

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	Identified Control Strategy Approved				
Comments	The details of the analysis and results are included in a memorandum on file at the District.				
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 886C0B0008864C0...	Date	4/9/2020 | 4:13
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 1A958A5FFE00A4A...	Date	4/13/2020 | 12:

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 1: Screening

To fulfill the requirements of Stage 1 (Screening) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at Uihlein Road	FDOT Project #	414506-2-22-01	Date	03/06/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com
FDOT Context Classification	C3R - Suburban Residential	FDOT District	District 1	County	Manatee
Project Locality (*City/Town/Village*)	Unincorporated Manatee County	Project Type	Corridor Improvement Project		
Project Purpose (*What is the catalyst for this project and why is it being undertaken?*)	A PD&E Study is being completed with the purpose of increasing capacity and improving traffic operational conditions along the SR 70 corridor from Lorraine Road to CR 675/Waterbury Road. The Intersection Control Evaluation (ICE) is based on the future build improvements of the project which widen SR 70 to 4-lanes. This ICE will focus on the intersection with Uihlein Road.				
Project Setting Description (*Describe the area surrounding the intersection*)	SR 70 at Uihlein Rd Future Land Use is comprised of Mixed Use -Commerical. There is a major residential development that is changing the setting from rural to suburban/residential.				
Multimodal Context (*Describe the pedestrian, bicycle, and transit activity in the area and the potential for activity based on surrounding land uses and development patterns*)	There are paved sidewalks on the both sides of Uihlein Road along with marked bike lanes. For SR 70, there are proposed sidewalks and paved shoulders on both sides of the road.				

Major Street Information

Route #:	SR 70	Route Name(s)	SR 70					Milepost	10.813
Existing Control Type	Two-way Stop-Control		Existing AADT	20,000		Design Year AADT			34,000
Design Vehicle	Interstate Semitrailer (WB-62)		Control Vehicle	Interstate Semitrailer (WB-62)					
Primary Functional Classification	Urban Principal Arterial					Design Speed (mph)			55
Secondary Functional Classification (if app.)						Target Speed (mph) [if app.]			

Approach #1	Direction	Eastbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes		
	Sidewalks along	Both sides of the approach	Left-Turn	2					
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak		Weekday PM Peak		
	On-Street Bike Facilities?	Yes	Through	2	Left	430	Left	698	
	Multi-Use Path?	No	Left-Through-Right		Through	846	Through	1,256	
	Scheduled Bus Service?	No	Through-Right		Right		Right		
	Bus Stop on Approach?	No	Right-Turn		Daily Truck %		14.0%		
Approach #2	Direction	Westbound	Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes		
	Sidewalks along:	Both sides of the approach	Left-Turn						
	Crosswalk on Approach?	Yes	Left-Through		Weekday AM Peak		Weekday PM Peak		
	On-Street Bike Facilities?	Yes	Through	2	Left		Left		
	Multi-Use Path?	No	Left-Through-Right		Through	1,242	Through	781	
	Scheduled Bus Service?	No	Through-Right		Right	137	Right	120	
	Bus Stop on Approach?	No	Right-Turn	1	Daily Truck %		14.0%		

Minor Street Information											
Route #:		Route Name(s)	Uihlein Rd					Milepost (if app.)	N/A		
Existing Control Type	Two-way Stop-Control			Existing AADT	4,300			Design Year AADT	14,000		
Design Vehicle	Interstate Semitrailer (WB-62)			Control Vehicle	Interstate Semitrailer (WB-62)						
Primary Functional Classification	Urban Local							Design Speed (mph)			
Secondary Functional Classification (if app.)								Target Speed (mph) [if app.]	45		
Approach #1	Direction	Southbound		Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes			
	Sidewalks along:	Both sides of the approach		Left-Turn	1						
	Crosswalk on Approach?	Yes		Left-Through		Weekday AM Peak		Weekday PM Peak			
	On-Street Bike Facilities?	Yes		Through		Left	142	Left	114		
	Multi-Use Path?	No		Left-Through-Right		Through		Through			
	Scheduled Bus Service?	No		Through-Right		Right	663	Right	411		
	Bus Stop on Approach?	No		Right-Turn	1	Daily Truck %		4.0%			
Approach #2	Direction			Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes			
	Sidewalks along:			Left-Turn							
	Crosswalk on Approach?			Left-Through		Weekday AM Peak		Weekday PM Peak			
	On-Street Bike Facilities?			Through		Left		Left			
	Multi-Use Path?			Left-Through-Right		Through		Through			
	Scheduled Bus Service?			Through-Right		Right		Right			
	Bus Stop on Approach?			Right-Turn		Daily Truck %					
Approach #3	Direction			Number of Lanes		Study Period #1 Traffic Volumes		Study Period #2 Traffic Volumes			
	Sidewalks along:			Left-Turn							
	Crosswalk on Approach?			Left-Through		Weekday AM Peak		Weekday PM Peak			
	On-Street Bike Facilities?			Through		Left		Left			
	Multi-Use Path?			Left-Through-Right		Through		Through			
	Scheduled Bus Service?			Through-Right		Right		Right			
	Bus Stop on Approach?			Right-Turn		Daily Truck %					

Crash History (Existing Intersections Only)
Append the most recent five-years of crash data for the intersection from the CAR System. If the crash data evidences any issues relating to safety performance, discuss briefly here:
The crash history was not included in the analysis since the future conditions of SR 70 changes significantly from a 2 lane undivided to a 4-lane divided. Instead, a predictive crash model was used for the analysis.

Control Strategy Evaluation						
Provide a brief justification as to why each of the following control strategies should be advanced or not. Justification should consider potential environmental impacts.						
	CAP-X Outputs			SPICE Ranking	Strategy to Be Advanced?	Justification
	V/C Ratio		Multimodal Score			
Control Strategy	Weekday AM Peak	Weekday PM Peak				
Two-Way Stop-Controlled	N/A	N/A	N/A	N/A	No	Future volumes exceed Peak Hour Volume Thresholds based on FDOT ICE Manual, Figure A1
All-Way Stop-Controlled	N/A	N/A	N/A	N/A	No	Future volumes exceed Peak Hour Volume Thresholds according to FDOT ICE Manual.
Signalized Control	0.83	0.54	4.8	7	Yes	Base condition
Roundabout	2x2: 1.52 1x2: 1.84 1x1: 2.33	2x2: 0.89 1x2: 0.89 1x1: 1.72	5.6 / 6.7	1 Lane: 1 2 Lane: 4	Yes	Roundabout has a favorable SPICE ranking
Median U-Turn	N/A	N/A	N/A	N/A	No	Not applicable since this is a T-intersection.
RCUT (Signalized)	0.91	0.66	6.3	3	No	The future volumes seem to be near the limit for Peak Hour Volume thresholds based on FDOT ICE Manual, Figure A3
RCUT (Unsignalized)	5.66	1.72	4.4	2	No	V/C ratio exceeded during the PM Peak.
Jughandle				N/A	No	Not included in the analysis.
Displaced Left-Turn	.70 (Partial)	.45 (Partial)	4.8	6	Yes	Move to Stage 2 for Partial DLT
Continuous Green Tee	0.61	0.53	3.0	5	Yes	Move to Stage 2
Quadrant Roadway	N/A	N/A	N/A		No	Not applicable since this is a T-intersection.
Partial MUT	N/A	N/A	N/A	N/A	No	Not applicable since this is a T-intersection.
Other 2 (Type)	N/A	N/A	N/A	N/A	No	No additional alternative intersection configurations were included in this analysis.

Resolution						
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer						
Project Determination	Multiple Viable Alternatives Identified: Continue to Stage 2					
Comments						
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 886C0B0008864C9...	Date	4/8/2020	11:01
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 4A35D45FFF684A4...	Date	4/8/2020	4:18

Florida Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage 2: Intial Control Strategy Assessment

To fulfill the requirements of Stage 2 (Intersection Control Strategy) of FDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) for the project's approval.

Project Name	SR 70 at Uihlein Road	FDOT Project #	414506-2-22-01	Date	03/06/20
Submitted By	Nicole Harris, PE	Agency/Company	Stantec	Email	nicole.harris@stantec.com

List all viable intersection control strategies identified in Stage 1 (Screening):

Signalized Control	Roundabout	Displaced Left-Turn
Continuous Green Tee		

Operational Analyses

Summarize the results of the peak hour analysis performed for each control strategy. Select analysis year based on guidance in the ICE procedures document. Refer to Exhibit 19-8 of the *Highway Capacity Manual, 6th Edition* (HCM6) to determine the appropriate LOS based on intersection delay (*hover over this cell for Exhibit 19-8*).

Design Vehicle	Interstate Semitrailer (WB-62)	Control Vehicle	Interstate Semitrailer (WB-62)

Opening Year: 2025

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	B	11.5	Yes	A	7.8	Yes			
Roundabout	A	5.8	Yes	A	6.2	Yes			
Displaced Left-Turn	B	11.6	Yes	B	15.6	Yes			
Continuous Green Tee	B	12.7	Yes	A	10.0	Yes			

Design Year: 2045

Control Strategy	Peak Hour	Weekday AM Peak		Peak Hour	Weekday PM Peak		Peak Hour	Saturday Midday Peak	
	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?	LOS	Delay (sec.)	All Queues Accommodated?
Signalized Control	D	47.7	Yes	D	36.5	Yes			
Roundabout	C	15.2	Yes	C	19.6	Yes			
Displaced Left-Turn	B	17.6	Yes	C	25.1	Yes			
Continuous Green Tee	C	29.3	Yes	B	17.9	Yes			

Provide any additional discussion necessary regarding the results of the operational analysis:	Roundabout, Displaced Left-Turn, and Continuous Green Tee are operating at LOS C or better during both AM and PM Peak hours. The delay that is shown for the Displaced Left-Turn and Continuous Green T were recalculated as Experience Travel Time (ETT) based on guidance from the Highway Capacity Manual (HCM) 6th Edition, Chapter 23. Refer to Attachment F for the Delay Calculations.

Safety Performance							
Enter the most recent five (5) years of crash data from the CAR System.					Most recent year of crash data available		2018
Crash Type		2014	2015	2016	2017	2018	Total
Combined	Total						
	Fatal/Injury						
	PDO						
Single-Vehicle	Total	0	1	1	0	2	4
	Fatal/Injury	0	0	0	0	1	1
	PDO	0	1	1	0	1	3
Multi-Vehicle	Total	0	0	1	1	2	4
	Fatal/Injury	0	0	0	1	2	3
	PDO	0	0	1	0	0	1
Vehicle-Pedestrian	Fatal/Injury	0	0	0	0	0	0
Vehicle-Bicycle	Fatal/Injury	0	0	0	0	0	0
Total	All	0	1	2	1	4	8

Apply the FDOT SPICE Tool to model anticipated safety performance of each control strategy. For intersection types not accommodated in the tool, manually apply crash modification factors detailed in the ICE procedures document or qualitatively describe anticipated safety impacts.

Control Strategy	Anticipated Impact on Safety Performance	Opening Year		Design Year	
		Predicted Total Crashes	Predicted Fatal+Injury Crashes	Predicted Total Crashes	Predicted Fatal+Injury Crashes
Signalized Control	This option is comparable to the Displaced Left-Turn and Continuous Green Tee options.	5.18	1.84	12.50	3.90
Roundabout	This option has the lowest Predicted Fatal+Injury crashes during both Opening and Design years	7.00	1.23	14.82	2.98
Displaced Left-Turn	This option is comparable to the Signalized and Continuous Green Tee options.	4.56	1.62	11.00	3.43
Continuous Green Tee	This option is comparable to the Signalized and Displaced Left-Turn options.	4.97	1.56	12.00	3.31

Costs and Benefit/Cost Ratios						
Remaining cognizant of the current level of detail of each control strategy's conceptual design, provide a cost estimate for each. You may want to include costs for preliminary engineering, required right-of-way acquisitions, construction, and a contingency. Apply the FDOT ICE Tool to determine the delay benefit-cost ratio (B/C), safety B/C, overall B/C, and net-present value for each control stratetgy.						
Control Strategy	ROW Costs ($)	Construction Costs ($)	FDOT ICE Tool Outputs			
			Delay B/C	Safety B/C	Overall B/C	Net Present Value
Signalized Control	$0	$2,090,000	Base	Base	Base	Base
Roundabout	$30,000	$1,750,000	24.62	7.64	32.26	$11,947,931
Displaced Left-Turn	$1,820,000	$2,390,000	0.65	0.60	1.25	$556,798
Continuous Green Tee	$0	$2,150,000	50.79	26.98	77.77	$4,606,421

Multimodal Accomodations								
Note the existing/anticipated level of pedestrian/bicyclist activity at the study intersection during the peak hours of the typical day. See ICE procedures document for activity level thresholds:								
Peak Hour:	Weekday AM Peak		Weekday PM Peak		Saturday Midday Peak		Acitivity Level	
	Major Street	Minor Street	Major Street	Minor Street	Major Street	Minor Street	Ped.	Bicycles
# of ped. crossings (both approaches, if app.):							Low	Low
# of cyclists (both approaches, if app.):								

Summarize the ability of each viable control strategy to accommodate the exisitng/anticipated level of:

Control Strategy	Pedestrians and Bicyclists	Transit Services	Freight Needs
Signalized Control	Crosswalks and a bicycle lane can be safely accommmodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the design trucks at the turns.
Roundabout	Crosswalks and a bicycle lane can be safely accommmodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the design trucks at the turns.
Displaced Left-Turn	Crosswalks and a bicycle lane can be safely accommmodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the design trucks at the turns.
Continuous Green Tee	Crosswalks and a bicycle lane can be safely accommmodated with this option.	There is no transit service in the vicinity of this intersection.	This option was designed to accommodate the design trucks at the turns.

Environmental, Utility, and Right-of-Way Impacts	
Summarize any issues related to environmental, utility, or right-of-way (including relocation) impacts specific to each control strategy. Be sure to consider the NEPA requirements for each control type.	
Signalized Control	Improvements are within right-of-way and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Roundabout	Minor right of way needs. No new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.
Displaced Left-Turn	Right of way acquisition may be needed. There is also potential impacts to the overhead transmission lines on the north side. A driveway/connection will also be impacted.
Continuous Green Tee	Improvements are within right-of-way and no new environmental impacts are anticipated. The overhead transmission lines on the north side of the corridor are not expected to be impacted.

Public Input/Feedback (if appropriate)
Summarize any agency or public input regarding the control strategies:
None performed to date.

Control Strategy Evaluation		
Provide a brief justification as to why each of the following is either viable or not viable. If a single control strategy is recommended, select it as the only strategy to be advanced.		
Control Strategy	Strategy to be Advanced?	Justification
Signalized Control	No	This option was analyzed as the base intersection control. Comparing the B/C, NPV, and traffic operations to other options, this is not the recommended strategy.
Roundabout	Yes	1) B/C analysis tool indicates this is the preferred control strategy; 2) highest NPV; 3) 10% less severe crashes compared to others; 4) traffic operations best during AM; 5) minor ROW; 6) enhances the livable communities characteristic by lowering vehicle speeds.
Displaced Left-Turn	No	This option has the highest costs and potential impacts to utilities; although, it does have a B/C greater than 1 and a positive NPV which indicates that it is a better than the base option (signalized).
Continuous Green Tee	No	This option has a high B/C ratio, however, the roundabout has a higher NPV and safety benefit.
	No	
	No	

Resolution					
To be filled out by FDOT District Traffic Operations Engineer and District Design Engineer					
Project Determination	Identified Control Strategy Approved				
Comments	The details of the analysis and the results are included in a memorandum on file at the District.				
DTOE Name	Trisha Hartzell	Signature	DocuSigned by: Trisha Hartzell 000C0B0000004C9...	Date	4/8/2020 | 11:
DDE Name	Sam Joseph	Signature	DocuSigned by: Sam Joseph 1A95B15EEE00...	Date	8/19/2020 | 9:35 A