PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District 7

US 41 (SR 45) at SR 54 PD&E Study

From South of SR 54 Intersection to North of SR 54 Intersection

Pasco County, Florida

Work Program Item Segment No: 419182-1

Efficient Transportation Decision Making (ETDM) Number: 7883

January 2026

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

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PROFESSIONAL ENGINEER CERTIFICATION

PRELIMINARY ENGINEERING REPORT

Project: US 41 (SR 45) at SR 54 PD&E Study

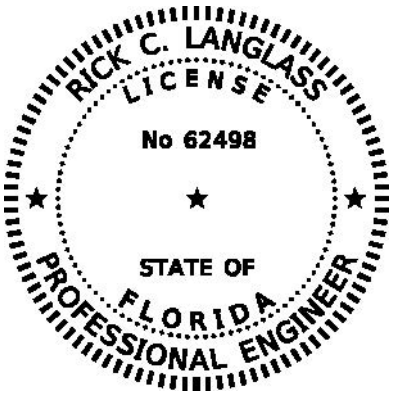
ETDM Number: 7883

WPI Segment No.: 419182-1

Federal Aid Project Number: TBD

This preliminary engineering report contains engineering information that fulfills the purpose and need for the US 41 (SR 45) at SR 54 PD&E Study from south of the SR 54 intersection to north of the SR 54 intersection in Pasco County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

I hereby certify that I am a registered professional engineer in the State of Florida practicing with RS&H, 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 *Rick Langlass, PE* on the date adjacent to the seal.

Signatures 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 capacity and operational improvements at the intersection of United State (US) Highway 41/State Road (SR) 45 and State Road (SR) 54 in Pasco County, Florida. Each roadway is a six-lane divided facility intersecting at-grade with a box span traffic signal. US 41 is a major north-south arterial that provides access to Tampa, Lutz, Land O' Lakes, and Brooksville. SR 54 is a major east-west arterial that connects US 19 near New Port Richey to the west and US 301 in Zephyrhills to the east. The Project Location Map is shown in **Figure 1.1**.

The length of the project is approximately 1.7 miles along US 41, with limits on SR 54 from approximately 1.2 miles east and 1.2 miles west of the intersection, as well as a 0.3-mile section of SR 597 (N. Dale Mabry Highway). This intersection is located in the Land O' Lakes area of unincorporated Pasco County, Florida. This intersection is under the jurisdiction of FDOT.

Project Status

The PD&E Study was included in the FDOT's Adopted Five Year Work Program for Fiscal Years (FY) 2018-2023 for District 7 (Item No. 419182-1). The Right-of-Way (ROW) phase is included in the FDOT's Adopted Five Year Work Program for FY 2026-2030 for District 7 (Item No. 419182-2). The proposed project is included in the Pasco County Metropolitan Planning Organization (MPO) 2050 Cost Feasible Long Range Transportation Plan (LRTP) for the years 2030-2050. The LRTP shows the intersection of US 41 and SR 54 as a new interchange. The proposed interchange at US 41 and SR 54 is included in the 2050 LRTP Needs Assessment. On June 25, 2025, the Pasco County MPO adopted their Transportation Improvement Plan (TIP) to show the ROW phase in FY 2029 and 2030. The State Transportation Improvement Plan (STIP) shows the Preliminary Engineering phase in FY 2025, ROW phase in FY 2029 and greater than 2029. Form No. 650-050-41, Planning Requirements for Environmental Document Approvals, will be submitted during approval of the environmental document.

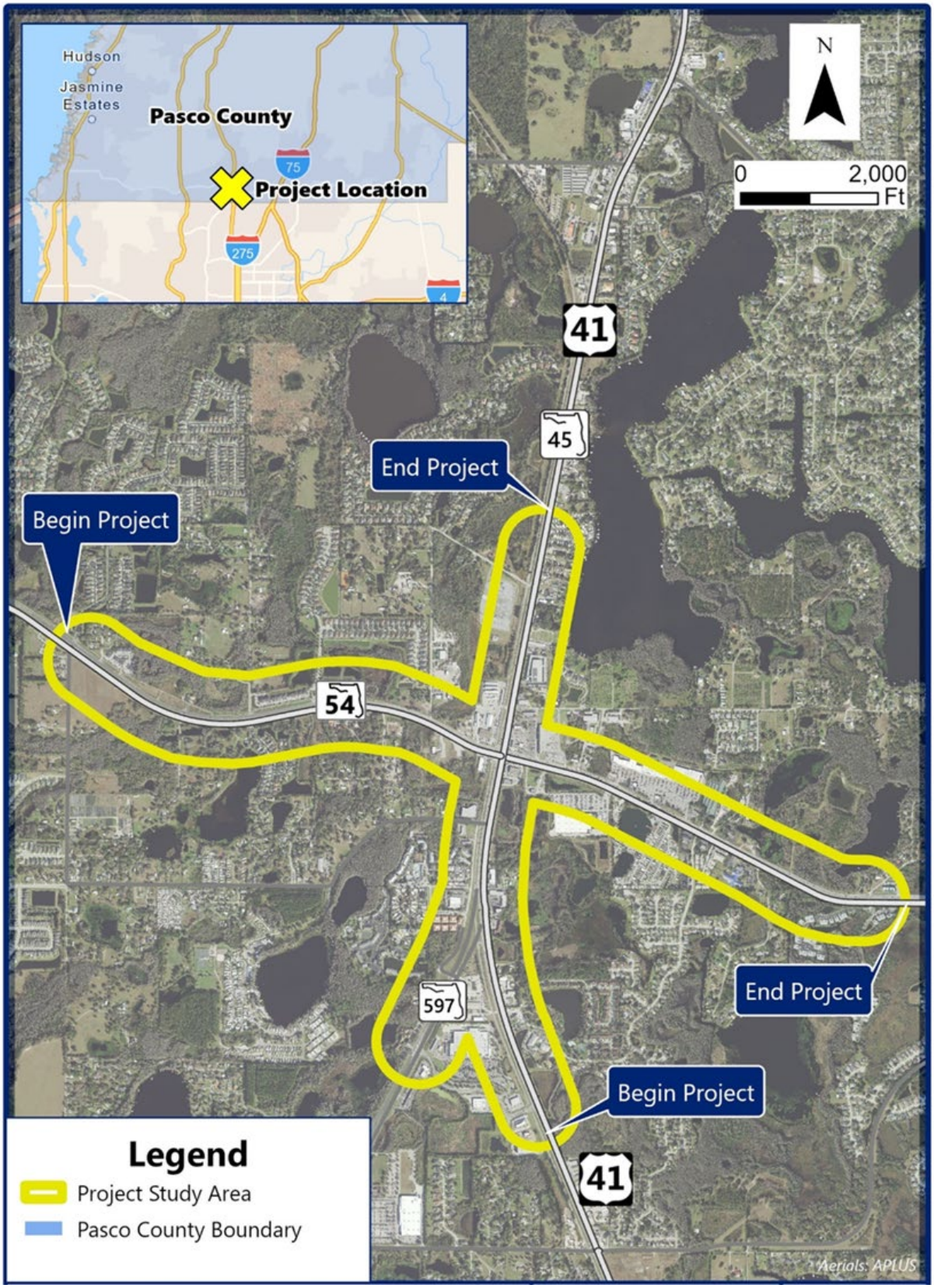


Figure 1.1: Project Location Map

1.2 Purpose & Need

This study is being conducted to provide relief for the existing and future congestion at the intersection of US 41 and SR 54 and to accommodate future traffic demands due to growth within the project and surrounding areas. The need for the project is based on system linkage, capacity, transportation demand, social demand, economic development, safety, and enhancement of evacuation routes.

1.2.1 Systems Linkage

SR 54 is one of two existing major east-west arterials that connect eastern and western Pasco County. The SR 54/SR 56 corridor provides connections to several regional north-south routes including US 19, SR 589 (Suncoast Parkway), US 41, Interstate 75 (I-75), and US 301. There are recently completed capacity improvement projects along SR 54/SR 56 that increased the mobility along this roadway. Both US 41 and SR 54/SR 56 are part of the regional roadway network identified by the Sun Coast Transportation Planning Alliance.

SR 54 from SR 589 to I-75 and US 41 from SR 597 (N. Dale Mabry Highway) to SR 54 are part of Florida's Strategic Intermodal System (SIS), a statewide network of highways, railways, waterways and transportation hubs that handle the bulk of Florida's passenger and freight traffic. The proposed improvements at US 41 and SR 54 will enhance the overall transportation network that links Pasco County to the entire Tampa Bay region.

1.2.2 Capacity

The need for additional capacity is based on this intersection currently operating at an unacceptable level of service (LOS) in both the AM and PM peak periods. The existing traffic analysis using raw traffic counts indicates the intersection of US 41 and SR 54 experiences severe congestion with level of service (LOS) F during the AM peak period. The maximum queue along eastbound SR 54 can extend over a mile. During the PM peak period, the intersection of US 41 and SR 54 also experiences severe congestion. The maximum westbound queue extends beyond the intersection with the Lowe's/Village Lakes Plaza driveway.

In addition to the evaluation of the existing conditions with raw traffic counts, the existing conditions were also evaluated using Direction Design Hour Volumes (DDHVs). The existing conditions with DDHVs represent conditions with existing traffic demand instead of traffic counts. Measures of Effectiveness (MOE) including delay per vehicle, LOS, and maximum queue lengths were summarized for major intersections in the study area. During the AM peak hour, the delay per vehicle is 286 seconds with LOS F. During the PM peak hour, the delay per vehicle is 258 seconds with LOS F.

1.2.3 Transportation Demand

The need to accommodate existing and future transportation demand at the US 41 at SR 54 interchange is based on existing and future Average Annual Daily Traffic (AADT) in the study area. The 2019 AADT for SR 54 ranges from 58,000 to 63,000 vehicles. For US 41, the AADTs range from 34,000 to 69,000 vehicles. The AADT for SR 597 (N. Dale Mabry Highway) is 35,000 vehicles.

In the Design Year (2045), the AADTs for SR 54 range from 96,000 to 98,000 vehicles. For US 41, the AADTs range from 43,000 to 87,000 vehicles. The AADT for SR 597 (N. Dale Mabry Highway) is 44,000 vehicles. During the AM peak hour, the anticipated level of service is LOS F. During the PM peak hour, the anticipated level of service is LOS F.

1.2.4 Social Demands and Economic Development

Social demands and economic development needs are based on historic and forecasted residential population and employment growth in Pasco County. Pasco County, with 745 square miles (sq mi) in land area is considered medium size when compared to the remainder of the counties in the State of Florida. Presently, Pasco County has more than 753 persons per sq mi, ranking it 11th in the state for population density. According to the 2020 Census of Population, Housing and Employment, the County's population of 561,891 represents a 20.9% increase over the 2010 population of 464,697. These growth trends are anticipated to continue with a permanent population of 785,428 projected in the year 2045, representing a 40% increase over

2020. Population growth has been fueled by tourism, increased migration from other states, and retirement.

1.2.5 Safety

The safety need is based on historic crash data along US 41, SR 54, and at the intersection. Historic crash data shows that the crash rate along US 41 from Wal-Mart Driveway to Morgan Road ranges from 1.857 to 2.544 crashes per million vehicle miles traveled and is higher than the statewide average for a similar facility. The FDOT statewide average crash rate for a similar facility is 1.566 crashes per million vehicle miles traveled. The crash rate along SR 597 (N. Dale Mabry Highway) from Wal-Mart Driveway to US 41 of 3.049 is more than three times the statewide average of 0.868. The most common type of crash along the US 41/Dale Mabry segments were rear ends, followed by sideswipes. 36% of segment crashes resulted in fatalities or injuries. The crash rates for the SR 54 corridor range from 1.685 to 1.982 crashes per million vehicle miles traveled, which exceeds the statewide average of 1.566. 52% of crashes were considered rear ends and 30% of SR 54 segment crashes resulted in injury. The SR 54 at US 41 intersection crash rate of 2.263 was twice as high as the statewide average of 1.152. A total of 427 crashes were reported with the majority being rear ends and sideswipes. Out of all the crashes included in the dataset, 11 were classified as pedestrian or bicycle crashes. Four of the 11 bicycle/pedestrian crashes were fatal.

1.2.6 Evacuation Routes

US 41 and SR 54 are both designated as evacuation routes by the Florida Division of Emergency Management (FDEM) and identified in the Pasco County Comprehensive Plan Transportation Element and the Pasco County MPO 2045 LRTP. This interchange is critical to the eastern portion of Pasco County, providing an east/west and north/south junction for coastal residents to access critical routes, serving destinations in eastern Pasco County with higher elevations. The Coastal Element of the Pasco County Comprehensive Plan states that Pasco County shall encourage capital improvement expenditures for critical evacuation routes lacking adequate capacity to clear the Hurricane Vulnerability Zone through coordination between Pasco County Development Services Branch, Office of Emergency Management, and the Board of County Commissioners.

1.3 Commitments

To minimize the impacts of this project to the social, cultural, natural, and physical environment, FDOT has identified the following commitments:

- The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be utilized during construction.
- FDOT will provide mitigation for impacts to wood stork Suitable Foraging Habitat within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank.
- FDOT will require contractors to remove garbage daily from the construction site or use bearproof containers for securing food and other debris from the project work area to prevent these items from becoming an attractant for the Florida black bear. Any interaction with nuisance bears will be reported to the FWC Wildlife Alert hotline 888-404-FWCC (3922).
- The FDOT will further evaluate the need and feasibility for a noise barrier at the impacted noise sensitive area (Tropicana Trailer Park) during the design phase.
- FDOT commits to archaeological survey of ponds FPC 125D and SMF 4D during the design phase, prior to any ground disturbing activities, if the land these pond(s) are situated on is required for the project.
- If the listing status of the tricolored bat is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area during the design and permitting phase of the proposed project, and the FDOT commits to reinitiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat.
- If the listing status of the monarch butterfly is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, during the design and permitting phase of the proposed project, the FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the monarch butterfly.

1.4 Alternatives Analysis Summary

The PD&E study started with four alternatives: 1, 2, 3, and 4. A brief description of each alternative is provided below:

- Alternative 1 – a Single Point Urban Interchange (SPUI) with US 41 over SR 54
- Alternative 2 – a Tight Diamond Interchange with US 41 over SR 54
- Alternative 3 – a Single Point Urban Interchange (SPUI) with SR 54 over US 41
- Alternative 4 – a Tight Diamond Interchange with SR 54 over US 41

Alternatives 1 and 2 would require future managed lanes (ML) in the SR 54/56 corridor to be implemented as a 3rd level to the interchange, increasing costs, impacts, and disruption of traffic. Alternatives 1 and 2 would also require the construction of braided ramps to accommodate weaving movements between the US 41 at SR 597 (N. Dale Mabry Highway) intersection and SR 54 because of the proximity of the intersections. Alternatives 1 and 2 were dropped from further consideration because the costs and impacts associated with these conditions made them infeasible. Alternative 4 was dropped from further consideration because it resulted in more traffic delay than Alternative 3, particularly in the PM peak hour.

Two additional alternatives were created to determine the best way to accommodate at-grade through movements on SR 54 at the intersection due to the decision that the interchange would not provide free elevated through lane access eastbound and westbound (all through traffic on the elevated section would pay a toll). First, Alternative 3A was developed by revising Alternative 3 to include two exclusive through lanes eastbound and westbound at-grade. Second, Alternative 3B was developed by revising Alternative 3 to include shared through-left turn lanes and through-right turn lanes at-grade to minimize the footprint. Alternative 3B still had significant impacts to properties along the east side of US 41 due to improvements on US 41. Alternative 3B was eliminated from further consideration due to the number of ROW impacts in the corridor.

A third alternative, Alternative 3C, was developed to obtain some of the configuration benefits of Alternative 3A while minimizing the ROW impacts associated with its large footprint. Alternative 3C maintained the existing geometry on SR 54 with one through lane in each direction on SR 54

removed between the ramps to elevate the managed lanes over the existing lanes to minimize ROW impacts. The existing inside lanes on SR 54 would be removed in order to create the necessary median width to allow the placement of bridge piers to support the elevated lanes.

Both Alternatives 3A and 3 C were presented at a Public Hearing in December of 2015. Following the Public Hearing, FDOT, in coordination with Pasco County, decided to allow the Pasco Metropolitan Planning Organization (MPO) to initiate a Vision Study for SR 54 that would include this intersection.

The Pasco MPO performed the Vision 54/56 Study starting in 2017. The task force recommended three build alternatives to FDOT for further review. Beginning in 2020, FDOT performed a Feasibility Study evaluation of these three alternatives to identify a recommended alternative. The Feasibility Study analyzed the following three alternatives:

- Feasibility Alternative 1 – a SPUI with elevated lanes on SR 54 over US 41
- Feasibility Alternative 2 – a Parallel Flow Intersection (PFI)
- Feasibility Alternative 3 – a Continuous Flow Intersection (CFI) with elevated lanes on SR 54 over US 41

The Feasibility Study recommended Feasibility Alternative 1 for further evaluation in the PD&E Study and was compared to the No-Build Alternative. Based on the analysis, the Feasibility Alternative 1 (SPUI with elevated lanes on SR 54 over US41) was selected as the PD&E Preferred Build Alternative and would be presented at a second Public Hearing.

However, based on input from public comments prior to the hearing, FDOT developed two additional interchange options with US 41 over SR 54: a Diverging Diamond Interchange (DDI) and a SPUI. These two interchange options were shown at the second Public Hearing on March 25, 2025. Public input at the hearing showed support for the interchange options with US 41 over SR 54 instead of the Build Alternative (SPUI with elevated lanes on SR 54 over US 41). Based on this input, the department decided to further analyze the DDI with US 41 over SR 54 interchange

option. The DDI with US 41 over SR 54 concept became Build Alternative Option#2. Based on the analysis, Build Alternative Option #2 was selected as the new Preferred Alternative.

1.5 Description of the Preferred Alternative

The Preferred Alternative, with Concept Plans shown in **Appendix A**, is a Diverging Diamond Interchange (DDI) with US 41 elevated over SR 54 and SR 597 (N. Dale Mabry Highway).

At SR 54, US 41 will carry two lanes in each direction over SR 54 via a single bridge. The bridge will be expandable to three lanes in each direction for future traffic demand. Two lane exit ramps from US 41 in each direction will connect to SR 54. The northbound and southbound exit ramps will widen to two left turn lanes and two right turn lanes at the at-grade intersection with SR 54. Along SR 54, the westbound lanes will widen from three lanes to five lanes after the signalized intersection at the Village Lakes Shopping Plaza/Lowe's driveway. The five lanes will enter the first crossover intersection of the DDI. Prior to the first crossover intersection, a sixth lane will be developed for right turns only to northbound US 41. Of the five lanes entering the first crossover intersection, the inside lane will be a left turn only lane and the adjacent lane will be a shared left/through lane. The remaining three lanes will be through lanes. Four lanes will enter the 2nd crossover intersection. After the 2nd crossover intersection, the inside lane will merge and end. Three lanes will continue westbound to match existing conditions.

Similarly, the eastbound lanes will widen from three lanes to five lanes as they approach the interchange. The five lanes will enter the first crossover intersection of the DDI. Prior to the crossover intersection, a sixth lane will be developed for right turns only to southbound US 41. Of the five lanes entering the first crossover intersection, the inside lane will be a left turn only lane and the adjacent lane will be a shared left/through lane. The remaining three lanes will be through lanes. Four lanes will enter the 2nd crossover intersection. After the 2nd crossover intersection, the outside lane will become a right turn only lane at the signalized intersection at the Village Lakes Shopping Plaza/Lowe's driveway. Three lanes will continue eastbound to match existing conditions.

A new roadway connection will be provided between Carson Drive and SR 54, east of US 41. From Carson Drive, the new connection will use the existing Raden Drive alignment before turning east towards the Village Lakes Shopping Plaza. The roadway will then connect to the existing signalized intersection of SR 54 at the Village Lakes Shopping Plaza/Lowe's driveway. This new roadway connection will require ROW acquisition to make the roadway available for public use.

At SR 597 (N. Dale Mabry Highway), northbound US 41 will carry two lanes over SR 597 (N. Dale Mabry Highway) via a bridge. Southbound US 41 will carry three lanes over SR 597 (N. Dale Mabry Highway) via a separate bridge. The third lane will come from SR 54 via a single lane southbound slip ramp. For the southbound direction, ramps are provided from SR 54 to southbound US 41 and southbound SR 597 (N. Dale Mabry Highway). For the northbound direction of US 41, the two-lane exit ramp from US 41 to SR 54 will form a signalized intersection at SR 597 (N. Dale Mabry Highway). The signal will manage the traffic from northbound US 41 to SR 54 and northbound SR 597 (N. Dale Mabry Highway) to SR 54. This intersection will allow a northbound US 41 to southbound US 41 u-turn via a "Texas u-turn". Traffic from northbound SR 597 (N. Dale Mabry Highway) to northbound US 41 will utilize a free flow ramp and merge onto US 41 south of the bridge over SR 54.

The existing CSX rail crossings at SR 54 and SR 597 (N. Dale Mabry Highway) will be modified to accommodate roadway improvements.

Figure 1.2 shows the proposed US 41 typical section. US 41 provides three 12-foot through lanes in each direction, seven-foot bike lanes in each direction, and 10-foot sidewalks in each direction. A 22-foot-wide grass median separates the southbound and northbound lanes. The proposed ROW width is 171 feet. A CSX rail in a separate ROW corridor is located on the west side of US 41.

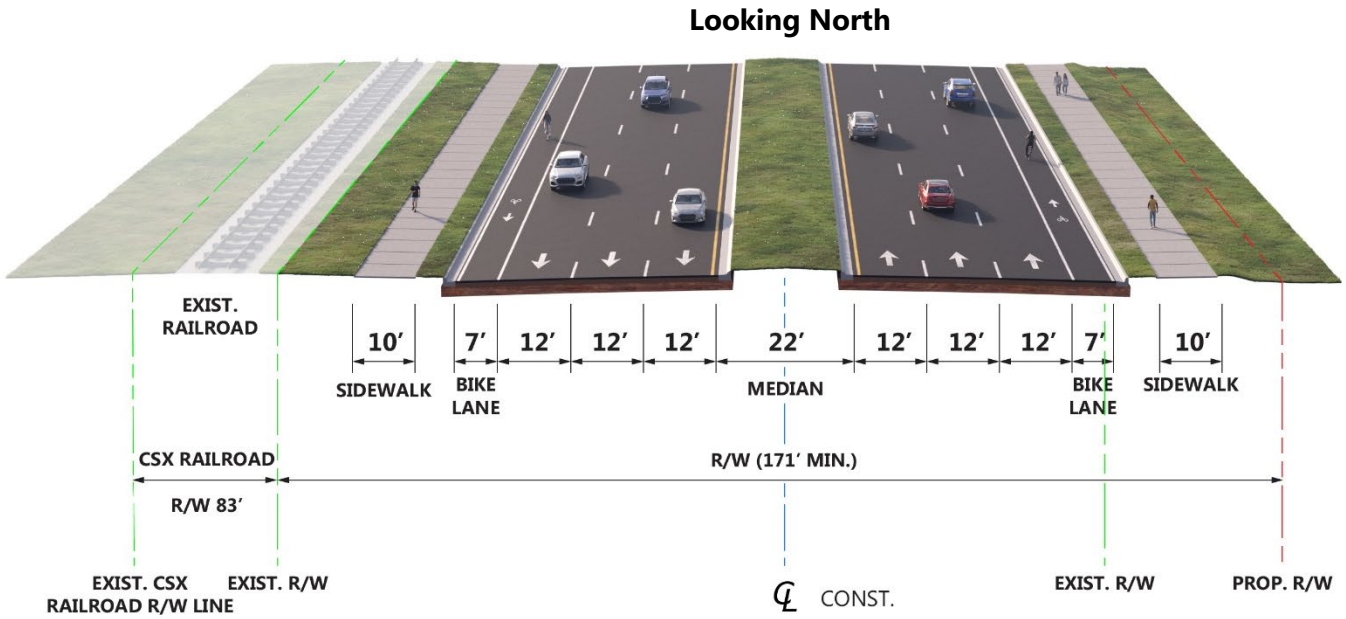


Figure 1.2: Proposed Typical Section - US 41

Figure 1.3 shows the proposed SR 54 typical section. SR 54 provides three 12-foot lanes with one 12-foot auxiliary lane in each direction, seven-foot bike lanes in each direction, and 10-foot sidewalks in each direction. A grass median of varying width separates the eastbound and westbound lanes. The maximum proposed ROW width is 286 feet.

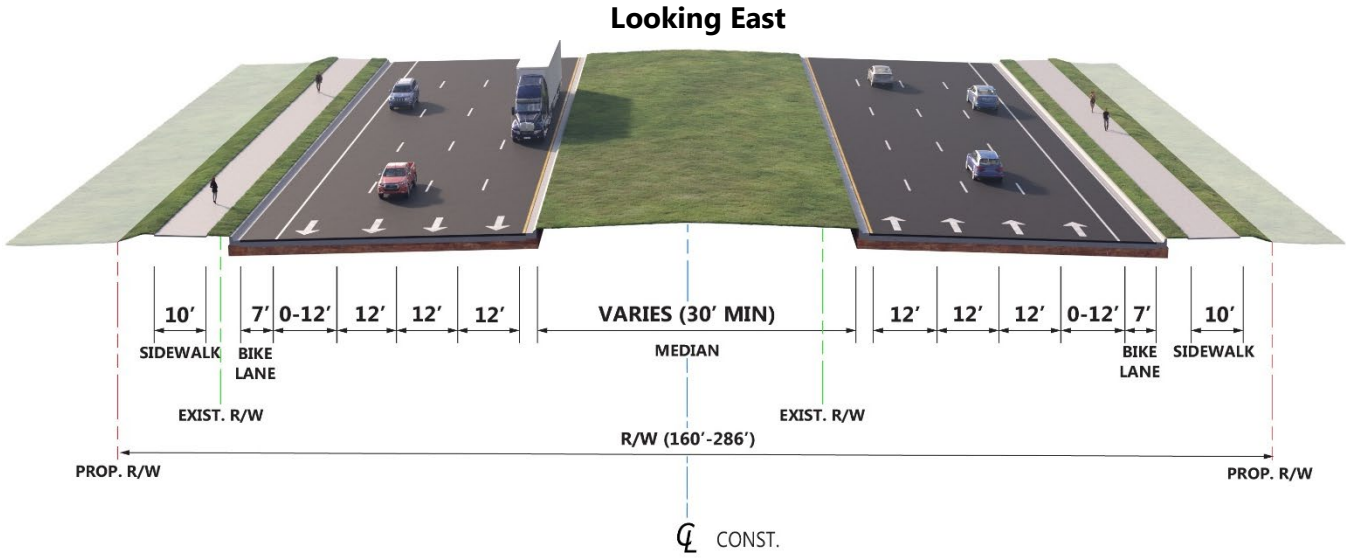


Figure 1.3: Proposed Typical Section - SR 54

Figure 1.4 shows the proposed typical section for the southbound US 41 bridge over SR 597 (N. Dale Mabry Highway). The bridge provides three 12-foot lanes, a 10-foot inside shoulder, and a 10-foot outside shoulder.

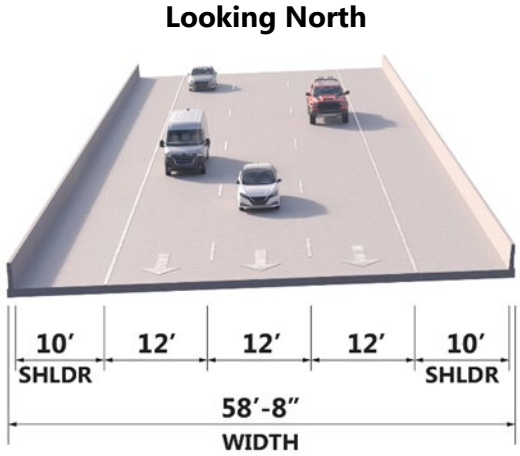


Figure 1.4: Proposed Southbound US 41 Bridge over SR 597 (N. Dale Mabry Highway) Typical Section

Figure 1.5 shows the proposed typical section for the northbound US 41 bridge over SR 597 (N. Dale Mabry Highway). The bridge provides two 12-foot lanes, an 8-foot inside shoulder, and a 10-foot outside shoulder.

Looking North

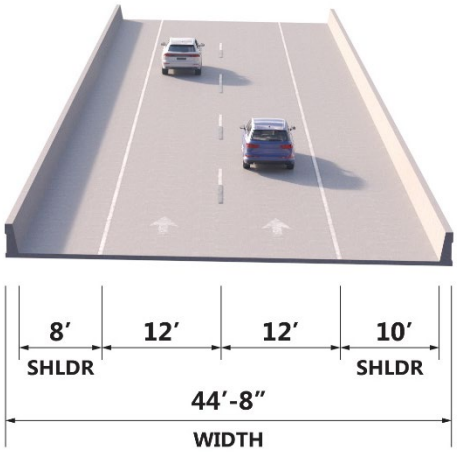


Figure 1.5: Proposed Northbound US 41 Bridge over SR 597 (N. Dale Mabry Highway) Typical Section

Figure 1.6 shows the proposed typical section for the US 41 bridge over the SR 54 intersection. The bridge provides two 12-foot lanes, a 10-foot outside shoulder and 14.5-foot inside shoulder in each direction, separated by a 17′ wide raised median. The inside shoulders can be converted into 12-foot travel lanes in the future, so the bridge is expandable to three lanes in each direction.

Looking North

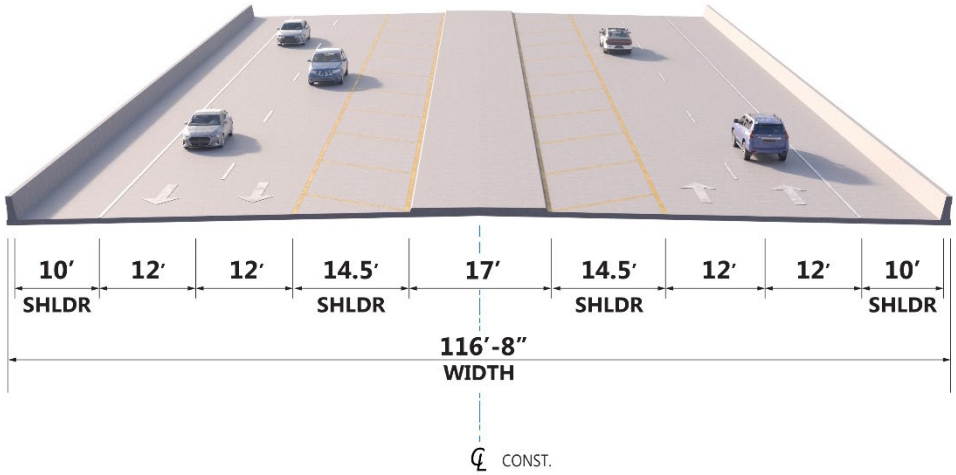


Figure 1.6: Proposed US 41 over SR 54 Bridge Typical Section

1.6 List of Technical Documents

The following technical documents were prepared as part of this PD&E Study:

- Conceptual Stage Relocation Plan (CSRP) – January 2026
- Contamination Screening Evaluation Report (CSER) – April 2015
- Contamination Technical Memorandum – January 2026
- Cultural Resources Assessment Survey (CRAS) – December 2024
- Cultural Resources Assessment Survey (CRAS) Addendum – January 2026
- Geotechnical Technical Memorandum – May 2024
- Location Hydraulics Report (LHR) – January 2026
- Natural Resources Evaluation (NRE) – January 2026
- Noise Study Report (NSR) – January 2026
- Pond Siting Report (PSR) – January 2026
- Project Traffic Analysis Report (PTAR) – January 2026
- Type 2 Categorical Exclusion – January 2026
- Utilities Assessment Package (UAP) – November 2025
- Water Quality Impact Evaluation (WQIE) – July 2024

2.0 Existing Conditions

2.1 Previous Planning Studies

The Pasco County MPO completed the Vision 54/56 Study in 2019. The task force recommended three build alternatives to FDOT for further review. FDOT performed a Feasibility Study evaluation of these three alternatives to identify a recommended Alternative which was then advanced to this PD&E Study where it was evaluated against the No-Build Alternative. The Feasibility Study analyzed three build alternatives:

- Feasibility Alternative 1 – a SPUI with elevated lanes on SR 54 over US 41
- Feasibility Alternative 2 – a Parallel Flow Intersection (PFI)
- Feasibility Alternative 3 – a Continuous Flow Intersection (CFI) with elevated lanes on SR 54 over US 41

Feasibility Alternative 1 is a SPUI interchange. In the alternative, SR 54 is elevated over US 41. There are ramps from SR 54 to the at-grade intersection of US 41. At the intersection, traffic can continue through the intersection or turn left or right. For US 41, traffic is controlled by signals at the ramp terminals with SR 54.

Feasibility Alternative 2 is an at-grade intersection improvement. It is a type of displaced left turn intersection. For all four approaches, the left turning vehicles cross over the opposing lanes at a signal in advance of the intersection. The vehicles then turn left onto the cross street at another signalized intersection.

Feasibility Alternative 2 is an interchange with displaced left turns at grade. Similar to Alternative 2, at all four approaches, left turning vehicles cross over the opposing lanes at a signal in advance of the intersection. The vehicles then turn left onto the cross street at another signalized intersection. In addition, SR 54 is elevated over US 41.

The Feasibility Study recommended Feasibility Alternative 1 – SPUI as the Preferred Alternative to carry forward into the PD&E Study.

2.2 Existing Roadway Conditions

2.2.1 Roadway Typical Sections

The typical sections of each of these roadways include three through lanes with curb and gutter in all directions approaching the US 41 at SR 54 intersection.

US 41 consists of two, 12-foot lanes and a single 14-foot lane in each direction separated by a grass raised median of varying width. The facility includes a six-foot sidewalk on the east side of the travel lanes, and a CSX railroad line on the west side of the travel lanes. The ROW width in this section of US 41 is a minimum of 156 feet. No bicycle lanes are provided (see **Figure 2.1)**.

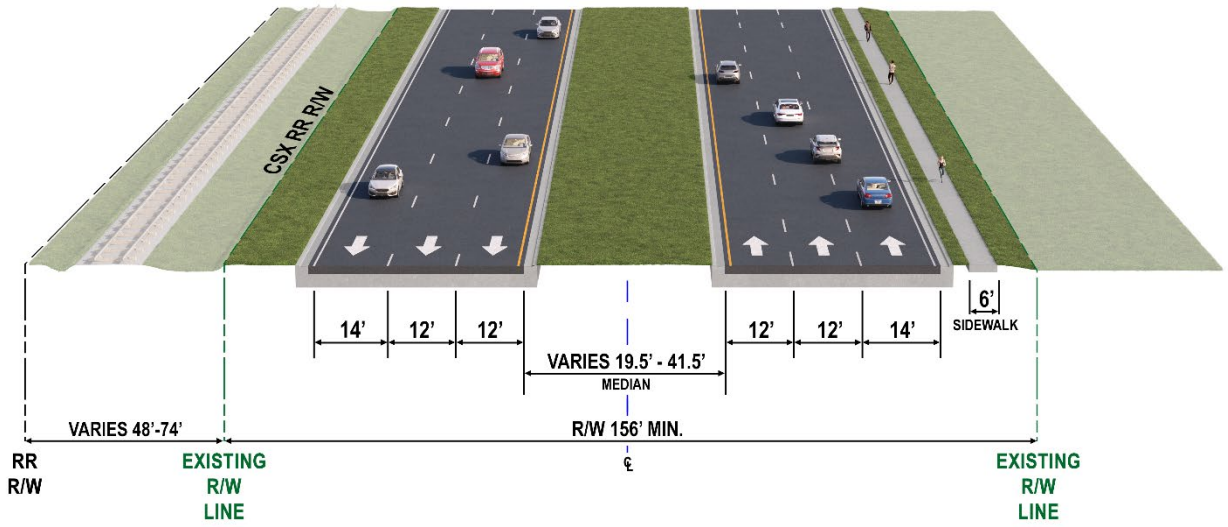


Figure 2.1: Existing Typical Section – US 41

Near the intersection of US 41, SR 54 consists of three 12-foot lanes in each direction separated by a 37.5-foot raised grass median with a four-foot bicycle lane and a six to eight-foot sidewalk on both sides of the travel lanes immediately adjacent to the roadway. The ROW width for this section of SR 54 is approximately 141.5 feet (see **Figure 2.2**).

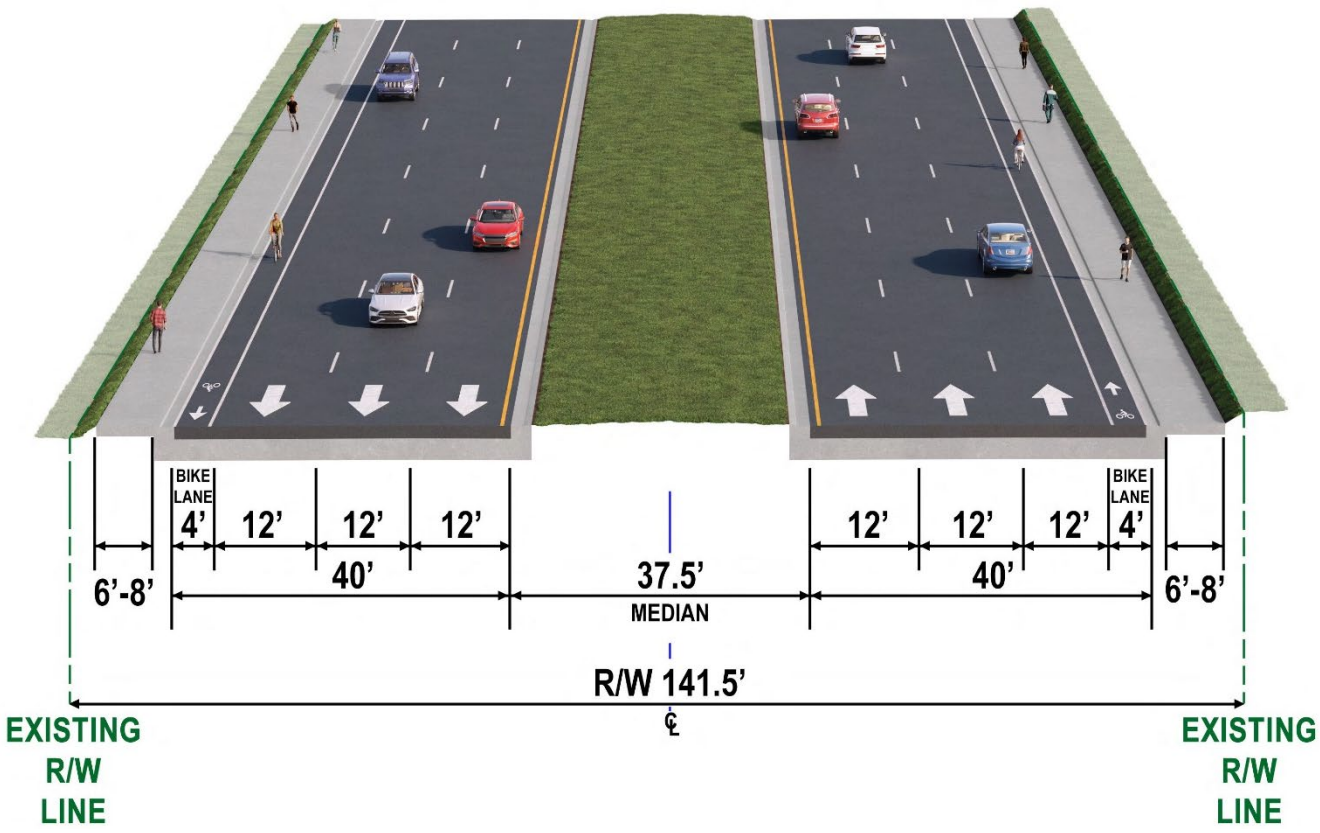


Figure 2.2: Existing Typical Section – SR 54 East and West of US 41 (Near Intersection)

Approximately one-half mile east of US 41, SR 54 consists of three 12-foot travel lanes, an eight-foot unpaved inside shoulder and an eight-foot paved outside shoulder with shoulder gutter, and a five-foot sidewalk in each direction separated by a 49-foot depressed grass median. The ROW width for this section of SR 54 is a minimum of 138 feet (see **Figure 2.3).**

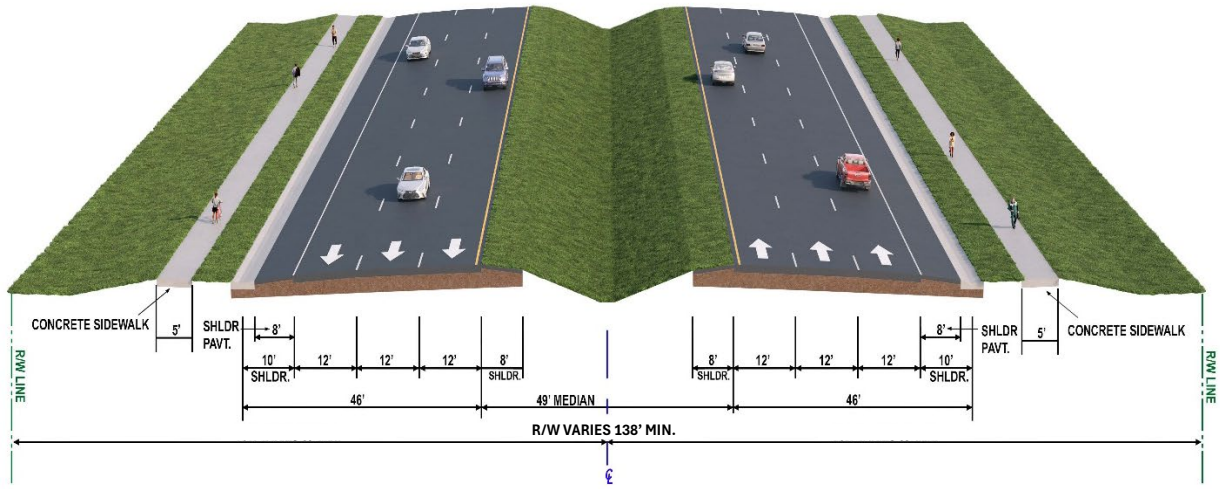


Figure 2.3: Existing Typical Section – SR 54 One-Half Mile East of US 41

Approximately one-half mile west of US 41, SR 54 consists of three 12-foot travel lanes, an eight-foot unpaved inside shoulder and a 10-foot outside shoulder including a paved five-foot bicycle lane, and a five-foot sidewalk in each direction separated by an approximate 48-foot depressed grass median. The ROW width for this section of SR 54 is a minimum of 250 feet (see **Figure 2.4).**

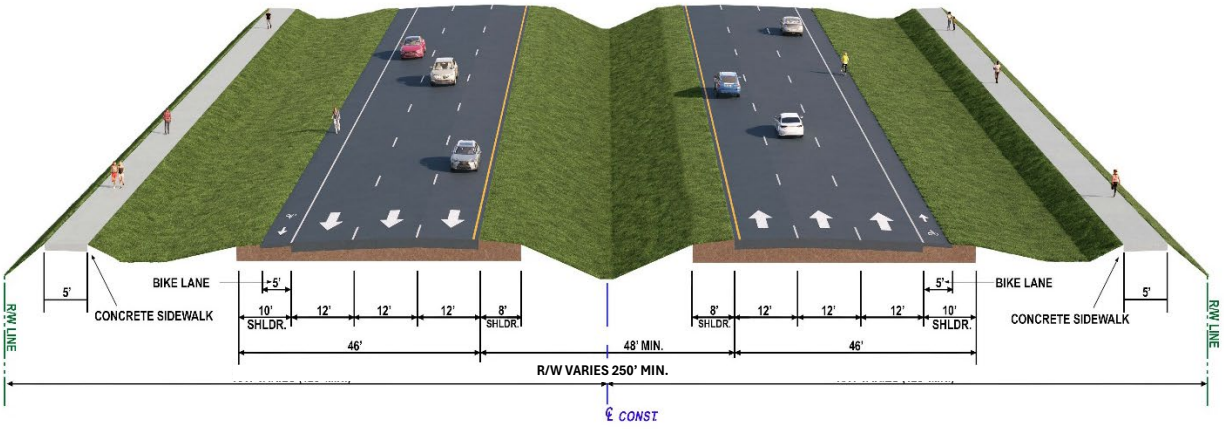


Figure 2.4: Existing Typical Section – SR 54 One-Half Mile West of US 41

2.2.2 Roadway Functional and Context Classification

US 41, SR 54, and SR 597 (N. Dale Mabry Highway) are classified as urban principal arterial roadways. US 41 is a SIS facility from SR 597 (N. Dale Mabry Highway) to SR 54. SR 54 is also an SIS facility from SR 589 to I-75. SR 597 (N. Dale Mabry Highway) is an SIS facility from SR 569

(Veteran's Expressway) to US 41. The SIS is a statewide network of highways, railways, waterways, and transportation hubs that handle the bulk of Florida's passenger and freight traffic. Both SR 54 and US 41 are part of the regional roadway network identified by the West Central Florida MPO's Chairs Coordinating Committee (CCC).

The context classification for US 41 and SR 597 (N. Dale Mabry Highway) is C3C, Suburban Commercial. The context classification for SR 54 east of US 41 is also C3C. The context classification for SR 54 west of US 41 is C2, Rural.

2.2.3 Access Management Classification

Access management is the coordinated planning, regulation, and design of access between roadways and land development. It promotes the efficient and safe movement of people and goods by reducing conflicts on the roadway system and at its interface with other modes of travel. Access Management classifications and standards are summarized in

Table 2.1.

Table 2.1: Access Management Standards

Road	Access Class	Median Type	Median Opening Spacing (feet)		Minimum Signal Spacing (feet)*	Connection Spacing (feet)	
			Directional	Full		Posted Speed Greater than 45 MPH	Posted Speed 45 MPH or less
US 41	3	Restrictive	1,320	2,640	2,640	660	440
SR 54 (east of US 41)	3	Restrictive	1,320	2,640	2,640	660	440
SR 54 (west of US 41)	2	Restrictive	1,320	2,640	2,640	1,320	660
N. Dale Mabry Hwy (SR 597)	3	Restrictive	1,320	2,640	2,640	660	440

Note: *Traffic signals, proposed at intervals closer than the access management standard for the designated access class, will only be approved where the need for such signal(s) is clearly demonstrated for the safety and operation of the roadway through the signal warrant process. (F.A.C. Rule Chapter: 14-97.003) Applicants requesting or requiring the addition, removal, or modification of a traffic signal for Category E,

F, and G connections, must submit an Intersection Control Evaluation Form, Form 750-010-30 (F.A.C. Rule Chapter: 14-96.003).

2.2.4 Right-of-Way

The existing ROW varies through the project corridor, see **Figures 2.1** to **2.4**. The existing ROW for SR 54 varies from 138 to 250 feet. The existing ROW for US 41 varies from 156 to 174 feet. The ROW for CSX varies from 48 to 74 feet.

2.2.5 Adjacent Land Use

The project is located within unincorporated Pasco County. Existing land uses within the project area were classified by the Florida Land Use, Cover and Forms Classification System (FLUCCS) FDOT 1999 Handbook and shown in **Figure 2.5**.

Near the US 41 at SR 54 intersection, the land use is mainly commercial and services (Land Use Code 140) and transportation and utility features (Land Use Codes 810 and 820). Residential land uses occur throughout the project area (Land Use Codes 110, 120, and 130). Wetlands (Land Use Codes 615, 621, 630, 640, 641, 644, 650, and 653) occur in all quadrants of the intersection. Surface waters (Land Use Code 500) occur mostly along the southeast quadrant of the intersection. Only a few undeveloped uplands (Land Use Codes 190, 210, 320, 411 and 434) occur throughout the project limits. The existing land uses within the project area are summarized in **Table 2.2**.

2.2.6 Pavement Type and Condition

A pavement survey was not completed for this PD&E Study. However, the FDOT Office of Pavement Material Systems Pavement Management History and Forecast Reports were reviewed, and field observations confirmed the existing condition of the pavement. According to the Pavement Conditions forecast, US 41 within the project limits has a pavement condition of 9.5 for cracking and 8.1 for ride which indicates a good pavement condition. SR 54 west of US 41 within the project limits has a pavement condition of 10.0 for cracking and 8.2 for ride which indicates a good pavement condition. SR 54 east of US 41 within the project limits has a pavement condition of 8.0-10.0 for cracking and 7.0-8.2 for ride which indicates a good pavement condition. SR 597

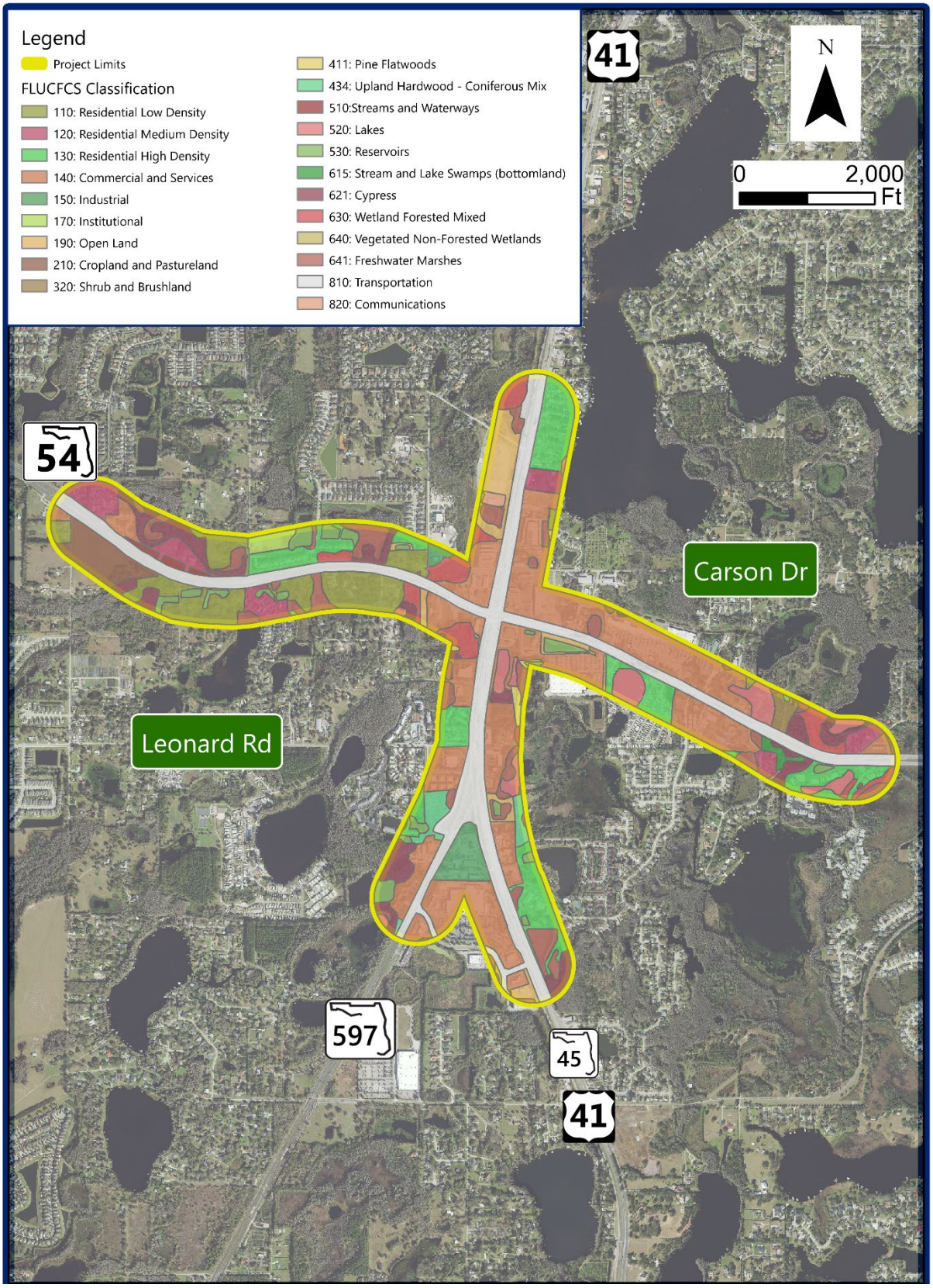


Figure 2.5: Existing Land Use Map

Table 2.2: Existing Land Use Descriptions and Percent Cover

FLUCCS Code		Description	Percent Cover
100 Urban and Built Up	110	Residential, Low Density < Two Dwelling Units Per Acre	6.81
	120	Residential, Medium Density Two to Five Dwelling Units Per Acre	4.15
	130	Residential High Density	10.21
	140	Commercial and Services	29.25
	150	Industrial	2.12
	170	Institutional	0.32
	190	Open Land	3.64
		TOTAL %	56.50
200 Agriculture	210	Cropland and Pastureland	2.22
		TOTAL %	2.22
300 Rangeland	320	Shrub and Brushland	0.52
		TOTAL %	0.52
400 Upland Forest	411	Pine Flatwoods	0.12
	434	Upland Hardwood – Coniferous Mix	1.08
		TOTAL %	1.20
500 Water	520	Lakes	2.47
	530	Reservoirs	1.96
		TOTAL %	4.43
600 Wetlands	615	Streams and Lake Swamps (Bottomland)	0.40
	621	Cypress	3.93
	630	Wetland Forested Mixed	3.97
	640	Vegetated Non-Forested Wetlands	0.21
	641	Freshwater Marshes	4.55
	644	Emergent Aquatic Vegetation	0.36
	650	Non-Vegetated	0.001
	653	Intermittent Ponds	0.35
		TOTAL %	13.78
800 Transportation, Communication and Utilities	810	Transportation	21.12
	820	Communication	0.23
		TOTAL %	21.34

(N. Dale Mabry Highway) within the project limits has a pavement condition of 7.5 for cracking and 5.4 for ride which indicates above average condition for cracking. The ride rating of 5.4 indicates that the pavement is deficient since it is below 6.0 and the speed limit is 50 mile per hour (mph).

2.2.7 Existing Design and Posted Speeds

SR 54 has a posted speed limit of 50 mph east and west of US 41. In the vicinity of the intersection, the posted speed limit along SR 54 is reduced to 45 mph. East and west of the intersection, SR 54 has a design speed of 60 mph. In the vicinity of the intersection, SR 54 has a design speed of 50 mph. US 41 has a posted speed limit of 50 mph in the study area. US 41 has a design speed of 45 mph. SR 597 (N. Dale Mabry Highway) has a design speed of 70 mph with a posted speed of 50 mph in the project area.

2.2.8 Horizontal Alignment

Table 2.3 and **Table 2.4** summarize the existing horizontal alignments of SR 54 and US 41, respectively. This information was extracted from the available as-built plans.

Table 2.3: SR 54 Existing Horizontal Curves

From FPID 256339-1-52-01: SR 54 from East of SR 589 to West of US 41						
PC STA	**PT STA**	**Deflection Angle**	**Curve Length (m/ft)**	**Radius (m/ft)**	**Degree of Curvature***	**Superelevation**
286+51.982	292+27.495	47° 12′ 15″ (LT)	575.513/ 1888.16	698.550/ 2291.83	2° 30′	0.07
294+54.718	299+21.000	30° 29′ 43″ (RT)	466.282/ 1529.80	876.069/ 2874.24	2° 00′	0.059
299+21.000	300+78.116	10° 24′ 32″ (RT)	156.254/ 512.64	864.854/ 2837.45	2° 00′	N/A
From FPID 256343-1-52-01: SR 54 East of US 41						
33+26.933	35+08.981	12° 01′ 57″ (RT)	182.048/ 597.27	866.865/ 2844.04	2° 00′	NC

STA – Stationing NC – Normal Crown RC – Reverse Crown LT – Left RT – Right
*Approximated

Table 2.4: US 41 Existing Horizontal Curves

From State Project #14010-3518: US 41						
PC STA	**PT STA**	**Deflection Angle**	**Curve Length (ft)**	**Radius (ft)**	**Degree of Curvature***	**Superelevation**
33+01.61	66+14.55	33° 12′ 38″ (RT)	3,312.94	5,715.58	1° 00′	NC
From State Project #14010-3518: US 41						
1039+85.06	1042+89.73	14° 57′ 46″ (LT)	306.47	1,166.66	5° 00′	RC

STA – Stationing NC – Normal Crown RC – Reverse Crown LT – Left RT – Right
*Approximated

2.2.9 Vertical Alignment

The existing vertical alignments of SR 54 and US 41, obtained from the available as-built plans, is generally flat (see **Table 2.5** and **Table 2.6)**. Since all the roadways include curb and gutter, the roadways have Vertical Point of Intersections (VPIs) to allow for drainage. The grade between the VPIs varies between 0.2% and 0.45%.

Table 2.5: SR 54 Existing Vertical Curves

PVI Station	Design Speed (MPH)	Existing Vertical Curve						Curve Length Criteria	K-Value Criteria		As-Built Plan Source of Data (FPID No./State Project No.)
		Type	G1 %	G2 %	A %	Length (feet)	K-Value		FDM	AASHTO	
286+50.00	60	Crest	0.28	-0.200	0.480	393	819	400	245	151	256339-1-52-01*
288+50.00	60	Sag	-0.20	0.200	0.400	295	738	300	136	136	256339-1-52-01*
291+00.00	60	Crest	0.20	-0.393	0.593	393	663	400	245	151	256339-1-52-01*
293+26.70	60	Sag	-0.393	0.289	0.682	295	433	300	136	136	256339-1-52-01*
296+00.00	60	Crest	0.289	-0.318	0.607	393	647	400	245	151	256339-1-52-01*
298+70.00	60	Sag	-0.318	0.300	0.618	295	477	300	136	136	256339-1-52-01*
1040+00.00	45	N/A	0.300	0.298 (LT) 0.260 (RT)	0.002 (LT) 0.04 (RT)	N/A	N/A	135	98	61	14010-3518
1044+36.90	45	N/A	0.298	0.00	0.298	N/A	N/A	135	98	61	14010-3518
1044+39.20	45	N/A	0.260	0.00	0.260	N/A	N/A	135	98	61	14010-3518
1044+45.92	45	N/A	0.00	-0.411	0.411	N/A	N/A	135	98	61	14010-3518
1044+48.21	45	N/A	0.00	-0.239	0.239	N/A	N/A	135	98	61	14010-3518
1044+75.15	45	N/A	-0.411	0.998	1.409	N/A	N/A	135	79	79	14010-3518
1044+77.45	45	N/A	-0.239	0.998	1.237	N/A	N/A	135	79	79	14010-3518

PVI Station	Design Speed (MPH)	Existing Vertical Curve						Curve Length Criteria	K-Value Criteria		As-Built Plan Source of Data (FPID No./State Project No.)
		Type	G1 %	G2 %	A %	Length (feet)	K-Value		FDM	AASHTO	
30+03.13	45	N/A	0.998	0.998	0.00	N/A	N/A	135	98	61	14010-3518
30+05.43	45	N/A	0.998	0.881	0.117	N/A	N/A	135	98	61	14010-3518
30+20.16	45	N/A	0.998	-1.142	2.140	N/A	N/A	135	98	61	14010-3518
30+22.46	45	N/A	0.881	-0.940	1.821	N/A	N/A	135	98	61	14010-3518
30+35.92	45	N/A	-1.142	-1.000	0.142	N/A	N/A	135	79	79	14010-3518
30+39.49	45	N/A	-0.940	-1.000	0.060	N/A	N/A	135	79	79	14010-3518
30+75.26	45	N/A	-1.000	-0.314	0.686	N/A	N/A	135	79	79	14010-3518
30+77.56	45	N/A	-1.000	-0.258	0.742	N/A	N/A	135	79	79	14010-3518
32+60.00	45	N/A	-0.314 (LT) -0.258 (RT)	0.380	0.694 (LT) 0.638 (RT)	N/A	N/A	135	79	79	14010-3518
36+00.00	45	N/A	0.380	-0.200	0.580	N/A	N/A	135	98	61	14010-3518
36+00.00	60	N/A	-0.295	0.300	0.625	N/A	N/A	300	136	136	256343-1-52-01*
37+00.00	60	N/A	0.300	-0.300	0.600	N/A	N/A	400	245	151	256343-1-52-01*
38+00.00	60	N/A	-0.300	0.300	0.600	N/A	N/A	300	136	136	256343-1-52-01*
39+00.00	60	N/A	0.300	-0.300	0.600	N/A	N/A	400	245	151	256343-1-52-01*
40+00.00	60	N/A	-0.300	0.300	0.600	N/A	N/A	300	136	136	256343-1-52-01*

Note: * Metric project. Values converted to imperial units.

Table 2.6: US 41 Existing Vertical Curves

PVI Station	Design Speed (MPH)	Existing Vertical Curve						Curve Length Criteria	K-Value Criteria		As-Built Plan Source of Data (FPID No./State Project No.)
		Type	G1 %	G2 %	A %	Length (feet)	K-Value		FDM	AASHTO	
47+35.00	45	N/A	-0.300	0.300	0.600	N/A	N/A	135	79	79	14010-3518
52+00.00	45	N/A	0.300	-0.300	0.600	N/A	N/A	135	98	61	14010-3518
58+00.00	45	N/A	-0.300	0.300	0.600	N/A	N/A	135	79	79	14010-3518
64+00.00	45	N/A	0.300	-0.300	0.600	N/A	N/A	135	98	61	14010-3518
70+00.00	45	N/A	-0.300	0.300	0.600	N/A	N/A	135	79	79	14010-3518
76+50.00	45	N/A	0.300	-0.300	0.600	N/A	N/A	135	98	61	14010-3518
79+50.00	45	N/A	-0.300	0.300	0.600	N/A	N/A	135	79	79	14010-3518
82+50.00	45	N/A	0.300	-0.300	0.600	N/A	N/A	135	98	61	14010-3518
85+50.00	45	N/A	-0.300	0.450	0.750	N/A	N/A	135	79	79	14010-3518
95+00.00	45	Crest	0.450	-0.300	0.750	656	875	135	98	61	14010-3518

2.2.10 Multimodal Facilities

The existing pedestrian facilities at the intersection of SR 54 and US 41 are as follows: sidewalks ranging in width from five to eight feet are provided on both sides of SR 54 east and west of US 41. A five-foot sidewalk is located along the east side of US 41 extending both north and south of SR 54. Marked crosswalks are provided at signalized intersections. Four-foot bicycle lanes are provided in both directions along SR 54 east and west of US 41. These four-foot designated bicycle lanes become five-foot designated bicycle lanes approximately one-half mile west of US 41, and eight-foot undesignated paved shoulders approximately one-half mile east of US 41. US 41 has no designated bicycle lanes, only a wide, 14-foot outside travel lane.

Pasco County Public Transportation (PCPT) operates one fixed route along SR 54 within the study area. Route 54 runs along SR 54 to Bruce B. Downs Boulevard, continues on Bruce B. Downs Boulevard to County Road 54 connecting US 19 and downtown Zephyrhills. The route runs between 4:40 am and 6:40 pm on weekdays and between 6:40 am to 4:40 pm on weekends. The bus headway is one to two hours. There are bus stops in each direction on SR 54 approximately 0.5 miles west of US 41, 750 feet east of US 41, and 0.5 miles east of US 41.

2.2.11 Intersections

There are four existing signal-controlled intersections within the project limits:

- US 41 at Wal-Mart Way;
- US 41 at SR 597 (N. Dale Mabry Highway);
- US 41 at SR 54;
- SR 54 at Village Lakes Shopping Center Drive; and
- SR 597 (N. Dale Mabry Highway) and Wal-Mart Way (installed in 2020).

The skewed intersection of SR 597 (N. Dale Mabry Highway) and US 41 configuration creates significant traffic operational challenges, including:

- US 41 northbound traffic (free-flow movement) desiring to turn left onto SR 54 must weave with the northbound traffic from SR 597 (N. Dale Mabry Highway) within a short distance (about 2,300 feet) to make the left turn movement.

- SR 597 (N. Dale Mabry Highway) northbound traffic desiring to turn right onto SR 54 must weave with the northbound traffic on US 41 within a short distance (about 2,300 feet) to make the right turn movement.

2.2.12 Physical or Operational Restrictions

There are no operational restrictions in the project area. There is a CSX railroad parallel to US 41 on the west side. SR 54 crosses the railroad and has gates for the travel lanes. SR 597 (N. Dale Mabry Highway) also crosses the railroad and has gates for the travel lanes. Section 2.4 has more details regarding the railroad.

2.2.13 Traffic Data

The traffic factors for this study are presented in **Table 2.7**. The Design Hour Factor (K) is the proportion of the Annual Average Daily Traffic (AADT) that occurs during the design hour. The Directional Distribution Factor (D) is the proportion of traffic traveling in the peak direction during the design hour. These factors represent the traffic demand a roadway is typically designed to accommodate.

The Truck Factor (T24) refers to the percentage of truck traffic during a 24-hour period. The Design Hour Truck (DHT) factor is the peak hour truck factor and is estimated as one-half of the T24 factor. The Peak Hour Factor (PHF) is the ratio of total peak hour volume to the peak 15-minute rate of flow within the hour. It accounts for the variability of traffic within the hour.

A standard K-factor of 9.0% was used for this study. The D-Factor used in the analysis was derived by considering historical traffic data and existing measured traffic characteristics from traffic counts. Portable traffic monitoring sites along SR 54 and US 41 [available from FDOT Florida Traffic Online (2018)] were used to determine the historical D values from 2014 to 2018. The results from both methods were evaluated and a D-Factor of 57.50% was used in development of the existing and future DDHVs for this study. The peak direction of travel was assumed to be consistent with the existing counts.

Table 2.7: Traffic Factors

Traffic Factor	Roadway	FDOT Standard/ Acceptable Range	Historic Average (FDOT)	Measured Average	Proposed Design Traffic Factor[4]
K-Factor[1]	SR 54, West of US 41	9.00%	9.00%	7.21%	**9.00%**
	SR 54, East of US 41	9.00%	9.00%	7.12%	
	US 41, North of SR 54	9.00%	9.00%	6.90%	
	US 41, South of SR 597 (N. Dale Mabry Highway)	9.00%	9.00%	6.95%	
	SR 597 (N. Dale Mabry Highway), South of US 41	9.00%	9.00%	7.31%	
		Overall Average:	**9.00%**	**7.10%**	
D-Factor[2]	SR 54, West of US 41	50.8% - 67.1%	57.26%	54.06%	**57.50%**
	SR 54, East of US 41	50.8% - 67.1%	57.26%	54.00%	
	US 41, North of SR 54	50.8% - 67.1%	57.26%	53.67%	
	US 41, South of SR 597 (N. Dale Mabry Highway)	50.8% - 67.1%	57.26%	63.42%	
	SR 597 (N. Dale Mabry Highway), South of US 41	50.8% - 67.1%	57.26%	63.14%	
		Overall Average:	**57.26%**	**57.66%**	
T-Factor[3]	SR 54, West of US 41	-	5.18%	5.12%	**2.5%**
	SR 54, East of US 41	-	6.02%	4.85%	
	US 41, North of SR 54	-	5.58%	4.91%	
	US 41, South of SR 597 (N. Dale Mabry Highway)	-	4.14%	4.94%	
	SR 597 (N. Dale Mabry Highway), South of US 41	-	4.36%	4.37%	
		Overall Average:	***5.06%***	***4.84%***	

[1]Measured Average K-Factor provided represents the Peak-to-Daily Ratio calculated from existing (2019) counts

[2]FDOT Acceptable Range provided represents characteristics for an Urban Arterial

[3]Historic and measured value provided represents daily truck factors

[4]Proposed T-Factor for the design hour assumes that half of the daily trucks (greater of historic or measured) travel during the peak hour [*FDOT Project Traffic Forecasting Handbook, 2019*]

The Truck Factor (T) used in the analysis was derived by considering historical traffic data and existing measured traffic. Portable traffic monitoring sites along SR 54 and US 41 [available from FDOT Florida Traffic Online (2018)] were used to determine the historical daily truck factors (T24)

from 2014 to 2018 (as available). An average of 2.5% peak hour truck percentage was utilized for the study area.

The LOS target for state roads during peak travel hours is LOS D in urbanized areas, per the State Highway System Policy No. 000-525-006c, effective April 19, 2017. However, the overall objective is to deliver enhancements that provide an improved LOS in consideration of both project and corridor constraints. Existing Traffic Data 72-hour classification tube counts (bi-directional approach volumes at 15-minute increments with hourly totals) and concurrent 4-hour (two-hour AM and two-hour PM) vehicle turning movement counts (TMC) (at 15-minute increments with hourly totals) for peak periods (7 AM to 9 AM and 4 PM to 6 PM) were conducted in mid-May 2019. Miovision cameras were used to collect vehicle turning movements counts including pedestrian and bicycle counts at the intersections listed below:

- US 41 at SR 597 (N. Dale Mabry Highway) (signalized),
- US 41 at SR 54 (signalized),
- SR 54 at Village Lakes Shopping Center Drive (signalized),
- Walmart Driveway on Dale Mabry (unsignalized), and
- Walmart Driveway on US 41 (signalized).

The 72-hour classification tube counts were collected at the following locations:

- US 41 (south of SR 597 (N. Dale Mabry Highway), between SR 597 (N. Dale Mabry Highway) and SR 54, and north of SR 54),
- SR 597 (N. Dale Mabry Highway) [south of US 41], and
- SR 54 [west of US 41 and east of US 41].

Travel time runs were conducted for the two-hour AM and PM peak periods (7 AM to 9 AM and 4 PM to 6 PM) on May 7, 2019 (Tuesday). The "floating car" method of data collection was employed to determine travel times on the roadway network. This method consists of a vehicle equipped with a GPS device traveling with the mainstream traffic and recording the vehicle's

position at one second time intervals. **Table 2.8** and **Table 2.9** show the summary of the travel times for US 41 and SR 54 and AM and PM peak periods, respectively.

Signal timing data was provided by Pasco County Traffic Operations Division. Field reviews were conducted to confirm signal phasing and posted speeds. High resolution aerial maps were used to develop the Vissim roadway network. The length of the acceleration and deceleration lanes was maximized to include the taper section as recommended for Vissim modeling.

The high-resolution aerials were also used to identify intersection layout, verify channelization patterns and to measure the length of the left and right turn storage bays. The entry links for arterials were extended to over half a mile to provide adequate distance for lane change maneuvers and ensure that all traffic demand entered the network.

Table 2.8: 2019 (Existing) Travel Times during AM Peak Hour

From	To	Peak Hour Travel Times (Seconds)	
US 41 Northbound			
Northwood Drive	Walmart Driveway	26	217
Walmart Driveway	SR 597 (N. Dale Mabry Highway)	41	
SR 597 (N. Dale Mabry Highway)	SR 54	115	
SR 54	Morgan Road	35	
US 41 Southbound			
Morgan Road	SR 54	211	301
SR 54	SR 597 (N. Dale Mabry Highway)	34	
SR 597 (N. Dale Mabry Highway)	Walmart Driveway	43	
Walmart Driveway	Northwood Drive	13	
SR 54 Eastbound			
Devonoak Blvd.	US 41	297	359
US 41	Daiquiri Lane	62	
SR 54 Westbound			
Daiquiri Lane	US 41	172	220
US 41	Devonoak Blvd.	47	

The four-hour analysis period provided adequate time for congestion build-up and dissipation. According to approach counts collected for this study, the four-hour AM peak period is from 6 AM to 10 AM and PM peak period is from 3:45 PM to 7:45 PM. The second (2nd) hour is the peak hour with the highest volumes during AM and PM peak periods. During the AM peak period, the peak hour (2nd hour) is from 7 AM to 8 AM. During the PM peak period, the peak hour (2nd hour) is from 4:45 PM to 5:45 PM.

Table 2.9: 2019 (Existing) Travel Times during PM Peak Hour

From	To	Peak Hour Travel Times (Seconds)	
US 41 Northbound			
Northwood Drive	Walmart Driveway	14	255
Walmart Driveway	SR 597 (N. Dale Mabry Highway)	39	
SR 597 (N. Dale Mabry Highway)	SR 54	165	
SR 54	Morgan Road	36	
US 41 Southbound			
Morgan Road	SR 54	167	299
SR 54	SR 597 (N. Dale Mabry	77	
SR 597 (N. Dale Mabry Highway)	Walmart Driveway	42	
Walmart Driveway	Northwood Drive	13	
SR 54 Eastbound			
Devonoak Blvd.	US 41	219	284
US 41	Daiquiri Lane	65	
SR 54 Westbound			
Daiquiri Lane	US 41	291	334
US 41	Devonoak Blvd.	43	

2.2.14 Roadway Operational Conditions

This section summarizes the Vissim output and traffic operational results for the intersections and correspond to traffic counts collected during the AM and PM peak hours. The second (2nd) hour is the peak hour with highest volumes during the AM and PM peak periods; however, the congestion continues to grow into the third (3rd) hour. Measures of effectiveness, including delay, levels of service, and maximum queue lengths derived from Vissim simulations were reported in **Table 2.10** and **Table 2.11** for the peak hour under the existing conditions. During the third (3rd) hour in the AM peak period, the intersection of US 41 and SR 54 is experiencing severe congestion with level of service F. Especially, the maximum queue along eastbound can extend over a mile. During the PM peak period, the intersection of US 41 and SR 54 is also experiencing severe congestion. The maximum westbound queue extends beyond the intersection with Village Lakes Shopping Center Drive. Occurrences of extremely long queues along SR 54 from Vissim simulation are also corroborated by field observations. The average travel times collected from field data were utilized in the calibration process to compare with simulated travel times derived from Vissim simulations.

The travel time results from Vissim were successively compared with field collected data during the calibration process. The model parameters were adjusted within reasonable ranges through several iterations until the model travel times were within one minute of the observed (field collected) travel time. **Table 2.12** and **Table 2.13** summarize the travel time comparisons between model and field data for the AM and PM peak hours respectively.

In addition to the evaluation of the existing conditions with raw traffic counts, the existing conditions were also evaluated using the DDHVs, representing conditions with existing traffic demand instead of traffic counts. Measures of Effectiveness (MOE) including delay per vehicle, LOS, and maximum queue lengths were summarized for major intersections in the study area. As displayed in **Table 2.14** and **Table 2.15**, during the AM peak hour, the delay per vehicle is 286 seconds with LOS F. During the PM peak hour, the delay per vehicle is 258 seconds with LOS F. The DDHVs for the existing conditions can be found in **Figure 2.6.**

Table 2.10: Existing Conditions AM Vissim Intersection Performance Based on Raw Data

Intersection	Movement	AM Volume Demand (VPH)	Delay (Seconds)	Level of Service	Max Queue Length (Feet)
US 41 and SR 54	**Overall**	**7470**	**162**	**F**	
	SBLT	375	106	F	325
	SBTH	1519	99	F	1753
	SBRT	211	43	D	124
	NBLT	339	604	F	1268
	NBTH	570	89	F	458
	NBRT	450	6	A	287
	EBLT	130	359	F	178
	EBUT	6	357	F	178
	EBTH	1255	360	F	6504
	EBRT	476	303	F	23
	WBLT	553	86	F	503
	WBUT	3	85	F	503
	WBTH	1232	46	D	840
	WBRT	351	6	A	155
SR 54 and Village Lakes Shopping Center Drive	**Overall**	**4344**	**9**	**A**	
	SBLT	46	91	F	147
	SBTH	6	9	A	147
	SBRT	9	11	B	147
	NBLT	46	94	F	93
	NBTH	2	99	F	93
	NBRT	25	12	B	86
	EBLT	28	8	A	39
	EBUT	3	15	B	39
	EBTH	1997	5	A	252
	EBRT	53	5	A	252
	WBLT	33	7	A	47
	WBUT	2	10	B	47
	WBTH	2083	9	A	702
	WBRT	11	6	A	714
US 41 and SR 597 (N. Dale Mabry Highway)	**Overall**	**1902**	**28**	**C**	
	SBTH	1173	27	C	303
	NBTH	708	31	C	421
	NBRT	21	8	A	67
US 41 and Wal-Mart	**Overall**	**1912**	**5**	**A**	
	SBTH	1146	2	A	94
	SBRT	47	4	A	37
	NBLT	26	4	A	36
	NBTH	613	4	A	109
	EBLT	38	51	D	86
	EBRT	42	51	D	100
SR 597 (N. Dale Mabry Highway) and Wal-Mart	**Overall**	**2169**	**1**	**A**	
	SBTH	1372	1	A	0
	SBRT	3	0	A	0
	NBTH	694	0	A	0
	NBLT	1	1	A	0
	NBUT	4	4	A	14
	NBRT	59	1	A	0
	EBRT	1	11	B	36
	WBRT	35	13	B	103

Table 2.11: Existing Conditions PM Vissim Intersection Performance Based on Raw Data

Intersection	Movement	PM Volume Demand (VPH)	Delay (Seconds)	Level of Service	Max Queue Length (Feet)
US 41 and SR 54	**Overall**	**7850**	**98**	**F**	
	SBLT	446	93	F	638
	SBTH	765	75	E	556
	SBRT	211	10	A	122
	NBLT	745	99	F	813
	NBTH	1263	90	F	671
	NBRT	804	21	C	8
	EBLT	259	192	F	281
	EBUT	0	0	A	281
	EBTH	1079	192	F	2496
	EBRT	319	126	F	33
	WBLT	412	88	F	339
	WBUT	5	89	F	339
	WBTH	1276	94	F	1750
	WBRT	266	42	D	172
SR 54 and Village Lakes Shopping Center Drive	**Overall**	**4579**	**28**	**C**	
	SBLT	117	77	E	237
	SBTH	6	16	B	237
	SBRT	86	24	C	237
	NBLT	81	81	F	128
	NBTH	11	76	E	128
	NBRT	69	11	B	116
	EBLT	93	9	A	96
	EBUT	9	33	C	96
	EBTH	2143	9	A	345
	EBRT	89	2	A	345
	WBLT	45	27	C	56
	WBUT	9	26	C	56
	WBTH	1793	48	D	1459
	WBRT	28	36	D	1470
US 41 and SR 597 (N. Dale Mabry Highway)	**Overall**	**2040**	**42**	**D**	
	SBTH	654	41	D	364
	NBTH	1356	44	D	992
	NBRT	30	11	B	71
US 41 and Wal-Mart	**Overall**	**2370**	**18**	**B**	
	SBTH	458	2	A	95
	SBRT	226	26	C	179
	NBLT	108	17	B	89
	NBTH	1283	7	A	294
	EBLT	174	84	F	409
	EBRT	121	83	F	346
SR 597 (N. Dale Mabry Highway) and Wal-Mart	**Overall**	**2457**	**2**	**A**	
	SBTH	841	0	A	0
	SBRT	3	0	A	0
	NBTH	1245	1	A	28
	NBLT	4	1	A	0
	NBUT	14	2	A	27
	NBRT	169	1	A	28
	EBRT	40	10	A	92
	WBRT	141	17	B	134

Table 2.12: Travel Time Comparisons - Existing 2019 AM Peak Hour Conditions

Roadway	From	To	Sim. Peak Hour Travel Time (Seconds)	Peak Hour Field Time (Seconds)	Difference (Seconds)
SR 54 WB	Daiquiri Lane	Devonoak Blvd.	161	220	(59)
SR 54 EB	Devonoak Blvd.	Daiquiri Lane	312	359	(47)
US 41 NB	Northwood Dr.	Morgan Road	214	217	(3)
US 41 SB	Morgan Road	Northwood Dr.	261	301	(40)

Table 2.13: Travel Time Comparisons - Existing 2019 PM Peak Hour Conditions

Roadway	From	To	Sim. Peak Hour Travel Time	Peak Hour Field Time (Seconds)	Difference (Seconds)
SR 54 WB	Daiquiri Lane	Devonoak Blvd.	277	334	(57)
SR 54 EB	Devonoak Blvd.	Daiquiri Lane	307	284	23
US 41 NB	Northwood Dr.	Morgan Road	244	255	(11)
US 41 SB	Morgan Road	Northwood Dr.	248	299	(51)

Table 2.14: Existing Conditions w/ DDHVs - AM Peak Hour Vissim Intersection Performance

Intersection	Movement	AM Volume (VPH) Demand	Delay (Seconds)	Level of Service	Max Queue Length (Feet)
US 41 and SR 54	**Overall**	**11101**	**286**	**F**	
	SBLT	535	282	F	1076
	SBTH	2166	279	F	5589
	SBRT	300	221	F	142
	NBLT	658	1116	F	2897
	NBTH	1107	290	F	1587
	NBRT	875	89	F	1889
	EBLT	209	376	F	164
	EBTH	2018	377	F	6800
	EBRT	765	316	F	24
	WBLT	623	96	F	489
	WBTH	1438	51	D	1355
	WBRT	395	11	B	189
SR 54 and Village Lakes Shopping Center/Lowe's Driveway	**Overall**	**6093**	**11**	**B**	
	SBLT	94	86	F	225
	SBTH	11	10	B	225
	SBRT	17	15	B	225
	NBLT	85	87	F	135
	NBTH	3	76	E	135
	NBRT	45	14	B	105
	EBLT	45	7	A	42
	EBTH	3296	6	A	366
	EBRT	83	5	A	366
	WBLT	38	12	B	69
	WBTH	2357	14	B	1026
	WBRT	13	14	B	1038
US 41 and N. Dale Mabry Highway	**Overall**	**2966**	**456**	**F**	
	SBTH	1627	31	C	310
	NBTH	1301	984	F	2734
	NBRT	38	566	F	67
US 41 and Wal-Mart Driveway	**Overall**	**3187**	**5**	**A**	
	SBTH	1596	2	A	111
	SBRT	70	4	A	40
	NBLT	49	4	A	60
	NBTH	1338	5	A	211
	EBLT	64	41	D	116
	EBRT	70	43	D	158
N. Dale Mabry Highway and Wal-Mart Driveway	**Overall**	**3380**	**404**	**F**	
	SBTH	1924	1	A	0
	SBRT	4	0	A	0
	NBTH	1254	934	F	2573
	NBLT	2	638	F	0
	NBRT	104	698	F	2573
	EBRT	1	11	B	21
	WBRT	84	970	F	410

Table 2.15: Existing Conditions w/ DDHVs - PM Peak Hour Vissim Intersection Performance

Intersection	Movement	PM Volume (VPH) Demand	Delay (Seconds)	Level of Service	Max Queue Length (Feet)
US 41 and SR 54	**Overall**	**10617**	**258**	**F**	
	SBLT	696	515	F	5612
	SBTH	1193	422	F	5610
	SBRT	330	317	F	256
	NBLT	945	172	F	653
	NBTH	1602	161	F	627
	NBRT	1021	97	F	0
	EBLT	346	414	F	275
	EBTH	1538	433	F	6818
	EBRT	427	362	F	14
	WBLT	507	105	F	323
	WBTH	1678	127	F	1791
	WBRT	327	69	E	190
SR 54 and Village Lakes Shopping Center/Lowe's Driveway	**Overall**	**6113**	**114**	**F**	
	SBLT	130	76	E	251
	SBTH	7	26	C	251
	SBRT	96	44	D	251
	NBLT	91	78	E	129
	NBTH	12	72	E	129
	NBRT	78	11	B	113
	EBLT	131	12	B	118
	EBTH	2993	9	A	271
	EBRT	124	3	A	271
	WBLT	58	209	F	35
	WBTH	2332	265	F	6007
	WBRT	36	238	F	6019
US 41 and N. Dale Mabry Highway	**Overall**	**2492**	**210**	**F**	
	SBTH	1153	43	D	570
	NBTH	1300	359	F	2694
	NBRT	39	187	F	72
US 41 and Wal-Mart Driveway	**Overall**	**3396**	**42**	**D**	
	SBTH	966	4	A	320
	SBRT	224	18	B	156
	NBLT	121	26	C	109
	NBTH	1756	59	E	1441
	EBLT	194	94	F	304
	EBRT	135	66	E	262
N. Dale Mabry Highway and Wal-Mart Driveway	**Overall**	**3112**	**516**	**F**	
	SBTH	972	0	A	0
	SBRT	4	0	A	0
	NBTH	1697	542	F	2585
	NBLT	6	311	F	0
	NBRT	214	366	F	2585
	EBRT	44	10	A	105
	WBRT	157	3150	F	426

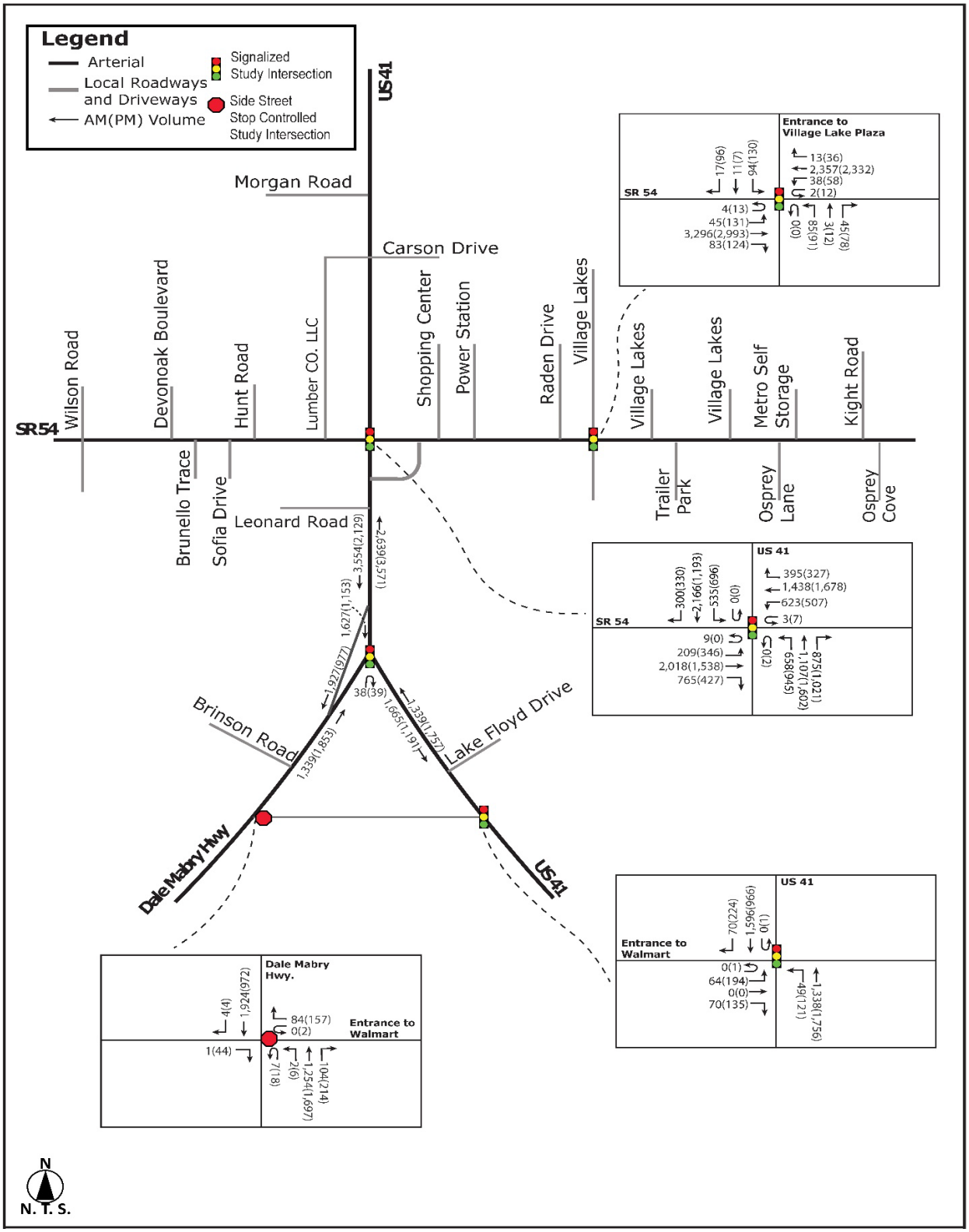


Figure 2.6: 2019 Existing Directional Design Hour Volumes

Network-wide statistics during the AM (6:00-10:00 AM) and PM (3:45 to 7:45 PM) peak periods for the existing conditions with DDHVs are listed in **Table 2.16**. As displayed in **Table 2.16**, during the AM peak period, the unmet demand is 18% and the network-wide average speed is 12 mph. During the PM peak period, the unmet demand is 8% and the network-wide average speed is 10 mph. It is evident that some improvements are needed to accommodate the actual traffic demand.

Table 2.16: 2019 Existing Conditions DDHVs - Network Performance Statistics

Statistics	Year 2019	
	AM Peak Period	PM Peak Period
Total travel time (hours)	7,220	9,352
Total delay time (hours)	5,399	7,386
Average delay time (seconds)	552.7	673
Average speed (mph)	12	10
Percent demand served	82%	92%

2.2.15 Managed Lanes

There are no existing Managed Lanes within the project study area.

2.2.16 Crash Data

Crash data was obtained from FDOT's Signal 4 Analytics Database (S4) along US 41, SR 597 (N. Dale Mabry Highway), and SR 54 for the five-year period from 2018-2022.

2.2.16.1 Roadway Corridors

US 41 and SR 597 (Dale Mabry Highway) Corridors Crash Analyses

Table 2.17 provides a summary of the crash data and analysis along US 41, from Northwood Drive to Morgan Road and SR 597 (N. Dale Mabry Highway), from Wal-Mart Driveway to US 41. Within the five-year period (2018-2022), a total of 329 crashes were reported, with an average of 65.8 crashes per year. Within the corridor, the highest number of crashes occurred on the segment of US 41 between N. Dale Mabry Highway and SR 54 with 154 crashes reported over the five-year period. Historic crash data shows that the crash rate along US 41 from Wal-Mart Driveway to Morgan Road ranges from 1.857 to 2.544 crashes per million vehicle miles traveled and is higher

than the statewide average for a similar facility of 1.566 crashes per million vehicle miles traveled. Rear-end collisions were the most common crash type recorded, with 44.68% of total crashes, followed by sideswipe collisions, with 21.28%. Out of the 329 total crashes, 114 (34.65%) were crashes with injuries and 212 (64.44%) were crashes with property damage only. There were three fatal crashes recorded along the corridors.

Within the corridors, the northbound segment of US 41 between SR 597 (N. Dale Mabry Highway) and SR 54 creates a weaving zone within a short distance (about 2,300 feet), which may contribute to the number of crashes. The segment of SR 597 (N. Dale Mabry Highway) from Wal-Mart driveway to US 41 experienced the highest crash rate, with 3.049 crashes per million vehicle miles traveled, which is higher than the FDOT statewide average crash rate of 0.868 for a similar facility.

SR 54 Corridor Crash Analyses

Table 2.18 provides a summary of the crash data and analysis along SR 54 from Wilson Road to Osprey Lane. For the five-year period (2018-2022), there were a total of 247 crashes reported, with an average of 49.4 crashes per year. Within the corridor, the highest number of crashes occurred on the segment between Wilson Road and US 41 with 120 crashes reported. Rear-end collisions were the most common crash type recorded, making up 51.82% of total crashes, followed by sideswipe collisions (15.38%). Out of the 247 total crashes, 73 (29.55%) were crashes with injuries and 174 (70.45%) were crashes with property damage only. There were no fatal crashes recorded along the corridor.

The crash rates for the SR 54 corridor range from 1.685 to 1.982 crashes per million vehicle miles traveled, which exceeds the statewide average for a similar facility of 1.566 crashes per million vehicle miles traveled.

Figure 2.7 and **Figure 2.8** illustrate the crashes by severity and type, respectively, along the US 41/SR 597 (N. Dale Mabry Highway) and SR 54 corridors. **Figure 2.9** and **Figure 2.10** show the lighting and roadway surface conditions, respectively, along each segment. As shown in those figures, the majority of the crashes occurred during daylight and dry conditions.

Table 2.17: US 41 and SR 597 (N. Dale Mabry Highway) Segments Crash Summary (2018-2022)

Segment[1]							Crash Type								Severity				Study Area Crash Rates	
Segment Number	Location Description	Functional Class	Begin Mile Post	End Mile Post	Length		Total	Angle[2]	Rear End	Sideswipe	Head On	With Pedestrians	With Bicycles	All Other[3]	Fatal	Injuries	PDO	Total	Actual Crash Rate (crashes/MVMT)	Statewide Crash Rate (crashes/MVMT)[4]
1	US 41 from Northwood Drive to Wal-Mart	Urban Arterial	0.246	0.444	0.198	5- Year	12	6	1	2	0	0	0	3	0	5	7	12	1.019	1.566
						Average	2.4	1.2	0.2	0.4	0	0	0	0.6	0	1	1.4	2.4		
2	US 41 from Wal-Mart Driveway to SR 597	Urban Arterial	0.444	0.969	0.525	5-Year	58	22	12	7	0	1	1	15	0	23	35	58	**1.857**	1.566
						Average	11.6	4.4	2.4	1.4	0	0.2	0.2	3	0	4.6	7	11.6		
3	SR 597 from Wal-Mart Driveway to US 41	Urban Arterial	0.609	1.011	0.402	5- Year	68	11	39	6	0	3	0	9	2	21	45	68	**3.049**	0.868
						Average	13.6	2.2	7.8	1.2	0	0.6	0	1.8	0.4	4.2	9	13.6		
4	US 41 forms 597 to SR 54	Urban Arterial	0.969	1.445	0.476	5- Year	154	11	63	47	2	1	1	29	1	48	105	154	**2.544**	1.566
						Average	30.8	2.2	12.6	9.4	0.4	0.2	0.2	5.8	0.2	9.6	21	30.8		
5	US 41 from SR 54 to Morgan Road	Urban Arterial	1.445	1.919	0.474	5- Year	95	18	44	15	0	0	1	17	0	40	55	95	**2.116**	1.566
						Average	19.0	3.6	8.8	3.0	0.0	0.0	0.2	3.4	0.0	8.0	11.0	19.0		
US 41/SR 597 (N. Dale Mabry Highway) Corridor Summary						**5- Year**	**329**	**46**	**147**	**70**	**2**	**4**	**2**	**58**	**3**	**114**	**212**	**329**		
						Average	**65.8**	**9.2**	**29.4**	**14**	**0.4**	**0.8**	**0.4**	**11.6**	**0.6**	**22.8**	**42.4**	**65.8**		
Crash Type and Severity Percentage								**13.98%**	**44.68%**	**21.28%**	**0.61%**	**1.22%**	**0.61%**	**17.63%**	**0.91%**	**34.65%**	**64.44%**			

Source: Florida Department of Transportation Signal Four (2018-2022)

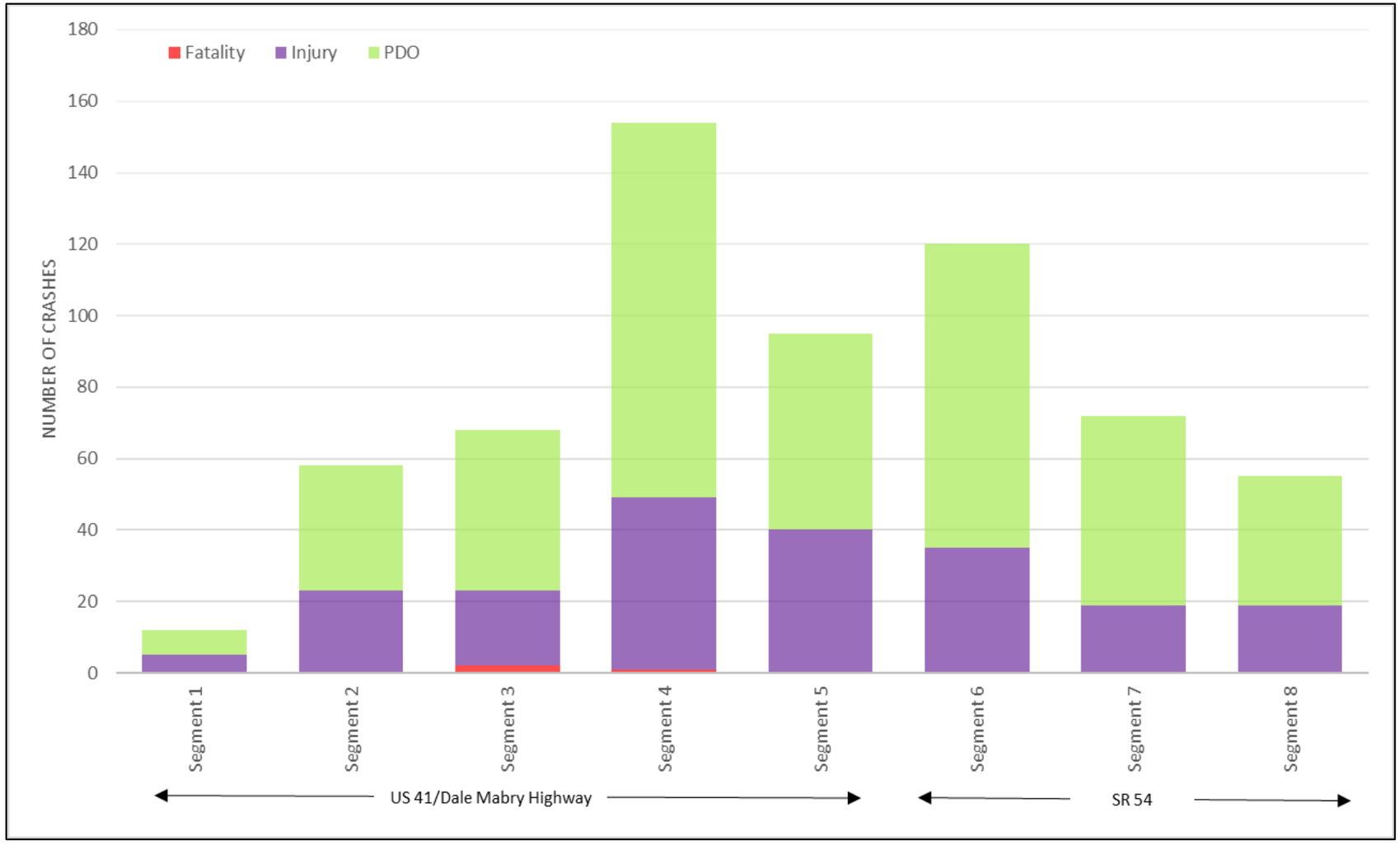
Notes:
[1] Does not include crashes at intersections
[2] Includes left-turn and right-turn type crashes
[3] Includes all other crash types where specific crash type is not listed
[4] Statewide average spot crash rates based on the five-year data between 2018-2022
MVMT = million vehicle miles traveled; PDO = Property Damage Only
Statewide Crash Rate used "U | 2 | D" and "U | 3 | D"
Red highlighted: Actual Crash Rate > Statewide Average Crash Rate

Table 2.18: SR 54 Segments Crash Summary (2018-2022)

Segment[1]							Crash Type								Severity				Study Area Crash Rates	
Segment Number	Location Description	Functional Class	Begin Mile Post	End Mile Post	Length		Total	Angle[2]	Rear End	Sideswipe	Head On	With Pedestrians	With Bicycles	All Other[3]	Fatal	Injuries	PDO	Total	Actual Crash Rate (crashes/MVMT)	Statewide Crash Rate (crashes/MVMT)[4]
6	SR 54 from Wilson Road to US 41	Urban Arterial	7.565	8.289	0.724	5-Year	120	16	60	16	0	0	0	28	0	35	85	120	**1.685**	1.566
						Average	24.0	3.2	12	3.2	0	0	0	5.6	0	7	17	24		
7	SR 54 from US 41 to Village Lakes Shopping Center Drive	Urban Arterial	0	0.319	0.319	5-Year	72	9	39	17	1	0	0	6	0	19	53	72	**1.982**	1.566
						Average	14.4	1.8	7.8	3.4	0.2	0	0	1.2	0	3.8	10.6	14.4		
8	SR 54 from Village Lakes Shopping Center Drive to Osprey Lane SR 54 from Wilson Road to US 41	Urban Arterial Urban Arterial	0.319 7.565	0.586 8.289	0.267 0.724	5-Year	55	8	29	5	0	0	0	13	0	19	36	55	**1.809**	1.566
						Average	11.0	1.6	5.8	1.0	0.0	0.0	0.0	2.6	0.0	3.8	7.2	11.0		
SR 54 Corridor Summary						**5-Year**	247	33	128	38	1	0	0	47	0	73	174	247		
						Average	49.4	6.6	25.6	7.6	0.2	0	0	9.4	0	14.6	34.8	49.4		
Crash Type and Severity Percentage								13.36%	51.82%	15.38%	0.40%	0.00%	0.00%	19.03%	0.00%	29.55%	70.45%			

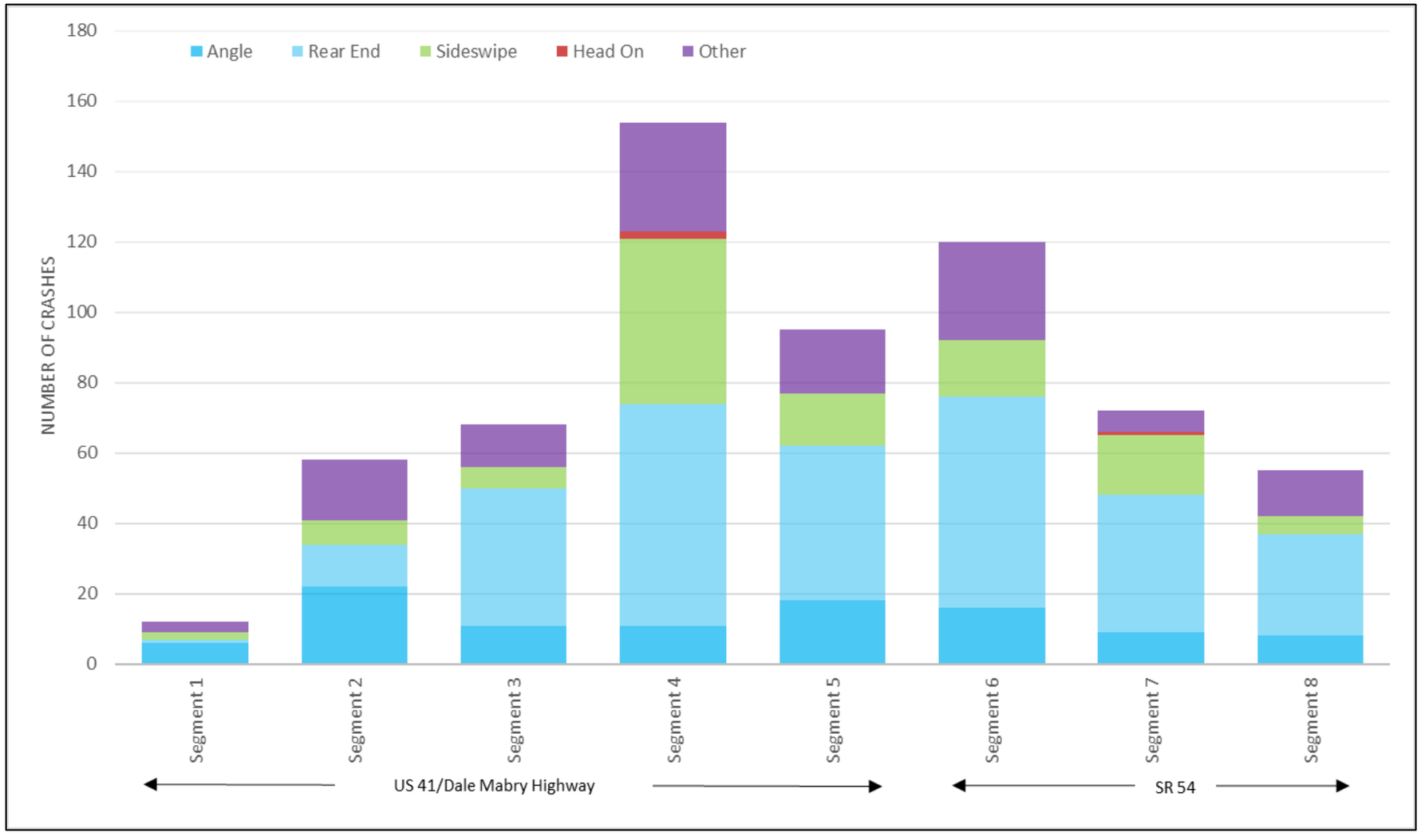
Source: Florida Department of Transportation Signal Four (2018-2022)

Notes:
[1] Does not include crashes at intersections
[2] Includes left-turn and right-turn type crashes
[3] Includes all other crash types where specific crash type is not listed
[4] Statewide average spot crash rates based on the five-year data between 2018-2022
MVMT = million vehicle miles traveled
PDO = Property Damage Only
Statewide Crash Rate used "U | 3 | D"
Red highlighted: Actual Crash Rate > Statewide Average Crash Rate



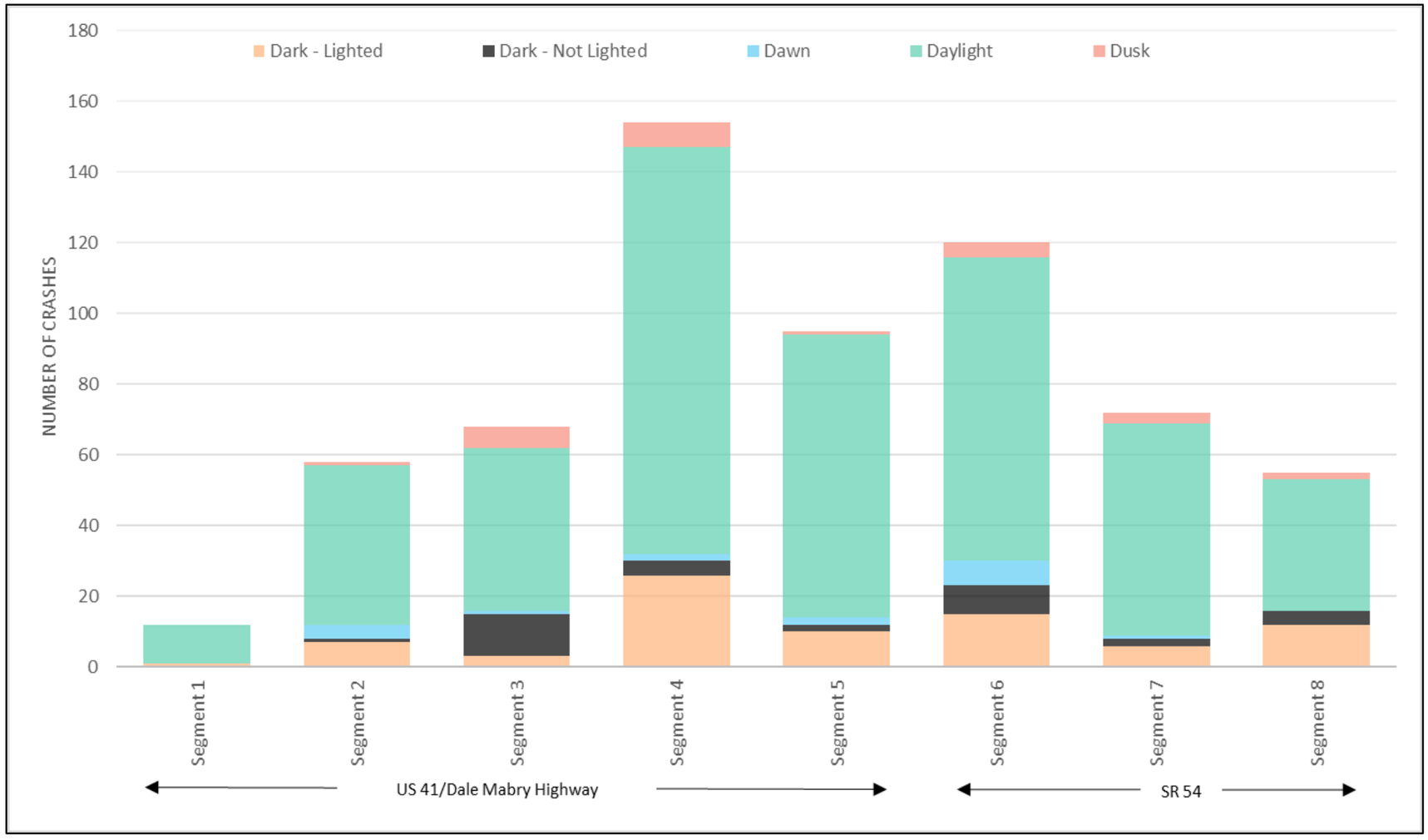
Segment 1	US 41 from Northwood Drive to Wal-Mart Driveway
Segment 2	US 41 from Wal-Mart Driveway to SR 597 (N. Dale Mabry Hwy)
Segment 3	SR 597 (N. Dale Mabry Hwy) from Wal-Mart Driveway to US 41
Segment 4	US 41 from SR 597 (N. Dale Mabry Hwy) to SR 54
Segment 5	US 41 from SR 54 to Morgan Rd
Segment 6	SR 54 from Wilson Rd to US 41
Segment 7	SR 54 from US 41 to Village Lake Driveway
Segment 8	SR 54 from Village Lakes Driveway to Osprey Ln

Figure 2.7: Crash Summary by Severity



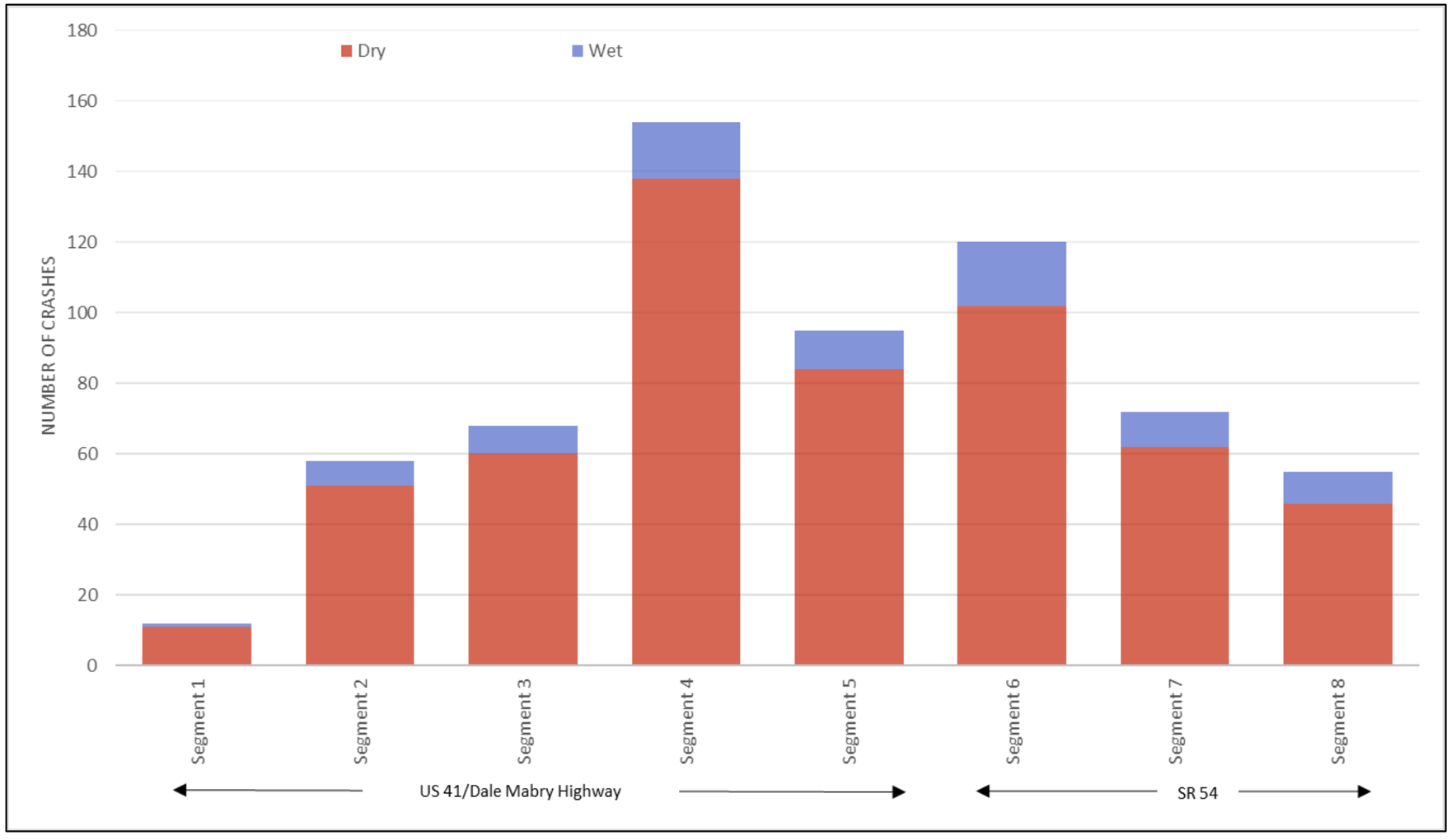
Segment 1	US 41 from Northwood Drive to Wal-Mart Driveway
Segment 2	US 41 from Wal-Mart Driveway to SR 597 (N. Dale Mabry Hwy)
Segment 3	SR 597 (N. Dale Mabry Hwy) from Wal-Mart Driveway to US 41
Segment 4	US 41 from SR 597 (N. Dale Mabry Hwy) to SR 54
Segment 5	US 41 from SR 54 to Morgan Rd
Segment 6	SR 54 from Wilson Rd to US 41
Segment 7	SR 54 from US 41 to Village Lake Driveway
Segment 8	SR 54 from Village Lakes Driveway to Osprey Ln

Figure 2.8: Crash Summary by Type



Segment 1	US 41 from Northwood Drive to Wal-Mart Driveway
Segment 2	US 41 from Wal-Mart Driveway to SR 597 (N. Dale Mabry Hwy)
Segment 3	SR 597 (N. Dale Mabry Hwy) from Wal-Mart Driveway to US 41
Segment 4	US 41 from SR 597 (N. Dale Mabry Hwy) to SR 54
Segment 5	US 41 from SR 54 to Morgan Rd
Segment 6	SR 54 from Wilson Rd to US 41
Segment 7	SR 54 from US 41 to Village Lake Driveway
Segment 8	SR 54 from Village Lakes Driveway to Osprey Ln

Figure 2.9: Crash Summary by Lighting Condition



Segment 1	US 41 from Northwood Drive to Wal-Mart Driveway
Segment 2	US 41 from Wal-Mart Driveway to SR 597 (N. Dale Mabry Hwy)
Segment 3	SR 597 (N. Dale Mabry Hwy) from Wal-Mart Driveway to US 41
Segment 4	US 41 from SR 597 (N. Dale Mabry Hwy) to SR 54
Segment 5	US 41 from SR 54 to Morgan Rd
Segment 6	SR 54 from Wilson Rd to US 41
Segment 7	SR 54 from US 41 to Village Lake Driveway
Segment 8	SR 54 from Village Lakes Driveway to Osprey Ln

Figure 2.10: Crash Summary by Roadway Surface Condition

2.2.16.2 Signalized Intersection Crash Analyses

US 41 at Wal-Mart Driveway

A total of 23 crashes were reported at the intersection of US 41 and the Wal-Mart driveway from 2018-2022. Rear-end and angle (which includes left and right turns) collisions constituted the majority (approximately 43.48% and 34.78%, respectively) of the crashes. As shown on **Figure 2.11,** 12 (52.17%) were crashes with property damage only, and 10 (43.48%) were injury crashes. There was one fatal crash reported during the five-year analysis period.

SR 597 (N. Dale Mabry Highway) at Wal-Mart Driveway

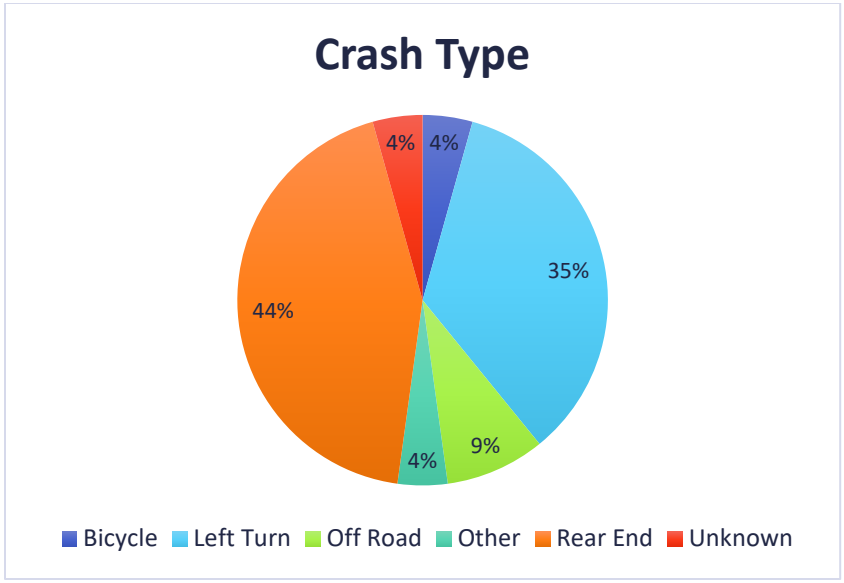
A total of six crashes were reported at the intersection of N. Dale Mabry Highway and the Wal-Mart driveway from 2018-2022. They consisted of three rear-ends (50%), two sideswipes (33%), and one angle (left turn) collision (17%). As shown on **Figure 2.12**, five were crashes with property damage only (83%), and one (17%) was an injury-related crash. There were no fatal crashes reported during the five-year analysis period.

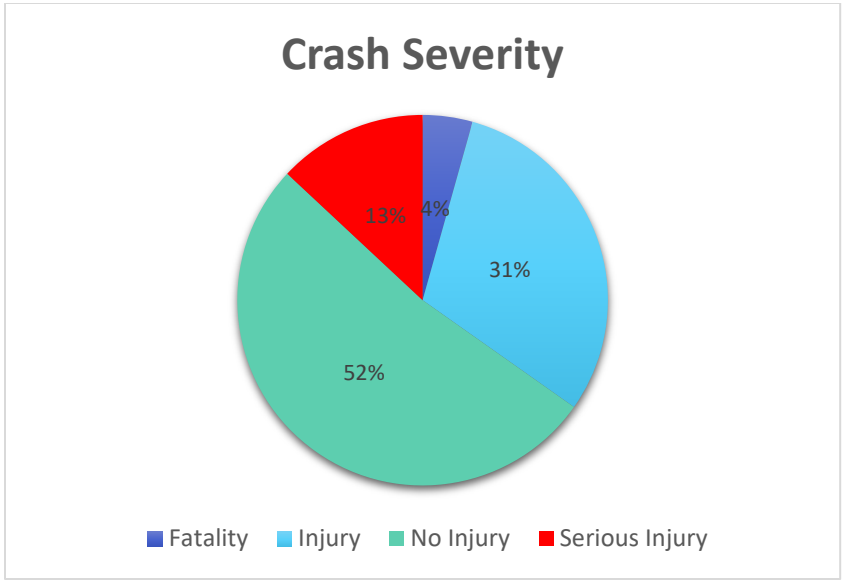
US 41 at SR 597 (N. Dale Mabry Highway)

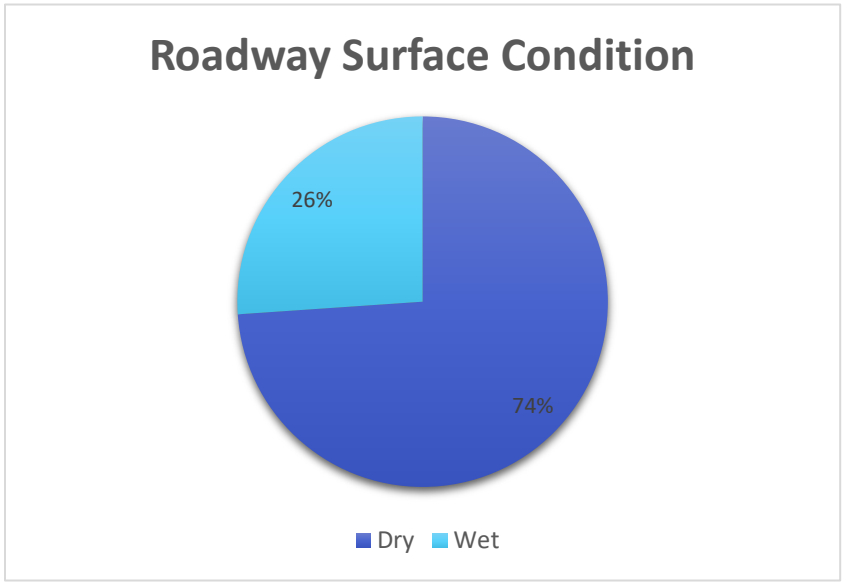
A total of 38 crashes were reported at the intersection of US 41 and SR 597 (N. Dale Mabry Highway) from 2018-2022. Rear-end and sideswipe crashes constituted the majority (approximately 65.79% and 13.16%, respectively) of the crashes. As shown on **Figure 2.13**, 23 (or 60.53%) were crashes with property damage only, and 15 (or 39.47%) were injury crashes. There were no fatal crashes reported during the five-year analysis period.

SR 54 at US 41

A total of 427 crashes were reported at the intersection of SR 54 and US 41 from 2018-2022. Rear-end and sideswipe crashes constituted the majority (approximately 60.66% and 15.93%, respectively) of the crashes. As shown on **Figure 2.14**, 315 (or 73.77%) were crashes with property damage only, and 112 (or 26.23%) were injury crashes. There were no fatal crashes reported during the five-year analysis period.







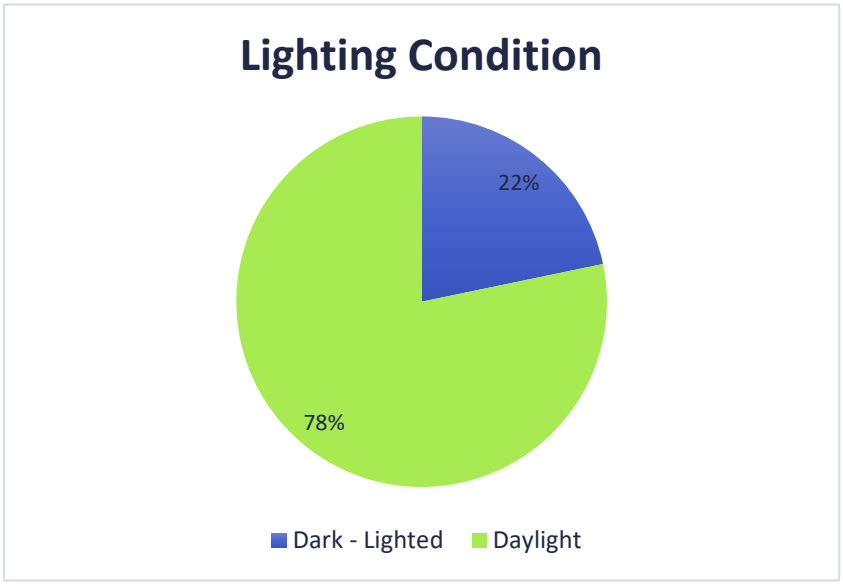
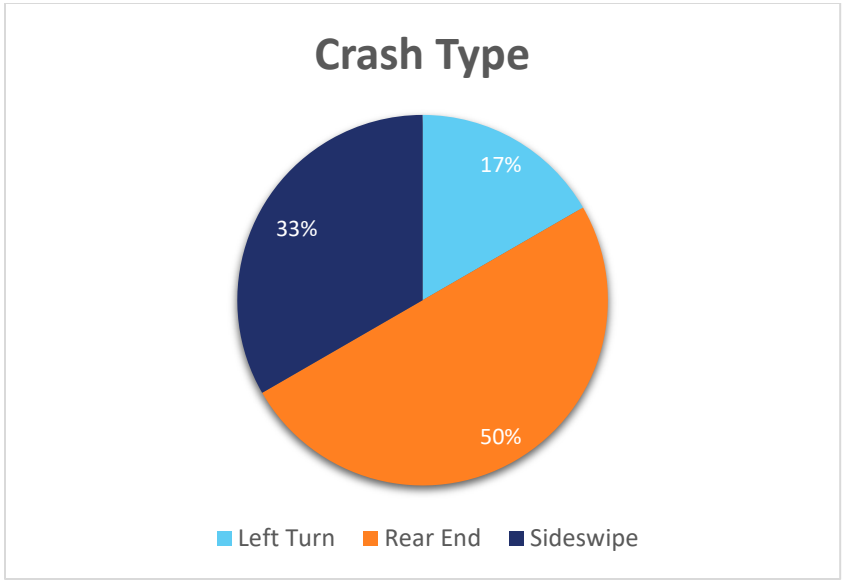
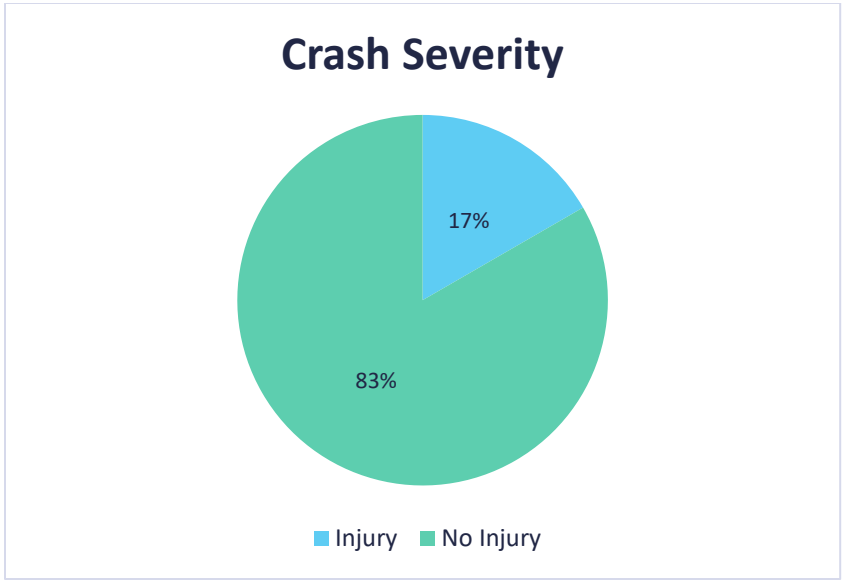
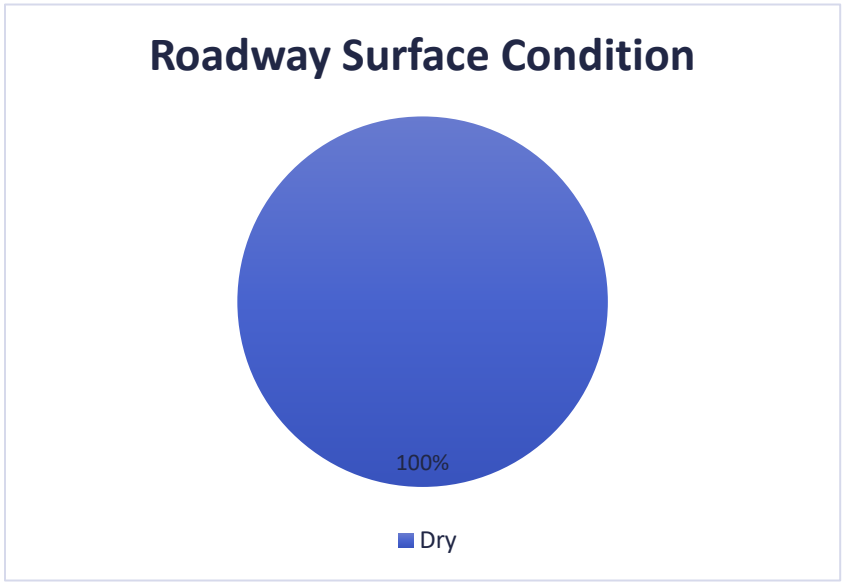


Figure 2.11: Crash Summary for US 41 at Wal-Mart Driveway







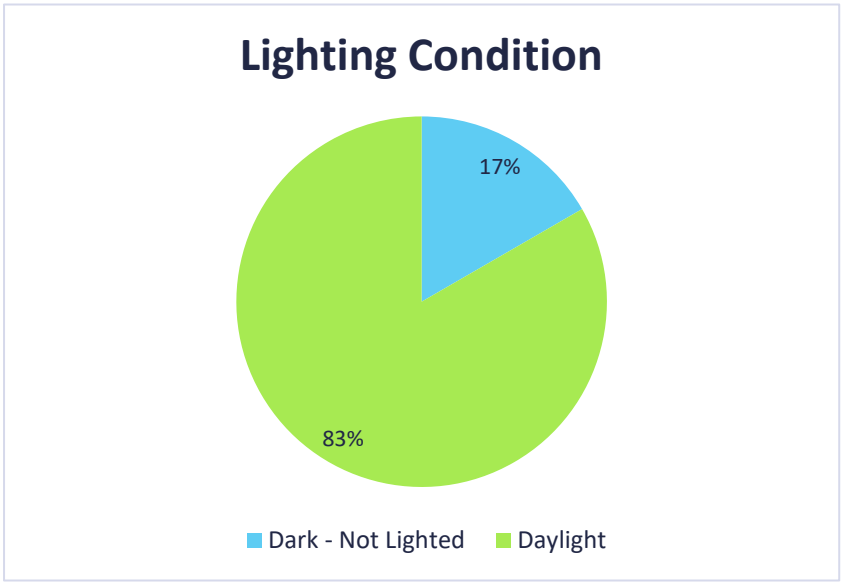


Figure 2.12: Crash Summary for SR 597 (N. Dale Mabry Highway) at Wal-Mart Driveway

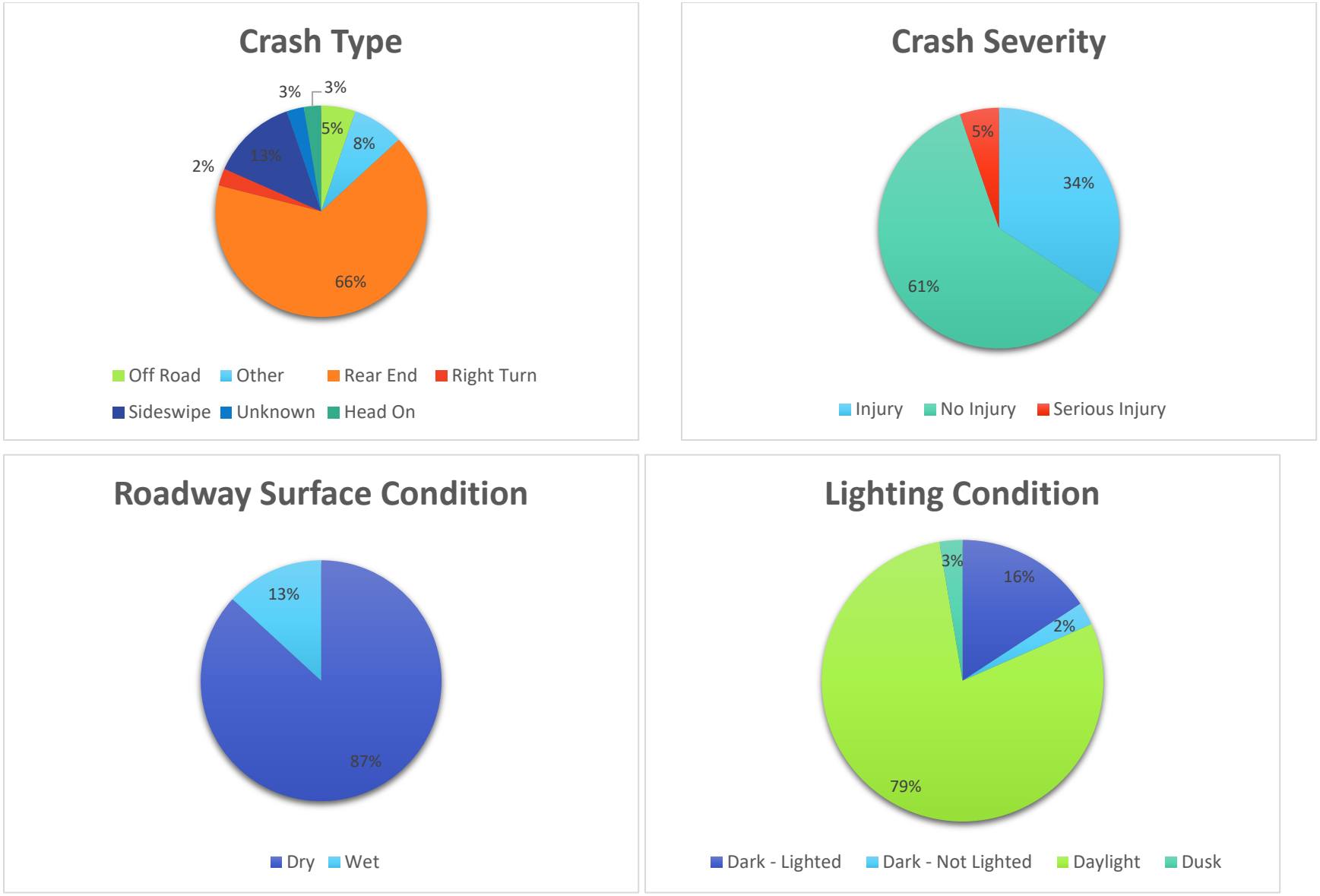


Figure 2.13: Crash Summary for US 41 at SR 597 (N. Dale Mabry Highway)

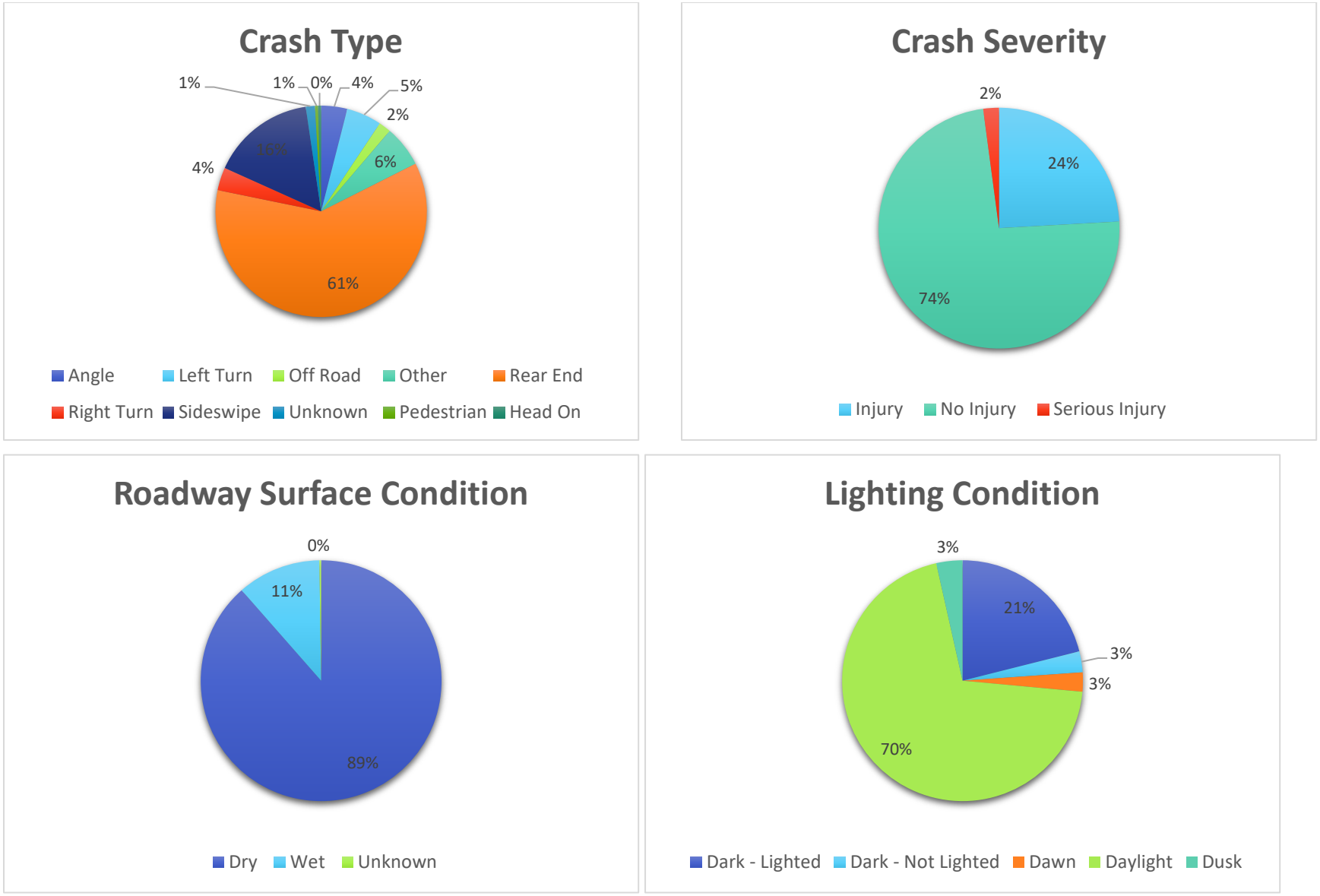


Figure 2.14: Crash Summary for SR 54 at US 41

SR 54 at Village Lakes Shopping Center Drive

A total of 84 crashes were reported at the intersection of SR 54 and Village Lakes Shopping Center Drive from 2018-2022. Rear-end and angle crashes constituted the majority (approximately 53.57% and 27.38%, respectively) of the crashes. As shown on **Figure 2.15**, 54 (or 64.29%) were crashes with property damage only, and 30 (or 35.71%) were injury crashes. There were no fatal crashes reported during the five-year analysis period.

Actual crash rates at the intersections were computed and compared with average crash rates for similar facilities statewide to assess the safety conditions within the study area. Crash rates for the intersections were estimated as crashes per million entering vehicles (MEV). **Table 2.19** summarizes the crash rates, types, and severities during the five-year period. The actual crash rate for the SR 54 and US 41 intersection exceeds the FDOT average crash rates for similar facilities and may indicate safety issues. A crash heat map and a severe crashes map for the study area are illustrated in **Figure 2.16** and **Figure 2.17**, respectively, for the 5-year period from 2018-2022.

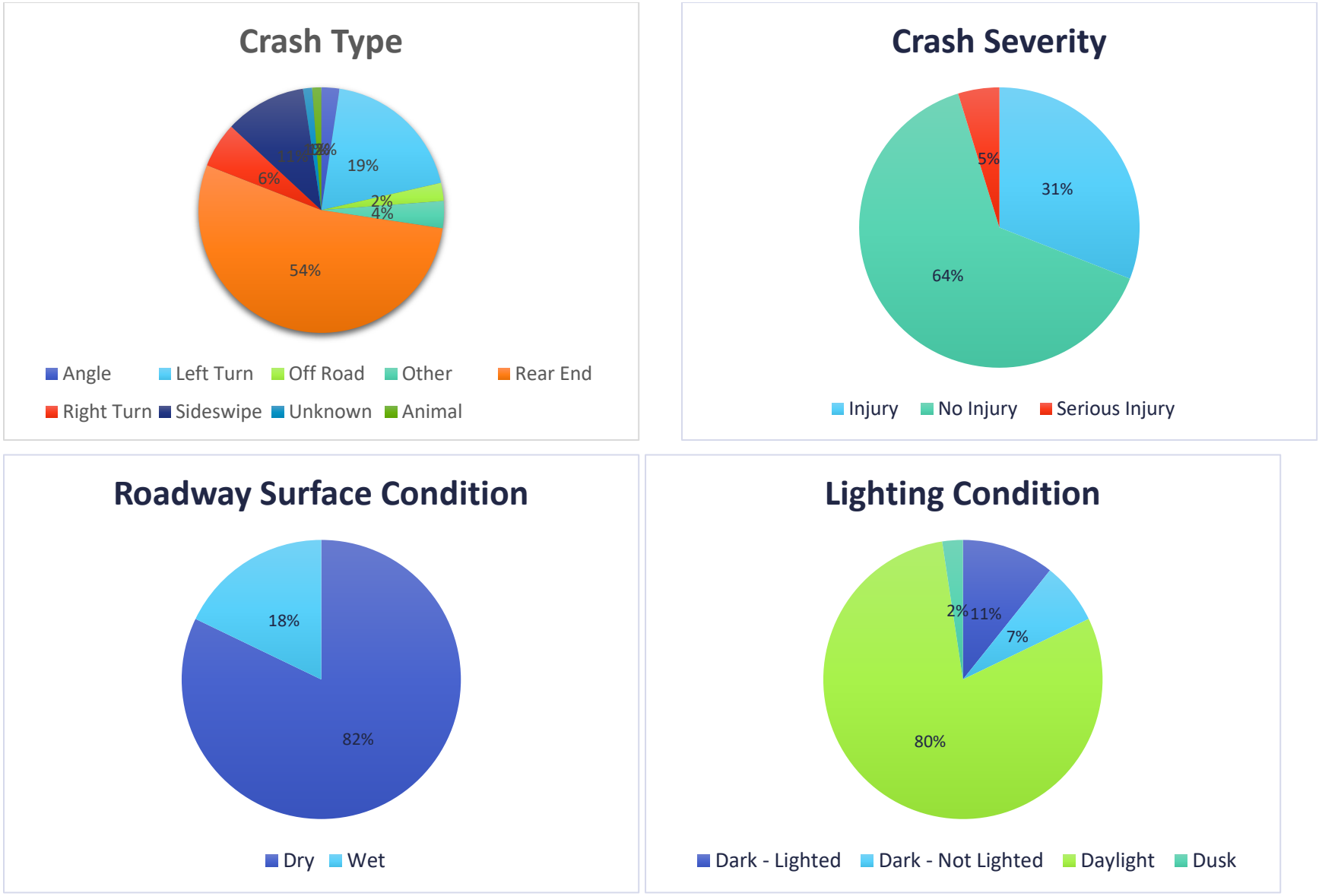


Figure 2.15: 2018-2022 Crash Summary for SR 54 at Village Lakes Shopping Center Drive

Table 2.19: Intersections Crash Summary

Intersection Number	Location Description		Crash Type								Severity				Study Area Crash Rates	
			Total	Angle[1]	Rear End	Sideswipe	Head On	With Pedestrians	With Bicycles	All Other[2]	Fatal	Injuries	PDO	Total	Actual Crash Rate (crashes/MEV)	Statewide Crash Rate (crashes/MEV)[3]
1	US 41 at Wal-Mart Driveway	5- Year	23	8	10	0	0	0	1	4	1	10	12	23	0.345	0.632
		Average	4.6	1.6	2	0	0	0	0.2	0.8	0.2	2	2.4	4.6		
2	Dale Mabry Hwy at Wal-Mart Driveway	5- Year	6	1	3	2	0	0	0	0	0	1	5	6	0.101	0.632
		Average	1.2	0.2	0.6	0.4	0	0	0	0	0	0.2	1	1.2		
3	US 41 at Dale Mabry Hwy	5- Year	38	1	25	5	1	0	0	6	0	15	23	38	0.314	0.632
		Average	7.6	0.2	5	1	0.2	0	0	1.2	0	3	4.6	7.6		
4	US 41 at SR 54	5- Year	427	55	259	68	2	2	0	41	0	112	315	427	**2.263**	1.152
		Average	85.4	11.0	51.8	13.6	0.4	0.4	0.0	8.2	0.0	22.4	63.0	85.4		
5	SR 54 at Village Lakes Driveway	5- Year	84	23	45	9	0	0	0	7	0	30	54	84	0.693	1.152
		Average	16.8	4.6	9.0	1.8	0.0	0.0	0.0	1.4	0.0	6.0	10.8	16.8		
All Intersections Total		**5- Year**	578	88	342	84	3	2	1	58	1	168	409	578		
		Average	115.6	17.6	68.4	16.8	0.6	0.4	0.2	11.6	0.2	33.6	81.8	115.6		
				15.22%	**59.17%**	**14.53%**	**0.52%**	**0.35%**	**0.17%**	**10.03%**	**0.17%**	**29.07%**	**70.76%**			

Source: Florida Department of Transportation Signal Four (2018-2022)

Notes: [1] Includes left-turn and right-turn type crashes

[2] Includes all other crash types where specific crash type is not listed

[3] Statewide average spot crash rates based on the five-year data between 2018-2022

MEV = million entering vehicles; PDO = Property Damage Only

Intersection Statewide Average Crash Rate used "U | 3 | D"

Red highlighted: Actual Crash Rate > Statewide Average Crash Rate

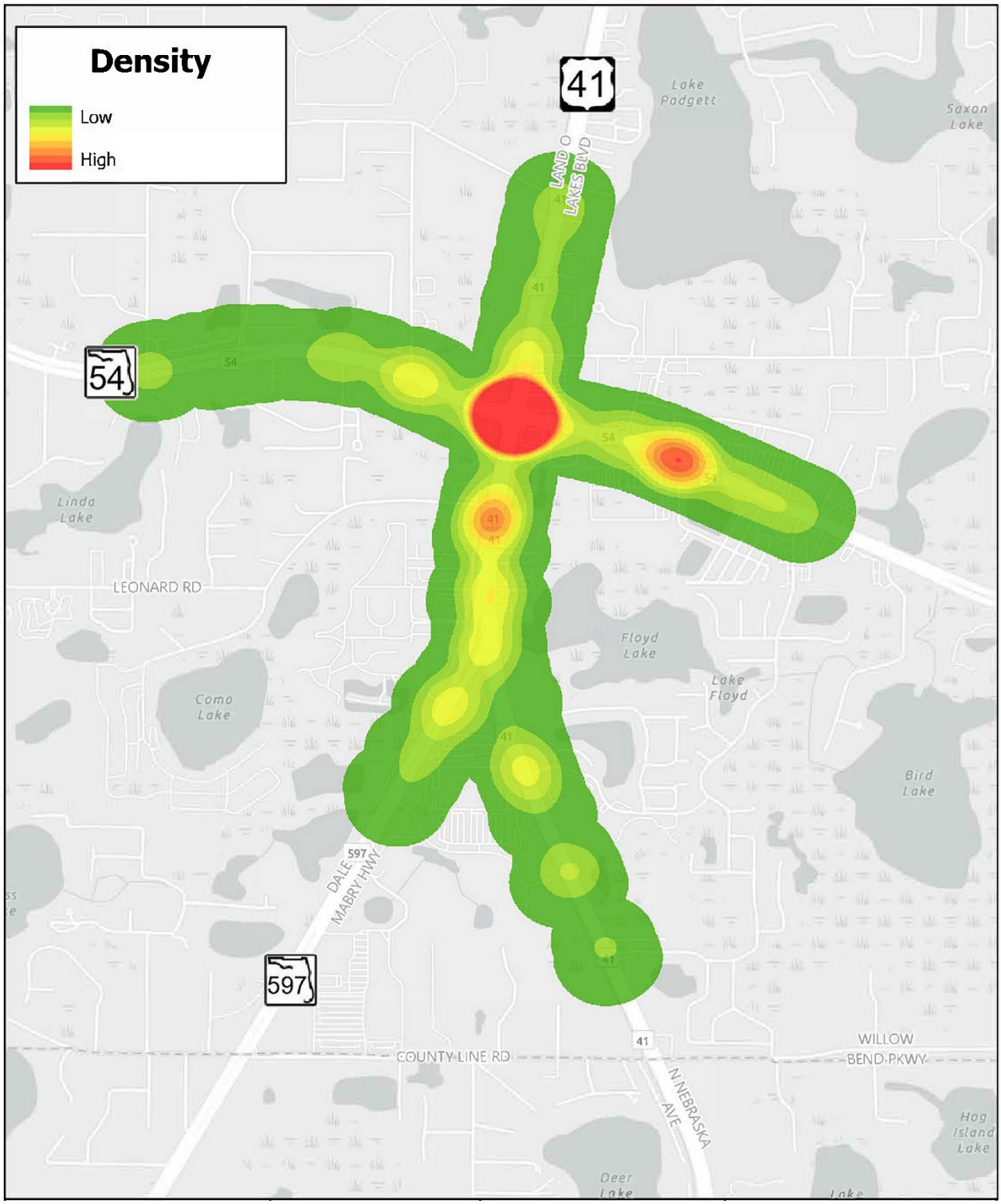


Figure 2.16: Crash Heat Map

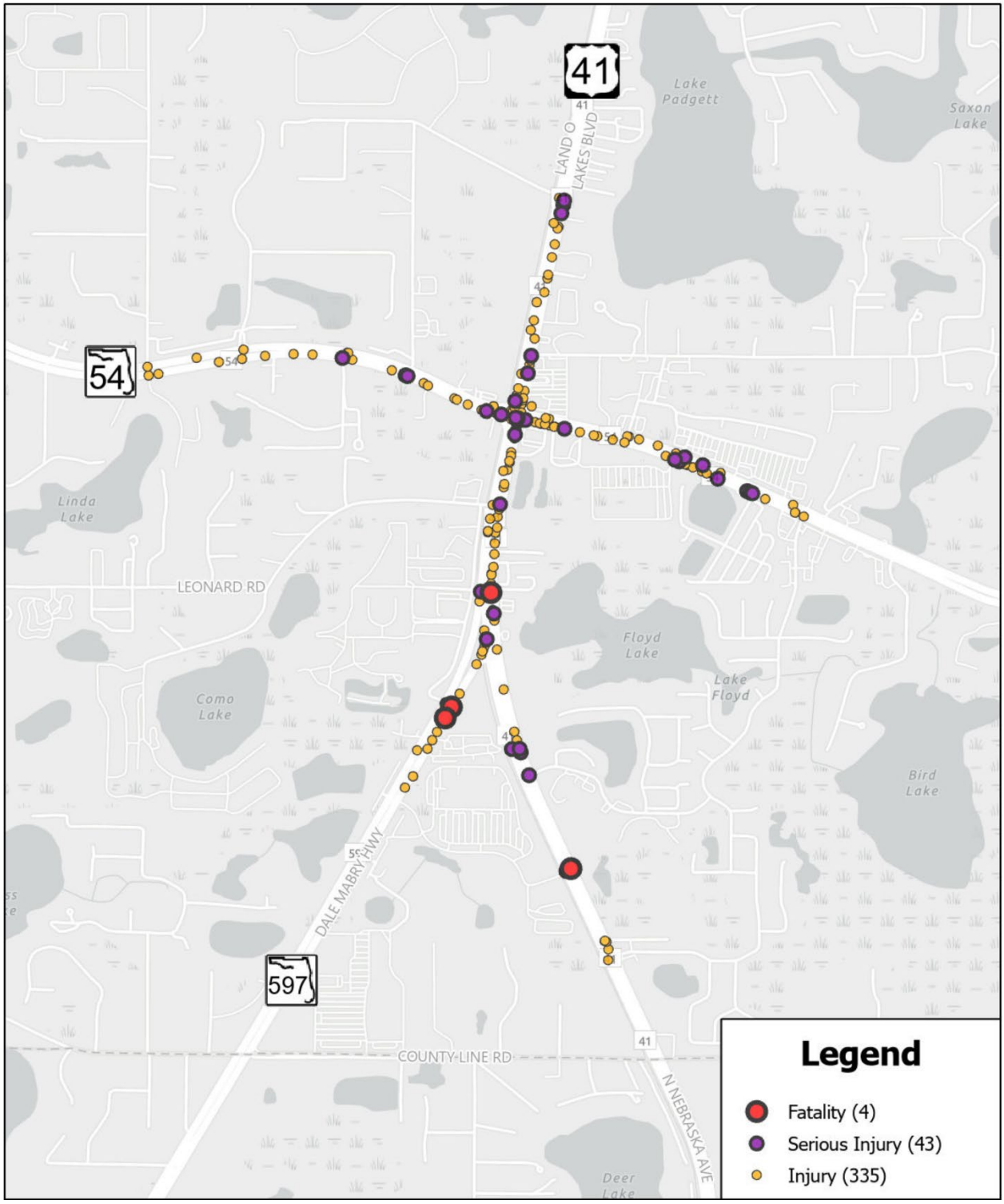


Figure 2.17: Severe Crashes Map

2.2.17 Railroad Crossings

There is a single CSX rail line that is located immediately west of US 41 and runs parallel to the roadway through the project. There are four railroad crossings within the project area:

- SR 597 (N. Dale Mabry Highway) – National Grade Crossing Number (NGCN) 624936-Y (R.R. MP. SR-827.39)
- Leonard Road – NGCN 624934-K (R.R. MP. SR-827.07)
- SR 54 - NGCN 624933-D (R.R. MP. SR-826.85)
- Morgan Road – NGCN 624932-V (R.R. MP. SR-826.40)

2.2.18 Drainage

The project is located within Pasco County and is within the jurisdiction of the Southwest Florida Water Management District (SWFWMD). The project boundaries are located within three basins: the South Branch basin and the Upper Rocky Creek Basin west of the intersection, and the Lake Hanna Outlet Basin east of the intersection.

The US 41 at SR 54 project corridor is generally divided into eight (8) hydrologic basins: south of the intersection includes Basins A and B; middle of the intersection Basin C; north of the intersection includes Basin D; east of the intersection includes Basin 1A and Basin 2A; and west of the intersection includes Basin E1 and E2. General basin boundaries were initially identified utilizing boundaries presented by SWFWMD permits. The hydrologic basin limits were confirmed or adjusted utilizing the Pasco County one foot contour Lidar data and design survey. Per water management discussion and existing permits, all of the hydrologic basins identified are considered open basins. The west portion of the intersection is within two waterbody identifications (IDs). Water Body ID# 1456 with 2008 Environmental Protection Agency (EPA) established Total Maximum Daily Loads (TMDLs) for total nitrogen (TN) and total phosphorus (TP). WBID 1463S is not attaining water quality standards but a causative pollutant has not been identified. It is on Florida Department of Environmental Protection's (FDEP's) Florida 303 (d) Study List for Dissolved Oxygen.

Generally, throughout the project corridor along the corridor, as permitted by SWFWMD, closed storm sewer systems and wet detention ponds are presently managing the stormwater and utilizing existing cross drains to discharge into the surrounding wetlands.

The intersection drains to existing FDOT wet ponds located on the southeast corner of the intersection. These ponds outfall to existing wetland areas just east of the existing ponds. The area continues to drain into the Cypress Creek watershed which flows to the southeast and, ultimately, to the Hillsborough River. The corridor east of the intersection has two different outfall locations. The portion of the corridor in front of the Village Lakes Shopping Center, drains to an existing FDOT wet pond located south of SR 54 and east of US 41. This pond outfalls to an existing wetland area south of the pond. This wetland area then drains into the Cypress Creek watershed which flows southeast and, ultimately, to the Hillsborough River. The remaining eastern portion of the corridor to the end of the project limits, along SR 54, outfalls into an existing FDOT pond located north of SR 54 and ultimately into Lake Toni. The areas south of the intersection along US 41 from West County Line Road to the area just past SR 597 (N. Dale Mabry Highway) and Brinson Road drain to existing FDOT wet ponds that outfall into wetlands located east of the ponds and ultimately to the Hillsborough River. The area of SR 54 west of the US 41 at SR 54 intersection drains west to a system of roadside ponds that outfall into surrounding wetlands and, ultimately, drains into the East Pinellas Anclote Basin. The corridor area located at the northern portion of US 41 to the north project limits outfalls to an existing FDOT pond then discharges into Lake Vienna.

Each quadrant of the existing interchange area is currently developed with commercial land uses. There is a CSX railroad line along the west side of the interchange, and there are several wetland areas adjacent to the interchange study area.

There are five (5) existing cross drains that convey stormwater runoff under SR 54 and one under US 41 and serve as outfall locations for the roadway collection system. Generally, the cross drains convey stormwater runoff in a north to south direction under SR 54 with only one (1) of the culverts, CD-1, conveying runoff in a west to east direction under US 41. **Table 2.20** shows a Summary of Existing Cross Drains.

Table 2.20: Summary of Cross Drains

Cross Drain	Approximate Location (Milepost)	Description	Outfall
1	2568+80 (CL Const US 41)	(1)- 30-inch RCP	Wetland
2	1431+25	(1) - 18-inch RCP	Wetland
3	1436+50	(1) - 42-inch RCP	Wetland
4	1452+90	(2) - 8-foot X 3-foot CBC	Wetland
5	1420+50	(2) – 30" RCP	Wetland

The Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) for Pasco County. The existing intersection area is in a FEMA Flood Zone AE flood hazard area according to the effective FEMA FIRMs, dated September 26, 2014. The flood elevations vary from 67.3 feet on the south side of SR 54 west of US 41 to 69.6 feet on the south side of SR 54 east of US 41.

There are existing floodplain compensation sites associated with both US 41 and SR 54. These floodplain compensation sites are located adjacent to the US 41 and SR 54 existing stormwater ponds.

Environmental Look Around (ELA) meetings were held with both Pasco County and SWFWMD to discuss any potential stormwater partnering opportunities between regulatory agencies/other stakeholders and FDOT. SWFWMD provided Geographic Information System (GIS) data of 2012 flooding complaints located upstream of existing Pond B and downstream of Basin E1. Due to the flooding complaints, a critical duration analysis will need to be performed during final design in order to size the ponds. FDOT District 7 Maintenance Department and Pasco County were contacted for flooding complaints. District 7 and Pasco County reported no flooding complaints.

2.2.19 Lighting

Conventional lighting is provided along US 41 throughout the project corridor at an approximate interval of 200 feet. Conventional lighting is provided along SR 54 on the approaches to the

intersection with US 41 at an approximate interval of 200 feet. There is no lighting provided along SR 597 (N. Dale Mabry Highway). FDOT is responsible for maintaining the lighting.

2.2.20 Utilities

Table 2.21 summarizes the existing Utility Agency Owners (UAOs) in the area. There are two Duke Energy power substations in the project area. The first is in the northeast quadrant of the US 41 at SR 54 intersection, adjacent to SR 54. The second substation is in the southwest quadrant of US 41 and Morgan Road, north of the SR 54 intersection. There is a Florida Gas Transmission (FGT) easement with two pipelines (30" and 36") adjacent to the CSX rail corridor.

2.2.21 Soils and Geotechnical Data

A number of non-hydric and hydric soils are located within the project area. **Figure 2.18** shows the soil types within the project limits. Natural Resource Conservation Service (NRCS) data was used to generate the soil polygons depicted in the map. Within 500 feet of the project, the NRCS data indicates this portion of the county has 10 specific soil map unit designations: Myakka (5), Tavares (6), Sellers (8), Adamsville (11), Smyrna (21), Basinger (23), Quartzipsaments (24), Narcoossee (26), Urban Land (38), Samsula (52), and Water (99). The 1982 United States Department of Agriculture (USDA) Soil Survey for Pasco County provides general descriptions of the soil conditions throughout Pasco County. This document was accessed through the online University of Florida Digital Collections library and the information was summarized in **Table 2.22**. The table includes descriptions of 10 soil types within the project area; a description of Water was not included. Three of the 10 soil designations are considered hydric: Sellers, Basinger, and Samsula. Myakka soil type is the most commonly occurring.

Table 2.21: Existing Utilities

Utility Owner	Type of Utility Service	Type of Equipment	Location
Bright House Networks	Fiber-optic cable	Aerial (sizes unknown)	E/W along north side of SR 54 N/S along east side of US 41
Florida Gas Transmission	Natural gas	Buried gas mains 30-inch & 36-inch	N/S west of US 41 within CSX ROW or utility easement
Level 3 Communications	Fiber-optic cable	Buried 2–1.25-inch FOC 2-1.50-inch FOC	N/S west of US 41 within CSX ROW
Frontier Communications	Fiber-optic cable	Buried (sizes unknown)	E/W along both sides of SR 54 N/S along east side of US 41
Pasco County Traffic Services	Signalization	Traffic signals (sizes unknown)	At signalized intersections: - SR 54/US 41 - SR 54/Village Lakes - US 41/SR 597
Pasco County Utilities	Water/Sewer	Buried water 12-inch WM 16-inch WM Buried sanitary 6-inch FM 8-inch FM	E/W along north side of SR 54 N/S along west side of US 41
Duke Energy Distribution	Electric power	Aerial 7.2 Kv 110/120/240 v	E/W along north and south side of SR 54 N/S along west side US 41
Duke Energy Transmission	Electric power	Aerial 69 Kv 230 Kv	N/S along west side of US 41
TECO Peoples Gas	Natural gas	Buried 2-inch Steel GM 6-inch Steel GM	E/W along both sides of SR 54 N/S along west side of US 41 south of SR 54
Verizon/MCI	Fiber-optic cable	Buried 1.5-inch PE 4-inch Cable 1 to 9–4-inch BT	E/W along the south side of SR 54 N/S along the east side of US 41

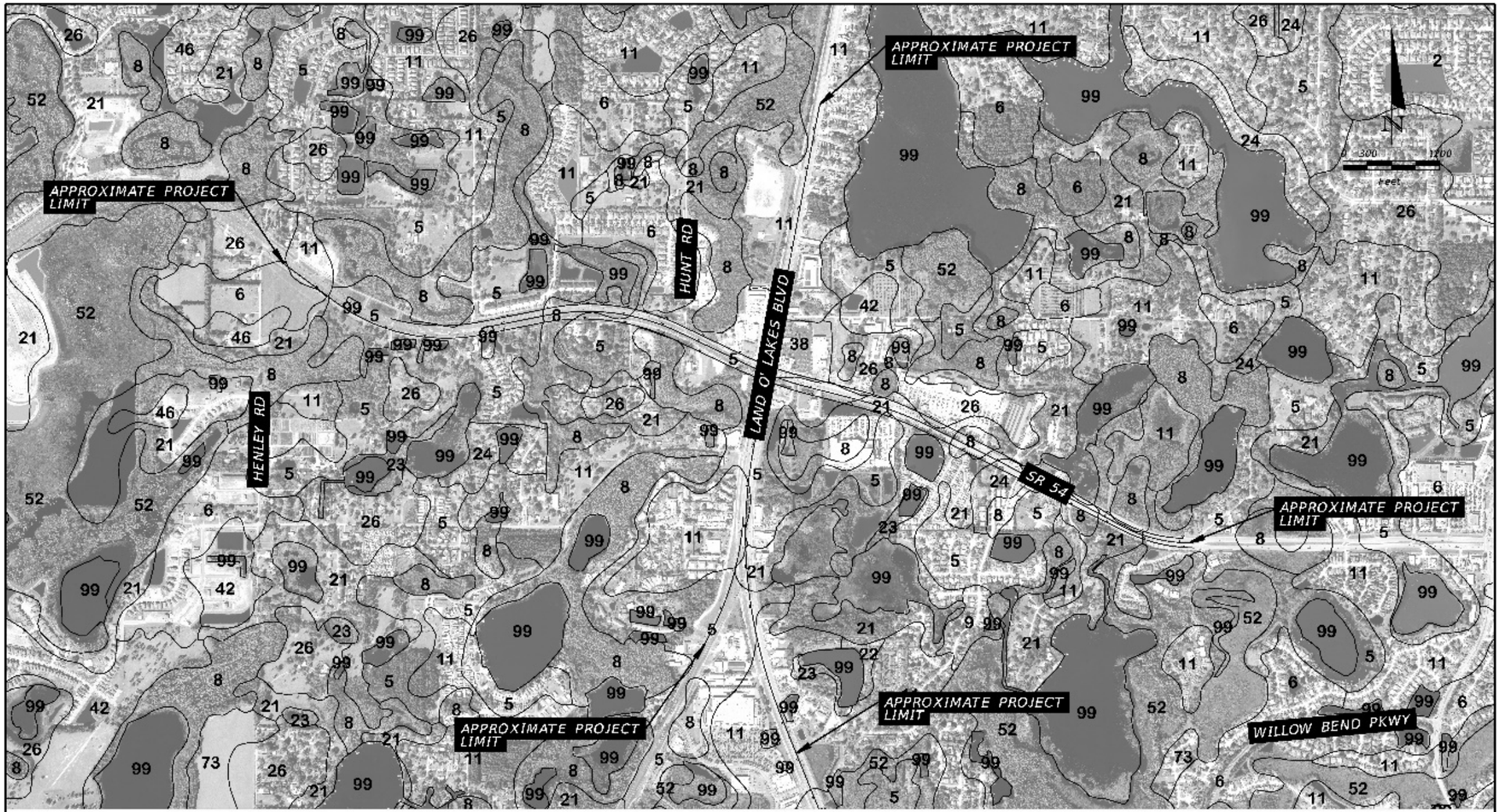


Figure 2.18: NRCS Soils Map

Table 2.22: Generalized Local Soils

Name/ Soil ID Number	Type	Description	Seasonal High Water Table Depth	Hydric (Yes/No)
Adamsville (101011)	Nearly level, somewhat poorly drained	Very dark gray fine sand about 3" thick	20" to 40" for 2 to 6 months, but may rise to within 20" of the surface for less than 2 weeks during very wet seasons and recedes to a depth of more than 40" during dry periods	No
Basinger (101023)	Nearly level soil, poorly drained	Dark gray fine sand about 3" thick	<10" for 2 to 6 months annually and at a depth of 10" to 30" for a period of more than 6 months in most years	Yes
Myakka (101005)	Nearly level, poorly drained	Fine sand about 6" thick	<10" for 1 to 4 months in most years and a +depth of more than 40" in very dry seasons	No
Narcoossee (101026)	Nearly level, somewhat poorly drained	Very dark gray fine sand about 3" thick	2' to 3.5' for 4 to 6 months During dry periods, the water table recedes to a depth of more than 60"	No
Quartzips-aments (101024)	Nearly level to gently sloping sandy soils, disturbed	Varies	Variable but ranges from about 20" to more than 72", depending on thickness of the fill material and drainage of the underlying soil	No
Samsula (101052)	Nearly level, very poorly drained	Muck about 32" thick	At or near surface for 6 to 12 months and is commonly above surface for very long periods	Yes
Sellers (101008)	Nearly level, very poorly drained	Black muck about 2" thick	Ponded during the wet seasons for 3 to 6 months and the water table is at a depth of 10" for 6 to 12 months	Yes
Smyrna (101021)	Nearly level, poorly drained	Fine sand about 5" thick	<10" for a period of 1 to 4 months in most years add between 10" to 40" for more than 6 months	No
Tavares (101006)	Nearly level, to gently sloping, moderately well drained soil	Very dark gray sand about 3" thick	40" to 60" for 6 to 12 months and below 60" during very dry periods	No
Urban Land (101038)	Disturbed	Varies	Varies	No

Source: 1982 USDA *Soil Survey for Pasco County*

2.2.22 Aesthetic Features

There are no scenic views or vistas in the project area. In addition, there are no aesthetic features within the project limits. Landscaping in the project area is limited to small caliper trees in the median near the US 41/SR 597 (N. Dale Mabry Highway) apex.

2.2.23 Traffic Signs

There are two existing overhead sign gantries for southbound US 41 between SR 597 (N. Dale Mabry Highway) and SR 54. The signs provide guidance for vehicles to continue on US 41 southbound or to exit it SR 597 (N. Dale Mabry Highway) southbound.

2.2.24 Noise Walls and Perimeter Walls

Along SR 54 and US 41, there are no noise or perimeter walls.

2.2.25 Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features

There are no ITS facilities in the study area.

2.3 Existing Bridges and Structures

There are no existing bridges within the project area.

2.4 Existing Environmental Features

2.4.1 Social Resources

2.4.1.1 Community Focal Points

Community focal points / facilities are public or private locations or organizations that are important to the local residents and communities. Community focal points include: schools, places of worship, community centers, parks, cemeteries, fire stations, law enforcement facilities, government buildings, healthcare facilities, and social service facilities. Below is a list of community features located within ¼-mile of the project study area.

There are four (4) places of worship identified within the ¼-mile study area, see **Figure 2.19**. Places of worship within the ¼-mile study area include Keystone Community Church, Iglesia

Asambleas De Dios, Church of the Lakes, and Willow Bend Community Church. The project is not anticipated to significantly impact places of worship

There are two (2) schools located within the ¼-mile study area, see **Figure 2.19**. Schools within the 1/4-mile study area include Center Academy – Lutz (a middle and high school) and Kids' Stuff Preschool, Private School, and Childcare. The project is anticipated to impact and require relocation of both schools. The project will impact all 1.97 acres of the Kids' Stuff Preschool parcel. The project will impact 0.70 acres of the parcel with the Center Academy.

There are no parks or cemeteries located within ¼-mile of the study area, However, there is one (1) fire station located within the study, Pasco County Fire Station 23. The location of the fire station is shown in **Figure 2.19.** It is anticipated the project will impact require relocation of the fire station (3.84 acres).

There are ten (10) healthcare facilities within ¼-mile of the study area, see **Figure 2.19**. These facilities are Palm Medical Center, Sandhill Pediatrics, David Herson MD PA, Mahesh Bhambore MD, Morton Plant North Bay Hospital, Roberto Garcia MD PA, Tampa Orthopedic Clinic, St Luke's Dental, Watson Peggy MD Family Medicine, and CVS Pharmacy. The project is anticipated to impact three (3) heath care facilities: Palm Medical Center, St. Luke's Dental, and CVS Pharmacy. The project will impact and require relocation of the CVS Pharmacy (1.22 acres), St. Luke's Dental (0.59 acres), and Palm Medical Center (0.40 acres).

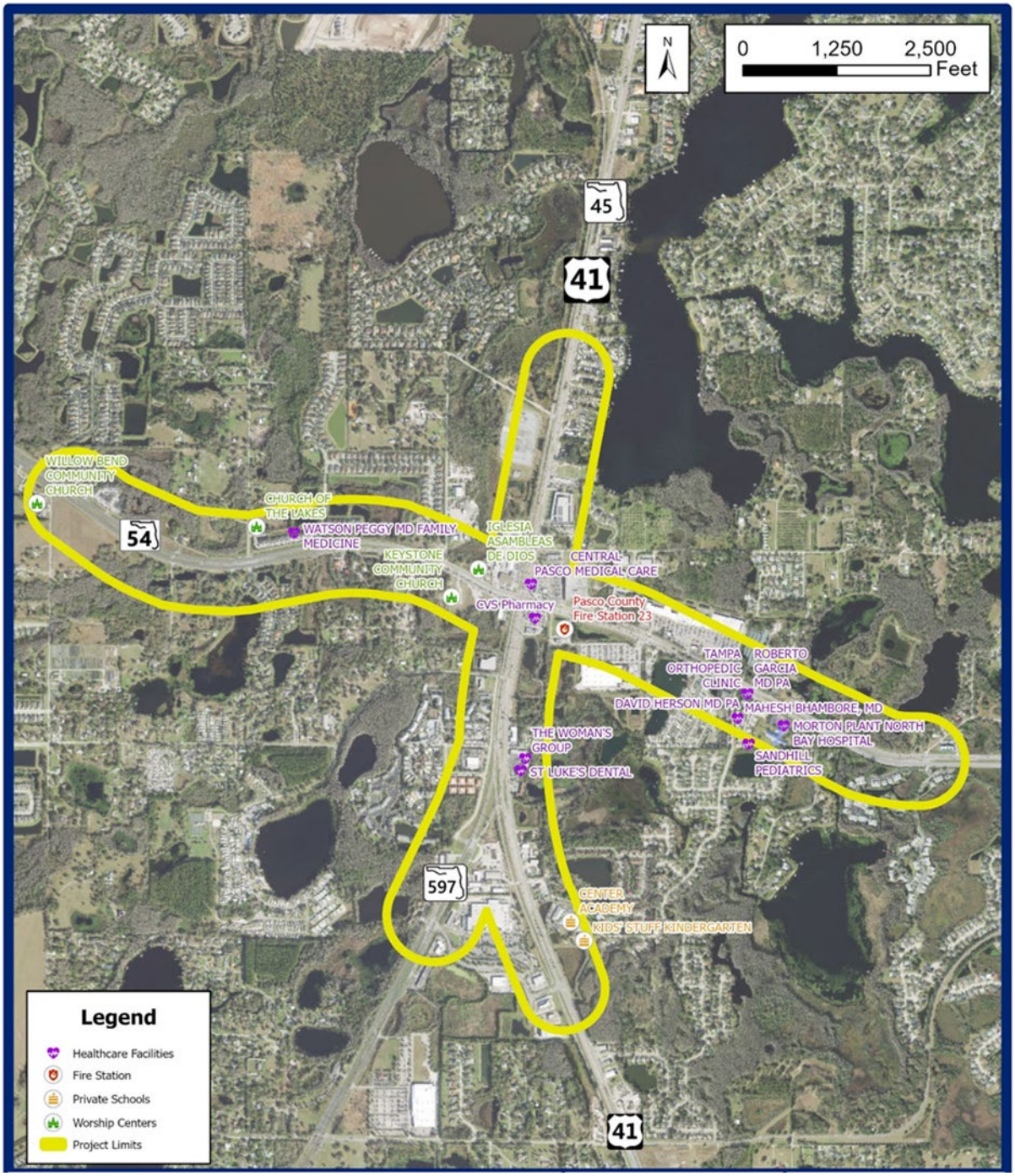


Figure 2.19: Community Features

2.4.1.2 Demographics

Demographic data describes a community's structure and is primarily collected by local, state, or federal agencies such as the United States (US) Census Bureau and other local government departments. Demographic data covers a range of topics about communities, including: population size, age composition, ethnic backgrounds, household characteristics, and geographic distribution. This data assists in designing public participation, outreach, and education strategies that reflect the age, education, and economic backgrounds of the community.

The US Census American Community Survey (ACS) 2022 for Pasco County was used to complete the demographic comparison and analysis contained in this document. The ¼-mile project study area buffer overlaps with four (4) Census Tracts (316.04, 316.05, 320.07, 320.13) in Pasco County as shown in **Figure 2.20**.

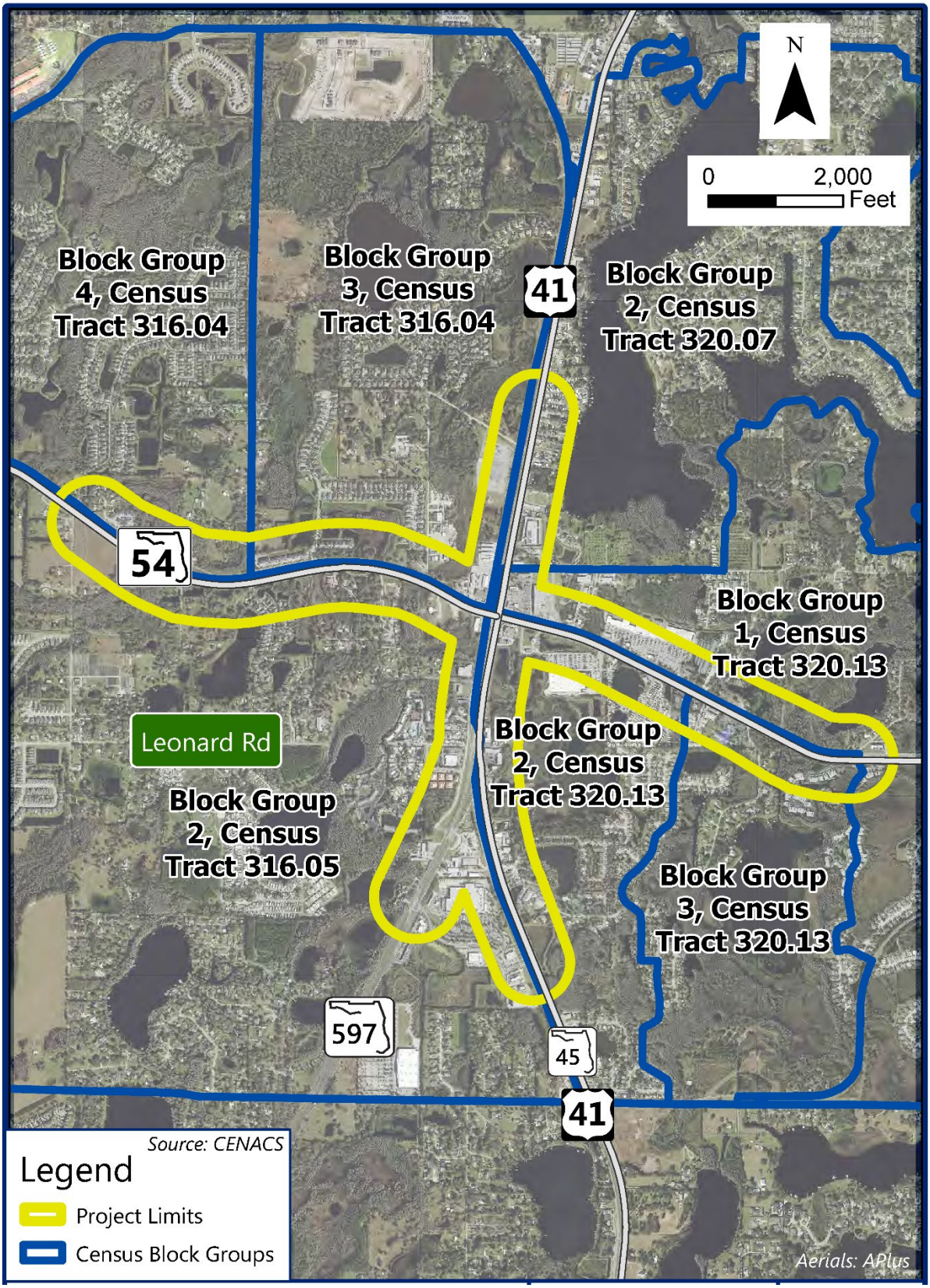


Figure 2.20: Census Block Group

As shown in **Table 2.23**, the percentage of population considered white is approximately 84% in the project study area as compared to Pasco County (72%). The percent of population considered Hispanic is 9% in the study area as compared to Pasco County (17%). As a result, the percentage of population that is considered "minority" is approximately 16% in the project study area as compared to Pasco County (29%). The median population age in the project study area is 44.5 as compared to Pasco County (43.9%).

Table 2.23: Estimated Percentage of Minority, Racial, National Origin, or Ethnic Households

Evaluation Criteria	Pasco County	Study Area
Total Population	632,996	21,970
Percent of the population that is White	72.0%	84.0%
Percent of the population that is Black	6.0%	1.0%
Percent of the population that is Hispanic	17.0%	9,.0%
Percent of the population that is Asian	3.0%	3.0%
Percent of the population that is Other[1]	3.0%	3.0%
Percent of the population that is considered 'Minority'	29.0%	16.0%

[1] Other nationality include: American Indian or Alaskan Native, Native Hawaiian or other Pacific Islander, or 2 or more races.

As shown in **Table 2.24**, average household size within the project study area census tracts ranges from 2.42 to 2.77 persons per household, which is generally comparable to Pasco County's average household size of 2.52. The percentage of households containing five (5) or more members vary across the project study area, ranging from 16.4 percent to 20.01 percent. These values are similar to Pasco County overall, where 19.2 percent of households consist of five (5) or more members. Overall, household size and composition within the project study area are consistent with countywide trends.

Table 2.24: Estimated Percentage of Households Containing 5 or More Family Members

Topic	Pasco County	Census Tract 316.04	Census Tract 320.07	Census Tract 320.13	Census Tract 316.05
Total Households	199,227	2,327	1,034	2,387	1,600
Average HH Size	2.52	2.77	2.65	2.57	2.42
% HH >/= 5	19.20%	16.40%	18.30%	20.01%	16.40%

As shown in **Table 2.25,** the median household income is $60,151 for Pasco County and $75,000 in the study area. Similarly, the median family income is $83,486 in Pasco County compared to $87,816 in the study area. The households and individuals below the poverty line, which is 9.3% and 12.2% in Pasco County compared to 2.2% and 11.3% in the study area.

Table 2.25: Estimated Income Ranges (in USD)

Household Income	Pasco County	Census Tract 316.04	Census Tract 320.07	Census Tract 320.13	Census Tract 316.05
<$25,000 Per Year	16.1%	10.5%	13.70%	12.30%	7.80%
$25,000 - $49,999	21.1%	12.7%	21.60%	13.50%	12.30%
$50,000 - $74,999	18.5%	22.1%	19.60%	26.10%	16.90%
$75,000 - $99,999	11.9%	12.2%	7.60%	12.10%	13.10%
>/= $100,000	32.3%	42.6%	37.50%	36.00%	49.90%
Median Household Income	$60,151.00	$114,290.00	$93,504.00	$87,727.00	$129,633.00

According to the US Census ACS 2022, the estimated percentage of people in Pasco County with any type of disability (hearing, vision, cognitive, ambulatory, self-care, independent living) is 16.2%, see **Table 2.26**. The project Census Tracts indicate a range between 8.4% to 15.9% for people with any type of disability.

Table 2.26: Estimated Disabled Residential Occupants for Whom Special Assistance Services May Be Necessary

Topic	Pasco County	Census Tract 316.04	Census Tract 320.07	Census Tract 320.13	Census Tract 316.05
% Population Disabled	16.20%	8.40%	15.90%	12.3%	13.20%

According to the US Census ACS 2022, the estimated percentage of homeownership and renter occupied rates are 72.0% and 28.0%, respectively, see **Table 2.27**. The project Census Tracts indicate a range between 79.3% to 85.4% homeownership rate and 14.6% to 25.9% renter occupied rate.

Table 2.27: Estimated Occupancy Owner/Renter

Topic	Pasco County	Census Tract 316.04	Census Tract 320.07	Census Tract 320.13	Census Tract 316.05
Total Housing Units	256,783	2,673	1,174	2,523	3,057
Percent Occupied	87.70%	96.20%	94.20%	94.17%	84.98%
Percent Owner Occupied	72.00%	79.30%	85.40%	74.10%	85.0%
Percent Renter Occupied	28.00%	20.70%	14.60%	25.90%	15.0%

According to the 2022 US Census, 22.4% of the population of Pasco County is 65 years or older, see **Table 2.28**. Similarly, 21.9% of the population of Census Tract 320.07 is 65 years or older. However, less than 20% of the population in Census Tracts 316.04 and 320.13 is 65 years or older.

Table 2.28: Estimated Percentage of Elderly Households

Age	Pasco County	Census Tract 316.04	Census Tract 320.07	Census Tract 320.13	Census Tract 316.05
Under 25 Years	27.51%	33.07%	34.20%	27.60%	25.70%
25-44 Years	23.05%	28.40%	22.00%	22.80%	21.00%
45-64 Years	26.96%	25.19%	32.00%	30.80%	29.10%
65 Years or Older	22.40%	13.32%	21.90%	18.80%	24.30%
Median Age	44.60	39.20	49.80	44.80	49.30

2.4.2 Cultural Resources

As documented in the December 2024 Cultural Resource Assessment Survey (CRAS), there are four previously recorded archaeological sites within the initial Preferred Alternative's Area of Potential Effect (APE). Two of these sites (8PA00289 and 8PA00556) are ineligible for listing on the National Register of Historic Places (NRHP), and two (8PA00290 and 8PA00291) have insufficient information to make a determination of eligiblilty. As a result of the CRAS, no new archaeological material was identified, and no evidence of sites 8PA00290 and 8PA00291 was found within the APE.

Eleven historic resources were previously recorded within the APE. Of these, five (8PA00303, 8PA01474, 8PA01489, 8AP02112, and 8PA02419) were determined ineligible for listing in the

NRHP. The other six (8PA01497-8PA01502) had not been evaluated by the SHPO. The CRAS determined that one of these resources, 8PA02419, was eligible for listing in the NRHP but it was found that the project would have No Adverse Effect on the resource.

Background research indicated that one artifact scatter (8PA00556), two lithic scatters (8PA00289; 8PA00291), and an isolated find (8PA00290). Sites 8PA00289 and 8PA00556 have been determined ineligible for listing in the NRHP by the State Historic Preservation Officer (SHPO), while sites 8PA00290 and 8PA00291 had insufficient information for the SHPO to make a determination of eligibility.

The historical/architectural background research revealed eleven historic resources were previously recorded within the area of potential effect (APE) (8PA00303, 8PA01474, 8PA01489, 8PA01497 – 8PA01502, 8PA02112, 8PA02419). These include ten buildings (8PA00303, 8PA01474, 8PA01489, 8PA01497 – 8PA01502, 8PA02112) and one linear resource (8PA02419). Of these, five have been determined ineligible for listing in the National Register of Historic Places (NRHP) by the SHPO (8PA00303, 8PA01474, 8PA01489, 8PA02112, 8PA02419) and six have not been evaluated by the SHPO (8PA01497 – 8PA01502). A review of relevant historic United States Geological Survey (USGS) quadrangle maps, historic aerial photographs, and the Pasco County Property Appraiser's website data revealed the potential for 29 new historic resources 45 years of age or older (constructed in or prior to 1979) within the APE (Wells 2024). A field survey will be necessary for proper identification and evaluation of the Preferred Alternative. Further information including a map of archaeological and historical resources can be found in the CRAS provided under a separate cover.

There are no Section 4(f) properties impacted by the proposed improvements.

2.4.3 Natural Resources

2.4.3.1 Protected Species and Habitat

Federally and State protected species with the potential to occur within the region of the study area are listed in **Table 2.29, Table 2.30**, and **Table 2.31**. Each species listed in the table is

assigned a potential for occurrence within the project study area based on data reviews and assigned a low, moderate, or high likelihood for occurrence within the project study area based on the following criteria:

None – Species have the potential to occur in Pasco County, but due to lack of suitable habitat there is no likelihood of species presence.

Low – Species with a low likelihood of occurrence within the project corridor are defined as those species that are known to occur in Pasco County, but preferred habitat is limited within the project corridor.

Moderate - Species with a moderate likelihood of occurrence are those species known to occur in Pasco or nearby counties, and for which suitable habitat is present, no observations or positive indications exist to verify presence.

High - Species with a high likelihood for occurrence are suspected within the project corridor based on known ranges and preferred habitat is present within project corridor; are known to occur adjacent to the corridor; or have been previously and recently observed or documented in the vicinity.

Additional information on protected species and habitat can be found in the *Natural Resources Evaluation* report provided under a separate cover.

Table 2.29: Federally-Listed Species in the Project Study Area

Species	Common Name	Federal Status	Effect Determination	Potential for Occurrence
Birds				
Mycteria americana	Wood stork	T	Not Likely to Adversely Affect	Moderate
Aphelocoma coerulescens	Florida Scrub Jay	T	No Effect	None
Laterallus jamaicensis	Eastern black rail	T	No Effect	None
Rostrhamus sociabilis plumbeus	Everglade Snail Kite	E	No Effect	Low
Grus americana	Whooping Crane	E	No Effect	None
Reptiles				
Drymarchon couperi	Eastern indigo snake	T	Not Likely to Adversely Affect	Low
Lampropeltis extenuatum	Short-tailed Snake	T	No Effect	None
Caretta caretta	Loggerhead Sea Turtle	T	No Effect	None
Mammals				
Perimyotis subflavus	Tricolored Bat	P (E)	N/A	Moderate
Insects				
Danaus Plexippus	Monarch butterfly	P (E)	N/A	Moderate

Ranking: P – Proposed Candidate Species P (E) - Proposed Endangered E - endangered, T – threatened
(1) USFWS - US Fish and Wildlife Service status, Official lists of Threatened and Endangered species, 50 CFR 17.11
(2)Listed species believed to or known to occur in Pasco, Florida (fws.gov)
Note: In accordance with Florida Administrative Code (FAC) Title 68A-27.0012, Procedures for Listing and Removing Species from Florida's Endangered and Threatened Species List, federally endangered or threatened species under the Endangered Species Act will be listed by the FWC by their federal designation.

Table 2.30: State-Listed Species in the Project Study Area

Species	Common Name	State Status	Effect Determination	Potential for Occurrence
Birds				
Egretta caerule	Little Blue Heron	T	No Adverse Effect Anticipated	Moderate
Egretta tricolor	Tricolored Heron	T	No Adverse Effect Anticipated	Moderate
Falco sparverius paulus	Southeastern American Kestrel	T	No Effect	None
Grus canadensis pratenis	Florida Sandhill Crane	T	No Adverse Effect Anticipated	Moderate
Ammospiza maritima peninsulae	Scoot's Seaside Sparrow	T	No Effect	None
Athene cunicularia floridana	Florida Burrowing Owl	T	No Effect	None
Cistothorus palustris marianae	Marian's Marsh Wren	T	No Adverse Effect Anticipated	Moderate
Haematopus palliatu	American Oystercatcher	T	No Effect	None
Sternula antillarum	Least Turn	T	No Effect	None
Reptiles				
Pituophis melanoleucus	Pine Snake	T	No Adverse Effect Anticipated	Moderate
Reptiles				
Gopherus polyphemus	Gopher Tortoise	T	May Affect, Not Likely to Adversely Affect	Moderate
Plants				
Blechnum occidentale	Hammock fern	E	No Adverse Effect Anticipated	Low
Calopogon multiflorus	Many-flowered grass-pink	T	No Adverse Effect Anticipated	Low
Carex chapmanii	Chapman's sedge	T	No Adverse Effect Anticipated	Low
Coelorachis tuberculosa	Florida Jointgrass	T	No Adverse Effect Anticipated	Low

Species	Common Name	State Status	Effect Determination	Potential for Occurrence
Drosera intermedia	Water sundew	T	No Adverse Effect Anticipated	Low
Hexalectris spicata	Spiked crested coralroot	E	No Adverse Effect Anticipated	Low
Lilium catesbaei	Catesby's lily	T	No Adverse Effect Anticipated	Low
Lobelia cardinalis	Cardinal flower	T	No Adverse Effect Anticipated	Low
Cheiroglossa palmata	Hand fern	E	No Adverse Effect Anticipated	Low
Glandularia tampensis	Tampa mock vervain	E	No Adverse Effect Anticipated	Low
Litsea aestivalis	Pondspice	E	No Adverse Effect Anticipated	Low
Pinguicula caerulea	Blueflower butterwort	T	No Adverse Effect Anticipated	Low
Pinguicula lutea	Yellow butterwort	T	No Adverse Effect Anticipated	Low
Platanthera ciliaris	Yellow fringed orchid	T	No Adverse Effect Anticipated	Low
Platanthera cristata	Crested yellow orchid	T	No Adverse Effect Anticipated	Low
Platanthera flava	Southern tubercled orchid	T	No Adverse Effect Anticipated	Low
Platanthera nivea	Snowy orchid	T	No Adverse Effect Anticipated	Low
Pogonia ophioglossoides	Rose pogonia	T	No Adverse Effect Anticipated	Low
Sacoila lanceolata var. lanceolata	Leafless beaked ladiestresses	T	No Adverse Effect Anticipated	Low
Sarracenia minor	Hooded pitcherplant	T	No Adverse Effect Anticipated	Low

Species	Common Name	State Status	Effect Determination	Potential for Occurrence
Spiranthes laciniata	Lacelip ladiestresses	T	No Adverse Effect Anticipated	Low
Tricerma phyllanthoides	Florida mayten	T	No Adverse Effect Anticipated	Low
Zephyranthes atamasca var. treatiae	Treat's Zephyr lily	T	No Adverse Effect Anticipated	Low
Nemastylis floridana	Celestial lily	E	No Adverse Effect Anticipated	Low
Pecluma ptilodon var. bourgeauana	Comb polypody	E	No Adverse Effect Anticipated	Low
Asplenium auritum	Auricled spleenwort	E	No Adverse Effect Anticipated	Low
Centrosema arenicola	Pineland butterfly pea	E	No Adverse Effect Anticipated	Low
Dendrophylax porrectus	Needleroot Airplant Orchid	T	No Adverse Effect Anticipated	Low
Garberia heterophylla	Garberia	T	No Adverse Effect Anticipated	Low
Myrcianthes fragrans	Twinberry	T	No Adverse Effect Anticipated	Low
Monotropsis reynoldsiae	Pygmy pipes	E	No Adverse Effect Anticipated	Low
Opuntia stricta	Erect pricklypear	T	No Adverse Effect Anticipated	Low
Tillandsia utriculata	Giant Airplant	E	No Adverse Effect Anticipated	Low
Pecluma dispersa	Widespread polypody	E	No Adverse Effect Anticipated	Low
Pecluma plumula	Plume polypody	E	No Adverse Effect Anticipated	Low

Ranking: E - endangered, T – threatened
Sources: (1) FWC – Florida Fish and Wildlife Conservation Commission, Florida's Threatened and Endangered Species List, Updated June 2023.
(2) FWC – Florida's Imperiled Species Management Plan, 2016
(3) FNAI http://www.fnai.org/bioticssearch.cfm accessed February 2024

Table 2.31: Managed and Protected Species in the Project Study Area

Species	Common Name	Potential for Occurrence
Birds		
Haliaeetus leucocephalus	Bald Eagle	Moderate
Pandion haliaetus	Osprey	High
Aphelocoma coerulescens	Florida Scrub Jay	None

Ranking: E - endangered, T – threatened Sources:
(1) USFWS - US Fish and Wildlife Service status, Official lists of Threatened and Endangered species, 50 CFR 17.11
(2) FWC – Florida Fish and Wildlife Conservation Commission, Florida's Threatened and Endangered Species List, Updated June 2023.
http://ecos.fws.gov/tess_public/reports/species-by-current-range-county- accessed June 2023
http://www.fnai.org/bioticssearch.cfm accessed June 2023

2.4.3.2 Wetland and Other Surface Waters

The identified wetlands and surface water systems within the study limits are shown in **Figure 2.21** and are classified into FLUCFCS types. **Table 2.32** provides approximate acreage of each wetland and surface waters within the project area. Additional information on wetlands and surface waters can be found in the *Natural Resources Evaluation* report provided under a separate cover.

Table 2.32: Wetland and Surface Waters within Project Area

Wetland/ Surface Water ID	FLUCFCS Classification	FLUCFCS Description	NWI Classification	Acres in Project Area	Percentage of Project Area
-	5100	Streams and Waterways	-	16.6	2.70%
WL 5, 8 and 10	5200	Lakes	PAB3H	15.1	2.40%
SW1,2,3,4, &5	5300	Reservoirs	-	2.1	0.30%
-	6150	Stream and Lake Swamps (bottomland)	-	33.9	5.40%
WL1	6210	Cypress	PEM1F	24.3	3.90%
WL2, 3, 6, 7, 9, 11, and 12	6300	Wetland Forested Mixed	PSS1F/PSS7C	1.5	0.20%
-	6400	Vegetated Non-Forested Wetlands	-	33.8	5.40%
WL4 and WL6	6410	Freshwater Marshes	PEM1F	3.2	0.50%
Project Area Total				**130.6**	**20.80%**

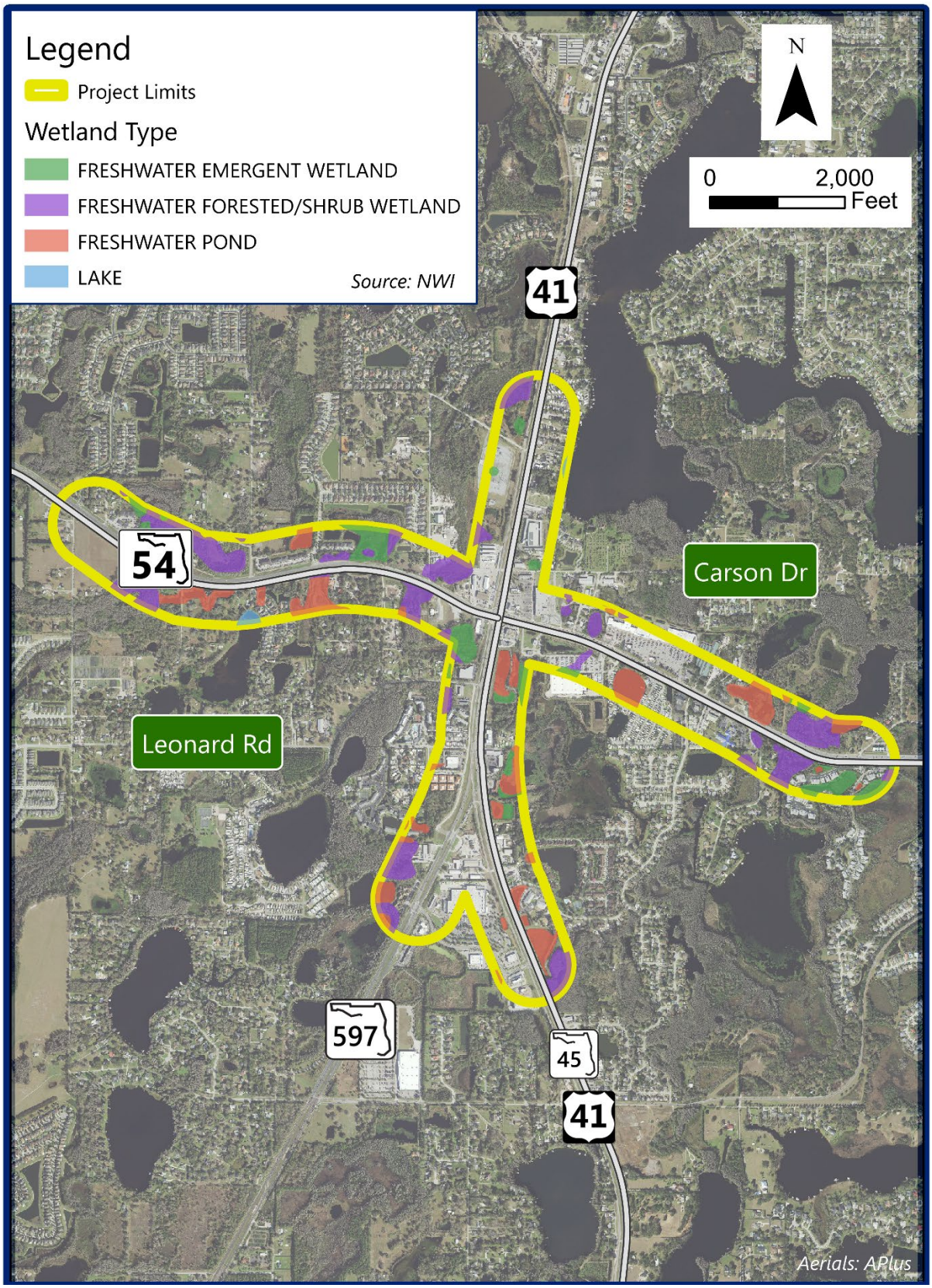


Figure 2.21: Wetlands and Surface Waters within the Project Study Area

2.4.4 Physical Environment

2.4.4.1 Contamination

A Contamination Screening Evaluation Report (CSER) was prepared in April 2015 to identify contamination sites within the project area and is in the project file. A Contamination Technical Memorandum, included in the project file, was prepared in July 2024 to update the evaluation for all previously identified contamination sites (30 total contamination sites). The Contamination Technical Memorandum, included in the project files, includes the Stormwater Management Facilities (SMF) and Floodplain Compensation (FPC) sites. A CSER update was ordered in November 2025 to update the evaluation for all previously identified contamination sites.

Based on the methodologies performed, eighty-three (83) potential contamination sites were identified within the buffer radii. Of these, there are twenty-two (22) sites ranked medium risk and four (4) ranked high risk. The medium and high ranked sites are listed in **Table 2.33**. Of the SMF and FPC sites, eight (8) were ranked medium risk, while zero (0) were ranked high risk. The pond sites are listed in **Table 2.34**. The Preferred Alternative was designed to avoid or minimize involvement with known or potential contamination sites, where possible. However, some sites could not be avoided, and ROW acquisition is required. Contamination sites are shown in **Figure 2.22**

For those locations with a risk rating of "Medium" or "High", a Level II field screening will be conducted during the design phase.

Table 2.33: Contamination Sites

Site No.	Name	Facility Address	Risk Rating
6	Walmart Super Center #988/ Walmart Fuel Station	Fuel Station 2575 Land O'Lakes Blvd/21035 Walmart Way	Medium
7	Sunoco Gas Station	1616 Dale Mabry Hwy N	Medium
8	Tires Plus/Don Olson Firestone	1621 US 41	Medium
11	Lutz Land O'Lakes Auto Body Shop	1641 US 41	Medium
12	Top Cat Marine	1635 Dale Mabry Hwy	Medium
16	Diamond Auto Work	1704 - 1712 Land O'Lakes Blvd	Medium
17	SS Studios	1720 Land O'Lakes Blvd	Medium
18	Cemex - Land O'Lakes Ready Mix/Ewell Industries	1714 N Dale Mabry Hwy	Medium
21	Starrs Kountry Kitchen/St. Luke Lakeside Plaza LLC.	1908 Land O'Lakes Blvd	Medium
22	Caliber Collision - Lutz #2051/Enterprise Rent a Car #29258	1927 Brinson Rd	Medium
23	Crandon 66 Service	1930 - 2000 US 41 N	Medium
25	Former Liberty Cleaners	2116 US 41 N	Medium
32	CVS Pharmacy 1771/Former Majik Market	2322 Land O'Lakes Blvd	High
34	Pasco County Sheriff Substation	21300 SR 54	Medium
36	Cox Lumber Co.	21033 SR 54	Medium
38	Sod Depot of Tampa Bay, LLC.	2515 Hunt Rd	Medium
39	7-Eleven 32714/FDOT ROW (FormerHandway #63)	2400 Land O'Lakes Blvd	Medium
40	Liberty Cleaners 2408 - 2414 Land O'Lakes Blvd	2408 - 2414 Land O'Lakes Blvd	Medium
42	Jiffy Lube #2786/Dipsticks Oil Change Inc.	21345 SR 52	Medium
44	Former Real Cleaners	21525 - 21601 Village Lakes Shopping Center	High
49	Meineke Car Care Center	2632 Land O'Lakes Blvd	Medium
50	Former Bobs Filtered Oil Co.	2700 Land O'Lakes Blvd	High
51	Duncheon's Nursery & Landscaping, LLC.	2720 Land O'Lakes Blvd	Medium
57	CSX RR Tracks	Parallel to US 41 N	High

Table 2.34: Stormwater Management Facilities and Floodplain Compensation Contamination Sites

Pond Name	Location	Risk Rating
SMF 3D	East side of Land O'Lakes Blvd, north of Lake Floyd Dr	Medium
FPC 119D	South of the intersection of Land O'Lakes Blvd and N Dale Mabry Hwy	Medium
SMF 2D (South)	East of Land O'Lakes Blvd, approximately 400 feet south of SR 54	Medium
FPC 110D	Southwest corner of US 41 N and SR 54	Medium
FPC 109D (East)	South side of SR 54, approximately 350 feet east of US 41 N	Medium
FPC 105D	North side of SR 54, approximately 1,200 feet west of US 41 N	Medium
SMF 2D (North)	North side of SR 54, approximately 250 feet east of US 41 N	Medium
FPC 117D	North side of SR 54, approximately 1,550 feet east of US 41 N	Medium

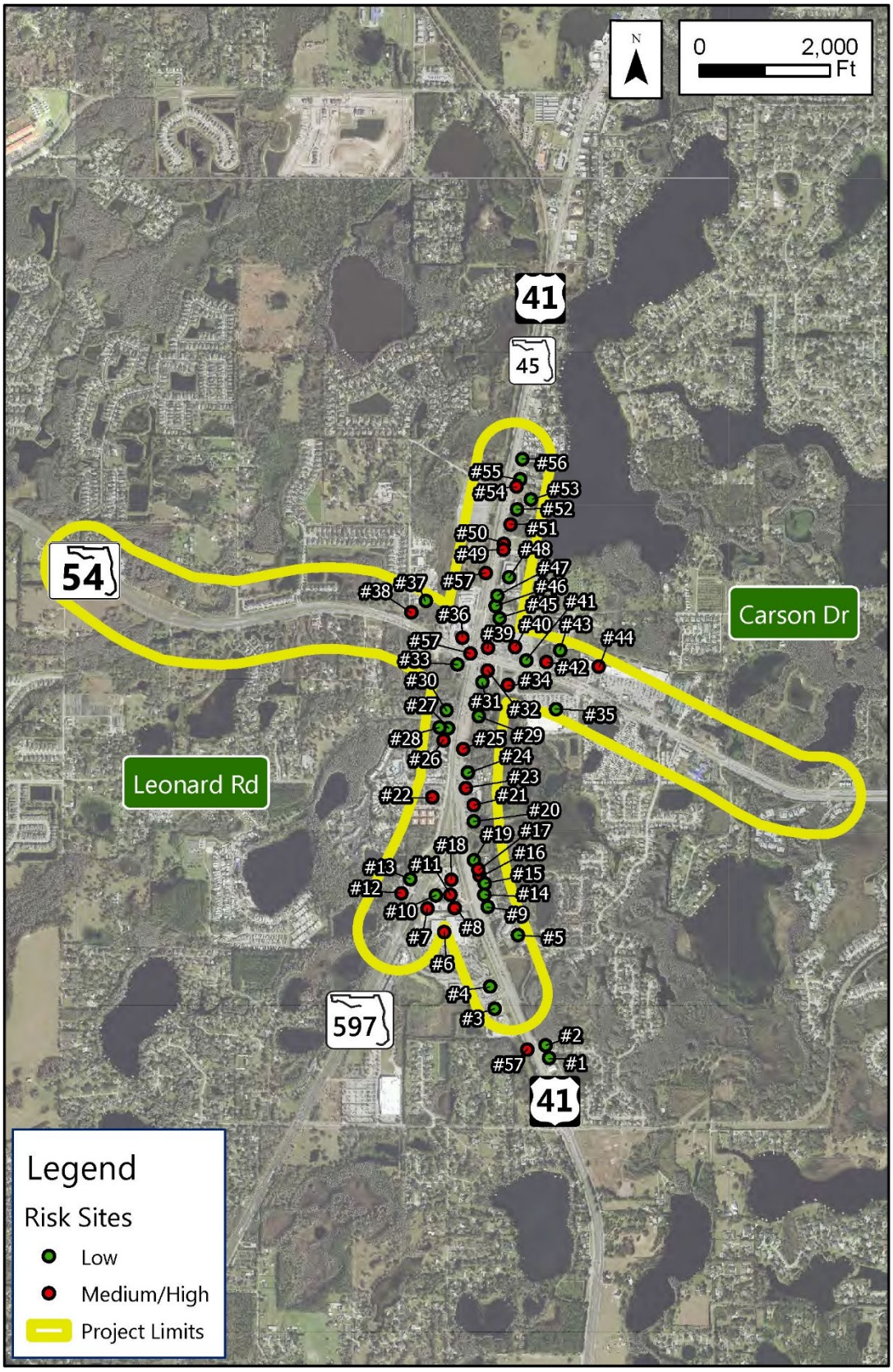


Figure 2.22: Contamination Sites

3.0 Future Conditions

3.1 Future Conditions Considerations

The future Context Classifications for the project roadways are anticipated to remain the same as the existing classifications: C3C, Suburban Commercial for US 41, SR 597 (N. Dale Mabry Highway), and SR 54 east of US 41; and C2, Rural for SR 54 west of US 41. Coordination will continue through the design phase. The future land use for the study area is a mix of residential, mixed use, industrial, commercial, and planned development (see Section 7.2.1 for the Future Land Use map).

3.2 Future Traffic Demand

The development of the future demand volumes and design hour volumes presented in the following sections are summarized from the Project Traffic Analysis Report, prepared under a separate cover.

3.2.1 Travel Demand Forecasting

The available version of the Tampa Bay Regional Planning Model (TBRPM) v8.2 was utilized to develop the future year daily traffic projections for this project. This study adopted the TBRPM v8.2 with base year 2010 and horizon year 2040. The resulting Peak Season Weekday Average Daily Traffic (PSWADT) volumes were reviewed for reasonableness. The National Cooperative Highway Research Project (NCHRP) Report 765 ratio and difference smoothing method was applied to get the updated 2040 AADTs. Then the linear growth rate between 2019 and 2040 was estimated. Design Year 2045 AADTs for US 41 over SR 54 were developed by applying Linear Trend Growth Rates to existing 2019 AADTs as shown in **Table 3.1**

3.2.2 Future Year Traffic Forecast

Future year Design Hour Volumes were developed by applying the recommended design traffic factors to the future year AADTs. At the intersections, the future turning movement volumes were obtained by applying the existing turning movement percentages to the approach volumes. The Directional Design Hour Volumes (DDHVs) were reviewed for reasonableness and adjusted to ensure consistent volume flow between intersections. The driveway volumes within

Table 3.1: Traffic Projections for Design Year 2045

Location	2019 AADTs	Linear Trend Growth Rate	2025 AADTs	2045 AADTs
SR 54, East of US 41	63,000	2.04%	70,600	96,000
SR 54, West of US 41	58,000	2.65%	67,200	98,000
US 41, North of SR 54	58,000	0.85%	61,000	71,000
US 41, South of SR 54	69,000	1.03%	73,200	87,000
US 41, South of SR 597 (N. Dale Mabry Highway)	34,000	1.02%	36,000	43,000
SR 597 (N. Dale Mabry Highway), South of US 41	35,000	0.99%	37,000	44,000

Note - * Including the US 41 Overpass AADT of 38,000 vpd for the Design Year

the study were obtained from Institute of Transportation Engineers (ITE) Trip Generation Handbook, 10th Edition. The peak direction of travel was maintained consistently with the existing counts.

The overpass DDHVs were developed by applying design traffic factors to the AADT of 36,800 and 50,000 vehicles per day (vpd). The overpass volumes during peak hour peak direction (2,590 vph) and off-peak direction (1,910 vph) were subtracted from the at-grade intersection along SR 54 east and westbound through movements under 2045 Build Alternatives with elevated SR 54. A similar procedure was applied for Opening Year 2025 overpass volumes development. Weaving volumes along US 41 northbound were calculated utilizing the proportion of traffic from SR 597 N. Dale Mabry Highway) and US 41. **Figure 3.1** illustrates the projected traffic for the Design Year for the No-Build Alternative. **Figure 3.2** and **Figure 3.3** illustrate the projected traffic for the Design Year for Build Alternative Option 1 and Build Alternative Option 2, respectively.

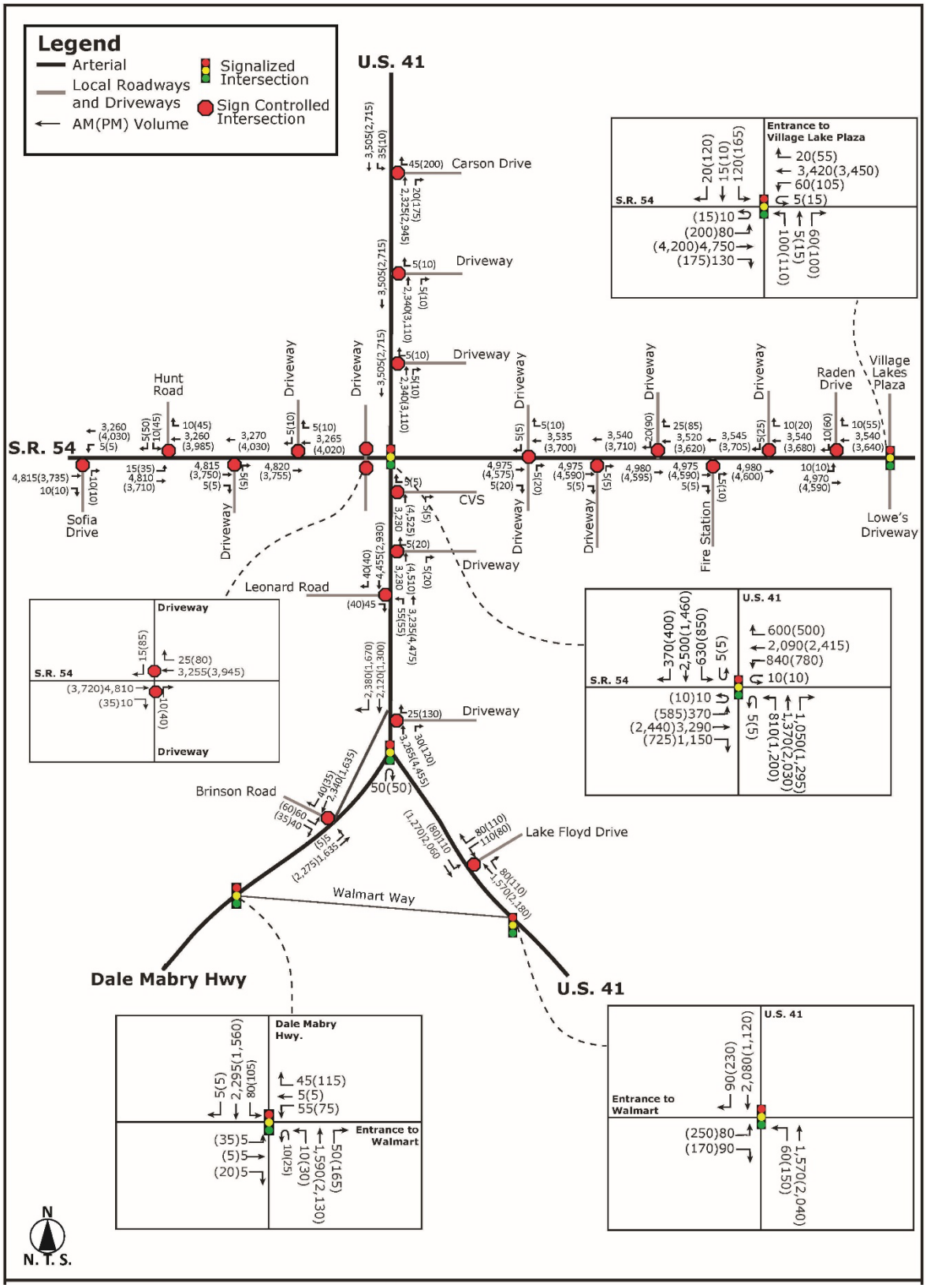


Figure 3.1: 2045 No-Build Directional Design Hour Volumes

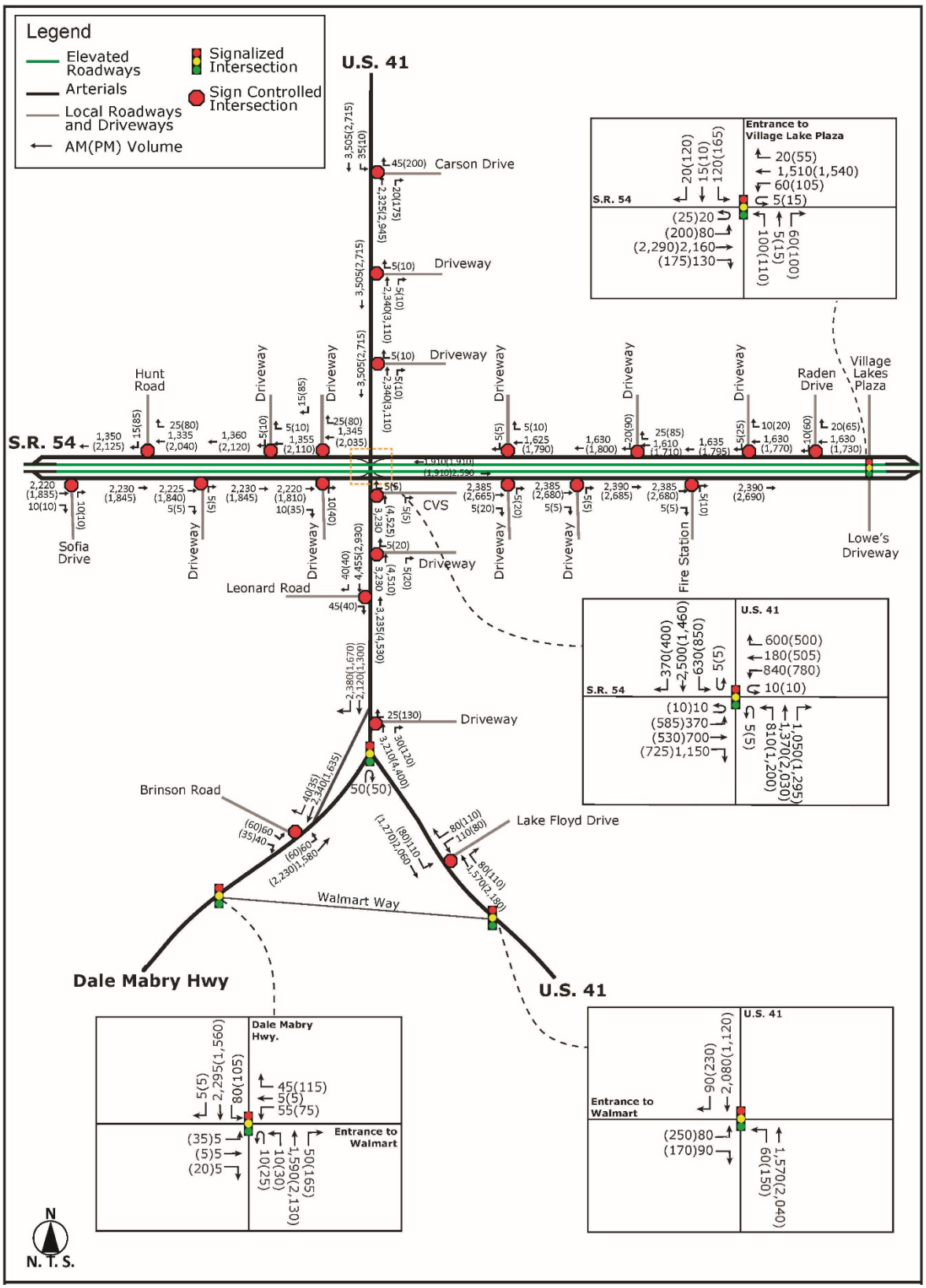


Figure 3.2: 2045 Build Alternative Option 1 - Single Point Urban Interchange (SPUI) Directional Design Hour Volumes

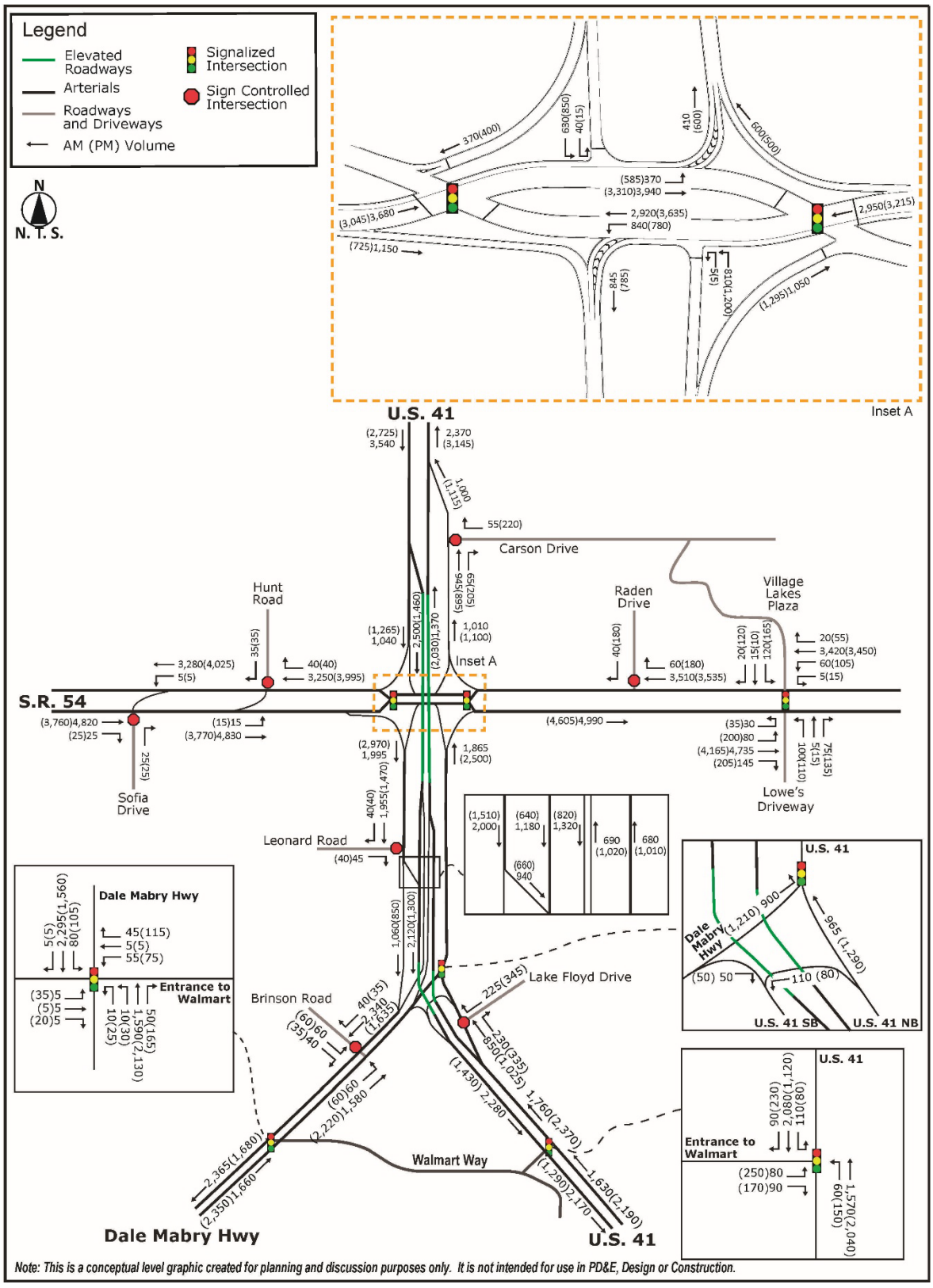


Figure 3.3: 2045 Build Alternative Option 2 – Diverging Diamond Interchange (DDI) Directional Design Hour Volumes

4.0 Design Controls & Criteria

4.1 Design Controls

4.1.1 Roadway Context Classification

The context classification for US 41, SR 597 (N. Dale Mabry Highway), and SR 54 east of US 41 is C3C, Suburban Commercial. The context classification for SR 54 west of US 41 is C2, Rural.

4.1.2 Functional Classification and Strategic Intermodal System Designation

US 41, SR 54, and SR 597 (N. Dale Mabry Highway) are classified as urban principal arterial roadways. US 41 is a SIS facility from SR 597 (N. Dale Mabry Highway) to SR 54. SR 54 is also an SIS facility from SR 589 to I-75. SR 597 (N. Dale Mabry Highway) is an SIS facility from SR 569 to US 41.

4.1.3 Access Management Classification and Applicable Standards

The access classifications for the state roads in the project area are:

- US 41- Class 3
- SR 54 (west of US 41 – Class 2
- SR 54 (east of US 41) - Class 3
- SR 597 (N. Dale Mabry Highway) - Class 3

The minimum spacing standards for the applicable access management classes are summarized in **Table 4.1**. The access classes are anticipated to remain the same.

4.1.4 Design Speed and Target Speed

SR 54 will have a design speed of 50 mph within the project area. However, within the DDI, the design speed will be reduced to 35 mph. US 41 will have a design speed and target speed of 45 mph. SR 597 (N. Dale Mabry Highway) will have a design speed of 70 mph.

4.1.5 Capacity and LOS Target

The intersection capacity target is LOS D.

Table 4.1: Access Management Standards

Road	Access Class	Median Type	Minimum Median Opening Spacing (feet)		Minimum Signal Spacing (feet)*	Connection Spacing Standard (feet)	
			Directional	Full		Posted Speed Greater than 45 MPH	Posted Speed 45 MPH or less
US 41	3	Restrictive	1,320	2,640	2,640	660	440
SR 54 (east of US 41)	3	Restrictive	1,320	2,640	2,640	660	440
SR 54 (west of US 41)	2	Restrictive with Service Roads	1,320	2,640	2,640	1,320	660
SR 597	3	Restrictive	1,320	2,640	2,640	660	440

* Traffic signals, proposed at intervals closer than the access management standard for the designated access class, will only be approved where the need for such signal(s) is clearly demonstrated for the safety and operation of the roadway through the signal warrant process. (F.A.C. Rule Chapter: 14-97.003) Applicants requesting or requiring the addition, removal, or modification of a traffic signal for Category E, F, and G connections, must submit an Intersection Control Evaluation Form, Form 750-010-30 (F.A.C. Rule Chapter: 14-96.003). This language is in the draft version of rule 14-96.

4.1.6 Design Vehicle

The design vehicle is the Florida Interstate Semitrailer, WB-62FL.

4.1.7 Pedestrian and Bicycle Requirements

The pedestrian and bicycle requirements are determined by the Context Classification and Design Speed (see Sections 4.1.1 and 4.1.4).

For both SR 54 and US 41, 7-foot bicycle lanes are provided adjacent to the travel lanes in each direction. However, as both facilities enter the Diverging Diamond Interchange, the bicycle lanes are transitioned to the 10-foot sidewalk that is separated from the roadway. A 10-foot sidewalk will be provided in each direction within the project limits.

4.1.8 Physical Constraints

There are several physical constraints in the project area.

There are multiple intersecting roads along SR 54 and US 41. The most significant intersecting road is SR 597 (N. Dale Mabry Highway). It intersects US 41 south of SR 54. The distance between the intersection of US 41 and SR 597 (N. Dale Mabry Highway) and the intersection of US 41 and SR 597 (N. Dale Mabry Highway) is approximately 2,400 feet. The angle of the intersection is approximately 25-30°. The proximity of the intersections contributes to weaving issues between the intersections.

There is a CSX railroad adjacent to US 41 on the west side through the project corridor. There are four railroad crossings in the project area, including both SR 54 and SR 597 (N. Dale Mabry Highway). The railroad limits the ability to make improvements to US 41 on the west side.

There are two Duke Energy power substations in the project area. The smaller one is located on the north side of SR 54 just east of the US 41 intersection. The larger substation is located at the southwest corner of US 41 and Morgan Road. These two sites constrain the improvements to the roadways in the immediate area.

4.1.9 Environmental Constraints

There are several protected species and habitats within the project area. However, none are anticipated to be adversely affected by the project. There are wetlands and surface water within the project area. It is anticipated that some of them will be impacted by the improvements. These impacts will be mitigated pursuant to Section 373.4137,F.S. There are no environmental constraints.

4.1.10 Types of Stormwater Facilities

The stormwater facilities will use a wet detention treatment system to treat one inch of runoff from the contributing area.

4.1.11 Navigational Requirements

Navigation requirements are not applicable for this project.

4.1.12 Design High Water

The design high water elevation will meet the requirement for base clearance per FDM 210.10.3.

4.1.13 Design Wave Heights

Design wave heights requirements are not applicable for this project.

4.2 Design Criteria

The Roadway Design Criteria for this study are based upon current design standards established by the FDOT Florida Design Manual (FDM) and the American Association of State Highway and Transportation Officials (AASHTO) as shown in **Table 4.2**.

Table 4.2: Roadway Design Criteria

Design Element	Design Standard	Source
Border Width		
US 41	14 feet (45 mph, curbed) 29 feet (50 mph, curbed)	FDOT Design Manual Table 210.7.1
SR 54	14 feet (45 mph, curbed) 40 feet (50 mph, flush shoulder) 29 feet (50 mph, curbed) 35 feet (55 mph, curbed)	
Lane Width	12 feet (Travel) 12 feet (Auxiliary) 12 feet (Two-Way Left Turn)	FDOT Design Manual Table 210.2.1
Median Width US 41 SR 54	30 feet (Curbed) 40 feet (Flush Shoulder) 26 feet (with Barrier)	FDOT Design Manual Table 210.3.1 Table 211.3.1
Pedestrian Facilities Sidewalk Width (min.) US 41 SR 54	6 feet (C3C) 5 feet (C2)	FDOT Design Manual Table 222.2.1
Bicycle Facilities Bike Lane Width	7 feet	FDOT Design Manual Section 223.2.1.1
Shared Use Paths	10 feet minimum 12 feet standard	FDOT Design Manual Section 224.4
Outside Shoulder Width	Without Shoulder Gutter 10 feet (Full) 5 feet (Paved) With Shoulder Gutter 15.5 feet (Full) 8 feet (Paved)	FDOT Design Manual Table 210.4.1

Design Element	Design Standard	Source
Inside Shoulder Width	Without Shoulder Gutter 10 feet (Full) 0 feet (Paved - 3-Lanes) 4 feet (Paved - 4-Lanes or More) With Shoulder Gutter 15.5 feet (Full) 8 feet (Paved)	FDOT Design Manual Table 210.4.1
Maximum Degree of Curve	8º15'00" (e_max = 0.10)	FDOT Design Manual Table 210.9.1
Minimum Length of Horizontal Curve	750'	FDOT Design Manual Table 210.8.1
Maximum Deflection Without Curve	0º 45' 00"	FDOT Design Manual Section 210.8.1
Stopping Sight Distance	425' (Grade ≤ 2%)	FDOT Design Manual Table 210.11.1
Superelevation Transition Tangent Curve	80% Desirable, 50% Minimum 20% Desirable, 50% Maximum	FDOT Design Manual Section 210.9.1
Maximum Superelevation Rate	0.10	FDOT Design Manual Section 210.9
Maximum Profile Grade	6%	FDOT Design Manual Table 210.10.1
Minimum Profile Grade	0.3% (Curbed Roadway)	FDOT Design Manual Section 210.10.1.1
Maximum Change in Grade Without Vertical Curve	0.60%	FDOT Design Manual Table 210.10.2
Minimum Length of Vertical Curve	200' (Sag) 300' (Crest)	FDOT Design Manual Table 210.10.4
Minimum K Value for Vertical Curve	96 (Sag) 136 (Crest)	FDOT Design Manual Table 210.10.3

Design Element	Design Standard	Source
Roadside Slopes	Traversable Slope: • Recoverable Traversable Slope, 1:4 or flatter • Non-Recoverable Traversable Slope, 1:3 or flatter and steeper than 1:4 Non-Traversable Slope Rough terrain, obstructed, or slopes steeper than 1:3	FDOT Design Manual Section 215.2.2
Clear Zone Width	24' (Travel Lanes & Multilane Ramps) 14' (Auxiliary Lanes & Single Lane Ramps)	FDOT Design Manual Table 215.2.1
Maximum Cross Slope	0.03 *0.035 may be used for 5-lanes sloped in one direction	FDOT Design Manual Figure 210.2.1
Minimum Base Clearance	3'	FDOT Design Manual Section 210.10.3
Bridge Vertical Clearance	New Bridge over roadway 16.5' Bridge over railroad 23.5'	FDOT Design Manual Table 260.6.1
Bridge Cross Slopes	Slope = 0.02	FDOT Design Manual Section 260.4

5.0 Alternatives Analysis

5.1 No-Build (No-Action) Alternative

The No-Build Alternative keeps the existing at-grade intersection. This alternative would have no environmental or community impacts and would provide significant monetary savings. However, it would not improve future traffic conditions, system linkage, safety (vehicles, pedestrian, or bicyclists), or hurricane evacuation. It would not be consistent with the local transportation plans or meet the social and economic demands of the area. The No-Build Alternative remains an alternative for consideration until the conclusion of the PD&E Study.

5.2 Transportation Systems Management and Operational (TSM&O) Alternative

No TSM&O Alternative was considered for this project.

5.3 Multimodal Alternatives

Multimodal improvements include adding 10-foot sidewalks and 7-foot buffered bicycle lanes along both sides of US 41 and SR 54. These improvements will enhance safety for those users and enhance the multimodal network in the project area. No transit Alternatives were identified.

5.4 Build Alternatives

The PD&E study started with four alternatives: 1, 2, 3, and 4. A brief description of each follow:

- Alternative 1 – a Single Point Urban Interchange (SPUI) with US 41 over SR 54
- Alternative 2 – a Tight Diamond Interchange with US 41 over SR 54
- Alternative 3 – a Single Point Urban Interchange (SPUI) with SR 54 over US 41
- Alternative 4 – a Tight Diamond Interchange with SR 54 over US 41

Alternatives 1 and 2 would require future managed lanes (ML) in the SR 54/56 corridor to be implemented as a 3rd level to the interchange increasing costs, impacts, and disruption of traffic. Alternatives 1 and 2 would also require the construction of braided ramps to accommodate weaving movements between the US 41/SR 597 (N. Dale Mabry Highway) intersection apex and SR 54 because of the proximity to the intersection to the south. Alternatives 1 and 2 were dropped

from further consideration because the costs and impacts associated with these conditions made them infeasible. Alternative 4 was dropped from further consideration because it resulted in more traffic delay than Alternative 3, particularly in the PM peak hour.

Two additional alternatives were created to determine the best way to accommodate at-grade through movements on SR 54 at the intersection due to the decision that the interchange would not provide free elevated through lane access eastbound and westbound (all through traffic on the elevated section would pay a toll). First, Alternative 3A was developed by revising Alternative 3 to include two exclusive through lanes eastbound and westbound at-grade. Second, Alternative 3B was developed by revising Alternative 3 to include shared through-left turn lanes and through-right turn lanes at-grade to minimize the footprint. Alternative 3B still had significant impacts to properties along the east side of US 41 due to improvements on US 41, but these impacts were slightly more than the impacts from Alternative 3A. Alternative 3B was eliminated from further consideration due to the number of ROW impacts in the corridor.

A third alternative, Alternative 3C, was developed to obtain some of the configuration benefits of Alternative 3A while minimizing the ROW impacts associated with its large footprint. Alternative 3C maintains the existing geometry on SR 54 with one through lane in each direction on SR 54 removed between the ramps to elevate the managed lanes over the existing lanes to minimize ROW impacts. The existing inside lanes on SR 54 would be removed in order to create the necessary median width to allow the placement of bridge piers to support the elevated lanes.

Both Alternatives 3A and 3 C were presented at a Public Hearing in December of 2015. Following the Public Hearing, FDOT in coordination with Pasco County decided to allow the Pasco MPO to initiate a Vision Study for SR 54 that would include this intersection.

The Pasco County MPO performed the Vision 54/56 Study starting in 2017. The task force recommended three build alternatives to FDOT for further review. FDOT performed a Feasibility Study evaluation of these three alternatives to identify a recommended alternative. The Feasibility Study analyzed three new alternatives:

- Feasibility Alternative 1 – a SPUI with elevated lanes on SR 54 over US 41
- Feasibility Alternative 2 – a Parallel Flow Intersection (PFI)
- Feasibility Alternative 3 – a Continuous Flow Intersection (CFI) with elevated lanes on SR 54 over US 41

The Feasibility Study recommended Feasibility Alternative 1 for further evaluation in the PD&E Study and was compared to the No-Build Alternative. Based on the analysis, the Feasibility Alternative 1 (SPUI with elevated lanes on SR 54 over US41) was selected as the PD&E Preferred Build Alternative and would be presented at a second Public Hearing.

However, based on input from public comments prior to the hearing, FDOT developed two additional interchange options with US 41 over SR 54: a Diverging Diamond Interchange (DDI) and a SPUI. These two interchange options were shown at the second Public Hearing on March 25, 2025. Public input at the hearing showed support for the interchange options with US 41 over SR 54 instead of the Build Alternative (SPUI with elevated lanes on SR 54 over US 41). Based on this input, the department decided to further analyze the DDI with US 41 over SR 54 interchange option. The DDI with US 41 over SR 54 concept became Build Alternative Option#2.

Build Alternative Option #1, provided in the project file, is a Single Point Urban Interchange (SPUI) with SR 54 elevated over US 41. SR 54 will carry two lanes in each direction over US 41. At the exit ramps, the center lane of SR 54 will be a choice lane to either continue up and over US 41 or remain at-grade and continue to the signalized intersection with US 41. The off-ramps will develop additional left and right turn lanes as they approach US 41. At the intersection with US 41, both the eastbound and westbound off-ramp will have three left turn lanes, two through lanes, and two signal-controlled right turn lanes. The at-grade lanes will provide access to the adjacent parcels. U-turn lanes will be provided in each direction under the SR 54 overpass. SR 54 will also be elevated over the signalized intersection at the entrance to Village Lakes Shopping Center Drive and Lowe's. The at-grade ramps will be signalized at each intersection to maintain access. Along US 41, three through lanes in each direction will remain throughout the project. For

northbound and southbound US 41 at SR 54, three left turn lanes and a signal-controlled right turn lane will be provided.

Build Alternative Option #2 is a Diverging Diamond Interchange (DDI) with US 41 elevated over SR 54 and SR 597 (N. Dale Mabry Highway). At SR 54, US 41 will carry two lanes in each direction over SR 54 via a bridge. The bridge will be expandable to three lanes in each direction for future traffic demand. Two lane exit ramps from US 41 in each direction will connect to SR 54. The northbound and southbound exit ramps will widen to two left turn lanes and two right turn lanes at the intersection with SR 54. Along SR 54, the westbound lanes will widen from three lanes to five lanes after the signalized intersection at the Village Lakes Shopping Plaza/Lowe's driveway. The five lanes will enter the first crossover intersection of the DDI. Prior to the first cross over intersection, a sixth lane will be developed for right turns only to northbound US 41. Of the five lanes entering the first crossover intersection, the inside lane will be a left turn only lane. The adjacent lane will be a shared left and through lane. The remaining three lanes will be through lanes. Four lanes will enter the 2nd crossover intersection. After the 2nd crossover intersection, the inside lane will merge and end. Three lanes will continue westbound. Similarly, the eastbound lanes will widen from three lanes to five lanes. The five lanes will enter the first crossover intersection of the DDI. Prior to the cross over intersection, a sixth lane will be developed for right turns only to southbound US 41. Of the five lanes entering the first crossover intersection, the inside lane will be a left turn only lane. The adjacent lane will be a shared left and through lane. The remaining three lanes will be through lanes. Four lanes will enter the 2nd crossover intersection. After the 2nd crossover intersection, the outside lane will become a right turn only lane at the signalized intersection at the Village Lakes Shopping Plaza/Lowe's driveway. Three lanes will continue eastbound. At SR 597 (N. Dale Mabry Highway), northbound US 41 will carry two lanes over SR 597 (N. Dale Mabry Highway) via a bridge. Southbound US 41 will carry three lanes over SR 597 (N. Dale Mabry Highway) via a bridge. The third lane will come from SR 54 via a single lane southbound ramp. For the southbound direction, there are ramps from SR 54 to southbound US 41 and southbound SR 597 (N. Dale Mabry Highway). For the northbound direction of US 41, the exit ramp from US 41 to SR 54 will provide a signalized intersection at SR

597 (N. Dale Mabry Highway). This intersection will allow a northbound US 41 to southbound US 41 u-turn via a "Texas u-turn". The signal will manage the traffic from northbound US 41 to SR 54 and northbound SR 597 (N. Dale Mabry Highway) to SR 54. Traffic from northbound SR 597 (N. Dale Mabry Highway) to northbound US 41 will utilize a free flow ramp and merge onto US 41 south of the bridge over SR 54.

Both Build Alternative options address the purpose and need of the project of enhancing the overall transportation network by providing relief for the existing and future congestion and improving capacity for evacuations. Also, the alternative options address safety concerns by reducing congestion and removing through movements from the intersections of US 41 at SR 54 and US 41 at SR 597. 7-foot bicycle lanes and 10-foot-wide sidewalks are provided along both facilities. These improvements provide separate facilities for pedestrians and bicyclists.

5.4.1 Context Sensitive Design

The proposed alternative options were developed in accordance with the Context Classifications for the facilities.

5.4.2 Pedestrian and Bicycle Accommodation

The proposed alternative options were developed to provide both pedestrian and bicycle improvements within the project study area based on the Context Classifications. 7-foot bicycle lanes and 10-foot-wide sidewalks are provided in the alternative options.

5.4.3 Traffic Operation and Safety

For Build Alternative Option #1, the average delay at the intersection of US 41 and SR 54 is anticipated to be 298 seconds per vehicle with a total volume of 10,860 vehicles per hour (vph). The projected volume on the four-lane overpass is 1,910 vph along either the eastbound approach or the westbound approach. To account for the free-flow traffic on the overpass, the composite delay weighted by volume was calculated in the same manner as for the AM conditions. As a result, the composite delay for the intersection of US 41 and SR 54 is anticipated to be 220 seconds per vehicle for the design year 2045 PM conditions. During the AM peak period of the Design

Year 2045, the unmet demand is 14% and the network-wide average speed is 19 mph. During the PM peak period, the unmet demand is 9% and the network-wide average speed is 10 mph.

The results of the predictive safety evaluation indicate that over a 20-year evaluation period the overall Build Alternative Option #1 condition is anticipated to result in a 15% reduction in the total number of predicted crashes when compared to the No Build condition. The proposed changes to the SR 54 facility are predicted to reduce crashes by 35%, while the US 41 and the SR 597 (N. Dale Mabry Highway) are predicted to have negligible changes. The SPUI interchange with SR 54 elevated is anticipated to result in a predicted crash increase of 6%. Furthermore, the added signalization improvements at US 41 at SR 597(N. Dale Mabry Highway) are anticipated to reduce crashes by 34%.

For Build Alternative Option #2, The average delay for the intersection of the SR 54 southbound approach and US 41 is anticipated to be 200 seconds per vehicle, with a total volume of 9,455 vehicles per hour (vph). The average delay for the intersection of the SR 54 northbound approach and US 41 is anticipated to be 67 seconds per vehicle, with a total volume of 10,125 vph. The projected volume on the four-lane overpass is 3,490 vph. Accounting for the free-flow traffic on the overpass, the composite delay for the US 41 and SR 54 intersections under 2045 PM conditions is anticipated to be 111 seconds per vehicle. during the AM peak period of the design year 2045, the unmet demand is 9% and the network-wide average speed is 24 mph. During the PM peak period, the unmet demand is 12% and the network-wide average speed is 20 mph.

The results of the predictive safety evaluation indicate that over a 20-year evaluation period the overall Build Alternative Option #2 condition is anticipated to result in a 42% reduction in the total number of predicted crashes when compared to the No Build condition. The proposed changes to the SR 54 facility are predicted to reduce crashes by 40%. The proposed changes to the US 41 facility are predicted to reduce crashes by 10%. The DDI interchange with US 41 elevated is anticipated to result in a predicted crash reduction of 69%. The newly proposed ramp connections between SR 597(N. Dale Mabry Highway), US 41 and SR 54 results in a predicted increase in crashes by 147%.

5.4.4 Managed Lanes

Since the facilities are not limited access, there are no proposed Managed Lanes for any alternative.

5.4.5 Access Management

The existing access management classes for the roadways will remain as existing. Since the proposed alternative options consisted of a grade-separated intersection, future access management was considered. The existing left turns in the median would be restricted before and after the overpass. Most parcels would keep right-in/right-out access. U-turns at signalized intersections were provided to maintain access to and from parcels.

5.4.6 Interchange on Interstate Highways

The facilities are not Interstate Highways.

5.4.7 Intelligent Transportation Systems

There are no existing Intelligent Transportation Systems (ITS) facilities in the project area. No ITS facilities are proposed.

5.4.8 Lane Repurposing

There is no need for lane repurposing in the project area.

5.4.9 Landscape

Landscape features will be considered during the design phase.

5.4.10 Lighting

Lighting will be provided within the project limits for all alternative options. The specific needs for lighting will be determined during the design phase.

5.4.11 Wildlife Crossings

No wildlife crossings are planned for this project.

5.4.12 Permits

All necessary permits will be acquired. The anticipated environmental permits will be acquired from the following agencies:

- United State Army Corps of Engineers (USACE) – Section 404 Individual Dredge and Fill Permit
- SWFWMD - Environmental Resource Permit
- FDEP - National Pollution Discharge Elimination System Permit

5.4.13 Stormwater Management

The stormwater management facilities for the alternatives are designed to not have adverse impacts on the area's water quality or quantity. The design of the stormwater management facilities for the project is governed by the rules set forth by the SWFWMD and FDOT. Water quality treatment and water quantity attenuation requirements will comply with the guidelines as defined in SWFWMD and FDEP's Environmental Resource Permit (ERP) manual, Volume I (FDEP) and II (SWFWMD), and 2024 FDOT Drainage Manual.

5.4.14 Sea Level Impact Protection (SLIP) Studies

No Sea Level Impact Protection Study is required for this project as it is not located near coastal waters.

5.4.15 Water Quality

The alternatives will not adversely impact the water quality in the project area.

5.4.16 Hydrology and Floodplains

This project includes work in flood sensitive, heavily urbanized floodplains, where the conditions of flooding are largely attributable to the low-lying terrain. US 41/SR 54 Interchange improvements, which include widening the roadway typical section and adding sidewalks and bike lanes, will encroach FEMA Flood Zones AE and A, as identified in the Pasco County FIRM (Panels 403, 404 and 412, September 2014). Compensation for the floodplain impacts incurred by the

proposed US 41 at SR 54 interchange improvements will be provided by off-site floodplain compensation (FPC) areas. There is no significant change in flood "Risk" associated with this project. The encroachments will not have a significant potential for interruption or termination of transportation facilities needed for emergency vehicles or used as an evacuation route. In addition, no significant adverse impacts on natural and beneficial floodplain values are anticipated and no significant impacts to highway users are expected. Therefore, the encroachments are considered minimal.

5.4.17 Utilities and Railroads

Both alternative options will modify the rail crossing at SR 54 and SR 597 (N. Dale Mabry Highway). However, the crossings still serve the existing traffic movements. Further coordination with CSX will occur during design. Impacts to existing utilities are anticipated by both alternative options. The alternative options avoid impacts to the Duke substations located in the project area. Also, minimal impacts to FGT are anticipated as no improvements will occur in the FGT easement other than a perpendicular crossing of the easement at-grade. Further coordination with the utilities will occur during design.

5.4.18 Survey and Mapping

Preliminary survey for exiting conditions and ROW have been conducted as part of the study. However further survey and mapping will be required during the design phase.

5.4.19 Geotechnical Investigation

Preliminary geotechnical investigations have been performed. These include a desktop analysis of the soils.

5.4.20 Structural and Bridges

There are no existing structures. However, both alternative options proposed multiple bridge and wall structures. The preliminary analysis identified the likely bridge types and materials.

5.4.21 Perimeter Walls

There are no proposed perimeter walls associated with either alternative.

5.4.22 Transportation Management Plan

A Transportation Management Plan (TMP) is used to minimize activity-related traffic delays and crashes. The goal of the TMP is for congestion relief during the construction phase by managing traffic flow and balancing traffic demand with highway capacity through the project area.

There are three components of a TMP, the Temporary Traffic Control (TTC) plan, Transportation Operations, and Public Information. The TTC plan component describes measures to be used for facilitating road users through a work zone or an incident area. A high-level construction plan was developed for the alternative options to maintain traffic during construction. For Build Alternative 2, a multi-phase construction plan was developed. Raden Drive would be constructed to connect Carson Drive with SR 54. The northbound US 41 at-grade lanes would be constructed in the ultimate location. Next the southbound at-grade lanes would be constructed in the ultimate location. The elevated section of US 41 including the bridges would be constructed between the at-grade lanes. The eastbound SR 54 lanes would be constructed in the ultimate location. The westbound SR 54 lanes would be constructed in the ultimate location. Finally, the crossover intersections of the DDI would be constructed during nighttime operations. In section 7.18, a high-level description of the construction phasing to maintain traffic during construction for the preferred alternative is described

A complete TTC plan will be developed during the design phase. The Transportation Operations provides strategies for mitigating impacts of the work zone to the operation and management of the transportation system. This component will be developed during the design phase. The Public Information component communicates with drivers, general public, businesses and others the expected work zone impacts. This component will be integrated into the Community Awareness Plan (CAP) developed during the design phase.

5.4.23 Constructability

The alternatives are designed to be constructed in phases to minimize impacts to adjacent properties and maintain the traffic during construction.

5.4.24 Construction Impacts

For both alternative options, temporary noise impacts are anticipated during construction. Attempts will be made to minimize impacts. Standard Protection Measures will be performed to minimize water quality impacts during construction. A maintenance of traffic plan will be developed during the design phase to provide access to adjacent parcels and minimize delays during constructions. This project is not expected to create adverse impacts on air quality because the project area is in attainment for all National Ambient Air Quality Standards (NAAQS) and reduce delay and congestion on all facilities within the study area.

5.5 Comparative Alternatives Evaluation

Engineering, environmental, and cost analyses were performed on the two Build Alternative options as well as the No-Build Alternative.:

- Build Alternative Option #1 - SPUI with SR 54 over US 41
- Build Alternative Option #2 - DDI with US 41 over SR 54

The results of this analysis and preliminary construction cost estimates were summarized in the Alternatives Evaluation Matrix shown in **Table 5.1**. The construction, design, and construction engineering inspection costs shown for Build Alternative Option#1 have been updated since the Public Hearing was held on March 25, 2025.

Table 5.1: Alternatives Evaluation Matrix

EVALUATION FACTORS		NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE OPTION#1	BUILD ALTERNATIVE OPTION#2
POTENTIAL RIGHT OF WAY IMPACTS				
NUMBER OF IMPACTED PARCELS		0	79	78
NUMBER OF BUSINESS RELOCATIONS		0	36	97
NUMBER OF RESIDENTIAL RELOCATIONS		0	4	4
ANTICIPATED RIGHT OF WAY ACQUISITION (Total Acres)		0.0	116.60	44.03
NATURAL/CULTURAL/PHYSICAL ENVIRONMENTAL EFFECTS				
ARCHAEOLOGICAL/HISTORICAL SITES (Number of NRHP Listed or Eligible Sites)		0/0	0/1	0/1
POTENTIAL SECTION 4(F) SITES (Number)		0	0	0
POTENTIAL NOISE RECEPTOR SITES APPROACHING/EXCEEDING THE NOISE ABATEMENT CRITERIA		0	18	7
WETLANDS/OTHER SURFACE WATERS (Acres)		0.00/0.00	7.93/1.43	0.94/9.12
FLOODPLAINS (Acres)		0.00	11.52	5.63
THREATENED & ENDANGERED SPECIES (High, Medium, or Low based on likelihood of occurrence)		None	Low	Low
CONTAMINATED SITES (Number of Low, Medium, and High Sites)		0/0/0	11/7/5	49/30/4
ESTIMATED PRESENT DAY COSTS ($ Millions)				
FINAL DESIGN (10% OF CONSTRUCTION)		$0.00	$27.58	$24.25
RIGHT-OF-WAY	ROADWAY	$0.00	$166.70	$135.71
	PONDS	$0.00	$91.07	$55.81
CONSTRUCTION		$0.00	$275.82	$242.54
UTILITY RELOCATIONS		$0.00	$6.86	$6.86
CONSTRUCTION ENGINEERING INSPECTION (10% OF CONSTRUCTION)		$0.00	$27.58	$24.25
WETLAND MITIGATION*		$0.00	$0.91	$0.06
TOTAL COSTS ($ MILLIONS)		$0.00	$596.52	$489.49

* Wetland mitigation costs for estimation purposes only based on Senate Bill mitigation costs - costs may change at time of construction

5.6 Selection of the Preferred Alternative

The comparison of Build Alternative Option#1 (SR 54 over US 41 SPUI) and Build Alternative Option #2 (US 41 over SR 54 DDI) shows Build Alternative Option #2 has fewer acres of impacts to the adjacent parcels, lower costs and meets the purpose and need for the project.

After review of the engineering, environmental, and cost analysis, along with stakeholder and public input, Build Alternative #2 is recommended as the Preferred Alternative (**Appendix A)** for this PD&E Study. The project evaluation matrix is provided in **Table 5.1**. This alternative meets the project Purpose and Need and is the most appropriate improvement for the project study area context.

6.0 Agency Coordination & Public Involvement

6.1 Agency Coordination

The project was entered into the Efficient Transportation Decision Making (ETDM) Environmental Screening Tool and reviewed by the agencies in 2012. A coordination meeting was held with Pasco County on July 19, 2013, to review Alternatives 3A and 3C and receive input from the County. A pre-application meeting was held with the Southwest Florida Water Management District (SWFWMD) on March 13, 2014 to discuss SWFWMD requirements for drainage and impacts to wetlands. A new Environmental Resource Permit (ERP) will be required which will replace all other existing ERPs associated with this roadway intersection. Continued coordination with the proper federal and state agencies will be conducted during the design phase of this project. All necessary permits will be acquired. After a Public Hearing was held on December 10, 2015, the project was put on hold before the Location and Design Concept Acceptance. Pasco County MPO conducted the Vision 54/56 Study with completion in 2019. The Vision 54/56 Study task force recommended three build alternatives to FDOT for further review. FDOT performed a Feasibility Study evaluation of these three alternatives from 2020 to 2023 to identify a recommended Alternative which will then be advanced to the PD&E Study where it was evaluated against the No-Build Alternative. In November of 2023, the PD&E Study re-commenced. Environmental Look Around (ELA) coordination meetings were held with Pasco County and SWFWMD on March 29, 2024, to discuss options for regional pond opportunities.

Presentations were made to the Pasco MPO committees: Bicycle/Pedestrian Advisory Committee (BPAC), Technical Advisory Committee (TAC), and Citizens Advisory Committee (CAC) on January 6, 2025, prior to the Public Hearing. A presentation was made to the MPO Board on April 10, 2025, after the Public Hearing.

6.2 Public Involvement

An initial Public Hearing for the PD&E study was held on December 10, 2015. A 2nd Public Hearing for the PD&E Study was held on March 25, 2025, after the completion of the Feasibility Study. Further details on these two hearings are provided in Section 6.3.

During the Feasibility Study, a hybrid Alternatives Public Workshop was held on September 16, 2021. An in-person meeting was held from 5:30 pm-7:30 pm at the Keystone Community Church located at 21010 SR 54 Lutz, FL 33558. A virtual online meeting was held at the same time. The in-person meeting hosted 47 members of the public. The virtual online meeting hosted 45 members of the public. Based on public input as well as engineering and environmental factors, the Feasibility Study recommended Alternative 1 to be further evaluated in the PD&E Study.

Prior to the 2nd Public Hearing, small group meetings were held with homeowner's associations (HOAs), and the Pasco Rotary Club between February 7, 2025, and March 20, 2025. The HOAs included:

Devonwood HOA: The meeting was held on February 19, 2025. The community concerns included access impacts for residents, response times for emergency vehicles, viewshed of the overpass for the community, access during construction, and project schedule.

Heron Cove HOA: The meeting was held on March 5, 2025. The community concerns included safety concerns for ingress and egress to and from the community entrance, which businesses are impacted by the proposed alternative, noise impacts to the community, and project schedule. The community stated they preferred an option of US 41 over SR 54 instead to reduce impacts to better address the traffic demands.

Lake Como HOA: The meeting was held on March 20, 2025. The community concerns included the number of through lanes on US 41, weaving issues for northbound US 41 between SR 597 (N. Dale Mabry Highway) and SR 54, need for improvements to Brinson Road (including lighting), changing access to Brinson Road at US 41 to right-in/right out only, locations of proposed noise barriers, improvements to Henley Road at SR 54, stormwater treatment associated with the improvements, potential relocation of Fire Station #23, and the project schedule.

Paradise Lanes HOA: The meeting was held on March 19, 2025. The community concerns included potential for relocation in the Paradise Lakes community, improvements for the US 41 at

SR 597 (N. Dale Mabry Highway) intersection (particularly for northbound US 41), need for improvements to Brinson Road (including lighting), improvements to Henley Road at SR 54, number of lanes on SR 54 (elevated versus at-grade), project funding and project schedule.

Pasco Sunset Lakes HOA: The meeting was held on February 18, 2025. The community concerns included the proposed overpass bridge only having four lanes total, locations of ponds and floodplain compensation sites, lengths of the southbound turn lanes for US 41 at SR 54, noise impacts related to an elevated SR 54, and potential for improvements at SR 54 and Collier Parkway that may affect the US 41 intersection.

6.3 Public Hearing

The first Public Hearing was held on December 10, 2015. The public hearing was held to allow interested persons an opportunity to provide comments concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements. The study was considering two build alternatives: Alternative 3A and Alternative 3C, which were both new interchanges with SR 54 elevated over US 41. Alternative 3A was SPUI interchange with SR 54 over US 41. This alternative included two through lanes eastbound and westbound at-grade at the US 41 intersection. Alternative 3C maintained the existing geometry on SR 54 with one through lane in each direction on SR 54 removed between the ramps to elevate the managed lanes over the existing lanes to minimize ROW impacts. The existing inside lanes on SR 54 would be removed in order to create the necessary median width to allow the placement of bridge piers to support the elevated lanes.

The hearing was held at the Myrtle Lake Baptist Church, 2017 Riegler Road, Land O' Lakes, Florida. The Open House began at 5:30 p.m. on Thursday, December 10, 2015, and the formal hearing presentation began at 6:30 p.m. Following the formal presentation, the Open House continued until 7:30 p.m. The public were given the opportunity to provide their comments in writing during the open house or by mail to be postmarked by December 21, 2015; verbally at the microphone during the formal presentation, or verbally to the court reporter during the open house portions of the hearing. An informational project video ran continuously during the informal, open house

portions of the hearing. Project exhibits and draft documents were on display. FDOT representatives were available during the open house to speak one-on-one with attendees, take comments and answer questions.

One hundred eighty-eight members of the public signed-in at the public hearing. FDOT and consultant staff were available to answer questions and take comments throughout the informal session of the public hearing.

Attendees were provided with a project newsletter and a comment form. The hearing provided interested persons an opportunity to express their views concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements.

Forty-two comments were collected at the hearing and during the official comment period and 19 people spoke during the formal session. Several requested additional project information, and 27 requests were made to be placed on the project mailing list. Ten of the comments received were in favor of the No-Build Alternative.

A 2nd Public Hearing was held on March 25, 2025. The public hearing was held to allow interested persons an opportunity to provide comments concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements. The preferred alternative presented at the Public Hearing was Build Alternative 1, SPUI with SR 54 over US 41. Based on input from public comments prior to the hearing, FDOT developed two additional preliminary concepts with US 41 over SR 54. The 1st preliminary concept was a Diverging Diamond Interchange (DDI) and the 2nd preliminary concept was a SPUI. These two preliminary concepts were also shown at the Public Hearing on March 25, 2025.

The hearing was held at the Land O' Lakes Recreation Complex, 3032 Collier Parkway, Land O' Lakes, Florida. The Open House began at 5:30 p.m. on Tuesday, March 25, 2025, and the formal hearing presentation began at 6:30 p.m. Following the formal presentation, the Open House continued until 7:30 p.m. The public were given the opportunity to provide their comments via

the project website; in writing during the open house or by mail to be postmarked by April 4, 2025; verbally at the microphone during the formal presentation, or verbally to the court reporter during the open house portions of the hearing. An informational project video ran continuously during the informal, open house portions of the hearing. Project exhibits and draft documents were on display. FDOT representatives were available during the open house to speak one-on-one with attendees, take comments and answer questions. A virtual meeting was held using GoToWebinar at the same time as the in-person meeting. During the formal portion of the meeting, virtual attendees were allowed an opportunity to make a verbal comment.

One hundred fifty-six members of the public signed in at the public hearing. FDOT and consultant staff were available to answer questions and take comments throughout the informal session of the public hearing. One hundred twenty members of the public signed into the virtual meeting.

Attendees were provided with a project newsletter and a comment form. The hearing provided interested persons an opportunity to express their views concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements.

One hundred comments were collected at the hearing and during the official comment period and 23 people spoke during the formal session. A total of 58 the public comments were in support of the two additional concepts showing US 41 over SR 54. Eleven of the public comments were in favor of the No-Build Alternative. Public input at the hearing showed support for the concepts with US 41 over SR 54 instead of the preferred alternative of the SPUI with SR 54 over US 41. Based on this input, the department decided to further analyze the DDI with US 41 over SR 54 concept.

6.4 Virtual Project Update

A Virtual Project Update (VPU) is scheduled to be held in January 2026. The public will have an opportunity to review the reports and materials showing the updated preferred alternative and the analysis of the alternative. This section will be updated after the VPU is complete.

7.0 Preferred Alternative

7.1 Engineering Details of the Preferred Alternative

7.1.1 Typical Sections

Please refer to **Section 1.5** for the proposed typical sections for the Preferred Alternative.

7.1.2 Access Management

The proposed access management criteria are provided in Section 4.1.3. The proposed improvements will not change the existing access classifications of the roadways. The addition of a grade separation along US 41 from north of Lake Floyd Dr to south of Morgan Road, will change the access along this portion of US 41. Driveways within the limits of the grade separation will have right-in/right-out access only. The signalized intersection of SR 54 will be maintained. To provide similar access as existing, the Preferred Alternative allows northbound and southbound U-turn lanes under the bridge over SR 54. A u-turn lane for northbound US 41 at SR 597 (N. Dale Mabry Highway) will be provided at the signalized intersection for SR 597 (N. Dale Mabry Highway) under the US 41 bridges. For Carson Drive, direct access to SR 54 will be provided by adding a connection road with the Village Lakes Shopping Plaza The connection will use the existing signalized intersection to access SR 54.

7.1.3 Right-of-Way

The analysis of the ROW impacts for the Preferred Alternative indicates it will require approximately 44.03 acres of additional ROW. The alternative impacts 78 privately owned parcels. It is anticipated that the Preferred Alternative will require 96 business, four residential, and one publicly owned facility relocations. Most of the business relocations occur along the east side of US 41. The other businesses are located along SR 54, east and west of US 41. All four quadrants of the US 41 and SR 54 intersection have business impacts. Three of the four residential relocations are located within the Tropicana Trailer Park, east of US 41 between SR 597 (N. Dale Mabry Highway) and SR 54. The other residential relocation is near the southern end of the project east of US 41. Relocations are identified on the concept plans in **Appendix A**.

7.1.4 Horizontal and Vertical Alignment Geometry

Table 7.1 summarizes the proposed horizontal alignment geometry for northbound and southbound US 41. **Table 7.2** summarizes the proposed horizontal alignment geometry for eastbound and westbound SR 54. **Table 7.3** summarizes the proposed horizontal alignment geometry for northbound and southbound SR 597 (N. Dale Mabry Highway).

Table 7.1: US 41 Proposed Horizontal Alignment Geometry

US 41						
PC STA	**PT STA**	**Deflection Angle**	**Curve Length (ft)**	**Radius (ft)**	**Degree of Curvature**	**Superelevation ft/ft**
NB US 41						
2001+03.25	2005+07.84	04°00′43″ (RT)	404.59	5,778.00	00°59′30″	NC
2005+07.84	2009+15.52	04°00′44″ (LT)	407.68	5,822.00	00°59′03″	NC
2013+91.14	2038+61.81	21°21′05″ (RT)	2,470.68	6,630.00	00°51′51″	NC
2046+74.79	2050+76.45	12°51′24″ (RT)	401.66	1,790.00	03°12′03″	RC
2067+10.79	2072+12.86	06°11′30″ (LT)	502.07	4,646.00	01°14′00″	NC
2074+41.01	2078+57.06	06°11′30″ (RT)	416.05	3,850.00	01°29′18″	NC
2083+78.08	2087+82.10	01°50′36″ (LT)	404.02	12,558.00	00°27′22″	NC
2087+82.10	2091+82.39	01°50′36″ (RT)	400.29	12,442.00	00°27′38″	NC
SB US 41						
1001+03.25	1005+09.38	04°00′43″ (RT)	406.13	5,800.00	00°59′16″	NC
1005+09.38	1009+15.52	04°00′44″ (LT)	406.14	5,800.00	00°59′16″	NC
1013+91.14	1044+80.99	22°45′19″ (RT)	3,089.85	7,780.00	00°44′11″	NC
1044+80.99	1049+15.95	11°27′10″ (RT)	434.96	2,176.00	02°37′59″	NC
1067+43.70	1072+40.80	06°11′30″ (LT)	497.10	4,600.00	01°14′44″	NC
1072+40.80	1076+73.06	06°11′30″ (RT)	432.26	4,000.00	01°25′57″	NC
1084+09.67	1088+12.99	01°50′36″ (LT)	403.32	12,536.00	00°27′25″	NC
1088+12.99	1092+13.99	01°50′36″ (RT)	401.00	12,464.00	00°27′35″	NC

STA – Stationing NC – Normal Crown RC – Reverse Crown LT – Left RT – Right

Table 7.2: SR 54 Proposed Horizontal Alignment Geometry

SR 54						
PC STA	**PT STA**	**Deflection Angle**	**Curve Length (ft)**	**Radius (ft)**	**Degree of Curvature***	**Superelevation ft/ft**
EB SR 54						
3000+00.00	3008+16.00	24°48′58″ (RT)	816.00	1,884.00	03°02′28″	NC
3011+02.09	3014+57.67	39°47′28″ (LT)	355.58	512.00	11°11′26″	RC
3016+28.85	3018+05.29	18°26′51″ (RT)	176.44	548.00	10°27′20″	NC
3021+17.55	3023+70.86	26°29′04″ (RT)	253.31	548.00	10°27′20″	RC
3025+46.41	3028+59.89	35°55′21″ (LT)	313.48	500.00	11°27′33″	NC
3030+27.83	3035+57.87	21°41′33″ (RT)	530.05	1,400.00	04°05′33″	NC
WB SR 54						
4000+00.00	4009+12.99	14°27′30″ (RT)	912.99	3,618.00	01°35′01″	NC
4010+99.33	4012+97.05	20°40′24″ (LT)	197.73	548.00	10°27′20″	RC
4016+89.27	4018+26.94	14°23′41″ (LT)	137.68	548.00	10°27′20″	RC
4019+98.12	4021+75.46	14°16′14″ (RT)	177.34	712.00	08°02′50″	NC
4026+40.27	4031+31.32	12°25′38″ (RT)	491.05	2,264.00	02°31′51″	NC

STA – Stationing NC – Normal Crown RC – Reverse Crown LT – Left RT – Right

Table 7.3: SR 597 (N. Dale Mabry Highway) Proposed Horizontal Alignment Geometry

SR 597 (N. Dale Mabry Highway)						
PC STA	**PT STA**	**Deflection Angle**	**Curve Length (ft)**	**Radius (ft)**	**Degree of Curvature***	**Superelevation ft/ft**
NB SR 597 (N. Dale Mabry Highway)						
509+75.95	513+76.01	03°49'36" (RT)	400.06	5,990.00	00°57'23"	NC
513+76.01	517+76.04	33°01'35" (LT)	400.04	694.00	08°15'21"	0.05
519+95.98	524+71.50	03°31'51" (RT)	475.53	7,716.67	00°44'33"	NC
524+7150	529+26.36	10°13'56" (RT)	454.86	2,547.00	02°14'58"	NC
SB SR 597 (N. Dale Mabry Highway)						
409+87.93	413+87.97	04°35'03" (RT)	400.04	5,000.00	01°08'45"	NC
413+87.97	418+04.26	33°47'02" (LT)	416.29	706.00	08°06'56"	0.047
419+78.37	424+75.72	03°40'51" (RT)	497.34	7,741.67	00°44'24"	NC
424+75.72	430+03.72	10°05'03" (RT)	528.01	3,000.00	01°54'35"	NC

STA – Stationing NC – Normal Crown RC – Reverse Crown LT – Left RT – Right

The proposed vertical geometry of US 41 over SR 54 is summarized in **Table 7.4**. Elevations are relative to the North American Vertical Datum of 1988 (NAVD 88).

Table 7.4: US 41 Proposed Vertical Geometry

VPC STA/ Elevation (ft)	VPI STA/ Elevation (ft)	VPT STA/ Elevation (ft)	Vertical Curve Length (ft)	K Value	Grade Back (%)	Grade Ahead (%)
NB US 41						
	2001+40.92/ 71.09					+0.300
	2008+71.90/ 73.29				+0.300	-0.300
	2012+17.06/ 72.75				-0.300	+0.301
	2021+68.55/ 75.11				+0.301	+0.600
2026+43.67/ 77.97	2027+78.18/ 78.77	2029+12.67/ 84.15	269	79.12	+0.600	+4.000
2031+23.86/ 92.60	2035+31.36/ 108.90	2039+38.86/ 91.38	815	98.19	+4.000	-4.300
2041+87.71/ 80.68	2043+69.71/ 72.85	2045+27.98/ 73.36	364	79.13	-4.300	+0.300
	2047+97.94/ 74.14				+0.300	-0.300
2050+90.21/ 73.26	2052+95.71/ 72.64	2055+01.21/ 82.70	411	79.12	-0.300	+4.895
2056+24.09/ 88.72	2060+67.09/ 110.40	2065+10.09/ 92.07	886	98.08	+4.895	-4.139
2067+79.51/ 80.91	2069+63.01/ 73.32	2071+07.01/ 74.24	367	79.13	-4.139	+0.499
	2075+64.54/ 76.32				+0.499	+0.301
	2080+56.21/ 77.80				+0.301	-0.350
	2091+82.39/ 73.86				-0.350	
SB US 41						
	1001+41.06/ 71.09					+0.300
	1008+72.06/ 73.29				+0.300	-0.300
	1012+17.06/ 72.25				-0.300	+0.300
	1021+71.43/ 75.11				+0.300	+0.900

VPC STA/ Elevation (ft)	VPI STA/ Elevation (ft)	VPT STA/ Elevation (ft)	Vertical Curve Length (ft)	K Value	Grade Back (%)	Grade Ahead (%)
1025+18.20/ 78.24	1027+01.20/ 79.88	102+84.20/ 90.00	366	79.04	+0.900	+5.531
1029+40.41/ 93.11	1034+82.41/ 108.10	1040+70.41/ 90.46	1,130	98.00	+5.531	-6.000
1041+20.53/ 87.45	1043+73.53/ 72.27	1045+94.90/ 73.22	506	79.06	-6.000	+0.400
	1049+29.32/ 74.50				+0.400	-0.300
1051+36.49/ 73.87	1053+41.99/ 73.26	1055+47.49/ 83.33	411	79.04	-0.300	+4.900
1056.50/ 88.67	1061+00.00/ 110.40	1065+43.50/ 91.99	887	98.01	+4.900	-4.150
1068+09.49/ 80.96	1069+93.49/ 73.32	1071+37.92/ 74.14	368	79.14	-4.150	+0.500
	1075+93.95/ 76.32				+0.500	+0.300
	1080+87.81/ 77.80				+0.300	-0.350
	1092+13.99/ 73.86				-0.350	

STA – Stationing NC – Normal Crown RC – Reverse Crown LT – Left RT – Right

7.1.5 Design Variations and Exceptions

No design variations or exceptions are anticipated for this design.

7.1.6 Multimodal Accommodations

Multimodal accomodations include adding 10-foot-wide sidewalks along both sides of US 41 and SR 54 and providing 7-foot buffered bicycle lanes in each direction on US 41 and SR 54. These improvements will enhance safety for those users and enhance the multimodal network in the project area. There are existing bus stops in each direction on SR 54 approximately 0.5 miles west of US 41, 750 feet east of US 41, and 0.5 miles east of US 41. Coordination with Pasco County Public Transportation will occur during the Design phase to determine if the bus stops should be relocated so they can be accessed by pedestrians from both sides of SR 54.

7.1.7 Intersection / Interchange Concepts and Signal Analysis

The concept plans in **Appendix A** show the proposed DDI interchange at the intersection of US 41 and SR 54, as well as the overpass of US 41 over SR 597 (N. Dale Mabry Highway), along with the proposed intersection configurations including traffic control. The traffic signal analysis is provided in the Project Traffic Analysis Report, prepared under a separate cover. There are six signalized intersections:

- SR 54 at US 41 (west crossover intersection)
- SR 54 at US 41 (east crossover intersection)
- SR 54 at Village Lakes Shopping Center Drive
- Northbound US 41 ramp at SR 597 (N. Dale Mabry Highway)
- US 41 at Wal-Mart Way
- SR 597 (N. Dale Mabry Highway) at Walmart Way

7.1.8 Tolled Projects

This project will not be tolled.

7.1.9 Intelligent Transportation System and TSM&O Strategies

ITS design will be incorporated during design phase and the Preferred Alternative will not prevent its implementation. TSM&O strategies are included with the Preferred Alternative.

7.1.10 Landscape

Landscape features will be considered during the design phase.

7.1.11 Lighting

Lighting will be provided within the project limits. The specific needs for lighting will be determined during the design phase.

7.1.12 Wildlife Crossings

No wildlife crossings are planned for this project.

7.1.13 Permits

A preapplication meeting was held with the SWFWMD on March 13, 2014. A new SWFWMD permit will be required which will replace all other existing permits associated with this roadway intersection. Continued coordination with the proper federal and state agencies will be conducted during the design phase of this project. All necessary permits will be acquired. Environmental permits will be required from the following agencies:

- United State Army Corps of Engineers (USACE) – Section 404 Individual Dredge and Fill Permit
- SWFWMD - Environmental Resource Permit
- FDEP - National Pollution Discharge Elimination System Permit

No gopher tortoises have been documented within the project area. If any gopher tortoises are discovered, in accordance with the requirements of Rules 68A-25.002 and 68A-27.004 (F.A.C.), a permit for gopher tortoise capture/release activities must be secured from the FWC before initiating any relocation work. The FWC will require a 100 percent gopher tortoise survey to be conducted within 90 days of construction commencement to support the permit application. An FWC gopher tortoise relocation permit may be required if this species is documented during project surveys.

7.1.14 Drainage and Stormwater Management Facilities

Alternative pond sites have been identified along the project corridor. The evaluation provides estimates for right-of way needs implementing a volumetric analysis that accounts for the water quantity and quality requirements set forth by FDOT, SWFWMD, and Pasco County for the project area.

The locations of the pond alternatives are provided in the exhibits in **Appendix A**. Please note that the recommendations are based on preliminary data and calculations, reasonable engineering judgment, and assumptions. The pond sizes and locations are subject to change during final design when detailed data becomes available for the permeability rates of the soils,

estimated seasonal high-water elevations, and final roadway profiles. Please refer to **Table 7.5** for the Summary of Stormwater Management Facility Recommendations.

Table 7.5: Summary of Stormwater Management Facility Recommendations

Basin Name	Preferred Pond	Approximate Location	Normal Water Level	Inside Berm Elevation	Design High Water Elevation	Minimum Gutter Elevation	Outfall
1	Exist. Pond D	1103+60 (LT) @ BL_SB_US 41	69.26	73.00	71.25 (25YR/24HR)	73.28	Lake Vienna
2	SMF 2D	2050+00 (RT) @BL BL_NB_US41	68.14	71.60	70.55 (25YR/24HR)	72.38	Lake Floyd
3	SMF 3D	2022+00 to 2034+40 (RT) @ BL_NB_US41	68.50	71.03	70.03 (25YR/24HR)	73.54	Wetland D
4	SMF 4D	2007+00 and 2019+00 (RT) @ BL_NB_US41	68.25	70.60	69.26 (25YR/24HR)	71.74	Wetland B
5	SMF 5D	3002+00 (RT) @ BL_SR54_EB	64.00	66.90	66.15 (25YR/24HR)	67.15	Lake Thomas
Village Lakes Shopping Center Drive	No pond required for this Basin						Lake Floyd

7.1.15 Floodplain Analysis

The US 41 at SR 54 intersection improvements will encroach FEMA Flood Zones AE and A, as identified in the Pasco County FIRM (Panels 403, 404 and 412, September 2014). There are 13 Zone AE floodplains that will be impacted because of the intersection improvements. The total acres impacted are 5.63 acres. Compensation for the floodplain impacts incurred by the proposed US 41 at SR 54 interchange improvements will be provided by off-site floodplain compensation (FPC) areas. Drainage features will be designed in accordance with the FDOT Drainage Manual,

Topic No. 625-040-002, and no adverse impacts to floodplains are anticipated as a result of the project.

7.1.16 Bridge and Structure Analysis

Three new bridge structures are proposed for the Preferred Alternative. All proposed bridges span over other road facilities and do not span any bodies of water or railroads. Currently no existing bridge structures are located within the project limits. The project corridor is urbanized and does not have any wildlife connectivity requirements. The proposed project structures are not anticipated to have any impact on historic resources. The proposed bridge plan and elevation sheets and typical section sheets are provided in **Appendix B**.

Bridge 1 – Southbound US 41 over SR 597 (N. Dale Mabry Highway)

The Preferred Alternative includes a new overpass carrying the southbound US 41 through movements over four ramps. The proposed Bridge 1 typical section has three 12-foot travel lanes in the southbound direction with two 10-foot shoulders. The proposed bridge will have 36-inch single slope traffic railings on the outside edges of the bridge for drop-off protection. The overall out-to-out width of the proposed bridge is 58-feet-8-inches. See **Figure 1.4** for the Bridge Typical Section.

An existing CSX railroad and FGT natural gas transmission specified width easement run parallel to US 41 along the west side. The proposed southbound US 41 overpass bridge will span one U-turn movement from the US 41 access road, three proposed ramps that will provide connectivity between US 41 and SR597, and two sidewalks while satisfying stopping sight distance requirements. It is recommended that five simply supported spans with prestressed concrete I-beams be utilized for the proposed overpass superstructure. The assumed span lengths are as follows: Span 1 at 147-feet-0 inches, Spans 2 and 3 at 129-feet-0 inches each, Span 4 at 157-feet-6 inches, and Span 5 at 90-feet-6 inches. The proposed total bridge length is 653-feet-0 inches. The proposed bridge horizontal alignment consists of one curve. It is anticipated that stormwater spread can be fully accommodated in the shoulders and no bridge deck drainage will be required.

Inverted-T straddle piers are recommended at piers three and four for the substructure supports to minimize the vertical profile above the ramp movements. A 16-foot-6-inch minimum vertical clearance will be provided to the bottom of the straddle pier caps above the ramps. Single-column inverted-T hammerhead piers are recommended for piers two and five to meet sight distance and lateral offset criteria. The assumed straddle pier columns will be 7-feet wide by 4-feet-6-inches thick and spaced at 62-feet-3-inches on center. The assumed hammerhead pier columns will be 15-feet wide by 4-feet-6-inches thick.

End bents with wrap-around MSE retaining walls are proposed to retain the elevated roadway embankment and minimize the overall bridge length. A 16-foot-6 inch minimum vertical clearance will be provided to the bridge superstructure in accordance with FDM 260.6. Footings and end bents with prestressed concrete piles are the likely foundation type given the geotechnical conditions consisting primarily of sands.

Bridge 2 – Northbound US 41 over SR 597 (N. Dale Mabry Highway)

The Preferred Alternative includes a new overpass carrying the northbound US 41 through movements over the proposed Ramp B1. The proposed Bridge 2 typical section has two 12-foot travel lanes in the northbound direction with one 8-foot inside shoulder and one 10-foot outside shoulder. The proposed bridge will have 36-inch single slope traffic railings on the outside edges of the bridge for drop-off protection. The overall out-to-out width of the proposed bridge is 44-feet-8 inches. See **Figure 1.5** for the Bridge Typical Section.

The proposed northbound US 41 overpass bridge will be required to span the proposed Ramp B1. It is recommended that one simply supported span with prestressed concrete I-beam superstructure be utilized for the proposed overpass. The assumed span will be 170-feet-0 inches and will span one SR-41 access road U-turn movement, one left-turn movement from SR-597 onto the SR-41 access road (Ramp B1), and two sidewalks while satisfying stopping sight distance requirements. The proposed bridge horizontal alignment consists of one curve. It is anticipated that stormwater spread can be fully accommodated in the shoulders and no bridge deck drainage will be required.

End bents with wrap-around MSE retaining walls are proposed to retain the elevated roadway embankment and minimize the overall bridge length. A 16-foot-6 inch minimum vertical clearance will be provided to the bridge superstructure in accordance with FDM 260.6. Prestressed concrete piles are the likely foundation type given the geotechnical conditions consisting primarily of sands.

Bridge 3 – US 41 Over SR 54

The Preferred Alternative includes a new overpass carrying both northbound and southbound US-41 through movements over SR-54. The proposed Bridge 3 typical section has four 12-foot travel lanes, two 10-foot outside shoulders, two 14-foot-6 inch inside shoulders, and one 17-foot-0 inch raised concrete median. The proposed bridge can be reconfigured in the future to accommodate three lanes in each direction. The proposed bridge will have 36-inch single slope traffic railings on the outside edges of the bridge for drop-off protection. The overall out-to-out width of the proposed bridge is 116 feet-8 inches. See **Figure 1.6** for the Bridge Typical Section.

The existing SR 54 intersection with US 41 will be reconfigured into a DDI. The proposed US 41 overpass bridge will be required to span the SR 54 intersection. It is recommended that two simply supported spans with prestressed concrete I-beams be utilized for the proposed overpass superstructure. Both assumed spans will be 182-feet-6 inches and will accommodate the westbound and eastbound SR-54 through movements and one sidewalk while satisfying stopping sight distance requirements. The proposed total bridge length is 365-feet-0 inches. The proposed bridge has two horizontal alignments, one for NB SR-41 and one for SB SR-41. Each horizontal alignment consists of a single tangent. It is anticipated that stormwater spread can be fully accommodated in the shoulders and no bridge deck drainage will be required.

A multi-column pier cap with five columns is recommended at Pier 2 for the substructure. The assumed pier columns will be 6-feet wide by 4-feet-6-inches thick and spaced at 25-feet on center.

End bents with wrap-around MSE retaining walls are proposed to retain the elevated roadway embankment and minimize the overall bridge length. A 16-foot-6-inch minimum vertical

clearance will be provided to the bridge superstructure in accordance with FDM 260.6. Footings and end bents with prestressed concrete piles are the likely foundation type given the geotechnical conditions consisting primarily of sands.

7.1.17 Transportation Management Plan

A Transportation Management Plan (TMP) is used to minimize activity-related traffic delays and crashes. The goal of the TMP is for congestion relief during the construction phase by managing traffic flow and balancing traffic demand with highway capacity through the project area.

There are three components of a TMP, the Temporary Traffic Control (TTC) plan, Transportation Operations, and Public Information. The TTC plan component describes measures to be used for facilitating road users through a work zone or an incident area. In section 7.18, a high-level description of the construction phasing to maintain traffic during construction is described. A complete TTC plan will be developed during the design phase. The Transportation Operations provides strategies for mitigating impacts of the work zone to the operation and management of the transportation system. This component will be developed during the design phase. The Public Information component communicates with drivers, general public, businesses and others the expected work zone impacts. This component will be integrated into the Community Awareness Plan (CAP) developed during the design phase.

7.1.18 Constructability

The Preferred Alternative will need to be constructed in a series of phases to maintain traffic. The improvements to Raden Drive connecting the road to the signalized intersection with SR 54 would be the first phase. This would provide access between Carson Drive and SR 54 as the improvements to US 41 are started.

The next phase would include preparation for construction of the improvements along the eastern side of US 41. The improvements for US 41 will require additional ROW east of US 41 and provide enough room to shift existing traffic off the proposed US 41 travel lanes and the southbound on and off-ramps. Temporary pavement along US 41 and a temporary intersection at the US 41 and

SR 54 intersection will be constructed to match the number of lanes in the existing configuration. Between Lake Floyd Drive and SR 54, the northbound and southbound US 41 traffic will remain on temporary pavement to the east of the existing travel lanes to provide construction space for the ramp connections at SR 597 (N. Dale Mabry Highway). All existing connections to SR 597 (N. Dale Mabry Highway) will be maintained through phasing shifts and the travel lanes will shift back to the existing alignment near Lake Floyd Drive.

Once the US 41 travel lanes have been shifted east, construction on the US 41 mainline overpass at SR 54 can begin. The southbound ramps to and from SR 54 will be constructed in the ultimate location. The bridge structure over SR 54 is expected to be constructed in two phases. The initial phase of bridge construction will occur once US 41 has been shifted to its temporary alignment along the eastern right-of-way. The western portion of the bridge and its approaches will be constructed leaving enough space for the flare out of turn lanes at the intersection at SR 54 Once complete, southbound traffic can then be moved onto the initial bridge and approach roadway opening space for the remaining bridge and roadway approach construction which will occur in the next phase. Upon completion of the full bridge structure and approach roadway, US 41 northbound traffic can be moved to its final location and the final northbound on and off ramps can be completed through traffic shifts matching the conversion of the DDI crossover along SR 54.

At SR 597 (N. Dale Mabry Highway), the southbound overpass will be constructed and then tie into US 41 near the Walmart Way signalized intersection. Once the ultimate southbound travel lanes and ramps have been constructed, the southbound traffic can be shifted to the new lanes.

The northbound US 41 travel lanes including the overpass over SR 597 (N. Dale Mabry Highway) will be constructed in the location where the temporary southbound travel lanes were located. The final connections of SR 597 and US 41 can be completed. The two bridge structures at SR 597 (N. Dale Mabry Highway) will be constructed in phases. The southbound overpass bridge and its approaches will be constructed in a single phase matching the initial US 41 over SR 54 bridge phase. Once complete, the US 41 southbound traffic will be moved onto the completed bridge

structure. In the next phase, the northbound overpass bridge and its approaches will be completely constructed. Upon completion of the northbound overpass, US 41 northbound traffic will be moved to its final location. A few sub-steps will be necessary to maintain and move ramp movements below the bridge structures.

All bridge structures are expected to be prestressed concrete beam superstructure bridges founded on piers with driven concrete piles. Protected work zones around substructure and MSE wall locations will be required to facilitate safe construction while maintaining traffic. Nighttime road closures will be necessary for beam erection, material delivery, crane positioning, and crane operation. Since the bridges are expected to be completed in multiple phases along with significant roadway, utility, and drainage improvements, the construction duration is anticipated to be approximately 30 to 36 months.

At SR 54, the US 41 ramps will form a tight diamond interchange to begin the conversion of SR 54 to the DDI. The westbound lanes will use as much existing pavement as possible. The eastbound lanes located outside of the existing ROW will be constructed. The new eastbound lanes will be connected to the existing eastbound travel lanes during overnight construction.

The two crossover intersections will be constructed. The final connection of the travel lanes to the crossover intersections will occur during overnight construction. The final ramp connections between US 41 and SR 54 will be made after the crossover intersections are completed.

A total of seven phases will be needed to complete the construction.

7.1.19 Construction Impacts

Temporary noise impacts are anticipated during construction. Attempts will be made to minimize impacts. Standard Protection Measures will be performed to minimize water quality impacts during construction. A maintenance of traffic plan will be developed during the design phase to provide access to adjacent parcels and minimize delays during constructions. This project is not expected to create adverse impacts on air quality because the project area is in attainment for all

National Ambient Air Quality Standards (NAAQS) and reduce delays and congestion on all facilities within the study area.

7.1.20 Special Features

Gravity walls behind the sidewalk along portions of the west side of US 41 and south of SR 54 will be used to eliminate ROW impacts to the CSX parcel.

7.1.21 Utilities

The Preferred Alternative will require adjustments for 13 UAOs. The estimated utility adjustment costs for the project are approximately $27.4 million. Two of the UAOs (Florida Gas Transmission and Duke Energy) have facilities situated in proprietary easements that may make adjustments of their facilities potentially eligible for FDOT reimbursement. This reimbursement cost is estimated at $6.86 million.

7.1.22 Project Costs

The estimated project costs are provided in **Table 7.6**. The construction costs were developed using FDOT's Long Range Estimate (LRE) tool. The LREs are provided in **Appendix C**. The Construction costs for the Preferred Alternative were determined in October 2025. The design and construction, engineering, and inspection (CEI) are based on 10% of the construction cost. The ROW costs for the Preferred Alternative were developed based on acreage of impacts and potential for relocations. The ROW costs were determined in November 2025.

Table 7.6: Project Costs

Estimated Present Day Costs ($ millions)		No-Build	Preferred Alternative
Final Design (10% of Construction)		$0.00	$24.26
Right-of-Way	Roadway	$0.00	$135.71
	Ponds	$0.00	$55.81
Construction		$0.00	$242.54
Utility Relocations		$0.00	$6.86
Construction Engineering Inspection (10% of Construction)		$0.00	$24.25
Wetland Mitigation*		$0.00	$0.06
Total Costs		$0.00	$489.49

* Wetland mitigation costs for estimation purposes only based on Senate Bill mitigation costs - costs change at time of construction

7.2 Summary of Environmental Impacts

7.2.1 Future Land Use

The future land use for the study area is a mix of residential, mixed use, industrial, commercial, and planned development. The project is consistent with future land uses. The project will not induce secondary development or change existing land use patterns. The roadway improvements are anticipated to accommodate increased travel demand from population and employment growth of the area. **Figure 7.1** shows the Future Lanes Use map of the study area.

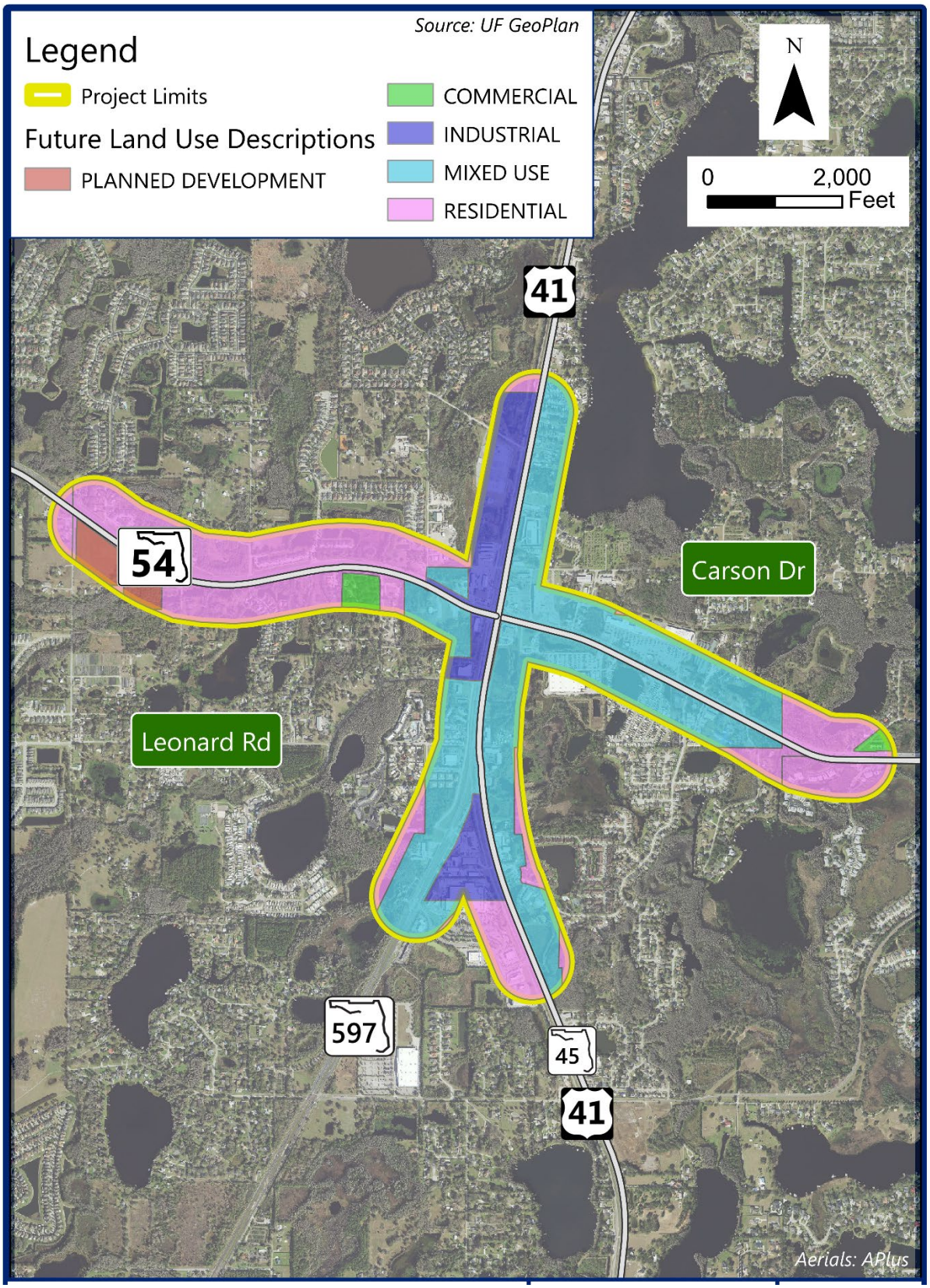


Figure 7.1: Future Land Use

7.2.2 Section 4(f)

There are no Section 4(f) properties impacted by the Preferred Alternative.

7.2.3 Cultural Resources

A Cultural Resource Assessment Survey (CRAS) was prepared for the PD&E Study in December 2024. Its survey area was based on the initial Preferred Alternative (SR 54 over US 41). This CRAS defined the archaeological Area of Potential Effect (APE) as the footprint of construction and the area of each proposed pond site.

Four (4) previously recorded archaeological sites lie within the initial Preferred Alternative's APE. Two of these sites (8PA00289 and 8PA00556) are ineligible for listing on the National Register of Historic Places (NRHP), and two (8PA00290 and 8PA00291) have insufficient information to make a determination of eligibility. As a result of the CRAS, no new archaeological material was identified, and no evidence of sites 8PA00290 and 8PA00291 was found within the APE.

The historical/architectural background research revealed eleven historic resources were previously recorded within the APE. These include ten buildings and one linear resource. Of these, five have been determined ineligible for listing in the NRHP by the State Historic Preservation Officer (SHPO) and six have not been evaluated by the SHPO.

As a result of the field survey, 37 historic resources were identified. Of these, 28 were newly identified, recorded, and evaluated, eight extant previously recorded historic resources were identified and re-evaluated, and a newly identified segment of a previously recorded linear resource was identified and evaluated. Furthermore, two previously recorded resources were found to be demolished since last recordation. One historic resource within the APE appears eligible for listing in the NRHP. Although the segment of the Tampa Northern Railroad within the APE is a typical example found throughout Florida, it meets the requirements found in Florida's Historic Railroad Resources Multiple Property Listing under property type F.3. The newly recorded segment of the linear resource had insufficient information to make a determination of eligibility

for the resource as a whole. The Criteria of Adverse Effects was applied to the eligible historic resource as well as the linear resource that had insufficient information to make a determination of eligibility. A Section 106 finding of No Adverse Effect was determined, and the SHPO concurred with this finding on January 6, 2025.

As a result of the changed Preferred Alternative (the DDI), a CRAS Addendum was prepared in January 2026 with a revised APE and is included in the project file. This CRAS Addendum defined the archaeological APE as the footprint of construction and the area of each proposed pond site.

As a result of the field survey, no new archaeological material was recovered. No evidence was found of either of the two previously recorded archaeological sites, both of which have been determined to be ineligible for listing on the NRHP by the SHPO.

A total of 40 historic resources were identified. Of these, eight were newly identified, recorded, and evaluated. One extant previously recorded linear resource was identified and re-evaluated to include a newly identified segment. One previously recorded resource was found to have been demolished since its last recordation. As in the 2024 CRAS, only one historic resource within the APE appears eligible for listing in the NRHP. The Criteria of Adverse Effects was applied to the eligible historic resource as well as a linear resource that had insufficient information to make a determination of eligibility. A Section 106 finding of No Adverse Effect was determined

There are no Section 4(f) properties impacted by the proposed improvements.

7.2.4 Wetlands

The wetlands and other surface waters within the project study area were overlaid with the Preferred Alternative to identify areas of impacts. Anticipated wetland impacts for the Preferred Alternative are 0.95 acres and 9.12 acres of surface water impacts, shown in **Table 7.7.** Additional information on wetlands and other surface waters can be found in the *Natural Resources Evaluation*, provided under a separate cover.

Table 7.7: Potential Wetland and Surface Water Impacts

Wetland/ Surface Water ID	FLUCFCS Classification	FLUCFCS Description	Classification	Impact Acreage
Wetlands				
WL 1	6210	Cypress	PEM1F	0.04
WL 2, 3, 4 & 5	6300	Wetland Forested Mixed	PSS1F/PSS7C	0.91
			Total Wetland Impacts	**0.95**
Surface Waters				
SW1,2,3,4, &5	5300	Reservoirs		9.12
			Total Surface Water Impacts	**9.12**
			Total Wetland and Surface Water Impacts	**10.07**

Table 7.8 provides a summary of the UMAM evaluation for wetlands anticipated to be impacted by the proposed project. The functional assessment will be refined and finalized during permitting. Construction of the project results in an estimated loss of 0.95 UMAM functional loss units.

Table 7.8: UMAM Summary

Wetland Identification	Wetland Type	UMAM Score (Delta Value)	Impact Acreage	Functional Loss
WL1	Cypress	0.50	0.04	0.02
WL2	Wetland Forested Mixed	0.57	0.73	0.42
WL3	Wetland Forested Mixed	0.57	0.12	0.07
WL4	Wetland Forested Mixed	0.53	0.001	0.00
WL5	Wetland Forested Mixed	0.53	0.05	0.03
Total			**0.94**	**0.54**

These scores are subject to agency review and revisions are anticipated during the permitting process.

7.2.5 Protected Species and Habitat

Federally and State protected species with the potential to occur within the region of the study area are identified in Section 2.13.3 of this report. The effect determination for each species is listed in **Table 2.29, Table 2.30**, and **Table 2.31**. Additional information on protected species and habitat can be found in the *Natural Resources Evaluation* report provided under a separate cover.

7.2.6 Essential Fish Habitat

There are no essential fish habitats impacted by the Preferred Alternative.

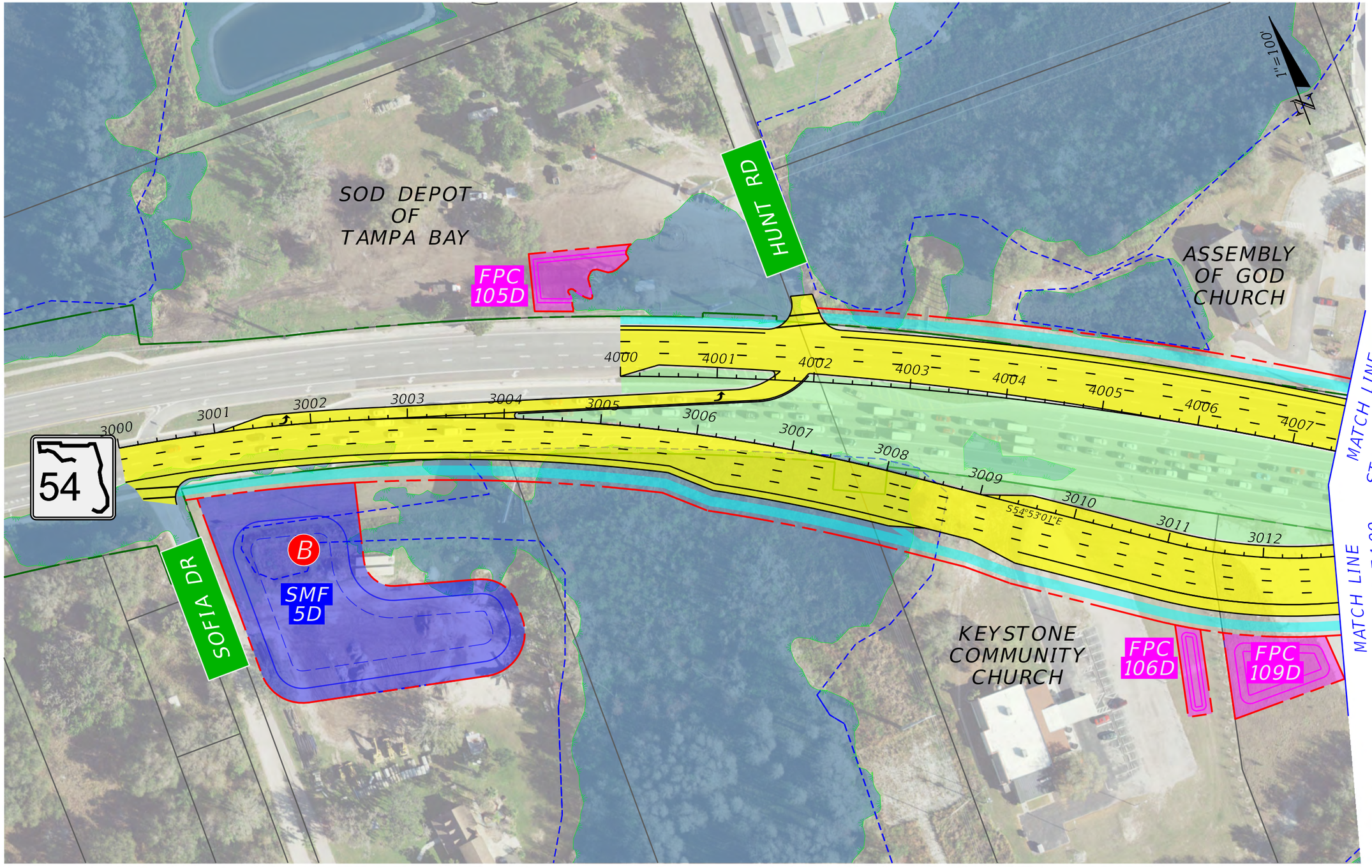
7.2.7 Highway Traffic Noise

A Noise Study Report (December 2025) identified a total of 108 receptors representing 107 properties for which there are Noise Abatement Criteria (NAC) for the use of the land that were evaluated. Design year (2045) traffic noise levels for the Build Alternative Option #2 will approach or exceed the NAC at seven properties within the project limits. The properties are comprised of 7 residences. The results of the traffic noise analysis indicated that 6 of the 7 properties would be impacted by traffic noise in the project's design year (2045) with the Preferred Alternative. Noise barriers were not considered a feasible noise abatement option at one of the seven impacted residences because they represent isolated receptors. For a noise barrier to be considered an acoustically feasible abatement measure, it must benefit at least two impacted receptor sites. Noise barriers were evaluated for the other six residences that approach or exceed the NAC. Based on the evaluation, a single noise barrier at the one Common Noise Environment (CNE), Tropicana Trailer Park, was determined to be feasible and cost effective and is recommended for further consideration during the design phase and public input.

7.2.8 Contamination

Contamination sites within the study area are identified in Section 2.4.4.1 of this report. The risk ratings for the contaminated sites are listed in **Table 2.33** and **Table 2.34**. Additional information on the contamination analysis can be found in the *CSER* update provided under a separate cover.

Appendix A: Preferred Alternative Concept Plans



LEGEND

- EXISTING PARCEL
- EXISTING R/W LINE
- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
- EXIST. CSX RAILROAD GRADE SEPARATION
- PROPOSED ROADWAY
- PROPOSED MEDIAN
- PROPOSED SIDEWALK
- PROPOSED BRIDGE
- PREFERRED POND SITE
- FLOODPLAIN
- FPC SITE
- PROPOSED TRAFFIC SIGNAL
- POTENTIAL CONTAMINATION SITE
- POTENTIAL BUSINESS/PUBLIC /RESIDENTIAL RELOCATIONS

ENGINEER OF RECORD

RICK LANGLASS, P.E.
LICENSE NUMBER: 62498
RS&H, INC.
1715 N WESTSHORE BLVD., SUITE 600
TAMPA, FL 33607

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 1

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

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SEE CONCEPT PLAN (8)

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MATCH LINE STA. 3012+74.00

MATCH LINE STA. 4021+23.00

MATCH LINE STA. 3026+80.00

MATCH LINE STA. 1056+80.00
SEE CONCEPT PLAN (7)

TIBBETTS LUMBER COMPANY

MCDONALDS

BIG LOTS

PARTY LIQUORS

SMF 2D

SUBWAY

DUKE ENERGY

7-ELEVEN

CVS

MCOR AUTOMOTIVE

FPC 110D

MUV DISPENSARY

PINCH -A- PENNY

HUNGRY HOWIES

FPC 118D

PASCO COUNTY FIRE RESCUE NO. 23

54

41

1"=100'

LEGEND

- EXISTING PARCEL
- EXISTING R/W LINE
- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
- EXIST. CSX RAILROAD
- GRADE SEPARATION
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SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 2

FAC NOTE

INSET A-A

SMF 2D

SMF 2D

INSET A-A

1"=100'

1"=100'

B

C

VILLAGE LAKE SHOPPING CENTER

JIFFY LUBE

WENDY'S

DUKE ENERGY

C

B

FPC 117D

AYR DISPENSARY

MATCH LINE STA. 4021+23.00

MATCH LINE STA. 3026+80.00

4022 4023 4024 4025 4026 4027 4028 4029 4030 4031

S75°28'19"E

3027 3028 3029 3030 3031 3032 3033 3034 3035

S85°39'54"E

Existing

54

LAKE DR

LEGEND

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- EXISTING R/W LINE
- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
- EXIST. CSX RAILROAD
- GRADE SEPARATION
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SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 3

FAC NOTE

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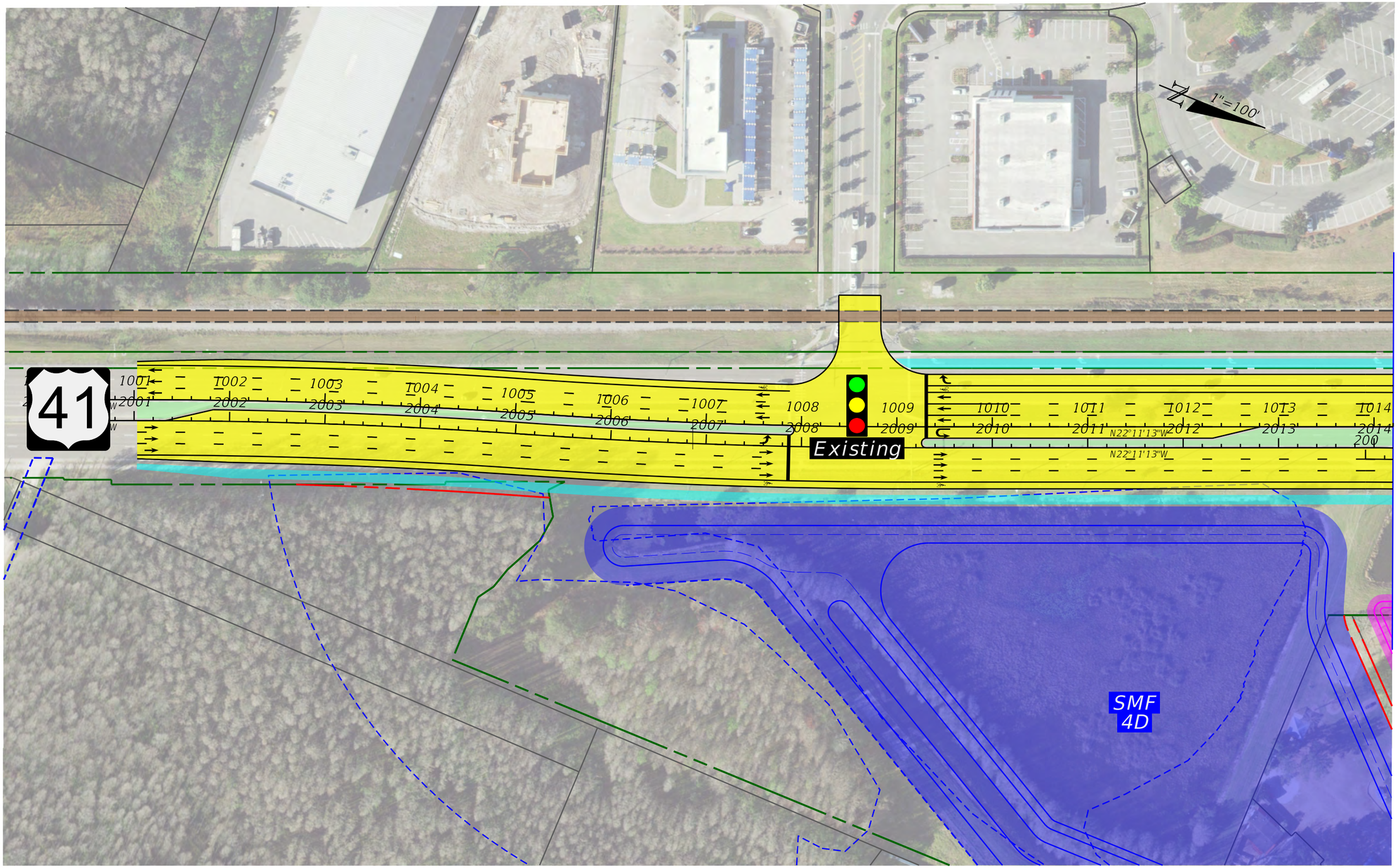

LEGEND

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- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
- EXIST. CSX RAILROAD GRADE SEPARATION
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SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

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WALMART

TIRES PLUS

VACANT

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MATCH LINE STA. 1014+20.00

MATCH LINE STA. 1028+40.00

41

N16°41'45"W

N13°18'01"W

TROPICAL VILLAGE

LAND O' LAKES SAND & GRAVEL

UP EQUIPMENT

PESTBEAR

WHOLESALE TRANSMISSION

FPC 125D

SMF 3D

LAKE FLOYD DR

B

B_2 B_3 B_5 B_8

LEGEND

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- EXISTING R/W LINE
- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
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SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 5

FAC NOTE

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SEE CONCEPT PLAN (10)

MATCH LINE STA. 1028+40.00

MATCH LINE STA. 1042+92.00

TERRACES AT PARADISE LAKES

CALIBER COLLISION

BRINSON ROAD

1"=100'

PARADISE LAKES RV PARK

41

BECK GALLERY

SMF 3D

LAKE FRANCISCO PLAZA

ST. LUKE'S DENTAL

HARBOUR VILLAGE

POTENTIAL NOISE BARRIER

TROPICANA TRAILER PARK

B4 B8 B4 B10 R3

N12°02'13"W

N28°14'14"E

N19°53'E

N00°19'53"W

N01°44'38"W

N00°50'08"W

LEGEND

- EXISTING PARCEL
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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 6

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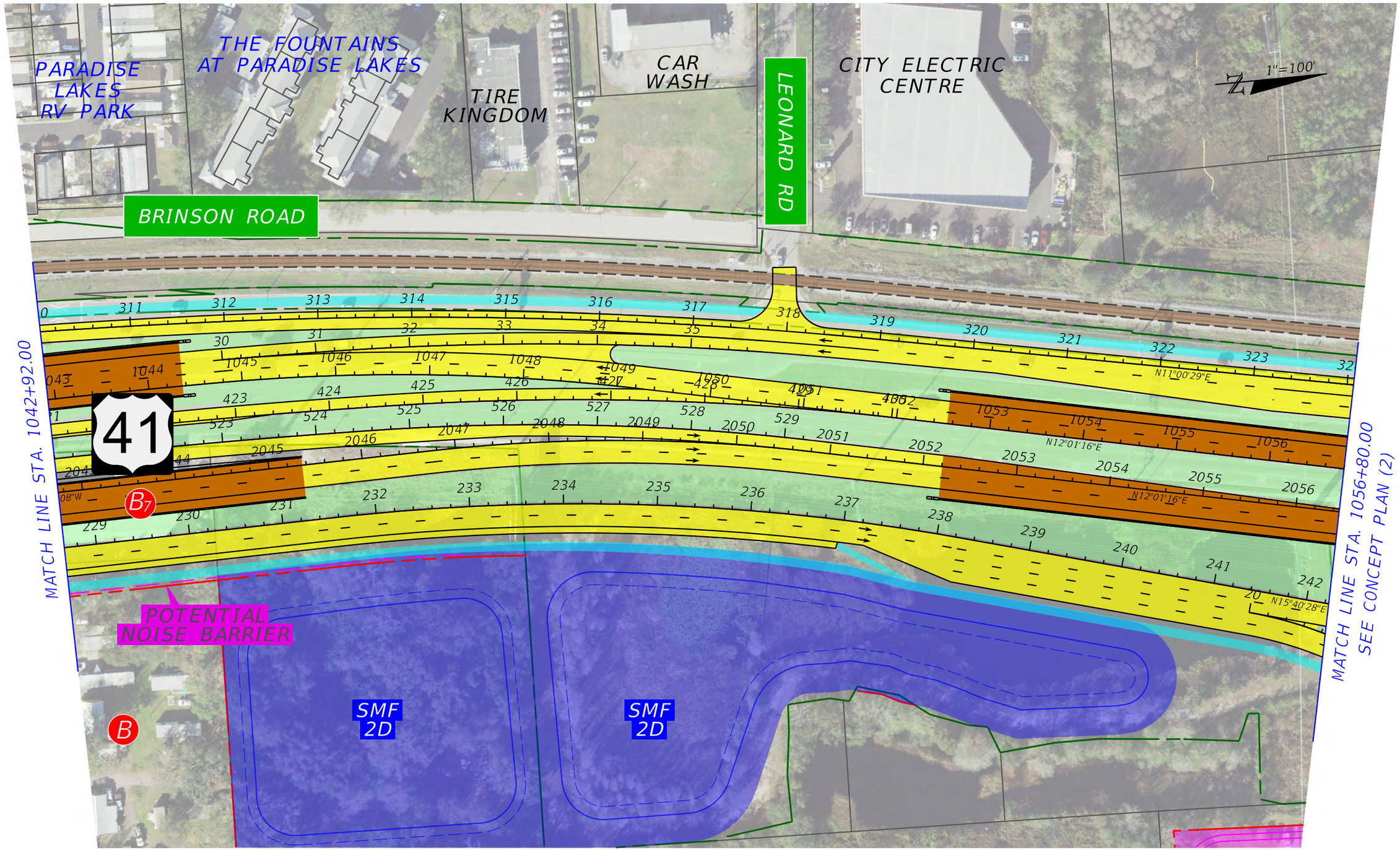

LEGEND

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- PROPOSED R/W
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SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 7

FAC NOTE

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SEE CONCEPT PLAN (2)

MATCH LINE STA. 1079+28.00

1"=100'

FPC 107D

41

MCDONALDS

SMF 2D

CARSON DR

FPC 112D

RUSSELL ADAMS REALTY

CAMROCK FOUNDATIONS

EXTRASPACE STORAGE

LOUD MOUTH'S BAR & KITCHEN

MEINEKE

N11°01'40"E

N04°50'10"E

N02°03'31"W

LEGEND

- EXISTING PARCEL
- EXISTING R/W LINE
- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
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SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 8

FAC NOTE

MATCH LINE STA. 1079+28.00

DUKE ENERGY

MORGAN RD

1"=100'

N

1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1091 1092 1093

2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2091 2092

N11°01'40"E

41

AREA 41 AUTO SALES

ACCURATE SIGN

VACANT

OUTDOOR KITCHEN COMPANY

WHIPPLES RUSTIC LODGE

COAKLEY COVE

COAKLEY LANE

MCKAIG LANE

PAOLI DRIVE

C

LEGEND

- EXISTING PARCEL
- EXISTING R/W LINE
- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
- EXIST. CSX RAILROAD GRADE SEPARATION
- PROPOSED ROADWAY
- PROPOSED MEDIAN
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- FLOODPLAIN
- FPC SITE
- PROPOSED TRAFFIC SIGNAL
- POTENTIAL CONTAMINATION SITE
- POTENTIAL BUSINESS/PUBLIC /RESIDENTIAL RELOCATIONS

ENGINEER OF RECORD

RICK LANGLASS, P.E.
LICENSE NUMBER: 62498
RS&H, INC.
1715 N WESTSHORE BLVD., SUITE 600
TAMPA, FL 33607

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 9

FAC NOTE

P:\FDOT\10042490000_US_41_SR_54_Interchange_PD_E_Study\EnvironmentalManagement\Reports\PER\Appendix B\PLANEM201_US41_06.dgn : PLANEM201_US41_06
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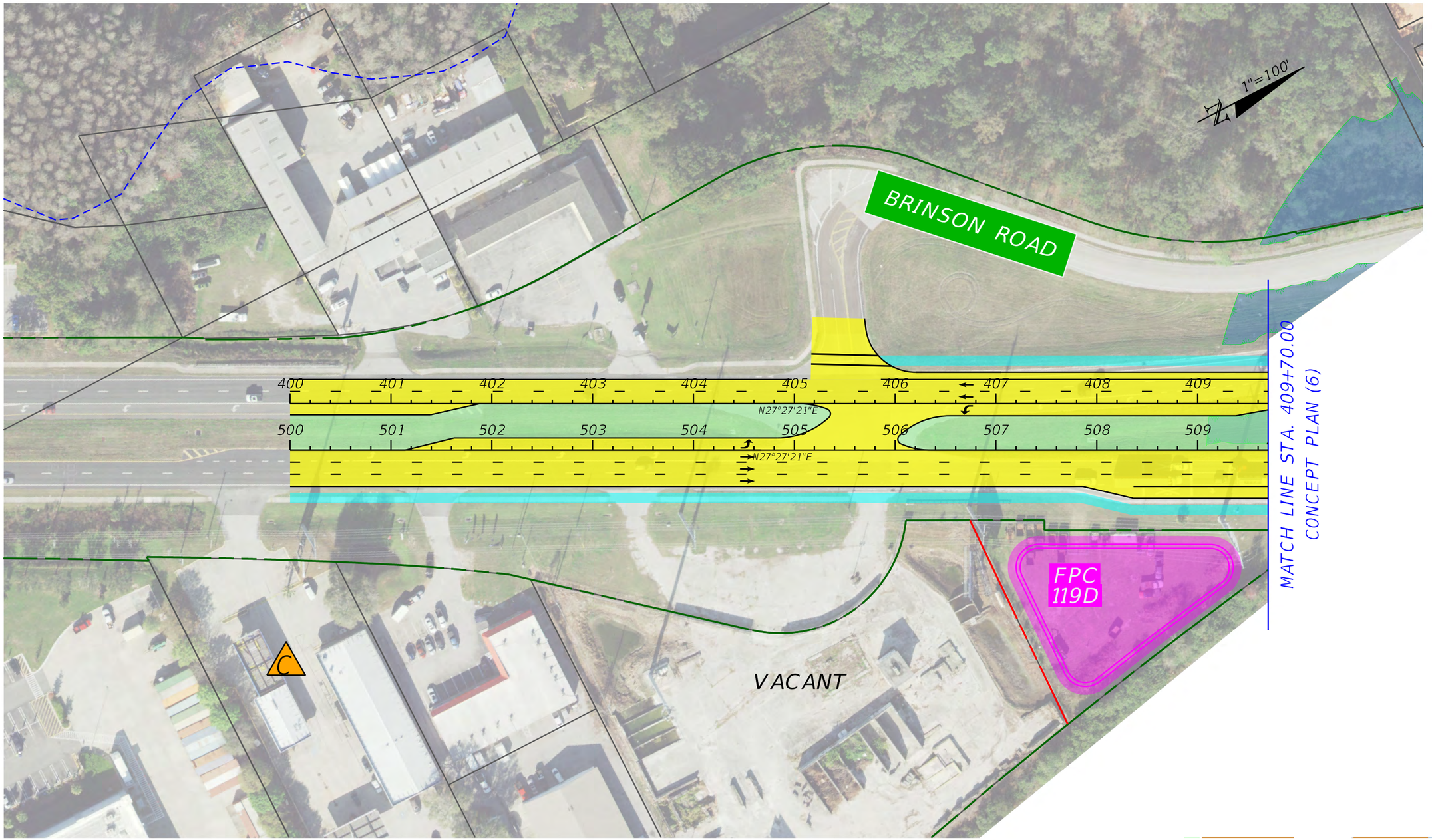

LEGEND

- EXISTING PARCEL
- EXISTING R/W LINE
- PROPOSED R/W
- EXISTING WETLAND
- OSW LINE
- EXIST. CSX RAILROAD GRADE SEPARATION
- PROPOSED ROADWAY
- PROPOSED MEDIAN
- PROPOSED SIDEWALK
- PROPOSED BRIDGE
- PREFERRED POND SITE
- FLOODPLAIN
- FPC SITE
- PROPOSED TRAFFIC SIGNAL
- POTENTIAL CONTAMINATION SITE
- POTENTIAL BUSINESS/PUBLIC /RESIDENTIAL RELOCATIONS

ENGINEER OF RECORD

RICK LANGLASS, P.E.
LICENSE NUMBER: 62498
RS&H, INC.
1715 N WESTSHORE BLVD., SUITE 600
TAMPA, FL 33607

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-1-22-10

PREFERRED ALTERNATIVE

DDI - US 41 OVER SR 54

SHEET NO. 10

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

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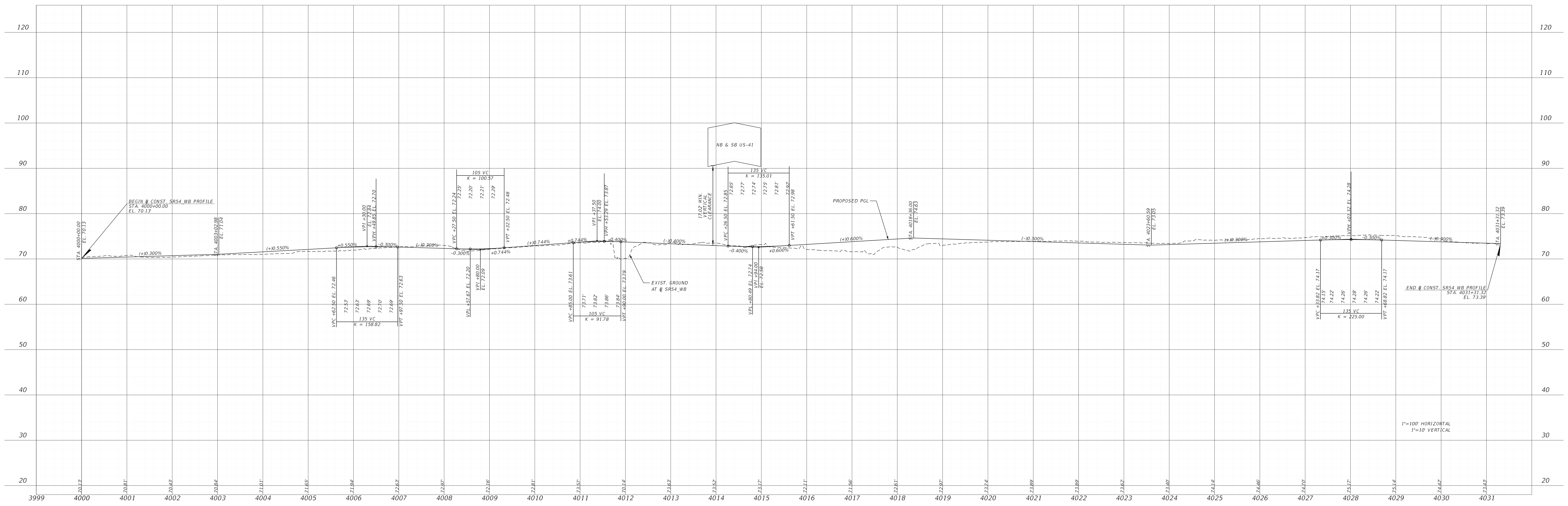

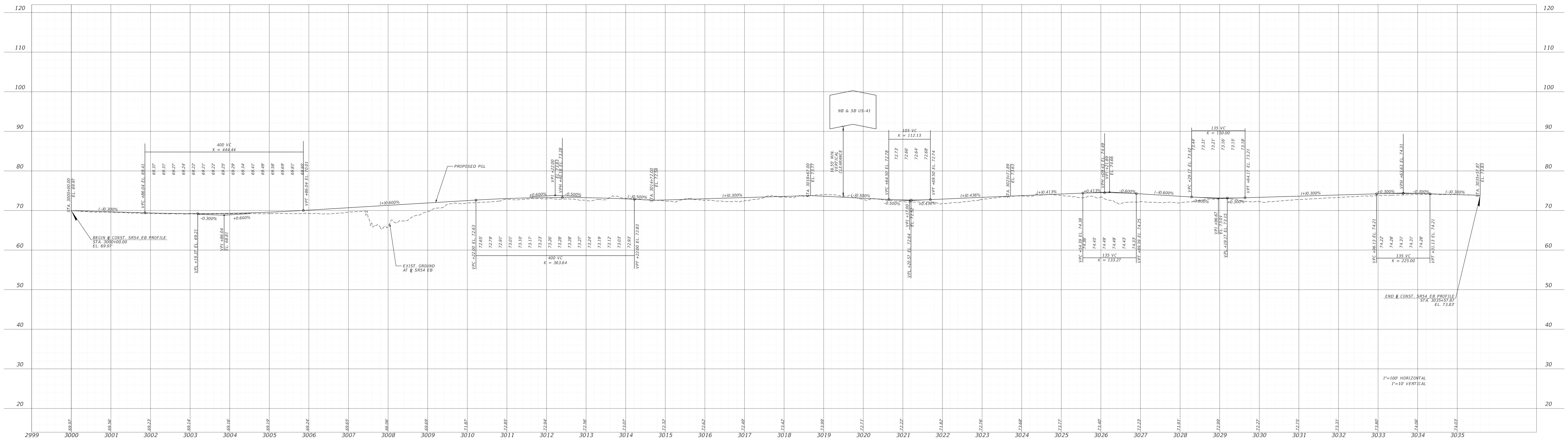

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.	ENGINEER OF RECORD RICK LANGLASS, P.E. LICENSE NUMBER: 62498 RS&H, INC. 1715 N WESTSHORE BLVD., SUITE 600 TAMPA, FL 33607	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROFILE SHEET (1) SR 54
		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	SHEET NO.
		SR 54	PASCO	419182-1-22-10	

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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.	ENGINEER OF RECORD RICK LANGLASS, P.E. LICENSE NUMBER: 62498 RS&H, INC. 1715 N WESTSHORE BLVD., SUITE 600 TAMPA, FL 33607	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD NO.: SR 54 / COUNTY: PASCO / FINANCIAL PROJECT ID: 419182-1-22-10	PROFILE SHEET (2) US-41 SB	SHEET NO.

P:\FDOT\10042490000_US_41_SR_54_Interchange_PD_E_Study\Concepts\PROFEM201.dgn : PR_US41_SB [SHEET]
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.	ENGINEER OF RECORD RICK LANGLASS, P.E. LICENSE NUMBER: 62498 RS&H, INC. 1715 N WESTSHORE BLVD., SUITE 600 TAMPA, FL 33607	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD NO.: SR 54 COUNTY: PASCO FINANCIAL PROJECT ID: 419182-1-22-10	PROFILE SHEET (3) US-41 NB	SHEET NO.

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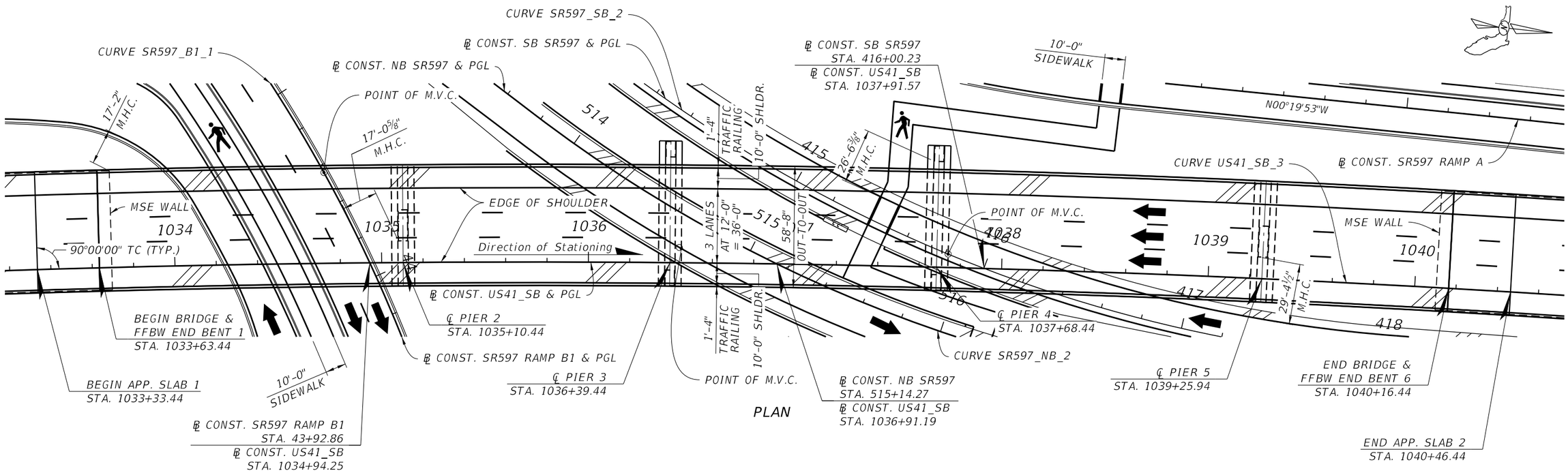
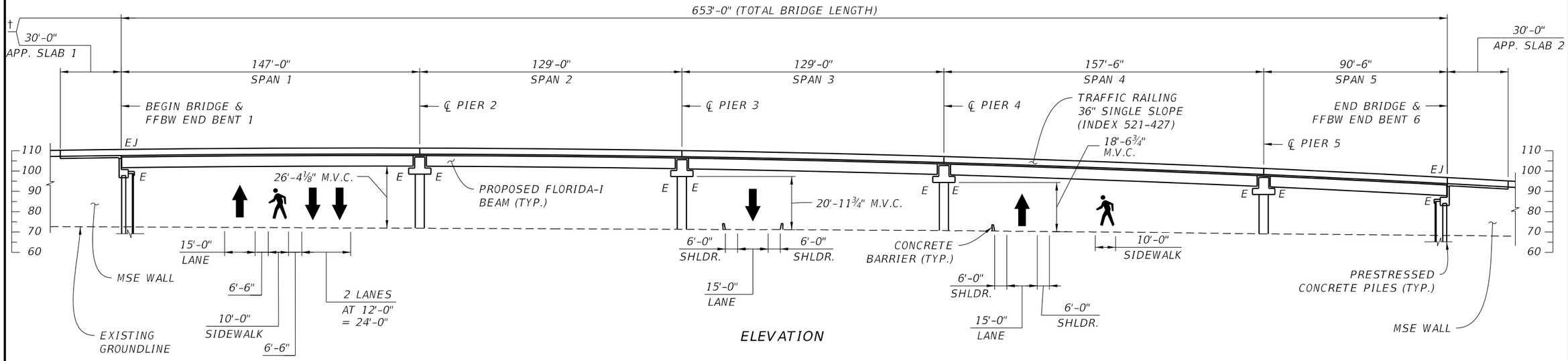
Appendix B: Proposed Bridge Plan and Elevation and Bridge Typical Sections



PLAN

† MEASURED ALONG ℄ CONST. US41_SB



ELEVATION

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
LCC	JPW	LCC	JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

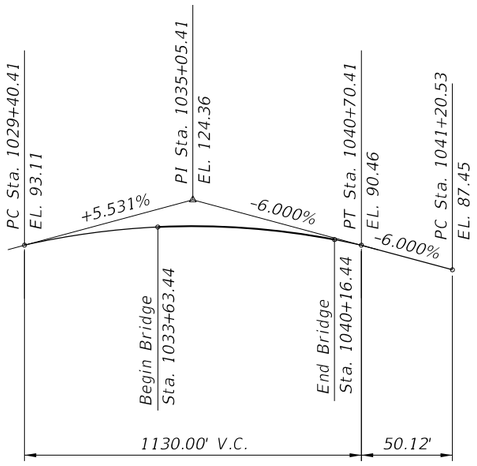
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: PLAN AND ELEVATION (1 OF 2) SB US-41 OVER SR-597

REF. DWG. NO.:

PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

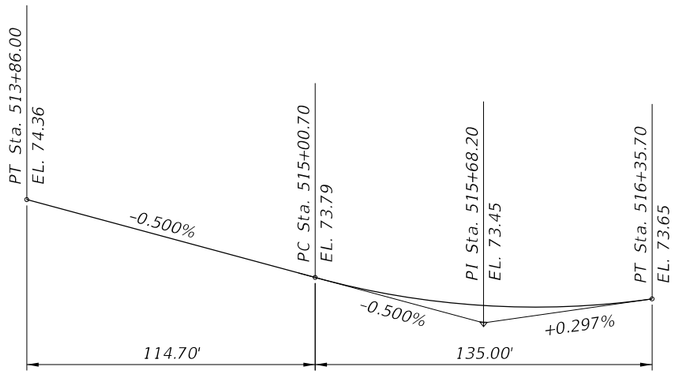
SHEET NO.: B1-1



VERTICAL CURVE DATA
(℄ CONST. US 41_SB)

HORIZONTAL CURVE DATA

(CURVE US41_SB_3)
PI Sta. = 1029+56.69
Δ = 22°45'19" (RT)
D = 00°44'11"
T = 1,565.56
L = 3,089.85
R = 7780.00
PC Sta. = 1013+91.14
PCC Sta. = 1044+80.99
e = NC
D.S. = 45 MPH



VERTICAL CURVE DATA
(℄ CONST. NB SR597)

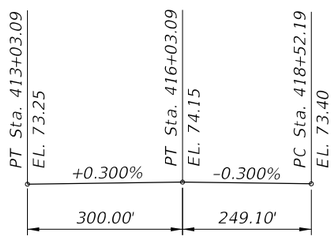
HORIZONTAL CURVE DATA

(CURVE SR597_NB_2)
PI Sta. = 515+81.75
Δ = 33°01'35" (LT)
D = 08°15'21"
T = 205.75
L = 400.04
R = 694.00
PC Sta. = 513+76.01
PT Sta. = 517+76.04
e = 0.050
D.S. = 45 MPH

VERTICAL CURVE DATA
(℄ CONST. SR597 RAMP B1)

HORIZONTAL CURVE DATA

(CURVE SR597_B1_1)
PI Sta. = 42+66.36
Δ = 40°51'50" (RT)
D = 8°00'48"
T = 266.36
L = 509.94
R = 715.00
PC Sta. = 40+00.00
PT Sta. = 45+09.94
e = RC
D.S. = 40 MPH



VERTICAL CURVE DATA
(℄ CONST. SB SR597)

HORIZONTAL CURVE DATA

(CURVE SR597_SB_2)
PI Sta. = 416+02.36
Δ = 33°47'02" (LT)
D = 08°06'56"
T = 214.39
L = 416.29
R = 706.00
PC Sta. = 413+87.97
PT Sta. = 418+04.26
e = 0.047
D.S. = 45 MPH

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
LCC	JPW	LCC	JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

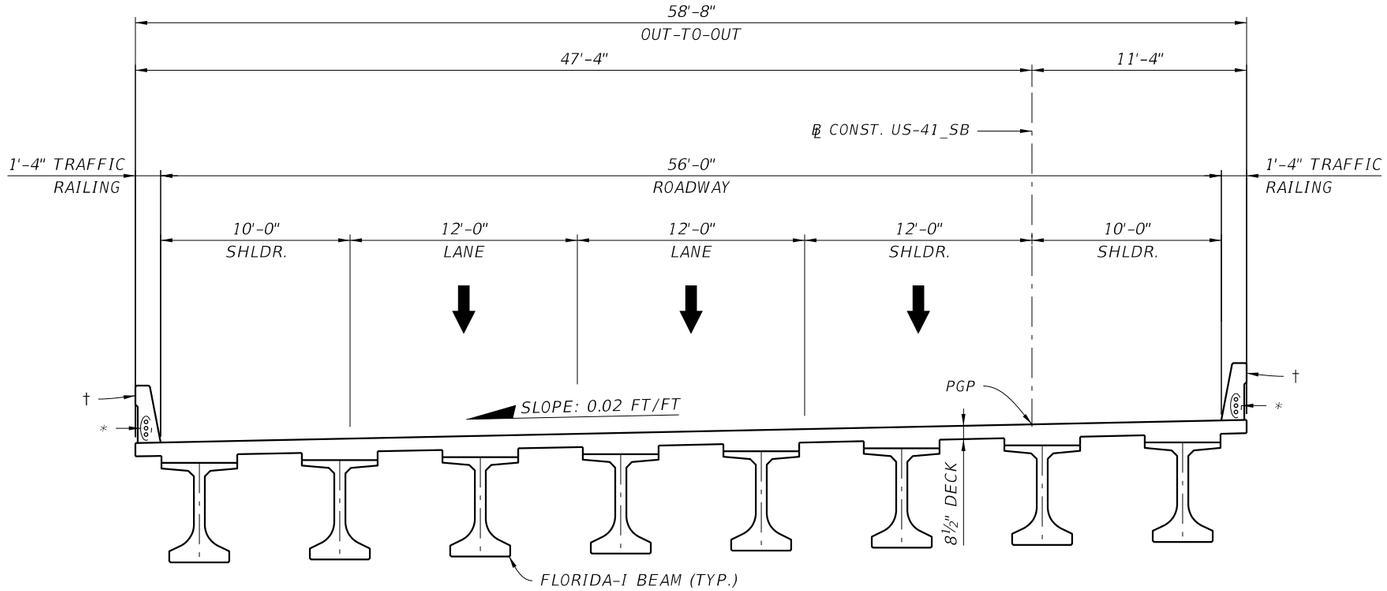
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: PLAN AND ELEVATION (2 OF 2)
SB US-41 OVER SR-597

REF. DWG. NO.:

PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

SHEET NO.: B1-2



TYPICAL SECTION

LEGEND:

† TRAFFIC RAILING (36" SINGLE-SLOPE) (INDEX 521-427)

* 3 - 2" ∅ PVC CONDUITS (INDEX 630-010)

PROPOSED LANE

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
LCC	JPW	LCC	JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

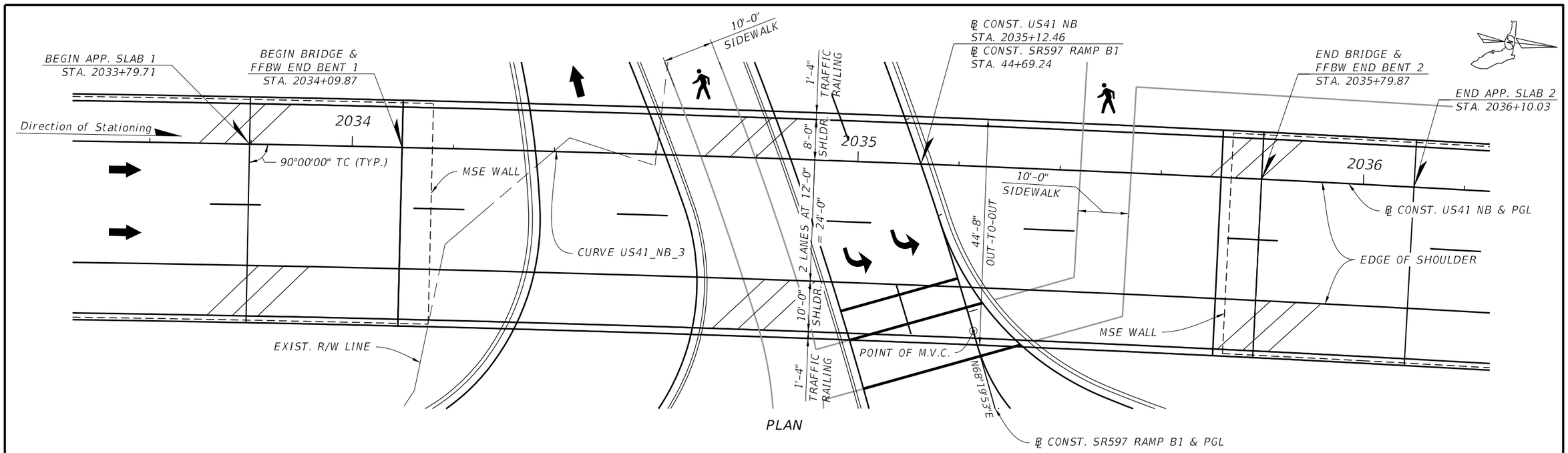
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: TYPICAL SECTION
SB US-41 OVER SR-597

REF. DWG. NO.:

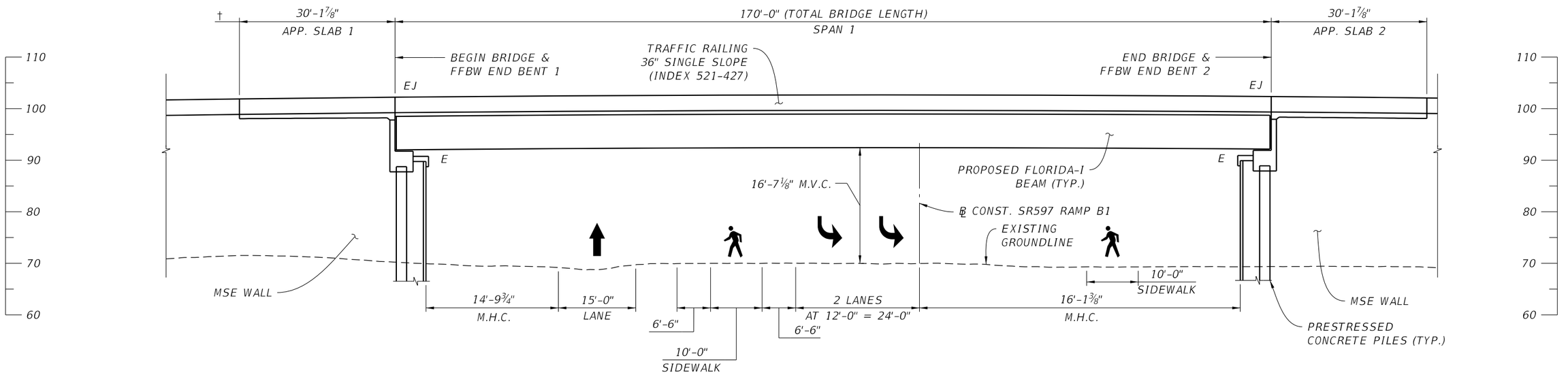
PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

SHEET NO.: B1-3



PLAN

† MEASURED ALONG ℄ CONST. US41 NB



ELEVATION

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:
CHECKED BY:
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

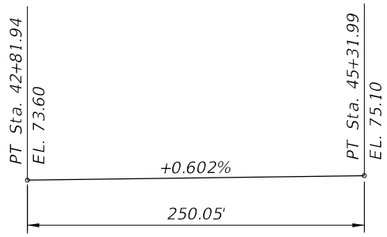
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE:
PLAN AND ELEVATION (1 OF 2)
NB US-41 OVER SR-597

REF. DWG. NO.

PROJECT NAME:
U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

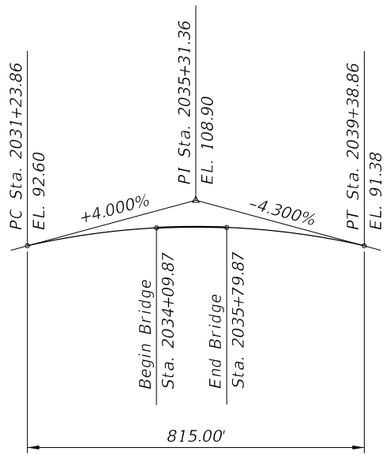
SHEET NO.
B2-1



VERTICAL CURVE DATA
(℄ CONST. SR597 RAMP B1)

HORIZONTAL CURVE DATA

(CURVE SR597_B1_1)
PI Sta. = 42+66.36
Δ = 40°51'50" (RT)
D = 8°00'48"
T = 266.36
L = 509.94
R = 715.00
PC Sta. = 40+00.00
PT Sta. = 45+09.94
e = RC
D.S. = 40 MPH



VERTICAL CURVE DATA
(℄ CONST. US41_NB)

HORIZONTAL CURVE DATA

(CURVE US41_NB_3)
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Δ = 21°21'05" (RT)
D = 00°51'51"
T = 1249.84
L = 2470.68
R = 6630.00
PC Sta. = 2013+91.14
PT Sta. = 2038+61.81
e = NC
D.S. = 45 MPH

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY: LCC
CHECKED BY: JPW
DESIGNED BY: LCC
CHECKED BY: JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

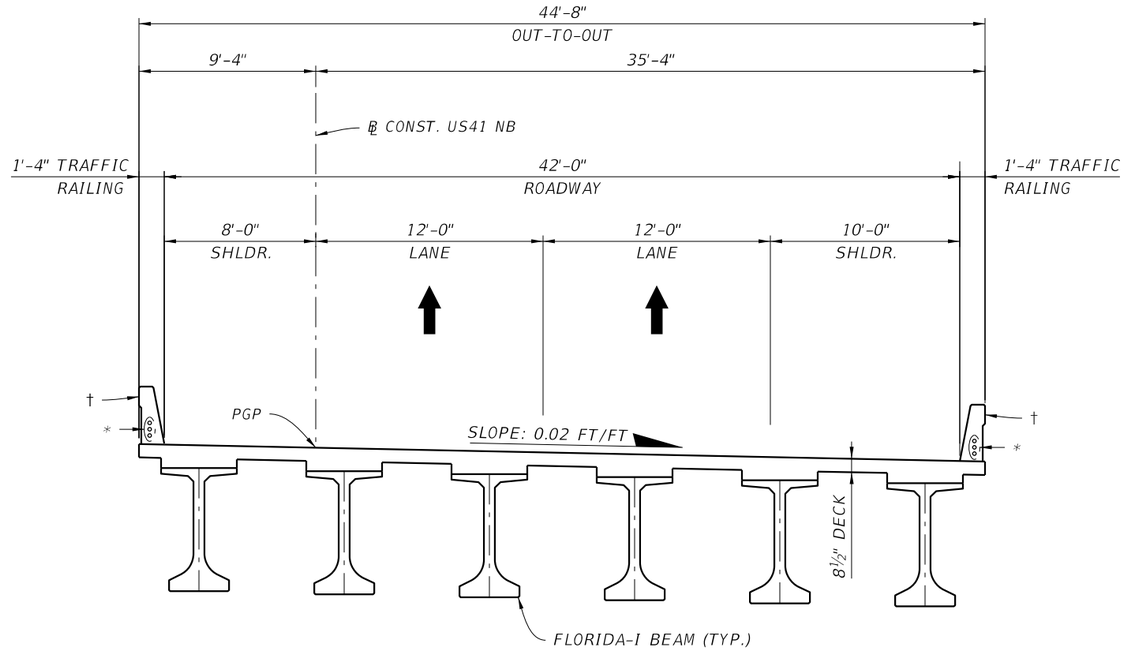
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: PLAN AND ELEVATION (2 OF 2)
NB US-41 OVER SR-597

REF. DWG. NO.:

PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

SHEET NO.: B2-2



TYPICAL SECTION

LEGEND:

† TRAFFIC RAILING (36" SINGLE-SLOPE) (INDEX 521-427)

* 3 - 2" ∅ PVC CONDUITS (INDEX 630-010)

PROPOSED LANE

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:	LCC
CHECKED BY:	JPW
DESIGNED BY:	LCC
CHECKED BY:	JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

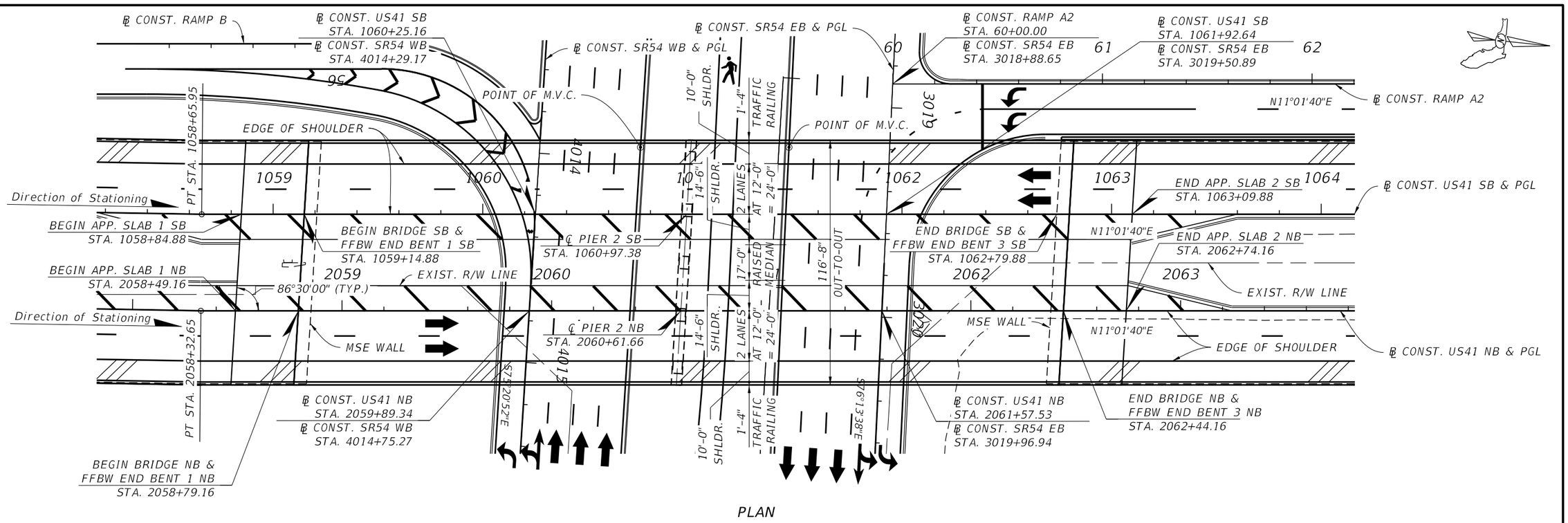
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: TYPICAL SECTION
NB US-41 OVER SR-597

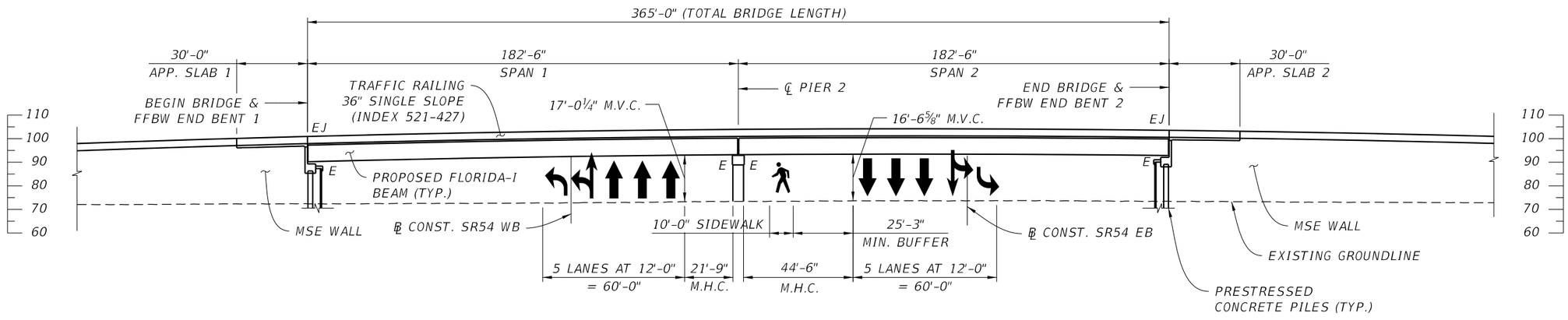
REF. DWG. NO.:

PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

SHEET NO.: B2-3



PLAN



ELEVATION

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
LCC	JPW	LCC	JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

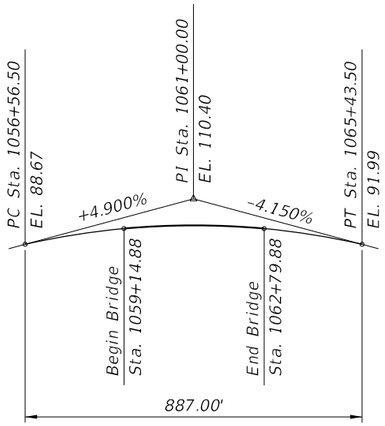
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: PLAN AND ELEVATION (1 OF 2)
US-41 OVER SR-54

REF. DWG. NO.:

PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

SHEET NO.: B3-1



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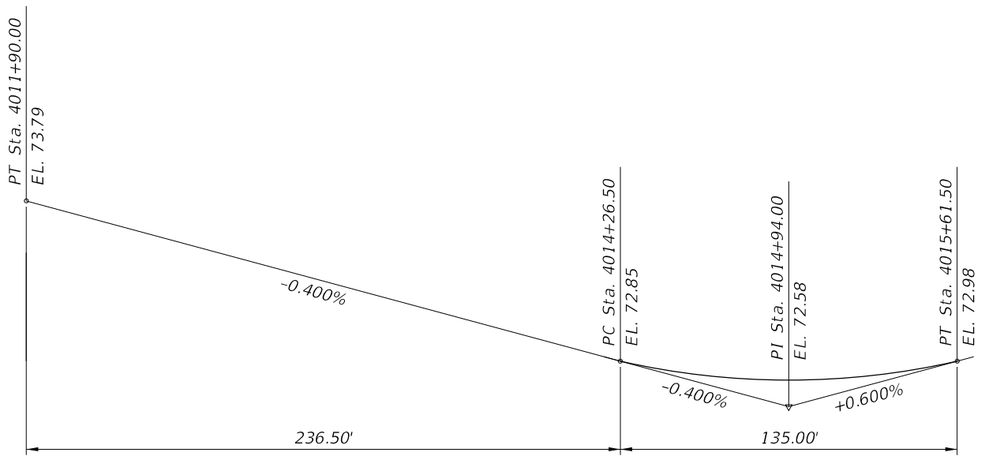
(℄ CONST. US 41_SB)



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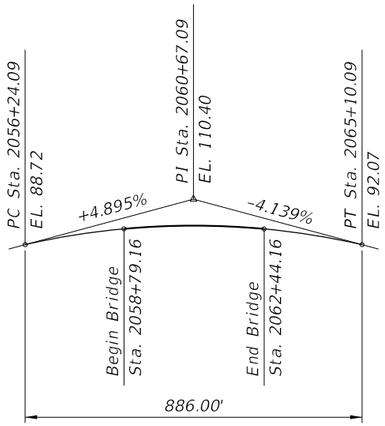
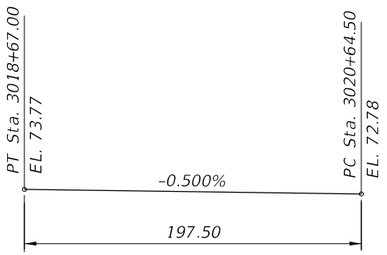
(℄ CONST. SR54 WB)



VERTICAL CURVE DATA
(℄ CONST. US 41_NB)



VERTICAL CURVE DATA
(℄ CONST. SR54 EB)

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:	LCC
CHECKED BY:	JPW
DESIGNED BY:	LCC
CHECKED BY:	JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

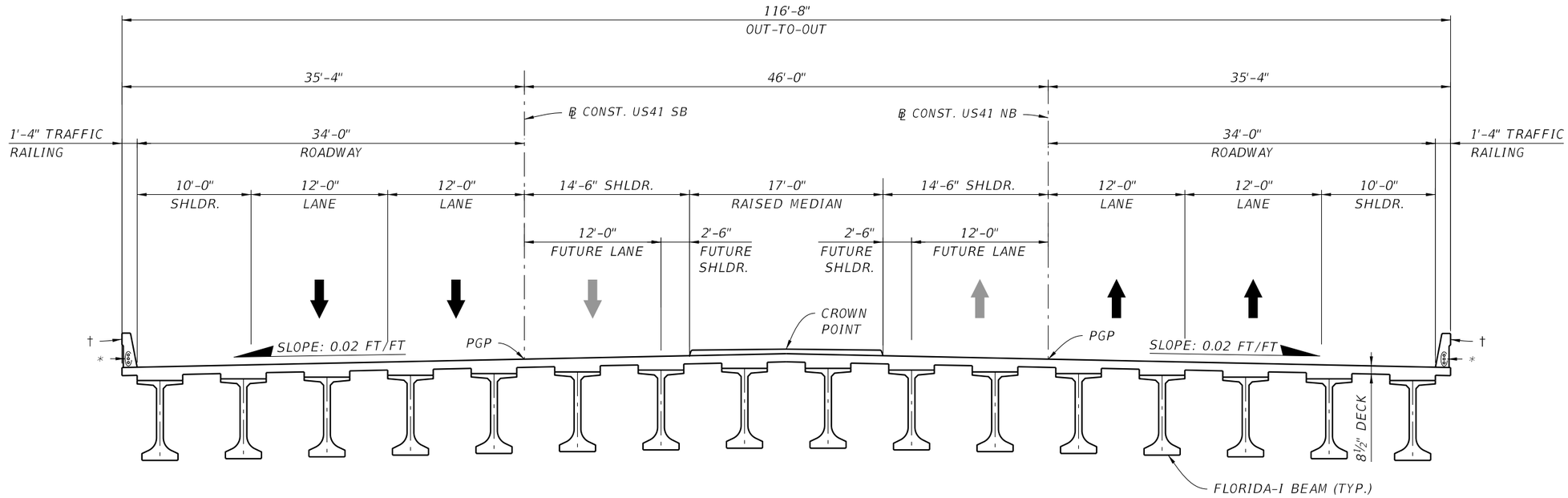
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: PLAN AND ELEVATION (2 OF 2)
US-41 OVER SR-54

REF. DWG. NO.:

PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

SHEET NO.: B3-2



TYPICAL SECTION

LEGEND:

† TRAFFIC RAILING (36" SINGLE-SLOPE) (INDEX 521-427)

* 3 - 2" ∅ PVC CONDUITS (INDEX 630-010)

PROPOSED LANE

FUTURE LANE

Bridge No. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JUSTIN P. WELLBORN, P.E.
P.E. LICENSE NUMBER 72951
RS&H, INC.
1715 N. WESTSHORE BOULEVARD, SUITE 600
TAMPA, FLORIDA 33607-3999

DRAWN BY:	LCC
CHECKED BY:	JPW
DESIGNED BY:	LCC
CHECKED BY:	JPW

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 54	PASCO	419182-2-32-01

SHEET TITLE: TYPICAL SECTION US-41 OVER SR-54

REF. DWG. NO.:

PROJECT NAME: U.S. 41 (S.R. 45) AT S.R. 54 PD&E STUDY

SHEET NO.: B3-3

Appendix C: Preferred Alternative Long Range Estimates (LRE)

Preferred Alternative - Diverging Diamond Interchange (DDI) Long Range Estimate

Date: 10/13/2025 1:47:05 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 419182-1-22-01 **Letting Date:** 01/2099

Description: SR45 (US41) @ SR54 FROM W OF WILSON RD TO EAST OF OSPREY LN

District: 07 **County:** 14 PASCO **Market Area:** 07 **Units:** English
Contract Class: 4 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.970 MI

Project Manager: PRD-CAF-RSH

Add 15% for Project unknowns.
Project Unknowns = $31,616,003.60

Total Project = $242,539,360.90

Version 12 Project Grand Total **$210,923,357.30**
Description: DDI - 10/2025

Sequence: 1 NUU - New Construction, Undivided, Urban **Net Length:** 1.395 MI 7,367 LF

Description: NB US 41/CR 597 2 LANE CURBED RAMP SEGMENTS WITH BIKE LANE & SIDEWALK

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	24.00 / 48.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.528
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	107.10
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.331
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	107.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.109
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.48
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	4
Distance	0.100
Top of Structural Course For Begin Section	105.00

Top of Structural Course For End Section	107.35
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Alignment Number	5
Distance	0.108
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	106.85
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Alignment Number	6
Distance	0.228
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	106.34
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	12.17	AC	$111,881.58	$1,361,598.83
120-6	EMBANKMENT	64,637.73	CY	$54.44	$3,518,878.02
	Earthwork Component Total				$4,880,476.85

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	0.00 / 31.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	27,487.78	SY	$38.89	$1,068,999.76
285-709	OPTIONAL BASE,BASE GROUP 09	25,375.86	SY	$75.63	$1,919,176.29
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	3,489.18	TN	$156.81	$547,138.32
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	2,093.51	TN	$180.00	$376,831.80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,110.51	SY	$38.89	$43,187.73
	Comment: Ramp Aux Lanes near DDI entrance				

285-709	OPTIONAL BASE,BASE GROUP 09	1,110.51	SY	$75.63	$83,987.87
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,110.51	TN	$156.81	$174,139.07
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,110.51	TN	$180.00	$199,891.80
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	313.00	LF	$4.09	$1,280.17
	Comment: Crosswalk				
711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	109.00	LF	$7.24	$789.16
	Comment: Intersection Stop Bar				

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	188.00	EA	$4.86	$913.68
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	1.40	GM	$7,705.93	$10,788.30
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	1.40	GM	$2,006.82	$2,809.55
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	1.40	GM	$7,286.57	$10,201.20
	Roadway Component Total				$4,440,134.70

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	14.25 / 16.75
Total Outside Shoulder Perf. Turf Width L/R	12.00 / 4.50
Sidewalk Width L/R	0.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	7,367.18	LF	$65.85	$485,128.80
520-1-10	CONCRETE CURB & GUTTER, TYPE F	7,367.18	LF	$64.61	$475,993.50
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	8,185.76	SY	$101.08	$827,416.62
570-1-1	PERFORMANCE TURF	13,506.50	SY	$4.87	$65,776.66

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	14,245.28	SY	$4.87	$69,374.51
	Comment: Traffic Islands and additional turf				

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	14,734.37	LF	$3.36	$49,507.48
104-11	FLOATING TURBIDITY BARRIER	348.82	LF	$14.60	$5,092.77
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	348.82	LF	$5.87	$2,047.57
104-15	SOIL TRACKING PREVENTION DEVICE	2.00	EA	$4,635.36	$9,270.72
104-18	INLET PROTECTION SYSTEM	72.00	EA	$161.73	$11,644.56
107-1	LITTER REMOVAL	16.91	AC	$59.84	$1,011.89
107-2	MOWING	16.91	AC	$98.05	$1,658.03
	Shoulder Component Total				$2,003,923.11

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	51.00	EA	$15,856.76	$808,694.76
425-1-451	INLETS, CURB, TYPE J-5, <10'	14.00	EA	$27,416.73	$383,834.22
425-1-521	INLETS, DT BOT, TYPE C, <10'	7.00	EA	$12,458.23	$87,207.61
425-2-41	MANHOLES, P-7, <10'	7.00	EA	$15,287.00	$107,009.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	3,248.00	LF	$163.74	$531,827.52
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	288.00	LF	$706.48	$203,466.24
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	6,984.00	LF	$834.25	$5,826,402.00
570-1-1	PERFORMANCE TURF	424.17	SY	$4.87	$2,065.71
	Drainage Component Total				$7,950,507.06

INTERSECTIONS COMPONENT

Intersection 1

Description	Value
Mainline No. of Left Turn Lanes	0
Mainline No. of Right Turn Lanes	0
Mainline Design Speed	45
Cross Street Thru Lanes	2
Cross Street No. of Left Turn Lanes	0
Cross Street No. of Right Turn Lanes	0
Cross Street Design Speed	45
T-Intersection?	Y
Multiplier	1
Description	NB US 41 Intersection with NB SR 597

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.42	AC	$111,881.58	$46,990.26
120-1	REGULAR EXCAVATION	395.65	CY	$56.45	$22,334.44
160-4	TYPE B STABILIZATION	991.88	SY	$38.89	$38,574.21
285-709	OPTIONAL BASE,BASE GROUP 09	991.88	SY	$75.63	$75,015.88

334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	136.38	TN	$156.81	$21,385.75
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	81.83	TN	$180.00	$14,729.40
520-1-10	CONCRETE CURB & GUTTER, TYPE F	388.00	LF	$64.61	$25,068.68
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	215.56	SY	$101.08	$21,788.80
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	86.94	SY	$137.59	$11,962.07
570-1-1	PERFORMANCE TURF	215.56	SY	$4.87	$1,049.78
	Intersections Component Total				$278,899.27

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	28.00	EA	$607.44	$17,008.32
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	3.00	EA	$2,024.78	$6,074.34
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	3.00	EA	$9,172.23	$27,516.69
	Signing Component Total				$50,599.35

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	2 Lane Strain Pole
Multiplier	2
Description	Signal at US 41 and SR 597 Intersection

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,600.00	LF	$24.33	$38,928.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$40.92	$12,276.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	2.00	PI	$12,547.59	$25,095.18
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	2.00	PI	$11,342.08	$22,684.16
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	20.00	EA	$1,687.94	$33,758.80
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	2.00	AS	$5,424.66	$10,849.32
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$10.29	$617.40
641-2-16	PREST CNC POLE,F&I,TYP P-VI	8.00	EA	$14,395.74	$115,165.92
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	16.00	AS	$2,114.44	$33,831.04
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	16.00	AS	$1,081.17	$17,298.72
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	16.00	EA	$649.33	$10,389.28
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	16.00	AS	$2,099.95	$33,599.20

665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	16.00	EA	$385.21	$6,163.36
670-5-166	TRAF CNTL ASS,F&I,NEMA,STD LOCK,RISER,1P	2.00	AS	$35,273.95	$70,547.90
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	8.00	EA	$302.94	$2,423.52
	Signalizations Component Total				$433,627.80

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	7,367.18	LF	$24.33	$179,243.49
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	961.36	LF	$40.92	$39,338.85
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	30.00	EA	$1,687.94	$50,638.20
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	24,985.64	LF	$3.35	$83,701.89
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	30.00	EA	$9,967.70	$299,031.00
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	30.00	EA	$942.35	$28,270.50
	Subcomponent Total				$680,223.93
	Lighting Component Total				$680,223.93

Sequence 1 Total $20,718,392.07

Sequence: 2 NUU - New Construction, Undivided, Urban

Net Length: 0.382 MI
2,019 LF

Description: NB US 41 2 LANE CURBED SEGMENTS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	24.00 / 48.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.253
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	111.24
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.130
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.68
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	3.33	AC	$111,881.58	$372,565.66
120-6	EMBANKMENT	16,983.40	CY	$54.44	$924,576.30
	Earthwork Component Total				$1,297,141.96

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	5,962.99	SY	$38.89	$231,900.68
285-709	OPTIONAL BASE,BASE GROUP 09	5,384.19	SY	$75.63	$407,206.29
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	740.33	TN	$156.81	$116,091.15
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	444.20	TN	$180.00	$79,956.00

Pavement Marking Subcomponent

Description	Value

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	52.00	EA	$4.86	$252.72
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.76	GM	$7,705.93	$5,856.51
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.38	GM	$2,006.82	$762.59
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.76	GM	$7,286.57	$5,537.79
	Roadway Component Total				$847,563.73

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.25 / 12.25
Total Outside Shoulder Perf. Turf Width L/R	10.00 / 10.00
Sidewalk Width L/R	0.00 / 0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,019.07	LF	$65.85	$132,955.76
520-1-10	CONCRETE CURB & GUTTER, TYPE F	2,019.07	LF	$64.61	$130,452.11
570-1-1	PERFORMANCE TURF	4,486.83	SY	$4.87	$21,850.86

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,038.14	LF	$3.36	$13,568.15
104-11	FLOATING TURBIDITY BARRIER	95.60	LF	$14.60	$1,395.76
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	95.60	LF	$5.87	$561.17
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	20.00	EA	$161.73	$3,234.60
107-1	LITTER REMOVAL	4.63	AC	$59.84	$277.06
107-2	MOWING	4.63	AC	$98.05	$453.97
	Shoulder Component Total				$309,384.80

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	14.00	EA	$15,856.76	$221,994.64
425-1-451	INLETS, CURB, TYPE J-5, <10'	4.00	EA	$27,416.73	$109,666.92

425-1-521	INLETS, DT BOT, TYPE C, <10'	2.00	EA	$12,458.23	$24,916.46
425-2-41	MANHOLES, P-7, <10'	2.00	EA	$15,287.00	$30,574.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	888.00	LF	$163.74	$145,401.12
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	80.00	LF	$706.48	$56,518.40
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,912.00	LF	$834.25	$1,595,086.00
570-1-1	PERFORMANCE TURF	116.25	SY	$4.87	$566.14
	Drainage Component Total				$2,184,723.68

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	8.00	EA	$607.44	$4,859.52
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$2,024.78	$2,024.78
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$9,172.23	$9,172.23
	Signing Component Total				$16,056.53

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	2,019.07	LF	$24.33	$49,123.97
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	263.47	LF	$40.92	$10,781.19
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	9.00	EA	$1,687.94	$15,191.46
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	6,847.64	LF	$3.35	$22,939.59
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	9.00	EA	$9,967.70	$89,709.30
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	9.00	EA	$942.35	$8,481.15
	Subcomponent Total				$196,226.67
	Lighting Component Total				$196,226.66

Sequence 2 Total $4,851,097.36

Sequence: 3 NUR - New Construction, Undivided, Rural **Net Length:** 0.340 MI 1,797 LF

Description: NB US 41 2 LANE FLUSH SHLDR SEGMENT WITH MSE, SR 597 OVERPASS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	24.00 / 46.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.143
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	124.73
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	5 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	5.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.025
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.10
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	5 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	5.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.172
Top of Structural Course For Begin Section	129.67
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	5 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	5.00 % / 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	2.88 AC	$111,881.58	$322,218.95
120-6	EMBANKMENT	98,244.03 CY	$54.44	$5,348,404.99
	Earthwork Component Total			$5,670,623.94

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount

160-4	TYPE B STABILIZATION	8,384.99	SY	$38.89	$326,092.26
285-709	OPTIONAL BASE,BASE GROUP 09	4,857.31	SY	$75.63	$367,358.36
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	658.82	TN	$156.81	$103,309.56
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	395.29	TN	$180.00	$71,152.20

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	46.00	EA	$4.86	$223.56
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.34	GM	$7,705.93	$2,620.02
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.34	GM	$2,006.82	$682.32
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.34	GM	$7,286.57	$2,477.43
	Roadway Component Total				$873,915.71

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.00 / 10.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	8.00 / 10.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	3,725.33	SY	$40.06	$149,236.72
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	197.65	TN	$156.81	$30,993.50
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	296.47	TN	$180.00	$53,364.60

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
521-8-7	CONC BARRIER, W/JUNCT SL, 36 SS	3,258.00	LF	$515.42	$1,679,238.36
	Comment: MSE Wall Shoulder Barrier				
570-1-1	PERFORMANCE TURF	3,620.00	SY	$4.87	$17,629.40
	Comment: Maintenance Area at the back of Retaining Wall				

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,671.64	LF	$3.36	$15,696.71
104-11	FLOATING TURBIDITY BARRIER	85.08	LF	$14.60	$1,242.17
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	85.08	LF	$5.87	$499.42
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
107-1	LITTER REMOVAL	4.12	AC	$59.84	$246.54
107-2	MOWING	4.12	AC	$98.05	$403.97
	Shoulder Component Total				$1,953,186.75

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	280.00	LF	$435.14	$121,839.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	64.00	LF	$706.48	$45,214.72
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	14.00	EA	$3,554.05	$49,756.70
570-1-1	PERFORMANCE TURF	239.57	SY	$4.87	$1,166.71
	Drainage Component Total				$217,977.33

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	1.00	EA	$607.44	$607.44
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	7.00	EA	$2,024.78	$14,173.46
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	1.00	EA	$7,626.59	$7,626.59
	Signing Component Total				$22,407.49

BRIDGES COMPONENT

Bridge 1

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	161.00
Width (LF)	44.66
Type	Low Level
Cost Factor	1.00
Structure No.	
Removal of Existing Structures area	0.00
Default Cost per SF	$112.00
Factored Cost per SF	$112.00
Final Cost per SF	**$142.98**

Basic Bridge Cost **$805,309.12**

Description NB US 41 BRIDGE OVER SR 597 RAMP

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II, APPROACH SLABS	99.24	CY	$1,968.25	$195,329.13
415-1-9	REINF STEEL- APPROACH SLABS	17,367.00	LB	$1.58	$27,439.86
	Bridge 1 Total				$1,028,078.11
	Bridges Component Total				$1,028,078.11

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	667.00
Begin height	5.00
End Height	28.31
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RET WALL SYSTEM, PERM, EX BARRIER	22,217.76	SF	$84.38	$1,874,734.59

Retaining Wall 2

Description	Value
Length	962.00
Begin height	29.38
End Height	5.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RET WALL SYSTEM, PERM, EX BARRIER	33,073.56	SF	$84.38	$2,790,746.99
	Retaining Walls Component Total				$4,665,481.58

Sequence 3 Total $14,431,670.91

Sequence: 4 NDU - New Construction, Divided, Urban

Net Length: 0.773 MI
4,079 LF

Description: US 41 6 LANE CURBED MEDIAN DIVIDED

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	85.00 / 85.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.772
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	106.79
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.346
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	106.41
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	15.91	AC	$111,881.58	$1,780,035.94
120-6	EMBANKMENT	159,721.12	CY	$54.44	$8,695,217.77
	Earthwork Component Total				$10,475,253.71

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	43.00 / 43.00
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	43,652.22	SY	$38.89	$1,697,634.84
285-709	OPTIONAL BASE,BASE GROUP 09	38,975.20	SY	$75.63	$2,947,694.38
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	6,430.91	TN	$156.81	$1,008,431.00
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	3,215.45	TN	$180.00	$578,781.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	2,913.00	SY	$38.89	$113,286.57
	Comment: AUX LANES				
285-709	OPTIONAL BASE,BASE GROUP 09	2,913.00	SY	$75.63	$220,310.19
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	480.65	TN	$156.81	$75,370.73
337-7-81	ASPH CONC FC,TRAFFIC B,FC-12.5,PG 76-22	240.32	TN	$186.42	$44,800.45
711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	115.00	LF	$7.24	$832.60
	Comment: INTERSECTION STOP BAR				
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.23	GM	$7,705.93	$1,772.36
	Comment: AUX LANES STRIPPING				

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	521.00	EA	$4.86	$2,532.06
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.77	GM	$7,705.93	$5,933.57
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	3.09	GM	$2,006.82	$6,201.07
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.77	GM	$7,286.57	$5,610.66
	Roadway Component Total				$6,709,191.48

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	20.75 / 20.75
Total Outside Shoulder Perf. Turf Width L/R	8.50 / 8.50
Sidewalk Width L/R	10.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	4,078.80	LF	$64.61	$263,531.27
520-1-10	CONCRETE CURB & GUTTER, TYPE F	4,078.80	LF	$64.61	$263,531.27
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	9,064.00	SY	$101.08	$916,189.12
570-1-1	PERFORMANCE TURF	7,704.40	SY	$4.87	$37,520.43

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	8,157.60	LF	$3.36	$27,409.54
104-11	FLOATING TURBIDITY BARRIER	193.12	LF	$14.60	$2,819.55
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	193.12	LF	$5.87	$1,133.61
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	40.00	EA	$161.73	$6,469.20
107-1	LITTER REMOVAL	19.66	AC	$59.84	$1,176.45
107-2	MOWING	19.66	AC	$98.05	$1,927.66
	Shoulder Component Total				$1,526,343.46

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	18.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	8,157.60	LF	$65.85	$537,177.96
570-1-1	PERFORMANCE TURF	8,157.60	SY	$4.87	$39,727.51
	Median Component Total				$576,905.47

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	28.00	EA	$15,856.76	$443,989.28
425-1-451	INLETS, CURB, TYPE J-5, <10'	8.00	EA	$27,416.73	$219,333.84
425-1-521	INLETS, DT BOT, TYPE C, <10'	4.00	EA	$12,458.23	$49,832.92
425-2-41	MANHOLES, P-7, <10'	4.00	EA	$15,287.00	$61,148.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	2,048.00	LF	$163.74	$335,339.52
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	184.00	LF	$706.48	$129,992.32
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	3,864.00	LF	$834.25	$3,223,542.00
570-1-1	PERFORMANCE TURF	234.84	SY	$4.87	$1,143.67
	Drainage Component Total				$4,464,321.55

INTERSECTIONS COMPONENT

Intersection 1

Description	Value
Mainline No. of Left Turn Lanes	1
Mainline No. of Right Turn Lanes	1
Mainline Design Speed	45
Cross Street Thru Lanes	2

Cross Street No. of Left Turn Lanes	1
Cross Street No. of Right Turn Lanes	1
Cross Street Design Speed	35
T-Intersection?	Y
Multiplier	1
Description	US 41 AND WALMART WY INTERSECTION

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.18	AC	$111,881.58	$132,020.26
120-1	REGULAR EXCAVATION	738.74	CY	$56.45	$41,701.87
160-4	TYPE B STABILIZATION	1,209.22	SY	$38.89	$47,026.57
160-4	TYPE B STABILIZATION	1,783.68	SY	$38.89	$69,367.32
285-709	OPTIONAL BASE,BASE GROUP 09	1,209.22	SY	$75.63	$91,453.31
285-709	OPTIONAL BASE,BASE GROUP 09	1,783.68	SY	$75.63	$134,899.72
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	199.52	TN	$156.81	$31,286.73
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	294.31	TN	$156.81	$46,150.75
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	99.76	TN	$180.00	$17,956.80
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	147.15	TN	$180.00	$26,487.00
520-1-7	CONCRETE CURB & GUTTER, TYPE E	101.42	LF	$65.85	$6,678.51
520-1-10	CONCRETE CURB & GUTTER, TYPE F	449.00	LF	$64.61	$29,009.89
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	335.00	LF	$141.46	$47,389.10
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	195.00	LF	$141.46	$27,584.70
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	249.44	SY	$101.08	$25,213.40
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	86.94	SY	$137.59	$11,962.07
570-1-1	PERFORMANCE TURF	249.44	SY	$4.87	$1,214.77
	Intersections Component Total				$787,402.77

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	19.00	EA	$607.44	$11,541.36
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	2.00	EA	$2,024.78	$4,049.56
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	2.00	EA	$9,172.23	$18,344.46
700-2-116	MULTI- COLUMN SIGN, F&I GM, 100.1-200 SF	2.00	EA	$20,868.09	$41,736.18
	Signing Component Total				$75,671.56

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	2 Lane Strain Pole
Multiplier	2
Description	US 41 AND WALMART WY INTERSECTION SIGNAL

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,600.00	LF	$24.33	$38,928.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00	LF	$40.92	$12,276.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	2.00	PI	$12,547.59	$25,095.18
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	2.00	PI	$11,342.08	$22,684.16
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	20.00	EA	$1,687.94	$33,758.80
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	2.00	AS	$5,424.66	$10,849.32
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$10.29	$617.40
641-2-16	PREST CNC POLE,F&I,TYP P-VI	8.00	EA	$14,395.74	$115,165.92
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	16.00	AS	$2,114.44	$33,831.04
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	16.00	AS	$1,081.17	$17,298.72
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	16.00	EA	$649.33	$10,389.28
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	16.00	AS	$2,099.95	$33,599.20
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	16.00	EA	$385.21	$6,163.36
670-5-166	TRAF CNTL ASS,F&I,NEMA,STD LOCK,RISER,1P	2.00	AS	$35,273.95	$70,547.90
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	8.00	EA	$302.94	$2,423.52
	Signalizations Component Total				$433,627.80

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	4,078.80	LF	$24.33	$99,237.20
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	809.58	LF	$40.92	$33,128.01
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	28.00	EA	$1,687.94	$47,262.32
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	14,896.89	LF	$3.35	$49,904.58
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	28.00	EA	$9,967.70	$279,095.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	28.00	EA	$942.35	$26,385.80
	Subcomponent Total				$535,013.52
	Lighting Component Total				$535,013.51

Sequence 4 Total	$25,583,731.31

Sequence: 5 NDR - New Construction, Divided, Rural **Net Length:** 0.404 MI 2,134 LF

Description: US 41 4 LANE DIVIDED SEGMENT WITH MSE

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	69.00 / 69.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.165
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	130.87
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.021
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.46
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.218
Top of Structural Course For Begin Section	129.73
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	6.76	AC	$111,881.58	$756,319.48
120-6	EMBANKMENT	340,443.78	CY	$54.44	$18,533,759.38
	Earthwork Component Total				$19,290,078.86

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	16,124.89	SY	$38.89	$627,096.97
285-709	OPTIONAL BASE,BASE GROUP 09	11,695.28	SY	$75.63	$884,514.03
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,878.07	TN	$156.81	$294,500.16
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	455.29	TN	$290.79	$132,393.78

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	164.00	EA	$4.86	$797.04
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.40	GM	$7,705.93	$3,082.37
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.81	GM	$2,006.82	$1,625.52
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.40	GM	$7,286.57	$2,914.63
	Roadway Component Total				$1,946,924.50

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	0.00 / 0.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
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	4,899.12	SY	$40.06	$196,258.75
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	260.84	TN	$156.81	$40,902.32
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	189.70	TN	$290.79	$55,162.86

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

521-8-7	CONC BARRIER, W/JUNCT SL, 36 SS	2,990.00 LF	$515.42	$1,541,105.80
	Comment: MSE WALL SHOULDER BARRIER			
570-1-1	PERFORMANCE TURF	3,322.00 SY	$4.87	$16,178.14
	Comment: Maintenance area at back of retaining wall			

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	5,548.86	LF	$3.36	$18,644.17
104-11	FLOATING TURBIDITY BARRIER	101.05	LF	$14.60	$1,475.33
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	101.05	LF	$5.87	$593.16
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	3.00	EA	$161.73	$485.19
107-1	LITTER REMOVAL	9.80	AC	$59.84	$586.43
107-2	MOWING	9.80	AC	$98.05	$960.89
	Shoulder Component Total				$1,876,988.40

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	46.00
Performance Turf Width	42.00
Total Median Shoulder Width L/R	0.00 / 0.00
Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	0
Friction Course Spread Rate	0
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	9,959.49	SY	$4.87	$48,502.72
	Median Component Total				$48,502.72

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-551	INLETS, DT BOT, TYPE E, <10'	3.00	EA	$12,724.05	$38,172.15
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	328.00	LF	$435.14	$142,725.92
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	144.00	LF	$163.74	$23,578.56
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	120.00	LF	$706.48	$84,777.60
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	17.00	EA	$3,554.05	$60,418.85
524-1-1	CONCRETE DITCH PAVT, NR, 3"	808.40	SY	$267.71	$216,416.76
570-1-1	PERFORMANCE TURF	284.56	SY	$4.87	$1,385.81

	Drainage Component Total	$567,475.65

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	1.00	EA	$607.44	$607.44
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	10.00	EA	$2,024.78	$20,247.80
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	1.00	EA	$7,626.59	$7,626.59
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	3.00	EA	$9,172.23	$27,516.69
	Signing Component Total				$55,998.52

BRIDGES COMPONENT

Bridge 2

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	365.00
Width (LF)	116.66
Type	Low Level
Cost Factor	1.00
Structure No.	
Removal of Existing Structures area	0.00
Default Cost per SF	$112.00
Factored Cost per SF	$112.00
Final Cost per SF	**$125.67**
Basic Bridge Cost	**$4,769,060.80**
Description	US 41 BRIDGE OVER SR 54 DDI

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II, APPROACH SLABS	259.24	CY	$1,968.25	$510,249.13
415-1-9	REINF STEEL- APPROACH SLABS	45,367.00	LB	$1.58	$71,679.86
	Bridge 2 Total				$5,350,989.79
	Bridges Component Total				$5,350,989.79

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	657.00
Begin height	5.00
End Height	25.42
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RET WALL SYSTEM, PERM, EX BARRIER	19,985.94	SF	$84.38	$1,686,413.62

Retaining Wall 2

Description	Value
Length	838.00
Begin height	25.00
End Height	5.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RET WALL SYSTEM, PERM, EX BARRIER	25,140.00	SF	$84.38	$2,121,313.20
	Retaining Walls Component Total				$3,807,726.82

Sequence 5 Total $32,944,685.26

Sequence: 6 NUR - New Construction, Undivided, Rural

Net Length: 0.727 MI
3,838 LF

Description: 1 LANE FLUSH SHLDR SEGMENT

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	14.00 / 29.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.330
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.90
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.397
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	107.85
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.79	AC	$111,881.58	$424,031.19
120-6	EMBANKMENT	27,263.22	CY	$54.44	$1,484,209.70
	Earthwork Component Total				$1,908,240.89

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	0.00 / 15.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	11,514.10	SY	$38.89	$447,783.35
285-709	OPTIONAL BASE,BASE GROUP 09	6,537.45	SY	$75.63	$494,427.34
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	879.55	TN	$156.81	$137,922.24
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	527.73	TN	$180.00	$94,991.40

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	60.03	LF	$4.09	$245.52
	Comment: MIDWALK STRIPING				

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	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.73	GM	$7,705.93	$5,625.33
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.73	GM	$7,286.57	$5,319.20
	Roadway Component Total				$1,186,314.38

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	6.00 / 6.00
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 2.00
Paved Outside Shoulder Width L/R	2.00 / 4.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	2,840.14	SY	$40.06	$113,776.01
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	140.73	TN	$156.81	$22,067.87
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	211.09	TN	$180.00	$37,996.20
570-1-1	PERFORMANCE TURF	2,558.69	SY	$4.87	$12,460.82

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
521-72-40	SHLDR CONC BARRIER,38" OR 44" HEIGHT	943.67	LF	$496.88	$468,890.75
	Comment: SHOULDER BARRIER WALL NEAR BRIDGE PIER				

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	9,978.88	LF	$3.36	$33,529.04
104-11	FLOATING TURBIDITY BARRIER	181.72	LF	$14.60	$2,653.11
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	181.72	LF	$5.87	$1,066.70

104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$4,635.36	$4,635.36
107-1	LITTER REMOVAL	8.81 AC	$59.84	$527.19
107-2	MOWING	8.81 AC	$98.05	$863.82
	Shoulder Component Total			$698,466.87

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	584.00	LF	$435.14	$254,121.76
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	128.00	LF	$706.48	$90,429.44
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	30.00	EA	$3,554.05	$106,621.50
570-1-1	PERFORMANCE TURF	511.74	SY	$4.87	$2,492.17
	Drainage Component Total				$453,664.87

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	2.00	EA	$607.44	$1,214.88
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	15.00	EA	$2,024.78	$30,371.70
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	2.00	EA	$7,626.59	$15,253.18
	Signing Component Total				$46,839.76

Sequence 6 Total $4,293,526.77

Sequence: 7 NUU - New Construction, Undivided, Urban

Net Length: 0.719 MI
3,795 LF

Description: SB US 41 1 LANE CURBED SEGMENT W/ BIKE LANE

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	14.00 / 29.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.375
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	110.21
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.344
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.15
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	3.75	AC	$111,881.58	$419,555.92
120-6	EMBANKMENT	48,813.27	CY	$54.44	$2,657,394.42
	Earthwork Component Total				$3,076,950.35

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	0.00 / 19.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	9,100.20	SY	$38.89	$353,906.78
285-709	OPTIONAL BASE,BASE GROUP 09	8,012.22	SY	$75.63	$605,964.20
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,101.68	TN	$156.81	$172,754.44
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	661.01	TN	$180.00	$118,981.80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	91.47 LF	$4.09	$374.11
	Comment: MIDWALK STRIPING			

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	1
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.72 GM	$7,705.93	$5,548.27
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.72 GM	$7,286.57	$5,246.33
	Roadway Component Total			$1,262,775.93

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.25 / 16.75
Total Outside Shoulder Perf. Turf Width L/R	10.00 / 4.50
Sidewalk Width L/R	0.00 / 10.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	3,795.26 LF	$65.85	$249,917.87
520-1-10	CONCRETE CURB & GUTTER, TYPE F	3,795.26 LF	$64.61	$245,211.75
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	4,216.96 SY	$101.08	$426,250.32
570-1-1	PERFORMANCE TURF	6,114.59 SY	$4.87	$29,778.05

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	7,590.53 LF	$3.36	$25,504.18
104-11	FLOATING TURBIDITY BARRIER	179.70 LF	$14.60	$2,623.62
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	179.70 LF	$5.87	$1,054.84
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	37.00 EA	$161.73	$5,984.01
107-1	LITTER REMOVAL	8.71 AC	$59.84	$521.21
107-2	MOWING	8.71 AC	$98.05	$854.02
	Shoulder Component Total			$992,335.23

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	26.00	EA	$15,856.76	$412,275.76
425-1-451	INLETS, CURB, TYPE J-5, <10'	8.00	EA	$27,416.73	$219,333.84
425-1-521	INLETS, DT BOT, TYPE C, <10'	4.00	EA	$12,458.23	$49,832.92
425-2-41	MANHOLES, P-7, <10'	4.00	EA	$15,287.00	$61,148.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	1,672.00	LF	$163.74	$273,773.28
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	152.00	LF	$706.48	$107,384.96
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	3,600.00	LF	$834.25	$3,003,300.00
570-1-1	PERFORMANCE TURF	218.52	SY	$4.87	$1,064.19
	Drainage Component Total				$4,128,112.95

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	15.00	EA	$607.44	$9,111.60
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	2.00	EA	$2,024.78	$4,049.56
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	2.00	EA	$9,172.23	$18,344.46
	Signing Component Total				$31,505.62

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	3,795.26	LF	$24.33	$92,338.68
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	495.25	LF	$40.92	$20,265.63
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	16.00	EA	$1,687.94	$27,007.04
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	12,871.55	LF	$3.35	$43,119.69
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	16.00	EA	$9,967.70	$159,483.20
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	16.00	EA	$942.35	$15,077.60
	Subcomponent Total				$357,291.84
	Lighting Component Total				$357,291.84

Sequence 7 Total $9,848,971.92

Sequence: 8 WDU - Widen/Resurface, Divided, Urban **Net Length:** 0.185 MI 976 LF

Description: CR597 2 LANE DIVIDED SEGMENT - NB INSIDE WIDENING

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	25.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.185
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 Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
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	1.12	AC	$111,881.58	$125,307.37
120-1	REGULAR EXCAVATION	1,615.70	CY	$56.45	$91,206.26
	Earthwork Component Total				$216,513.64

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Existing Roadway Pavement Width L/R	24.00 / 24.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 12.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,580.71	SY	$38.89	$61,473.81
285-709	OPTIONAL BASE,BASE GROUP 09	1,336.77	SY	$75.63	$101,099.92
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	5,203.97	SY	$4.63	$24,094.38
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	429.33	TN	$156.81	$67,323.24
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	178.89	TN	$156.81	$28,051.74
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	208.16	TN	$180.00	$37,468.80
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	107.33	TN	$180.00	$19,319.40

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	584.35	SY	$38.89	$22,725.37
	Comment: AUX LANE				
285-709	OPTIONAL BASE,BASE GROUP 09	584.35	SY	$75.63	$44,194.39
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	80.35	TN	$156.81	$12,599.68
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	48.21	TN	$180.00	$8,677.80
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.08	GM	$7,705.93	$616.47
	Comment: AUX LANE STRIPING				

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	125.00	EA	$4.86	$607.50
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.37	GM	$7,705.93	$2,851.19
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.74	GM	$2,006.82	$1,485.05
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.37	GM	$7,286.57	$2,696.03
	Roadway Component Total				$435,284.77

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	8.00 / 8.00
New Total Outside Shoulder Width L/R	6.25 / 16.75
Total Outside Shoulder Perf. Turf Width L/R	4.00 / 4.50
Sidewalk Width L/R	0.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	975.74	LF	$64.61	$63,042.56
520-1-10	CONCRETE CURB & GUTTER, TYPE F	975.74	LF	$64.61	$63,042.56
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,084.16	SY	$101.08	$109,586.89
570-1-1	PERFORMANCE TURF	921.54	SY	$4.87	$4,487.90

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

104-10-3	SEDIMENT BARRIER	1,951.49	LF	$3.36	$6,557.01
104-11	FLOATING TURBIDITY BARRIER	18.48	LF	$14.60	$269.81
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	18.48	LF	$5.87	$108.48
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	9.00	EA	$161.73	$1,455.57
107-1	LITTER REMOVAL	1.61	AC	$59.84	$96.34
107-2	MOWING	1.61	AC	$98.05	$157.86
	Shoulder Component Total				$253,440.34

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	46.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	578.94	SY	$4.87	$2,819.44
	Median Component Total				$2,819.44

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	7.00	EA	$15,856.76	$110,997.32
425-1-451	INLETS, CURB, TYPE J-5, <10'	2.00	EA	$27,416.73	$54,833.46
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	104.00	LF	$163.74	$17,028.96
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	32.00	LF	$706.48	$22,607.36
570-1-1	PERFORMANCE TURF	56.18	SY	$4.87	$273.60
	Drainage Component Total				$205,740.70

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	5.00	EA	$607.44	$3,037.20
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$2,024.78	$2,024.78
700-1-500	SINGLE COL GRND SIGN AS, RELOCATE	1.00	EA	$344.84	$344.84
700-1-600	SINGLE COL GRND SIGN AS, REMOVE	5.00	EA	$46.67	$233.35
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	1.00	EA	$7,626.59	$7,626.59
700-2-600	MULTI- COLUMN GROUND SIGN, REMOVE	1.00	EA	$976.71	$976.71

Signing Component Total	$14,243.47
Sequence 8 Total	$1,128,042.36

Sequence: 9 NUR - New Construction, Undivided, Rural

Net Length: 0.321 MI
1,693 LF

Description: SB US 41 3 LANE SEGMENT WITH MSE

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	58.00 / 24.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.130
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	128.03
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	5.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.027
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.40
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	5.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.164
Top of Structural Course For Begin Section	136.73
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	5.00 % / 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	3.19	AC	$111,881.58	$356,902.24
120-6	EMBANKMENT	136,796.60	CY	$54.44	$7,447,206.90
	Earthwork Component Total				$7,804,109.14

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	36.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

160-4	TYPE B STABILIZATION	10,532.78	SY	$38.89	$409,619.81
285-709	OPTIONAL BASE,BASE GROUP 09	6,833.14	SY	$75.63	$516,790.38
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	931.02	TN	$156.81	$145,993.25
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	558.61	TN	$180.00	$100,549.80

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	173.00	EA	$4.86	$840.78
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.32	GM	$7,705.93	$2,465.90
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.64	GM	$2,006.82	$1,284.36
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.32	GM	$7,286.57	$2,331.70
	Roadway Component Total				$1,179,875.98

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	0.00 / 0.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	OPTIONAL BASE,BASE GROUP 04	3,885.84	SY	$40.06	$155,666.75
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	206.89	TN	$156.81	$32,442.42
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	310.34	TN	$180.00	$55,861.20

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
521-8-7	CONC BARRIER, W/JUNCT SL, 36 SS	2,078.00	LF	$515.42	$1,071,042.76
570-1-1	PERFORMANCE TURF	2,316.02	SY	$4.87	$11,279.02
	Comment: Maintenance area at back of retaining wall				

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,401.20	LF	$3.36	$14,788.03
104-11	FLOATING TURBIDITY BARRIER	80.15	LF	$14.60	$1,170.19
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	80.15	LF	$5.87	$470.48
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
107-1	LITTER REMOVAL	3.89	AC	$59.84	$232.78
107-2	MOWING	3.89	AC	$98.05	$381.41
	Shoulder Component Total				$1,347,970.40

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	264.00	LF	$435.14	$114,876.96
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	56.00	LF	$706.48	$39,562.88
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	13.00	EA	$3,554.05	$46,202.65
570-1-1	PERFORMANCE TURF	225.70	SY	$4.87	$1,099.16
	Drainage Component Total				$201,741.65

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	1.00	EA	$607.44	$607.44
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	7.00	EA	$2,024.78	$14,173.46
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	1.00	EA	$7,626.59	$7,626.59
	Signing Component Total				$22,407.49

BRIDGES COMPONENT

Bridge 3

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Length (LF)	653.00
Width (LF)	58.66
Type	Low Level
Cost Factor	1.00
Structure No.	
Removal of Existing Structures area	0.00
Default Cost per SF	$112.00
Factored Cost per SF	$112.00
Final Cost per SF	**$119.64**
Basic Bridge Cost	**$4,290,157.76**
Description	SB US-41 3 LANE BRIDGE

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II, APPROACH SLABS	130.36	CY	$1,968.25	$256,581.07
415-1-9	REINF STEEL- APPROACH SLABS	22,813.00	LB	$1.58	$36,044.54
	Bridge 3 Total				$4,582,783.37
	Bridges Component Total				$4,582,783.37

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	619.00
Begin height	5.00
End Height	34.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RET WALL SYSTEM, PERM, EX BARRIER	24,141.00	SF	$84.38	$2,037,017.58

Retaining Wall 2

Description	Value
Length	420.00
Begin height	19.00
End Height	5.00
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RET WALL SYSTEM, PERM, EX BARRIER	10,080.00	SF	$84.38	$850,550.40
	Retaining Walls Component Total				$2,887,567.98

Sequence 9 Total $18,026,456.01

Sequence: 10 NUR - New Construction, Undivided, Rural **Net Length:** 0.092 MI 486 LF

Description: RADEN DR RECONSTRUCTION

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	14.00 / 26.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.092
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.45	AC	$111,881.58	$50,346.71
120-6	EMBANKMENT	4,296.28	CY	$54.44	$233,889.48
	Earthwork Component Total				$284,236.19

ROADWAY COMPONENT

User Input Data

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,511.25	SY	$38.89	$58,772.51
285-709	OPTIONAL BASE,BASE GROUP 09	1,330.98	SY	$75.63	$100,662.02
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	178.11	TN	$156.81	$27,929.43
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	106.87	TN	$180.00	$19,236.60

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	12.00	EA	$4.86	$58.32

711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.18 GM	$7,705.93	$1,387.07
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.18 GM	$7,286.57	$1,311.58
711-16-231	THERMOPLASTIC, STD-OTH, YELLOW, SKIP, 6"	0.09 GM	$1,726.34	$155.37
	Roadway Component Total			$209,512.90

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	2.00 / 2.00
Total Outside Shoulder Perf. Turf Width L/R	2.00 / 2.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	165
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	215.89	SY	$4.87	$1,051.38

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,262.98	LF	$3.36	$4,243.61
104-11	FLOATING TURBIDITY BARRIER	23.00	LF	$14.60	$335.80
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	23.00	LF	$5.87	$135.01
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
107-1	LITTER REMOVAL	1.12	AC	$59.84	$67.02
107-2	MOWING	1.12	AC	$98.05	$109.82
	Shoulder Component Total				$10,578.00

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	80.00	LF	$435.14	$34,811.20
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	$706.48	$11,303.68
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	4.00	EA	$3,554.05	$14,216.20
570-1-1	PERFORMANCE TURF	64.77	SY	$4.87	$315.43
	Drainage Component Total				$60,646.51

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	1.00 EA	$607.44	$607.44
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	2.00 EA	$2,024.78	$4,049.56
700-2-114	MULTI- COLUMN SIGN, F&I GM, 30.1-50 SF	1.00 EA	$7,626.59	$7,626.59
	Signing Component Total			$12,283.59

Sequence 10 Total $577,257.19

Sequence: 11 NUU - New Construction, Undivided, Urban **Net Length:** 0.354 MI 1,870 LF

Description: 1 LANE CURBED RAMP SEGMENT WITH SIDEWALK

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	14.00 / 29.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.354
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.26
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.85	AC	$111,881.58	$206,980.92
120-6	EMBANKMENT	6,945.86	CY	$54.44	$378,132.62
	Earthwork Component Total				$585,113.54

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	1
Roadway Pavement Width L/R	15.00 / 0.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	3,653.08	SY	$38.89	$142,068.28
285-709	OPTIONAL BASE,BASE GROUP 09	3,116.96	SY	$75.63	$235,735.68
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	428.58	TN	$156.81	$67,205.63
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	257.15	TN	$180.00	$46,287.00

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.35	GM	$7,705.93	$2,697.08
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.35	GM	$7,286.57	$2,550.30
	Roadway Component Total				$496,543.97

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	8.25 / 20.75
Total Outside Shoulder Perf. Turf Width L/R	6.00 / 8.50
Sidewalk Width L/R	0.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	1,870.18	LF	$65.85	$123,151.35
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,870.18	LF	$64.61	$120,832.33
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	2,077.97	SY	$101.08	$210,041.21
570-1-1	PERFORMANCE TURF	3,013.06	SY	$4.87	$14,673.60

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	3,953.09	SY	$4.87	$19,251.55
	Comment: Traffic Islands				

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	3,740.35	LF	$3.36	$12,567.58
104-11	FLOATING TURBIDITY BARRIER	88.55	LF	$14.60	$1,292.83
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	88.55	LF	$5.87	$519.79
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	19.00	EA	$161.73	$3,072.87
107-1	LITTER REMOVAL	4.29	AC	$59.84	$256.71
107-2	MOWING	4.29	AC	$98.05	$420.63
	Shoulder Component Total				$510,715.81

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	13.00	EA	$15,856.76	$206,137.88
425-1-451	INLETS, CURB, TYPE J-5, <10'	4.00	EA	$27,416.73	$109,666.92
425-1-521	INLETS, DT BOT, TYPE C, <10'	2.00	EA	$12,458.23	$24,916.46
425-2-41	MANHOLES, P-7, <10'	2.00	EA	$15,287.00	$30,574.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	824.00	LF	$163.74	$134,921.76

430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	80.00	LF	$706.48	$56,518.40
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,776.00	LF	$834.25	$1,481,628.00
570-1-1	PERFORMANCE TURF	107.68	SY	$4.87	$524.40
	Drainage Component Total				$2,044,887.82

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	8.00	EA	$607.44	$4,859.52
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$2,024.78	$2,024.78
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$9,172.23	$9,172.23
	Signing Component Total				$16,056.53

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,870.18	LF	$24.33	$45,501.48
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	244.04	LF	$40.92	$9,986.12
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	8.00	EA	$1,687.94	$13,503.52
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	6,342.66	LF	$3.35	$21,247.91
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	8.00	EA	$9,967.70	$79,741.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	8.00	EA	$942.35	$7,538.80
	Subcomponent Total				$177,519.43
	Lighting Component Total				$177,519.43

Sequence 11 Total $3,830,837.10

Sequence: 12 NUU - New Construction, Undivided, Urban **Net Length:** 0.663 MI 3,498 LF

Description: SB US 41 2 LANE CURBED SEGMENTS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	24.00 / 49.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.266
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.61
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.070
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.21
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.156
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.03
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	4
Distance	0.002
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.05
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	5.86	AC	$111,881.58	$655,626.06
120-6	EMBANKMENT	20,488.60	CY	$54.44	$1,115,399.38
	Earthwork Component Total				$1,771,025.44

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	0.00 / 24.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	10,330.76	SY	$38.89	$401,763.26
285-709	OPTIONAL BASE,BASE GROUP 09	9,328.00	SY	$75.63	$705,476.64
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,282.60	TN	$156.81	$201,124.51
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	769.56	TN	$180.00	$138,520.80

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,368.00	SY	$38.89	$53,201.52
	Comment: Aux Lanes				
285-709	OPTIONAL BASE,BASE GROUP 09	1,368.00	SY	$75.63	$103,461.84
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	188.10	TN	$156.81	$29,495.96
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	112.86	TN	$180.00	$20,314.80
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	48.00	LF	$4.09	$196.32
	Comment: Cross walk striping				
711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	55.00	LF	$7.24	$398.20
	Comment: Stop Bar striping				
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.27	GM	$7,705.93	$2,080.60
	Comment: Aux Lane striping				

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	89.00	EA	$4.86	$432.54
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.66	GM	$7,705.93	$5,085.91
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.66	GM	$7,286.57	$4,809.14
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.66	GM	$1,701.03	$1,122.68
	Roadway Component Total				$1,667,484.72

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	7.25 / 20.75
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 8.50
Sidewalk Width L/R	0.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	3,498.00	LF	$65.85	$230,343.30
520-1-10	CONCRETE CURB & GUTTER, TYPE F	3,498.00	LF	$64.61	$226,005.78
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	3,886.67	SY	$101.08	$392,864.60
570-1-1	PERFORMANCE TURF	5,247.00	SY	$4.87	$25,552.89

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	2,863.70	SY	$4.87	$13,946.22
	Comment: Splitter Island Turf				

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	6,996.00	LF	$3.36	$23,506.56
104-11	FLOATING TURBIDITY BARRIER	165.62	LF	$14.60	$2,418.05
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	165.62	LF	$5.87	$972.19
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	34.00	EA	$161.73	$5,498.82
107-1	LITTER REMOVAL	8.03	AC	$59.84	$480.52
107-2	MOWING	8.03	AC	$98.05	$787.34
	Shoulder Component Total				$927,011.63

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	24.00	EA	$15,856.76	$380,562.24
425-1-451	INLETS, CURB, TYPE J-5, <10'	7.00	EA	$27,416.73	$191,917.11
425-1-521	INLETS, DT BOT, TYPE C, <10'	4.00	EA	$12,458.23	$49,832.92
425-2-41	MANHOLES, P-7, <10'	4.00	EA	$15,287.00	$61,148.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	1,544.00	LF	$163.74	$252,814.56
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	136.00	LF	$706.48	$96,081.28
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	3,320.00	LF	$834.25	$2,769,710.00
570-1-1	PERFORMANCE TURF	201.40	SY	$4.87	$980.82
	Drainage Component Total				$3,803,046.93

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	14.00	EA	$607.44	$8,504.16
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	2.00	EA	$2,024.78	$4,049.56
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	2.00	EA	$9,172.23	$18,344.46
	Signing Component Total				$30,898.18

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	3,498.00	LF	$24.33	$85,106.34
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	456.46	LF	$40.92	$18,678.34
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	14.00	EA	$1,687.94	$23,631.16
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	11,863.39	LF	$3.35	$39,742.36
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	14.00	EA	$9,967.70	$139,547.80
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	14.00	EA	$942.35	$13,192.90
	Subcomponent Total				$319,898.90
	Lighting Component Total				$319,898.90

Sequence 12 Total $8,519,365.80

Sequence: 13 NDU - New Construction, Divided, Urban **Net Length:** 0.237 MI 1,249 LF

Description: SR 54 6 LANE DDI APPROACH SEGMENTS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	105.00 / 105.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.168
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	107.01
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.069
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.03
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 0.00 %
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	6.03	AC	$111,881.58	$674,645.93
120-6	EMBANKMENT	29,732.35	CY	$54.44	$1,618,629.13
	Earthwork Component Total				$2,293,275.06

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	36.00 / 36.00
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	11,426.46	SY	$38.89	$444,375.03
285-709	OPTIONAL BASE,BASE GROUP 09	9,993.98	SY	$75.63	$755,844.71
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,649.01	TN	$156.81	$258,581.26
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	824.50	TN	$180.00	$148,410.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,185.33	SY	$38.89	$46,097.48
	Comment: AUX LANES				
285-709	OPTIONAL BASE,BASE GROUP 09	1,185.33	SY	$75.63	$89,646.51
	Comment: AUX LANES				
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	195.58	TN	$156.81	$30,668.90
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	195.58	TN	$180.00	$35,204.40
710-11-125	PAINTED PAVT MARK,STD,WHITE,SOLID,24"	65.00	LF	$2.13	$138.45
	Comment: Stop Bar Striping				
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.18	GM	$7,705.93	$1,387.07
	Comment: Aux Lanes Striping				

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	160.00	EA	$4.86	$777.60
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.47	GM	$7,705.93	$3,621.79
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.47	GM	$7,286.57	$3,424.69
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.95	GM	$1,701.03	$1,615.98
	Roadway Component Total				$1,819,793.87

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	18.75 / 18.75
Total Outside Shoulder Perf. Turf Width L/R	6.50 / 6.50
Sidewalk Width L/R	10.00 / 10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,249.25	LF	$64.61	$80,714.04
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,249.25	LF	$64.61	$80,714.04
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	2,776.11	SY	$101.08	$280,609.20
570-1-1	PERFORMANCE TURF	1,804.47	SY	$4.87	$8,787.77

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,498.50	LF	$3.36	$8,394.96
104-11	FLOATING TURBIDITY BARRIER	59.15	LF	$14.60	$863.59
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	59.15	LF	$5.87	$347.21
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	13.00	EA	$161.73	$2,102.49
107-1	LITTER REMOVAL	6.02	AC	$59.84	$360.24
107-2	MOWING	6.02	AC	$98.05	$590.26
	Shoulder Component Total				$468,119.16

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,498.50	LF	$65.85	$164,526.22
570-1-1	PERFORMANCE TURF	741.22	SY	$4.87	$3,609.74
	Median Component Total				$168,135.97

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	9.00	EA	$15,856.76	$142,710.84
425-1-451	INLETS, CURB, TYPE J-5, <10'	3.00	EA	$27,416.73	$82,250.19
425-1-521	INLETS, DT BOT, TYPE C, <10'	2.00	EA	$12,458.23	$24,916.46
425-2-41	MANHOLES, P-7, <10'	2.00	EA	$15,287.00	$30,574.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	632.00	LF	$163.74	$103,483.68
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	56.00	LF	$706.48	$39,562.88
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,184.00	LF	$834.25	$987,752.00
570-1-1	PERFORMANCE TURF	71.93	SY	$4.87	$350.30
	Drainage Component Total				$1,411,600.35

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	6.00	EA	$607.44	$3,644.64
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$2,024.78	$2,024.78
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$9,172.23	$9,172.23

700-2-116	MULTI- COLUMN SIGN, F&I GM, 100.1-200 SF	1.00	EA	$20,868.09	$20,868.09
	Signing Component Total				$35,709.74

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	**Value**
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,249.25	LF	$24.33	$30,394.25
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	247.96	LF	$40.92	$10,146.52
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	9.00	EA	$1,687.94	$15,191.46
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	4,562.59	LF	$3.35	$15,284.68
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	9.00	EA	$9,967.70	$89,709.30
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	9.00	EA	$942.35	$8,481.15
	Subcomponent Total				$169,207.36
	Lighting Component Total				$169,207.36

Sequence 13 Total $6,365,841.51

Sequence: 14 NDU - New Construction, Divided, Urban **Net Length:** 0.431 MI 2,274 LF

Description: SR 54 - DDI EastBound

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	24.00 / 24.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.183
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	106.85
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.143
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	106.02
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.102
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.69
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	2.51	AC	$111,881.58	$280,822.77
120-6	EMBANKMENT	32,426.71	CY	$54.44	$1,765,310.09
	Earthwork Component Total				$2,046,132.86

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	0.00 / 48.00
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	13,432.33	SY	$38.89	$522,383.31
285-709	OPTIONAL BASE,BASE GROUP 09	12,128.51	SY	$75.63	$917,279.21
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	2,001.20	TN	$156.81	$313,808.17
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,000.60	TN	$180.00	$180,108.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,497.56	SY	$38.89	$58,240.11
	Comment: AUX LANES				
285-709	OPTIONAL BASE,BASE GROUP 09	1,497.56	SY	$75.63	$113,260.46
	Comment: AUX LANES				
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	247.10	TN	$156.81	$38,747.75
	Comment: AUX LANES				
337-7-26	ASPH CONC FC,FC-5,FC-5, HIGH POLYMER	247.10	TN	$267.08	$65,995.47
	Comment: AUX LANES				
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.22	GM	$7,705.93	$1,695.30
	Comment: AUX LANE STRIPING				

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	174.00	EA	$4.86	$845.64
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.43	GM	$7,705.93	$3,313.55
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.86	GM	$2,006.82	$1,725.87
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.43	GM	$7,286.57	$3,133.23
	Roadway Component Total				$2,220,536.07

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	14.25 / 14.25
Total Outside Shoulder Perf. Turf Width L/R	12.00 / 12.00
Sidewalk Width L/R	0.00 / 0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

520-1-10	CONCRETE CURB & GUTTER, TYPE F	2,274.10	LF	$64.61	$146,929.60
570-1-1	PERFORMANCE TURF	6,064.26	SY	$4.87	$29,532.95

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,548.19	LF	$3.36	$15,281.92
104-11	FLOATING TURBIDITY BARRIER	107.68	LF	$14.60	$1,572.13
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	107.68	LF	$5.87	$632.08
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	22.00	EA	$161.73	$3,558.06
107-1	LITTER REMOVAL	10.96	AC	$59.84	$655.85
107-2	MOWING	10.96	AC	$98.05	$1,074.63
	Shoulder Component Total				$203,872.58

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	40.00
Performance Turf Width	10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	4,548.19	LF	$65.85	$299,498.31
570-1-1	PERFORMANCE TURF	2,526.77	SY	$4.87	$12,305.37
	Median Component Total				$311,803.68

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	16.00	EA	$15,856.76	$253,708.16
425-1-451	INLETS, CURB, TYPE J-5, <10'	5.00	EA	$27,416.73	$137,083.65
425-1-521	INLETS, DT BOT, TYPE C, <10'	3.00	EA	$12,458.23	$37,374.69
425-2-41	MANHOLES, P-7, <10'	3.00	EA	$15,287.00	$45,861.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	1,144.00	LF	$163.74	$187,318.56
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	104.00	LF	$706.48	$73,473.92
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	2,160.00	LF	$834.25	$1,801,980.00
570-1-1	PERFORMANCE TURF	130.93	SY	$4.87	$637.63
	Drainage Component Total				$2,537,437.61

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	11.00	EA	$607.44	$6,681.84
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$2,024.78	$2,024.78
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$9,172.23	$9,172.23
700-2-116	MULTI- COLUMN SIGN, F&I GM, 100.1-200 SF	1.00	EA	$20,868.09	$20,868.09
	Signing Component Total				$38,746.94

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	2,274.10	LF	$24.33	$55,328.85
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	451.37	LF	$40.92	$18,470.06
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	16.00	EA	$1,687.94	$27,007.04
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	8,305.62	LF	$3.35	$27,823.83
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	16.00	EA	$9,967.70	$159,483.20
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	16.00	EA	$942.35	$15,077.60
	Subcomponent Total				$303,190.58
	Lighting Component Total				$303,190.58

Sequence 14 Total $7,661,720.32

Sequence: 15 NUU - New Construction, Undivided, Urban **Net Length:** 0.256 MI 1,353 LF

Description: SB US 41 3 LANE CURBED SEGMENT

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	24.00 / 60.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.256
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	115.49
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	2.61	AC	$111,881.58	$292,010.92
120-6	EMBANKMENT	21,930.76	CY	$54.44	$1,193,910.57
	Earthwork Component Total				$1,485,921.49

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	0.00 / 36.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	5,798.73	SY	$38.89	$225,512.61
285-709	OPTIONAL BASE,BASE GROUP 09	5,410.94	SY	$75.63	$409,229.39
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	744.00	TN	$156.81	$116,666.64
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	446.40	TN	$180.00	$80,352.00

Pavement Marking Subcomponent

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	138.00	EA	$4.86	$670.68

711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.26	GM	$7,705.93	$2,003.54
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.26	GM	$7,286.57	$1,894.51
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.51	GM	$1,701.03	$867.53
	Roadway Component Total				$837,196.90

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	12.25 / 12.25
Total Outside Shoulder Perf. Turf Width L/R	5.00 / 5.00
Sidewalk Width L/R	5.00 / 5.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,352.74	LF	$64.61	$87,400.53
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,352.74	LF	$64.61	$87,400.53
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,503.04	SY	$101.08	$151,927.28
570-1-1	PERFORMANCE TURF	1,503.04	SY	$4.87	$7,319.80

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,705.47	LF	$3.36	$9,090.38
104-11	FLOATING TURBIDITY BARRIER	64.05	LF	$14.60	$935.13
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	64.05	LF	$5.87	$375.97
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	14.00	EA	$161.73	$2,264.22
107-1	LITTER REMOVAL	3.11	AC	$59.84	$186.10
107-2	MOWING	3.11	AC	$98.05	$304.94
	Shoulder Component Total				$351,840.24

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	10.00	EA	$15,856.76	$158,567.60
425-1-451	INLETS, CURB, TYPE J-5, <10'	3.00	EA	$27,416.73	$82,250.19
425-1-521	INLETS, DT BOT, TYPE C, <10'	2.00	EA	$12,458.23	$24,916.46
425-2-41	MANHOLES, P-7, <10'	2.00	EA	$15,287.00	$30,574.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	600.00	LF	$163.74	$98,244.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	56.00	LF	$706.48	$39,562.88
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,288.00	LF	$834.25	$1,074,514.00
570-1-1	PERFORMANCE TURF	77.88	SY	$4.87	$379.28

	Drainage Component Total	$1,509,008.41

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	6.00	EA	$607.44	$3,644.64
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$2,024.78	$2,024.78
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$9,172.23	$9,172.23
	Signing Component Total				$14,841.65

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,352.74	LF	$24.33	$32,912.16
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	176.52	LF	$40.92	$7,223.20
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	6.00	EA	$1,687.94	$10,127.64
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	4,587.77	LF	$3.35	$15,369.03
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	6.00	EA	$9,967.70	$59,806.20
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	6.00	EA	$942.35	$5,654.10
	Subcomponent Total				$131,092.33
	Lighting Component Total				$131,092.33

Sequence 15 Total	$4,329,901.02

Sequence: 16 NDU - New Construction, Divided, Urban **Net Length:** 0.490 MI 2,587 LF

Description: SR 54 - DDI Westbound

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	24.00 / 24.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.175
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.91
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.150
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	106.05
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.165
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	105.84
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Shoulder Cross Slope L/R	0.00 % / 0.00 %
Outside Shoulder Cross Slope L/R	0.00 % / 0.00 %
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	2.85 AC	$111,881.58	$318,862.50
120-6	EMBANKMENT	35,678.16 CY	$54.44	$1,942,319.03
	Earthwork Component Total			$2,261,181.53

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	0.00 / 48.00
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	15,281.73	SY	$38.89	$594,306.48
285-709	OPTIONAL BASE,BASE GROUP 09	13,798.40	SY	$75.63	$1,043,572.99
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	2,276.74	TN	$156.81	$357,015.60
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,138.37	TN	$180.00	$204,906.60

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,495.84	SY	$38.89	$58,173.22
	Comment: AUX LANE				
285-709	OPTIONAL BASE,BASE GROUP 09	1,495.84	SY	$75.63	$113,130.38
	Comment: AUX LANE				
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	246.81	TN	$156.81	$38,702.28
	Comment: AUX LANE				
337-7-26	ASPH CONC FC,FC-5,FC-5, HIGH POLYMER	246.81	TN	$267.08	$65,918.01
	Comment: AUX LANE				
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.21	GM	$7,705.93	$1,618.25
	Comment: AUX LANE STRIPING				

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

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	198.00	EA	$4.86	$962.28
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	0.49	GM	$7,705.93	$3,775.91
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.98	GM	$2,006.82	$1,966.68
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	0.49	GM	$7,286.57	$3,570.42
	Roadway Component Total				$2,487,619.10

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	14.25 / 14.25
Total Outside Shoulder Perf. Turf Width L/R	12.00 / 12.00
Sidewalk Width L/R	0.00 / 0.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	2,587.20	LF	$65.85	$170,367.12
520-1-10	CONCRETE CURB & GUTTER, TYPE F	2,587.20	LF	$64.61	$167,158.99
570-1-1	PERFORMANCE TURF	6,899.20	SY	$4.87	$33,599.10

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	5,174.40	LF	$3.36	$17,385.98
104-11	FLOATING TURBIDITY BARRIER	122.50	LF	$14.60	$1,788.50
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	122.50	LF	$5.87	$719.08
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$4,635.36	$4,635.36
104-18	INLET PROTECTION SYSTEM	25.00	EA	$161.73	$4,043.25
107-1	LITTER REMOVAL	12.47	AC	$59.84	$746.20
107-2	MOWING	12.47	AC	$98.05	$1,222.68
	Shoulder Component Total				$401,666.26

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	40.00
Performance Turf Width	10.00

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	5,174.40	LF	$65.85	$340,734.24
570-1-1	PERFORMANCE TURF	2,874.67	SY	$4.87	$13,999.64
	Median Component Total				$354,733.88

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	18.00	EA	$15,856.76	$285,421.68
425-1-451	INLETS, CURB, TYPE J-5, <10'	5.00	EA	$27,416.73	$137,083.65
425-1-521	INLETS, DT BOT, TYPE C, <10'	3.00	EA	$12,458.23	$37,374.69
425-2-41	MANHOLES, P-7, <10'	3.00	EA	$15,287.00	$45,861.00
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	1,296.00	LF	$163.74	$212,207.04
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	120.00	LF	$706.48	$84,777.60
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	2,456.00	LF	$834.25	$2,048,918.00
570-1-1	PERFORMANCE TURF	148.96	SY	$4.87	$725.44
	Drainage Component Total				$2,852,369.10

INTERSECTIONS COMPONENT

Intersection 1

Description	Value
Mainline No. of Left Turn Lanes	0
Mainline No. of Right Turn Lanes	0
Mainline Design Speed	35
Cross Street Thru Lanes	4
Cross Street No. of Left Turn Lanes	0
Cross Street No. of Right Turn Lanes	0
Cross Street Design Speed	35
T-Intersection?	N
Multiplier	1
Description	DDI CROSSOVER APPROACH

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.40	AC	$111,881.58	$156,634.21
120-1	REGULAR EXCAVATION	1,030.00	CY	$56.45	$58,143.50
160-4	TYPE B STABILIZATION	642.22	SY	$38.89	$24,975.94
160-4	TYPE B STABILIZATION	2,486.92	SY	$38.89	$96,716.32
285-709	OPTIONAL BASE,BASE GROUP 09	2,486.92	SY	$75.63	$188,085.76
285-709	OPTIONAL BASE,BASE GROUP 09	642.22	SY	$75.63	$48,571.10
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	105.97	TN	$156.81	$16,617.16
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	410.34	TN	$156.81	$64,345.42
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	52.98	TN	$180.00	$9,536.40
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	205.17	TN	$180.00	$36,930.60
520-1-7	CONCRETE CURB & GUTTER, TYPE E	202.84	LF	$65.85	$13,357.01
520-1-10	CONCRETE CURB & GUTTER, TYPE F	546.00	LF	$64.61	$35,277.06
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	303.33	SY	$101.08	$30,660.60
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	173.89	SY	$137.59	$23,925.53
570-1-1	PERFORMANCE TURF	303.33	SY	$4.87	$1,477.22

Intersection 2

Description	Value
Mainline No. of Left Turn Lanes	0
Mainline No. of Right Turn Lanes	0
Mainline Design Speed	35
Cross Street Thru Lanes	4
Cross Street No. of Left Turn Lanes	0
Cross Street No. of Right Turn Lanes	0
Cross Street Design Speed	35
T-Intersection?	N
Multiplier	1
Description	DDI CROSSOVER EXIT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.40	AC	$111,881.58	$156,634.21
120-1	REGULAR EXCAVATION	1,030.00	CY	$56.45	$58,143.50
160-4	TYPE B STABILIZATION	642.22	SY	$38.89	$24,975.94
160-4	TYPE B STABILIZATION	2,486.92	SY	$38.89	$96,716.32
285-709	OPTIONAL BASE,BASE GROUP 09	642.22	SY	$75.63	$48,571.10
285-709	OPTIONAL BASE,BASE GROUP 09	2,486.92	SY	$75.63	$188,085.76
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	105.97	TN	$156.81	$16,617.16
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	410.34	TN	$156.81	$64,345.42
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	52.98	TN	$180.00	$9,536.40
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	205.17	TN	$180.00	$36,930.60
520-1-7	CONCRETE CURB & GUTTER, TYPE E	202.84	LF	$65.85	$13,357.01
520-1-10	CONCRETE CURB & GUTTER, TYPE F	546.00	LF	$64.61	$35,277.06
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	303.33	SY	$101.08	$30,660.60
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	173.89	SY	$137.59	$23,925.53
570-1-1	PERFORMANCE TURF	303.33	SY	$4.87	$1,477.22
	Intersections Component Total				$1,610,507.66

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-111	SINGLE COL GRND SIGN AS, F&I GM, <12 SF	12.00	EA	$607.44	$7,289.28
700-1-112	SINGLE COL GRND SIGN AS, F&I GM, 12-20	1.00	EA	$2,024.78	$2,024.78
700-2-115	MULTI- COLUMN SIGN, F&I GM, 50.1-100 SF	1.00	EA	$9,172.23	$9,172.23
700-2-116	MULTI- COLUMN SIGN, F&I GM, 100.1-200 SF	1.00	EA	$20,868.09	$20,868.09
	Signing Component Total				$39,354.38

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	4 Lane Strain Pole
Multiplier	2
Description	DDI CROSSOVER APPROACH

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,500.00	LF	$24.33	$36,495.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	400.00	LF	$40.92	$16,368.00

632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	2.00	PI	$12,547.59	$25,095.18
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	2.00	PI	$11,342.08	$22,684.16
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	28.00	EA	$1,687.94	$47,262.32
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	2.00	AS	$5,424.66	$10,849.32
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00	LF	$10.29	$617.40
641-2-16	PREST CNC POLE,F&I,TYP P-VI	8.00	EA	$14,395.74	$115,165.92
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	24.00	AS	$2,114.44	$50,746.56
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	16.00	AS	$1,081.17	$17,298.72
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	24.00	EA	$649.33	$15,583.92
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	24.00	AS	$2,099.95	$50,398.80
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	16.00	EA	$385.21	$6,163.36
670-5-166	TRAF CNTL ASS,F&I,NEMA,STD LOCK,RISER,1P	2.00	AS	$35,273.95	$70,547.90
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	8.00	EA	$302.94	$2,423.52

Signalization 2

Description	Value
Type	4 Lane Strain Pole
Multiplier	1
Description	DDI CROSSOVER EXIT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	750.00	LF	$24.33	$18,247.50
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	200.00	LF	$40.92	$8,184.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	$12,547.59	$12,547.59
634-4-143	SPAN WIRE ASSEMBLY, F&I, SINGLE PT, BOX	1.00	PI	$11,342.08	$11,342.08
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	14.00	EA	$1,687.94	$23,631.16
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00	AS	$5,424.66	$5,424.66
639-2-1	ELECTRICAL SERVICE WIRE, F&I	30.00	LF	$10.29	$308.70
641-2-16	PREST CNC POLE,F&I,TYP P-VI	4.00	EA	$14,395.74	$57,582.96
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	12.00	AS	$2,114.44	$25,373.28
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	$1,081.17	$8,649.36
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	12.00	EA	$649.33	$7,791.96
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	12.00	AS	$2,099.95	$25,199.40
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00	EA	$385.21	$3,081.68
670-5-166	TRAF CNTL ASS,F&I,NEMA,STD LOCK,RISER,1P	1.00	AS	$35,273.95	$35,273.95
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00	EA	$302.94	$1,211.76

Signalizations Component Total	$731,550.12

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	2,587.20	LF	$24.33	$62,946.58
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	513.52	LF	$40.92	$21,013.24
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	18.00	EA	$1,687.94	$30,382.92
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	9,449.16	LF	$3.35	$31,654.69
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40'MH,12'ARM L	18.00	EA	$9,967.70	$179,418.60
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	18.00	EA	$942.35	$16,962.30
	Subcomponent Total				$342,378.32

Lighting Component Total	$342,378.33
Sequence 16 Total	$11,081,360.36

Date: 10/13/2025 1:47:08 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 419182-1-22-01 **Letting Date:** 01/2099

Description: SR45 (US41) @ SR54 FROM W OF WILSON RD TO EAST OF OSPREY LN

District: 07 **County:** 14 PASCO **Market Area:** 07 **Units:** English

Contract Class: 4 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 0.970 MI

Project Manager: PRD-CAF-RSH

Version 12 Project Grand Total **$210,923,357.30**

Description: DDI - 10/2025

Project Sequences Subtotal			**$174,192,857.27**
102-1	Maintenance of Traffic	10.00 %	$17,419,285.73
101-1	Mobilization	10.00 %	$19,161,214.30
Project Sequences Total			**$210,773,357.30**
Project Unknowns		0.00 %	$0.00
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					**$210,923,357.30**

Add 15% for Project unknowns.
Project Unknowns = $31,616,003.60

Total Project = $242,539,360.90