This preliminary engineering report contains detailed engineering information that fulfills the purpose and need for State Road 400 (SR 400)/Interstate 4 (I-4), from one mile east of SR 434 to east of SR 15-600/US 17-92, PD&E study.
Notes to Reviewer:

The typical section package for the entire SR 400 (I-4) Beyond the Ultimate corridor has been submitted under separate cover.
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1.0 Summary of Project

The Florida Department of Transportation (FDOT) is conducting an update/reevaluation of the Project Development and Environment (PD&E) studies for the extension of proposed express lanes for State Road 400 (SR 400)/Interstate 4 (I-4). The project limits in the original PD&E studies were:

- West of Memorial Boulevard (SR 546) to the Polk/Osceola County Line, (29.5 miles)
- CR 532 (Polk/Osceola County Line) to West of SR 528 Beachline Expressway (13.7 miles), and
- West of SR 528 Beachline Expressway to SR 472 (43 miles).

The corresponding environmental documents associated with these PD&E studies include: Environmental Assessment/Finding of No Significant Impact (EA/FONSI) for SR 400 (I-4) from West of Memorial Boulevard (SR 546) to the Polk/Osceola County Line [Financial Project Number (FPN) 201210 (December 1998)] and from CR 532 (Polk/Osceola County Line) to West of SR 528 (Beachline Expressway) [FPN 242526 and 242483 (December 1999)] and Final Environmental Impact Statement (FEIS) for I-4 from SR 528 (Beachline Expressway) to SR 472 [FPN 242486, 242592 and 242703 (August 2002, Record of Decision Pending)].

The project limits of the current SR 400 (I-4) PD&E reevaluation, herein referred to as I-4 Beyond the Ultimate (BtU) PD&E Reevaluation Study, include a total of approximately 43 miles of roadway sections east and west of the 21-mile, I-4 Ultimate project. The I-4 Ultimate project, which began construction in early 2015, is reconstruction to include new express lanes, of the section of I-4 that extends from west of SR 435 (Kirkman Road) to east of SR 434. For analysis purposes, the current I-4 BtU PD&E study has been divided into the following five segments:

- Segment 1: SR 400 (I-4) from West of CR 532 (Polk/Osceola County Line) to West of SR 528 (Beachline Expressway) - Osceola County (92130) and Orange County (75280)
- Segment 2: SR 400 (I-4) from West of SR 528 (Beachline Expressway) to West of SR 435 (Kirkman Road) - Orange County (75280)
- Segment 3: SR 400 (I-4) from 1 Mile East of SR 434 to East of SR 15-600/US 17-92 (Seminole/Volusia County Line) - Seminole County (77160)
- Segment 4: SR 400 (I-4) from East of SR 15-600/US 17-92 (Seminole/Volusia County Line) to 1/2 Mile East of SR 472 - Volusia County (79110)
- Segment 5: SR 400 (I-4) from West of SR 25/US 27 to West of CR 532 (Polk/Osceola County Line) Polk County (16320)

Since no Record of Decision has been issued by the Federal Highway Administration (FHWA) for Segments 2, 3 and 4, the current PD&E BtU study for these three segments will update the original PD&E study. This preliminary engineering report was prepared for Segment 3 of the I-4 BtU PD&E study and contains detailed engineering information that fulfills the purpose and need for SR 400 (I-

The purpose of this preliminary engineering report is to document design changes in support of the PD&E update for the I-4 BtU Segment 3 portion of the FEIS for I-4 from SR 528 (Beachline Expressway) to SR 472 (FPN 242486-1, 242592-1 and 242703-1, August 2002, Record of Decision pending). This update includes environmental and engineering analysis of the original design concept, which showed six general use lanes (GULs) and two high occupancy vehicles (HOV) lanes (6+2), to the current proposed design, which includes six GULs and four express lanes (EL) operating under a variable price toll plan (6+4). Other changes being reanalyzed include stormwater management, access plan and interchange configurations.

1.1 Commitments

To minimize impacts of this project on the environment, FDOT is committed to the following mitigation measures for impacts resulting from the Recommended Alternative.


2. **Cultural Resources** - FDOT commits to documenting any structures that reach historic age prior to project completion as part of a supplemental CRAS. FDOT commits to avoidance of the potentially eligible Paola Church Cemetery (8SE02326). The staging of construction equipment, materials, or vehicles will be prohibited during the project.

3. **Wildlife and Habitat** – The utilization of the following specific wildlife and habitat commitments and mitigation measures for unavoidable impacts are recommended to minimize the overall impacts to wildlife from this project:

   a. As required by FDOT Standard Specifications, the construction equipment staging areas for storage of oils, greases, fuel, road bed material and equipment maintenance will be sited in previously disturbed areas not adjacent to any streams, wetlands, or surface water bodies. The staging areas will be surveyed for listed species prior to their use. Also as required by FDOT Standard Specifications, if protected species are identified unexpectedly within the construction area during construction, coordination will be initiated with the appropriate resource agencies to avoid or mitigate impacts.

c. During permitting, all potential gopher tortoise habitat that could be impacted by the project will be systematically surveyed according to the current guidelines published by the Florida Fish and Wildlife Conservation Commission (FFWCC). If gopher tortoise burrows are found, all practicable design measures will be employed to avoid impacts to the burrows. For burrows which cannot be avoided, a permit will be obtained from FFWCC for relocation of gopher tortoises and commensals, and relocation will be performed at a time as close as practicable to the start of construction activities at the site of the burrows.

d. During permitting, FDOT will coordinate with the permitting agencies to quantify and provide compensation for any unavoidable impacts to wood stork suitable foraging habitat (SFH). Mitigation for these impacts will be provided within the service area of a USFWS-approved wetland mitigation bank that provides an amount of habitat and foraging function equivalent to that of the impacted SFH in accordance with the Corps of Engineers and U.S. Fish and Wildlife Service Effect Determination Key for the Wood Stork in Central and North Peninsular Florida.

e. During permitting, FDOT will re-survey for listed species to ensure no changes have occurred since the completion of the PD&E Study.

4. Wetlands - The following commitments are proposed to ensure that the project does not result in adverse impacts to wetland communities and the functions they provide:

a. During the permitting process, FDOT will coordinate with federal and state agency personnel to ensure minimization and reduction of adverse wetland impacts have been explored to the fullest extent of the project while meeting engineering standards and practice.

b. Wetland impacts (direct and secondary) that will result from the construction of this project will be mitigated pursuant to requirements of Part IV. Chapter 373, F.S. and 33 U.S.C.s.1344, as appropriate. Where feasible, the FDOT is committed to minimize direct, secondary and temporary impacts.

c. During the development of the design, a Quality Enhancement Strategies (QES) plan addressing the avoidance and minimization for losses of waters of the United States and
alternative design changes to minimize wetland impacts (without jeopardizing safety) will be committed by others.

5. **Contamination** - Project commitments to address potential contamination sites include:
   a. FDOT commits to conducting Level II Contamination Screenings on all Medium and High Risk Rated sites before establishing a final determination. This will include investigating previous PD&E Studies and Design Projects covering the project area and its surroundings.
   b. All bridges and other structures which will require possible demolition or retrofit should be tested for asbestos containing materials, lead-based paint or any other hazardous materials prior to construction.
   c. Should any parcels containing medical facilities, doctor offices, hospitals, or drug stores be acquired, they should be tested for asbestos, lead-based paint, x-ray equipment, lead-lined walls, chemicals and pharmaceuticals prior to demolition.

6. **Noise** - FDOT is committed to the construction of feasible and reasonable noise abatement measures at Pine Bay Drive as shown on the Noise Maps contingent upon the following conditions:
   a. Cost analysis indicates that the cost of the noise barriers will not exceed the cost-reasonable criterion.
   b. Community input supporting types, heights and locations of noise barriers is provided to the District Office.
   c. Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

7. **Section 4(f)** - FDOT commits to avoidance of any Section 4(f) resources along the I-4 BtU corridor. The staging of construction equipment, materials, or vehicles will be prohibited within these areas during the project.

8. **Trails, Sidewalks, and Bicycle Lanes** - FDOT commits that during the construction of the project, connectivity to trails, sidewalks, and bicycle lanes will be maintained.

### 1.2 Recommendations

The FDOT recommends improvements to the 10.1-mile segment of I-4 from east of SR 434 to east of SR 15-600/US 17-92 (Seminole/Volusia County Line) in Seminole County. This recommendation was developed based on engineering and environmental analysis conducted as part of the PD&E Update/Re-evaluation studies, community input and coordination with local governments and other agencies.
The recommended improvements, as shown in the Concept Plans in Appendix A and described in detail in Chapter 6 of this report, provide for six general purpose lanes and four express lanes, interchange modifications, grade-separated ramps, ramp-to-ramp auxiliary lanes, intersection modifications and/or other improvements. As a result of the Public Hearing, environmental and engineering analyses and interagency coordination, the Recommended Alternative is recommended for Location Design Concept Acceptance by the FHWA.

**Typical Section**

Two mainline typical sections are recommended for I-4 Segment 3. The majority of the I-4 Segment 3 corridor will have a total of ten dedicated lanes (6 general use lanes + 4 express lanes). The section of I-4 from the begin project limits to just south of Lake Mary Boulevard will have three GUL and one auxiliary lane in each direction, resulting in a 12-lane section (6 GUL + 2 Aux + 4 EL) through this portion of the corridor. Both typical sections provide a design speed of 70 miles per hour (mph) within a minimum 300-foot right-of-way.

**Interchanges**

The recommended alternative for I-4 Segment 3 provides grade separations and/or interchanges at six locations:

1. EE Williamson Road (overpass),
2. Lake Mary Boulevard (Diverging Diamond Interchange),
3. CR 46A (Diverging Diamond Interchange),
4. SR 417/SR 429 (Seminole Expressway)/Wekiva Parkway (Systems Interchange),
5. SR 46 (Partial Cloverleaf), and
6. US 17-92 (Tight Urban Diamond Interchange)

**Bridges/Structures**

The recommended alternative for I-4 Segment 3 provides 28 existing, newly constructed or reconstructed bridges, the majority of which are multiple span structures except for the I-4 bridges over SR 46 and the proposed Lake Emma Ramp bridges at the Lake Mary Boulevard interchange, which are single span structures. The existing pedestrian bridge at EE Williamson Road over I-4 will be demolished; pedestrian accommodations will be provided in the proposed bridge section replacing the existing bridge structures. The structures carrying I-4 eastbound and westbound over US 17-92 and the St. Johns River will be widened with substructure retrofit. Additionally, an existing box culvert located approximately 0.7 mile east of SR 46 where I-4 goes over an outfall ditch will need to be extended.

**Drainage**

Stormwater management the recommended alternative for I-4 Segment 3 will involve collection of runoff by storm sewer systems or roadside ditches and routing to existing or proposed stormwater
ponds. There is a total of 22 basins within the project limits which will require 26 existing or proposed ponds and one swale to achieve water quality treatment and attenuation of project runoff. Additionally, one floodplain compensation pond is proposed to compensate for floodplain impacts.

1.3 **Description of Proposed Action**

FDOT is proposing to reconstruct and widen I-4 as part of the I-4 BtU concept. This involves the build-out of I-4 to its ultimate condition through Central Florida, including segments in Polk, Osceola, Orange, Seminole and Volusia Counties. The project limits for the segment analyzed in this report are within an approximate 10-mile segment of I-4 which extends from east of SR 434 (Milepost 4.050) to east of US 17-92 (Milepost 14.135) in Seminole County (herein referred to as I-4 Segment 3), as shown in Figure 1.1.

The concept design proposes the addition of two new express lanes in each direction, resulting in a total of ten dedicated lanes for the majority of the I-4 Segment 3 corridor [6 general use lanes (GUL) + 4 express lanes (EL)]. The section of I-4 from the begin project limits to just south of Lake Mary Boulevard will have three GUL and one auxiliary lane in each direction, resulting in a 12-lane section (6 GUL + 2 Aux + 4 EL) through this portion of the corridor. Although, the interstate is a designated east-west corridor, the alignment follows a southwest to northeast orientation through the limits of Segment 3. The study area in this section from east of SR 434 to east of US 17-92 includes the interchanges at Lake Mary Boulevard, CR 46A, SR 417 (Seminole Expressway)/SR 429 (future Wekiva Parkway), SR 46 and US 17-92. Figure 1.2 illustrates the proposed mainline typical sections for I-4 Segment 3.

1.4 **Purpose and Need**

The proposed improvements to I-4 include widening the existing six-lane divided urban interstate to a 10- or 12-lane divided highway in order to improve traffic operations, enhance connectivity and improve mobility by providing travel choices to the motoring public. I-4 is an east-west limited access freeway which links the west and east coasts of Florida, from I-275 in Tampa to I-95 in Daytona Beach. I-4 spans across six counties in Central Florida, traversing many cities including Lakeland, Orlando, Altamonte Springs, Sanford and DeLand. I-4 is a critical component of Florida’s Strategic Intermodal System (SIS) which links seaports, rail, airports and other intermodal facilities. This aspect of I-4’s significance is evidenced through connectivity provided by major junctions with I-275 and I-75 in the Tampa Bay area, SR 429 (Daniel Webster Western Beltway), SR 417 (Southern Connector/Central Florida Greeneway/Seminole Expressway), SR 528 (Martin Andersen Beachline Expressway), SR 91 (Florida’s Turnpike), SR 408 (Spessard Lindsay Holland East-West Expressway) in Central Florida and I-95 on the east coast.
Figure 1.1 – Project Location Map
Figure 1.2 - I-4 Segment 3 Proposed Typical Sections

Typical Section SR 400 (Interstate 4)
MP 4.725 to MP 7.843 (Seminole County)
Station 2079+37.95 to Station 2244+00.00
Design Speed = 70 MPH

Typical Section SR 400 (Interstate 4)
MP 7.843 to MP 14.178 (Seminole County)
Station 2244+00.00 to Station 2578+48.33
Design Speed = 70 MPH
I-4 serves as the primary corridor in the movement of people and freight between major population, employment and activity centers in the Central Florida region. When the entire Interstate was fully opened in the early 1960’s, it was designed to serve intrastate and interstate travel by providing a critical link between the east and west coasts of Central Florida. Although this role continues to be a crucial transportation function of I-4, the highway also serves large volumes of local and commuter traffic with shorter trip distances. Today, the highway serves as the primary link between hotel/resort complexes and tourist attractions such as Walt Disney World, Universal Studios, Sea World, the International Drive Resort Area and downtown Orlando. Since I-4 is the only north-south limited access facility that is centrally located between the predominant employment centers and the major suburbs to the north, it has become the primary commuting corridor in the Central Florida metropolitan area.

Growth in Central Florida over the past decades has made it difficult for the transportation system to accommodate travel demand. Additionally, traffic congestion and crash incidents have resulted in major delays on the Interstate as well as other arterials surrounding the corridor. Increased congestion levels are experienced outside of the typical morning and afternoon rush-hour periods, affecting mobility levels for more hours of the day and impacting other non-commuter/non-weekday travel. The congestion on I-4 is further evidenced by the less than desirable levels of service on the Interstate as well as the crossroads.

Projections of future population and employment in the region indicate that travel demand will continue to increase well into the future. Table 1.1 and Table 1.2, respectively, provide a summary of the population and employment growth projections for counties surrounding the I-4 corridor. The ability to accommodate the new travel patterns resulting from growth must be provided to sustain the region’s economy. Without the improvements, extremely congested conditions are expected to occur for extended periods of time in both the morning and evening peak periods. Due to these congested conditions, user travel times will continue to increase, the movement of goods through the urban area will be slower, and the deliveries of goods within the urban area will be forced to other times throughout the day. The need for improvements to I-4 is illustrated by the important transportation roles I-4 serves to the Central Florida region and the State of Florida. If no improvements are made to the Interstate, a loss in mobility for the area's residents, visitors and commuters can be expected, resulting in a severe threat to the continued viability of the economy and the quality of life.

This PD&E update involves revising the original design concept showing 6 GULs + 2 HOV lanes, as recommended in the FEIS for I-4 from SR 528 to SR 472 (FPN No. 242486, 242592 & 242703, August 2002, Record of Decision Pending), to the current proposed design of 6 GUL + 4 EL. The express lanes are tolled lanes and will extend the full length of the project. The access to/from the tolled lanes will be evaluated as part of this effort to determine if changes are needed from the previously approved
concept for access to/from the HOV Lanes. The original I-4 PD&E Studies involved physical separation between the general use lanes and the HOV lanes on I-4, with demand management in the HOV lanes. The original demand management strategy was to control the use of the lanes by requiring a minimum number of occupants per vehicle to maintain an acceptable level of service (Level of Service D).

Table 1.1: Population Projections for Counties in the I-4 Corridor

<table>
<thead>
<tr>
<th>County</th>
<th>April 1, 2013</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flagler</td>
<td>97,843</td>
<td>124,863</td>
<td>160,705</td>
<td>191,861</td>
</tr>
<tr>
<td>Hillsborough</td>
<td>1,276,410</td>
<td>1,445,344</td>
<td>1,666,187</td>
<td>1,845,013</td>
</tr>
<tr>
<td>Lake</td>
<td>303,317</td>
<td>355,935</td>
<td>425,221</td>
<td>479,928</td>
</tr>
<tr>
<td>Orange</td>
<td>1,202,978</td>
<td>1,394,814</td>
<td>1,641,173</td>
<td>1,840,695</td>
</tr>
<tr>
<td>Osceola</td>
<td>288,361</td>
<td>360,478</td>
<td>452,651</td>
<td>532,472</td>
</tr>
<tr>
<td>Polk</td>
<td>613,950</td>
<td>691,355</td>
<td>794,061</td>
<td>883,393</td>
</tr>
<tr>
<td>Seminole</td>
<td>431,074</td>
<td>465,128</td>
<td>508,329</td>
<td>541,133</td>
</tr>
<tr>
<td>Sumter</td>
<td>105,104</td>
<td>138,220</td>
<td>181,846</td>
<td>219,396</td>
</tr>
<tr>
<td>Volusia</td>
<td>498,978</td>
<td>529,447</td>
<td>566,999</td>
<td>595,077</td>
</tr>
<tr>
<td>Total</td>
<td>4,818,015</td>
<td>5,505,584</td>
<td>6,397,172</td>
<td>7,128,968</td>
</tr>
</tbody>
</table>


Table 1.2: Employment Projections for Workforce Regions in the I-4 Corridor

<table>
<thead>
<tr>
<th>Workforce Region</th>
<th>2014</th>
<th>2022</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, All Occupations</td>
<td>200,541</td>
<td>224,127</td>
<td>11.8</td>
</tr>
<tr>
<td>Flagler &amp; Volusia Counties</td>
<td>699,877</td>
<td>789,163</td>
<td>12.8</td>
</tr>
<tr>
<td>Hillsborough County</td>
<td>228,559</td>
<td>252,300</td>
<td>10.4</td>
</tr>
<tr>
<td>Lake, Orange, Osceola, Seminole and Sumter Counties</td>
<td>1,224,998</td>
<td>1,404,357</td>
<td>14.6</td>
</tr>
</tbody>
</table>

Source: Florida Department of Economic Opportunity

This update also addresses revising the demand management tool to convert the HOV lanes to tolled express lanes. The express lanes will be separated from the general use travel lanes by two shoulders with a barrier wall between the shoulders. A variable pricing tolling plan is proposed for the express lanes. The tolls will vary by time of day and day of week to maintain acceptable levels of service in the express lanes. The tolls will be collected electronically through existing E-Pass, SunPass and other systems currently in place in the Central Florida area. The conversion to express lanes will maintain the same right-of-way limits as documented previously and will not change the impacts to the social, natural or physical environment. An update to the Systems Access Modification Report (SAMR) prepared in January 2013 is being completed in conjunction with this effort.
2.0 Existing Conditions

The existing conditions within the I-4 study corridor were evaluated by reviewing existing plans and documents, coordination with regulatory agencies and performing field investigations. The following sections provide detailed descriptions of existing roadway characteristics, traffic and bridge features, drainage, soils, other physical features and traffic and crash data within the project study area.

2.1 Roadway Classification

I-4 is classified by FDOT as an Urban Interstate and Strategic Intermodal System (SIS) corridor throughout the limits of Segment 3. I-4 is a designated evacuation route by the Florida Division of Emergency Management.

2.2 Typical Section

The existing typical section for the I-4 Segment 3 mainline consists of three 12-foot travel lanes in each direction. The outside and inside shoulders are 12 feet wide with 10 feet paved with guardrail on the inside shoulder of the eastbound lanes. Both directions have auxiliary lanes in some areas. The roadways are separated by a grass median which varies in width from 40 feet to 164 feet. Table 2.1 provides a summary of the existing typical section features by approximate station location along I-4 and Figure 2.1 illustrates the existing I-4 typical section.

<table>
<thead>
<tr>
<th>Station From</th>
<th>Station To</th>
<th>Median Width</th>
<th>Number of Eastbound Auxiliary Lanes</th>
<th>Number of Westbound Auxiliary Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2043+71.32 (Begin Project)</td>
<td>2064+00.00 (East end of WB Rest Area)</td>
<td>128 feet</td>
<td>0-1</td>
<td>0</td>
</tr>
<tr>
<td>2064+00.00 (East end of WB Rest Area)</td>
<td>2143+00.00 (West end of EB Rest Area)</td>
<td>40 feet</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2143+00.00 (West end of EB Rest Area)</td>
<td>2461+00.00 (East of SR 417)</td>
<td>64 feet</td>
<td>0-2</td>
<td>0-2</td>
</tr>
<tr>
<td>2461+00.00 (East of SR 417)</td>
<td>2506+00.00 (East of SR 46)</td>
<td>100 feet</td>
<td>1</td>
<td>0-1</td>
</tr>
<tr>
<td>2506+00.00 (East of SR 46)</td>
<td>2550+00.00 (West of the I-4 overpass at Orange Blvd.)</td>
<td>64 feet</td>
<td>1-2</td>
<td>1</td>
</tr>
<tr>
<td>2550+00.00 (West of the I-4 overpass at Orange Blvd.)</td>
<td>2583+00.00 (End Project)</td>
<td>164 feet</td>
<td>0-1</td>
<td>0-1</td>
</tr>
</tbody>
</table>
2.3 **Right-of-way**

The existing right-of-way varies from 300 feet to 350 feet. The Concept Plans for this project, included in Appendix A, show the existing right-of-way along the corridor.

2.4 **Existing Property Lines and Land Use**

The existing property lines for parcels within the project study area were available from the Seminole County GIS database and are shown on the Concept Plans in Appendix A. Parcels affected by the proposed improvements are identified on the Concept Plans. The proposed improvements to the 10-mile I-4 Segment 3 corridor lie within Seminole County, with portions of the segment adjacent to or within the cities of Longwood, Lake Mary and Sanford as shown in Figure 2.2.

**Existing Land Use**

The existing land use map, shown in Figure 2.3, was created using information from FDOT 2014 parcel tax data records compiled by the Florida Geographic Data Library (FGDL). The existing land use along the I-4 Segment 3 corridor varies with a mixture of uses. The southern end of the corridor is characterized by large portions of residential land use along both sides of I-4. The remainder of the corridor, which comprises the majority of the corridor limits, consists largely of retail/office land uses interspersed with some parcels designated for agricultural uses and some undeveloped non-residential parcels.

**Future Land Use**

The future land use map, shown in Figure 2.4, was created using FGDL future land use data from the adopted comprehensive plan amendments for each municipality within the project’s limits.
Figure 2.2 - Existing City Limits
Figure 2.3 - Existing Land Use
Figure 2.4 - Future Land Use
Future land use along the I-4 Segment 3 corridor starting from the southwestern end and going northeast, primarily consists of parcels designated for very low and low density residential uses with some planned development, industrial and commercial uses. The northern portion of the corridor consists of industrial land use interspersed with some commercial parcels on the east side of I-4, and mixed-use with commercial on the west side of I-4. Several parcels designated as conservation area are concentrated near the northern end of Segment 3.

### 2.5 Horizontal Alignment

The alignment on I-4 is typical of most interstate highways with long tangent sections connecting long, gradual curves. Table 2.2 lists the horizontal curve data within the study limits. According to the as-built FDOT construction plans from 2003, the existing pavement cross slope within the project limits has a downward slope of 0.02 ft/ft towards the outside (except in the superelevated sections of roadway). The curve to the east of the westbound rest area does not meet current design criteria for a 70-mph design speed. The superelevation rate, $e$, and radius for this curve are equivalent to a 55-mph design speed. The posted speed limit throughout Segment 3 is 65 mph. The curve to the east of SR 46 also does not meet current design criteria for a 70-mph design speed. The superelevation rate, $e$, and radius for this curve are equivalent to a 65-mph design speed. A superelevation of 0.037 is required by today’s standards to meet a 70-mph design speed on this type of facility.

<table>
<thead>
<tr>
<th>Location and PI Station from Existing FDOT Plans</th>
<th>Degree of Curvature/Curve Direction</th>
<th>Existing Superelevation (ft/ft)</th>
<th>Equivalent Design Speed (Per FDOT PPM Table 2.9.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>East of Westbound Rest Area Station 2461+38.55</td>
<td>1°00’00” Left</td>
<td>0.028</td>
<td>55</td>
</tr>
<tr>
<td>East of Lake Mary Boulevard Station 2719+47.19</td>
<td>0°30’00” Right</td>
<td>0.054</td>
<td>70</td>
</tr>
<tr>
<td>East of SR 46 Station 2920+42.87</td>
<td>1°00’00” Right</td>
<td>0.036</td>
<td>65</td>
</tr>
</tbody>
</table>

### 2.6 Vertical Alignment

Table 2.3 summarizes the vertical alignment of I-4 within the corridor study limits and the design speed associated with each curve based on current design criteria. Reference location stationing is included on the Concept Plans in Appendix A. There are 34 vertical curves along the I-4 Segment 3 corridor, of which 19 do not meet the current requirements for 70 mph design speed for length of curve or curve constant, $K$. 
### Table 2.3: Existing I-4 Vertical Alignments within Segment 3

<table>
<thead>
<tr>
<th>PVI Stationing*</th>
<th>Location</th>
<th>At Inter-Change (Y/N)</th>
<th>Crest or Sag Curve</th>
<th>Grade In (%)</th>
<th>Grade Out (%)</th>
<th>Existing Curve Length (ft)</th>
<th>Existing K-Value</th>
<th>Equivalent Design Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2055+50</td>
<td>N</td>
<td>Sag</td>
<td>-1.404</td>
<td>2.335</td>
<td>650</td>
<td>173.8</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>2066+50</td>
<td>N</td>
<td>Crest</td>
<td>2.335</td>
<td>0.344</td>
<td>500</td>
<td>251.1</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>2093+90</td>
<td>N</td>
<td>Crest</td>
<td>0.344</td>
<td>-1.56</td>
<td>600</td>
<td>315.1</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>2106+00</td>
<td>EE Williamson Road</td>
<td>Y</td>
<td>Sag</td>
<td>-1.56</td>
<td>0.1</td>
<td>400</td>
<td>241.0</td>
<td>70</td>
</tr>
<tr>
<td>2112+50</td>
<td>N</td>
<td>No VC</td>
<td>0.1</td>
<td>0.31</td>
<td>0</td>
<td>0.0</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>2124+50</td>
<td>N</td>
<td>No VC</td>
<td>0.31</td>
<td>-0.8</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2134+50</td>
<td>N</td>
<td>Sag</td>
<td>-0.8</td>
<td>-0.259</td>
<td>400</td>
<td>739.4</td>
<td>70</td>
<td></td>
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<tr>
<td>2154+50</td>
<td>N</td>
<td>Sag</td>
<td>-0.259</td>
<td>2.52</td>
<td>600</td>
<td>215.9</td>
<td>70</td>
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</tr>
<tr>
<td>2168+00</td>
<td>N</td>
<td>Crest</td>
<td>2.52</td>
<td>-3.03</td>
<td>1350</td>
<td>243.2</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>2179+00</td>
<td>N</td>
<td>Sag</td>
<td>-3.03</td>
<td>2.951</td>
<td>850</td>
<td>142.1</td>
<td>55</td>
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<tr>
<td>2188+50</td>
<td>N</td>
<td>Crest</td>
<td>2.951</td>
<td>-1.42</td>
<td>1050</td>
<td>240.2</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>2199+50</td>
<td>N</td>
<td>Sag</td>
<td>-1.42</td>
<td>-0.1</td>
<td>400</td>
<td>303.0</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>2224+50</td>
<td>N</td>
<td>Crest</td>
<td>-0.1</td>
<td>-1.03</td>
<td>500</td>
<td>537.6</td>
<td>70</td>
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</tr>
<tr>
<td>2244+39</td>
<td>N</td>
<td>Sag</td>
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<td>0</td>
<td>400</td>
<td>388.3</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>2270+00</td>
<td>Lake Mary Boulevard</td>
<td>Y</td>
<td>Sag</td>
<td>0</td>
<td>1.419</td>
<td>400</td>
<td>281.9</td>
<td>70</td>
</tr>
<tr>
<td>2284+50</td>
<td>N</td>
<td>Crest</td>
<td>1.419</td>
<td>-1.721</td>
<td>800</td>
<td>254.8</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>2291+50</td>
<td>N</td>
<td>Sag</td>
<td>-1.721</td>
<td>0.12</td>
<td>600</td>
<td>325.9</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>2317+50</td>
<td>N</td>
<td>Sag</td>
<td>0.12</td>
<td>0.82</td>
<td>400</td>
<td>571.4</td>
<td>70</td>
<td></td>
</tr>
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<td>2340+44.44</td>
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<td>0.82</td>
<td>0.1</td>
<td>400</td>
<td>555.6</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>2355+50</td>
<td>N</td>
<td>Crest</td>
<td>0.1</td>
<td>-0.1</td>
<td>500</td>
<td>2500.0</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>2368+50</td>
<td>N</td>
<td>Crest</td>
<td>-0.1</td>
<td>-0.728</td>
<td>500</td>
<td>796.2</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>2384+50</td>
<td>N</td>
<td>Sag</td>
<td>-0.728</td>
<td>0</td>
<td>400</td>
<td>549.5</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>2410+91</td>
<td>N</td>
<td>Sag</td>
<td>0</td>
<td>3</td>
<td>500</td>
<td>166.7</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>2424+50</td>
<td>SR 417</td>
<td>Y</td>
<td>Crest</td>
<td>3</td>
<td>-3</td>
<td>1500</td>
<td>250.0</td>
<td>55</td>
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<tr>
<td>2437+48.31</td>
<td>N</td>
<td>Sag</td>
<td>-3</td>
<td>-0.475</td>
<td>400</td>
<td>158.4</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>2457+50</td>
<td>N</td>
<td>Crest</td>
<td>-0.475</td>
<td>-2.558</td>
<td>600</td>
<td>288.0</td>
<td>55</td>
<td></td>
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<tr>
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<td>Sag</td>
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<td>175.9</td>
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<tr>
<td>2484+90.78</td>
<td>SR 46</td>
<td>Y</td>
<td>Crest</td>
<td>3</td>
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<td>Crest</td>
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<td>-0.467</td>
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<tr>
<td>2553+27.61</td>
<td>N</td>
<td>Sag</td>
<td>-0.467</td>
<td>3</td>
<td>500</td>
<td>144.2</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>
### 2.7 Pedestrian and Bicycle Facilities

I-4 is a limited access interstate facility that accordingly prohibits bicycle and pedestrian traffic. Pedestrian and bicycle facility information along the Segment 3 corridor is provided in the following sections.

**I-4 and Lake Mary Boulevard Interchange**

No crosswalks, sidewalks or bicycle lanes are currently present at the ramp terminals of the I-4 and Lake Mary Boulevard interchange.

**Cross Seminole Trail**

The Seminole County Cross Seminole Trail is a 23-mile long paved, multi-use recreational trail which crosses over I-4 approximately 1/2 mile south of CR 46A. The Cross Seminole Trail connects to the 14-mile Seminole Wekiva Trail just west of I-4 and to the 6.5-mile Cady Way Trail in Winter Park which continues on to Orange County. Within the I-4 Segment 3 project area, the Cross Seminole trail extends east from the pedestrian overpass at I-4 for approximately 0.4 mile to Rinehart Road. The trail follows a north/south alignment parallel to Rinehart Road for approximately three miles to Greenway Boulevard where it turns east to continue into other parts of Seminole County. There is one trailhead which provides parking at the northeast corner of Rinehart Road/Greenwood Boulevard and Lake Mary Boulevard, approximately one mile east of I-4.

**Seminole Wekiva Trail**

The Seminole Wekiva Trail is a 14-mile paved recreational trail which follows a north/south alignment west of the Interstate and extends from Markham Road to the north to SR 436 to the south, entirely within Seminole County. Within the I-4 Segment 3 project area, the Seminole Wekiva Trail extends approximately 7.7 miles between the CR 46A and International Parkway and the SR 434 and Markham Woods Road intersections. There is one minor trailhead with parking located at the Southeast corner of Markham Woods Road and Long Pond Road, approximately 2/3 mile west of I-4. The Seminole Wekiva Trail connects to two pedestrian overpasses within the project area: Cross Seminole Trail/I-4 Overpass located approximately ½ mile south of CR 46A and EE Williamson Road/I-4 Overpass. The

---

**Table 2.3: Existing I-4 Vertical Alignments within Segment 3**

<table>
<thead>
<tr>
<th>PVI Stationing*</th>
<th>Location</th>
<th>At Inter-Change</th>
<th>Crest or Sag Curve</th>
<th>Grade In (%)</th>
<th>Grade Out (%)</th>
<th>Existing Curve Length (ft)</th>
<th>Existing K-Value</th>
<th>Equivalent Design Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2565+18.8</td>
<td>Orange Boulevard</td>
<td>Y</td>
<td>Crest</td>
<td>3</td>
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<td>241.4</td>
<td>55</td>
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<tr>
<td>2575+38.8</td>
<td>US 17-92</td>
<td>Y</td>
<td>Sag</td>
<td>-2.592</td>
<td>2.298</td>
<td>690</td>
<td>141.1</td>
<td>55</td>
</tr>
</tbody>
</table>

*Stationing based on the Concept Plans in Appendix A.
pedestrian overpass at EE Williamson Road is a separate bridge structure on the north side of the bridge carrying EE Williamson Road over I-4. A concrete barrier with pedestrian/bike railing separates the multi-use path from the roadway.

I-4 and CR 46A (HE Thomas Jr. Parkway) Interchange
At the I-4 and CR 46A interchange, continuous sidewalks and paved shoulders/unmarked bicycle lanes are present on the north and south sides of the road along CR 46A between Colonial Center Parkway, west of I-4, and Rinehart Road, east of I-4. The sidewalks on the CR 46A overpass are separated from the travel lanes by jersey barriers and shielded by chain link fencing on the outside. Crosswalks are present on all four approaches at the Colonial Center Parkway and CR 46A and at the Rinehart Road and CR 46A intersections located approximately 1/4 mile west and 0.2 mile east of I-4, respectively. At the ramp terminal located east of I-4, crosswalks are present only on the ramp entry and exit approaches; there are no crosswalks on CR 46A at this location.

I-4 and SR 417 Interchange
No crosswalks, sidewalks or bicycle lanes are present at the I-4 and SR 417 interchange because it is a system-to-system interchange.

I-4 and SR 46 Interchange
A 14’ sidewalk is present along the south side of SR 46, from 0.3 mile west of I-4 and continuing east for approximately 0.25 mile to Towne Center Boulevard. At Towne Center Boulevard, the sidewalk becomes 5’ and continues on the south side of the road for several miles east of the Interstate, providing connectivity to the Cross Seminole Trail at the Rinehart Road and SR 46 intersection. Sidewalk is discontinuous on the north side of SR 46 in the immediate vicinity of the interchange; a 6’ sidewalk is present for approximately 500 feet east of the I-4 eastbound on ramp and a 12’ sidewalk exists for approximately 0.35 mile, from west of North Elder Road to Monroe Road. Crosswalks are present on the south approach (exit ramp) of the I-4 eastbound ramp terminal and on the entrance ramp from SR 46 eastbound to I-4 westbound. Bicycles are accommodated by 5-foot unmarked lanes along the north and south sides of SR 46.

I-4 and US 17-92 Interchange
Near the I-4 and US 17-92 interchange, crosswalks are present on the east and north approaches of the US 17-92 and I-4 East Ramp/Monroe Road intersection and a 10’ sidewalk is present along the north side of US 17-92 between the I-4 east and west ramp terminals. Paved shoulders/unmarked bicycle lanes exist along both sides of US 17-92 east and west of the I-4 eastbound and westbound ramps, respectively.
2.8 Design and Posted Speed
The design speed for I-4 is 70 miles per hour (MPH) and the posted speed limit along Segment 3 is 65 MPH.

2.9 Lighting
An inventory of the existing lighting along I-4 was completed by field review to identify locations where lighting currently exists. Approximately 50% of the Segment 3 mainline corridor, including the rest areas and all interchanges with the exception of I-4 and US 17-92, has existing lighting. The existing lighting consists of conventional lighting poles along the mainline of I-4 and at the rest areas. Several of the interchanges and the area surrounding the Cross Seminole Trail overpass have high mast lighting poles. Table 2.4 shows the approximate limits and type of existing lighting along the I-4 Segment 3 mainline.

<table>
<thead>
<tr>
<th>Location</th>
<th>Begin MP</th>
<th>End MP</th>
<th>Existing Lighting</th>
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</thead>
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<tr>
<td>Westbound Rest Area</td>
<td>4.050</td>
<td>4.458</td>
<td>Conventional</td>
</tr>
<tr>
<td>Eastbound Rest Area</td>
<td>5.733</td>
<td>6.200</td>
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<tr>
<td>Lake Mary Boulevard Interchange</td>
<td>7.660</td>
<td>8.711</td>
<td>High Mast</td>
</tr>
<tr>
<td>I-4 Mainline (EB and WB)</td>
<td>8.740</td>
<td>9.790</td>
<td>Conventional</td>
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<tr>
<td>Cross Seminole Trail Overpass</td>
<td>9.820</td>
<td>10.040</td>
<td>High Mast</td>
</tr>
<tr>
<td>CR 46A Interchange to SR 417 Interchange (EB and WB)</td>
<td>10.050</td>
<td>12.025</td>
<td>High Mast</td>
</tr>
<tr>
<td>SR 46 Interchange</td>
<td>12.025</td>
<td>12.880</td>
<td>Conventional</td>
</tr>
</tbody>
</table>

2.10 Existing Traffic
Existing (2011) traffic information including volume counts, geometry, signal timing plans and other pertinent data for the I-4 Segment 3 study corridor was provided in the I-4 Beyond the Ultimate Systems Access Modification Report (SAMR) Re-Evaluation: I-4 Beyond the Ultimate Project North Section – from East of SR 434 to East of SR 472 (March 2017). This data was used to perform operational analyses of existing conditions using the latest VISSIM (Version 7.0) microsimulation software.

2.10.1 Traffic Volumes
Existing traffic volume data consists of year 2011 AM and PM peak hour counts compiled from FDOT’s Florida Traffic Information (FTI) database, Florida’s Turnpike Enterprise, Seminole County count program, other agencies and field data collection. The existing (year 2011) traffic counts for the I-4 Segment 3 study corridor were obtained from the I-4 Beyond the Ultimate Systems Access Modification Report (SAMR) Re-Evaluation: I-4 Beyond the Ultimate Project North Section – from East of SR 434 to East of SR 472 (March 2017) and are depicted in Figure 2.5 through Figure 2.7.
Figure 2.5 - Existing (Year 2011) Traffic Volumes (Sheet 1 of 3)
Figure 2.6 - Existing (Year 2011) Traffic Volumes (Sheet 2 of 3)
I-4 SAMR Re-evaluation - North Section Existing (2011) Conditions

Figure 2.7 - Existing (Year 2011) Traffic Volumes (Sheet 3 of 3)
2.10.2 **Intersection Geometry and Signalization**

There are five existing interchanges within the limits of I-4 Segment 3. The interchange configurations were depicted in Figure 2.5 through Figure 2.7 and are described in detail in the following sections.

**I-4 and Lake Mary Boulevard Interchange**

The I-4 interchange at Lake Mary Boulevard is a four-quadrant, six-ramp partial cloverleaf interchange with loop ramps in the northwest and southeast quadrants. The northwest quadrant loop ramp is a two-lane on-ramp from westbound Lake Mary Boulevard to westbound I-4. The outer connector ramp in the northwest quadrant is a two-lane off ramp from westbound I-4 that flares to three lanes at the signalized ramp terminus on Lake Mary Boulevard. The southeast quadrant loop ramp is a single lane on-ramp from eastbound Lake Mary Boulevard to eastbound I-4. The outer connector ramp in the southeast quadrant is a two-lane off ramp which flares to four lanes at the signalized ramp terminus on Lake Mary Boulevard. The I-4 eastbound and westbound off-ramps both form signalized, T-intersections with directional median openings which allow dual left turns from the exit ramps. The I-4 eastbound exit ramp also has two right turn lanes which are separated by an island onto eastbound Lake Mary Boulevard. The outside right turn lane is a free-flow right turn lane; the inside right turn lane is under signal control. The northeast and southwest quadrants contain a single lane on ramp from westbound Lake Mary Boulevard to eastbound I-4 and from eastbound Lake Mary Boulevard to westbound I-4, respectively.

**I-4 Interchanges with CR 46A (HE Thomas Jr. Parkway), SR 417 and SR 46**

The I-4 Interchanges with CR 46A, SR 417 and SR 46 are connected by a collector-distributor (C-D) system with two-lane C-D roads in both the eastbound and westbound directions. The eastbound C-D road spurs off I-4 just north of CR 46A, going under the CR 46A to I-4 eastbound on ramp. The road continues parallel to the Interstate providing an exit ramp to SR 417 southbound before crossing over SR 417 and the on ramp from SR 417 northbound to I-4 eastbound and terminating at SR 46. The westbound C-D road begins at SR 46, crosses over SR 417 providing an exit ramp to SR 417 southbound. Continuing parallel to the Interstate, the westbound C-D road crosses over the SR 417 northbound to I-4 westbound on ramp and continues under CR 46A providing entry and exit ramps for CR 46A before merging with the I-4 westbound lanes.

**I-4 and CR 46A**

The I-4 and CR 46A (HE Thomas Jr. Parkway) interchange has ramps in three quadrants. The I-4 eastbound on and off ramps form a single signalized intersection with dual left lanes and dual right lanes from the exit ramp and dual left lanes from eastbound 46A onto the entrance ramp. I-4 westbound traffic exits the freeway from a single lane loop ramp in the southwest quadrant which terminates at the signalized, four-way intersection of CR 46A and Colonial Center Parkway,
approximately 1200 feet west of the Interstate. The south leg of this intersection also serves as the on ramp for I-4 westbound from CR 46A.

I-4 and SR 417
The I-4 and SR 417 interchange is a systems interchange with a single-lane loop ramp in the southwest quadrant which serves as the connecting ramp from I-4 westbound to SR 417 southbound. SR 417 is a tolled, limited access highway which forms an eastern beltway between I-4 in Seminole County and I-4 in Osceola County. In the vicinity of I-4, SR 417 has its westerly terminus at International Parkway, approximately 2,800 feet west of I-4. Access from northbound SR 417 to westbound I-4 is provided by a single lane flyover ramp over the east-west connector road from International Parkway to SR 417 southbound. I-4 eastbound traffic connects to SR 417 southbound via single lane exit ramp from the C-D road in the southeast quadrant. SR 417 northbound traffic connects to I-4 eastbound by a two-lane ramp in the northeast quadrant.

I-4 and SR 46
The I-4 and SR 46 interchange is a partial cloverleaf interchange with ramps in all four quadrants. The northwest quadrant loop ramp is a single lane on ramp from SR 46 westbound to I-4 westbound. The northeast quadrant on ramp provides access from SR 46 to I-4 eastbound and the southwest quadrant single-lane on ramp provides access from SR 46 eastbound to I-4 westbound. The outer connector ramp in the northwest quadrant is a two-lane exit ramp from I-4 westbound which forms a signalized “T” intersection at the ramp terminal on SR 46. I-4 eastbound does not have a direct exit onto SR 46. Access to SR 46 is provided by the eastbound C-D road which terminates at SR 46. At the signalized ramp terminal, a single left turn lane and dual right lanes separated by a channelizing, painted island provide access to SR 46 westbound and eastbound, respectively.

I-4 and US 17-92 Interchange
The I-4 and US 17-92 interchange is a partial cloverleaf interchange with loop ramps in the northeast and southwest quadrants. The loop ramp in the northeast quadrant begins as a single lane off-ramp from I-4 eastbound approximately 3,380 feet south of US 17-92. It flares to two lanes near the signalized ramp terminal intersection of US 17-92 and Monroe Road. East/west traffic on US 17-92 enters I-4 eastbound from the single lane loop ramp in the southeast quadrant accessed via the US 17-92 and Monroe Road signalized intersection. The loop ramp in the southwest quadrant is a single lane exit ramp from I-4 westbound, which has a signalized ramp terminal on US 17-92, approximately 650 feet west of the Interstate. I-4 westbound is accessed from this signalized intersection which connects to the single lane outer connector entry ramp in the southwest quadrant.
2.10.3 **Traffic Operational Analyses**

Existing conditions operational analyses were performed for the I-4 mainline and study area intersections using the latest version of microsimulation software (VISSIM, Version 7.0). Link and node evaluation was performed to estimate Level of Service based on Highway Capacity Manual metrics for the I-4 mainline and study intersections. The intersection analysis indicates that the Lake Mary Boulevard and Lake Emma Road intersection operates at LOS F in the PM peak hour. The link evaluation of freeway segments indicates that all segments operate with average speeds greater than 60 mph, with the exception of I-4 eastbound, west of SR 434. The results of the operational analyses for I-4 Segment 3 are summarized in Table 2.5 and Table 2.6. Detailed outputs from the software programs are provided in the *I-4 Beyond the Ultimate Systems Access Modification Report (SAMR) Re-Evaluation: I-4 Beyond the Ultimate Project North Section – from East of SR 434 to East of SR 472* (March 2017).

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<th>LOS</th>
<th>Existing PM Delay (sec)</th>
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<td>C</td>
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<td>C</td>
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<tr>
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<tr>
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<td>C</td>
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<tr>
<td></td>
<td>I-4 EB Ramps</td>
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<td>C</td>
<td>26.6</td>
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<td>Rinehart Rd</td>
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<td>C</td>
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<td>1.1</td>
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*Intersection operating at or below LOS E.*
Table 2.6: I-4 Mainline Freeway Link/Segment Operational Analysis

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<tr>
<th>Location</th>
<th>Average Speed (mph)</th>
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<td>AM Peak Hour</td>
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<tr>
<td><strong>I-4 Segment 3 Eastbound</strong></td>
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<tr>
<td>I-4 EB at SR 434</td>
<td>65.6</td>
</tr>
<tr>
<td>I-4 EB West of SR 434</td>
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<tr>
<td>I-4 EB Lake Mary Blvd off-ramp</td>
<td>66.8</td>
</tr>
<tr>
<td>I-4 EB East of CR 46A</td>
<td>67.7</td>
</tr>
<tr>
<td>I-4 EB West of SR 46</td>
<td>67.5</td>
</tr>
<tr>
<td>I-4 EB at SR 46</td>
<td>68.0</td>
</tr>
<tr>
<td>I-4 EB at US 17-92</td>
<td>66.8</td>
</tr>
<tr>
<td>I-4 EB East of US 17-92</td>
<td>66.4</td>
</tr>
<tr>
<td><strong>I-4 Segment 3 Westbound</strong></td>
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</tr>
<tr>
<td>I-4 WB between SR 434 &amp; Lake Mary Blvd</td>
<td>70.1</td>
</tr>
<tr>
<td>I-4 WB West of US 17-92</td>
<td>67.5</td>
</tr>
<tr>
<td>I-4 WB West of Lake Mary Blvd</td>
<td>68.3</td>
</tr>
</tbody>
</table>

Link segment operating with average speed <60 mph.

2.11 Pavement Conditions

Pavement condition surveys are conducted by FDOT and are rated on a scale of zero to 10, with a rating of six or less considered critical. The pavement surface and base conditions on I-4 throughout the study area were rated as “good” to “very good” based on high pavement survey ratings between 7.0 and 8.0. The section of I-4 from EE Williamson Road to Lake Mary Boulevard was recently milled and resurfaced in March 2015. Table 2.7 provides the existing pavement condition ratings for 2013 and forecasted 2018 ratings for I-4 Segment 3.

Table 2.7: Pavement Conditions I-4 Segment 3

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<tr>
<th></th>
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<td>9.0</td>
<td>4.5</td>
<td>7.4</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Source: Florida Department of Transportation, All System Pavement Condition Forecast (2013 Ratings)
2.12 Drainage and Hydrology

Existing drainage characteristics in the study area were determined by reviewing FDOT construction plans, the Straight Line Diagrams of Road Inventory, St. Johns River Water Management District (SJRWMD) drainage and permitting files, United States Geological Survey (USGS) Quadrangle Maps, Geographic Information System (GIS) maps and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). Field reviews were also conducted along the corridor. The study area lies within the jurisdiction of SJRWMD.

2.12.1 Existing Drainage Patterns

The project is separated into 22 basins in the existing condition, which includes the pond sites and the full roadway right-of-way. There are 24 ponds that were constructed for treatment and attenuation of the runoff. The stormwater runoff from the roadway is collected by roadside ditches and cross drains that either discharge to an existing pond for treatment and attenuation, or discharge directly to the outfall untreated. The Wekiva River Hydrologic Basin is considered an Outstanding Florida Water (OFW) and Lake Monroe is a nutrient impaired water body. The overall drainage maps for the project are provided in Figure 6.1 through Figure 6.4 in Section 6.6 of this report.

The first nine basins (Basin HH to 306) are located within the Wekiva Recharge Protection Basin and the Wekiva River Hydrologic Basin. The basin limits start at one mile east of SR 434 and ends just north of the I-4 and Lake Mary Boulevard interchange. The basins include nine existing ponds that were constructed for treatment and attenuation. The first two ponds (Ponds HH & II) are located within the Richie Green Rest Area in Longwood and discharge to the Little Wekiva River, which is an OFW. Ponds 300, 301, 302, 303 and 304 are land-locked and discharge to either Grace Lake or existing depressional areas. The existing ponds were designed as dry retention ponds, for interim improvements only. Ponds 305 and 306 discharge to the Heathrow Development stormwater management system, which is an open basin.

There are two basins (Basins 307 to 308) that are located within the Lake Emma Basin, which is land-locked. The basin limits start north of Lake Mary Boulevard and end just south of CR 46A. The basins include two existing ponds, which were designed as dry retention ponds and constructed for treatment and attenuation.

The next three basin limits (Basins 309-311) start from CR 46A and extend to the I-4 and SR 417 interchange. The basins are considered land-locked and include four existing ponds that were constructed for treatment and attenuation. Three of the four existing ponds (Ponds 309, 310 and 311) were designed as wet detention ponds and Pond 309A was designed as a dry retention pond.

Basin 312 begins at the existing I-4 and SR 417 interchange (future I-4 and Wekiva Parkway/SR 429 interchange) and continues north along the I-4 corridor. The basin includes one existing pond that
was constructed for treatment and attenuation. The existing pond was designed as a wet detention pond and ultimately discharges to the Lockhart-Smith Canal.

The next three basins (Basins 313-315) begin at SR 46 and continue north along the I-4 corridor. The basins include four existing ponds that were constructed for treatment and attenuation. The existing ponds (Ponds 313, 313A, 314 and 315) were designed as wet detention ponds and ultimately discharge to the Lockhart-Smith Canal.

The final three basins (Basins 316-318) begin north of SR 46 and continue north along the I-4 corridor to the US 17-92 bridge at the St. Johns River. Basin 318 also includes CR 15, School Street and Orange Boulevard. The basins include five existing ponds that were constructed for treatment and attenuation. The existing ponds (Ponds 316, 317A, 317B, 317C and 318) were designed as wet detention ponds and ultimately discharge to Lake Monroe, which is a nutrient impaired water body. Additional information on existing drainage patterns is presented in the Pond Siting Report (November 2016).

2.12.2 Cross Drains

There are two existing cross drains within the study area. Table 2.8 presents the existing cross drain data obtained from the original I-4 construction plans pertinent to the project study area. In addition to the cross drains, there are several other drainage structures to convey onsite drainage, such as ditch bottom inlets, roadside swales and driveway culverts. Additional information is presented in the Location Hydraulic Report (November 2016) prepared for this project.

<table>
<thead>
<tr>
<th>Milepost</th>
<th>Station</th>
<th>Description from Straight Line Diagram of Road Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Count</td>
</tr>
<tr>
<td>5.471</td>
<td>2120+87</td>
<td>1</td>
</tr>
<tr>
<td>5.731</td>
<td>2134+09</td>
<td>1</td>
</tr>
</tbody>
</table>

Abbreviations: RCP – Reinforced Concrete Pipe

2.13 Existing Bridges

Within Segment 3 of the I-4 study corridor, there are six existing bridge structures which cross I-4 and seven existing mainline bridge structures which carry I-4 over local roads. The existing bridges are listed in Table 2.9 and depicted graphically in Figure 2.8.

2.13.1 Type of Structure

Mainline Bridges - The superstructures of the existing mainline I-4 bridges consist of a cast-in-place concrete deck carried by steel plate girders or AASHTO prestressed precast concrete girders. Table 2.9 summarizes the span lengths, deck widths, shoulder/lane widths and superstructure types.
Table 2.9: Existing Bridge Structures

<table>
<thead>
<tr>
<th>Facility</th>
<th>Bridge No.</th>
<th>No. of Spans</th>
<th>Bridge Length (ft)</th>
<th>MAX Span Length (ft)</th>
<th>Deck Width (ft)</th>
<th>Lane/Shoulder Widths (ft)</th>
<th>Superstructure Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE Williamson Road Over I-4</td>
<td>770018</td>
<td>4</td>
<td>285.5</td>
<td>71.9</td>
<td>34.1</td>
<td>2’ shldr., 2 lanes @ 12’, 2’ shldr.</td>
<td>AASHTO Concrete Beam</td>
</tr>
<tr>
<td>EE Williamson Pedestrian Over I-4</td>
<td>774051</td>
<td>4</td>
<td>285.5</td>
<td>72.0</td>
<td>9.0</td>
<td>N/A</td>
<td>Steel Plate Girder</td>
</tr>
<tr>
<td>Lake Mary Boulevard EB Over I-4</td>
<td>770040</td>
<td>2</td>
<td>226.7</td>
<td>119.6</td>
<td>68.5</td>
<td>1.5’ inside shldr., 4 lanes @ 12’, 6’ outside shldr.</td>
<td>AASHTO Concrete Beam</td>
</tr>
<tr>
<td>Lake Mary Boulevard WB Over I-4</td>
<td>770039</td>
<td>2</td>
<td>226.7</td>
<td>119.6</td>
<td>104.5</td>
<td>1.5’ inside shldr., 3 lanes @ 12’, 10’ shldr., 4’ traffic separator, 6’ shldr., 2 lanes @ 12’, 10’ outside shldr.</td>
<td>AASHTO Concrete Beam</td>
</tr>
<tr>
<td>Pedestrian Bridge Over I-4</td>
<td>774049</td>
<td>1</td>
<td>1006.9 [1]</td>
<td>373.3</td>
<td>14.0</td>
<td>N/A</td>
<td>Steel Truss</td>
</tr>
<tr>
<td>CR-46A Over I-4</td>
<td>770077</td>
<td>3</td>
<td>356.1</td>
<td>148.5</td>
<td>100.5</td>
<td>4’ shldr., 2 lanes @ 12’, 5.5’ median, 4 lanes @ 12’, 4’ shldr.</td>
<td>Steel Plate Girder</td>
</tr>
<tr>
<td>I-4 WB over SR-417</td>
<td>770008</td>
<td>3</td>
<td>146.0</td>
<td>53.2</td>
<td>58.4</td>
<td>10’ outside shldr., 4 lanes @ 12’, 10’ inside shldr.</td>
<td>AASHTO Concrete Beam</td>
</tr>
<tr>
<td>I-4 EB over SR-417</td>
<td>770910</td>
<td>3</td>
<td>146.0</td>
<td>53.2</td>
<td>70.5</td>
<td>10’ outside shldr., 3 lanes @ 12’, 10’ inside shldr.</td>
<td>AASHTO Concrete Beam</td>
</tr>
<tr>
<td>I-4 WB Over SR-46</td>
<td>770084</td>
<td>1</td>
<td>202.1</td>
<td>200.5</td>
<td>63.7 [2]</td>
<td>10’ inside shldr., 3 lanes @ 12’, 10’ outside shldr.</td>
<td>Steel Plate Girder</td>
</tr>
</tbody>
</table>
### Table 2.9: Existing Bridge Structures

<table>
<thead>
<tr>
<th>Facility</th>
<th>Bridge No.</th>
<th>No. of Spans</th>
<th>Bridge Length (ft)</th>
<th>MAX Span Length (ft)[1]</th>
<th>Deck Width (ft)</th>
<th>Lane/Shoulder Widths (ft)</th>
<th>Superstructure Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-4 EB Over SR-46</td>
<td>770085</td>
<td>1</td>
<td>202.1</td>
<td>200.5</td>
<td>68.9</td>
<td>10’ outside shldr., 4 lanes @ 12’, 10’ inside shldr.</td>
<td>Steel Plate Girder</td>
</tr>
<tr>
<td>I-4 Over Outfall Ditch</td>
<td>770029</td>
<td>1</td>
<td>23.0</td>
<td>9.8</td>
<td>58.0</td>
<td>12’ inside shldr., 3 lanes @ 12’, 10’ inside shldr.</td>
<td>Concrete Box Culvert</td>
</tr>
<tr>
<td>I-4 WB Over Orange Boulevard &amp; CSX RR</td>
<td>770086</td>
<td>2</td>
<td>280.0</td>
<td>140.0</td>
<td>66.9</td>
<td>10’ outside shldr., 3 lanes @ 12’, 12’ inside shldr.</td>
<td>Steel Plate Girder</td>
</tr>
<tr>
<td>I-4 EB Over Orange Boulevard &amp; CSX RR</td>
<td>770087</td>
<td>2</td>
<td>245.5</td>
<td>122.8</td>
<td>66.3</td>
<td>10’ outside shldr., 3 lanes @ 12’, 12’ inside shldr.</td>
<td>Steel Plate Girder</td>
</tr>
<tr>
<td>I-4 WB Over St. Johns River</td>
<td>790196</td>
<td>20</td>
<td>2566.3</td>
<td>Varies 70.0 to 58.0</td>
<td>12’ inside shldr., 3 lanes @ 12’, 1 aux. lane @ 12’, 10’ outside shldr.</td>
<td>AASHTO Concrete Beam</td>
<td></td>
</tr>
<tr>
<td>I-4 EB Over St. Johns River</td>
<td>790197</td>
<td>20</td>
<td>2566.3</td>
<td>Varies 70.0 to 58.0</td>
<td>12’ inside shldr., 3 lanes @ 12’, 1 aux. lane @ 12’, 10’ outside shldr.</td>
<td>AASHTO Concrete Beam</td>
<td></td>
</tr>
</tbody>
</table>

[1] Plans for bridge are not available. Data taken from Bridge Inspection Reports.

[2] Data shown is for pre-widened configuration. Current data will be provided at a future date.
Figure 2.8 – Existing Bridge Locations

Legend
- I-4, Segment 3 Corridor

- 1-4 Over St. Johns River
  - 770196 (WB)
  - 770197 (EB)

- 1-4 Over Orange Boulevard and CSX RR
  - 770086 (WB)
  - 770087 (EB)

- 1-4 Over SR-46
  - 770084 (WB)
  - 770085 (EB)

- 1-4 Over SR-417
  - 770008 (WB)
  - 770910 (EB)

- CR-46A Over I-4
  - 770077

- Pedestrian Bridge Over I-4
  - 774049

- Lake Mary Boulevard Over I-4
  - 770040 (EB)
  - 770039 (WB)

- EE Williamson Road Over I-4
  - 770018

- Pedestrian Bridge Over I-4
  - 774051
Overpass Bridges - The superstructures for the bridges over I-4 consist of steel plate girders or AASHTO prestressed concrete beams, with the exception of the Cross Seminole Trail pedestrian bridge which employs a single span, steel through-truss superstructure.

2.13.2 Current Conditions and Year of Construction

Table 2.10 provides a description of the existing bridges within the I-4 study corridor. This information was obtained from existing plans and the most recent bridge inspection reports. The sufficiency rating is derived from a formula that evaluates factors that are indicative of the structure’s ability to remain in service. A rating of 100 percent represents an entirely sufficient bridge and a rating of zero percent represents an entirely deficient bridge. The table provides data on the year of original construction and when the bridges were widened or replaced. This data was obtained from the most recent bridge inspection reports or approximated from the dates of the existing plans. The oldest existing bridge is EE Williamson Road over I-4, which was constructed in 1963. The oldest existing bridge culvert is I-4 over Outfall Ditch, which was constructed in 1959.

None of the mainline facilities are classified as “functionally obsolete” or “structurally deficient.” The facility carrying I-4 WB over SR-417 Ramps A1 and C1 has a structural sufficiency rating below 90. Likewise, bridges carrying EE Williamson Road and Lake Mary Boulevard eastbound over the I-4 mainline have a structural sufficiency rating below 90. The culvert carrying I-4 over Outfall Ditch also has a sufficiency rating below 90. All other facilities have a structural sufficiency rating above 90.

Table 2.10: Current Structure Condition and Year of Construction

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EE Williamson Road Over I-4</td>
<td>770018</td>
<td>73.6</td>
<td>6</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>EE Williamson Pedestrian Over I-4</td>
<td>774051</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Lake Mary Boulevard EB Over I-4</td>
<td>770040</td>
<td>80.6</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Lake Mary Boulevard WB Over I-4</td>
<td>770039</td>
<td>93.2</td>
<td>8</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Pedestrian Bridge Over I-4</td>
<td>774049</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CR-46A Over I-4</td>
<td>770077</td>
<td>100.0</td>
<td>7</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>I-4 WB over SR-417</td>
<td>770008</td>
<td>94.8</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>
Table 2.10: Current Structure Condition and Year of Construction

<table>
<thead>
<tr>
<th>Facility</th>
<th>Bridge No.</th>
<th>Sufficiency Rating</th>
<th>Overall NBI Rating</th>
<th>Year Built</th>
<th>Year Replaced/Widened</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-4 EB over SR-417</td>
<td>770910</td>
<td>94.8</td>
<td>7</td>
<td>7</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 WB Over SR-46</td>
<td>770084</td>
<td>94.5</td>
<td>7</td>
<td>7</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 EB Over SR-46</td>
<td>770085</td>
<td>98.0</td>
<td>7</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>I-4 Over Outfall Ditch</td>
<td>770029</td>
<td>72.5</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 WB Over Orange Boulevard &amp; CSX RR</td>
<td>770086</td>
<td>92.9</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>I-4 EB Over Orange Boulevard &amp; CSX RR</td>
<td>770087</td>
<td>93.9</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>I-4 WB Over St. Johns River</td>
<td>790196</td>
<td>91.6</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>I-4 EB Over St. Johns River</td>
<td>790197</td>
<td>91.6</td>
<td>8</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

**Notes:**
- National Bridge Inventory (NBI) Rating: 9 - Excellent; 8 - Very Good; 7 - Good; 6 - Satisfactory; 5 – Fair.
- N/A - Per FHWA National Bridge Inspection Standards 23 CFR 650.303, bridges not carrying highways are not covered by NBIS regulations and therefore, do not require NBI ratings.
- Construction and widening years obtained from Bridge Inspection Reports.
- Data shown is for pre-widened configuration. Current data will be provided at a future date.

**2.13.3 Horizontal and Vertical Alignments of Structures**

Existing vertical clearances less than 16.5 feet are undesirable over the Interstate. The facilities carrying EE Williamson Road and CR 46A over the mainline do not meet the minimum vertical clearance threshold while all other over the mainline provide adequate vertical clearance. Table 2.11 presents the pier locations and horizontal clearances for each of the bridges. Table 2.12 summarizes the vertical curve data at each location. Table 2.13 provides the vertical clearance information at each structure.
### Table 2.11: Horizontal Clearances at Bridges

<table>
<thead>
<tr>
<th>Facility</th>
<th>Bridge No.</th>
<th>Horizontal Clearance To Substructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE Williamson Road Over I-4</td>
<td>770018</td>
<td>30.5’ to Pier 3</td>
</tr>
<tr>
<td>EE Williamson Pedestrian Over I-4</td>
<td>774051</td>
<td>30.5’ to Pier 3</td>
</tr>
<tr>
<td>Lake Mary Boulevard EB Over I-4</td>
<td>770040</td>
<td>30.0’ to Pier 2</td>
</tr>
<tr>
<td>Lake Mary Boulevard WB Over I-4</td>
<td>770039</td>
<td>30.0’ to Pier 2</td>
</tr>
<tr>
<td>Pedestrian Bridge Over I-4</td>
<td>774049</td>
<td>Approximately 369’ pylon-to-pylon</td>
</tr>
<tr>
<td>CR-46A Over I-4</td>
<td>770077</td>
<td>17.2’ to Pier 3</td>
</tr>
<tr>
<td>I-4 WB over SR-417</td>
<td>770008</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 EB over SR-417</td>
<td>770910</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 WB Over SR-46</td>
<td>770084</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 EB Over SR-46</td>
<td>770085</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 Over Outfall Ditch</td>
<td>770029</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 WB Over Orange Boulevard &amp; CSX RR</td>
<td>770086</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 EB Over Orange Boulevard &amp; CSX RR</td>
<td>770087</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 WB Over St. Johns River</td>
<td>790196</td>
<td>6.7’ US 17-92 to Pier 2</td>
</tr>
<tr>
<td>I-4 EB Over St. Johns River</td>
<td>790197</td>
<td>6.7’ US 17-92 to Pier 2</td>
</tr>
</tbody>
</table>

### Table 2.12: Vertical Curve Data at Bridges

<table>
<thead>
<tr>
<th>Facility</th>
<th>Bridge No.</th>
<th>Vertical Curve Length (ft)</th>
<th>Vertical Curve Grade In/Grade Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE Williamson Road Over I-4</td>
<td>770018</td>
<td>300</td>
<td>+1.13%/-1.24%</td>
</tr>
<tr>
<td>EE Williamson Pedestrian Over I-4</td>
<td>774051</td>
<td>300</td>
<td>+1.13%/-1.24%</td>
</tr>
<tr>
<td>Lake Mary Boulevard EB Over I-4</td>
<td>770040</td>
<td>600</td>
<td>+3%/-1.50%</td>
</tr>
<tr>
<td>Lake Mary Boulevard WB Over I-4</td>
<td>770039</td>
<td>600</td>
<td>+3%/-1.50%</td>
</tr>
<tr>
<td>Pedestrian Bridge Over I-4</td>
<td>774049</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CR-46A Over I-4</td>
<td>770077</td>
<td>600</td>
<td>+3.27%/-4.19%</td>
</tr>
<tr>
<td>I-4 WB over SR-417</td>
<td>770008</td>
<td>253</td>
<td>+0.5073%/-0.5313%</td>
</tr>
<tr>
<td>I-4 EB over SR-417</td>
<td>770910</td>
<td>253</td>
<td>+0.5073%/-0.5313%</td>
</tr>
<tr>
<td>I-4 WB Over SR-46</td>
<td>770084</td>
<td>1,804</td>
<td>+2.00%/-2.00%</td>
</tr>
<tr>
<td>I-4 EB Over SR-46</td>
<td>770085</td>
<td>1,804</td>
<td>+2.00%/-2.00%</td>
</tr>
<tr>
<td>I-4 Over Outfall Ditch</td>
<td>770029</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 WB Over Orange Boulevard &amp; CSX RR</td>
<td>770086</td>
<td>1,130</td>
<td>+2.9947%/-0.7699%</td>
</tr>
<tr>
<td>I-4 EB Over Orange Boulevard &amp; CSX RR</td>
<td>770087</td>
<td>1,130</td>
<td>+2.9947%/-0.7699%</td>
</tr>
<tr>
<td>I-4 WB Over St. Johns River</td>
<td>790196</td>
<td>2,180</td>
<td>+2.0396%/-2.1802%</td>
</tr>
<tr>
<td>I-4 EB Over St. Johns River</td>
<td>790197</td>
<td>2,180</td>
<td>+2.0396%/-2.1802%</td>
</tr>
</tbody>
</table>
Table 2.13: Vertical Clearances at Bridges

<table>
<thead>
<tr>
<th>Location</th>
<th>Bridge No.</th>
<th>Vertical Clearance (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE Williamson Road Over I-4</td>
<td>770018</td>
<td>16.4</td>
</tr>
<tr>
<td>EE Williamson Pedestrian Over I-4</td>
<td>774051</td>
<td>18.8</td>
</tr>
<tr>
<td>Lake Mary Boulevard EB Over I-4</td>
<td>770040</td>
<td>16.5</td>
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<tr>
<td>Lake Mary Boulevard WB Over I-4</td>
<td>770039</td>
<td>16.5</td>
</tr>
<tr>
<td>Pedestrian Bridge Over I-4</td>
<td>774049</td>
<td>20.7</td>
</tr>
<tr>
<td>CR-46A Over I-4</td>
<td>770077</td>
<td>16.3</td>
</tr>
<tr>
<td>I-4 WB over SR-417</td>
<td>770008</td>
<td>23.05</td>
</tr>
<tr>
<td>I-4 EB over SR-417</td>
<td>770910</td>
<td>21.77</td>
</tr>
<tr>
<td>I-4 WB Over SR-46</td>
<td>770084</td>
<td>16.6</td>
</tr>
<tr>
<td>I-4 EB Over SR-46</td>
<td>770085</td>
<td>16.6</td>
</tr>
<tr>
<td>I-4 Over Outfall Ditch</td>
<td>770029</td>
<td>N/A</td>
</tr>
<tr>
<td>I-4 WB Over Orange Boulevard &amp; CSX RR</td>
<td>770086</td>
<td>22.0 to Orange Blvd., 23.7 to CSX RR</td>
</tr>
<tr>
<td>I-4 EB Over Orange Boulevard &amp; CSX RR</td>
<td>770087</td>
<td>22.4 to Orange Blvd., 23.7 to CSX RR</td>
</tr>
<tr>
<td>I-4 WB Over St. Johns River</td>
<td>790196</td>
<td>21.2’ to US 17-92</td>
</tr>
<tr>
<td>I-4 EB Over St. Johns River</td>
<td>790197</td>
<td>22.8’ to US 17-92</td>
</tr>
</tbody>
</table>

2.13.4 Span Arrangement

The existing span arrangement (number and length of spans) of the bridges within the project limits were listed in Table 2.9.

2.13.5 Historical Significance

Existing bridges in Segment 3 of the I-4 study corridor carry no historical significance. Thus, this section is not applicable to this project.

2.13.6 Channel Dimensions

Table 2.14 summarizes the channel dimensions for I-4 EB and I-4 WB over the St. Johns River.

Table 2.14: Channel Dimensions

<table>
<thead>
<tr>
<th>Location</th>
<th>Bridge No.</th>
<th>Vertical Clearance (ft)[1]</th>
<th>Horizontal Clearance (ft)[2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-4 WB Over St. Johns River</td>
<td>790196</td>
<td>45.0</td>
<td>112.7</td>
</tr>
<tr>
<td>I-4 EB Over St. Johns River</td>
<td>790197</td>
<td>45.0</td>
<td>112.7</td>
</tr>
</tbody>
</table>

[1] Vertical clearance is measured from the lowest point under the bridge (including lighting, utilities, etc.) to the Near High Water (NHW) elevation

[2] Horizontal clearance is measured between the inside faces of the existing fender system
2.13.7  Bridge Openings
Since the I-4 widening project does not involve any moveable bridges that fall within the study limits, this section is not applicable to this project.

2.13.8  Ship Impact Data
Table 2.15 summarizes the ship impact forces for I-4 eastbound and I-4 westbound over the St. Johns River which the substructures were designed to withstand.

Table 2.15: Ship Impact Data

<table>
<thead>
<tr>
<th>Pier</th>
<th>Equivalent Static Force (Kips)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transverse</td>
</tr>
<tr>
<td>2 to 4 &amp; 5 EB</td>
<td>N/A</td>
</tr>
<tr>
<td>5 WB</td>
<td>300</td>
</tr>
<tr>
<td>6</td>
<td>1,000</td>
</tr>
<tr>
<td>7</td>
<td>2,000</td>
</tr>
<tr>
<td>8</td>
<td>2,000</td>
</tr>
<tr>
<td>9</td>
<td>2,600</td>
</tr>
<tr>
<td>10</td>
<td>2,600</td>
</tr>
<tr>
<td>11</td>
<td>2,600</td>
</tr>
<tr>
<td>12</td>
<td>2,600</td>
</tr>
<tr>
<td>14</td>
<td>2,600</td>
</tr>
<tr>
<td>15 EB</td>
<td>1,500</td>
</tr>
<tr>
<td>15 WB</td>
<td>300</td>
</tr>
<tr>
<td>16 TO 20</td>
<td>N/A</td>
</tr>
</tbody>
</table>

2.14  Crash Data
The five-year crash data, between 2008 and 2012, was analyzed for the I-4 segment between east of SR 434 and east of SR 15-600/US 17-92 (Seminole/Volusia County Line), from Milepost 4.050 to 14.135 in Seminole County. The crash data was downloaded from the FDOT Crash Analysis Reporting System (CARS) system and includes data for the I-4 mainline as well as the ramps.

The five-year crash data analysis showed that there were 801 crashes within this approximate 10-mile segment of I-4 in the last five years. Out of these 801 crashes there were thirteen (13) fatal crashes, 422 injury crashes and 366 property damage only crashes. Table 2.16 shows the summary of crashes by severity within the study area. Figure 2.9 shows the crash distribution by severity along the I-4 Segment 3 mainline within Seminole County.
Table 2.16: Crash Severity Summary

<table>
<thead>
<tr>
<th>Crash Severity</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Injury</td>
<td>78</td>
<td>83</td>
<td>84</td>
<td>87</td>
<td>90</td>
<td>422</td>
</tr>
<tr>
<td>Property Damage Only</td>
<td>77</td>
<td>57</td>
<td>86</td>
<td>60</td>
<td>86</td>
<td>366</td>
</tr>
<tr>
<td>Total</td>
<td>157</td>
<td>140</td>
<td>171</td>
<td>155</td>
<td>178</td>
<td>801</td>
</tr>
</tbody>
</table>

During the five-year study period, of the crashes that were classified as specific crash events, the highest were rear end collisions (248 crashes), angle collisions (89 crashes) and hitting guard rail collisions (63 crashes). The highest numbers of contributing causes were careless driving (396 crashes) followed by improper lane change (95 crashes).

Rear end collisions represent nearly 31% of the total crashes occurring along the I-4 Segment 3 study corridor for the five-year period analyzed. Over 60% (151 crashes) of the rear end collisions occurred during “clear” weather conditions and approximately 63% (156 crashes) occurred during daylight lighting conditions. The data indicates that the high occurrence of rear end collisions may be due to peak periods of heavy congestion along the corridor. Table 2.17 provides a summary of the types of crashes within the study area and Table 2.18 provides a summary of contributing causes.

As part of the crash data analysis, the FDOT District 5 High Crash Roadway Segments list was reviewed. Within I-4 Segment 3, the sections identified as high crash segments are shown in Table 2.19. The actual crash rates on these segments were greater than the average district wide crash rate for urban interstate facility type. The segment in Seminole County between MP 7.100 and MP 7.300, just west of the Lake Mary Boulevard interchange, appears on the list for two of the five years of data analyzed.
Figure 2.9 - Crash Distribution Along I-4 Segment 3 Corridor (Seminole County)
### Table 2.17: Crash Event Summary

<table>
<thead>
<tr>
<th>Harmful Event</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Other</td>
<td>6</td>
<td>10</td>
<td>19</td>
<td>17</td>
<td>31</td>
<td>83</td>
</tr>
<tr>
<td>Angle</td>
<td>30</td>
<td>22</td>
<td>17</td>
<td>9</td>
<td>11</td>
<td>89</td>
</tr>
<tr>
<td>Animal</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Backed Into</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Bike</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Cargo Loss or Shift</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Collision with Motor Vehicle On Road</td>
<td>-</td>
<td>1</td>
<td>7</td>
<td>18</td>
<td>29</td>
<td>55</td>
</tr>
<tr>
<td>Crash Attenuator</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Fire</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Hit Concrete Barrier Wall</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Hit Const Barricd/SignBr/Pier/Abutt</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Hit Guardrail</td>
<td>15</td>
<td>13</td>
<td>13</td>
<td>8</td>
<td>14</td>
<td>63</td>
</tr>
<tr>
<td>Hit Sign/Sign Post</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>Hit Tree/Shrub</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Hit Utility Pole</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Median Crossover</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Moveable Object</td>
<td>-</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Occasional Fall from Vehicle</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Other Fixed Object</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>-</td>
<td>11</td>
</tr>
<tr>
<td>Overturned</td>
<td>8</td>
<td>7</td>
<td>12</td>
<td>9</td>
<td>7</td>
<td>43</td>
</tr>
<tr>
<td>Parked Car</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Ran into Ditch/Culvert</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Ran Off Rd into Water</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Rear End</td>
<td>49</td>
<td>44</td>
<td>53</td>
<td>50</td>
<td>52</td>
<td>248</td>
</tr>
<tr>
<td>Separation of Units</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Sideswipe</td>
<td>19</td>
<td>19</td>
<td>16</td>
<td>-</td>
<td>-</td>
<td>54</td>
</tr>
<tr>
<td>Trac/Trail Jackknifed</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Unknown/Not Coded</td>
<td>14</td>
<td>4</td>
<td>9</td>
<td>24</td>
<td>17</td>
<td>68</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>157</strong></td>
<td><strong>140</strong></td>
<td><strong>171</strong></td>
<td><strong>155</strong></td>
<td><strong>178</strong></td>
<td><strong>801</strong></td>
</tr>
</tbody>
</table>

### Table 2.18: Contributing Cause Summary

<table>
<thead>
<tr>
<th>Contributing Cause</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol-Under Influence</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>All Other</td>
<td>18</td>
<td>6</td>
<td>21</td>
<td>17</td>
<td>29</td>
<td>91</td>
</tr>
<tr>
<td>Careless Driving</td>
<td>75</td>
<td>71</td>
<td>86</td>
<td>74</td>
<td>90</td>
<td>396</td>
</tr>
<tr>
<td>Dis regardless Traffic Signal</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Driver Distraction</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Drove Left of Center</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 2.18: Contributing Cause Summary

<table>
<thead>
<tr>
<th>Contributing Cause</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceeded Safe Speed Limit</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Failed to Maintain Equipment</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Followed Too Closely</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Failed to Yield Right-of-way</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Improper Backing</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Improper Lane Change</td>
<td>33</td>
<td>32</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>95</td>
</tr>
<tr>
<td>Improper Load</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>Improper Passing</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>No Improper Driving</td>
<td>14</td>
<td>12</td>
<td>9</td>
<td>28</td>
<td>21</td>
<td>84</td>
</tr>
<tr>
<td>Obstructing Traffic</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Unknown/Not Coded</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>25</td>
<td>17</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>157</strong></td>
<td><strong>140</strong></td>
<td><strong>171</strong></td>
<td><strong>155</strong></td>
<td><strong>178</strong></td>
<td><strong>801</strong></td>
</tr>
</tbody>
</table>

Table 2.19: High Crash Segment Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Begin MP</th>
<th>End MP</th>
<th>Total # Crashes</th>
<th>ADT</th>
<th>Crash Rate</th>
<th>Average District Wide Crash Rate (Urban Interstate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.417</td>
</tr>
<tr>
<td>2009</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.477</td>
</tr>
<tr>
<td>2010</td>
<td>7.100</td>
<td>7.400</td>
<td>18</td>
<td>133,907</td>
<td>1.227</td>
<td>0.519</td>
</tr>
<tr>
<td>2011</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.458</td>
</tr>
<tr>
<td>2012</td>
<td>7.100</td>
<td>7.300</td>
<td>12</td>
<td>132,663</td>
<td>1.239</td>
<td>0.497</td>
</tr>
<tr>
<td></td>
<td>13.700</td>
<td>14.135</td>
<td>22</td>
<td>102,993</td>
<td>1.345</td>
<td></td>
</tr>
</tbody>
</table>


2.15 Railroad

There is one at-grade rail/highway crossing within the project limits, approximately 800 feet east of I-4 at Monroe Road. There is also one grade separated crossing, located just north of Orange Boulevard where the I-4 bridge over Orange Boulevard also spans over the railroad. In this region, this rail corridor is known as the Central Florida Rail Corridor and is owned by the Florida Department of Transportation. The tracks are primarily used by the SunRail commuter trains; other users include CSXT and Florida Central Railroad (FCEN), for freight transportation and Amtrak intercity passenger rail service.

2.16 Utilities

The utilities located within the right-of-way were identified through the use of existing plans and by contacting all of the utility companies identified via the Sunshine State One call system. Table 2.20 provides a list of the utility companies and contact information. Table 2.21 provides approximate
locations of the major utilities that are within the project corridor. The easements by utility type and owner are shown in the Concept Plans (Appendix A).

**Table 2.20: Utility Contact information**

<table>
<thead>
<tr>
<th>Utility</th>
<th>Contact Name</th>
<th>Address</th>
<th>Phone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;T Corporation</td>
<td>Greg Jacobson</td>
<td>6015 Benjamin Rd Suite 306 Lake Mary, FL 32746</td>
<td>(813) 342-0512</td>
<td><a href="mailto:gtjacobson@att.com">gtjacobson@att.com</a></td>
</tr>
<tr>
<td>AT&amp;T Florida</td>
<td>Alan Reynolds</td>
<td>5100 Steyr Street Orlando, FL 32819</td>
<td>(407) 351-8180</td>
<td><a href="mailto:AR2916@att.com">AR2916@att.com</a></td>
</tr>
<tr>
<td>BrightHouse Networks</td>
<td>Marvin Usry</td>
<td>3767 All American Boulevard Orlando, FL 32810</td>
<td>(407) 532-8509</td>
<td><a href="mailto:marvin.usry@mybrighthouse.com">marvin.usry@mybrighthouse.com</a></td>
</tr>
<tr>
<td>CenturyLink</td>
<td>Jeff Griffin</td>
<td>33 North Main St Winter Garden, FL 34787</td>
<td>(407) 814-5344</td>
<td><a href="mailto:jeff.w.griffin@centurylink.com">jeff.w.griffin@centurylink.com</a></td>
</tr>
<tr>
<td>City of Altamonte Springs</td>
<td>Ed Torres</td>
<td>223 Newburyport Ave Altamonte Springs, FL 32701</td>
<td>(407) 571-8337</td>
<td><a href="mailto:etorres@altamonte.org">etorres@altamonte.org</a></td>
</tr>
<tr>
<td>City of Lake Mary</td>
<td>Bruce Paster</td>
<td>911 Wallace Court Lake Mary, FL 32746</td>
<td>(407) 585-1452</td>
<td><a href="mailto:bpaster@lakemaryfl.com">bpaster@lakemaryfl.com</a></td>
</tr>
<tr>
<td>City of Sanford</td>
<td>Richard Blake</td>
<td>300 N. Park Ave Sanford, FL 32771</td>
<td>(407) 688-5101</td>
<td><a href="mailto:blakerl@sanfordfl.gov">blakerl@sanfordfl.gov</a></td>
</tr>
<tr>
<td>Comcast Communications</td>
<td>Cesar Rivera</td>
<td>4305 Vineland Rd. Suite G-2 Orlando, FL 32811</td>
<td>(407) 849-3611</td>
<td><a href="mailto:Cesea_rivera@cable.comcast.com">Cesea_rivera@cable.comcast.com</a></td>
</tr>
</tbody>
</table>
## Table 2.20: Utility Contact Information

<table>
<thead>
<tr>
<th>Utility</th>
<th>Contact Name</th>
<th>Address</th>
<th>Phone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duke Energy-Distribution</td>
<td>Sharon Dear</td>
<td>3300 Exchange Place NP4A</td>
<td>(407) 942-9421</td>
<td><a href="mailto:sharon.dear@duke-energy.com">sharon.dear@duke-energy.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lake Mary, FL 32746</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duke Energy-Transmission</td>
<td>Jennifer Williams</td>
<td>20525 Amberfield Dr. Suite 201</td>
<td>(813) 909-1210</td>
<td><a href="mailto:jewilliams@ucseng.com">jewilliams@ucseng.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Land O'Lakes, FL 34638</td>
<td></td>
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<tr>
<td>Embarq Communications</td>
<td>Rod Judy</td>
<td>420 Pineview St Altamonte Springs, FL 34638</td>
<td>(407) 920-8981</td>
<td><a href="mailto:judyr@outsource-inc.com">judyr@outsource-inc.com</a></td>
</tr>
<tr>
<td>Florida Power &amp; Light</td>
<td>Robert Helfer</td>
<td>5910 E Highway 100 Palm Coast, FL 32701</td>
<td>(386) 586-6432</td>
<td><a href="mailto:robert.helfer@fpl.com">robert.helfer@fpl.com</a></td>
</tr>
<tr>
<td>Florida Power &amp; Light Overhead</td>
<td>Peter Washio</td>
<td>700 Universe Boulevard TS4/JW Juno Beach, FL 33408</td>
<td>(561) 904-3693</td>
<td><a href="mailto:Peter.h.washio@fpl.com">Peter.h.washio@fpl.com</a></td>
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<tr>
<td>Transmission</td>
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<td></td>
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<tr>
<td>Florida Power &amp; Light Underground</td>
<td>Seyed Hajassadollah</td>
<td>158 McArthur Causeway Miami Beach, FL 33408</td>
<td>(305) 228-5290</td>
<td><a href="mailto:Seyed.hajassadollah@fpl.com">Seyed.hajassadollah@fpl.com</a></td>
</tr>
<tr>
<td>Transmission</td>
<td></td>
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</tr>
<tr>
<td>Florida Public Utilities</td>
<td>Dan Scribben</td>
<td>450 South Highway 17-92 Debary, FL 32713</td>
<td>(386) 668-9319</td>
<td><a href="mailto:dscribben@fpuc.com">dscribben@fpuc.com</a></td>
</tr>
<tr>
<td>Level 3 Communications</td>
<td>Richard Simonton</td>
<td>380 South Lake Destiny Dr. Orlando, FL 32810</td>
<td>(407) 462-0609</td>
<td><a href="mailto:richard.simonton@level3.com">richard.simonton@level3.com</a></td>
</tr>
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</table>
Table 2.20: Utility Contact information

<table>
<thead>
<tr>
<th>Utility</th>
<th>Contact Name</th>
<th>Address</th>
<th>Phone</th>
<th>E-Mail</th>
</tr>
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<tbody>
<tr>
<td>Sanlando Utilities</td>
<td>Bryan Gongre</td>
<td>200 Weathersfield Ave Altamonte Springs, FL 32714</td>
<td>(800) 272-1919 ext. 1360</td>
<td><a href="mailto:bkgongre@uiwater.com">bkgongre@uiwater.com</a></td>
</tr>
<tr>
<td>Seminole County</td>
<td>James Monahan</td>
<td>500 W. Lake Mary Blvd. Suite 200 Sanford, FL 32773</td>
<td>(407) 665-2021</td>
<td><a href="mailto:jmonahan02@seminolecountyfl.gov">jmonahan02@seminolecountyfl.gov</a></td>
</tr>
<tr>
<td>TECO Peoples Gas</td>
<td>Bruce Stout</td>
<td>600 West Robinson St. Orlando, FL 32801</td>
<td>(407) 420-2678</td>
<td><a href="mailto:bstout@tecoenergy.com">bstout@tecoenergy.com</a></td>
</tr>
<tr>
<td>Transcore</td>
<td>Eric Gordon</td>
<td>Milepost 263 Ocoee, FL 34761</td>
<td>(407) 264-3316</td>
<td><a href="mailto:eric.gordon@dot.state.fl.us">eric.gordon@dot.state.fl.us</a></td>
</tr>
<tr>
<td>TW Telecom</td>
<td>Sean Moss</td>
<td>485 North Keller Rd. Suite 551 Maitland, FL 32751</td>
<td>(407) 215-6895</td>
<td><a href="mailto:sean.moss@twtelecom.com">sean.moss@twtelecom.com</a></td>
</tr>
<tr>
<td>Verizon</td>
<td>John McNeil</td>
<td>210 Recker Highway Auburndale, FL 33823</td>
<td>(862) 965-6438</td>
<td><a href="mailto:john.mcneil@verizon.com">john.mcneil@verizon.com</a></td>
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Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>6.5&quot; Underground Fiber Optic</td>
<td>Crossing at intersection of Markham Woods Blvd &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>From intersection of Markham Woods Blvd &amp; Lake Mary Blvd east on Lake Mary Blvd for 700-ft</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Type of Utility</td>
<td>Owner of Utility</td>
<td>Type of Facility</td>
<td>Limits</td>
<td>Offset/Side</td>
</tr>
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</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing on SR 417, 1520-ft east of Rinehart Rd, SR 417 underpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing at intersection of Monroe Rd &amp; SR 46</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing of I-4 Corridor at Orange Blvd, I-4 underpass</td>
<td>Center of underpass</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>From 200-ft north of intersection of Barwick Rd &amp; US 17-92 to 260-ft west of intersection of I-4 east bound ramp to US 17-92 &amp; US 17-92</td>
<td>North/west side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>From 200-ft north of intersection of Barwick Rd &amp; US 17-92 to intersection of Old Deland Rd &amp; US 17-92</td>
<td>East side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing US 17-92 at I-4 Main Corridor Overpass</td>
<td>West side of overpass</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>From west side of US 17-92, I-4 Overpass to intersection of Monroe Rd &amp; US 17-92</td>
<td>South side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Varying Size Underground Fiber Optic</td>
<td>Two Crossings at intersection of Rinehart Rd &amp; CR 46a</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Type of Utility</td>
<td>Owner of Utility</td>
<td>Type of Facility</td>
<td>Limits</td>
<td>Offset/Side</td>
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<tr>
<td>Communications</td>
<td>ATT</td>
<td>25 Pair Underground Fiber Optic</td>
<td>From intersection to 930-ft east of intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>50 Pair Underground Fiber Optic</td>
<td>From 760-ft west of to intersection of N Sun Dr. &amp; Lake Mary Blvd</td>
<td>North side of Road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>144 Pair Underground Fiber Optic</td>
<td>From intersection of Rinehart Rd &amp; CR 46A east to end of project limits on CR 46A</td>
<td>South side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>200 Pair Underground Fiber Optic</td>
<td>From intersection of to 470-ft east of intersection of Rinehart Rd &amp; CR 46A</td>
<td>South side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>200 Pair Underground Fiber Optic</td>
<td>Crossing of CR 46A 470-ft east of intersection of Rinehart Rd &amp; CR46A</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>600 Pair Underground Fiber Optic</td>
<td>Crossing at intersection of S Sun Dr. &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>600 Pair Underground Fiber Optic</td>
<td>From intersection of N Sun Dr. &amp; Lake Mary Blvd east to intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>600 Pair Underground Fiber Optic</td>
<td>Crossing of SR 417 at Rinehart Rd underpass</td>
<td>East side of underpass</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>2-4&quot; Underground PVC Duct Bank</td>
<td>From 1130-ft east of to Towne Center Blvd underpass of SR 417</td>
<td>South side of road</td>
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</table>
### Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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<tbody>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>2-4&quot; Underground PVC Duct Bank</td>
<td>Crossing of SR 417 at Towne Center Blvd underpass</td>
<td>West side of underpass</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>6-4&quot; PVC Duct Bank</td>
<td>From intersection of Markham Woods &amp; Lake Mary Blvd east to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>9-4&quot; PVC Duct Bank</td>
<td>Crossing of I-4 at Lake Mary Blvd overpass</td>
<td>South side of overpass</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>9-4&quot; PVC Duct Bank</td>
<td>From intersection of I-4 east bound ramp to Lake Mary Blvd east to intersection of Lake Emma Rd &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>12-4&quot; PVC Duct Bank</td>
<td>Crossing at intersection of Lake Emma Rd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
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<tr>
<td>Communications</td>
<td>ATT</td>
<td>16-4&quot; PVC Duct Bank</td>
<td>Crossing of I-4 2690-ft east of Lake Mary, I-4 overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>18-4&quot; PVC Duct Bank</td>
<td>Crossing at intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size PVC Duct Bank</td>
<td>From 450-ft east of intersection of Lake Emma Rd &amp; Lake Mary Blvd east to intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>Center of road</td>
</tr>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>Unknown Size PVC Duct Bank</td>
<td>Crossing at intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
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</table>
Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
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<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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</thead>
<tbody>
<tr>
<td>Communications</td>
<td>CenturyLink</td>
<td>Underground Copper Cable</td>
<td>From 13720-ft to 11030-ft south of Lake Mary, I-4 overpass</td>
<td>East side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>CenturyLink</td>
<td>Underground Fiber Optic Cable</td>
<td>Crossing of I-4 Corridor, north side of E.E. Williamson overpass</td>
<td>North side of overpass</td>
</tr>
<tr>
<td>Communications</td>
<td>CenturyLink</td>
<td>Underground Fiber Optic Cable</td>
<td>Crossing of I-4 Corridor, north side of E.E. Williamson overpass</td>
<td>North side of overpass</td>
</tr>
<tr>
<td>Communications</td>
<td>Comcast Communication s</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing of I-4 Corridor at Orange Blvd, I-4 underpass</td>
<td>Center of underpass</td>
</tr>
<tr>
<td>Communications</td>
<td>Comcast Communication s</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>From 260-ft west of intersection of US 17-92 ramp to I-4 west bound &amp; US 17-92 &amp; Monroe Rd &amp; US 17-92</td>
<td>South side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>Embarq Communications</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing on I-4 Corridor, 9320-ft south of Lake Mary Blvd, I-4 overpass</td>
<td>N/A</td>
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<tr>
<td>Communications</td>
<td>Embarq Communications</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing on I-4 Corridor, 2640-ft north of Lake Mary Blvd, I-4 overpass</td>
<td>N/A</td>
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<tr>
<td>Communications</td>
<td>FPL Fibernet</td>
<td>Unknown Size Underground Fiber Optic</td>
<td>Crossing at the EE. Williamson, I-4 Overpass</td>
<td>North side of overpass</td>
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<td>Communications</td>
<td>FPL Fibernet</td>
<td>Unknown Size Aerial Fiber Optic</td>
<td>Crossing of SR 417, 1350-ft west of Towne Center Blvd, SR 417 underpass</td>
<td>N/A</td>
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<tr>
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<td>Level 3</td>
<td>12-1.25&quot; Underground Fiber Optic</td>
<td>Crossing 700-ft south of intersection of Barwick Rd &amp; US 17-92</td>
<td>N/A</td>
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<tr>
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<td>Owner of Utility</td>
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<td>Limits</td>
<td>Offset/Side</td>
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<tr>
<td>Communications</td>
<td>Level 3</td>
<td>3-1.25&quot; Underground Fiber Optic</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>Level 3</td>
<td>3-1.25&quot; Underground Fiber Optic</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>From International Pkwy to Primera Blvd on Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing of I-4 at Lake Mary Blvd overpass</td>
<td>North side of overpass</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at intersection of Business Center Dr. &amp; CR 46A</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at intersection of I-4 eastbound ramp to CR 46A &amp; CR 46A</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>From intersection of I-4 west bound ramp to CR 46A &amp; CR 46A to intersection of Rinehart Rd &amp; CR 46A</td>
<td>South side of road</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at intersection of Rinehart Rd &amp; CR 46A</td>
<td>South side of intersection</td>
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</table>
### Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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<tbody>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at CR 46A overpass of I-4</td>
<td>South side of overpass</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Aerial Electric</td>
<td>Crossing of I-4 Corridor E.E. Williamson Overpass</td>
<td>East side of overpass</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Aerial Electric</td>
<td>Crossing at entrance of 7-11 on Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Aerial Electric</td>
<td>Crossing of I-4 Corridor 2330-ft east of E.E. Williamson Overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Aerial Electric</td>
<td>From 1500-ft to 5000-ft east of E.E. Williamson Overpass on I-4 Corridor</td>
<td>West side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Aerial Electric</td>
<td>Crossing of Lake Mary Blvd, 1790-ft west of intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>N/A</td>
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<tr>
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<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>From 400-ft west to E.E. Williamson Overpass on I-4 Corridor</td>
<td>West side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Two Crossings of I-4 Corridor, 9340-ft west of Lake Mary, I-4 Overpass</td>
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<tr>
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<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Crossing of I-4 Corridor, 5380-ft west of Lake Mary, I-4 Overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Three Crossings of I-4 Corridor, 2680-ft east of Lake Mary, I-4 Overpass</td>
<td>N/A</td>
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</table>
### Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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<tbody>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground</td>
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<td>South side of</td>
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<td>intersection</td>
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<tr>
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<td>Duke Energy Distribution</td>
<td>13 KV Underground</td>
<td>From intersection of Markham Woods Blvd &amp; Lake Mary Blvd east to 130-ft west of intersection of I-4 westbound ramp to Lake Mary Blvd</td>
<td>North side of</td>
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<tr>
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<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground</td>
<td>From intersection of Markham Woods Blvd &amp; Lake Mary Blvd east to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>South side of</td>
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<td></td>
<td></td>
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<td>road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground</td>
<td>Crossing of Lake Mary Blvd, 2440-ft west of intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground</td>
<td>Crossing at intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Electricity</td>
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<td>13 KV Underground</td>
<td>Crossing 180-ft east of intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>N/A</td>
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<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground</td>
<td>From 320-ft west to intersection of Lake Emma Rd &amp; Lake Mary Blvd</td>
<td>South side of</td>
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<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Two crossings at intersection of Lake Emma Rd &amp; Lake Mary Blvd.</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>From intersection of Primera Blvd &amp; Lake Mary Blvd east to station 138+00 on Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>From 350-ft east to intersection of Lake Emma Rd &amp; Lake Mary Blvd</td>
<td>South side of road</td>
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<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>From intersection of Lake Emma Blvd &amp; Lake Mary Blvd east to station 138+00 on Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>From intersection to 500-ft east of intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
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Table 2.21: Major Utilities

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<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>South side of intersection</td>
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<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Multiple crossings at intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
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<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Two lines from Lake Mary Overpass to 2760-ft east of Lake Mary, I-4 Overpass on I-4 Corridor</td>
<td>West side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Underground Electric</td>
<td>Crossing at intersection of Markham Woods Blvd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Underground Electric</td>
<td>From 240-ft west to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Underground Electric</td>
<td>From 160-ft east of intersection of International Pkwy &amp; Lake Mary Blvd to 150-ft west of intersection of I-4 westbound ramp to Lake Mary Blvd &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of I-4 Corridor, 9380-ft west of Lake Mary Blvd, I-4 Corridor Overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of I-4 Corridor, 9400-ft west of Lake Mary Blvd, I-4 Corridor Overpass</td>
<td>N/A</td>
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<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Diagonal Crossing of I-4 Corridor, from 1560-ft west of to 730-ft east of SR 46, I-4 Underpass</td>
<td>Diagonally across road</td>
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<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Two Crossings of I-4 Corridor, 2420-ft west of US 17-92, I-4 underpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing at intersection of Rinehart Rd &amp; CR 46A</td>
<td>N/A</td>
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<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of CR 46A, 190-ft east of intersection of Rinehart Rd &amp; CR 46A</td>
<td>N/A</td>
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<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of CR 46A, 210-ft east of intersection of Rinehart Rd &amp; CR 46A</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of SR 417, 1350-ft west of Towne Center Blvd, SR 417 underpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Two Crossings of SR 417, 1180-ft west of Towne Center Blvd, SR 417 underpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of SR 46, 690-ft east of intersection of N. Oregon St. &amp; SR 46</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of SR 46, 270-ft west of intersection of Hickman Dr. &amp; SR 46</td>
<td>N/A</td>
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<tr>
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<tbody>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Crossing of SR 46, 220-ft west of intersection of Hickman Dr. &amp; SR 46</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Aerial Electric</td>
<td>Crossing at intersection of Rinehart Rd &amp; CR 46A</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Aerial Electric</td>
<td>From 500-ft east to 1320-ft east of intersection of Rinehart Rd &amp; CR 46A on west bound CR 46A</td>
<td>South side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Aerial Electric</td>
<td>From 1440-ft east of intersection of Rinehart Rd &amp; CR 46A east bound CR 46A, east to station 139+00 on CR 46A</td>
<td>South side of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Aerial Electric</td>
<td>Crossing at intersection of Banana Lake Rd &amp; CR 46A</td>
<td>Diagonally across intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Aerial Electric</td>
<td>Crossing at intersection of International Pkwy &amp; Wekiva Pkwy</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>From 85-ft west of intersection of Bright Meadow Dr. &amp; CR 46A</td>
<td>West of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Bright Meadow Dr. &amp; CR 46A</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing 500-ft east of intersection of Bright Meadow Dr. &amp; CR 46A</td>
<td>N/A</td>
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<tr>
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<tbody>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing 770-ft west of intersection of Lake Como Dr. &amp; CR 46A</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing 610-ft west of intersection of Lake Como Dr. &amp; CR 46A</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing of I-4 Corridor, 2980-ft south of CR 46A, I-4 overpass</td>
<td>North side of pedestrian overpass</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing of I-4 Corridor 3030-ft south of CR 46A, I-4 overpass</td>
<td>South of pedestrian overpass</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>From station 10+00 on CR 46A to intersection of Banana Lake Rd &amp; CR 46A</td>
<td>Varies from north to center of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing 230-ft west of intersection of St. Albans Loop &amp; CR 46A</td>
<td>West bound lane only</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>From 230-ft west to 100-ft east of St. Albans Loop on CR 46A</td>
<td>Center of road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of St. Albans Loop &amp; CR 46A</td>
<td>North east corner of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Banana Lake Rd &amp; CR 46A</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Banana Lake Rd &amp; CR 46A</td>
<td>Diagonally across intersection</td>
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<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Business Center Rd &amp; CR 46A</td>
<td>East side of intersection</td>
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<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Colonial Center Pkwy &amp; CR 46A</td>
<td>North side of intersection</td>
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<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Underground Electric</td>
<td>Crossing at intersection of Lake George Dr. &amp; CR 46A</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>230 KV Aerial Electric</td>
<td>Three Crossings of I-4, 5720-ft north of the SR 46, I-4 underpass</td>
<td>N/A</td>
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<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>230 KV Aerial Electric</td>
<td>Two Crossings of SR 46, 590-ft east of the intersection of Rinehart Road &amp; SR 46</td>
<td>N/A</td>
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<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>115 KV Aerial Electric</td>
<td>Crossing of I-4 at the US 17-92, I-4 underpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>115 KV Aerial Electric</td>
<td>Crossing of US 17-92, 500-ft east of the intersection of US 17-92 and I-4 WB Ramp to US 17-92</td>
<td>N/A</td>
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<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>115 KV Aerial Electric</td>
<td>Crossing at the intersection of Orange Blvd and Monroe Road</td>
<td>West side of intersection</td>
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<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Two Lines from beginning of project limits on I-4 east to 6600-ft west of I-4 Lake Mary Overpass.</td>
<td>West side of road</td>
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<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Four Crossings of I-4 10900-ft west of I-4, Lake Mary Overpass</td>
<td>N/A</td>
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<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Two Crossings of I-4 6600-ft ft west of I-4, Lake Mary Overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Two lines from 6600-ft west of I-4, Lake Mary Overpass east to CR 46a, I-4 Overpass</td>
<td>East side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Crossing of I-4 at Lake Mary Blvd overpass</td>
<td>West side of overpass, runs through Lake Mary Barrier Wall</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From the intersection of International Pkwy east to end of project limits on Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Crossing of I-4 at CR 46a overpass</td>
<td>West side of overpass</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From CR 46a on I-4 east to 2380-ft west of SR 46a underpass</td>
<td>West side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Crossing of I-4 2380-ft west of SR 46a underpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From 2380-ft west of SR 46a east to 4000-ft west of Orange Blvd, I-4 Underpass</td>
<td>East side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From I-4, SR 417 underpass on SR 417, east to Towne Center Rd, SR 417 underpass</td>
<td>South side of road</td>
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<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Crossing of SR 417 at Towne Center Blvd underpass</td>
<td>East side of underpass</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From Towne Center Blvd, SR 417 underpass east to end of project limits on SR 417</td>
<td>North side of Road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Two Crossings of I-4, 4000-ft west of Orange Blvd, I-4 Underpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From 4000-ft west of Orange Blvd, I-4 underpass east to Orange Blvd, I-4 underpass</td>
<td>West side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Crossing at I-4, Orange Blvd underpass</td>
<td>West side of underpass</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Two lines on I-4 from I-4, Orange Blvd, underpass east to I-4, US 17-92, underpass</td>
<td>East side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From the intersection of Monroe Rd &amp; Orange Blvd north to the intersection of Monroe Blvd &amp; US 17-92</td>
<td>East side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From US 17-92 east to end of project limits of Segment Three along I-4</td>
<td>East side of road</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Two crossings of I-4 at US 17-92, I-4 underpass</td>
<td>West side of underpass</td>
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<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>Crossing of US 17-92, 1320-ft west of intersection of US 17-92 and Monroe Road</td>
<td>N/A</td>
</tr>
<tr>
<td>Intelligent Transportation System</td>
<td>Florida Department of Transportation</td>
<td>Intelligent Transportation System Cable</td>
<td>From end of project limits on US 17-92 east to 1320-ft east of intersection of US 17-92 and Monroe Road</td>
<td>North side of Road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>6&quot; Natural Gas Main</td>
<td>Crossing on I-4 Corridor, 5410-ft south of Lake Mary Blvd, I-4 overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>6&quot; Natural Gas Main</td>
<td>From intersection of Tournament Dr. &amp; Lake Mary Blvd to intersection of International Way &amp; Lake Mary Blvd on Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>6&quot; Natural Gas Main</td>
<td>Crossing at intersection of International Way &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>6&quot; Natural Gas Main</td>
<td>Crossing at intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>6&quot; Natural Gas Main</td>
<td>From 670-ft west of intersection of Business Center Dr. &amp; Lake Mary Blvd to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>6&quot; Natural Gas Main</td>
<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>South side of intersection</td>
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</table>
## Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot;-6&quot; Natural Gas Main</td>
<td>From intersection of N. Oregon St &amp; SR 46 to east to station 141+00 on SR 46</td>
<td>North side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>Crossing at intersection of Markham Woods Blvd &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>From intersection of Markham Woods Blvd &amp; Lake Mary Blvd to intersection of Tournament Dr. &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>Crossing at intersection of Tournament Dr. &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
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<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>Crossing at intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>From intersection of Rinehart Rd &amp; Lake Mary Blvd east to station 138+00 on Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>Crossing of SR 417 at Towne Center Blvd underpass</td>
<td>West side underpass</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>From station 10+00 on SR 46 to intersection of Terracina Dr. &amp; SR 46</td>
<td>North side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>Crossing at intersection of N. Oregon St &amp; SR 46</td>
<td>North side of intersection</td>
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<tr>
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<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>Crossing at intersection of Hickman Dr. &amp; SR 46</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>4&quot; Natural Gas Main</td>
<td>Crossing 330-ft west of intersection of Central Park Dr. &amp; SR 46</td>
<td>N/A</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>From 130-ft west to 300-ft east of intersection of International Way &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing at intersection of International Way &amp; Lake Mary Blvd</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>From intersection of Primera Blvd &amp; Lake Mary Blvd to 410-ft west of intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing at intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>From 450-ft west to 600-ft east of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing 150-ft west of intersection of International Pkwy &amp; CR 46A</td>
<td>N/A</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing at intersection of Townpark Ave &amp; CR 46A</td>
<td>East side of intersection</td>
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<tbody>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing 260-ft west of intersection of Colonial Center Pkwy &amp; CR 46A</td>
<td>N/A</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>From 190-ft west of intersection of Colonial Center Pkwy &amp; CR 46A to intersection of Rinehart Rd &amp; CR 46A</td>
<td>South side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing at intersection of Rinehart Rd &amp; SR 46</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2&quot; Natural Gas Main</td>
<td>Crossing at intersection of Monroe Rd &amp; SR 46</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>1.25&quot; Natural Gas Main</td>
<td>From Towne Center Blvd, SR 417 underpass east to 500-ft east of Towne Center Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Gas Transmission</td>
<td>12.75&quot; Natural Gas Main</td>
<td>Crossing of SR 46 and SR 46 ramp to I-4 west bound 180-ft east of I-4 west bound ramp to SR 46</td>
<td>N/A</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Gas Transmission</td>
<td>3.5&quot; Natural Gas Main</td>
<td>Crossing of I-4 460-ft north of the SR 46, I-4 Overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>55&quot; Underground CATV</td>
<td>From north side to south side of US 17-92 bridge crossing St. John's River</td>
<td>West side of bridge</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>From 940-ft west of intersection of Bright Meadow Dr. &amp; CR 46A on east bound CR 46A, east to station 141+00 on CR 46A</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Type of Utility</td>
<td>Owner of Utility</td>
<td>Type of Facility</td>
<td>Limits</td>
<td>Offset/Side</td>
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</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>From 100+00 on SR 46 to 500-ft east of intersection of N. Hendersen Ln &amp; SR 46</td>
<td>North side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>From intersection of Terracina Dr. &amp; SR 46 to 270-ft west of intersection of N. Oregon St &amp; SR 46</td>
<td>North side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>From 450-ft west to 630-ft west of intersection of Hickman Dr. &amp; SR 46</td>
<td>North side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>Crossing at intersection of Sewell Rd &amp; SR 46</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>From 250-ft east of intersection of Towne Center Blvd &amp; SR 46 east to station 141+00 on SR 46</td>
<td>South side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>Crossing at intersection of Elder Rd &amp; SR 46</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Aerial CATV</td>
<td>Crossing at intersection of Monroe Rd &amp; SR 46</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>From intersection of Markham Woods Blvd &amp; Lake Mary Blvd to International Pkwy &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>Crossing 280-ft west of intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 2.21: Major Utilities

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<th>Offset/Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>Crossing of I-4 Corridor, 5450-ft south of Lake Mary Blvd, I-4 overpass</td>
<td>N/A</td>
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<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>From station 10+00 on Lake Mary Blvd west on Lake Mary Blvd for 520-ft</td>
<td>South side</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
<td></td>
<td>road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>Crossing on I-4 Corridor, 4370-ft north of Lake Mary Blvd, I-4 overpass</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>From station 10+00 on CR 46A to intersection of St. Albans Loop &amp; CR 46A</td>
<td>North side</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
<td></td>
<td>road</td>
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<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>Crossing at intersection of Orange Blvd &amp; CR 46A</td>
<td>East side of intersection</td>
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<tr>
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<td></td>
<td>Underground CATV</td>
<td></td>
<td></td>
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<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>Crossing at intersection of Banana Lake Rd &amp; CR 46A</td>
<td>South side of intersection</td>
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<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
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<td></td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>From intersection of Orange Blvd &amp; CR 46A to intersection of International Pkwy &amp; CR 46A</td>
<td>North side of road</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>West side of intersection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>North side of intersection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
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<tbody>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size</td>
<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>East side of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underground CATV</td>
<td></td>
<td>intersection</td>
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<td></td>
<td>From intersection of International Pkwy &amp; CR 46A to</td>
<td>North side of road</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>intersection of Colonial Center Pkwy &amp; CR 46A</td>
<td></td>
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<td></td>
<td></td>
<td>Crossing at intersection of I-4 west bound ramp to</td>
<td>East side of</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>intersection</td>
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<td></td>
<td></td>
<td></td>
<td>Crossing at intersection of I-4 west bound ramp to</td>
<td>South side of</td>
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<td>road</td>
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<td></td>
<td></td>
<td></td>
<td>Crossing at intersection of I-4 west bound ramp to</td>
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<td>West side of</td>
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<td>intersection</td>
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<td>South side of</td>
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<td>intersection</td>
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<tbody>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>From 550-ft west of intersection of Lake Forest Blvd &amp; SR 46 to intersection of Terracina Dr. &amp; SR 46</td>
<td>North side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>Crossing at intersection of N. Oregon St &amp; SR 46</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>From intersection of Wayside Dr. &amp; SR 46 to intersection of Upsala Rd &amp; SR 46</td>
<td>South side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>From 450-ft west of intersection of Hickman Dr. &amp; SR 46 to 380-ft of intersection of N. Elder Rd &amp; SR 46</td>
<td>North side of road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>Crossing at intersection of Monroe Rd &amp; SR 46</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>From south side of US 17-92 bridge crossing St. John's River to intersection of Monroe Rd &amp; US 17-92</td>
<td>South side of road</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Sanitary Main</td>
<td>From station 10+00 on Lake Mary Blvd east for 650-ft</td>
<td>Varies from north to center of road</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Lake Mary Utilities</td>
<td>4&quot; Sanitary Main</td>
<td>From intersection east of Primera Blvd &amp; Lake Mary Blvd to intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>North side of road</td>
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<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of Markham Woods Rd &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>From intersection of Markham Woods Rd &amp; Lake Mary Blvd to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>From intersection of Keenwicka Dr. &amp; CR 46A to intersection of St. Albans Loop &amp; CR 46A</td>
<td>Center/north side of road</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of St. Albans Loop &amp; CR 46A</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of Orange Blvd &amp; CR 46A</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of Orange Blvd &amp; CR 46A</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of Rinehart Rd &amp; CR 46A</td>
<td>East side of intersection</td>
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<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of International Pkwy &amp; Wekiva Pkwy</td>
<td>Diagonally across intersection</td>
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<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
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<td>Crossing at intersection of International Pkwy &amp; Wekiva Pkwy</td>
<td>Center of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
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<td>From Intersection of International Pkwy &amp; Wekiva Pkwy to beginning of Wekiva Pkwy on SR 417</td>
<td>North side of road</td>
</tr>
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<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
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<td>Crossing of I-4 Corridor 2040-ft west of SR 417 underpass</td>
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<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
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<td>Crossing of SR 417 at Rinehart Rd underpass</td>
<td>East side of underpass</td>
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<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
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<td>Crossing of SR 46 270-ft west of intersection of Hickman Dr. &amp; SR 46</td>
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<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
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<td>From station 10+00 on SR 46 east to SR 46 west bound ramp to I-4 west bound</td>
<td>North side of road</td>
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<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
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<td>Crossing at SR 46 west bound ramp to I-4 west bound</td>
<td>Center of ramp</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing at intersection of N. Oregon St &amp; SR 46</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Wastewater/Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Two Crossings of I-4 Corridor at Orange Blvd &amp; US 17-92 underpasses</td>
<td>Center/east side of underpass</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>City of Sanford</td>
<td>Crossing of I-4 Corridor at Orange Blvd, I-4 underpass</td>
<td>East side of underpass</td>
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<td>Owner of Utility</td>
<td>Type of Facility</td>
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<td>Offset/Side</td>
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<tr>
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<td>Lake Mary Utilities</td>
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<td>Crossing at intersection of Rinehart Rd. &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
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<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>16&quot; Water Main</td>
<td>From intersection of Primera Blvd &amp; Lake Mary Blvd west to station 138+00 on Lake Mary Blvd</td>
<td>Varies from center to south side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>12&quot; Water Main</td>
<td>From 5900-ft to 5500-ft south of Lake Mary Blvd, I-4 overpass</td>
<td>East side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>12&quot; Water Main</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>East center of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>12&quot; Water Main</td>
<td>Crossing at intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>12&quot; Water Main</td>
<td>Crossing at intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>12&quot; Water Main</td>
<td>From intersection of Rinehart Rd &amp; CR 46A east to station 139+00 on CR 46A</td>
<td>Varies from center to south side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Water Main</td>
<td>Crossing on Lake Mary Blvd, 425-ft east of intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>N/A</td>
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<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Water Main</td>
<td>Crossing on Lake Mary Blvd, 240-ft west of intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>N/A</td>
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</table>
### Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Water Main</td>
<td>Crossing on Lake Mary Blvd, 240-ft east of intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
<td>N/A</td>
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<td>Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Water Main</td>
<td>Crossing on Lake Mary Blvd, 700-ft east of intersection of N. Sun Dr. &amp; Lake Mary Blvd</td>
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<tr>
<td>Water</td>
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<td>8&quot; Water Main</td>
<td>Crossing on Lake Mary Blvd, 490-ft west of intersection of Rinehart Rd. &amp; Lake Mary Blvd</td>
<td>N/A</td>
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<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Water Main</td>
<td>Crossing at intersection of Rinehart Rd. &amp; Lake Mary Blvd</td>
<td>North side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Water Main</td>
<td>Crossing on Lake Mary Blvd, 450-ft east of intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>N/A</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>8&quot; Water Main</td>
<td>Crossing on Lake Mary Blvd, 500-ft west to station 138+00 Lake Mary Blvd</td>
<td>N/A</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>6&quot; Water Main</td>
<td>Crossing at intersection east of Primera Blvd &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>Unknown Size Reclaim Main</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
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</table>
## Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>Unknown Size</td>
<td>From intersection of Primera Blvd &amp; Lake Mary Blvd west to station 139+00 on Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>Reclaim Main</td>
<td>Crossing on Lake Mary Blvd, 460-ft east of intersection of Rinehart Rd &amp; Lake Mary Blvd</td>
<td>N/A</td>
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<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>Unknown Size</td>
<td>Crossing on I-4 Corridor, 2920-ft south of CR 46A, I-4 overpass</td>
<td>South of pedestrian overpass</td>
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<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>Reclaim Main</td>
<td>Crossing at intersection of Rinehart Rd &amp; CR 46A</td>
<td>South east corner of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Sanlando Utilities</td>
<td>24&quot; Water Main</td>
<td>Crossing 13750-ft south of Lake Mary Blvd, I-4 Overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size</td>
<td>Crossing of I-4 Corridor, 4810-ft west of Lake Mary Blvd Overpass</td>
<td>N/A</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Water Main</td>
<td>Crossing at intersection of Markham Woods Rd &amp; Lake Mary Blvd</td>
<td>Center of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size</td>
<td>From intersection of Markham Woods Rd &amp; Lake Mary Blvd to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Water Main</td>
<td>Crossing at intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
</tbody>
</table>
### Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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<tbody>
<tr>
<td>Water</td>
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<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>From intersection of International Pkwy &amp; Lake Mary Blvd to intersection of I-4 East Bound Ramp to Lake Mary Blvd &amp; Lake Mary Blvd</td>
<td>South side on road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>From 280-ft east to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>From intersection of Lake Emma Rd &amp; Lake Mary Blvd to intersection of Sun Dr. &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing of I-4 Corridor at Cross Seminole Trail Overpass</td>
<td>West side of overpass</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at intersection of Keenwика Dr. &amp; CR 46A</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>From intersection of Keenwика Dr. &amp; CR 46A to intersection of International Pkwy &amp; CR 46A</td>
<td>South side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at intersection of St. Albans Loop &amp; CR 46A</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at intersection of Orange Blvd &amp; CR 46A</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Type of Utility</td>
<td>Owner of Utility</td>
<td>Type of Facility</td>
<td>Limits</td>
<td>Offset/Side</td>
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<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
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<td>Crossing at intersection of Lake George Dr. &amp; CR 46A</td>
<td>East side of intersection</td>
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<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
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<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>South side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>From intersection to 320-ft east of International Pkwy &amp; Lake Mary Blvd</td>
<td>South side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>From station 10+00 on SR 46 east to SR 46 west bound ramp to I-4 west bound</td>
<td>North side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at intersection of SR 46</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at intersection of N. Oregon St. &amp; SR 46</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing of SR 46 270-ft west of intersection of Hickman Dr. &amp; SR 46</td>
<td>N/A</td>
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<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at SR 46 west bound ramp to I-4 west bound</td>
<td>Center of ramp</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing at intersection of Orange Blvd &amp; Kastner Pl.</td>
<td>East side of intersection</td>
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</table>
Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
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<tbody>
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<td>Water</td>
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<td>Unknown Size Water Main</td>
<td>From 1200-ft west of I-4 overpass on Orange Blvd to intersection of Orange Blvd &amp; Kastner Pl.</td>
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<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Water Main</td>
<td>Crossing 100-ft east of intersection of Orange Blvd &amp; Kastner Pl.</td>
<td>Center/east side of underpass</td>
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<tr>
<td>Water</td>
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<td>Two Crossings of I-4 Corridor at Orange Blvd &amp; US 17-92 underpasses</td>
<td>Center/east side of underpass</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclaim Water Main</td>
<td>Crossing of I-4 Corridor, 4810-ft west of Lake Mary Blvd Overpass</td>
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</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclaim Water Main</td>
<td>Crossing at intersection of Markham Woods Rd &amp; Lake Mary Blvd</td>
<td>East side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclaim Water Main</td>
<td>From 350-ft east of intersection of Markham Woods Rd &amp; Lake Mary Blvd to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclaim Water Main</td>
<td>Crossing 280-ft east of intersection of International Pkwy &amp; Lake Mary Blvd</td>
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<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclaim Water Main</td>
<td>From 280-ft east to intersection of International Pkwy &amp; Lake Mary Blvd</td>
<td>North side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclaim Water Main</td>
<td>Crossing at intersection of Primera Blvd &amp; Lake Mary Blvd</td>
<td>West side of intersection</td>
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</tbody>
</table>
Table 2.21: Major Utilities

<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Owner of Utility</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset/Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclalm Water Main</td>
<td>Crossing of I-4 Corridor at Cross Seminole Trail Overpass</td>
<td>West side of overpass</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclalm Water Main</td>
<td>From intersection of Keenwicka Dr. &amp; CR 46A to intersection of International Pkwy &amp; CR 46A</td>
<td>North side of road</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclalm Water Main</td>
<td>Crossing at intersection of International Pkwy &amp; CR 46A</td>
<td>East side of intersection</td>
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<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclalm Water Main</td>
<td>Crossing at intersection of Wekiva Pkwy &amp; International Pkwy</td>
<td>West side of intersection</td>
</tr>
<tr>
<td>Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Reclalm Water Main</td>
<td>Crossing at intersection of Bernini Way &amp; SR 46</td>
<td>West side of intersection</td>
</tr>
</tbody>
</table>

2.17 Soils

A preliminary geotechnical review was conducted to assist in the evaluation of the stormwater management system in the project corridor study area. Soils data from the U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS) and the United States Geological Society (USGS) Quadrangle Map was reviewed within the limits of the proposed improvements in Seminole County to determine soil and groundwater conditions along the I-4 Segment 3 corridor. Review of the USGS Forest City, Casselberry and Sanford, Florida Quadrangle maps indicates that the natural ground surface elevation for the proposed ponds in Segment 3 ranges from approximately +60 feet NGVD to +75 feet NGVD and for the proposed swale, +30 feet NGVD.

Based on the NRCS survey, the soils within the area of the proposed ponds in Segment 3 are characterized as sands with variable silt content (A-3, A-2-4). For the majority of the soils within the proposed pond footprints, the soil survey lists seasonal high water table levels at depths greater than 6 feet below the existing ground surface. However, the estimated seasonal high groundwater levels do not account for changes in groundwater due to development and are only relevant for the soil’s natural, undisturbed condition. The soils in the vicinity of the proposed swales are generally classified as urban land with no estimated groundwater levels. However, the surrounding natural
soils typically have shallow seasonal high groundwater levels within about one foot of the natural ground. The predominant types of soils found in the study area and their corresponding soil properties are summarized in Table 2.22 and illustrated in Figure 2.10.

<table>
<thead>
<tr>
<th>Soil Name</th>
<th>Depth (in)</th>
<th>Soil Description</th>
<th>Soil Classification (AASHTO)</th>
<th>Seasonal High Groundwater Depth (ft)</th>
<th>Hydrologic Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astatula fine sand, 0 to 5 percent slopes</td>
<td>0 - 4 4 - 80</td>
<td>Fine sand Fine sand, sand</td>
<td>A-3 A-3</td>
<td>&gt;6</td>
<td>A</td>
</tr>
<tr>
<td>Apopka fine sand, 0 to 5 percent slopes</td>
<td>0 – 64 64 - 80</td>
<td>Fine sand Sandy clay loam, sandy loam, sandy clay</td>
<td>A-3 A-6, A-2-4, A-2-6, A-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Astatula fine sand 5 to 8 percent slopes</td>
<td>0 - 3 3 - 80</td>
<td>Fine sand Fine sand, sand</td>
<td>A-3 A-3</td>
<td>&gt;6</td>
<td>A</td>
</tr>
<tr>
<td>Apopka fine sand, 5 to 8 percent slopes</td>
<td>0 - 65 65 - 80</td>
<td>Fine sand Sandy clay loam, sandy loam, sandy clay</td>
<td>A-3 A-2-6, A-4, A-6, A-2-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Astatula fine sand, 8 to 12 percent slopes</td>
<td>0 - 3 3 - 80</td>
<td>Fine sand Fine sand, sand</td>
<td>A-3 A-3</td>
<td>&gt;6</td>
<td>A</td>
</tr>
<tr>
<td>Apopka fine sand, 8 to 12 percent slopes</td>
<td>0 - 65 65 - 80</td>
<td>Fine sand Sandy clay loam, sandy loam, sandy clay</td>
<td>A-3 A-2-6, A-4, A-6, A-2-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myakka fine sand</td>
<td>0 - 28 28 – 45 45 - 80</td>
<td>Fine sand, sand Fine sand, sand, loamy fine sand Fine sand, sand</td>
<td>A-3 A-2-4, A-3 A-3</td>
<td>0.5 - 1.5</td>
<td>A/D</td>
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<tr>
<td>EauGallie fine sand</td>
<td>0 - 18 18 - 41 41 – 60 60 - 80</td>
<td>Fine sand Fine sand, sand Sandy clay loam, sandy loam, fine sandy loam Loamy sand, sand, loamy fine sand</td>
<td>A-3 A-2-4, A-3 A-2-6, A-2-4 A-2-4, A-3</td>
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<td></td>
</tr>
<tr>
<td>Urban Land</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Figure 2.10 – Soils Map

Prepared from:
NRCS Soil Survey of Seminole County, FL
Seminole County Map Unit Legend
6 - Astoria-Apopka fine sands, 0 to 5 percent slopes
7 - Astoria-Apopka fine sands, 5 to 6 percent
8 - Astoria-Apopka fine sands, 6 to 10 percent slopes

0 1,000 2,000 Feet

West
N
0
Subsurface exploration to evaluate soil and groundwater conditions at the pond and swale locations generally consisted of performing 2 machine auger borings to a depth of 20 feet below the existing ground surface, along with one field permeability test at each of the proposed pond locations and one boring along with one field permeability test at each of the swale locations. The pond borings generally encountered fine sands with varying amounts of silt (A-3, A-2-4) to the boring termination depths of 10 to 20 feet below the existing ground surface. The majority of the soils encountered in the pond borings appear suitable for use as roadway embankment in accordance with Index 505 of the FDOT Standard. Detailed soil boring information, permeability test results and soil survey information can be found in the Report of Preliminary Geotechnical Engineering Investigation for Ponds – Segment 3 (December 2015) completed for this project.

2.18 Sociocultural Conditions

Sociocultural Effects (SCE) Evaluation is the process of determining and evaluating the effects a transportation action may have on a community and the quality of life of the citizenry. A community is defined as a geographic, manmade or natural boundary comprised of people and places, which may share similar social, cultural, economic, and political or other characteristics. This section of the report identifies community features and characteristics surrounding the project corridor, including a data inventory of existing community facilities that will be used in the subsequent SCE evaluation.

2.18.1 Study Area

The SCE study area was determined by evaluating project plans, land use maps, local government comprehensive plans and other relevant resources. Segment 3 is located in Seminole County which is within the U.S. Census designated Orlando-Kissimmee-Sanford Metropolitan Statistical Area. In this metro area, the corridor lies within U.S. postal zip codes 32750 and 32779 in Longwood, 32746 in Lake Mary and Heathrow and 32771 in Sanford. For the majority of the limits of improvements, the west side of the corridor is in unincorporated Seminole County, while the majority of the east side of the corridor is within or adjacent to the city limits of Lake Mary, Sanford or Longwood. The community of Heathrow lies to the west of the corridor about midway through the project limits.

2.18.2 Social Demographics

Based on the 2010 Census, Seminole County is the 13th most populous County in the State of Florida. With a 2014 population estimate of 437,086, the County represents approximately two percent of the total State population.¹ Seminole County population grew by 3.4% between 2010 and 2014 with a population increase of approximately 14,400. According to the US Census, the County population increased by 15.8% from 365,199 to 422,718 over the ten-year period from 2000 to 2010. The

¹ Florida Legislature, Office of Economic and Demographic Research, January 2015.
population projection for Seminole County for the year 2040 is 541,100, an increase of approximately 24% over a 26-year period.²

Demographic statistics specific to the area surrounding the I-4 Segment 3 corridor were obtained from the U.S. Census Bureau’s American Community Survey (ACS). The U.S. Census Bureau has developed Zip Code Tabulation Areas (ZCTAs) to represent U.S. Postal Service (USPS) ZIP code service areas. Since USPS ZIP codes can cross state, county, census tract and census block boundaries, the Bureau has developed the ZCTAs to provide a correlation between postal zip codes and census bureau geographic boundaries. The socioeconomic demographic data for Seminole County and the ZCTAs in the study area is summarized in Table 2.23.

Table 2.23: Community Demographics

<table>
<thead>
<tr>
<th>Community Characteristic</th>
<th>Seminole County</th>
<th>ZCTA 32746</th>
<th>ZCTA 32750</th>
<th>ZCTA 32771</th>
<th>ZCTA 32779</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>422,718</td>
<td>40,571</td>
<td>22,713</td>
<td>49,481</td>
<td>27,556</td>
</tr>
<tr>
<td>% White</td>
<td>78.2</td>
<td>80.8</td>
<td>86.4</td>
<td>58.7</td>
<td>89.3</td>
</tr>
<tr>
<td>% Black or African American</td>
<td>11.1</td>
<td>6.9</td>
<td>4.5</td>
<td>31.2</td>
<td>3.2</td>
</tr>
<tr>
<td>% Other</td>
<td>10.7</td>
<td>12.3</td>
<td>9.1</td>
<td>10.1</td>
<td>7.5</td>
</tr>
<tr>
<td>% Hispanic Or Latino (Of Any Race)</td>
<td>17.1</td>
<td>14.5</td>
<td>14.3</td>
<td>14.1</td>
<td>9.1</td>
</tr>
<tr>
<td>% 65 Years and Over</td>
<td>12.0</td>
<td>11.0</td>
<td>15.7</td>
<td>10.4</td>
<td>15.1</td>
</tr>
<tr>
<td>% High School Graduate or Higher</td>
<td>91.1</td>
<td>94.8</td>
<td>90.7</td>
<td>85.6</td>
<td>94.5</td>
</tr>
<tr>
<td>% Bachelor's Degree or Higher</td>
<td>34.0</td>
<td>43.2</td>
<td>28.9</td>
<td>28.2</td>
<td>50.1</td>
</tr>
<tr>
<td>% Speak English Less Than &quot;Very Well&quot;</td>
<td>5.9</td>
<td>5.0</td>
<td>4.2</td>
<td>4.5</td>
<td>4.3</td>
</tr>
<tr>
<td>% Employed (Age 16 And Over)</td>
<td>61.9</td>
<td>65.7</td>
<td>59.7</td>
<td>59.2</td>
<td>58.8</td>
</tr>
<tr>
<td>% Unemployed</td>
<td>6.0</td>
<td>5.0</td>
<td>6.5</td>
<td>7.6</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Commuting to Work</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Car, Truck, Or Van -- Drove Alone</td>
<td>84.2</td>
<td>84.2</td>
<td>84.6</td>
<td>84.3</td>
<td>83.9</td>
</tr>
<tr>
<td>% Car, Truck, Or Van – Carpoled</td>
<td>7.0</td>
<td>6.0</td>
<td>5.3</td>
<td>7.5</td>
<td>5.5</td>
</tr>
<tr>
<td>% Public Transportation (Excluding Taxicab)</td>
<td>0.5</td>
<td>0.2</td>
<td>0.4</td>
<td>0.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Mean Travel Time to Work (Minutes)</td>
<td>25.7</td>
<td>24.2</td>
<td>24.8</td>
<td>25.3</td>
<td>26.7</td>
</tr>
<tr>
<td><strong>Average Household Size</strong></td>
<td>2.77</td>
<td>2.86</td>
<td>2.83</td>
<td>2.70</td>
<td>2.78</td>
</tr>
<tr>
<td><strong>Average Family Size</strong></td>
<td>3.37</td>
<td>3.42</td>
<td>3.33</td>
<td>3.44</td>
<td>3.20</td>
</tr>
<tr>
<td>Median Household Income (Dollars)</td>
<td>58,908</td>
<td>75,515</td>
<td>60,951</td>
<td>46,984</td>
<td>83,895</td>
</tr>
<tr>
<td>Mean Household Income (Dollars)</td>
<td>79,008</td>
<td>99,889</td>
<td>76,891</td>
<td>69,323</td>
<td>123,005</td>
</tr>
<tr>
<td>Per Capita Income (Dollars)</td>
<td>29,894</td>
<td>36,460</td>
<td>28,284</td>
<td>26,964</td>
<td>45,474</td>
</tr>
<tr>
<td><strong>Income Below the Poverty Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% All People</td>
<td>10.0</td>
<td>6.5</td>
<td>5.6</td>
<td>16.1</td>
<td>5.1</td>
</tr>
<tr>
<td>% 65 Years and Over</td>
<td>8.6</td>
<td>2.3</td>
<td>5.7</td>
<td>20.7</td>
<td>5.7</td>
</tr>
<tr>
<td>% Under 18 Years</td>
<td>12.5</td>
<td>11.3</td>
<td>4.5</td>
<td>20.9</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, 2010 Census

---

2.18.3 Economics
The total employment in Seminole County for 2014 was approximately 189,000. The employment is projected to increase by about 2% per year, with an estimated employment of 218,000 in 2022. The top employment industries in Seminole County for 2014 consisted of: Trade, Transportation & Utilities (20.6%), Professional & Business Services (16.1%), Education & Health Services (11.3%) and Leisure & Hospitality (9.5%).

2.18.4 Community Facilities and Services
Existing community resources within the I-4 Segment 3 project study area were identified as part of the sociocultural analysis. The existing patterns of social activity revolve heavily around the businesses and commercial centers in this corridor. The International Parkway and Lake Mary Boulevard corridors consist of many, large office complexes which are home to several national corporations. The business corridors are surrounded by residential communities including several golf course/country club communities in this area of I-4. Numerous community resources exist to serve the residential and workforce population in this region. Table 2.24 provides a list of the locations of existing community facilities and services in the I-4 Segment 3 study area. Community resources which serve the residential population in this region are also illustrated in Figure 2.11 and Figure 2.12.

Table 2.24: Community Facilities and Services

<table>
<thead>
<tr>
<th>Community Facility/Service</th>
<th>Address</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Within 500 feet of I-4</td>
</tr>
<tr>
<td>School/College/Daycare Facilities</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Woodlands Elementary School</td>
<td>1420 E E Williamson Rd, Longwood</td>
<td>✓</td>
</tr>
<tr>
<td>ITT Technical Institute</td>
<td>1400 South International Pkwy, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Remington College of Nursing</td>
<td>660 Century Pt., Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Seminole State College of Florida - Heathrow Campus</td>
<td>1055 AAA Dr., Heathrow</td>
<td>✓</td>
</tr>
<tr>
<td>Baby Days Infant Care</td>
<td>109 S Pressview Ave, Longwood</td>
<td>✓</td>
</tr>
<tr>
<td>Gracekids Academy</td>
<td>1767 W. SR 434, Longwood</td>
<td>✓</td>
</tr>
<tr>
<td>La Petite Academy #146-Lake Mary</td>
<td>3850 Lake Emma Rd, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Ladybird Academy #2</td>
<td>185 Timacuan Blvd, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Lake Mary Child Care</td>
<td>875 Wallace Court, Suite 1001, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Legacy Academy for Children</td>
<td>3050 International Parkway, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Little Pros Academy of Heathrow</td>
<td>1032 AAA Drive, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Longwood Huntington Learning Center</td>
<td>1907 W State Road 434, Longwood</td>
<td>✓</td>
</tr>
<tr>
<td>Markham Woods Christian Academy</td>
<td>1675 Dixon Rd, Longwood</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 2.24: Community Facilities and Services

<table>
<thead>
<tr>
<th>Community Facility/Service</th>
<th>Address</th>
<th>Location Within 500 feet of I-4</th>
<th>Location Within ½ mile of I-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHMC Mother’s Morning Out</td>
<td>1525 West State Road 434, Longwood</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Rowe Family Day Care Home</td>
<td>135 Des Pinar Ln, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Royal Academy of Learning Inc</td>
<td>1001 Greenwood Blvd, Lake Mary</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Sanlando Christian School</td>
<td>1894 West State Road 434, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Seminole Community Private School System</td>
<td>4009 School St., Sanford</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sommerville Kids Klub</td>
<td>1665 EE Williamson Road, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>St. Peter's Preschool Kindergarten</td>
<td>700 Rinehart Rd., Lake Mary</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Star Child Academy - Crystal Creek</td>
<td>1701 Shandwick Ct, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>The Neighborhood Preschool</td>
<td>301 Markham Woods Rd, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Health/Safety Facilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seminole County Fire Department &amp; Rescue Station #34</td>
<td>4905 Wayside Dr., Sanford</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Sanford Police Department - Substation</td>
<td>200 Towne Center Circle, Sanford</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Lake Mary Fire Department &amp; Rescue Station #37</td>
<td>911 Wallace Ct., Lake Mary</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>US Drug Enforcement Administration - Orlando District Office</td>
<td>300 International Pkwy., Heathrow</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religious Facilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providence Missionary Baptist</td>
<td>4561 Douglas St, Lake Monroe</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Rose Hill Missionary Baptist Church</td>
<td>1161 Moton Ave, Sanford</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>First Baptist Church of Lake Monroe</td>
<td>691 Monroe Rd, Lake Monroe</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Holy Cross Lutheran Church</td>
<td>780 N Sun Dr, Lake Mary</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>St Peter's Episcopal Church</td>
<td>700 Rinehart Rd, Lake Mary</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Reality the Church</td>
<td>600 Rinehart Road, Lake Mary</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Neighborhood Alliance Church</td>
<td>301 Markham Woods Road, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Markham Woods Church of Seventh-day Adventists</td>
<td>505 Markham Woods Rd, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Sanlando United Methodist Church</td>
<td>1890 W. SR 434, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Rolling Hills Moravian Church</td>
<td>1525 W. SR 434, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Church on the Living Edge</td>
<td>555 Markham Woods Rd, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Wekiva Assembly of God</td>
<td>1675 Dixon Rd, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Iglesia De Dios Pentecostal</td>
<td>975 Markham Woods Rd, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Orlando North Community Church</td>
<td>7 Wooden Shoe Ln, Longwood</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Parks/Recreation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Monroe Wayside Park</td>
<td>4150 U.S. 17/92, Sanford</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Central Florida Zoo and Botanical Gardens</td>
<td>3755 Seminole Blvd, Sanford</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Bookertown Park</td>
<td>4640 Richard Allen St., Sanford</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Heathrow Country Club</td>
<td>1200 Bridgewater Dr., Heathrow</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Table 2.24: Community Facilities and Services

<table>
<thead>
<tr>
<th>Community Facility/Service</th>
<th>Address</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Within 500 feet of I-4</td>
</tr>
<tr>
<td>Seminole-Wekiva Trail</td>
<td>Seminole County</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Government Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Post Office #46</td>
<td>755 Monroe Rd, Lake Monroe</td>
<td>✓</td>
</tr>
<tr>
<td>Lake Mary Municipal Services Complex</td>
<td>911 Wallace Ct., Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Economic Development</td>
<td>1055 AAA Dr, Suite 145, Heathrow</td>
<td>✓</td>
</tr>
<tr>
<td>Tourism Development Office</td>
<td>1000 AAA Dr, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>U.S. Post Office Headquarters, Southern Region</td>
<td>800 Rinehart Rd, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Other Community Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amstar Stadium 12 Movie Theater</td>
<td>950 Colonial Grand Ln, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Seminole Town Center Movie Theater</td>
<td>430 Towne Center Cir, Sanford</td>
<td>✓</td>
</tr>
<tr>
<td>Seminole State College of Florida Library</td>
<td>1055 AAA Dr, Suite 145, Heathrow</td>
<td>✓</td>
</tr>
<tr>
<td>Joyful Music and Dance Studios</td>
<td>105 Commerce Street #109, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Arthur Murray Dance Studio</td>
<td>120 International Pkwy #176, Lake Mary</td>
<td>✓</td>
</tr>
<tr>
<td>Extreme Dance</td>
<td>4932 Florida 46, Sanford</td>
<td>✓</td>
</tr>
</tbody>
</table>
Figure 2.11 - Community Facilities and Services (Sheet 1 of 2)
Figure 2.12 - Community Facilities and Services (Sheet 2 of 2)
3.0 Planning Phase/Corridor Analysis

The current PD&E study is an update to the previously approved PD&E study for I-4 from West of SR 528 (Beachline Expressway) to SR 472 [FM Nos. 242486, 242592 and 242703 (FEIS – August 2002, Record of Decision Pending)]. The original projects followed a multi-level screening process which involved preliminary evaluations of the I-4 corridor with respect to constructability, design speeds and type of physical separation between the special use (HOV in the original design concept and express lanes in the current design concept) and general use lanes. The preliminary evaluations were reviewed with FDOT, and the corridor was analyzed with the following project goals:

- Use the existing infrastructure to the maximum extent possible
- Evaluate a barrier-separated facility
- Refine concept plans to minimize traffic disruptions during construction
- Minimize construction costs and right-of-way requirements
- Avoid and/or minimize impacts especially for wetlands, floodplains, Section 4(f) properties and Section 106 properties

Since the proposed project is a widening project, no alternative alignments were evaluated.
4.0 Design Criteria and Standards

The I-4 BtU PD&E Reevaluation Study incorporates project elements with various design requirements. Table 4.1 presents the roadway design criteria established for each design element. The design criteria and standards are based on design parameters in accordance with *A Policy on Geometric Design of Highway and Streets* (AASHTO 2011), *Roadway Plans Preparation Manual (PPM), Volumes I and II* (FDOT, January 2015), and *Roadway and Traffic Design Standards* (FDOT, 2015).

**Table 4.1: Roadway Design Criteria**

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Design Standard</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Vehicle</td>
<td>WB-62FL</td>
<td>PPM, Pg. 1-19</td>
</tr>
<tr>
<td>Design Year</td>
<td>2040</td>
<td>FDOT Scope of Services</td>
</tr>
<tr>
<td>Design Speed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td>70 mph</td>
<td>FDOT PPM, Table 1.9.1</td>
</tr>
<tr>
<td>Diamond Ramps</td>
<td>50 mph</td>
<td>2011 AASHTO, Page 10-89</td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>30 mph (25 mph min as per AASHTO)</td>
<td></td>
</tr>
<tr>
<td>Median Width I-4</td>
<td>64 ft. without barrier</td>
<td>FDOT PPM, Table 2.2.1</td>
</tr>
<tr>
<td></td>
<td>26 ft. minimum with barrier</td>
<td></td>
</tr>
<tr>
<td>Maximum Degree of Curve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td>3°00'</td>
<td>FDOT PPM, Table 2.8.3</td>
</tr>
<tr>
<td>Direct Connection Ramp</td>
<td>8°15'</td>
<td>(e MAX – 0.10)</td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>24°45'</td>
<td></td>
</tr>
<tr>
<td>Length of Horizontal Curves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td>Desirable: 30(V)¹</td>
<td>FDOT PPM, Table 2.8.2a</td>
</tr>
<tr>
<td>Ramps</td>
<td>Minimum: 15(V)¹</td>
<td></td>
</tr>
<tr>
<td>Diamond Ramps</td>
<td>Desirable: 15(V)¹</td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>Minimum: 150 ft.</td>
<td></td>
</tr>
<tr>
<td>Minimum Stopping Sight Distance</td>
<td></td>
<td>FDOT PPM, Table 2.7.1</td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td>820 ft.</td>
<td></td>
</tr>
<tr>
<td>Diamond Ramps</td>
<td>425 ft.</td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>200 ft.</td>
<td></td>
</tr>
<tr>
<td>Decision Sight Distance</td>
<td></td>
<td>2011 AASHTO, Exhibit 3-3, Page 3-7</td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td>1,445 ft.</td>
<td></td>
</tr>
<tr>
<td>Diamond Ramps</td>
<td>910 ft.</td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>490 ft.</td>
<td></td>
</tr>
<tr>
<td>Maximum Shoulder &quot;Roll-Over&quot;</td>
<td>7%</td>
<td>FDOT Roadway &amp; Traffic Design Standard Index No. 510, 2011 AASHTO pg. 4-5</td>
</tr>
<tr>
<td>Maximum Lane “Roll-Over”</td>
<td>4%</td>
<td></td>
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</tbody>
</table>
Table 4.1: Roadway Design Criteria

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Design Standard</th>
<th>Source(s)</th>
</tr>
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<tbody>
<tr>
<td>Superelevation Transition</td>
<td></td>
<td>FDOT PPM, Page 2-53</td>
</tr>
<tr>
<td>Tangent Curve</td>
<td>80% desirable, 50% minimum</td>
<td></td>
</tr>
<tr>
<td>Maximum Superelevation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes Ramps</td>
<td>20% desirable, 50% maximum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>On- and Off-Ramp Design</td>
<td></td>
<td>FDOT Roadway &amp; Traffic Design Standard Index No 525</td>
</tr>
<tr>
<td>Diamond On-Ramps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taper Design with 50:1 (1200 ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taper Design with 3° to 5°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Parallel Design: 1,200’ Accel + 300’ Taper and 800’ Decel + 300’ Taper – District Preference)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diamond Off-Ramps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Profile Grade</td>
<td></td>
<td>FDOT PPM, Table 2.6.1</td>
</tr>
<tr>
<td>Mainline I-4 Express Lanes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diamond Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Change in Grade without Vertical Curve</td>
<td></td>
<td>FDOT PPM, Table 2.6.2</td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diamond Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crest Vertical Curve</td>
<td></td>
<td>FDOT PPM, Table 2.8.5</td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes (Open Highway)</td>
<td>K=506, min. length 1,000ft.</td>
<td></td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes (w/interchange)</td>
<td>K=506, min. length 1,800 ft.</td>
<td></td>
</tr>
<tr>
<td>Diamond Ramp</td>
<td>K=136, min. length 300 ft.</td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td>K=31, min. length 3V^1</td>
<td></td>
</tr>
<tr>
<td>Sag Vertical Curve</td>
<td></td>
<td>FDOT PPM, Table 2.8.6</td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diamond Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loop Ramp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Vertical Clearance</td>
<td></td>
<td>FDOT PPM, Tables 2.10.1 and 2.10.2</td>
</tr>
<tr>
<td>Bridges over I-4</td>
<td>16’-6”</td>
<td></td>
</tr>
<tr>
<td>I-4 Bridges over Cross Roads</td>
<td>16’-6”</td>
<td></td>
</tr>
<tr>
<td>Pedestrian Facilities over Rdwy</td>
<td>17’-6”</td>
<td></td>
</tr>
<tr>
<td>Overhead Signs</td>
<td>17’-6”</td>
<td></td>
</tr>
<tr>
<td>Roadway over Railroad</td>
<td>23’-6”</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4.1: Roadway Design Criteria

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Design Standard</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lane Widths</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4</td>
<td>12 ft. – Tangent</td>
<td>FDOT PPM, Tables 2.1.1, 2.1.2 and 2.1.3</td>
</tr>
<tr>
<td>One-Lane Ramp</td>
<td>15 ft. – Tangent</td>
<td></td>
</tr>
<tr>
<td>Two-Lane Ramp</td>
<td>24 ft. – Tangent</td>
<td></td>
</tr>
<tr>
<td><strong>Lane Drop Taper</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes</td>
<td>70:1 Desirable</td>
<td>2011 AASHTO, Page 3-143</td>
</tr>
<tr>
<td><strong>Shoulder Width – Roadway – Inside (or Left)</strong></td>
<td>Total</td>
<td>Paved</td>
</tr>
<tr>
<td>Mainline I-4</td>
<td>12 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td>One-Lane Ramp</td>
<td>6 ft.</td>
<td>2 ft.</td>
</tr>
<tr>
<td>Two-Lane Ramp</td>
<td>8 ft.</td>
<td>4 ft.</td>
</tr>
<tr>
<td>Two-Lane Express Lane</td>
<td>6 ft.</td>
<td>6 ft.</td>
</tr>
<tr>
<td><strong>Shoulder Width – Roadway – Outside (or Right)</strong></td>
<td>Total</td>
<td>Paved</td>
</tr>
<tr>
<td>Mainline I-4</td>
<td>12 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Mainline with Auxiliary Lane</td>
<td>12 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td>One-Lane Ramp</td>
<td>6 ft.</td>
<td>4 ft.</td>
</tr>
<tr>
<td>Two-Lane Ramp</td>
<td>12 ft</td>
<td>10 ft.</td>
</tr>
<tr>
<td>Two-Lane Express Lane</td>
<td>10 ft.</td>
<td>10 ft.</td>
</tr>
<tr>
<td><strong>Typical Roadway Cross Section</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Slopes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roadways:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Lanes in Same Direction</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Addition Lane in Same Direction</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td><strong>Shoulders:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inside Shoulder</td>
<td>0.05 (0.06 for 4 or more lanes)</td>
<td>FDOT PPM, Figure 2.1.1 and Table 2.3.1</td>
</tr>
<tr>
<td>Outside Shoulder</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td><strong>Recoverable Terrain (min. from edge of travel way)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4 / Express Lanes (&gt;55mph)</td>
<td>36 ft.</td>
<td>FDOT PPM Table 2.11.11</td>
</tr>
<tr>
<td>Auxiliary Lane (&gt;55mph)</td>
<td>24 ft.</td>
<td></td>
</tr>
<tr>
<td>One-Lane Ramp (50 mph)</td>
<td>14 ft.</td>
<td></td>
</tr>
<tr>
<td>Two-Lane Ramp (50 mph)</td>
<td>24 ft.</td>
<td></td>
</tr>
<tr>
<td>Loop Ramp (30 mph)</td>
<td>18 ft.</td>
<td></td>
</tr>
<tr>
<td><strong>Shoulder Width – Bridge Structures – Inside</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4</td>
<td>10 ft.</td>
<td>FDOT PPM Figure 2.0.1</td>
</tr>
<tr>
<td>One-Lane Ramp</td>
<td>6 ft.</td>
<td></td>
</tr>
<tr>
<td>Two-Lane Ramp</td>
<td>6 ft.</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.1: Roadway Design Criteria

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Design Standard</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder Width – Bridge Structures – Outside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline I-4</td>
<td>10 ft.</td>
<td>FDOT PPM, Figure 2.0.1</td>
</tr>
<tr>
<td>Auxiliary Lanes</td>
<td>10 ft.</td>
<td></td>
</tr>
<tr>
<td>One-Lane Ramp</td>
<td>6 ft.</td>
<td></td>
</tr>
<tr>
<td>Two-Lane Ramp</td>
<td>10 ft.</td>
<td></td>
</tr>
<tr>
<td>Border Width⁴</td>
<td>94 ft.</td>
<td>FDOT PPM, Table 2.5.3</td>
</tr>
</tbody>
</table>

Notes:
1. Where V = design speed of the roadway.
2. Includes 6" allowance for resurfacing.
3. Includes Rail Resurfacing (Track Raised): 12' for conventional railroads.
4. Measured from outside edge of travel way to right-of-way.
5.0 Alternatives Analysis

The original I-4 PD&E Study, (Interstate 4 (SR 400) Project Development and Environment Study, Section 2, from West of SR 528 Beachline Expressway to SR 472 (FM Nos. 242486, 242592 and 242703), FEIS - August 2002), was performed to address access, safety and capacity improvements. This update adheres to the project development process by examining the various concepts considered for this project. The alternatives analysis will focus primarily on the interchanges and pond sites. The mainline typical section will be consistent with the approved typical section that is being implemented for the I-4 Ultimate project from SR 435 (Kirkman Road) to SR 434, the section of I-4 that began construction in early 2015. The alternatives for the interchanges include no modifications to the existing interchange geometry (No Build), Transportation System Management and Operations (TSMO), and Study (Build) Alternatives. The following sections describe each of the proposed alternatives in greater detail and the advantages and disadvantages of each.

5.1 No Project (No-Build) Alternative

The No-Build Alternative assumes no changes to the transportation facilities within the project corridor beyond currently planned and programmed projects already committed within Metro Plan Orlando’s 2030 Long Range Transportation Plan and the Fiscal Year 2013/14 to 2017/18 Transportation Improvement Program. The No-Build Alternative forms the basis of the comparative analysis for each of the viable Study Alternatives.

The benefits of the No-Build Alternative are the absence of construction-related and short-term operational impacts associated with the Build Alternatives. However, long-term benefits accrued from serving future traffic demands will not be realized with this alternative. Operating conditions are anticipated to worsen with time, while further increasing delays and congestion. Specifically, the No-Build Alternative will offer no benefits to address existing or future traffic congestion anticipated on I-4. Distinct advantages and disadvantages associated with the No-Build Alternative are as follows.

Advantages:
- No impedance to traffic flow during construction,
- No expenditure of funds for design, right-of-way acquisition, or construction,
- No impact to the adjacent natural, social, physical and cultural environments and
- No disruption to existing/future land uses due to construction-related activities.

Disadvantages:
- Increase in traffic congestion and road user costs, unacceptable level of service and an increase in accidents associated with increases in travel times (due to excessive delays) and traffic volumes,
- Increase in maintenance costs due to roadway and structure deterioration,
• Increase in carbon monoxide levels and other air pollutants caused by an increase in traffic congestion,
• Increase in emergency service response time in addition to an increase in evacuation time during weather emergencies as a result of heavy congestion,
• Increase in delays to evacuation procedures throughout the state and
• Increase in safety-related accidents due to heavy congestion

The No-Build Alternative shall remain a viable alternative through the study. The final selection of an alternative will not be made until all impacts are considered and responses to the public hearing comments have been evaluated.

5.2 Transportation System Management and Operations

Transportation System Management and Operations (TSMO) Alternatives are defined as low capital cost transportation improvements designed to maximize the utilization and efficiency of the existing transportation system through improved system management. The various forms of TSMO activities include:

• Traffic signal improvements,
• Intersection/interchange improvements,
• Widening of parallel arterials,
• Ridesharing programs,
• Reversible flow roadway systems,
• Transit,
• ITS and
• Ramp-to-ramp auxiliary lanes.

Although the implementation of TSMO strategies would aid in localized operation of the existing roadway, the projected traffic volumes for the design year 2040 require I-4 to be widened to provide the additional capacity necessary to maintain or improve the existing and future levels of service. Therefore, the TSMO Alternative is not considered a viable alternative and no further evaluation of the TSMO Alternative will be conducted during this study.

5.3 Multi-Modal Alternatives

The project study area, including arterial streets crossing I-4, is served by different modes of travel, both motorized and non-motorized. Increased connectivity for bicycle, pedestrian, and transit users is an objective of the project.
5.3.1 **Transit**

The I-4 Segment 3 corridor has several transit opportunities available to the community. Phase one of the SunRail commuter rail line began operations in May 2014. The Phase One line extends from DeBary in the North, through downtown Orlando and terminates at Sand Lake Road in the South.

Near the I-4 Segment 3 corridor, SunRail stations with parking facilities exist approximately 2.5 miles east of I-4, along SR 46 in Sanford and along Lake Mary Boulevard in Lake Mary. Commuter rail service is provided at the stations every 30 minutes during morning and evening peak hours and every 2.5 hours during mid-day service on weekdays. Future expansion plans near the I-4 Segment 3 corridor include extension of the commuter rail service to the north, between DeBary and DeLand. Connectivity to other transit opportunities such as the existing Amtrak operations in Winter Park and Sanford, Volusia County’s Votran and Orlando’s LYNX bus systems is another feature of the SunRail. Bus transit options in this corridor include the LYNX Bus service along I-4 (Link 200 - Volusia County/Downtown Orlando/I-4), SR 46 (Link 46W - West SR 46/ Seminole Towne Center) and Lake Mary Boulevard (Link 45 - Lake Mary).

5.3.2 **Bicycles and Pedestrians**

In accordance with Florida Statute 335.065, bicycle and pedestrian accommodations were given full consideration in the planning of the facilities and upgrades. There are no designated bicycle lanes currently on the cross streets within Segment 3 in the vicinity of I-4; however, there are undesignated bicycle lanes/paved shoulders along CR 46A, SR 46 and US 17-92. Pedestrian accommodations exist along EE Williamson Road, CR 46A, SR 46 and US 17-92. The Cross Seminole Trail crosses I-4 to the south of CR 46A utilizing a pedestrian bridge overpass. Additionally, a new trail crossing under I-4 at the SR 46 bridge has recently been constructed which connects to the Cross Seminole Trail at the Rinehart Road and SR 46 intersection, just east of I-4. The proposed build alternatives will include further bicycle and pedestrian accommodations at Lake Mary Boulevard and CR 46A.

The Coast to Coast Connector (C2C) trail, part of the Florida Greenways and Trails System Plan, is a multi-use trail that extends 275 miles across Central Florida, between the Gulf of Mexico and the Atlantic Ocean. Although the Connector is 75% complete, several gaps exist along the route. An effort to close the current gaps in the trail is currently under way and one of the gaps remaining in the trail is the crossing of the St. Johns River between Seminole and Volusia County. The crossing is planned to occur at the current sites of Lake Monroe Wayside Park in Seminole County and the Spring to Spring Trail at Lake Monroe Park in Volusia County. The I-4 BtU project will include provisions to accommodate the multi-use trail at the St. Johns River crossing, closing this gap in the Coast to Coast Connector. Details on the various alternatives developed and evaluated for the multi-use path at the river crossing are provided in *St. Johns River Multi-Use Bridge Concept Report, (November 2014).*
5.4 Build Alternatives

The build alternative for the I-4 mainline involves widening from the existing 6-lane to the proposed 10-lane section with four, tolled express lanes. Access to and from the express lanes will be provided through direct access ramps at major interchanges or slip ramp connections between interchanges. Slip ramps provide access between the general use lanes and the express lanes, direct access ramps provide access between the crossroads at the major interchanges and the express lanes and dual access ramps provide both access between GULs and ELs and major crossroads and ELs. The build alternative will provide two slip ramps and one direct access ramp along I-4 Segment 3, as shown in Figure 5.1. Detailed analysis on the development of express lanes access points and tolling concepts, is provided in the supplemental report Concept of Operations SR 400 (I-4) from West of SR 25/US 27 to East of SR 472 (June 2016) prepared for this project.

![Figure 5.1 – I-4 Segment 3 Proposed Express Lane Access Points](image)

As outlined previously, the project objective is to develop and evaluate viable interchange alternatives to enhance the ability of the roadways to meet anticipated traffic demands, improve safety, and serve existing and future land uses along the I-4 corridor. As part of the evaluation of Segment 3, four alternative typical sections were considered for the north/east segments of the I-4 BtU corridor to assess the need for reversible traffic lanes. Detailed analysis of the typical section alternatives evaluated for I-4 Segment 3 are provided in the supplemental report titled Reversible Express Lanes Evaluation - Segment 3 (1 Mile East of SR 434 to East of US 17-92) in Seminole County.
and Segment 4 (East of SR 15/600-US 17-92 to 1/2 mile East of SR 472) in Volusia County (November 2014). The four typical section alternatives evaluated for I-4 Segment 3 were:

- Alternative 1 [6 GUL + 4 EL (No Reversible Lanes)] - Six general use lanes and four express lanes (two in each direction), no reversible lanes,
- Alternative 2 [6 GUL + 2 EL (No Reversible Lanes)] - Six general use lanes and two express lanes (one in each direction), no reversible lanes,
- Alternative 3 [6 GUL + 3 EL (with Reversible “Zipper” Lane)] - Six general use lanes and three express lanes (one in each direction with a center reversible “zipper” lane), and
- Alternative 4 [6 GUL + 4 EL & 6 GUL + 2 EL (No Reversible Lanes)] - Six general use lanes and four express lanes from east of SR 434 (Begin Project Station 2043+71.32) to the slip ramps west of Dirksen Drive (Station 2710+01.89) and six general use lanes and two express lanes from west of Dirksen Drive to east of SR 472 (End Project Station 3118+46.00).

The four alternative typical sections were evaluated based on several factors including historical and projected traffic volumes, existing and projected directional distribution patterns, project construction costs and reversible lane facility criteria established by AASHTO and the Institute of Transportation Engineers (ITE). Based on the preceding factors, Alternative 2 (6 GUL + 2 EL - No reversible lane) was not advanced for further consideration as desirable LOSs in the express lanes would not be achieved with a single express lane throughout the entire corridor. Of the remaining three alternatives, the estimated construction cost for the reversible lane alternative (Alternative 3) is approximately $303M. Although the roadway and bridge construction costs for Alternative 3 ($263M) were lower than for Alternative 1 ($290M), the initial capital costs and recurring annual costs of the Moveable Median Barrier (MMB) system resulted in an overall higher cost for this alternative. The total construction costs for Alternatives 1 and 4 were similar with Alternative 4 approximately 7% ($20M) lower than Alternative 1. Based on the life cycle cost analysis for the MMB system, the structural analysis of the bridge system over the St. Johns River and considering other design, operations, maintenance and cost factors, the Alternative 1 (6 GUL + 4 EL) typical section configuration was recommended for implementation throughout I-4 Segments 3 and 4.

Generally speaking, the typical section will be consistent throughout Segment 3 and will have six 12-foot general use travel lanes (3 in each direction with 10-foot inside and 12-foot outside shoulders) and four 12-foot express lanes (2 in each direction with 4-foot inside and 10-foot outside shoulders). The section of I-4 from the begin project limits to just south of Lake Mary Boulevard will have three GUL and one auxiliary lane in each direction, resulting in a 12-lane section (6 GUL + 2 Aux + 4 EL) through this portion of the corridor. The proposed mainline typical sections were previously shown in Figure 1.2. The complete typical section package for the I-4 BtU project has been submitted under separate cover.
The alternatives analysis will focus primarily on the interchanges and pond sites, since the mainline typical section (three general use lanes and two express lanes in each direction) will be consistent with the approved typical section that is being implemented for the I-4 Ultimate section from SR 435 (Kirkman Road) to SR 434. Build alternatives will be evaluated for the CR 46A, SR 417/Wekiva Parkway, SR 46, and US 17-92 interchanges and the EE Williamson Road overpass bridge.

5.4.1 Design Speed
The design speed of I-4 (general use lanes and express lanes) is 70 mph. The design speed of the remaining roadway facilities in the study corridor are:

- Lake Mary Boulevard and SR 46 - 50 mph,
- CR 46A - 45 mph,
- US 17-92 - 60 mph and
- SR 417/Wekiva Parkway – 70 mph.

5.4.2 Interchange Alternatives
The Build Alternatives for I-4 Segment 3 include new interchanges at Lake Mary Boulevard, CR 46A, SR 417, SR 46 and US 17-92. The Concept Plans provided in Appendix A include detail sheets of the interchange alternatives described in the following sections.

**Lake Mary Boulevard Interchange Alternatives**
Four alternatives were considered for the Lake Mary Boulevard interchange. Alternative 1, shown in Sheets 33-36 of the Concept Plans in Appendix A, leaves the existing interchange as it is with the addition of a second free-flow right turn lane from the eastbound I-4 off ramp to the Lake Mary Boulevard and Lake Emma Road intersection. The existing 2-lane I-4 eastbound exit ramp will continue to connect to the I-4 general use lanes. The existing 1-lane eastbound Lake Mary Boulevard loop on ramp and the westbound Lake Mary Boulevard on ramp will now merge into a single lane prior to connecting to the I-4 eastbound general use lanes. The existing 2-lane I-4 westbound exit ramp will continue to connect to the general use lanes. The existing 2-lane westbound Lake Mary Boulevard loop on ramp will continue to connect to the I-4 westbound general use lanes. A new pedestrian bridge, in order to safely accommodate pedestrians, is proposed along the south side of Lake Mary Boulevard, extending across the interchange. To provide sidewalk connectivity in this area, new sidewalks are proposed along the south side of Lake Mary Boulevard from the proposed pedestrian bridge, west to International Parkway and east to Lake Emma Road. Bike lanes will also be added along both directions of travel on Lake Mary Boulevard. No additional right-of-way will be required along Lake Mary Boulevard.

Alternative 2, shown in Sheets 37-40 of the Concept Plans in Appendix A, is a single point urban interchange (SPUI) design. The SPUI design will allow for all through traffic on the crossroad, as well
as the left turns to and from the interstate to be controlled by a single set of traffic signals. The intersection will have dual left turn lanes from eastbound Lake Mary Boulevard onto eastbound I-4 and from westbound Lake Mary Boulevard onto westbound I-4. The SPUI design enables the opposing left turns to proceed simultaneously, increasing the capacity of the interchange. The I-4 eastbound, 2-lane off ramp will continue to connect to the general use lanes; however, the ramp terminus will shift approximately 500’ west from its current location at Lake Mary Boulevard. In addition, the off ramp will increase to five lanes, with triple left turn lanes and dual right turn lanes to Lake Mary Boulevard. The eastbound dual lefts and the westbound single right turn lane ramps from Lake Mary Boulevard will merge to continue on to a single lane on ramp which will connect to the I-4 eastbound general use lanes. The same configuration would be designed for the I-4 westbound entrance and exit ramps with continued connection to the general use lanes. Both loop ramps are eliminated in this design. The SPUI design will make the interchange more compact, however it will require complete reconstruction of the bridge, as the intersection will necessitate a larger bridge width carrying Lake Mary Boulevard over I-4. However, no additional right-of-way would be needed to build this alternative. With proper construction phasing, traffic can be maintained through the intersection during construction.

Alternative 3, shown in Sheets 41-44 of the Concept Plans in Appendix A, is a grade separated diverging diamond interchange (DDI). A grade separated DDI is similar to an at grade DDI where traffic is briefly shifted to the opposite side of the roadway. Vehicles are guided by roadway signs and markings at each crossover on either end of the bridge. This design allows for free left turns onto the freeway on ramp without any opposing through conflict. The main feature of the grade separated DDI design is that there are no traffic signals, allowing uninterrupted traffic flow on Lake Mary Boulevard between Lake International Parkway and Lake Emma Boulevard. The opposing directions of the roadway are bridged over one another instead of intersecting at grade, eliminating the need for a traffic signal. The 2-lane eastbound off ramp will continue to connect to the general use lanes. This off ramp will increase to three lanes, with the two right turn lanes terminating near the current ramp connection. The left turn lane will go over Lake Mary Boulevard and I-4 before merging with westbound Lake Mary Boulevard on the right side. A single lane on ramp will connect to the I-4 eastbound general use lanes. The same configuration would be designed for the I-4 westbound entrance and exit ramps with continued connection to the general use lanes. Both loop ramps are eliminated in this design. There will be no additional right-of-way required to build this alternative. With proper construction phasing, traffic can be maintained through the intersection during construction. However, this alternative is not a viable option due to the low constructability, high cost and extreme grades required to tie down to the existing terrain.

Alternative 4, shown in Sheets 45-51 of the Concept Plans in Appendix A, proposes modifying the existing partial cloverleaf interchange to an at-grade DDI. A DDI is designed so that each direction of the crossing roadway traffic is split and then crosses over itself. The traffic will temporarily drive on
the left-hand side of the roadway and cross back over on the other side of the interchange. In order to avoid wrong way movements through this type of interchange, the opposite directions of the roadway are intersected at an angle that is large enough to appear to the driver as if they are making a through movement and that the other side of the roadway is an intersecting street. This alternative includes a new two-way, east-west connector roadway approximately 1/4 mile south of Lake Mary Boulevard. The eastbound connector road will spur off the I-4 eastbound off-ramp and terminate at a new signalized intersection at Lake Emma Road. The westbound connector road begins at Lake Emma Road and continues west until it splits and crosses over the I-4 eastbound off-ramp. The left spur will provide access to the I-4 eastbound general use lanes and the right spur will run parallel to Lake Mary Boulevard and over I-4 before connecting to the I-4 westbound general use lanes. Additional right-of-way will be required along the new connector road between Lake Emma Road and the I-4 eastbound off ramp.

The build alternative identified in the original PD&E study (I-4 PD&E Study – Section 2, Final Environmental Impact Statement FEIS, August 2002) for the Lake Mary Boulevard interchange maintained the existing partial cloverleaf design with the proposed I-4 improvements. Proposed modifications to the interchange included improvements to ramp gore areas and merging of the two I-4 westbound on ramps into a single ramp before connecting to I-4.

CR 46A Interchange Alternatives
Three interchange concepts were evaluated for the CR 46A interchange. Alternative 1, shown in Sheets 52-56 of the Concept Plans in Appendix A, maintains the existing interchange in the current configuration. The existing 2-lane eastbound exit ramp and the existing 1-lane eastbound on ramp will continue to connect to the general use lanes. I-4 westbound will have a C-D system that will connect to CR 46A via a single off lane ramp. Likewise, a single lane on ramp will connect CR 46A to the westbound I-4 C-D system. The westbound C-D lanes will connect to the I-4 general use lanes west of CR 46A. An additional lane will be added in each direction along CR 46A from International Parkway to Rinehart Road. The design speed for CR 46A will be maintained at 45 mph. The intersection at the I-4 eastbound off ramp will be modified to separate the outside right turn lane from the inside right turn lane with the use of a channelizing island. The purpose of the separation is to maintain the flow of vehicles from the I-4 eastbound off ramp onto CR 46A, similar to the configuration of the I-4 eastbound off ramp at Lake Mary Boulevard. The intersection of CR 46A at Colonial Center Parkway, which serves I-4 westbound entry and exit traffic, will be modified to include six lanes along CR 46A (three lanes in each direction between International Parkway and Rinehart Road). The CR 46A through lanes are 11-feet wide in order to minimize right-of-way impacts to the adjacent businesses. The current channelizing island for the right turn lane from eastbound CR 46A to westbound I-4 will need to be modified to fit the new CR 46A geometry by decreasing the radius of the bypass lane and decreasing the size of the channelizing island. The CR 46A overpass
will be modified by widening the bridge to accommodate the additional lanes. Additional right-of-way will not be required along CR 46A.

Alternative 2, shown in Sheets 57-62 of the Concept Plans in Appendix A, modifies the existing interchange design by adding Displaced Left Turns (DLTs) or Continuous Flow Intersections (CFIs) and the use of a reverse jug handle to improve the traffic flow along CR 46A and to decrease the potential for queue formation along the ramps extending to the I-4 mainline. The two-lane exit ramp from I-4 eastbound will increase to five lanes as it approaches CR 46A. This ramp will provide access to CR 46A via dual left and dual right turn lanes. One through lane will continue straight onto a new, three lane quadrant road that connects to Rinehart Road or to the I-4 eastbound general use lanes. A new single lane off ramp will connect the westbound C-D roadway via three right turn lanes to westbound CR 46A and by a single left turn lane directed to the quadrant road/Rinehart Road. The existing single lane I-4 westbound loop off ramp will become a two-lane loop ramp that provides access from the westbound C-D system to eastbound CR 46A. The outer connector ramp of the new loop ramp will accommodate westbound I-4 entering vehicles from the westbound CR 46A dual left lanes at the west end of the bridge. The intersection of CR 46A and Rinehart Road will be modified to eliminate left turns from CR 46A to improve traffic flow. Westbound CR 46A to southbound Rinehart Road traffic will continue straight through the intersection and then turn right onto the new quadrant roadway that connects back to Rinehart Road. Eastbound CR 46A to northbound Rinehart Road traffic will turn left at the intersection at the west end of the CR 46A bridge. Traffic will then proceed along a roadway similar to a displaced left turn and turn onto the quadrant roadway. The quadrant roadway will intersect Rinehart Road approximately 1,020 feet north of CR 46A at the existing roadway on the south side of Sanford Infiniti, forming the west leg of a new four-way intersection. The quadrant roadway will also provide access to eastbound I-4 with a new ramp that will connect to the general use lanes. The new intersection at the west end of the CR 46A bridge will accommodate westbound I-4 to westbound CR 46A, westbound I-4 to Rinehart Road, the displaced left turns from westbound CR 46A and Colonial Center Parkway and the displaced left turns from eastbound CR 46A and I-4 eastbound. The intersection will also serve as the connection for the westbound I-4 loop off ramp to eastbound CR 46A. The south leg of the CR 46A will no longer accommodate entry onto I-4 westbound from westbound CR 46A. This movement will take place at a displaced left turn at the new westbound off ramp terminal. The eastbound CR 46A to westbound I-4 on ramp will be modified to a two-lane free-flow right turn to increase capacity. Additional right-of-way will be required for this alternative at several locations including along CR 46A, Colonial Center Parkway and the I-4 westbound off ramp.

Alternative 3, shown in Sheets 63-69 of the Concept Plans in Appendix A, proposes a Diverging Diamond Interchange (DDI). The proposed I-4 exit ramp movements will be signalized and provide triple lefts and triple right turn lanes onto CR 46A. This design changes the signal operations at the eastbound ramp terminal from a three-phase to two-phase cycle, as the left turn movements from
the crossroad to the on ramp are now free flow movements. CR 46A will be widened to three through lanes in each direction between International Parkway and east of Rinehart Road and bike lanes have been provided along CR 46A through the interchange. To the west of the interchange, modifications include elimination of the westbound dual left lanes at CR 46A and Colonial Center Parkway; I-4 westbound will be accessed by the westbound lanes of the DDI. To the east of the interchange, modifications include elimination of eastbound and westbound left turn lanes at the intersection of CR 46A and Rinehart Road. Eastbound traffic on CR 46A destined to the north will have the option to go straight through and make a U-turn on CR 46A to return to the intersection and make a right turn onto northbound Rinehart Road. The other option for eastbound traffic is to turn right onto Rinehart Road and make a U-turn at a new, proposed median opening south of the intersection. Westbound traffic destined to the south would have to turn right onto Rinehart Road and access the existing median opening which will be modified to accommodate U-turns for a larger design vehicle. This alternative will require additional right-of-way at several locations including along CR 46A, Colonial Center Parkway and the I-4 westbound off ramp.

The build alternative identified in the original PD&E study/FEIS for the CR 46A interchange proposed modifying the full access diamond with loop ramp for the I-4 westbound to CR 46A movements to allow for the continuation of the westbound C-D ramp from SR 46 and providing a 2-lane eastbound off ramp. West of the interchange, the C-D ramp would merge with the I-4 westbound on ramp from CR 46A.

**SR 417/Wekiva Parkway Interchange Alternatives**

The Wekiva Parkway interchange will be constructed under the Wekiva Parkway Design-Build project that is currently under development and construction (FDOT FPN 240200-4). The interchange will be built to accommodate the express lanes along I-4 with minimal reconstruction during the Beyond the Ultimate construction. Four interchange concepts were developed for the SR 417/Wekiva Parkway interchange as part of the I-4 BtU project to facilitate coordination between the I-4 BtU improvements and the Wekiva Parkway project. The four interchange concepts are discussed in the following paragraphs; Concept Plans for the interchange are provided only for the recommended alternative.

Alternative 1 accommodates the additional lanes that will be needed with the construction of the Wekiva Parkway. The proposed improvements for this interchange are being coordinated with the Wekiva Parkway project. The existing interchange connects I-4 to SR 417 and International Parkway. The new SR 417/Wekiva Parkway and I-4 interchange will be a partial cloverleaf interchange. Direct connections to and from Wekiva Parkway/SR 417 will be provided to and from both the I-4 general use lanes and the express lanes. Eastbound Wekiva Parkway will have a single lane ramp which will provide access to the I-4 westbound general use lanes, the westbound express lanes, the eastbound general use lanes and the eastbound express lanes. The eastbound I-4 express lanes will have a ramp
that braids over eastbound I-4 general use lanes and ties into the 2-lane off ramp for the eastbound general use lanes. The 2-lane eastbound general use lane exit ramp will provide single lane access to SR 417 southbound and westbound Wekiva Parkway. Northbound SR 417 will have a two-lane off ramp which will split and provide access to the eastbound express lanes, eastbound general use lanes, westbound express lanes and westbound general use lanes. The westbound I-4 express lanes will have a single lane ramp that braids over westbound I-4 general use lanes and will split to provide access to westbound Wekiva Parkway and southbound SR 417 via the westbound collector distributor lanes. The westbound general use lanes will have access to westbound Wekiva Parkway and southbound SR 417 via the collector/distributor lanes adjacent to westbound I-4. Additional right-of-way requirements for the Wekiva Parkway interchange will be purchased under the Wekiva Parkway Project.

Alternative 2 is the most radical design and costs more than the other three concepts evaluated. The eastbound express lane has a single left sided ramp that will combine with the westbound express lane ramp and braid over the westbound express lanes, the westbound general use lanes, and the C-D road between CR 46A and the Wekiva Parkway. The eastbound express lane splits where one lane goes to SR 417 southbound and the other goes to Wekiva Parkway westbound. I-4 eastbound general use will have a two-lane exit that will split into two separate exits: the left split will be the start of a C-D system that will end at SR 46. The right lane will split again and the left ramp will go to SR 417 southbound and the right ramp will go to Wekiva Parkway westbound. Northbound SR 417 will be a three-lane exit: one lane will taper off on the left, go under the eastbound C-D system, eastbound I-4 general use and express lanes, and will ramp up and merge into the eastbound express lanes between the eastbound and westbound express lanes. The other 3 lanes on the ramp will split and the right lane will merge into eastbound I-4 general use. The two other lanes will travel under the eastbound C-D system, eastbound I-4 general use and express lanes. It will split and the left lane will ramp up and merge into westbound I-4 express lanes in between the eastbound and westbound express lanes. The right lane will merge into the westbound C-D system between Wekiva Parkway and SR 46. The exit ramp for the westbound I-4 express lanes will braid over the westbound general use lanes and the westbound C-D system. The single lane ramp will turn into three lanes where the right lane will split off and merge with the westbound general use off ramp and will eventually split to go to southbound SR 417 and westbound Wekiva Parkway. The two left lanes will split: the right lane will merge with the two-lane ramp created from the express lane and general use lane exits. The left lane will continue straight and will merge with the two lanes that diverged off of the general use exit ramp. From here the express exit ramp, general use exit ramp, and SR 46 on ramp will combine into a C-D system allowing access to southbound SR 417, CR 46A, and westbound I-4 general use. The two-lane exit ramp off of the westbound general use lanes will travel under the SR 46 on ramp. One lane will taper off to the right and merge with the westbound express lane exit ramp while two lanes will continue straight and combine with the other westbound express off ramp and the SR 46 on ramp to form a C-D system between CR 46A and SR 46. Eastbound Wekiva Parkway has a single
lane exit ramp that splits. The right lane braids over the westbound C-D system, westbound general use lanes, and westbound express lanes. It ramps down and merges into the westbound express lanes from the left. The left lane splits again with the right lane merging into the westbound C-D system. The left lane splits and the left split travels under westbound I-4 and ramps up and merges into the eastbound express lanes. The right split travels under I-4 and merges with the eastbound C-D system.

Alternative 3 is the preferred alternative due to its lowest cost and impacts. The eastbound express exit ramp goes under the eastbound general use lanes and merges with the single lane off ramp from the general use lanes. From there, the two-lane ramp splits: right lane goes to southbound SR 417 and left lane goes to westbound Wekiva Parkway via a proposed loop ramp. Northbound SR 417 has a two-lane exit ramp that will provide two lanes to merge into the eastbound I-4 general use lanes and will have one lane taper off and braid over northbound and southbound SR 417 and then contraflow between the SR 417 southbound ramp and southbound SR 417 lanes. This single lane ramp will provide access to International Parkway and to I-4 westbound general use lanes. The single lane ramp from southbound SR 417 will merge with the two-lane ramp from northbound SR 417 to form a three-lane ramp. The left lane of the ramp will braid over the eastbound general use lanes and merge into the eastbound express lanes. The other two lanes will merge into the eastbound general use lanes. The westbound express lane exit will travel under the westbound general use lanes and the westbound C-D system. The ramp will split: the right split will combine with the exit ramp off of the C-D system and merge into westbound Wekiva Parkway and the left split will merge into the westbound C-D system and will provide access to southbound SR 417 via the existing loop ramp, to CR 46A or to the westbound general use lanes. There is a one lane exit ramp off of eastbound Wekiva Parkway that will split. The right split will merge with the contraflow ramp from northbound SR 417 and will merge into the westbound general use lanes. The left split will ramp up and braid over eastbound and westbound Wekiva Parkway. Then it will ramp under and across the I-4 lanes before merging with the two-lane ramp from northbound SR 417. From here the left lane will ramp off and braid over the eastbound general use lanes and merge into the eastbound express. The other two lanes will merge into the eastbound general use lanes.

Alternative 4 is nearly identical to the third except for the Wekiva Parkway/SR 417 mainline configuration. Northbound SR 417 crosses over southbound SR 417 at the Town Center Blvd bridges allowing a left-handed exit ramp onto International Parkway and westbound I-4 general use lanes. Wekiva Parkway eastbound will cross over the westbound lanes at the International Parkway bridges. A left-hand exit will split off of the westbound lanes and merge with the two-lane ramp from northbound SR 417 to eastbound I-4. The remaining two lanes of the eastbound Wekiva Parkway turn into southbound SR 417 and crosses back under northbound SR 417 to the original configuration at the Town Center Blvd bridges. SR 417/Wekiva Parkway is shown as a grade-separated diverging diamond.
The build alternative identified in the original PD&E study/FEIS for the SR 417 (Central Florida GreeneWay) interchange proposed modifying ramp junctions to and from I-4 to connect to the reconstructed freeway. The I-4 westbound to SR 417 ramp junction would be moved east to approximately 2,100 feet west of SR 46. This ramp would merge with the SR 46 to SR 417/I-4 C-D ramp and form a three-lane facility adjacent to I-4.

SR 46 Interchange Alternatives

Two interchange concepts are being evaluated for the SR 46 interchange. Alternative 1, shown in Sheets 70-73 of the Concept Plans in Appendix A, will leave the existing interchange as it is with widening of eastbound SR 46 for an additional left turn lane from eastbound SR 46 to eastbound I-4. The existing 2-lane eastbound C-D road between CR 46A and SR 46 will be removed. A new 2-lane exit ramp will be added for I-4 eastbound general use traffic to SR 46. The 1-lane eastbound on ramp will connect to the I-4 eastbound general use lanes. The SR 46 and I-4 eastbound ramp connection intersection will be changed so that there are two left turn lanes from SR 46 eastbound onto I-4 eastbound; three through lanes will remain along SR 46 eastbound. The westbound I-4 general use will have a 2-lane exit ramp connecting to SR 46 around the outside of the loop ramp in the northwest quadrant. The 1-lane SR 46 westbound loop on ramp will connect to the I-4 westbound C-D road. No additional right-of-way will be required for this concept.

Alternative 2, shown in Sheets 74-77 of the Concept Plans in Appendix A, is similar to Alternative 1, but has an additional off ramp that connects the I-4 eastbound off ramp to Towne Road. This additional off ramp provides access to Towne Center Boulevard without using SR 46. The connection for the new ramp will be a new roundabout intersection that connects to South Oregon Avenue and Towne Road. The existing access on the local roads will be maintained. Additional right-of-way will be required along North Towne Road and the existing right-of-way will need to be converted to limited access right-of-way.

The build alternative identified in the original PD&E study/FEIS for the SR 46 interchange proposed maintaining the full access diamond with I-4 eastbound to SR 46 movement provided via a C-D ramp that exits just east of CR 46A. Proposed modifications would add a loop ramp for SR 46 westbound to I-4 westbound; this loop ramp would begin the westbound C-D roadway that would serve the SR 46, SR 417 and CR 46A interchanges and realigning Oregon Street in the northwest quadrant.

US 17-92 Interchange Alternatives

Eight interchange concepts are being evaluated for the US 17-92 interchange. The eight concepts are a partial cloverleaf, a diamond interchange, a single point urban interchange, a diamond interchange that keeps the existing loop ramp, a single point urban interchange that modifies southbound US 17-92 to directly align with Monroe Road, a partial cloverleaf interchange that modifies US 17-92 to align with Monroe Road, a grade separated diverging diamond interchange (GSDDI), and a tight urban diamond interchange (TUDI) that realigns US 17-92 to align with Monroe.
Road. The current configuration of the US 17-92 interchange was built in accordance with the approved concept from the original FEIS from 2002. Alternative concepts were developed for this interchange because the existing interchange has been shown to cause exiting traffic to back up onto I-4.

Alternative 1, shown in Sheets 78-81 of the Concept Plans in Appendix A, keeps the same overall existing geometry of the ramps and alignment of US 17-92. The single lane I-4 eastbound exit ramp will remain in place and be widened to allow for two lanes of traffic. The single lane I-4 eastbound on ramp will continue to connect to the general use lanes. The westbound I-4 off ramp will remain a single lane loop off ramp, but the channelizing island at the intersection with southbound US 17-92 will be removed. The single lane I-4 westbound on ramp will remain a single lane ramp and a new channelizing island will be constructed for the southbound US 17-92 traffic to improve the safety and geometry at this intersection. The southbound US 17-92 traffic will no longer have a dedicated turn lane for traffic turning south onto Monroe Road; instead traffic will have to turn at the intersection of US 17-92 and the I-4 eastbound off ramp. Dual left turn lanes will be added for the northbound US 17-92 traffic turning left onto Monroe Road.

Alternative 2, shown in Sheets 82-86 of the Concept Plans in Appendix A, changes the existing geometry of the ramps and the alignment of US 17-92. The interchange is changed to a diamond interchange with US 17-92 shifting further to the south and remaining an underpass, but requiring a new bridge to be built. The existing alignment of US 17-92 is changed at the St. John’s River Bridge with the curve being moved to the south of its current location. Part of the existing US 17-92 bridge over Lake Monroe would need to be removed from the point of curve to the south and rebuilt to continue straight with four lanes further south. A curve would then be constructed to redirect the roadway back to the east under I-4, approximately halfway between the current underpass and the existing Orange Boulevard underpass. An access road will be added to the west of I-4 to maintain access to Lake Monroe Wayside Park. Beyond the interchange, US 17-92 will continue to the east and a new intersection with Monroe Road will be made, eliminating the roadway further to the north. US 17-92 will then curve back to the north and transition from a four-lane roadway to a two-lane roadway. The current entrance to the Central Florida Zoo & Botanical Gardens will be shifted further to the south with a new intersection being built for access. The design speed for the realignment of 17/92 is 60 mph. The current interchange ramps will be modified where possible or eliminated altogether and the I-4 St. John’s River Bridge will need to be widened to accommodate the new ramps. The existing one lane I-4 eastbound off ramp will need to be widened and the vertical alignment may need to be changed to align with the US 17-92 underpass. A new single lane on-ramp will be added for the eastbound lanes. Additional single lane on ramps and off ramps will be added to the westbound lanes. Additional right-of-way will need to be purchased in order to build this alternative.
Alternative 3, shown in Sheets 87-91 of the Concept Plans in Appendix A, is a single point urban interchange design which will have the same geometric characteristics as Alternative 2 with the exception of the interchange design. The alignment of US 17-92 for Alternative 3 will be the same as the new alignment in Alternative 2. The changes to I-4 would also be the same with the exception of the new overpass bridge being larger for Alternative 3. The I-4 overpass bridge will need to be lengthened to accommodate extra space needed for the left turn lanes of the single point urban interchange. The same additional right-of-way will need to be purchased in order to build this alternative as in Alternative 2.

Alternative 4, shown in Sheets 92-96 of the Concept Plans in Appendix A, is also a diamond interchange with a realignment of US 17-92 similar to Alternative 2. The exception is that the current loop ramp from the I-4 eastbound off ramp is kept and extended back to the new Monroe Road and US 17-92 intersection. This extension can be accomplished using the existing Monroe Road lanes to direct traffic back to the intersection. The other exception is that the current I-4 eastbound on ramp will be reused for access from US 17-92 to I-4 eastbound. Thus, the eastbound I-4 St. John’s River Bridge may only need minimal adjustments to accommodate the new ramp. The same additional right-of-way will need to be purchased in order to build this alternate as in Alternative 2.

Alternative 5, shown in Sheets 97-101 of the Concept Plans in Appendix A, is a single point urban interchange similar to Alternative 3, but with a realignment of US 17-92 to connect directly into Monroe Road. The old section of 17-92 along Lake Monroe will become a low speed, scenic road and will connect to US 17-92 via a T intersection. The new US 17-92 will terminate at SR 46 to the south. There is one at grade rail road crossing that will need to be reconstructed due to the realignment of Monroe Road, also known as the new US 17-92. A traffic operational analysis was conducted for this alternative, and the majority of the traffic through the interchange is coming from the north, via US 17-92 and from the south via Monroe Road. It is also desired by the local agency to make the old section of US 17-92 a lower speed scenic roadway. Additional right-of-way will need to be purchased in order to build this alternative.

Alternative 6, shown in Sheets 102-109 of the Concept Plans in Appendix A, is a partial cloverleaf interchange that realigns US 17-92 to connect with Monroe Road similar to Alternative 5. Alternative 6 proposes a grade separation at the Monroe Road and SunRail crossing. This grade separation will improve traffic flow and safety in the area. The existing grade crossing will remain only to provide a connection between Monroe Road and the existing US 17-92 portion that goes to downtown Sanford, Florida. The traffic volumes will be reduced along the existing Monroe Road alignment resulting in the SunRail grade crossing on Monroe Road having less of an impact on the overall operations of this interchange. The existing westbound single lane loop off ramp and on ramp will connect to the general use lanes. The existing eastbound single lane off ramp and partial loop on ramp will also connect to the general use lanes. The eastbound off ramp and on ramp will be
realigned to use School Street and the connection will be at the existing School Street/Monroe Road intersection. A new roundabout will be added to connect Orange Boulevard and School Street to the east of the new US 17-92 and existing Monroe Road alignments. Additional right-of-way will be required to build the new loop ramps, US 17-92 alignment, and roundabout as well as purchasing new limited access right-of-way between the eastbound ramps. Residential relocations will be required to build this alternative.

Alternative 7, shown in Sheets 110-116 of the Concept Plans in Appendix A, is a Grade Separated Diverging Diamond Interchange (GSDDI) which realigns the existing US 17-92 to align with Monroe Road similar to Alternative 5. The existing US 17-92 roadway that travels to downtown Sanford will remain and be renamed, but will tee into the new US 17-92 alignment. The new alignment of US 17-92 will provide grade separation between US 17-92 and SunRail. The existing at grade crossing of Monroe Road and SunRail will be eliminated in this alternative. A new roundabout will be added to connect Orange Boulevard and School Street to the east of the new US 17-92 and existing Monroe Road alignments. Due to the constraint of not being able to reconstruct the I-4 bridge over the St. Johns River, this alternative is not feasible to build. Additional right-of-way will be required to construct the new roundabout and new 17/92 alignment.

Alternative 8, shown in Sheets 117-123 of the Concept Plans in Appendix A, is a Tight Urban Diamond Interchange (TUDI) that realigns US 17-92 to directly align with Monroe Road. The existing US 17-92 roadway that travels to downtown Sanford, Florida will be renamed and will remain, but will tee into the new US 17-92 alignment, west of I-4. Two single-lane roundabouts are proposed with this alternative, one each at the locations of the existing US 17-92 ramp terminals east and west of I-4. The new alignment of US 17-92 will provide grade separation between US 17-92 and SunRail. The existing at grade crossing of Monroe Road and SunRail will remain in this alternative; however, Monroe Road will be a two-lane roadway north of Orange Boulevard instead of the current four-lane section, reducing the rail crossing width. A new road will be added to connect Orange Boulevard and School Street to the east of the new US 17-92 and existing Monroe Road alignments. The existing westbound single lane off ramp and on ramp will connect to the general use lanes. The existing eastbound single lane off ramp and on ramp will also connect to the general use lanes. Additional right-of-way will be required to construct the new extension of Orange Blvd to Monroe Road and the new 17/92 alignment.

Alternatives 2 through 8 for the US 17-92 interchange involve reconstruction of the US 17-92 bridge over the St. Johns River, as shown in the Concept Plans in Appendix A. The US 17-92 bridge is in superelevation. During design, survey will be required to determine the exact limits of deck replacement, in order to obtain the correct cross slope for the horizontal geometry.
The build alternative identified in the original PD&E study/FEIS for the US 17-92 interchange proposed maintaining the full access partial cloverleaf design with all movements occurring at US 17-92 as they are today, instead of being split between US 17-92 and Orange Boulevard.

5.4.3 EE Williamson Road Bridge

Two alternatives were evaluated for the EE Williamson Road overpass bridge over I-4. Alternative 1, shown in Sheets 27-29 of the Concept Plans in Appendix A, proposes a new bridge section over I-4 which replaces the two existing bridges with a single bridge that will carry both highway and pedestrian traffic. The proposed bridge will accommodate one 11-foot travel lane in each direction with a 14-foot two-way left turn lane. In addition, 6-foot and 10-foot sidewalks are proposed on the south and north sides of the road, respectively. No additional right-of-way is required to construct this alternative.

Alternative 2, shown in Sheets 30-32 of the Concept Plans in Appendix A, proposes a direct connect interchange with access to the I-4 westbound express lanes and from the I-4 eastbound lanes, from and to EE Williamson Road, respectively. A westbound exclusive left turn lane on the bridge will provide access from westbound EE Williamson Road and the eastbound through lane will provide access from eastbound EE Williamson Road to a single lane on ramp which connects directly to the I-4 westbound express lanes. Similarly, a single lane exit ramp which connects directly to the I-4 eastbound express lanes will provide access from I-4 eastbound express to EE Williamson Road. No additional right-of-way is required to construct this alternative.

5.5 Design Traffic
Development of project traffic for I-4 and surrounding arterials within the study limits of Segment 3 was based on the procedures outlined in the Methodology Letter of Understanding (MLOU, October 2014 Update) and are provided in the I-4 Beyond the Ultimate Systems Access Modification Report (SAMR) Re-Evaluation: I-4 Beyond the Ultimate Project North Section – From East of SR 434 to East of SR 472 (March 2017) prepared for this project.

5.5.1 Future Traffic Volumes
Travel demand modeling using the Central Florida Regional Planning Model (CFRPM version 5.01) was utilized to forecast Directional Design Hour Volumes (DDHV) for the I-4 Segment 3 project. The future traffic forecasts were determined for 2020 (opening year), 2030 (interim year) and 2040 (design years) for two build alternatives: Original Build and Modified Build. The Original Build alternative refers to the preferred interchange alternatives identified in the original I-4 SAMR dated April 2000 and approved by FHWA in June 2000 with subsequent update in 2003. The Modified Build alternative refers to the current I-4 SAMR Reevaluation and constitutes revised improvement concepts, which account for changing conditions over time. These changes include variation in traffic
characteristics, modifications to express lane access points and other traffic and design considerations which led to the current proposed build alternatives.

### 5.5.2 Design Traffic Factors

The traffic volume outputs generated by the model represent Peak Season Weekday Average Daily Traffic (PSWADT). A Model Output Conversion Factor (MOCF) was used to convert the PSWADT to Average Annual Daily Traffic (AADT). The Base year for the CFRPM is 2005. A MOCF of 0.98 for I-4 and 0.97 for arterial streets in Seminole County was used for this study. DDHV for I-4 Segment 3 were produced by applying K and D factors to the AADT projections from the CFRPM model. The FDOT standard “K” and “D” factor approach was used to develop the DDHVs for I-4 Segment 3.

**K Factor**

The K factor is used to convert the 24-hour AADT estimate to an hourly volume (DHV-Design Hour Volume). It is the ratio of the AADT that occurs during the design hour for the design year. Standard K-factors have been adopted by FDOT based on area and facility type with consideration to typical peak periods of the day. The K-factor used in the analysis for I-4 Segment 3 traffic was 9.0 for I-4 and arterial streets in Seminole County.

**D-Factor**

The Directional Distribution (D) is the percentage of total, two-way design traffic traveling in the peak direction. The D-factors used in the analysis for I-4 Segment 3 traffic was 54.30 for the Interstate and 53.10 for arterials in Seminole County.

**T Factor**

The percentage of trucks (T) using a roadway is the most critical factor in pavement design. The T factor used in traffic analysis for I-4 Segment 3 traffic was 2.8% for the AM and PM peak hours.

### 5.5.3 Intersection/Interchange Traffic Volumes

Traffic volumes for intersections and interchanges within the I-4 Segment 3 corridor were developed for both Original Build and Modified Build conditions based on the procedures outlined in the MLOU (October 2014 Update). The CFRPM model was used to develop the existing, 2020 and 2030 forecasts. Year 2040 forecasts were developed by determining a growth rate from 2030 to 2035 (forecast year of the model) and using that growth rate to extrapolate volumes from 2030 to 2040. For the Original Build scenario, year 2040 peak hour volumes were adjusted based on reasonable growth rates for localized movements, current land-use patterns and future projected developments, population growth rate and, if needed, peak hour capacity of the proposed roadway configurations. Traffic volumes for the Modified Build scenario were developed based on the Original Build volumes. The redistribution of traffic between the Original Build and Modified Build was performed based on the current proposed interchange and freeway configurations. The resulting design year 2040 DDHVs for the Modified Build scenario, which is pertinent to the current reevaluation study, are shown in Figure 5.2 through Figure 5.4.
Figure 5.2 – Segment 3: 2040 Modified-Build Directional Design Hour Traffic Volumes (Sheet 1 of 3)
Figure 5.3 – Segment 3: 2040 Modified-Build Directional Design Hour Traffic Volumes (Sheet 2 of 3)
Figure 5.4 – Segment 3: 2040 Modified-Build Directional Design Hour Traffic Volumes (Sheet 3 of 3)
5.5.4 Intersection Operational Analysis

As part of the development of interchange alternatives for I-4 Segment 3, traffic operational analyses of the intersections within or near the proposed interchange improvements were completed for No Build and Build alternatives. Some alternatives were removed from consideration due to roadway geometric design constraints or other critical evaluation criteria and no further traffic analysis was completed. Peak hour operational analysis of intersections/interchanges was completed using Synchro or VISSIM-version 5.4 software.

Lake Mary Boulevard Interchange

Five alternatives, in addition to the No-Build, were considered for the traffic operational analysis of the Lake Mary Boulevard interchange:

- No-Build,
- Alternative 1 - Single Point Urban Interchange (SPUI),
- Alternative 2 - Grade separated DDI (GS DDI),
- Alternative 3 - No-Build + Pedestrian Overpass across I-4 with additional free northbound right lane at I-4 EB Ramps intersection and exclusive 2nd eastbound right lane at Lake Emma Road intersection,
- Alternative 4a - DDI with existing intersection geometry at Lake Mary Boulevard and Lake Emma Road intersection and
- Alternative 4 - DDI with additional ramp intersection on Lake Emma Road

The Lake Mary Boulevard interchange alternative concepts and associated operational analyses were evaluated in detail as part of the I-4 Beyond the Ultimate Systems Access Modification Report (SAMR) Re-Evaluation: I-4 Beyond the Ultimate Project North Section – from East of SR 434 to East of SR 472 (March 2017). During the development of interchange alternatives, which included agency and stakeholder coordination, Alternative 2 (GSDDI) was eliminated due to geometric constraints, cost and pedestrian access issues. Therefore, operational analysis was not evaluated for this alternative.

Preliminary operational analyses of the Lake Mary Boulevard Interchange for the No-Build and Alternatives 1 and 3 were conducted for the analysis year 2040. The results, summarized in Table 5.1, show that Alternative 3 provided better operational performance among the three alternatives; however, adjacent intersections on Lake Emma Road and International Parkway were operating poorly. Alternatives 4a and 4 were developed to provide improved operational performance for the study area. A detailed PM peak hour operational analysis was conducted for Alternatives 3, 4a and 4 using micro simulation software VISSIM version 5.4. As shown in Table 5.2, intersection operations are significantly improved in Alternative 4 when compared to Alternative 3 and Alternative 4a.

----

4 Lake Mary Boulevard Alternative 4a was reviewed only for traffic operational purposes as a basis of comparison to Alternative 4; thus, a design concept was not developed for Alternative 4. The Concept Plans in Appendix A contain the alternative designs for Alternatives 1, 2, 3 and 4.
### Table 5.1: Average Delay and Level of Service (LOS) – Lake Mary Boulevard Intersections

<table>
<thead>
<tr>
<th>Lake Mary Blvd Intersection with</th>
<th>No-Build Alternative</th>
<th>Alternative 1 SPUI</th>
<th>Alternative 3 Ped Overpass + 2nd EBR at Lake Emma Rd</th>
<th>No-Build Alternative</th>
<th>Alternative 1 SPUI</th>
<th>Alternative 3 Ped Overpass + 2nd EBR at Lake Emma Rd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM Delay (sec/veh)</td>
<td>AM LOS</td>
<td>AM Delay (sec/veh)</td>
<td>AM LOS</td>
<td>PM Delay (sec/veh)</td>
<td>PM LOS</td>
</tr>
<tr>
<td>International Pkwy</td>
<td>57.2</td>
<td>E</td>
<td>54.7</td>
<td>D</td>
<td>56.3</td>
<td>E</td>
</tr>
<tr>
<td>I-4 WB Ramps</td>
<td>43.6</td>
<td>D</td>
<td>-</td>
<td>-</td>
<td>49.2</td>
<td>D</td>
</tr>
<tr>
<td>I-4 EB Ramps</td>
<td>203.9</td>
<td>F</td>
<td>-</td>
<td>-</td>
<td>51.4</td>
<td>D</td>
</tr>
<tr>
<td>I-4 SPUI Ramps</td>
<td>-</td>
<td>-</td>
<td>142.7</td>
<td>F</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lake Emma Rd</td>
<td>125</td>
<td>F</td>
<td>102.5</td>
<td>F</td>
<td>84.6</td>
<td>F</td>
</tr>
</tbody>
</table>

*Intersection operating at or below LOS E.

*Note: The differences in delay values shown in Table 5.1 and Table 5.2 are due to values being extracted from Synchro versus VISSIM, respectively.

### Table 5.2: Lake Mary Boulevard PM Peak Hour Node Evaluation Comparison

<table>
<thead>
<tr>
<th>I-4 and Lake Mary Interchange</th>
<th>Intersection</th>
<th>Alternative 3 Ped Overpass + 2nd EBR at Lake Emma Rd</th>
<th>Alternative 4a DDI w/existing geometry at Lake Mary Blvd/Lake Emma Rd</th>
<th>Alternative 4 DDI w/ramp intersection on Lake Emma Rd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay</td>
<td>LOS</td>
<td>Delay</td>
<td>LOS</td>
</tr>
<tr>
<td>Lake Mary Blvd/International Pkwy</td>
<td>171.2</td>
<td>F</td>
<td>39.4</td>
<td>D</td>
</tr>
<tr>
<td>Lake Mary Blvd/I-4 WB Ramps</td>
<td>136.5</td>
<td>F</td>
<td>34.3</td>
<td>C</td>
</tr>
<tr>
<td>Lake Mary Blvd/I-4 EB Ramps</td>
<td>69.2</td>
<td>E</td>
<td>61.9</td>
<td>E</td>
</tr>
<tr>
<td>Lake Mary Blvd/Lake Emma Rd</td>
<td>169.3</td>
<td>F</td>
<td>127.8</td>
<td>F</td>
</tr>
<tr>
<td>Lake Emma Rd/Flagg Rd</td>
<td>119.2</td>
<td>F</td>
<td>52.8</td>
<td>D</td>
</tr>
<tr>
<td>Lake Emma Rd/Greenwood Blvd</td>
<td>107.7</td>
<td>F</td>
<td>29.0</td>
<td>C</td>
</tr>
<tr>
<td>Lake Emma Rd/Ramp Connection</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Intersection operating at or below LOS E.
CR 46A Interchange
Traffic operational analyses were completed for seven CR 46A interchange options; due to operational deficiencies and constructability issues, three alternatives in addition to the No-Build, were considered:

- No-Build
- Alternative 1 - CR 46A widening to six lanes
- Alternative 2 - CR 46A, continuous flow interchange (CFI) and restricted movements at Rinehart Road
- Alternative 3 – DDI with express left turns on Rinehart Road

A separate AM and PM peak hour intersection analysis for the study area intersections was completed in VISSIM for the study intersections along CR 46A; the intersection delay and LOS summary is shown in Table 5.3. Network-wide performance was also evaluated for all of the alternatives; the results of are summarized in Table 5.4. Based on the intersection operational analyses and network wide performance parameters, Alternatives 2 and 3 provide similar operational benefits when compared to the No-Build Alternative.

SR 46 Interchange
Two alternatives, in addition to the No-Build, were considered for the SR 46 interchange evaluation:

- No Build
- Alternative 1 - No-Build + second eastbound left turn lane at eastbound ramps intersection
- Alternative 2 – Alt. 1 + Slip Ramp from I-4 eastbound off ramp at SR 46 to N Towne Road/Towne Center Boulevard

Review of the three alternatives was conducted for SR 46 interchange for the analysis year 2040. Based on the operational analysis, Alternative 2 provides better operational performance among the alternatives. The results of the peak hour intersection operational analyses for SR 46 are summarized in Table 5.5.

US 17-92 Interchange
Although eight alternative design concepts were developed for the US 17-92 interchange, only four alternatives were considered for traffic operational modeling of the US 17-92 interchange in addition to the No-Build alternative. Alternatives 1-4, as shown on pages 78-96 of the Concept Plans included in Appendix A, maintain the current US 17-92 alignment. With the programmed designation change of US 17-92 to Monroe Road, proposed alternatives that maintain the existing US 17-92 alignment were not considered further in the traffic operational analysis.
## Table 5.3: CR 46A Peak Hour Node Evaluation Comparison

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM Peak</td>
<td>PM Peak</td>
<td>AM Peak</td>
<td>PM Peak</td>
<td>AM Peak</td>
<td>PM Peak</td>
<td>AM Peak</td>
<td>PM Peak</td>
</tr>
<tr>
<td></td>
<td>Delay (sec/veh)</td>
<td>LOS</td>
<td>Delay (sec/veh)</td>
<td>LOS</td>
<td>Delay (sec/veh)</td>
<td>LOS</td>
<td>Delay (sec/veh)</td>
<td>LOS</td>
</tr>
<tr>
<td>International Pkwy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-4 WB On Ramp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-4 WB Off Ramp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR 46A Crossover</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-4 EB Off Ramp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rinehart Rd.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rinehart Rd./ NB U-turn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rinehart Rd./ SB U-turn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5.4: CR 46A Interchange Alternatives - Network Performance Comparison**

<table>
<thead>
<tr>
<th>Performance Parameter</th>
<th>No-Build</th>
<th>Alt. 1</th>
<th>Alt. 1 Improvement</th>
<th>Alt. 2</th>
<th>Alt. 2 Improvement</th>
<th>Alt. 3</th>
<th>Alt. 3 Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-4 &amp; CR 46A - AM Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Travel Time (hr)</td>
<td>1070</td>
<td>1094</td>
<td>-2%</td>
<td>561</td>
<td>47.6%</td>
<td>721</td>
<td>32.6%</td>
</tr>
<tr>
<td>Total Delay Time (hr)</td>
<td>858</td>
<td>864</td>
<td>-1%</td>
<td>277</td>
<td>67.7%</td>
<td>451</td>
<td>47.4%</td>
</tr>
<tr>
<td>Average Delay Time (sec/veh)</td>
<td>319</td>
<td>283</td>
<td>11%</td>
<td>82</td>
<td>74.3%</td>
<td>137</td>
<td>57.1%</td>
</tr>
<tr>
<td>Latent Delay Time (hr)</td>
<td>312</td>
<td>183</td>
<td>41%</td>
<td>0</td>
<td>100.0%</td>
<td>22</td>
<td>92.9%</td>
</tr>
<tr>
<td>Number of Arrived Vehicles</td>
<td>8514</td>
<td>9721</td>
<td>-14%</td>
<td>11573</td>
<td>35.9%</td>
<td>10982</td>
<td>-29.0%</td>
</tr>
<tr>
<td>Latent Vehicles</td>
<td>2656</td>
<td>1519</td>
<td>43%</td>
<td>0</td>
<td>100.0%</td>
<td>262</td>
<td>90.1%</td>
</tr>
<tr>
<td>Total Delay + Latent Delay (hr)</td>
<td>1170</td>
<td>1047</td>
<td>11%</td>
<td>277</td>
<td>76.3%</td>
<td>473</td>
<td>59.6%</td>
</tr>
</tbody>
</table>

| I-4 & CR 46A - PM Peak|          |          |                    |          |                    |          |                    |
| Total Travel Time (hr)| 1089     | 1193     | -10%               | 668      | 38.7%              | 778      | 28.6%              |
| Total Delay Time (hr)| 892      | 981      | -10%               | 349      | 60.9%              | 449      | 49.7%              |
| Average Delay Time (sec/veh) | 338 | 349 | -3% | 91 | 73.1% | 118 | 65.1% |
| Latent Delay Time (hr) | 582 | 490 | 16% | 0 | 100.0% | 31 | 94.7% |
| Number of Active Vehicles | 1110 | 1245 | -12% | 643 | 42.1% | 689 | 37.9% |
| Number of Arrived Vehicles | 8377 | 8875 | -6% | 13188 | 57.4% | 13001 | -55.2% |
| Latent Vehicles | 5047 | 4179 | 17% | 4 | 99.9% | 242 | 95.2% |
| Total Delay + Latent Delay (hr) | 1474 | 1471 | 0% | 349 | 76.3% | 480 | 67.4% |
Table 5.5: Average Delay and Level of Service (LOS) – SR 46 Intersections

<table>
<thead>
<tr>
<th>Intersection</th>
<th>AM Peak</th>
<th></th>
<th></th>
<th>PM Peak</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MOEs</td>
<td>No-Build</td>
<td>Alt. 1</td>
<td>Alt. 2</td>
<td>No-Build</td>
<td>Alt. 1</td>
</tr>
<tr>
<td>SR 46 &amp; Wayside Drive/Oregon Street</td>
<td>Delay</td>
<td>15.1</td>
<td>14.8</td>
<td>14.8</td>
<td>21.6</td>
<td>20.4</td>
</tr>
<tr>
<td></td>
<td>LOS</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>SR 46 &amp; I-4 WB Ramps</td>
<td>Delay</td>
<td>13.8</td>
<td>14.0</td>
<td>13.8</td>
<td>13.6</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td>LOS</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>SR 46 &amp; I-4 EB Ramps</td>
<td>Delay</td>
<td>38.1</td>
<td>22.6</td>
<td>21.9</td>
<td>43.3</td>
<td>21.7</td>
</tr>
<tr>
<td></td>
<td>LOS</td>
<td>D</td>
<td>C</td>
<td>C</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>SR 46 &amp; Towne Center Boulevard/Hickman Drive</td>
<td>Delay</td>
<td>27.2</td>
<td>26.2</td>
<td>28.1</td>
<td>26.6</td>
<td>25.0</td>
</tr>
<tr>
<td></td>
<td>LOS</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
</tbody>
</table>

Notes: Delay – Average delay (sec/veh), MOEs = Measures of Effectiveness

Alternatives 5 through 8 consider the realignment of US 17-92 to connect directly to Monroe Road; the old section of US 17-92 along Lake Monroe will become a low speed, scenic road and will connect to US 17-92 via a T-intersection. The new US 17-92 will terminate at SR 46 to the south.

In addition to the No-Build alternative, the following alternatives were considered for the US 17-92 interchange evaluation:

- Alternative 5 – Single Point Urban Interchange with US 17-92 realigned
- Alternative 6 – Partial cloverleaf with US 17-92 realigned
- Alternative 7 – Grade Separated Diverging Diamond Interchange with US 17-92 realigned
- Alternative 8 – Tight Urban Diamond Interchange with US 17-92 realigned

Review of the four US 17-92 interchange alternatives in addition to the No-Build alternative was conducted for the 2040 analysis year. Based on the operational analysis, the results indicate that Alternatives 6, 7 and 8 all perform better than No-Build. The results of the network wide performance for US 17-92 are summarized in Table 5.6.

### 5.6 Intersection Improvements

Intersection improvements based on the Concept Plans are proposed at or adjacent to the interchanges at Lake Mary Boulevard, CR 46A, SR 46 and US 17-92 within Segment 3. The Concept Plans for the proposed intersection concepts can be found in Appendix A.
Table 5.6: US 17-92 Interchange Alternatives - Network Performance Comparison

<table>
<thead>
<tr>
<th>Performance Parameter</th>
<th>(No-Build)</th>
<th>Alt. 5 (SPUI)</th>
<th>Alt. 5 (SPUI) Improvement</th>
<th>Alt. 6 (Parclo)</th>
<th>Alt. 6 (Parclo) Improvement</th>
<th>Alt. 7 (GSDDI)</th>
<th>Alt. 7 (GSDDI) Improvement</th>
<th>Alt. 8 (TUDI)</th>
<th>Alt. 8 (TUDI) Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I-4 &amp; US 17-92 - AM Peak</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Travel Time (hr)</td>
<td>409</td>
<td>512</td>
<td>-25%</td>
<td>327</td>
<td>20%</td>
<td>292</td>
<td>29%</td>
<td>286</td>
<td>30%</td>
</tr>
<tr>
<td>Total Delay Time (hr)</td>
<td>198</td>
<td>331</td>
<td>-67%</td>
<td>92</td>
<td>54%</td>
<td>75</td>
<td>62%</td>
<td>78</td>
<td>61%</td>
</tr>
<tr>
<td>Average Delay Time (sec/veh)</td>
<td>118</td>
<td>163</td>
<td>-38%</td>
<td>53</td>
<td>55%</td>
<td>43</td>
<td>64%</td>
<td>45</td>
<td>62%</td>
</tr>
<tr>
<td>Latent Delay Time (hr)</td>
<td>24</td>
<td>290</td>
<td>-1108%</td>
<td>3</td>
<td>88%</td>
<td>0</td>
<td>100%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Number of Arrived Vehicles</td>
<td>5,635</td>
<td>6,767</td>
<td>20%</td>
<td>5,970</td>
<td>6%</td>
<td>5,982</td>
<td>6%</td>
<td>5,988</td>
<td>6%</td>
</tr>
<tr>
<td>Latent Vehicles</td>
<td>186</td>
<td>2,557</td>
<td>-1275%</td>
<td>8</td>
<td>96%</td>
<td>1</td>
<td>99%</td>
<td>1</td>
<td>99%</td>
</tr>
<tr>
<td>Total Delay + Latent Delay (hr)</td>
<td>222</td>
<td>621</td>
<td>-180%</td>
<td>95</td>
<td>57%</td>
<td>75</td>
<td>66%</td>
<td>78</td>
<td>65%</td>
</tr>
<tr>
<td><strong>I-4 &amp; US 17-92 - PM Peak</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Travel Time (hr)</td>
<td>396</td>
<td>491</td>
<td>-24%</td>
<td>327</td>
<td>17%</td>
<td>302</td>
<td>24%</td>
<td>304</td>
<td>23%</td>
</tr>
<tr>
<td>Total Delay Time (hr)</td>
<td>185</td>
<td>294</td>
<td>-59%</td>
<td>92</td>
<td>50%</td>
<td>85</td>
<td>54%</td>
<td>96</td>
<td>48%</td>
</tr>
<tr>
<td>Average Delay Time (sec/veh)</td>
<td>113</td>
<td>134</td>
<td>-19%</td>
<td>53</td>
<td>53%</td>
<td>49</td>
<td>57%</td>
<td>55</td>
<td>51%</td>
</tr>
<tr>
<td>Latent Delay Time (hr)</td>
<td>41</td>
<td>247</td>
<td>-502%</td>
<td>3</td>
<td>93%</td>
<td>0</td>
<td>100%</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>Number of Active Vehicles</td>
<td>5,545</td>
<td>7,411</td>
<td>34%</td>
<td>5,970</td>
<td>8%</td>
<td>5,971</td>
<td>8%</td>
<td>5,955</td>
<td>7%</td>
</tr>
<tr>
<td>Number of Arrived Vehicles</td>
<td>328</td>
<td>2,161</td>
<td>-559%</td>
<td>8</td>
<td>98%</td>
<td>1</td>
<td>100%</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>Latent Vehicles</td>
<td>226</td>
<td>541</td>
<td>-139%</td>
<td>95</td>
<td>58%</td>
<td>85</td>
<td>62%</td>
<td>96</td>
<td>58%</td>
</tr>
<tr>
<td>Total Delay + Latent Delay (hr)</td>
<td>396</td>
<td>491</td>
<td>-24%</td>
<td>327</td>
<td>17%</td>
<td>302</td>
<td>24%</td>
<td>304</td>
<td>23%</td>
</tr>
</tbody>
</table>
5.7 Environmental Impacts

5.7.1 Floodplains and Regulatory Floodways

The Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) for Seminole and Volusia Counties. According to FEMA Map No. 12117C0135F, portions of the roadway and the proposed pond within Basin 300 (Pond E in Permit No. 22434-1) are located in the 100-year floodplain.

Based on the FEMA floodplain lines, the roadway widening will impact the floodplain on both sides of the roadway. The widening of the westbound lanes will impact the floodplain from Station 2116+00 to 2124+00 and is located in Zone AE of the floodplain with an elevation of 66.00 ft NAVD. The widening of the eastbound lanes will impact the floodplain from Station 2106+50 to 2124+50 and is located in Zone AE of the floodplain with an elevation of 66.00 ft NAVD. The pond berm for Pond 300 will also impact the floodplain and is located in Zone AE of the floodplain with an elevation of 66.00 ft NAVD. Although the pond berm causes an impact to the floodplain, the area of cut between the existing ground and the design high water will result in the pond providing compensation for the floodplain impacts. The roadway impacts the floodplain for a total of 6.43 ac-ft.

Three alternatives were evaluated for the floodplain compensation pond in this basin. Based on input provided at the public involvement meeting, individual meetings with property owners and other considerations, it was determined that FPC Pond 300-A has the least amount of impacts. Additional right-of-way will be required for floodplain compensation pond, FPC 300-A, with acquisition of one parcel.

The locations of the FEMA floodplains are shown on Figure 5.5. Additional information including detailed floodplain impacts and compensation calculations are presented in the Pond Siting Report (November 2016) and Location Hydraulic Report (November 2016) prepared for this project.

5.7.2 Wetlands

The jurisdictional extent of onsite wetlands and other surface water systems within the project corridor were evaluated through the review of current and historic aerial photography of the study area and by ground-truth activities. Current and historical information reviewed included infrared digitally orthorectified quadrangle maps (DOQs), U.S. Geological Survey Topographic Maps, National Wetlands Inventory (NWI) Maps and Soil Survey Maps.

Jurisdictional limits were identified and limits established in general accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1); the November 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region and the State of Florida’s Delineation of the Landward Extent of Wetlands and Surface Waters.
Figure 5.5 – FEMA Flood Insurance Map
Wetlands and surface waters observed were classified using the FDOT’s Florida Land Use, Cover and Forms Classification System (FLUCFCS) and the U.S. Fish and Wildlife Service’s (FWS) classification system as described in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et. al, 1979).

For this study, jurisdictional systems were identified from east to west and were classified as either Wetland (WL- #) or Other Surface Water (SW- #) and included the direction of the travel lanes of I-4 (i.e. East (E) or West (W)) relative to the location of the system. The term other surface water generally categorizes existing stormwater ponds, lakes, ditches or swales associated with the existing drainage conditions of Interstate 4. A description of wetlands and jurisdictional other surface waters within the study area are summarized in Table 5.7.

Preliminary estimates suggest that 11.86 acres of wetland communities and 6.75 acres of jurisdictional other surface waters will be impacted by proposed improvements associated with I-4 Segment 3. The impact areas, quality of each system and likelihood of requiring mitigation for adverse impacts are summarized in Table 5.8; surface water and wetland impact areas are illustrated in Figure 5.6 through Figure 5.20.

Table 5.7: Summary of Jurisdictional Wetlands and Other Surface Waters

<table>
<thead>
<tr>
<th>ID</th>
<th>USFWS Classification*</th>
<th>FLUCFCS Code**</th>
<th>Description/ Vegetation Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW-2(E)</td>
<td>L1AB34</td>
<td>5240</td>
<td>Lake</td>
</tr>
<tr>
<td>SW-3(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-5(E)</td>
<td>L2EM2/PFO4A</td>
<td>5230/6170</td>
<td>Lake/Mixed Forested Wetland</td>
</tr>
<tr>
<td>SW-6(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-16(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-17(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-18(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-19(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut swale</td>
</tr>
<tr>
<td>SW-20(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-21(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut swale</td>
</tr>
<tr>
<td>SW-22(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-22A(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-22B(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-24(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-27(E)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>WL-1(E)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
<tr>
<td>WL-1A(E)</td>
<td>PEM1E</td>
<td>6410</td>
<td>Freshwater Marsh</td>
</tr>
<tr>
<td>WL-2(E)</td>
<td>PEM1E</td>
<td>6410</td>
<td>Freshwater Marsh</td>
</tr>
<tr>
<td>WL-2A(E)</td>
<td>PSS67E</td>
<td>6180</td>
<td>Willow and Elderberry</td>
</tr>
<tr>
<td>WL-3(E)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
</tbody>
</table>
### Table 5.7: Summary of Jurisdictional Wetlands and Other Surface Waters

<table>
<thead>
<tr>
<th>ID</th>
<th>USFWS Classification*</th>
<th>FLUCFCS Code**</th>
<th>Description/ Vegetation Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL-4(E)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
<tr>
<td>WL-5(E)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
<tr>
<td>WL-6(E)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
<tr>
<td>SW-4(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut swale</td>
</tr>
<tr>
<td>SW-10(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-10A(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-10B(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-11(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut swale</td>
</tr>
<tr>
<td>SW-12(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-15(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-16(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut swale</td>
</tr>
<tr>
<td>SW-17A(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-17B(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-18(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut swale</td>
</tr>
<tr>
<td>SW-19(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-21(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>SW-22(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut swale</td>
</tr>
<tr>
<td>SW-23(W)</td>
<td>PEM2E</td>
<td>5130</td>
<td>Upland-cut ditch</td>
</tr>
<tr>
<td>WL-1(W)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
<tr>
<td>WL-2(W)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
<tr>
<td>WL-3(W)</td>
<td>PFO67E</td>
<td>6170</td>
<td>Mixed Wetland Hardwoods</td>
</tr>
<tr>
<td>WL-4(W)</td>
<td>PFO36F</td>
<td>6210</td>
<td>Cypress</td>
</tr>
<tr>
<td>WL-5(W)</td>
<td>PFO67E</td>
<td>6150</td>
<td>Streams and Lake Swamps (Bottomland)</td>
</tr>
</tbody>
</table>

*US Fish and Wildlife Service (USFWS) CLASSIFICATIONS:
- PEM2E: Palustrine/Emergent/Non-persistent/Seasonally Flooded/Saturated PUBHx: Palustrine/Unconsolidated Bottom/Permanently flooded/Excavated
- L2EM2: Lacustrine/Littoral/Emergent/Non-persistent
- PFO67E: Palustrine/Forest/Deciduous/Evergreen/Seasonally Flooded/Saturated
- PFO36F: Palustrine/Forest/Deciduous/Broad-Leaved Evergreen/Deciduous/Semipermanently Flooded
- PFO4A: Palustrine/Forest/Needle-Leaved Evergreen/Temporarily Flooded
- PEM1H: Palustrine/Emergent/Persistent/Permanently Flooded
- PEM1E: Palustrine/Emergent/Persistent/Seasonally Flooded/Saturated
- PSS67E: Palustrine/Scrub-Shrub/Deciduous/Evergreen/Seasonally Flooded/Saturated
- PFO67H: Palustrine/Forest/Deciduous/Evergreen/Permanently Flooded
- L1AB34: Lacustrine/Limnetic/Aquatic Bed/Rooted Vascular/Float Vascular

**Florida Land Use Cover and Forms Classification System (FLUCFCS Code):
- 5130: Streams and Waterways (Ditch/Swale)
- 5230: Lakes larger than 10 acres, but less than 100 acres
- 5240: Lakes less than 10 acres
- 5330: Reservoirs larger than 10 acres, but less than 100 acres
- 5340: Reservoirs less than 10 acres
- 6150: Streams and Lake Swamps (Bottomland)
- 6170: Mixed wetland hardwoods
- 6180: Willow and elderberry
- 6210: Cypress
- 6410: Freshwater marshes
Table 5.8: Summary of Proposed Impacts to Jurisdictional Wetlands/Other Surface Waters

<table>
<thead>
<tr>
<th>ID</th>
<th>FLUCFCS Code</th>
<th>Total Area within ROW (acres)</th>
<th>Proposed Impacts (acres)</th>
<th>*Quality (UMAM)</th>
<th>**Mitigation Requirements (Y, N, N/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetlands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WL-1(E)</td>
<td>6170</td>
<td>0.07</td>
<td>0.07</td>
<td>Low</td>
<td>Y</td>
</tr>
<tr>
<td>WL-1A(E)</td>
<td>6410</td>
<td>0.91</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-2(E)</td>
<td>6410</td>
<td>0.00</td>
<td>0.00</td>
<td>Low</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-2A(E)</td>
<td>6180</td>
<td>0.00</td>
<td>0.00</td>
<td>Low</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-3(E)</td>
<td>6170</td>
<td>4.83</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-4(E)</td>
<td>6170</td>
<td>0.43</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-5(E)</td>
<td>6170</td>
<td>2.33</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-6(E)</td>
<td>6170</td>
<td>0.58</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-1(W)</td>
<td>6170</td>
<td>0.07</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-2(W)</td>
<td>6170</td>
<td>0.09</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>WL-3(W)</td>
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<td>11.06</td>
<td>11.06</td>
<td>Moderate</td>
<td>Y</td>
</tr>
<tr>
<td>WL-4(W)</td>
<td>6210</td>
<td>5.14</td>
<td>0.73</td>
<td>Moderate</td>
<td>Y</td>
</tr>
<tr>
<td>WL-5(W)</td>
<td>6150</td>
<td>2.34</td>
<td>0.00</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>Subtotal Acres</td>
<td></td>
<td>27.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal Impacts</td>
<td></td>
<td>11.86</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other Surface Waters (Lakes, Upland-Cut Ditches, Swales)

<table>
<thead>
<tr>
<th>ID</th>
<th>FLUCFCS Code</th>
<th>Total Area within ROW (acres)</th>
<th>Proposed Impacts (acres)</th>
<th>*Quality (UMAM)</th>
<th>**Mitigation Requirements (Y, N, N/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW-2(E)</td>
<td>5240</td>
<td>0.00</td>
<td>0.00</td>
<td>Low</td>
<td>N/A</td>
</tr>
<tr>
<td>SW-3(E)</td>
<td>5130</td>
<td>0.31</td>
<td>0.31</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-5(E)</td>
<td>5230/6170</td>
<td>1.33</td>
<td>1.33</td>
<td>Moderate</td>
<td>Y</td>
</tr>
<tr>
<td>SW-6(E)</td>
<td>5130</td>
<td>0.02</td>
<td>0.02</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-16(E)</td>
<td>5130</td>
<td>0.01</td>
<td>0.00</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-17(E)</td>
<td>5130</td>
<td>0.04</td>
<td>0.04</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-18(E)</td>
<td>5130</td>
<td>0.33</td>
<td>0.33</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-19(E)</td>
<td>5130</td>
<td>0.06</td>
<td>0.06</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-20(E)</td>
<td>5130</td>
<td>0.11</td>
<td>0.11</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-21(E)</td>
<td>5130</td>
<td>0.01</td>
<td>0.01</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-22(E)</td>
<td>5130</td>
<td>0.02</td>
<td>0.02</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-22A(E)</td>
<td>5130</td>
<td>0.02</td>
<td>0.02</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-22B(E)</td>
<td>5130</td>
<td>0.41</td>
<td>0.00</td>
<td>Low</td>
<td>N/A</td>
</tr>
<tr>
<td>SW-24(E)</td>
<td>5130</td>
<td>0.16</td>
<td>0.00</td>
<td>Low</td>
<td>N/A</td>
</tr>
<tr>
<td>SW-27(E)</td>
<td>5130</td>
<td>0.41</td>
<td>0.00</td>
<td>Low</td>
<td>N/A</td>
</tr>
<tr>
<td>SW-4(W)</td>
<td>5130</td>
<td>0.15</td>
<td>0.15</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-10(W)</td>
<td>5130</td>
<td>0.08</td>
<td>0.08</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-10A(W)</td>
<td>5130</td>
<td>0.02</td>
<td>0.02</td>
<td>Low</td>
<td>N</td>
</tr>
</tbody>
</table>
Impact acreages will be further refined as detailed construction plans are developed during the permitting phase of the project. Impacts to surface waters and wetlands during construction will also be classified as temporary or permanent, depending on the proposed level of disturbance. The type and level of mitigation for adverse impacts will be based on the final impact acreages, the nature of disturbance (temporary or permanent) and the overall quality of the system.

It is anticipated that improvements along the mainline of I-4 may result in adverse secondary and cumulative impacts in meeting the intent of sections 10.2.7 and 10.2.8 of Volume I of the Environmental Resource Permit Information Manual. It is anticipated that the proposed project will not result in unacceptable cumulative impacts to wetland functions in the St. Johns River (Canaveral Marshes to Wekiva), Lake Jesup, and Wekiva River basins provided that there is appropriate and available mitigation within the same basin as the adverse impacts, or that a cumulative impact assessment analysis determines the mitigation plan is sufficient. A secondary and cumulative impacts assessment for I-4 Segment 3 improvements will be refined during the permitting phase in determining the exact mitigation needed in offsetting adverse impacts.

---

Table 5.8: Summary of Proposed Impacts to Jurisdictional Wetlands/Other Surface Waters

<table>
<thead>
<tr>
<th>ID</th>
<th>FLUCFCS Code</th>
<th>Total Area within ROW (acres)</th>
<th>Proposed Impacts (acres)</th>
<th>*Quality (UMAM)</th>
<th>**Mitigation Requirements (Y, N, N/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW-10B(W)</td>
<td>5130</td>
<td>0.12</td>
<td>0.12</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-11(W)</td>
<td>5130</td>
<td>0.32</td>
<td>0.32</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-12(W)</td>
<td>5130</td>
<td>0.50</td>
<td>0.50</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-15(W)</td>
<td>5130</td>
<td>1.78</td>
<td>1.78</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-16(W)</td>
<td>5130</td>
<td>0.09</td>
<td>0.09</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-17A(W)</td>
<td>5130</td>
<td>0.00</td>
<td>0.00</td>
<td>Low</td>
<td>N</td>
</tr>
<tr>
<td>SW-17B(W)</td>
<td>5130</td>
<td>0.08</td>
<td>0.00</td>
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<td>SW-18(W)</td>
<td>5130</td>
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<tr>
<td>SW-19(W)</td>
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<td>SW-21(W)</td>
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<td>SW-22(W)</td>
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<td>SW-23(W)</td>
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<tr>
<td>Project Total</td>
<td>35.67</td>
<td>18.61</td>
<td></td>
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</tr>
</tbody>
</table>

*Low= UMAM Score between 0 and 0.49  Moderate= UMAM Score between 0.50 and 0.79  High= UMAM Score of 0.80 or better.

**Y= Jurisdictional/Mitigation Required  N = Jurisdictional/No Mitigation Required  N/A = No Impacts Anticipated
Figure 5.6 – Surface Water & Wetland Impact Map (Sheet 1 of 15)
Figure 5.7 – Surface Water & Impact Wetland Map (Sheet 2 of 15)
Figure 5.8 – Surface Water & Wetland Impact Map (Sheet 3 of 15)
Figure 5.9 – Surface Water & Wetland Impact Map (Sheet 4 of 15)
Figure 5.10 – Surface Water & Wetland Impact Map (Sheet 5 of 15)
Figure 5.11 – Surface Water & Wetland Impact Map (Sheet 6 of 15)
Figure 5.12 – Surface Water & Wetland Impact Map (Sheet 7 of 15)
Figure 5.13 – Surface Water & Wetland Impact Map (Sheet 8 of 15)
Figure 5.14 – Surface Water & Wetland Impact Map (Sheet 9 of 15)
Figure 5.15 – Surface Water & Wetland Impact Map (Sheet 10 of 15)
Figure 5.16 – Surface Water & Wetland Impact Map (Sheet 11 of 15)
Figure 5.17 – Surface Water & Wetland Impact Map (Sheet 12 of 15)
Figure 5.18 – Surface Water & Wetland Impact Map (Sheet 13 of 15)
Figure 5.19 – Surface Water & Wetland Impact Map (Sheet 14 of 15)
Figure 5.20 – Surface Water & Wetland Impact Map (Sheet 15 of 15)
Estimates suggest that 11.86 acres of low to moderate quality wetland impacts and 1.33 acres of low to moderate quality other surface water impacts associated with Segment 3 could require approximately 8.30 mitigation credits (based on average UMAM score of 0.7). Mitigation requirements are based on a compilation of wetland parameters including quality, type, function and size. Impacts to wetlands and other surface waters will be avoided and minimized to the maximum extent possible while maintaining safe and sound engineering and construction practices. Primarily, avoidance and minimization efforts are related at the proposed stormwater management pond locations.

A mitigation plan that adequately offsets adverse impacts was developed and will be implemented prior to construction activities. Adverse wetland impacts that may result from the construction of this project will be mitigated, satisfying the requirements of Part IV. Chapter 373, F.S. and 33 U.S.C.s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and/or other mitigation options that satisfy state and federal requirements. Detailed analysis and descriptions of existing wetlands and other surface waters are provided in the Wetland Evaluation Report (WER) Segment 3: State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 (July 2016) prepared for this project.

5.7.3 Wildlife and Habitat

Potential environmental impacts include identifying impacts to wildlife and natural habitat within the proposed corridor. A supplemental report, Endangered Species Biological Assessment Segment 3: State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 (July 2016), was prepared following guidelines presented in the PD&E Manual, Part 2, Chapter 27 (FDOT, 10/1/91) to identify wildlife species of known or potential occurrence and natural habitat types along the I-4 Segment 3 project corridor and to document potential project-related impacts. Particular attention was given to species that have been provided regulatory protection such as federal or state listed endangered, threatened or otherwise sensitive species, as well as suitable habitat for those species.

The study area for the project corridor included all potential pond sites, the existing right-of-way of I-4 and a buffer of 500 feet beyond the boundary of the current right-of-way. The methodology used to conduct the wildlife assessment included research of existing records and review of literature published by the Florida Natural Areas Inventory (FNAL), the Florida Committee on Rare and Endangered Plants and Animals (FCREPA), the Florida Fish and Wildlife Conservation Commission (FFWCC), the U.S. Fish and Wildlife Service (USFWS) and other relevant scientific publications. Based on these sources, 45 species of animals and 43 species of plants have been identified as potentially occurring in Seminole County, though suitable habitat may not be available for all of them along the project corridor. Of these, 7 are federally listed animals, 2 are federally listed plants, 23 are state listed animals and 43 are state listed plants.
During the field investigation, individuals or evidence of at least 46 mammal, bird and reptile species were identified along the project corridor. The following observed species appear on protected species lists developed by the USFWS, the FFWCC, FNAI or FCREPA: little blue heron, gopher tortoise, Florida sandhill crane, Florida black bear, osprey and American swallow-tailed kite.

Additional wildlife species observed during the field investigations included: red-winged blackbird, red-tailed hawk, armadillo, pied-billed grebe, mottled duck, red-shouldered hawk, opossum, raccoon, mallard duck, green heron, catbird, Florida cooter, anhinga, coyote, American coot, grackle, green anole, turkey vulture, common gallinule, gray squirrel, Cuban brown anole, six-lined racerunner, black-necked stilt, barred owl, Florida soft-shell turtle, black racer, loggerhead shrike, eastern cottontail, great egret, rock dove, river otter, great blue heron, American crow, brown water snake, cattle egret, black vulture and double-crested cormorant.

Observations of species protected under state or federal regulations were documented and are shown in Figure 5.21. Numerous other wildlife and plant species, many of which are protected, have the potential to occur in Seminole County. Although evidence of the occurrence of those species was not observed during field inspections of the existing right-of-way or proposed pond sites, suitable habitat exists in those areas. Details of the field surveys including species identification, soils and land use types, habitat locations and potential impacts to federal or state-listed species and other sensitive species are included in the Endangered Species Biological Assessment Segment 3: State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 (July 2016) prepared for this project.

**Scrub Jay and Gopher Tortoise Surveys**

A scrub-jay survey was conducted during the original PD&E Study [Final Environmental Impact Statement (FEIS) for I-4 from SR 528 Beachline Expressway to SR 472, May 2000 with field work from 1996 – 1998] within this alignment corridor. Due to development that has occurred since the previous surveys were conducted, no potential habitat was identified in any of the previously identified locations, nor in any other area within this segment of the project. As such, no formal scrub-jay survey was conducted.

A gopher tortoise survey was conducted in April, May, and June of 2013 and April and October of 2015 in accordance with the FFWCC technical publication titled Gopher Tortoise Permitting Guidelines, April 2008 (Rev. April 2013 & February 2015). Habitats that were suspected of supporting tortoise populations because of the nature of the vegetation, hydrology and soils, were selected for the survey, as well as cleared areas within the right-of-way and areas with suitable soil conditions along the right-of-way fence line. Surveys methods were developed to cover 100% of the suitable habitat within the right-of-way and 50% of suitable habitat within each proposed pond site. The location of each burrow is depicted in Figure 5.21.
Figure 5.21 – Species Location Map
Additional wildlife and plant surveys were conducted in potential impact areas such as proposed pond site areas and the existing right-of-way that contain habitat for one or more listed species. The following sections describe those species with the potential to occur within the study limits and potentially be impacted by the project.

**Federally Listed Species**

**Reptiles**

**Eastern Indigo Snake** – The eastern indigo snake, listed by both the FFWCC and the USFWS as Threatened, is a habitat generalist, using a variety of habitats from mangrove swamps to xeric uplands. These snakes are cold-sensitive and require gopher tortoise burrows, other animal holes or stumps for protection during winter months. These snakes require large tracts of natural, undisturbed habitat, and prefer to forage in and around wetlands for their preferred prey – other snakes. Numerous burrows were located within the project area and the potential for indigo snakes is moderate, though no indigo snakes were observed during field studies and the closest documented sighting is located approximately 6 miles to the northwest (2008 sighting near Blue Springs State Park). If an eastern indigo snake is observed during construction, the contractor will be required to cease any operation that might cause harm to the snake. If the eastern indigo snake does not move away from the construction area, both the FFWCC and USFWS will be contacted for further guidance. An effects determination was made by utilizing the USFWS Programmatic Key for the Eastern Indigo Snake (January 2010, updated August 2013). In accordance with the key, the project will implement the Standard Protection Measures for the Eastern Indigo Snake (USFWS, 2013), will impact less than 25 acres of xeric habitat (scrub, sandhill, or scrubby flatwoods) but has more than 25 active and inactive gopher tortoise burrows. Therefore, the project would receive a may affect determination under the key. However, the FDOT will make the commitment to have permits conditioned such that all active and inactive gopher tortoise burrows will be evacuated prior to site manipulation in the vicinity of the burrow. In addition, the project occurs in a highly urbanized area with limited contiguous habitat to support this animal. USFWS has advised that for these reasons, they would support a finding of may affect, but not likely to adversely affect for the eastern indigo snake.

**Avian**

**Florida Scrub-Jay** – The Florida scrub-jay, listed as Threatened by both the FFWCC and USFWS, is an endemic species found in Florida scrub habitats. This gregarious jay is a habitat specialist and typically lives in scrub and scrubby flatwoods habitats. No suitable scrub habitat is located within the project corridor. During the initial PD&E (field work in 1996-1998), several stations were sampled for the presence of scrub-jays at the Lake Mary Boulevard interchange: 4 stations along the I-4 westbound right-of-way south of Lake Mary Boulevard, and 2 stations along the off-ramp from I-4 eastbound to Lake Mary Boulevard. Field investigations conducted during this study indicated that these areas no longer contained any suitable habitat. The areas along I-4 westbound have been developed into multi-family residential units with no natural vegetation remaining, and the area
along the eastbound off-ramp has been developed into a Gander Mountain store, with planted pines as a buffer from the road. Regardless, cursory surveys for scrub-jays were conducted in September of 2013 to evaluate the potential for presence of this species. No scrub-jays were observed within any proposed right-of-way or pond site areas of Segment 3. The proposed widening and stormwater ponds are not expected to have any direct impact on scrub-jays or scrub-jay habitat. Therefore, this project will have no effect on this species.

**Red-Cockaded Woodpecker** – This species is listed as Endangered by the USFWS and Threatened by the FFWCC. The colonial red-cockaded woodpecker (RCW) is a habitat specialist, requiring stands of over-mature pine that have contracted the red-heart disease. RCWs require diseased trees for cavity building, which they use for nest and roost cavities. Preferred pine stands need to have a fairly open canopy, with a sparse subcanopy to allow easy flight. RCWs must also have ample foraging habitat consisting of younger pines surrounding the cavity trees. No suitable nesting habitat was observed in the impact area within the project limits. The project occurs within the designated USFWS consultation area, though is not documented as having any nesting birds recorded within the project vicinity. The previous PD&E Study (May 2000) indicated no suitable habitat was observed nor any documented RCW sightings occurred within the proposed right-of-way or pond sites. Additionally, no suitable habitat for nesting or foraging was identified within the vicinity of the project during field surveys. Therefore, this project will have no effect on the red-cockaded woodpecker.

**Snail Kite** – The snail kite is listed as Endangered by both the USFWS and the FFWCC. This non-migratory, medium-sized raptor utilizes large open freshwater marsh habitats and lakes with shallow water. Nests are usually located in a low tree or shrub at the water’s edge. The main staple of their diet is the apple snail, lending to their name. The project does occur within the USFWS consultation area for the snail kite though no observations have been documented within or near the project corridor. No adequate nesting or foraging habitat was located adjacent to the project area, within the proposed right-of-way or pond site areas. Therefore, this project will have no effect the snail kite.

**Wood Stork** – This species, now listed as Threatened by both the USFWS and the FFWCC, is the only true species of stork nesting in the United States. This reclassification does not change any conservation or protection measures for the wood stork under the Endangered Species Act (ESA), rather it recognizes the recovery and the positive impact that conservation efforts have had on breeding populations of storks. Feeding areas for wood storks include marshes, pools, or ditches in which fish congregate. This species typically nests in mixed woodlands comprised of such overstory species as cypress, gum, and southern willow; pond apple and mangrove swamps may also be utilized for nesting. Based upon the updated colony map prepared by the USFWS in June 2014, the project is located within the 15-mile Core Foraging Area (CFA) of two wood stork colonies, as previously shown in Figure 5.21. Foraging areas within the study area are limited to drainage features, small
water bodies, and stormwater ponds, though several marshes occur adjacent to the project corridor. Utilizing the Army Corps of Engineers (ACOE) and USFWS Effect Determination Key for the Wood Stork in Central and North Peninsular Florida (2008), the project is not within 2,500 feet of an active colony site, will likely impact Suitable Foraging Habitat (SFH) of greater than 0.5 acres and is located within the CFA of two wood stork colonies (Lawne Lake and Hontoon Island). The estimated direct impacts to wetlands include approximately 11.86 acres of forested systems and 6.75 acres of other surface waters.

Additionally, FDOT commits to provide SFH compensation within the Service Area of a Service-approved wetland mitigation bank(s) within the CFA, and the project is not contrary to the Service’s Habitat Management Guidelines for the Wood Stork in the Southeast Region and is in accordance with the Clean Water Act section 404(b)(1) guidelines. There are five currently permitted mitigation banks that include the project corridor within the bank service area that have credits available to offset impacts to SFH. FDOT will coordinate with the permitting agencies during the permitting phase of the project on compensatory mitigation and minimization of impacts to SFH. These actions should result in no net loss of foraging habitat; therefore, the project may affect but is not likely to adversely affect the wood stork.

**Southern Bald Eagle** – The southern bald eagle was delisted from both the US Endangered Species Act and FFWCC imperiled list, though it is still protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The USFWS issued the National Bald Eagle Management Guidelines in May 2007 while Florida adopted a Bald Eagle Management Plan (BEMP) in April 2008, written closely to follow the federal guidelines. The BEMP provides guidelines and recommendations to help people avoid violating state and federal eagle laws. The BEMP also outlines strategies to maintain the Florida population of bald eagles at or above current levels. The BEMP goal is to, “maintain a stable or increasing population of eagles in Florida in perpetuity.” Bald eagles almost always nest in the tops of living or dead tall trees along or very near lakes and rivers; these water bodies provide fish, typically their preferred food. Bald eagles generally avoid areas with extensive human activity, so management guidelines must be considered before any construction can be initiated within 660 feet of an active southern bald eagle nest. Three bald eagle nests are recorded to be in the general vicinity (within 1 mile) of the project corridor. However, none of these nests are located within 660 feet of the proposed right-of-way or any of the proposed pond sites. For that reason, the project will have no effect on the southern bald eagle.

**Mammals**

**Florida Manatee** - This species is listed as Threatened by both the USFWS and the FFWCC and has designated critical habitat along the St. Johns River and within the western and northern shores of Lake Monroe. Florida manatees are found in freshwater, brackish, and marine environments. Typical coastal and inland habitats include coastal tidal rivers and streams, mangrove swamps, salt
marshes, freshwater springs, and vegetated bottoms. As herbivores, manatees feed on the wide range of aquatic vegetation that these habitats provide. Shallow seagrass beds, with ready access to deep channels, are generally preferred feeding areas in coastal and riverine habitats (Smith 1993). Manatees use springs and freshwater runoff sites for drinking water; secluded canals, creeks, embayments, and lagoons for resting, cavorting, mating, calving and nurturing their young; and open waterways and channels as travel corridors. Manatees occupy different habitats during various times of the year, with a focus on warm water sites during winter. Manatees have also adapted to changing ecosystems in Florida. Industrial warm water discharges and deep-dredged areas are used as wintering sites, stormwater/freshwater discharges provide manatees with drinking water, and the imported exotic plant, *Hydrilla* spp. has become an important food source at some wintering sites. This segment of the project does not propose any work within the St. Johns River, Lake Monroe, or any areas that are connected to these water bodies where manatees could gain access, and therefore, according the Corps of Engineers, Jacksonville District, and the State of Florida Effect Determination Key for the Manatee in Florida (April 2013) will have no effect on the Florida manatee.

**Federally Listed Plant Species**

A review of agency databases and a field review of the project corridor indicate that there have been few reported occurrences of federally listed plant species within the proposed project area. USFWS currently shows that one federally listed species has been demonstrated to have the potential to occur within Seminole County, the pygmy fringe tree though other sources have listed the potential for the Okeechobee gourd to occur. Information from the previous PD&E Study (May 2000) indicated that no listed plants were observed in this segment. A follow up protected plant field survey covering the area of proposed right-of-way widening and pond sites was conducted in May 2013 and again in April 2015 by project botanists and other biologists. No federally listed plant species were identified within the proposed widening impact area or pond sites during the field investigations; though a potential sighting of the Okeechobee gourd was made in the floodplain between I-4 and the Wayside Park boat ramp, outside of the proposed project area near the St. Johns River. Confirmation was not definitively made as the observation was not made during flowering season. There is no appropriate habitat for any federally listed plant species within the project right-of-way or proposed ponds sites. No direct or indirect impacts to federally listed plant species are likely to occur and the I-4 Segment 3 project should have no effect on any of the federally listed plant species.

**State Listed Species**

**Mammals**

**Sherman’s Fox Squirrel** – The Sherman’s fox squirrel, listed by the FFWCC as a Species of Special Concern, is the largest of the three fox squirrel subspecies that occur in Florida. They have large ranges that can span over 80 acres. Optimum habitat for this subspecies is predominantly longleaf pine-turkey oak sandhills, although they are also reported to occur in mesic forested areas. Some
potential habitat is present within the project area, although Sherman’s fox squirrels were not observed during the site investigations for this project. The amount of potential habitat for this species impacted by the project will be minimal. Therefore, the proposed project is not likely to adversely affect the Sherman’s fox squirrel.

**Florida Black Bear** – The Florida black bear is a very wide-ranging species formerly listed as Threatened by the FFWCC. Preferred habitat of the black bear includes dense forest, both upland and wetland, but the bear is often encountered in other areas during its seasonal movements. The bear was removed from the list in August 2012 after the approval of the Florida Black Bear Management Plan. The plan was implemented to set a strategy in place to address challenges in bear management, to manage for a sustainable bear population state-wide, and reduce human-bear conflicts. Going forward, FFWCC will continue to engage with landowners and regulating agencies to guide future land use to be compatible with the objectives of the Bear Management Plan. The plan divides the state into seven Bear Management Units (BMUs) which support the seven sub-populations of bear across the state. The project occurs within the Central BMU, which includes Alachua, Bradford, Brevard, Clay, Flagler, Lake, Marion, Orange, Putnam, Seminole, St. Johns, Sumter and Volusia counties and contains the Ocala/St. Johns subpopulation, named after the Ocala National Forest and St. Johns River watershed. The Central BMU is the only BMU with a subpopulation estimated at 1,000 bears (the highest in the state), which is one of the criteria that determine a species risk for extinction. Evidence of bear passage was observed during field surveys (black fur on fences, tracks at Pond Site 300-B). Numerous calls to FFWCC come in every year related to bear sightings in Longwood, especially to the west of the project corridor that is adjacent to the Wekiva River Management Area, and at least 22 bear road kills on this segment of I-4 have been recorded since 1989. As no further fragmentation of bear habitat is proposed, the project is not likely to adversely affect the Florida black bear.

**Reptiles**

**Gopher Tortoise** – The occurrence of this species, listed as Threatened by the FFWCC (and designated as a Candidate species for listing by the USFWS), is a key factor in the determination of habitat suitability for certain other listed species because of the large number of other animals that use tortoise burrows for one or more of their life requisites. While it is common to find gopher tortoise burrows in most types of upland communities, the preferred habitats include xeric uplands and disturbed, ruderal areas. Approximately 140 burrows were observed along the corridor within the right-of-way and proposed potential pond sites. It is likely that impacts to these areas cannot be avoided; therefore, relocation of the tortoises and their commensals will be necessary. A conservation permit should be applied for from the FFWCC, and the relocation of any burrows to be impacted should be carried out within 30 days of construction. As FDOT will make the commitment to relocate all potentially impacted gopher tortoise burrows, the project is not likely to adversely affect the gopher tortoise.
**Florida Pine Snake** – This snake, listed as Threatened by the FFWCC, is another tortoise burrow commensal organism, utilizing both tortoise burrows and the tunnels of pocket gophers for feeding and shelter. Preferred habitat of the pine snake is xeric uplands, and to a lesser extent, flatwoods and other mesic uplands. Some habitat is available within the project, especially where gopher tortoise burrows and pocket gopher mounds were observed. Both the pocket gophers and the pine snakes live nearly their whole lives underground and are very hard to observe directly. Earth work in suitable habitat may impact subterranean pine snakes. With relocation of commensal organisms from gopher tortoise burrows if impacted, the project is not likely to adversely affect the Florida pine snake.

**Short-tailed snake** – The short-tailed snake, listed as Threatened by the FFWCC, belongs to a monotypic genus that is endemic to Florida. Rarely seen due to its earth-burrowing tendencies, it is restricted to xeric uplands, primarily longleaf pine-turkey oak sandhills and sand pine scrub, for its habitat requirements. Herpetologist Paul Moler (FFWCC) reports short-tailed snakes occur in a wider range of ecosystems than indicated in the scant literature on the species, and may be found where prey (small snakes) and loose soils occur in North-Central Florida. Suitable habitat (sand pine scrub) is not present on this project, nor were any of these snakes observed during any field surveys. Due to the lack of xeric habitat, it is anticipated that this project will have no effect on the short-tailed snake.

**Avian**

**Florida Sandhill Crane** – This non-migratory subspecies, listed as Threatened by the FFWCC, can often be seen foraging in improved pastures, open fields and along the roadside. During the winter months, it is distinguished from its migratory northern cousins by its smaller size and more delicate stature. Sandhill cranes nest in freshwater marshes and feed in adjacent fields and pastures. Some adequate nesting habitat is found within the freshwater marshes located adjacent to the project corridor, and foraging habitat was found within the project limits. Sandhill cranes were observed flying over the project area several times during multiple surveying events, and were observed foraging at Pond Site 302. No evidence of nests was observed within the project area. The proposed project is not likely to adversely affect the sandhill crane.

**Southeastern American Kestrel** – This resident subspecies of the kestrel, listed as Threatened by the FFWCC, can be distinguished from its cousin, *F. s. sparverius*, a winter migrant, by its smaller size. The Southeastern American kestrel requires three components for optimal habitat: large, open fields for foraging, snags for nesting and snags, fence lines or telephone poles as perching sites from which to hunt. No areas that meet these three standards have been identified within the project corridor. No kestrels were observed along the project corridor, nor within any pond sites or along the portion of the project to be widened. Therefore, this project is not likely to adversely affect this species.
Least tern – Historically, least terns nested on sandy beaches and lakeshores, but presently, they nest almost exclusively on man-made substrates such as spoil islands and gravel rooftops. This small tern, listed as Threatened by the FFWCC, is still fairly common in localized areas. However, none have been reported in the project study area. Prime nesting areas are minimal, so this species has only a low possibility of occurring along the project corridor, therefore the proposed project will have no effect on the least tern.

Wading Birds – Wading bird rookeries were not observed and are not known to occur within or adjacent to the study area. Potential foraging habitat for little blue heron, roseate spoonbill and tricolored heron all classified as Threatened by the FFWCC, occurs within the limits of the study area. Little blue heron and white ibis were observed during field surveys. No wetlands providing critical foraging or nesting habitat for these avian species will be impacted by the proposed project and indirect impacts to wading birds are not anticipated. Therefore, the proposed project is not likely to adversely affect the wading bird population in the region.

State Listed Plant Species
A review of available information revealed that 43 state listed plant species have the potential to occur within the habitats located within the project area in Seminole County. No state listed plant species were observed during the field assessment of project area or during the previous PD&E Study (May 2000). No state-listed plant species were identified within the proposed widening impact area or pond sites during the field investigations, and no appropriate habitat for state listed plants was observed within the project right-of-way or proposed ponds sites. Therefore, the proposed project is not likely to adversely affect state listed plant species.

Other Sensitive Species
Migratory Birds
The Migratory Bird Conservation Commission was established on February 18, 1929 by the passage of the Migratory Bird Conservation Act. It was created and authorized to consider and approve any areas of land and/or water recommended by the Secretary of the Interior for purchase or rental by the USFWS under the Act. In 1989, the Commission acquired the additional responsibility to approve project funding under the North American Wetland Conservation Act. This Act provides for Federal funding to encourage partnerships to protect, enhance, restore, and manage wetland and other habitats for migratory birds and other fish and wildlife to carry out the North American Waterfowl Management Plan. Waterfowl are the most prominent and economically important group of migratory birds of the North American Continent. National Migratory Bird Areas in Florida include Arthur R. Marshall, Caloosahatchee, Cedar Key, Chassahowitzka, Egmont Key, Great White Heron, Hobe Sound, J.N. Ding Darling, Lake Woodruff, Matlacha Pass, Merritt Island, Okefenokee, Pine Island, Pinellas, St. Marks, and St. Vincent. None of these National Migratory Bird Areas are located within a one-mile radius of the project corridor. If the project results in direct impacts to wetland
habitat or surface water features (i.e. roadside ditches) that could be utilized by migratory birds, there may be an impact on these species. Impacts to wetlands will be mitigated for at approved mitigation sites within the affected watershed and will offset any potential impacts to migratory birds from this project.

The proposed project will avoid and minimize impacts to wildlife and their habitat to the greatest practicable extent. Unavoidable impacts will be mitigated through a combination of actions designed to enhance local and regional ecological and hydrologic connectivity where possible. Those actions constitute the current recommendations developed and refined by staff and consulting environmental scientists representing various federal and state agencies and nongovernmental organizations, using the most current record and project specific scientific information available. The FDOT routinely reevaluates PD&E Study results and commitments prior to and during the project design phase, and again prior to right-of-way acquisition and construction. Therefore, the wildlife and recommendations proposed herein will be subject to reevaluation in the future. Appropriate modifications to the recommended actions may be made in the event that the latest science, design constraints or other relevant changes in circumstance so dictate.

5.7.4 Archaeological and Historical Resources

A Cultural Resource Assessment Survey (CRAS) in support of proposed improvements to I-4 from east of SR 434 to east of US 17-92 in Seminole County, Florida was conducted to comply with Section 106 of the National Historic Preservation Act (as amended) and its implementing regulation 36 CFR Part 800 (Protection of Historic Properties). All work was performed in accordance with Part 2, Chapter 12, of the Florida Department of Transportation (FDOT) PD&E Manual (revised January 1999) and the Cultural Resource Management Handbook (revised November 2004) and is consistent with the Florida Division of Historical Resources (FDHR) recommendations for such projects as stipulated in the FDHR’s Cultural Resource Management Standards & Operations Manual, Module Three: Guidelines for Use by Historic Preservation Professionals. The CRAS study also complies with Chapter 267 of the Florida Statutes and Rule Chapter 1A-46, Florida Administrative Code.

The CRAS serves as an addendum to the previous report titled Cultural Resource Assessment Survey, Interstate 4 Section 2 Project Development and Environment Study from Bee Line Expressway (S.R. 528) to S.R. 472 Interchange, Orange, Seminole, and Volusia Counties, Florida [Florida Master Site File (FMSF) Survey No. 5707] (ACI and Janus Research 1999). The regional prehistory and history of the current project area are consistent with those described in the previous report and were not repeated in the current CRAS. The purpose of this survey is to update the previous I-4 corridor studies, which involves locating, identifying, and bounding archaeological resources within proposed pond locations and updating the inventory of historic structures and potential districts within the project Area of Potential Effect (APE). Previously undocumented resources identified in the APE were assessed for their potential for listing in the National Register of Historic Places (NRHP). The APE is
defined as the area within which the roadway improvements and subsequent maintenance may have physical, visual, audible, or atmospheric effects on historic properties. The APE as defined for this project includes the existing ROW along I-4 and was extended to the back or side property lines of parcels adjacent to the corridor, limited to a distance of no more than 100 meters (330 feet) from the proposed ROW. The APE also includes the proposed pond footprints plus a 100-foot buffer. Archaeological surveys were conducted within the proposed pond footprints, and the architectural study included the entire APE.

Field investigations consisted of pedestrian surface inspection and the excavation of 135 shovel tests within the footprints of the proposed ponds. No artifacts were recovered from any of the 135 shovel tests, and no archaeological sites or occurrences were identified. No further archaeological survey is recommended for the proposed ponds. Table 5.9 provides a summary of the results of the archeological survey.

The architectural survey resulted in the identification of 30 historic resources constructed before 1971 located within the I-4 Segment 3 APE, as illustrated in Figure 5.22 through Figure 5.26. Fifteen resources were previously recorded and 15 resources are newly recorded. Of these, two (CSX Railroad-Resource No. 8SE02138 and Atlantic Coast Line Railroad Bridge over the St. Johns River-Resource No. 8SE02823) are recommended eligible for NRHP inclusion.
Table 5.9: Results of Phase I Archaeological Survey of Proposed Ponds for I-4 Segment 3 APE

<table>
<thead>
<tr>
<th>Pond</th>
<th>Acreage</th>
<th>Number of Shovel Tests</th>
<th>Comment/ Condition</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>II*</td>
<td>0.37</td>
<td>4</td>
<td>North of SR 434</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>II South*</td>
<td>0.55</td>
<td>5</td>
<td>North of SR 434</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>II North*</td>
<td>0.74</td>
<td>6</td>
<td>North of SR 434</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>HH</td>
<td>2.43</td>
<td>14</td>
<td>North of SR 434</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>300</td>
<td>4.50</td>
<td>9</td>
<td>North of E. E. Williamson Road</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>FPC 300- A</td>
<td>0.68</td>
<td>4</td>
<td>North of E. E. Williamson Road</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>FPC 300- B</td>
<td>0.83</td>
<td>3</td>
<td>North of E. E. Williamson Road</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>301</td>
<td>2.03</td>
<td>3</td>
<td>Minor expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>302</td>
<td>2.02</td>
<td>2</td>
<td>Minor expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>303-A1</td>
<td>5.41</td>
<td>13</td>
<td>West of Skyline Drive; disturbance noted</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>303-A2</td>
<td>1.80</td>
<td>1</td>
<td>Minor expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>303-B2</td>
<td>1.46</td>
<td>7</td>
<td>West of Skyline Drive; disturbance noted</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>304</td>
<td>3.20</td>
<td>2</td>
<td>Minor expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>305</td>
<td>6.96</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>305A</td>
<td>10.48</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>306</td>
<td>7.91</td>
<td>3</td>
<td>Within the interchange of I-4 and Lake Mary Blvd</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>307</td>
<td>1.80</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>308</td>
<td>8.67</td>
<td>21</td>
<td>Expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>309</td>
<td>13.54</td>
<td>5</td>
<td>Minor expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>310</td>
<td>6.23</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
</tbody>
</table>
Table 5.9: Results of Phase I Archaeological Survey of Proposed Ponds for I-4 Segment 3 APE

<table>
<thead>
<tr>
<th>Pond</th>
<th>Acreage</th>
<th>Number of Shovel Tests</th>
<th>Comment/ Condition</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>311</td>
<td>2.65</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>312</td>
<td>6.38</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>Swale</td>
<td>1.80</td>
<td>9</td>
<td>South of N. Towne Road</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>313</td>
<td>3.78</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>313A</td>
<td>1.44</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>314</td>
<td>9.89</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>315</td>
<td>4.51</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>316</td>
<td>10.08</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>317A</td>
<td>8.07</td>
<td>6</td>
<td>Expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>317B</td>
<td>2.02</td>
<td>5</td>
<td>Minor expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>317C</td>
<td>1.65</td>
<td>8</td>
<td>North of Orange Boulevard</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>318A</td>
<td>2.04</td>
<td>0</td>
<td>Minor expansion of existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>318B</td>
<td>2.26</td>
<td>5</td>
<td>East of Monroe Road</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>Existing Pond</td>
<td>1.13</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td>Existing Pond</td>
<td>0.12</td>
<td>-</td>
<td>Existing pond</td>
<td>No archaeological sites or cultural material</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>139.5</strong></td>
<td><strong>135</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 5.22 – Recorded Historic Resources within I-4 Segment 3 APE (Sheet 1 of 5)
Figure 5.23 – Recorded Historic Resources within I-4 Segment 3 APE (Sheet 2 of 5)
Figure 5.24 – Recorded Historic Resources within I-4 Segment 3 APE (Sheet 3 of 5)
Figure 5.25 – Recorded Historic Resources within I-4 Segment 3 APE (Sheet 4 of 5)
Figure 5.26 – Recorded Historic Resources within I-4 Segment 3 APE (Sheet 5 of 5)
One additional resource (Paola Church Cemetery-Resource No. 8SE02326) presents insufficient information to make an eligibility determination, and another (Lake Monroe Bridge-Resource No. 8SE00077) was previously determined eligible but has since been altered. Based on the findings in the current CRAS, the Lake Monroe Bridge still conveys its engineering significance and is still eligible for the NRHP.

In addition to the aforementioned historic resources constructed prior to 1971, the Seminole County Property Appraiser’s records were examined, which indicated that 334 structures are located within the APE that date from 1971 to 1974. Depending on the progression of the project (i.e., depending on how much time elapses between the current study and the eventual design/construction of the project), it may become necessary to inventory and assess these resources.

Detailed evaluation of the cultural resources within the study area, including survey methodology, previously recorded resources and FMSF documentation are provided in the supplementary reports titled *Technical Memorandum: Cultural Resource Assessment Survey of Proposed Improvements to Segment 3: State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 (December 2015)* and *Addendum: Cultural Resource Assessment Survey of Proposed Improvements to Segment 3- Lake Emma Road Access Connection within the I-4 & Lake Mary Boulevard Interchange (May 2017)*, prepared for this project.

**5.7.5 Contamination**

A *Contamination Screening Evaluation Report (July 2016)* has been completed for the I-4 Segment 3 corridor and proposed pond sites to determine the likelihood of petroleum or other hazardous substance impacts to the project. This CSER, completed in accordance with Part 2, Chapter 22 (January 17, 2008 revision) of the PD&E Manual contains results from a physical site investigation of the project corridor, a limited investigation of properties along the corridor adjacent to the ROW as viewed from areas of public access, a review of Florida Department of Environmental Protection (FDEP) files, Seminole County records and available environmental databases.

As part of the CSER, a review of the Florida Department of Environmental Protection (FDEP) Oculus Database was conducted to determine locations of contaminated sites followed by visual inspection of properties adjacent to the corridor and properties within ½ a mile of the roadway. Known contamination sites and properties with potential contamination were identified and assigned a risk rating based on the degree of concern for potential contamination problems. A total of 294 sites or properties within 0.5 mile of the current I-4 right-of-way were identified by searches in the FDEP contamination database or by field inspections. Of these sites, two had a high risk rating, 14 had a medium risk rating and two had a Low/Medium risk rating. The remaining 276 sites identified received a no risk or low risk rating. It is recommended that any excavation, demolition or dewatering activities within or adjacent to any of the identified medium risk sites should require soil
and groundwater testing before construction. The 294 identified sites/properties within 1/2 mile of the existing I-4 right-of-way and the proposed pond sites and their corresponding risk rating are shown on Figure 5.27 through Figure 5.32.

Pond sites were inspected via pedestrian transects and rated for their potential to have contamination. Out of the 31 potential stormwater management facilities (recommended and alternative pond sites), four were given a medium risk rating (Pond 300, FPC 300A, FPC 300B (Alternative) and Swale 313A), two were given a high risk rating (Ponds 307 and 308) and the remaining 25 were given a low risk rating. Three sites were identified as groundwater contamination plumes of ethylene dibromide (EDB) and encompass 33 other listed contamination sites, in addition to pond sites 300 and 300B. Pond Site 300A is located adjacent to a delineated groundwater contamination plume, and all three were given a medium risk rating. In addition to the contamination plume, discarded debris such as labeled and unlabeled bottles and canisters were discovered at the pond site in the southeast quadrant of the interchange at Lake Mary Boulevard, which was also given a medium risk rating. Pond sites 308 and 309 were given high risk ratings based on their location near a listed contamination site and the potential for heavy metal contamination. Swale 313A was given a medium risk rating based on its proximity to three listed sites that are known contamination sites which may not have been cleaned up.

A Level 2 Contamination Impact Assessment Report (February 2015) was prepared for the medium/high risk ponds sites warranting further investigation. The level 2 analysis included soil and groundwater sampling activities to verify the potential presence of chemical contaminants. Based on the results of the Level 2 Assessment, it appears that the soil and groundwater at pond sites 300, 300A, 300B, 307 and 308 have not been impacted at this time and would not require special handling, characterization, and disposal provisions. No further contamination assessments are recommended at these locations. It is recommended that the Florida Department of Environmental Protection be included in the discussions regarding pond sites 307 and 308 due to the nearby contamination plume on the former Siemens facility and Crescent Property. Dewatering activities and stormwater infiltration may impact the nearby groundwater contamination plume.

Based on historic aerials, land use in the area before the construction of I-4 consisted of rural citrus groves, row crop farms, and pasture land. Potential contamination impacts from these activities include additional EDB contamination from the citrus groves, pesticide/herbicide/fertilizer contamination from the farms, and arsenic contamination from potential cattle dips associated with the pastures. However, the existence, exact location, and severity of these potential sources of contamination are mostly unknown.
Figure 5.27 – Potential Contamination Sites (Sheet 1 of 6)
Figure 5.28 – Potential Contamination Sites (Sheet 2 of 6)
Figure 5.29 – Potential Contamination Sites (Sheet 3 of 6)
Figure 5.30 – Potential Contamination Sites (Sheet 4 of 6)
Figure 5.31 – Potential Contamination Sites (Sheet 5 of 6)
Figure 5.32 – Potential Contamination Sites (Sheet 6 of 6)
All bridges and other structures which will require possible demolition or retrofit should be tested for asbestos containing materials, lead-based paint, or any other hazardous materials prior to construction.

Should any parcels containing medical facilities, doctor offices, hospitals, or drug stores be acquired, they should be tested for asbestos, lead-based paint, x-ray equipment, lead-lined walls, chemicals, and pharmaceuticals prior to demolition.

5.7.6 Noise

A Noise Study Report (July 2016) was completed for I-4 Segment 3 based on procedures established in Part 2, Chapter 17 “Noise,” of the FDOT PD&E Manual. The NSR was prepared to document predicted noise levels associated with the I-4 Segment 3 improvements and to determine if noise levels will be likely to increase, if noise-sensitive receivers are (or will be) within the project area and if noise impacts will occur. The noise analysis guidance is based on regulatory material found in 23 Code of Federal Regulations (CFR), Part 772, and titled “Procedures for Abatement of Highway Traffic Noise and Construction Noise” for FDOT noise assessments, regardless of funding. This regulation, pursuant to Rule Chapter 335.17, Florida Statutes (F.S.), is available from the FHWA and FDOT. If future design-year noise levels at noise sensitive sites approach, meet or exceed the Noise Abatement Criteria established by FHWA in 23 CFR 772 or increase 15 dB(A) over existing noise levels as a direct result of the transportation improvement project, noise abatement must be considered. The FHWA’s Traffic Noise Modeling (TNM) Version 2.5 computer program was used to determine if noise abatement was warranted, and if so, considered reasonable and feasible for any noise-sensitive sites.

Fifteen noise sensitive areas (NSA) that have the potential to be impacted by the project were identified within the study corridor as shown in Figure 5.33. One hundred thirty potentially impacted noise-sensitive sites were identified for the study segment, and consist of: single family residences, hotels, multi-family residences, churches, television broadcast studios, medical offices, recreation areas and county trails. The TNM analysis of noise sensitive areas predicted no sites to be impacted within NSA I, NSA J, NSA K, NSA M or NSA N.

The results of the noise barrier analysis indicate that one noise barrier will provide the best noise abatement and meet the requirements as reasonable and feasible. The recommended barriers for the Pine Bay Drive Subdivision within NSA D include either:

- a 12-foot tall, 1,802-foot long ground-mounted barrier (estimated cost $648,709), or
- a 10-foot tall, 1,746-foot long barrier-mounted barrier (estimated cost $523,857)

The barrier analysis also indicated that no reasonable or feasible measures are achievable for the remaining impacted sites within the impacted NSAs.
Figure 5.33 – Noise Sensitive Areas Map
5.7.7 Air Quality

The proposed project was reviewed for air quality impacts consistent with the guidance provided by the FHWA. Seminole County is an area currently designated as being attainment for the following air pollutants: ozone, nitrogen dioxide, particulate matter (2.5 microns in size and 10 microns in size), sulfur dioxide, carbon monoxide and lead.

The project was subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology and traffic. The FDOT’s screening model, CO Florida 2012 (released March 12, 2012) uses the latest United States Environmental Protection Agency (USEPA) – approved software (MOVES 2010a and CAL3QHC2) to produce estimates of one-hour and eight-hour CO at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the one-hour and eight-hour National Ambient Air Quality Standards (NAAQS) for CO that are 35 parts per million (ppm) and 9 parts per million (ppm), respectively.

The roadway intersection forecast to have the highest total approach traffic volume (for both the Build and No-Build scenarios) is the intersection of Lake Mary Boulevard and Lake Emma Road/Primera Boulevard. The Build and No-Build scenarios for the opening year (2020) and the design year (2040) were evaluated (for design hour volumes). Estimates of CO were predicted for the default receptors which are located 10 feet to 150 feet from the edge of the roadway. Based on the results from the screening model, the highest project-related CO one-hour and eight-hour levels are not predicted to meet or exceed the one-hour or eight-hour National Ambient Air Quality Standards (NAAQS) for this pollutant with either the Build or No-Build alternatives. As such, the project “passes” the screening model.

The project is located in an area which is designated attainment for all of the National Ambient Air Quality Standards under the criteria provided in the Clean Air Act. Therefore, the Clean Air Act conformity requirements do not apply to the project. Detailed data and analysis are provided in the supplemental report: Air Quality Analysis Technical Memorandum Segment 3: State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 (July 2016).

5.8 Public Involvement Program

A comprehensive Public Involvement Program (PIP) was initiated as part of this PD&E Study. This program is in compliance with Part 1, Chapter 11 of the FDOT PD&E Manual which details various federal, state and local regulations including Section 339.155, Florida Statutes; Council of Environmental Quality (CEQ) Regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA) and 23 Code of Federal Regulations (CFR) 771. The public involvement program for I-4 Segment 3 included the publication of newsletters, meetings with government agencies, community outreach meetings and an Alternatives Public Workshop. A
project website, www.i4express.com, was also developed to disseminate updated information about the project and allow the public to communicate with the project team and/or provide comments.

**Alternatives Public Workshop**

The Alternatives Public Workshop was held on Thursday, March 20, 2014, from 5:30 p.m. to 7:30 p.m. at Hyatt Place, 1255 S. International Parkway, Lake Mary. An invitational letter was mailed to property owners located within at least 300 feet on either side of the current project corridor and, to public officials, organizations and individuals interested in the project. An advertisement was placed in the Orlando Sentinel (full circulation) and a press release was distributed by FDOT to local media outlets. The Alternatives Public Workshop was held in an open house format with project display boards and an automated presentation which gave an overview of the proposed project, including a summary of the engineering and environmental considerations in development of the proposed alternatives. Forty-three citizens and 15 project team members signed in at the public meeting. Project team attendees included the FDOT Project Manager, staff from FDOT Right-of-Way, Consultant Project Management and Environmental Management Offices and the project consultants. Public comment forms were made available to attendees; three written comments were received during or after the meeting. These comments consisted of one comment in favor of the express lane connection to EE Williamson Boulevard, one comment requesting noise walls and once comment opposed to the express lane connection at EE Williamson Boulevard and opposed to the location of pond 300B.

Several additional meetings were held to discuss the proposed project improvements and PD&E study, as follows.

**Meetings with Seminole County:**

- Meeting with Seminole County staff (Brett Blackadar and Shad Smith) to discuss coordination with County projects along I-4 (June 6, 2013)
- Meeting with Seminole County staff to present proposed alternative improvements prior to Public Workshop (February 13, 2014)
- Meeting with Seminole County staff to discuss the results of the EE Williamson direct connect analysis (July 14, 2014)
- Coordination meeting with Seminole County staff to present recommended alternative concepts along Segment 3 (March 3, 2015)
- Workshop with Seminole County Board of County Commissioners to present interchange concepts, traffic, and schedule (February 9, 2016)
- Workshop and presentation to Seminole County Board of County Commissioners to present updated interchange concepts, Lake Emma direct ramp, and U-turns (January 24, 2017)
Meetings with Florida’s Turnpike Enterprise (FTE):

- FTE Coordination Meeting (May 1, 2015) – Review the proposed I-4/SR 417/Wekiva Parkway interchange.

Other Meetings:

- Attended and presented the potential EE Williamson direct connect concept to the Markham Woods HOA group (May 6, 2014)
- Coordination meeting with Duke Energy staff to discuss potential utility impacts on the I-4 alignments (October 27, 2014)
- Coordination meeting with Florida Gas Transmission staff to discuss potential utility impacts on the I-4 alignments (October 30, 2014)
- Coordination meeting with City of Lake Mary staff to present recommended alternative concepts along Segment 3 (March 20, 2015)

Public Hearing

A formal public hearing was conducted on November 14, 2016 to seek input on the Recommended Alternative. The hearing provided an overview of the Recommended Alternative and impacts, the study schedule and summary of the remaining steps in the study process. The hearing was held at Lake Mary City Hall, 100 North Country Club Road, Lake Mary, FL 32746. The draft environmental and engineering reports were available for public review from September 14, 2016 through November 25, 2016 on the project website (www.i4express.com) and at the Seminole County Public Library, Northwest Branch, located at 580 Greenway Boulevard, Lake Mary, FL 32746.

A half-hour open house preceded the formal portion of the hearing. The public was given the opportunity to ask questions and provide comments to the FDOT representatives in a one-on-one setting. A court reporter was present to receive oral comments from the public, and written comments were also accepted. The Recommended Alternative for the overall I-4 corridor and each interchange was displayed on aerial photography of the study area. A matrix with potential environmental impacts and cost estimates was presented. An audiovisual presentation describing the engineering and environmental components of the Recommended Alternative was given. After the presentation, the public was given an opportunity to offer oral comments to the hearing moderator.

Per Chapter 11 of the PD&E Manual, all property owners within at least 300 feet of either side of the centerline of the Recommended Alternative were notified of the hearing by newsletter. Forty-seven (47) citizens and twenty-one (21) project team members signed in at the public hearing. Project team attendees included the FDOT PD&E and Design Project Managers and staff from FDOT Public Information, Right-of-way and Environmental Management Offices. One public comment form was
received at the hearing. One additional written comment was received via email during the 10-day comment period following the hearing. Four public comments were provided during the oral comment period of the hearing. The public comments from the hearing are summarized as follows:

Written Comments

- A resident of Northridge subdivision expressed concerns about water and air quality and a desire to keep the natural tree buffer around Grace Lake.
- A citizen stated she was pleased to see Pond 300-B is no longer the recommended pond site and the express lane entry/exit ramps accessing I-4 at EE Williamson Road have been removed from the Concept Plans. Additional comments from this citizen included: a request for FDOT to re-evaluate the noise impacts and need for sound barrier near her home, evaluation of an alternative that includes non-tolled express lanes, suggestion that segments of the I-4 BtU not be approved for toll lanes until the I-4 Ultimate section is constructed and the effectiveness of toll lanes in the Orlando area can be proved, and questioning the safety of merging traffic at the slip ramp locations of the express lanes.

Oral Comments

- A resident of Northridge Subdivision requested FDOT look for stormwater alternatives that don’t impact the lake and existing tree buffer between the homes and interstate.
- A resident of Huntington Point Subdivision requested more details regarding the homes impacted by the project (whether they are in this subdivision), and also requested more information on the proposed sound barriers.
- A County Commissioner commented on FDOT’s efforts on this project and asked for details regarding the funding of construction and impacts to businesses as a result of sidestreet improvements. She asked for further discussion between the County and FDOT before getting too far into the plans and asked if the sidestreet improvements can be held off until the Interstate widening is completed. She specifically mentioned the CR 46A at Rinehart Road intersection.
- A County Commissioner questioned access of pedestrians and bicycles crossing I-4 on existing roadways. He also inquired about the scheduling of the I-4 BtU segments, specifically asking how the northern segments will be scheduled.

Oral and written comments from the public were either directly addressed by project team members during the public hearing or through follow-up letter/email responses provided by the FDOT Project Manager. The public involvement documentation for I-4 Segment 3, including official public hearing transcripts and public input comments with responses, are provided in Appendix B of this report.
Post Public Hearing Coordination
No written comments were received during the 10-day post-hearing comment period. The oral comments from the public hearing were either directly addressed by project team members during the public hearing or through follow-up letter/email responses provided by the FDOT Project Manager. The public involvement documentation for I-4 Segment 3, including official public hearing transcripts and public input comments with responses, are provided in Appendix B of this report.

5.9 Value Engineering (VE)
Value Engineering (VE) for the proposed improvements was conducted after the alternatives public workshop meeting in 2014. The VE study was held March 31 to April 4, 2014; the VE team consisted of representatives from the FDOT D5 office in the Traffic Operations, Roadway Design, Right-of-way, Construction, Structures, Geotechnical, Maintenance, Project Management and Drainage departments. The VE team reviewed the preliminary concept plans and made recommendations based on overall value added to the project. The VE team made seventeen recommendations that would result in cost savings or added value to the project. The detailed recommendations are provided in the Value Engineering for Transportation Improvements, Interstate 4 from East of State Road 434 to East of US 17-92, Value Engineering Study Draft Report (March 2014). The VE recommendations from the March 2014 report, and corresponding dispositions from April 2015 are summarized as follows.

a. Recommendation 1: Provide an additional floodplain compensation alternative in Basin 300 as FPC 300-A is impacted by a billboard. Not Accepted. The third floodplain compensation alternative in Basin 300 is FPC 300-C. FPC 300-C is an option that was recommended by the Value Engineering Study due to the impacts to an existing billboard within the FPC 300-A parcel. The potential pond site is located within the floodplain of Lake Grace, just east of Pond 300. After receiving additional topographic survey for the site, it was determined that it is not a feasible option. The existing ground elevation for the majority of the potential site is lower than the floodplain elevation of 67.00 ft NAVD. After this alternative was eliminated, FPC 300-A was reconfigured around the existing billboard as not to impact it.

b. Recommendation 2: Increase the size of the Pond 303-A1 and incorporate the entire lot that is for sale. Not Accepted. This pond site can be shown to take the entire property that is for sale, which would result in a joint use pond or two ponds under FDOT control. This pond alternative (Pond 303-A1) could be the preferred option if the billboard cannot be relocated on the other pond alternative site (Pond 303-B2).

c. Recommendation 3: Make Pond 303-B2 the preferred pond by relocating the billboard within the site. Accepted. Currently, central office is evaluating the billboard on this site for relocation. If the billboard can be relocated on this site, this pond will be the preferred alternative (Pond 303-B2).
d. **Recommendation 4:** Maintain the design variation in the Ultimate section though the entire corridor. *Accepted.* The design variation will be used throughout the section.

e. **Recommendation 5:** Consider concrete express lanes. *Accepted.* The use of concrete pavement will be considered for the construction of the express lanes.

f. **Recommendation 6:** Relocate the sidewalk off of back of curb at the BB&T Bank on Lake Mary Blvd. by purchasing an easement or right-of-way to avoid utility relocations. *Accepted.* Costly utility relocation could be avoided by moving the sidewalk back outside of the right-of-way.

g. **Recommendation 7:** Don't build the 6-ft. sidewalk on the south side of the bridge at EE Williamson Road. *Not Accepted.* The EE Williamson Road Bridge will be replaced and sidewalks will be provided on both sides to maintain consistency with the approaches on each side of the bridge.

h. **Recommendation 8:** Add direct connect ramps to the express lanes at EE Williamson. *Not Accepted.* Coordination with Seminole County occurred, as well as a public meeting to local residents, and this idea was dismissed due to significant opposition. A traffic study was also performed to evaluate the operations, and the results were there was little benefit to the operations of I-4.

i. **Recommendation 9:** Modify the eastbound Lake Mary Blvd. to eastbound I-4 ramp to begin before the interchange signal on the west side of I-4. *Not Accepted.* Concerned that everyone heading for I-4 will have limited room or distance to get to the ramp.

j. **Recommendation 11:** Provide a grade separated intersection at Lake Mary Blvd & Primera Blvd/Lake Emma Rd. *Not Accepted.* A grade separated intersection at this location would cause numerous access issues to the east of the intersection. In the current year and the future design year, traffic does not back up onto the I-4 mainline.

k. **Recommendation 12:** Corridor improvements on Lake Mary Blvd. from the I-4 interchange to Rinehart Rd. *Accepted.* The traffic modelers are looking at what kind of improvements can be made throughout the corridor.

l. **Recommendation 14:** Construct a pedestrian tunnel under ramps and bridge over the mainline on the north side of Lake Mary Blvd. *Not accepted.* It may be possible to tunnel under the ramps, but then the sidewalk would need to get up and over I-4 all while still meeting ADA requirements.
m. Recommendation 17: Eliminate the right turn lane at International Parkway and CR 46A because the outside lane becomes a right turn lane at the intersection. Accepted. The additional right turn lane at International Parkway will be removed.

n. Recommendation 18: Start the second eastbound left to eastbound I-4 after the westbound I-4 on ramp so the shift is under and before the overpass. Accepted. We will revise the amount of turn lane storage and model it to make sure there are no issues.

o. Recommendation 21: Modify the 17-92 Alternative 1 to better accommodate traffic by modifying Alt 1 to taper the US 17-92 SB to I-4 WB to eliminate the hard right and to add a third lane to Monroe Blvd and to add dual rights with stop control. Accepted. The addition of the SB free flow ramp to WB I-4 provide some relief to SB 17/92, and the addition of the third lane and stop control at the intersection of Monroe Rd will add relief to motorist heading WB on 17/92 as head south on Monroe Rd to get to I-4 EB.

p. Recommendation 22: Consider a skewed 4-leg Orange Ave. intersection that eliminates the left turn off of Monroe Road as a straight movement through the skewed intersection. Not accepted. This was modeled to evaluate the operations, and because of the additional leg added to the intersection, at an at-grade railroad crossing, it was determined that there would not be an operational benefit.

q. Recommendation 30: Construct a tight urban diamond interchange at the US 17-92 & I-4 Interchange. Accepted. The US 17-92 interchange will be modified to be a TUDI.

The VE study recommendations and dispositions are an integral part of the engineering design process. As the project proceeds through various phases of preliminary design, the design concepts are modified to reflect all aspects of engineering and environmental analyses. As such, some of the dispositions previously stated may have been modified during design and development of the Concept Plans.

### 5.10 Comparative Evaluation/Recommended Alternative

The proposed improvements follow the existing alignment of I-4 and the typical section for the I-4 BtU corridor will be consistent with the I-4 Ultimate mainline typical section (three general use lanes and two express lanes in each direction for the majority of the Segment 3 corridor). Thus, the alternatives analysis focused on the interchange design.

#### 5.10.1 Evaluation Criteria

Each of the viable alternatives was evaluated based on several criteria, including: right-of-way impacts, natural and physical environment, social impacts, traffic analysis, engineering design considerations and estimated project construction costs. The recommended alternatives were
based on the results of the engineering and environmental analysis and input from the public involvement program. The following provides a description of the evaluation criteria.

Community Impacts/Relocations
Community impacts anticipated from the proposed improvements may include adverse effects on neighborhoods and community cohesion. Potential relocations of residences and businesses that will be directly impacted are identified and quantified.

Environmental Impacts
Environmental impacts include identifying and quantifying, through literature research, field surveys and investigations, the archeological, historical and contamination sites impacted, as well as endangered species impacts. A cultural resources survey was conducted to identify historic sites in the study corridor and archaeological resources within proposed pond locations. The architectural study further assesses historic sites for their potential for listing in the NRHP. The contamination screening evaluation was completed to identify the number, location and risk potential of known or potential hazardous waste sites along the corridor. The endangered species biological assessment was completed to document the potential occurrence of natural habitats and wildlife within the proposed project corridor and recommend actions to avoid and/or minimize impacts to the greatest practicable extend.

Additional environmental impacts include identifying noise sensitive areas, air quality, wetlands and floodplain impacts along the project corridor. The noise study report evaluates future design traffic to determine if noise-sensitive receivers are within the project area, if noise levels are likely to increase and if noise impacts are anticipated to occur. Noise abatement measures are evaluated based on the analysis. Air pollutant quantities are estimated and compared to nationally-established air quality standards to determine impacts from traffic for the project design year. Encroachment into existing wetlands or floodplains may result from the proposed improvements. The wetlands evaluation report identifies existing wetlands and surface water communities based on the USFWS Classification and functionality. Impacts due to the proposed construction and improvements are addressed by the use of mitigation banks and/or other mitigation options that satisfy state and federal requirements. Impacts to the 100-year floodplain from the proposed improvements will be mitigated by floodplain compensation ponds.

Project Costs
Project costs include construction and right-of-way costs. Construction cost estimates include roadway, structures, retaining walls, utility relocation, drainage improvements, maintenance of traffic and engineering design cost. Construction engineering and inspection is assumed to be 12% of total construction cost. Additionally, the project costs include right-of-way costs (to be provided by FDOT) for additional right-of-way necessary for each alternative to accommodate roadway and
interchange improvements and stormwater management. Right-of-way costs also include residential and business relocations.

Public Involvement
A comprehensive public involvement program (PIP), as described in Section 5.8 of this report, including a series of meetings, workshops and other outreach activities was initiated as part of the I-4 BtU PD&E Reevaluation Study. As part of the PIP, an Alternatives Public Workshop was held on January 30, 2014 to present project information, to property owners, public officials, organizations and individuals interested in the project. The workshop was intended to provide details on the proposed design concepts and receive input from the public. Subsequently, a formal public hearing was conducted on November 14, 2016 to seek input on the Recommended Alternative.

5.10.2 Evaluation Matrix
A summary of the estimated impacts resulting from the comparative evaluation of the alternatives considered is provided in Table 5.10. The table illustrates impacts from the proposed improvements to the I-4 mainline for the build alternative and comparatively shows any additional impacts from the various interchange alternative options.

5.10.3 Recommended Alternative
The FDOT District 5 has selected the recommended alternative based on analyses of potential environmental impacts, projected traffic operations, right-of-way acquisitions, estimated project costs, value engineering study and other engineering considerations. The following alternatives were selected as the recommended alternative to be presented at the Public Hearing:

1. I-4 Mainline Build Alternative (Roadway reconstruction to include six general use lanes, two auxiliary lanes and four express lanes) for section of I-4 from the begin project limits to just south of Lake Mary Boulevard,
2. I-4 Mainline Build Alternative (Roadway reconstruction to include six general use lanes and four express lanes) from Lake Mary Boulevard to end project limits,
3. I-4 Mainline Build Alternative with Eastbound and Westbound C-D system between CR 46A and SR 46,
4. EE Williamson Road Alternative 1 (Overpass),
5. Lake Mary Boulevard Alternative 4 (Diverging Diamond Interchange with Lake Emma Road Access Connection),
6. CR 46A Alternative 3 (Diverging Diamond Interchange),
7. SR 417 (Seminole Expressway)/SR 429 (Systems Interchange),
8. SR 46 Alternative 1 (Partial Cloverleaf Interchange), and
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<thead>
<tr>
<th>Summary of Impacts¹</th>
<th>No-Build</th>
<th>I-4 Mainline</th>
<th>Lake Mary Boulevard</th>
<th>CR 46A</th>
<th>SR 45</th>
<th>US 17/92</th>
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<tr>
<td></td>
<td>Alt. 1</td>
<td>Alt. 2</td>
<td>Alt. 3</td>
<td>Alt. 1</td>
<td>Alt. 2</td>
<td>Alt. 3</td>
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<td>0</td>
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<td>6.75 - Surface Waters</td>
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<td>0</td>
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<td>n/a</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>Potential Historic Sites</td>
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<td>0</td>
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<td>0</td>
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<td>Potential Contamination Sites &amp; Risk Rating</td>
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<td>2 - Low</td>
<td>2 - Low</td>
<td>2 - Low</td>
<td>4 - Low</td>
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<tr>
<td></td>
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<td>1 - High</td>
<td>1 - High</td>
<td>1 - High</td>
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</table>

Table 5.10: Alternatives Evaluation Matrix
### Table 5.10: Alternatives Evaluation Matrix

<table>
<thead>
<tr>
<th>Summary of Impacts&lt;sup&gt;1&lt;/sup&gt;</th>
<th>No- Build</th>
<th>I-4 Mainline</th>
<th>Lake Mary Boulevard</th>
<th>CR 46A</th>
<th>SR 46</th>
<th>US 17-92</th>
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<tr>
<td></td>
<td>Alt. 1</td>
<td>Alt. 2</td>
<td>Alt. 3</td>
<td>Alt. 4</td>
<td>Alt. 1</td>
<td>Alt. 2</td>
</tr>
<tr>
<td>Potential Contamination Ponds &amp; Risk Rating</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Pond 300&lt;sup&gt;*, FPC 300-A&lt;sup&gt;4&lt;/sup&gt;, FPC 300-B&lt;sup&gt;4&lt;/sup&gt; &amp; Swale 313A - Med</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>Pond 307&lt;sup&gt;*, 308&lt;sup&gt;- High</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential to Improve Traffic Operations&lt;sup&gt;6&lt;/sup&gt;</td>
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<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bicycle Accommodations - No&lt;sup&gt;7&lt;/sup&gt;</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
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<td>Relocations</td>
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<td>0</td>
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<td>1</td>
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<td>Constructability</td>
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<td>High</td>
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<td>Low</td>
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<td>High</td>
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<td>Bridges Area (SF)</td>
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<td>86,471</td>
<td>52,000</td>
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<td>Construction Cost&lt;sup&gt;4&lt;/sup&gt;</td>
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<td>529 M</td>
<td>531 M</td>
<td>526 M</td>
<td>535 M</td>
<td>547 M</td>
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</tbody>
</table>

Notes:
- Alt. 1 - Designates the recommended alternative.
- This table illustrates impacts from the proposed improvements to I-4 for the build alternative and comparatively shows any additional impacts from the various interchange alternative options.
- Recommended pond sites as determined in the Pond Siteing Report, November 2016.
- APE includes area within existing ROW along I-4, within 330' from proposed ROW and proposed pond footprints plus 100' buffer.
- Within or near Ground Water Contamination Plume.
- Proximity to known Contamination Site #155 which involves heavy metals.
- Traffic operational analyses were not completed for alternatives that were dismissed from further consideration due to geometric/design constraints, operational deficiencies, inter-agency coordination indicating other preferences and/or being cost-prohibitive.
- Existing conditions provide paved shoulders/unmarked bicycle lanes in some locations.
- Construction costs are preliminary as determined by the Engineer’s Estimate included in Appendix D; shown in millions of dollars.
6.0 Design Details of Recommended Alternative

Based on the preceding analysis, a recommended build alternative was identified and selected to meet the purpose and need for the I-4 BtU Segment 3 corridor. The Concept Plans for this project, included in Appendix A, are provided for all of the alternatives evaluated in this report. Design concept details and further analysis of the recommended build alternative are discussed in the following section of the report.

6.1 Typical Section

The proposed typical sections for Segment 3 were previously shown in Figure 1.2. A typical section package for the entire I-4 BtU corridor has been prepared and submitted under separate cover to FDOT. The concept design proposes the addition of two new express lanes in each direction, resulting in a total of ten dedicated lanes for the majority of the I-4 Segment 3 corridor (6 GUL + 4 EL). The section of I-4 from the begin project limits to just south of Lake Mary Boulevard will have three GUL and one auxiliary lane in each direction, resulting in a 12-lane section (6 GUL + 2 Aux + 4 EL) through this portion of the corridor. Common features of the typical sections include:

- a design speed of 70 mph,
- 12-foot wide travel lanes
- 10-foot inside and 12-foot outside shoulders (general use lanes),
- 4-foot inside and 10-foot outside shoulders (express lanes),
- a 2-foot wide barrier wall between the general use and express lanes and
- a minimum 300-foot right-of-way.

6.2 Alignment

Horizontal Alignment: The proposed horizontal alignment of I-4 closely follows the existing I-4 alignment, therefore there are minimal locations where the horizontal alignment will need to be adjusted. There are three locations along Segment 3 where the horizontal curvature will need to be adjusted. A design speed of 70 mph was used to develop the horizontal alignment for the Concept Plans. Specific cross slopes and superelevation transition limits are not provided in the concepts. These will be further developed during the line and grade phase. The Concept Plans are provided in Appendix A.

Vertical Alignment: The proposed improvements require significant vertical alignment modifications for 19 curves within Segment 3, to meet established criteria for the vertical alignment as outlined in Section 4.0 of this report. A vertical alignment for a design speed of 70 mph will be developed during the line and grade phase. A listing of the known vertical curves and their design speeds can be found in Section 2.6.
6.3 Right-of-way Requirements

The proposed improvements to I-4 Segment 3 will follow the existing alignment and will require right-of-way for the roadway mainline improvements, stormwater management facilities and floodplain acquisition of parcels at the I-4 and SR 429 (Wekiva Parkway)/SR 417 interchange are being handled as part of the Wekiva Parkway project. The total anticipated right-of-way impacts involve full or partial acquisition of 49 parcels for a total of approximately 41 acres; some parcels may be impacted by both roadway and stormwater acquisitions. The proposed roadway improvements are anticipated to impact 45 parcels, with approximately 18 acres of right-of-way required, as shown in Table 6.1; the parcels impacted are shown on the Concept Plans included in Appendix A.

<table>
<thead>
<tr>
<th>Parcel ID</th>
<th>Roadway Alternative</th>
<th>Size (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-20-30-300-002G-0000</td>
<td>Mainline</td>
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<tr>
<td>07-20-30-5MK-0000-0020</td>
<td>Mainline</td>
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<td>07-20-30-300-005D-0000</td>
<td>Mainline</td>
<td>0.188</td>
</tr>
<tr>
<td>06-20-30-300-032C-0000</td>
<td>Mainline</td>
<td>0.132</td>
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<td>06-20-30-300-0140-0000</td>
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<td>06-20-30-300-016D-0000</td>
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<td>06-20-30-300-002D-0000</td>
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<td>06-20-30-300-002B-0000</td>
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<td>06-20-30-300-002E-0000</td>
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<td>06-20-30-300-002F-0000</td>
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<td>29-19-30-300-005C-0000</td>
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<td>29-19-30-300-007F-0000</td>
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<td>06-20-30-300-002X-0000</td>
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<td>18-20-30-300-002B-0000</td>
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The right-of-way required for stormwater facilities and floodplain compensation (full or partial acquisition), based on the recommended pond sites as determined in the Pond Siting Report (November 2016), is approximately 23 acres from 11 parcels, as shown in Table 6.2. Parcels impacted by pond right-of-way acquisitions are identified in the Concept Plans in Appendix A. Details on the proposed drainage system for the recommended alternative are provided in Section 6.6 of this report and the supplemental Pond Siting Report (November 2016).

### Table 6.1: Right-of-way Acquisition for Roadway Improvements

<table>
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<tr>
<th>Parcel ID</th>
<th>Roadway Alternative</th>
<th>Size (Acres)</th>
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**Total Right-of-Way Required:** 17.729

### Table 6.2: Right-of-way Acquisition for Stormwater Facilities

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<td>07-20-30-5MK-0000-0020</td>
<td>7.71</td>
</tr>
<tr>
<td>317A</td>
<td>16-19-30-300-002A-0000</td>
<td>3.53</td>
</tr>
<tr>
<td>318A</td>
<td>16-19-30-5AC-0000-0250</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>16-19-30-5AC-0000-025A</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>16-19-30-5AC-0000-0240</td>
<td>2.03</td>
</tr>
<tr>
<td>318B</td>
<td>16-19-30-5AC-0000-0250</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>16-19-30-5AC-0000-025A</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td>16-19-30-5AC-0000-025B</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>16-19-30-5AC-0000-025C</td>
<td>1.60</td>
</tr>
<tr>
<td>FPC 300-A</td>
<td>25-20-29-300-0050-0000</td>
<td>1.14</td>
</tr>
</tbody>
</table>

**Total Right-of-Way Required:** 23.44
6.4 **Relocations**

Right-of-way acquisition for the proposed improvements associated with I-4 Segment 3 involves partial or complete purchase of parcels within the project study area which may result in displacement of residential and non-residential land uses. In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, FDOT will carry out a Right-of-way and Relocation Program in accordance with state statutes and federal regulations. This includes advance notification to property owners of impending acquisitions, fair market value payment for property rights and financial assistance to relocated individuals or businesses.

The recommended alternative for I-4 Segment 3 is anticipated to impact four parcels which are developed/occupied and may require full or partial acquisitions involving potential displacement of existing residences or commercial businesses. The four parcels total approximately five acres in size, with proposed right-of-way acquisition (full or partial) of approximately three acres, as shown in Table 6.3. The remaining impacted parcels that are developed/occupied are expected to be partial acquisitions involving right-of-way takes of approximately 10% or less of the total parcel. Additional information pertaining to the potentially displaced properties, including resources available to facilitate relocation and socio-economic impacts to the surrounding neighborhoods are identified in the Conceptual Stage Relocation Plan - Segment 3: SR 400 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 (Seminole/Volusia County Line) [January 2017], prepared for this project.

<table>
<thead>
<tr>
<th>Parcel ID</th>
<th>Location</th>
<th>Parcel Size (Acres)</th>
<th>Proposed ROW Acquisition (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-20-29-300-0050-0000</td>
<td>1486 Northridge Dr., Longwood, FL 32750</td>
<td>3.37</td>
<td>1.14</td>
</tr>
<tr>
<td>16-19-30-5AC-0000-025A</td>
<td>811 Monroe Rd., Sanford, FL 32771</td>
<td>0.44</td>
<td>0.44</td>
</tr>
<tr>
<td>16-19-30-5AC-0000-0250</td>
<td>805 Monroe Rd., Sanford, FL 32771</td>
<td>0.40</td>
<td>0.40</td>
</tr>
<tr>
<td>18-20-30-510-0000-0050</td>
<td>3700 Lake Emma Rd., Lake Mary, FL 32746</td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td><strong>5.21</strong></td>
<td><strong>2.98</strong></td>
</tr>
</tbody>
</table>

6.5 **Design Exceptions and Variations**

From time to time, it may be necessary to deviate from the standard criteria used in the design process. If deemed necessary, two specific deviations may occur: (1) Design Exception or (2) Design Variation. A Design Exception is required when the design criteria applied falls below the minimums established by AASHTO. A Design Variation is required when design criteria applied falls below FDOT established criteria and the deviation is not covered by the Design Exception. Table 6.4 summarizes the 13 design elements and specifies whether AASHTO or FDOT design criteria are satisfied, or if a design exception/variation is required for the specific design element for the proposed improvements. The proposed improvements will require new construction; therefore, as indicated in Table 6.4, no design exceptions are anticipated. A design variation is anticipated for the median
shoʃer widths in the express lanes and general use lanes. The proposed median shoulder widths for the express lanes and general use lanes are four feet and ten feet, respectively. These shoulder widths are consistent with the minimum required by AASHTO and will not require a design exception.

Table 6.4: Design Exceptions and Variations

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Design Exception &lt; AASHTO</th>
<th>Design Variation &lt; FDOT and &gt; AASHTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Design Speed</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>2. Lane Width</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>3. Shoulder Width</td>
<td>Satisfied</td>
<td>Required</td>
</tr>
<tr>
<td>4. Bridge Width</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>5. Structural Capacity</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>6. Vertical Clearance</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>7. Grade</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>8. Cross Slope</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>9. Superelevation</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>10. Horizontal Alignment</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>11. Vertical Alignment</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>12. Stopping Sight Distance</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
<tr>
<td>13. Horizontal Clearance</td>
<td>Satisfied</td>
<td>Satisfied</td>
</tr>
</tbody>
</table>

Table 6.5 lists additional design elements that are not addressed by AASHTO but require a design variation by FDOT if the standards are not met.

Table 6.5: Additional Design Elements

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Design Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border Width</td>
<td>Required</td>
</tr>
<tr>
<td>Median Width</td>
<td>Satisfied</td>
</tr>
<tr>
<td>Length of Horizontal Curve</td>
<td>Satisfied</td>
</tr>
<tr>
<td>Length of Vertical Curve</td>
<td>Satisfied</td>
</tr>
</tbody>
</table>

A border width of 94 feet for freeways and interchange ramps is required by FDOT. In order to minimize impacts to adjacent properties and reduce right-of-way acquisition costs, a 15-foot border width has been used throughout the project limits. When necessary, standard concrete barrier wall will be placed at the edges of the outside shoulders. This will provide protection for motorists from objects that do not meet clear zone requirements and maintain the appropriate border width. The barrier wall will also be placed on top of any necessary retaining walls to provide protection from any drop offs.
6.6 **Drainage**

This project will make many improvements to the water quality along the roadway corridor. The stormwater runoff from both the new and existing impervious areas will be treated in existing and proposed stormwater facilities. The stormwater runoff will be collected by storm sewer systems and roadside ditches. The water quality treatment and attenuation will be achieved through the expansion and construction of offsite ponds and treatment swales, some of which will require acquisition of additional right-of-way.

The stormwater will be routed to existing and proposed stormwater ponds and treatment swales. There are a total of 22 basins within the project limits. In areas with poor soils and high water table, only wet detention ponds were considered. The ponds were sized based on the assumption that most of the offsite runoff would be drained through separate systems. For a majority of the ponds, the location of where the proposed basins begin and end is the same as the existing condition. The location of the outfall in the proposed condition is the same as the existing. Basins HH to 306 are located within the Wekiva Recharge Protection Basin and the Wekiva River Hydrologic Basin. Basins 316, 317 and 318 outfall to Lake Monroe, which is a nutrient impaired body of water.

The following is a summary of the findings documented in the *Location Hydraulic Report (November 2016)* and the *Pond Siting Report (November 2016)*. These documents contain more detailed information regarding the drainage along the project corridor.

6.6.1 **Proposed Drainage Patterns**

There are nine (9) basins (Basin HH to 306) within the project that ultimately discharge to the Wekiva River Hydrologic Basin. The first two basins have two existing ponds (Ponds HH and II) that do not need to be expanded or regraded. The existing ponds were designed to provide treatment and attenuation for the additional runoff generated by the proposed improvements. Ponds HH and II are located within the FDOT’s existing right-of-way; therefore, no additional right-of-way is required.

Basins 300, 301, 302, 303, 304, 305 and 306 require the existing ponds to be expanded and regraded to provide treatment and attenuation for the additional runoff generated by the proposed improvements. Pond 301, 302, 304, 305 and 306 modifications are within the FDOT’s existing right-of-way or drainage easement; therefore, no additional right-of-way is required. Pond 300 and 303-B2 modifications require additional right-of-way to provide treatment and attenuation for the additional runoff generated by the proposed improvements. The basin limits for Basin 305 and Basin 306 have been modified from the original basin limits to accommodate for the proposed improvements to Lake Mary Boulevard. The location of the pond outfall is maintained in the proposed condition.

There are two basins (Basins 307 to 308) that ultimately discharge to the Lake Emma basin which is land-locked. Basin 307 does not require any modifications to existing Pond 307 to provide treatment
and attenuation for the additional runoff generated by the proposed improvements. Pond 307 is located within the FDOT’s existing right-of-way; therefore, no additional right-of-way is required. Basin 308 limits for the proposed condition will be extended to the north by 1,250 feet and requires the existing pond to be expanded and regraded to provide treatment and attenuation for the additional runoff generated by the proposed improvements. Pond 308 is located within an FDOT drainage easement and the modifications will require additional right-of-way.

Basins 309, 310 and 311 treat runoff from CR 46A and extend to the I-4 and SR 417 interchange. In the proposed condition, Basin 309 will be reduced by 1,250 feet. Basin 309 has two existing ponds (Ponds 309 and 309A) that will be combined into one wet detention pond, Pond 309. The pond modifications are within the FDOT’s existing right-of-way; therefore, no additional right-of-way is required. Basins 310 and 311 have two existing ponds (Ponds 310 & 311) that will be expanded and regraded. The pond modifications are within the FDOT’s existing right-of-way; therefore, no additional right-of-way is required. Basins 309, 310 and 311 are considered land-locked.

There is one basin (Basin 312) that is within the future I-4 and Wekiva Parkway (SR 429) interchange. The basin includes Pond 312 that was constructed for treatment and attenuation. Although Pond 312 was recently constructed and designed to accommodate the current I-4 Ultimate roadway expansion, the proposed improvements to I-4 and the Wekiva Parkway (SR 429) project will impact this pond; therefore, modifications to this pond will be made by others during the design of the Wekiva Parkway (SR 429) project.

Basin 313A treats runoff from the eastbound ramp to SR 46, the ramp to Towne Road, North Oregon Avenue and a small portion of SR 46 from east of I-4. The basin includes a proposed swale (Swale 313A). Swale 313A is proposed within the existing right-of-way and therefore no additional right-of-way is required. Basin 313A discharges to Lockhart-Smith Canal, which is an open basin.

The next three basins (Basins 313-315) begin at SR 46 and continue north along the I-4 corridor. None of the three basins require any modifications to the existing ponds (Pond 313, 314 and 315) to provide treatment and attenuation for the additional runoff generated by the proposed improvements. All three ponds are located within the FDOT’s existing right-of-way; therefore, no additional right-of-way is required. The ponds ultimately discharge to the Lockhart-Smith Canal as in the existing condition.

The final three basins (Basins 316-318), north of SR 46 to the US 17-92 bridge at the St. Johns River, ultimately discharge to Lake Monroe, which is a nutrient impaired water body. Basin 316 does not require any modifications to the existing pond (Pond 316) to provide treatment and attenuation for the additional runoff generated by the proposed improvements. Basin 317 has three existing ponds (Ponds 317A, 317B and 317C); Pond 317A will be expanded (requiring additional right-of-way) and Pond 317C will be reduced and regraded to accommodate the proposed alignment. No modifications
will be necessary for Pond 317B. Pond 317B and 317C are within the FDOT’s existing right-of-way; therefore, no additional right-of-way is required. Basin 318 includes School Street, Monroe Road and Orange Boulevard. Basin 318 requires modifications to an existing pond (Pond 318A) and a new proposed pond (Pond 318B) to provide treatment and attenuation for the additional runoff generated by the proposed improvements.

The Pond Siting Report (November 2016) evaluated the alternatives and identified the recommended pond sites. Table 6.6 lists the recommended pond alternatives and pond construction costs for I-4 Segment 3. The overall drainage maps for the project are shown in Figure 6.1 through Figure 6.4.

Table 6.6: Summary of Recommended Pond and FPC Sites

<table>
<thead>
<tr>
<th>Basin Designation</th>
<th>Recommended Alternative</th>
<th>Total Pond Cost*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH**</td>
<td>Pond HH**</td>
<td>$0.00</td>
</tr>
<tr>
<td>II**</td>
<td>Pond II**</td>
<td>$10,022.10</td>
</tr>
<tr>
<td>300</td>
<td>Pond 300</td>
<td>$3,006,104.38</td>
</tr>
<tr>
<td>301</td>
<td>Pond 301</td>
<td>$147,266.67</td>
</tr>
<tr>
<td>302</td>
<td>Pond 302</td>
<td>$125,013.85</td>
</tr>
<tr>
<td>303</td>
<td>Pond 303-A2 &amp; Pond 303-B2</td>
<td>$3,345,459.00</td>
</tr>
<tr>
<td>304</td>
<td>Pond 304</td>
<td>$83,427.13</td>
</tr>
<tr>
<td>305</td>
<td>Pond 305 &amp; Pond 305A</td>
<td>$487,590.53</td>
</tr>
<tr>
<td>306</td>
<td>Pond 306</td>
<td>$438,650.15</td>
</tr>
<tr>
<td>307</td>
<td>Pond 307</td>
<td>$0.00</td>
</tr>
<tr>
<td>308</td>
<td>Pond 308</td>
<td>$4,077,912.13</td>
</tr>
<tr>
<td>309</td>
<td>Ponds 309</td>
<td>$447,713.40</td>
</tr>
<tr>
<td>310</td>
<td>Pond 310</td>
<td>$11,220.17</td>
</tr>
<tr>
<td>311</td>
<td>Pond 311</td>
<td>$100,238.78</td>
</tr>
<tr>
<td>312</td>
<td>Ponds 312</td>
<td>$0.00</td>
</tr>
<tr>
<td>313</td>
<td>Ponds 313 &amp; 313A</td>
<td>$0.00</td>
</tr>
<tr>
<td>313A</td>
<td>Swale 313A</td>
<td>$94,893.26</td>
</tr>
<tr>
<td>314</td>
<td>Pond 314</td>
<td>$0.00</td>
</tr>
<tr>
<td>315</td>
<td>Pond 315</td>
<td>$0.00</td>
</tr>
<tr>
<td>316</td>
<td>Pond 316</td>
<td>$0.00</td>
</tr>
<tr>
<td>318</td>
<td>Ponds 318A &amp; 318B</td>
<td>$2,061,693.36</td>
</tr>
<tr>
<td>FPC 300</td>
<td>FPC 300-A</td>
<td>$493,518.55</td>
</tr>
</tbody>
</table>

Total: $17,298,663.33

*Total pond cost, as determined in the Pond Siting Report (November 2016), includes stormwater management facility construction costs, costs associated with wetland impacts and parcel acquisition costs.

**Existing basins and corresponding pond sites; SJRWMD Permit No. 4-117-22434-3.
Figure 6.1 – Overall Drainage Map (Sheet 1 of 4)
Figure 6.2 – Overall Drainage Map (Sheet 2 of 4)
Figure 6.3 – Overall Drainage Map (Sheet 3 of 4)
Figure 6.4 – Overall Drainage Map (Sheet 4 of 4)
6.6.2 Proposed Cross Drains

The cross drain located at Milepost 5.471 is located within the 100-year floodplain. Through hydraulic analysis, it was determined that the existing cross drains will not create any adverse impacts; therefore, the cross drains will not require upsizing. The cross drain located at Milepost 5.731 will require a change in slope to function adequately. Table 6.7 depicts the results of the hydraulic analysis; detailed calculations are provided in the supplemental report, Location Hydraulic Report Segment 4: State Road 400 (SR 400)/Interstate 4 (I-4) from East of SR 15-600/US 17-92 (Seminole/Volusia County Line) to ½ Mile East of SR 472 (November 2016), prepared for this project.

Table 6.7: Proposed Cross Drains

<table>
<thead>
<tr>
<th>Milepost</th>
<th>Station</th>
<th>Count</th>
<th>Span (in)</th>
<th>Rise (in)</th>
<th>Type</th>
<th>Length (Ft)</th>
<th>Elevation (Ft NAVD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.471</td>
<td>2120+87</td>
<td>1</td>
<td>48</td>
<td>48</td>
<td>RCP</td>
<td>248</td>
<td>57.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>57.20</td>
</tr>
<tr>
<td>5.731</td>
<td>2134+09</td>
<td>1</td>
<td>54</td>
<td>54</td>
<td>RCP</td>
<td>278</td>
<td>52.93</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>51.47</td>
</tr>
</tbody>
</table>

RCP – Reinforced Concrete Pipe

6.7 Traffic Operational Analysis

Traffic operational analyses of the Recommended Build Alternative (referred to as Modified Build in the current I-4 SAMR Reevaluation) were completed. The operational analyses included Highway Capacity Analysis using Highway Capacity Software (HCS) 2010 for freeway, weave and ramp operations along the Interstate and Synchro software for arterial intersection operations. Additionally, micro simulation analyses were performed using VISSIM software to analyze the I-4 general and special use lanes and the study area intersections. Detailed analyses, including model runs and computer outputs are provided in Appendix I [I-4 Systems Access Management Report Reevaluation North Section - Operational Analysis (August 25, 2016)] of the supplemental report, I-4 Beyond the Ultimate Systems Access Modification Report (SAMR) Re-Evaluation: I-4 Beyond the Ultimate Project North Section – from East of SR 434 to East of SR 472 (March 2017), prepared for this project; the following sections provide a summary of the traffic operations analyses for the recommended alternative.

Basic Freeway Operations

The results of the operational analyses of the basic freeway segments, as shown in Table 6.8, indicated that all segments (general purpose lanes) within I-4 Segment 3 would operate at LOS D or better during both the AM and PM peak hour for the projected 2040 traffic volumes.
### Table 6.8: Basic Freeway Operational Analysis Results – Build 2040

<table>
<thead>
<tr>
<th>Roadway/Segment</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avg Speed (mph)</td>
<td>Density (pc/mi/ln)</td>
</tr>
<tr>
<td><strong>I-4 Basic Freeway Eastbound</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study Terminus</td>
<td>71.2</td>
<td>22.2</td>
</tr>
<tr>
<td>SR 434 Off Ramp</td>
<td>69.5</td>
<td>24.5</td>
</tr>
<tr>
<td>SR 434 On Ramp</td>
<td>66.1</td>
<td>27.0</td>
</tr>
<tr>
<td>On Ramp from EL at Lake Mary Blvd</td>
<td>64.4</td>
<td>29.4</td>
</tr>
<tr>
<td>Lake Mary Blvd Off Ramp</td>
<td>69.0</td>
<td>21.6</td>
</tr>
<tr>
<td>On Ramp from Lake Mary Blvd</td>
<td>69.2</td>
<td>21.1</td>
</tr>
<tr>
<td>Off Ramp to EL North of Lake Mary Blvd</td>
<td>69.5</td>
<td>20.3</td>
</tr>
<tr>
<td>CR 46A Off Ramp</td>
<td>70.0</td>
<td>13.1</td>
</tr>
<tr>
<td>SR 417 Off Ramp</td>
<td>70.0</td>
<td>10.5</td>
</tr>
<tr>
<td>SR 46 Off Ramp</td>
<td>70.0</td>
<td>7.8</td>
</tr>
<tr>
<td>On Ramp from CR 46A</td>
<td>70.0</td>
<td>12.9</td>
</tr>
<tr>
<td>On Ramp from SR 46</td>
<td>70.0</td>
<td>14.2</td>
</tr>
<tr>
<td>On Ramp from SR 46</td>
<td>67.9</td>
<td>19.3</td>
</tr>
<tr>
<td>US 17-92 Off Ramp</td>
<td>68.8</td>
<td>22.1</td>
</tr>
<tr>
<td><strong>I-4 Basic Freeway Westbound</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US 17-92 Off Ramp</td>
<td>65.9</td>
<td>28.9</td>
</tr>
<tr>
<td>On Ramp from US 17-92</td>
<td>67.7</td>
<td>26.8</td>
</tr>
<tr>
<td>SR 46 Off Ramp</td>
<td>73.0</td>
<td>19.6</td>
</tr>
<tr>
<td>SR 417-CR 46A Off Ramp</td>
<td>70.0</td>
<td>14.5</td>
</tr>
<tr>
<td>On Ramp from SR 417</td>
<td>69.7</td>
<td>19.7</td>
</tr>
<tr>
<td>On Ramp from SR 46</td>
<td>67.4</td>
<td>24.8</td>
</tr>
<tr>
<td>On Ramp from CR 46A</td>
<td>65.1</td>
<td>28.4</td>
</tr>
<tr>
<td>On Ramp from EL North of Lake Mary Blvd</td>
<td>64.2</td>
<td>29.8</td>
</tr>
<tr>
<td>Lake Mary Blvd Off Ramp</td>
<td>61.4</td>
<td>33.6</td>
</tr>
<tr>
<td>On Ramp from Lake Mary Blvd</td>
<td>63.3</td>
<td>32.1</td>
</tr>
<tr>
<td>Off Ramp to EL South of Lake Mary Blvd</td>
<td>65.7</td>
<td>27.5</td>
</tr>
<tr>
<td>SR 434 Off Ramp</td>
<td>65.3</td>
<td>28.1</td>
</tr>
<tr>
<td>On Ramp from SR 434 WB</td>
<td>68.6</td>
<td>22.6</td>
</tr>
<tr>
<td>On Ramp from SR 434 EB</td>
<td>66.7</td>
<td>26.1</td>
</tr>
<tr>
<td><strong>I-4 EL Eastbound</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study Terminus</td>
<td>75.0</td>
<td>10.7</td>
</tr>
<tr>
<td>Off Ramp from I-4 South of Lake Mary Blvd</td>
<td>75.0</td>
<td>7.8</td>
</tr>
<tr>
<td>On Ramp from I-4 North of Lake Mary Blvd</td>
<td>75.0</td>
<td>9.2</td>
</tr>
<tr>
<td>SR 417 Off Ramp</td>
<td>75.0</td>
<td>7.1</td>
</tr>
<tr>
<td>On Ramp from SR 417</td>
<td>75.0</td>
<td>10.2</td>
</tr>
<tr>
<td><strong>I-4 EL Westbound</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Ramp from I-4 South of Dirksen Dr</td>
<td>75.0</td>
<td>12.5</td>
</tr>
<tr>
<td>SR 417 Off Ramp</td>
<td>75.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Off Ramp to I-4 North of Lake Mary Blvd</td>
<td>75.0</td>
<td>7.3</td>
</tr>
<tr>
<td>On Ramp from I-4 South of Lake Mary Blvd</td>
<td>75.0</td>
<td>13.2</td>
</tr>
</tbody>
</table>
Intersection Operations
The results of the operational analyses, as shown in Table 6.9, indicated that the majority of study intersections within the project area are projected to operate at LOS D or better during both peak hours for the projected 2040 traffic volumes. Three of the 18 intersections would operate at LOS E during either the AM or PM peak hour.

Table 6.9: Intersection Operational Analysis Results – Build 2040

<table>
<thead>
<tr>
<th>Primary Road</th>
<th>Secondary Road</th>
<th>AM Peak-Hour 2040</th>
<th>PM Peak-Hour 2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Delay (sec)</td>
<td>LOS</td>
</tr>
<tr>
<td>Lake Mary Blvd</td>
<td>International Pkwy</td>
<td>32.7</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>WB Ramps</td>
<td>30.5</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>EB Ramps</td>
<td>24.5</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Lake Emma Rd</td>
<td>43.6</td>
<td>D</td>
</tr>
<tr>
<td>CR 46A</td>
<td>International Pkwy</td>
<td>63.1</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>WB Ramps</td>
<td>26.3</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>EB Ramps</td>
<td>24.1</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Rinehart Rd</td>
<td>59.0</td>
<td>E</td>
</tr>
<tr>
<td>Wekiva Pkwy</td>
<td>WB Ramps</td>
<td>4.5</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>EB Ramps</td>
<td>10.9</td>
<td>B</td>
</tr>
<tr>
<td>SR 46</td>
<td>Oregon St</td>
<td>27.8</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>WB Ramps</td>
<td>27.1</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>EB Ramps</td>
<td>24.0</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Towne Center Blvd</td>
<td>23.0</td>
<td>C</td>
</tr>
<tr>
<td>US 17-92</td>
<td>Orange Blvd</td>
<td>26.6</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>WB Ramps</td>
<td>19.5</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>EB Ramps</td>
<td>51.4</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>Old US 17-92</td>
<td>11.3</td>
<td>B</td>
</tr>
</tbody>
</table>

Intersections operating at LOS E.

6.8 Bridge Analysis
An analysis of the existing bridge conditions and proposed improvements for each bridge structure was conducted as part of this PD&E study. There are 18 existing bridge structures along the I-4 Segment 3 mainline. As part of this study, each bridge was evaluated to determine if widening or replacement of the bridges is required or if the bridge may remain in place. Where practical, widening or retrofitting the existing structure is recommended. However, due to the proposed roadway geometrics and alignment, there are several structures which will require replacement. Based on the bridge analysis, ten new bridge structures are recommended; the proposed improvements are summarized in Table 6.10. Vertical clearance requirements for bridges over CSX rail road are based on minimum vertical clearance to the rail of a future transit corridor.
### Table 6.10: Proposed Bridge Improvements

<table>
<thead>
<tr>
<th>Facility</th>
<th>Bridge No.</th>
<th>Proposed Improvements</th>
<th>Proposed Bridge Width (ft)</th>
<th>Proposed Bridge Length (ft)</th>
<th>Proposed Minimum Vertical Clearance (ft.)</th>
<th>Depth of Structure (ft)</th>
<th>Super-structure Type</th>
<th>No. Spans</th>
<th>Max Span Length</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE Williamson Road Over I-4</td>
<td>770018</td>
<td>Replace</td>
<td>53</td>
<td>270.2</td>
<td>16.5</td>
<td>5</td>
<td>Prestressed Concrete Beam</td>
<td>2</td>
<td>135.8</td>
<td>Bridges 700018 &amp; 774051 to be replaced with a single bridge carrying highway pedestrian traffic.</td>
</tr>
<tr>
<td>EE Williamson Pedestrian Over I-4</td>
<td>774051</td>
<td>Demolish</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Bridges 700018 &amp; 774051 to be replaced with a single bridge carrying highway pedestrian traffic.</td>
</tr>
<tr>
<td>Pedestrian Bridge Over I-4</td>
<td>New Bridge</td>
<td>New Bridge</td>
<td>19</td>
<td>1477</td>
<td>16.5</td>
<td>5</td>
<td>Prestressed Concrete Beam</td>
<td>10</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Lake Mary Blvd EB Over I-4</td>
<td>770040</td>
<td>Replace</td>
<td>161</td>
<td>300</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>2</td>
<td>150</td>
<td>Bridges 770040 &amp; 770039 to be replaced with a single bridge.</td>
</tr>
<tr>
<td>Lake Mary Blvd WB Over I-4</td>
<td>770039</td>
<td>Replace</td>
<td>174.9</td>
<td>334</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>2</td>
<td>167</td>
<td>Bridges 770040 &amp; 770039 to be replaced with a single bridge.</td>
</tr>
<tr>
<td>Lake Emma Rd to I-4 EB Ramp Over I-4 EB Off-Ramp</td>
<td>New Bridge</td>
<td>New Bridge</td>
<td>31</td>
<td>138</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>1</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td>Lake Emma Rd to I-4 WB Ramp Over I-4 EB Off-Ramp</td>
<td>New Bridge</td>
<td>New Bridge</td>
<td>31</td>
<td>180</td>
<td>16.5</td>
<td>6</td>
<td>Steel Girder</td>
<td>1</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>Lake Emma Rd to I-4 WB Over I-4</td>
<td>New Bridge</td>
<td>New Bridge</td>
<td>31</td>
<td>300</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>2</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Pedestrian Bridge Over I-4</td>
<td>774049</td>
<td>Remain</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>CR-46A EB Over I-4</td>
<td>770077</td>
<td>Replace</td>
<td>95</td>
<td>455</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>4</td>
<td>140</td>
<td>Replace single bridge with 2 bridges to accommodate new interchange geometry</td>
</tr>
<tr>
<td>CR-46A WB Over I-4</td>
<td>New Bridge</td>
<td>New Bridge</td>
<td>123</td>
<td>406</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>4</td>
<td>125</td>
<td>Replace single bridge with 2 bridges to accommodate new interchange geometry</td>
</tr>
<tr>
<td>I-4EB GUL Ramp to CR-46 Ramp to</td>
<td>New Bridge</td>
<td>New Bridge</td>
<td>80</td>
<td>700</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>5</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>I-4 WB over SR-417</td>
<td>770008</td>
<td>Remain</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>I-4 EB over SR-417</td>
<td>770910</td>
<td>Remain</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>I-4 EB &amp; WB EL Over SR-417</td>
<td>New Bridge</td>
<td>New Bridge</td>
<td>86</td>
<td>396</td>
<td>16.5</td>
<td>4</td>
<td>Prestressed Concrete Beam</td>
<td>4</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>Facility</td>
<td>Bridge No.</td>
<td>Proposed Improvements</td>
<td>Proposed Bridge Width (ft)</td>
<td>Proposed Bridge Length (ft)</td>
<td>Proposed Minimum Vertical Clearance (ft)</td>
<td>Depth of Structure (ft)</td>
<td>Super-structure Type</td>
<td>No. Span</td>
<td>Max Span Length</td>
<td>Comments</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
<td>-----------------------</td>
<td>---------------------------</td>
<td>---------------------------</td>
<td>----------------------------------------</td>
<td>------------------------</td>
<td>---------------------</td>
<td>---------</td>
<td>----------------</td>
<td>----------</td>
</tr>
<tr>
<td>SR-417 NB Ramp Over I-4 EB GUL to I-4 EB EL</td>
<td>New Bridge</td>
<td>31</td>
<td>744.4</td>
<td>16.5</td>
<td>10</td>
<td>Steel Girder</td>
<td>3</td>
<td>245</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-4 WB Over SR-46</td>
<td>770084</td>
<td>Widen</td>
<td>35</td>
<td>204</td>
<td>16.5</td>
<td>8</td>
<td>Steel Girder</td>
<td>1</td>
<td>204</td>
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</tr>
<tr>
<td>I-4 EB Over SR-46</td>
<td>770085</td>
<td>Widen</td>
<td>45 int. 17 ext.</td>
<td>204</td>
<td>16.5</td>
<td>8</td>
<td>Steel Girder</td>
<td>1</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td>I-4 Over Outfall Ditch</td>
<td>770029</td>
<td>Extend</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>I-4 WB Over Orange Blvd &amp;CSX RR</td>
<td>770086</td>
<td>Widen</td>
<td>43</td>
<td>280</td>
<td>23.5</td>
<td>6</td>
<td>Steel Girder</td>
<td>2</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>I-4 EB Over Orange Blvd &amp;CSX RR</td>
<td>770087</td>
<td>Widen</td>
<td>43</td>
<td>245.5</td>
<td>23.5</td>
<td>6</td>
<td>Steel Girder</td>
<td>2</td>
<td>122.8</td>
<td></td>
</tr>
<tr>
<td>I-4 WB Ramp Over Orange Blvd &amp; CSX RR</td>
<td>770088</td>
<td>Replace</td>
<td>48</td>
<td>415</td>
<td>16.5</td>
<td>5</td>
<td>Prestressed Concrete Beam</td>
<td>4</td>
<td>130</td>
<td>Ramp requires replacement for proposed interchange with US 17-92</td>
</tr>
<tr>
<td>US 17-92 Over I-4</td>
<td>New Bridge</td>
<td>108</td>
<td>1907</td>
<td>16.5</td>
<td>6</td>
<td>Prestressed Concrete Beam</td>
<td>14</td>
<td>160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-4 EB Ramp B1 Over Orange Blvd &amp; CSX RR</td>
<td>770089</td>
<td>Replace</td>
<td>60</td>
<td>290</td>
<td>16.5</td>
<td>5</td>
<td>Prestressed Concrete Beam</td>
<td>2</td>
<td>145</td>
<td>Ramp requires replacement for proposed interchange with US 17-92</td>
</tr>
<tr>
<td>US 17-92 Ramp to I-4 EB GUL</td>
<td>New Bridge</td>
<td>48</td>
<td>434.1</td>
<td>17.5</td>
<td>4.5</td>
<td>Prestressed Concrete Beam</td>
<td>4</td>
<td>121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-4 EB GUL Ramp to US 17-92</td>
<td>New Bridge</td>
<td>60</td>
<td>616</td>
<td>18.5</td>
<td>4.5</td>
<td>Prestressed Concrete Beam</td>
<td>5</td>
<td>123.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US 17-92 Over St. Johns River</td>
<td>770070</td>
<td>Reconstruct Spans 1 through 6</td>
<td>97</td>
<td>722</td>
<td>16.5</td>
<td>7</td>
<td>Prestressed Concrete Beam</td>
<td>5</td>
<td>145</td>
<td>Revise horizontal alignment to accommodate proposed US 17-92 interchange</td>
</tr>
<tr>
<td>I-4 WB Over US-17-92 and St. Johns River</td>
<td>790196</td>
<td>Widen with substructure retrofit</td>
<td>44</td>
<td>2566.3</td>
<td>45</td>
<td>7</td>
<td>Prestressed Concrete Beam</td>
<td>20</td>
<td>142.3</td>
<td></td>
</tr>
<tr>
<td>I-4 EB Over US 17-92 and St. Johns River</td>
<td>790197</td>
<td>Widen with substructure retrofit</td>
<td>44</td>
<td>2566.3</td>
<td>45</td>
<td>7</td>
<td>Prestressed Concrete Beam</td>
<td>20</td>
<td>142.3</td>
<td></td>
</tr>
</tbody>
</table>

Table 6.10: Proposed Bridge Improvements
6.9 Conceptual Signing Plan

A conceptual signing plan for the recommended alternatives was developed for the I-4 BtU improvements. A critical aspect in development of the signing concepts is distinguishing between the general use and special use (express) lanes. This is achieved by employing the designated sign panel colors to distinguish between the two lane facility types. The conceptual signing plan includes static and dynamic message signs (DMS) which show entry/exit access points between the general use and express lanes, as well as vehicle eligibility restrictions and toll pricing amounts. The conceptual signing plan for Segment 3 is provided in Appendix B.

6.10 Lighting

Based on the lighting warrant criteria specified in AASHTO’s Roadway Lighting Design Guide (October 2005) and as determined in the SR 400 (I-4) Project Development and Environment (PD&E) Study Lighting Justification Report – Segments 3 & 4: East of SR 434 to East of SR 472 (June 2014), continuous freeway lighting is recommended along all of Segment 3.

6.11 Utilities

Numerous utility companies have utilities located within the project corridor, as previously identified in Section 2.16 of this report. Utility impacts were carefully evaluated when considering the proposed roadway improvements and stormwater pond locations. The location of overhead utilities, existing power poles and access issues were also evaluated to minimize impacts. However, smaller gas lines and other buried utilities may involve relocation. Most utility companies have the capability to adjust their services without causing major inconveniences to the customers. As a result, mitigation measures, to the maximum extent feasible, will include the following:

- Maintaining utility connections in temporary locations;
- Minimizing the time without service;
- Installing alternative or new service before disconnecting the existing service; and
- Allowing service disruption only during periods of non-usage or minimum usage.

A Utility Impact Assessment (April 2016) report has been prepared and submitted under separate cover. Table 6.11 provides a summary of potential utility impacts associated with the proposed improvements for the recommended alternative in the I-4 Segment 3 corridor. Exact locations of existing utilities will be determined in the final design of the proposed improvements. Coordination with the known utility companies during the final design phase will assist in minimizing relocation adjustments and disruptions of service to the public.
<table>
<thead>
<tr>
<th>Type of Utility</th>
<th>Utility Owner</th>
<th>Type of Facility</th>
<th>Limits</th>
<th>Offset / Side</th>
<th>Beginning Station</th>
<th>End Station</th>
<th>Relocation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>ATT</td>
<td>9-4” PVC Duct Bank</td>
<td>From intersection of I-4 east bound ramp to Lake Mary Blvd east to intersection of Lake Emma Rd &amp; Lake Mary Blvd</td>
<td>South side of road</td>
<td>77+98</td>
<td>88+48</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Communications</td>
<td>CenturyLink</td>
<td>Underground Copper Cable</td>
<td>From 13720-ft to 11030-ft south of Lake Mary, I-4 overpass</td>
<td>East side of road</td>
<td>2132+14</td>
<td>2158+62</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at intersection of I-4 eastbound ramp to CR 46A &amp; CR 46A</td>
<td>East side of intersection</td>
<td>72+32</td>
<td>73+61</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>From intersection of I-4 west bound ramp to CR 46A &amp; CR 46A to intersection of Rinehart Rd &amp; CR 46A</td>
<td>South side of intersection</td>
<td>58+68</td>
<td>79+99</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Communications</td>
<td>TW Telecom</td>
<td>Fiber Optic Cable</td>
<td>Crossing at CR 46A overpass of I-4</td>
<td>South side of overpass</td>
<td>66+90</td>
<td>71+45</td>
<td>Yes, adjust for bridge improvements</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Aerial Electric</td>
<td>From 1500-ft to 5000-ft east of E.E. Williamson Overpass on I-4 Corridor</td>
<td>West side of road</td>
<td>2118+29</td>
<td>2157+66</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Crossing at entrance of 7-11 on Lake Mary Blvd</td>
<td>North side of road</td>
<td>120+10</td>
<td>121+30</td>
<td>Yes, relocation of poles required</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>13 KV Underground Electric</td>
<td>Two lines from Lake Mary Overpass to 2760-ft east of Lake Mary, I-4 Overpass on I-4 Corridor</td>
<td>West side of road</td>
<td>2295+16</td>
<td>2266+33</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Distribution</td>
<td>7.2 KV Underground Electric</td>
<td>From 160-ft east of intersection of International Pkwy &amp; Lake Mary Blvd to 150-ft west of intersection of I-4 westbound ramp to Lake Mary Blvd &amp; Lake Mary Blvd</td>
<td>North side of road</td>
<td>57+27</td>
<td>62+17</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Electricity</td>
<td>Duke Energy Transmission</td>
<td>230 KV Aerial Electric</td>
<td>Diagonal Crossing of I-4 Corridor, from 1560-ft west of to 730-ft east of SR 46, I-4 Underpass</td>
<td>Diagonally across road</td>
<td>2469+34</td>
<td>2490+52</td>
<td>Yes, relocation of poles required</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>13 KV Aerial Electric</td>
<td>Crossing at intersection of International Pkwy &amp; Wekiva Pkwy</td>
<td>East side of intersection</td>
<td>10+94</td>
<td>11+81</td>
<td>Yes, relocation of poles required</td>
</tr>
<tr>
<td>Electricity</td>
<td>Florida Power and Light</td>
<td>115 KV Aerial Electric</td>
<td>Crossing at the intersection of Orange Blvd and Monroe Road</td>
<td>West side of intersection</td>
<td>2564+07</td>
<td>2565+19</td>
<td>Yes, adjust poles to be outside of proposed roadway</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>2” Natural Gas Main</td>
<td>From 190-ft west of intersection of Colonial Center Pkwy &amp; CR 46A to intersection of Rinehart Rd &amp; CR 46A</td>
<td>South side of road</td>
<td>55+70</td>
<td>79+53</td>
<td>Yes, adjust for bridge improvements</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Florida Public Utilities</td>
<td>1.25” Natural Gas Main</td>
<td>From Towne Center Blvd, SR 417 underpass east to 500-ft east of Towne Center Blvd</td>
<td>North side of road</td>
<td>60+63</td>
<td>65+64</td>
<td>Yes, adjust to run parallel to road</td>
</tr>
<tr>
<td>Television</td>
<td>Bright House Networks</td>
<td>Unknown Size Underground CATV</td>
<td>From intersection of Wayside Dr. &amp; SR 46 to intersection of Upsala Rd &amp; SR 46</td>
<td>South side of road</td>
<td>61+96</td>
<td>120+99</td>
<td>Yes, adjust for bridge improvements</td>
</tr>
<tr>
<td>Wastewater/ Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Crossing of I-4 Corridor 2040-ft west of SR 417 underpass</td>
<td>N/A</td>
<td>2403+97</td>
<td>2404+19</td>
<td>Yes, extend across proposed I-4 Corridor</td>
</tr>
<tr>
<td>Wastewater/ Storm Water</td>
<td>Seminole County Utilities</td>
<td>Unknown Size Sanitary Water Main</td>
<td>Two Crossings of I-4 Corridor at Orange Blvd &amp; US 17-92 underpasses</td>
<td>Center/east side of underpass</td>
<td>2564+91</td>
<td>2564+96</td>
<td>Yes, extend across proposed I-4 Corridor</td>
</tr>
<tr>
<td>Water</td>
<td>Lake Mary Utilities</td>
<td>12” Water Main</td>
<td>From 5420-ft west of to 5200-ft west of Lake Mary Blvd, I-4 corridor</td>
<td>East side of road</td>
<td>2211+10</td>
<td>2213+00</td>
<td>Yes, adjust to be parallel to proposed road</td>
</tr>
</tbody>
</table>
6.12 Section 4(f) Lands

In accordance with Section 4(f) of the Department of Transportation (DOT) Act of 1966 [Title 49, USC, Section 1653(f)] amended and codified in Title 49, USC, Section 303, the project was evaluated for potential Section 4(f) resources. Section 4(f) properties include publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places (NRHP). Publicly owned lands have been identified along the project study area corridor, near the end of I-4 Segment 3. The corridor is located in the environmentally sensitive area adjacent to both sides of I-4 near Lake Monroe. However, neither the improvements nor the acquisitions are anticipated to impact publicly owned lands. One park, two trails and three historic resources (either newly or previously recorded) have been identified as Section 4(f) properties within the I-4 Segment 3 corridor study area. No potential NRHP districts were identified due to the lack of concentration of historic structures. Table 6.12 provides a summary of the potential Section 4(f) properties. The project is not anticipated to impact these properties; there will be no change in access, visual impacts, noise, or other from the project.

Table 6.12: Potential Section 4(f) Sites

<table>
<thead>
<tr>
<th>Site/Name</th>
<th>Location</th>
<th>Section 4(f) Property Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Monroe Wayside Park</td>
<td>North side of the existing US 17-92 alignment, west of I-4</td>
<td>Park or Recreational Facility</td>
</tr>
<tr>
<td>Cross Seminole Trail*</td>
<td>Follows an east/west alignment, crossing over I-4 approximately 1/2 mile south of CR 46A; extends east approximately 0.4 mile from the Seminole-Wekiva Trail over I-4, to Rinehart Road.</td>
<td>Park or Recreational Facility</td>
</tr>
<tr>
<td>Seminole-Wekiva Trail*</td>
<td>Follows a north/south alignment west of the Interstate; extends approximately 7.7 miles between the CR 46A &amp; International Parkway and the SR 434 &amp; Markham Woods Road intersections</td>
<td>Park or Recreational Facility</td>
</tr>
<tr>
<td>FMSF No. 8SE00077/8VO07174</td>
<td>Lake Monroe Bridge</td>
<td>NRHP-eligible swing through-truss bridge</td>
</tr>
<tr>
<td>CSX Railroad (Northern segment near Monroe Road and crossing under I-4)</td>
<td></td>
<td>NRHP Eligible</td>
</tr>
<tr>
<td>ACL Railroad Bridge over St. Johns River</td>
<td></td>
<td>NRHP-eligible rolling-lift bascule bridge</td>
</tr>
</tbody>
</table>
6.13 Access Management

Access management is the practice of controlling vehicular access to a roadway in order to increase roadway efficiency and improve travel safety by reducing the number of traffic conflicts encountered by roadway users. The State Highway System Access Management Act (F.S. 335.18) mandates the implementation of access management standards based on the Access Management Classification System developed in Administrative Rule 14-97. Property access impacts were evaluated to determine whether access can be maintained in interchange areas via the local roadway network. Meetings were conducted with some property owners regarding property access.

I-4 has been identified as Access Management Class 1 under this system. Access Class 1 consists of limited access facilities (roadways which do not provide direct property connections).

Lake Mary Boulevard is a County road which has a future classification as a collector roadway west of I-4 and a principal arterial east of I-4. The study area along Lake Mary Boulevard starts at International Parkway and continues east to Lake Emma Road/Primera Boulevard. There are many commercial driveways along both sides of Lake Mary Boulevard, on either side of I-4. The recommended alternative adds an additional dedicated right turn lane from eastbound Lake Mary Boulevard to southbound Lake Emma Road. The recommended alternative also includes a concrete traffic separator between the eastbound dual left turn lanes and the through lanes to prohibit traffic exiting the existing convenience store/gas station from traversing across three through lanes to access the eastbound dual left turn lanes from Lake Mary Boulevard to Primera Boulevard.

CR 46A is a County road which has a future classification as an arterial roadway in the project study area. The study area along CR 46A starts at International Parkway and continues east to Rinehart Road. There are many commercial driveways along both sides of CR 46A, west of I-4. To the east of the interchange, CR 46A forms a major intersection with Rinehart Road, with a cemetery located in the southeast corner of the intersection. The recommended alternative adds an additional through lane in each direction for the entire length of the study area.
SR 46 is currently a Class 3 Access Management roadway between East of River Oaks Circle (MP 0.000) and SR 15-600 (MP 8.929). It is a principal arterial that has many businesses and driveways along the study area between International Parkway and Rinehart Road. The recommended alternative for SR 46 maintains the existing driveways along SR 46 within the right-of-way.

SR 15-600/US 17-92 is currently a Class 3 Access Management roadway between Seminole Boulevard (MP 13.655) and SR 400/I-4 (MP 16.929) and also between SR 400/I-4 (MP 0.00) and the Volusia County Line (MP 0.521). It is a principal arterial that has many businesses and driveways along the study area between Lake Monroe Park Circle and Walnut Crest Run. The recommended alternative for US 17-92 realigns and connects US 17-92 with Monroe Road. The shared driveway/entrance for Southern Pride Business Center and the Kangaroo gas station along Monroe Road will be removed and all access will be provided at the shared driveway on Orange Boulevard. Two residential driveways/properties will be acquired at the northeast corner of Monroe Road and School Street.

6.14 Project Cost Estimates

The total estimated cost of construction including Maintenance of Traffic (MOT) and contingency is $451.2 Million. Estimated Engineering Design-Build and Construction Engineering and Inspection (CEI) costs are expected to be an additional 7% and 8% each, respectively, of the total construction cost. The complete Long Range Estimates (LRE) for Segment 3 are included in Appendix C. The total estimated cost for I-4 Segment 3 is $518.9 Million; Table 6.13 shows the breakdown of estimated project costs for I-4 Segment 3.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRE</td>
<td>$338,864,256</td>
</tr>
<tr>
<td>MOT (10%)</td>
<td>$33,886,426</td>
</tr>
<tr>
<td>Mobilization (10%)</td>
<td>$37,275,068</td>
</tr>
<tr>
<td>Project Unknowns (10%)</td>
<td>$41,002,575</td>
</tr>
<tr>
<td>Project Non-Bid Subtotal</td>
<td>$150,000</td>
</tr>
<tr>
<td><strong>Construction Subtotal</strong></td>
<td><strong>$451,178,325</strong></td>
</tr>
<tr>
<td>Design-Build (7%)</td>
<td>$31,582,483</td>
</tr>
<tr>
<td>CEI (8%)</td>
<td>$36,094,266</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$518,855,074</strong></td>
</tr>
</tbody>
</table>
6.15 Production Schedule

The PD&E re-evaluation for Segment 3 is scheduled to be completed Summer of 2017. The preliminary design began in September 2015. The segment is projected to be procured as a Design-Build project and is funded for right-of-way in FY 2022-FY 2025; however, it is not funded for construction.
7.0 Supplemental Technical Reports

A series of supporting documents including Technical Reports and Memorandums were prepared as part of the PD&E study for this project. Information from these reports was used to evaluate and develop the alternatives and design recommendations in this PER. These documents are listed here for reference.


2. Concept of Operations - SR 400 (I-4) from West of SR 25/US 27 to East of SR 472 [June 2016]


5. Endangered Species Biological Assessment - Segment 3: State Road 400 (SR 400)/Interstate 4 (I-4) from One Mile East of SR 434 to East of SR 15-600/US 17-92 [July 2016]


8. Interstate 4 from 1 Mile East of State Road 434 to Volusia County Line Value Engineering Study Recommendation Dispositions [April 2015]


10. Lighting Justification Report - Segments 3 & 4 East of SR 434 to East of SR 472 [June 2014]


16. **Reversible Express Lanes Evaluation - Segment 3 (1 Mile East of SR 434 to East of US 17-92) in Seminole County and Segment 4 (East of SR 15/600-17-92 to ½ mile East of SR 472) in Volusia County** [November 2014]

17. **SR 400(I-4) Over US 17-92 and St. Johns River Structural Evaluation Study** [September 2014]

18. **St. Johns River Multi-Use Bridge Concept Report - Segments 3 & 4: Seminole & Volusia Counties, Florida** [November 2014]


20. **Technical Memorandum Addendum: Cultural Resource Assessment Survey of Proposed Improvements to Segment 3: Lake Emma Road Access Connection within the I-4 & Lake Mary Boulevard Interchange** [May 2017]


INVESTIGATION/ ENFORCEMENT AREA TYPICAL SECTION

WESTBOUND INVESTIGATION/ ENFORCEMENT AREA DETAILS

EASTBOUND INVESTIGATION/ ENFORCEMENT AREA DETAILS
TYPICAL TOLL EQUIPMENT SITE BETWEEN ROADWAYS

GENERAL USE LANES

LIMITS OF TOLLING PAVEMENT

EXPRESS LANES

LIMITS OF TOLLING PAVEMENT

SEGMENT 3
I-4 PD&E STUDY
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
SEASIDE
FINANCIAL PROJECT ID
Sheet No.

HNTB CORPORATION
1600 CRESCENT EXECUTIVE CT
LAKE MARY, FL 32746
SUITE 400

CERT. OF AUTH. NO. 6500
(407) 805-0355

SUITE 400
610 CRESCENT EXECUTIVE CT
LAKE MARY, FL 32746

FDO T _ GRAY EXISTING .t b l

MO D E L : 1 : 2 0 0 . 0 . 0
S H E E T S I Z E : 1 6 . 5 x 1 0 . 6 (in .)
P L O T S C A L E : C o lo r_ F D O T P D F .p ltcfg

C o m p l e t e s h e d u c t i o n o f
P R I N T D R IV E R :

PEN TABLE:

SUITE 400
610 CRESCENT EXECUTIVE CT
LAKE MARY, FL 32746

FDO T _ GRAY EXISTING .t b l

MO D E L : 1 : 2 0 0 . 0 . 0
S H E E T S I Z E : 1 6 . 5 x 1 0 . 6 (in .)
P L O T S C A L E : C o lo r_ F D O T P D F .p ltcfg

C o m p l e t e s h e d u c t i o n o f
P R I N T D R IV E R :

PEN TABLE:
TYPICAL EMERGENCY ACCESS GATE DETAILS

- EXPRESS LANES
- CONCRETE PAD 121'-0" X 4'-3" (THICKNESS VARIES)
- STEEL BULKHEAD ASSEMBLY
- BARRIER WALL OPENING 120'-0"
- WALL ASSEMBLY
- 42'-0" GATE OPENING (WHEN OPEN)
- STEEL BULKHEAD ASSEMBLY
- WALL ASSEMBLY
- GATE ASSEMBLY
- BARRIER WALL OPENING 120'-0"

GENERAL USE LANES

EXPRESS LANES

- CONCRETE PAD 121'-0" X 4'-3" (THICKNESS VARIES)
- STEEL BULKHEAD ASSEMBLY
- BARRIER WALL OPENING 120'-0"
- WALL ASSEMBLY
- 42'-0" GATE OPENING (WHEN OPEN)
- STEEL BULKHEAD ASSEMBLY
- WALL ASSEMBLY
- GATE ASSEMBLY
- BARRIER WALL OPENING 120'-0"

GENERAL USE LANES
AREA SHADED IN GRAY TO BE CONSTRUCTED AS PART OF THE WEEKIVA PARKWAY PROJECT. FM 240200-4-52-01
EXISTING LA R/W
PROPOSED FDOT R/W
PARCEL LINES
FUTURE EXISTING CONDITION

GENERAL USE LANES
EXPRESSION LANES
EXISTING BRIDGE
PROPOSED BRIDGE
BARRIER WALL
PARCEL NUMBERS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

I-4 PD&E STUDY
LAKE MARY BLVD ALT 2 (2 OF 3)
SEGMENT 3

400
SEMINOLE
432100-1-22-01

HNTB CORPORATION
FL. REGISTRATION NO. 58593
ENGINEER OF RECORD: ROBERT M. DENNEY, P.E.
AREA TAKEN: 45,840 SF
PARCEL ID: 31-19-30-509-0C00-0000

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CR 46A ALT 2 (3 OF 5)
SEGMENT 3

EXISTING LA R/W
PROPOSED LA R/W
PROPOSED L/F R/W
PARCEL LINES
FUTURE EXISTING CONDITION

GENERAL USE LANES
EXPRESS LANES
EXISTING BRIDGE
PROPOSED BRIDGE
BARRIER WALL
PARCEL NUMBERS

I-4 PD&E STUDY
SEMINOLE
432100-1-22-05

HNTB CORPORATION
FL. REGISTRATION NO. 58593
ENGINEER OF RECORD: ROBERT M. DENNEY, P.E.
SEGMENT 3

EXISTING LA R/W
PROPOSED LA R/W
EXISTING R/W
PROPOSED FOOT R/W
PARCEL LINES
FUTURE EXISTING CONDITION

GENERAL USE Lanes
EXPRESSION LINES
EXISTING BRIDGE
PROPOSED BRIDGE
BARRIER WALL
PARCEL NUMBERS

HNTB CORPORATION
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ENGINEER OF RECORD: ROBERT M. DENNEY, P.E.

CR 46A ALT 3 (6 OF 6)
I-4 PD&E STUDY
(RECOMMENDED ALTERNATIVE)

 SuMBlno
 400

COUNTER OF REGISTRATION NO. 5883
FINANCIAL PROJECT NO. 432100-1-22-03

MATCHLINE B SEE SHEET 4
EXISTING R/W LINE
PROPOSED FDOT R/W
PARCEL LINES
FUTURE EXISTING CONDITION

EXISTING LA R/W
PROPOSED LA R/W
PROPOSED FOOT R/W
PARCEL LINES

GENERAL USE LANES
EXPRESS LANES
EXISTING BRIDGE
PROPOSED BRIDGE
BARRIER WALL
PARCEL NUMBERS

LAKE MONROE WAYSIDE PARK

EXISTING R/W LINE

EXIST US 17/92

PROPOSED US 17/92 ALIGNMENT

17/92 RAMP TO I-4 WB
TAKING 171,597 SF
PARCEL ID: 16-19-30-300-002A-0000

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
ENGINEER OF RECORD: ROBERT M. DENNEY, P.E.

HNTB CORPORATION

COUNTY
NO.
SHEET

610 CRESCENT EXECUTIVE CT
LAKE MARY, FL 32746
SUITE 400

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
ENGINEER OF RECORD: ROBERT M. DENNEY, P.E.

HNTB CORPORATION

COUNTY
NO.
SHEET

610 CRESCENT EXECUTIVE CT
LAKE MARY, FL 32746
SUITE 400

1:100
16.5 x 10.6 (in.)
US 17-92-02
MODEL:
SHEET SIZE:
PLOT SCALE:
PEN TABLE:
PRINT DRIVER:

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FDOT_textglow.tbl

11/2/2016
5:01:01 PM

\LKMw00\pmwork3\Jobs\59219 - I4 SAMR\TECHPROD\43210012201\Segment 3\roadway\planrd306-SPUI-ALT-3.dgn
**State of Florida**

**Department of Transportation**

**I-4 PD&E Study**

US 17 / 92 Alt 7 (5 of 6)

Segment 3

**Road No.** 400

**County** Seminole

**Financial Project ID** 432600-1-22-08

**Engineer of Record:** Robert M. Denney, P.E.

**Cert. of Auth. No.** 6500

**FDOT**

**Certification Expires:** May 08, 2000

**Fl. Registration No.** 58593

**Scale:** 1:100

**Sheet Size:** 16.5 x 10.6 (in.)

**Plot Scale:** 1:100

**Pen Table:**

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**FDOT_text-glow.tbl**

**Date:** 11/2/2016

**Time:** 5:06:30 PM

**Editor:** amourad

**Location:** 5:06:30 PM

**Sheet No.:** A-114

**Note:** The map and diagram contain various symbols and annotations related to the I-4 PD&E Study, including existing and proposed roadway conditions, parcel lines, and area taken. The map includes streets such as Orange Blvd., Monroe Rd., SW-22(E), SW-23(W), WL-2B(E), and SW-23(W). It also highlights parcel numbers and areas taken for construction purposes.
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Appendix B - Public Involvement Documentation
NOTICE OF PUBLIC HEARING:

This notice has nothing to do with any rule or rulemaking process.

The Florida Department of Transportation (FDOT), District Five announces a public hearing to which all persons are invited.

DATE:   Monday, November 14, 2016  
TIME:   5:30 p.m. to 7:30 p.m.  
Formal Presentation:  6:00 p.m.  
PLACE:  Lake Mary City Hall, Commission Chambers  
        100 North Country Club Road  
        Lake Mary, FL 32746  

GENERAL SUBJECT MATTER TO BE CONSIDERED:

Financial Project I.D.:  432100-1-22-01  
Design Project ID Number:  242592-4-32-01  
Federal Aid Project No:  0041-227-I  
Project Description:  “I-4 Beyond the Ultimate”, from East of SR 434 to East of US 17/92 in Seminole County  

The Florida Department of Transportation (FDOT) is conducting a public hearing for the “I-4 Beyond the Ultimate” PD&E Study. We will present the recommended design alternative for adding express lanes on the segment of Interstate 4 (I-4) from East of State Road (SR) 434 to East of US 17/92 in Seminole County. This hearing is being conducted to give interested persons an opportunity to express their views concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements.

The hearing will be Monday, November 14, 2016, from 5:30 p.m. to 7:30 p.m. at Lake Mary City Hall, Commission Chambers, located at 100 North Country Club Road, Lake Mary, FL 32746. It will begin as an open house at 5:30 p.m. with a formal presentation at 6:00 p.m., followed by a public comment period. At the conclusion of the presentation, attendees who complete a speaker’s card will be given the opportunity to make an oral statement that will become part of the public hearing record.

Persons wishing to submit written statements, in place of or in addition to oral statements, may do so at the hearing or by sending them to Beata Stys-Palasz, P.E., at 719 South Woodland Boulevard, DeLand, Florida 32720, by phone 386-943-5418, or by email to beata.stys-palasz@dot.state.fl.us. All statements postmarked no later than November 25, 2016 will become a part of the public hearing record.

The draft environmental and engineering reports developed by the Department will be available for public review starting on September 14, 2016 through November 25, 2016 at the Seminole County Public Library, Northwest Branch, located at 580 Green Way Boulevard, Lake Mary, FL 32746. The documents are also available for download on the study website, www.i4express.com, and will be available at the public hearing.

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this hearing is asked to advise the agency at least seven (7) days before the hearing by contacting Ms. Beata Stys-Palasz, PE at 386-943-5418.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. Persons wishing to express their concerns relative to FDOT compliance with Title VI may do so by contacting Jennifer Smith, FDOT District Five Title VI Coordinator by phone at (386) 943-5367, or via email at jennifer.smith2@dot.state.fl.us. Persons who require translation services (free of charge) should contact Ms. Beata Stys-Palasz, PE, at 386-943-5418 at least seven (7) days before the hearing.

A copy of the agenda may be obtained by contacting Ms. Beata Stys-Palasz, P.E., at 386-943-5418 or by email at beata.stys-palasz@dot.state.fl.us.

If you are hearing or speech impaired, please contact the agency using the Florida Relay Services, 1(800) 955-8771 (TDD) or 1(800) 955-8770 (Voice).

FOR MORE INFORMATION, YOU MAY CONTACT: Ms. Beata Stys-Palasz, P.E., FDOT Project Manager, at 386-943-5418 or email beata.stys-palasz@dot.state.fl.us.
Upcoming FDOT Public Hearing I-4 BtU, Segment 3 (rescheduled)

Sirmans, Amy [Amy.Sirmans@dot.state.fl.us]

Florida Department of Transportation

October 20, 2016

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study

From East of State Road (SR) 434 to East of US 17/92
Seminole County
Financial Project ID Number: 432100-1-22-01
Design Project ID Number: 242592-4-32-01
Federal Aid Project Number: 0041-227-I

Dear Government Partner,

On behalf of the Florida Department of Transportation (FDOT), I invite you to attend the rescheduled public hearing for the “I-4 Beyond the Ultimate” PD&E Study. This study focuses on the concept of adding express lanes on Interstate 4 (I-4), from west of US 27 to west of Kirkman Road/State Road (SR) 435 to the west, and from east of SR 434 to east of SR 472 to the east; a distance of approximately 40 miles. At this hearing we will present the recommended design alternative for adding express lanes on the segment of I-4 from East of SR 434 to East of US 17/92 in Seminole County. This hearing is being conducted to give interested persons an opportunity to express their views concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements.

The hearing will be Monday, November 14, 2016, from 5:30 p.m. to 7:30 p.m. at Lake Mary City Hall, Commission Chambers, located at 100 North Country Club Road, Lake Mary, FL 32746. It will begin as an open house at 5:30 p.m. with a formal presentation at 6:00 p.m., followed by a public comment period.

Persons wishing to submit written statements, in place of or in addition to oral statements, may do so at the hearing or by sending them to Beata Stys-Palasz, P.E. at 719 South Woodland Boulevard, DeLand, Florida 32720, by phone 386-943-5418, or by email to beata.stys-palasz@dot.state.fl.us. All statements postmarked no later than November 25, 2016 will become a part of the public hearing record.

The draft environmental and engineering reports developed by the Department will be available for public review from September 14, 2016 through November 25, 2016 at the following locations:

1. The Seminole County Public Library, Northwest Branch, located at 580 Green Way Boulevard, Lake

Sent: Thursday, October 20, 2016 11:27 AM
To: ngillet@seminolecountyfl.gov; bmcmenemy@seminolecountyfl.gov; CAOAdmin@seminolecountyfl.gov; jjrej@seminolecountyfl.gov; tware@seminolecountyfl.gov
bwilliamson@seminolecountyfl.gov; ssmith@seminolecountyfl.gov; twoutchon@seminolecountyfl.gov; jwilliams@longwoodfl.org;
mlongo@longwoodfl.org; ckinther@longwoodfl.org; drenfro@longwoodfl.org; pross@longwoodfl.org; ddowda@longwoodfl.org;
jsova@lakemaryfl.com; cfoster@lakemaryfl.com; bpaster@lakemaryfl.com; dkoury@lakemaryfl.com; jomana@lakemaryfl.com;
snoto@lakemaryfl.com; fcoration@lakemaryfl.com; sbracknell@lakemaryfl.com; Norton.Bonaparte@Sanfordfl.gov; porterc@sanfordfl.gov;
cynthia.porter@sanfordfl.gov; Bilal.Iftikhar@sanfordfl.gov; iftikhab@sanfordfl.gov; Russell.Gibson@sanfordfl.gov; cecil.smith@sanfordfl.gov;
Craig.Radzak@sanfordfl.gov
Cc: Stys-Palasz, Beata [Beata.Stys-Palasz@dot.state.fl.us]; Jarrell, Colleen [Colleen.Jarrell@dot.state.fl.us]
2. The study website - www.i4express.com

Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. Persons wishing to express their concerns relative to FDOT compliance with Title VI may do so by contacting Jennifer Smith, FDOT District Five Title VI Coordinator by phone at 386-943-5367, or via email at jennifer.smith2@dot.state.fl.us.

Persons with disabilities who require special accommodations under the Americans with Disabilities Act or persons who require translation services (free of charge) should contact Beata Stys-Palasz, P.E., by phone at 386-943-5418, or via email at beata.stys-palasz@dot.state.fl.us at least seven (7) days prior to the hearing. If you are hearing or speech impaired, please contact us by using the Florida Relay Service, 1-800-955-8771 (TDD) or 1-800-955-8770 (Voice).

For information pertaining to this project, please contact Beata Stys-Palasz, P.E., FDOT Project Manager, by phone at 386-943-5418, or via email at beata.stys-palasz@dot.state.fl.us.

Sincerely,

Amy Sirmans, P.E.
Project Development Manager
October 20, 2016

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study From East of State Road (SR) 434 to East of US 17/92, Seminole County
Financial Project ID Number: 432100-1-22-01; Design Project ID Number: 242592-4-32-01; Federal Aid Project Number: 0041-227-I

Dear Elected Official,

On behalf of the Florida Department of Transportation (FDOT), I invite you to attend the rescheduled public hearing for the “I-4 Beyond the Ultimate” PD&E Study. This study focuses on the concept of adding express lanes on Interstate 4 (I-4), from west of US 27 to west of Kirkman Road/State Road (SR) 435 to the west, and from east of SR 434 to east of SR 472 to the east; a distance of approximately 40 miles. At this hearing we will present the recommended design alternative for adding express lanes on the segment of I-4 from East of SR 434 to East of US 17/92 in Seminole County. This hearing is being conducted to give interested persons an opportunity to express their views concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements.

The hearing will be Monday, November 14, 2016, from 5:30 p.m. to 7:30 p.m. at Lake Mary City Hall, Commission Chambers, located at 100 North Country Club Road, Lake Mary, FL 32746. It will begin as an open house at 5:30 p.m. with a formal presentation at 6:00 p.m., followed by a public comment period.

Persons wishing to submit written statements, in place of or in addition to oral statements, may do so at the hearing or by sending them to Beata Stys-Palasz, P.E. at 719 South Woodland Boulevard, DeLand, Florida 32720, by phone 386-943-5418, or by email to beata.stys-palasz@dot.state.fl.us. All statements postmarked no later than November 25, 2016 will become a part of the public hearing record.

The draft environmental and engineering reports developed by the Department will be available for public review from September 14, 2016 through November 25, 2016 at the following locations:

1. The Seminole County Public Library, Northwest Branch, located at 580 Green Way Boulevard, Lake Mary, FL 32746
2. The study website - www.i4express.com

Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. Persons wishing to express their concerns relative to FDOT compliance with Title VI may do so by contacting Jennifer Smith, FDOT District Five Title VI Coordinator by phone at 386-943-5367, or via email at jennifer.smith2@dot.state.fl.us.
Persons with disabilities who require special accommodations under the Americans with Disabilities Act or persons who require translation services (free of charge) should contact Beata Stys-Palasz, P.E., by phone at 386-943-5418, or via email at beata.stys-palasz@dot.state.fl.us at least seven (7) days prior to the hearing. If you are hearing or speech impaired, please contact us by using the Florida Relay Service, 1-800-955-8771 (TDD) or 1-800-955-8770 (Voice).
For information pertaining to this project, please contact Beata Stys-Palasz, P.E., FDOT Project Manager, by phone at 386-943-5418, or via email at beata.stys-palasz@dot.state.fl.us.

Sincerely,

Noranne Downs, P.E.
District Five Secretary
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<thead>
<tr>
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Public Hearing: Lake Mary City Hall, 100 North Country Club Road, Lake Mary, FL
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BEYOND I-4 ULTIMATE PD&E REEVALUATION STUDY
FROM EAST OF SR 434 TO EAST OF US 17/92
Monday, November 16, 2016
Open House - 5:30 p.m. Formal Presentation - 6:00 p.m.
FPID: 432100-1-22-01

Name (PLEASE PRINT)
Valerie Clarke - Sen. Simmons Office
Judy Woodward
Ray Walter
Commissioner Brenda Carey
Lynn Terhune
Stacy & Marie Dudley
Joanne Massay
Leo Dixon
Lee Costantini
Roberta Pelicard
Cheryl Flee
Hilda Perez
Harry & Carolyn Jaeger
Marlapha Piny
Marvin C. Williams
Lisa Evans
Tim Jackson
Ande Hickman
Francis DeLuna
Mary Kent

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1209 BAYPOIN CT LONWOOD, FL 32770
1101 1ST STREET Sanford 32771
1130 GREENWOOD BLVD, LAKE MARY, FL 32779
14176 NORTHBRIDGE DR, LONWOOD, FL 32750
4550 PALM CREST LANE, LAKE MARY, FL 32746
12410 STARSTONE DR, LAKE MARY, FL 32746

1573 WINDY BLUFF PL LONWOOD, FL 32750
14302 L RIDGE LANE (NE LONGWOOD & 32752
1634 PINE BAY DR, LK MARY, FL 32746
1215 BEVERLY CT LONWOOD 32750 (NORTHBRIDGE)
1339 GRAY VIEW CT LND 32750
900 BAY CT 10333 TALLAHASSEE, FL 32302
1550 SHADWORTHS CIRCLE, LAKE MARY 32774
1397 S RIDGE LAKE CIRCLE LONGWOOD 32750
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Public Hearing
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Nick Johnson
Quentin (Bob) Beitel
Michael Dinnen

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SPEAKER REQUEST CARD
To be completed prior to making a recorded statement
PUBLIC HEARING – NOVEMBER 14, 2016
I-4 BEYOND THE ULTIMATE PD&E STUDY
FROM EAST OF SR 434 TO EAST OF US 17/92
FPID NO.: 432100-1-22-01

Name: Harry Jaeger
Address: 155 Baypoint Ct.
Longwood FL 32750
City State Zip
Affiliation:

Note: In order to allow all persons the opportunity to speak, please limit your comments to 3 minutes. Public Participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. All verbal or written comments provided become part of the study’s project file. This information may be provided to other individuals who make a public records request.

SPEAKER REQUEST CARD
To be completed prior to making a recorded statement
PUBLIC HEARING – NOVEMBER 14, 2016
I-4 BEYOND THE ULTIMATE PD&E STUDY
FROM EAST OF SR 434 TO EAST OF US 17/92
FPID NO.: 432100-1-22-01

Name: Hugo Gumbs
Address: 446 Palm Crest Lane
Lake Mary FL 32746
City State Zip
Affiliation: Home Owner

Note: In order to allow all persons the opportunity to speak, please limit your comments to 3 minutes. Public Participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. All verbal or written comments provided become part of the study’s project file. This information may be provided to other individuals who make a public records request.

SPEAKER REQUEST CARD
To be completed prior to making a recorded statement
PUBLIC HEARING – NOVEMBER 14, 2016
I-4 BEYOND THE ULTIMATE PD&E STUDY
FROM EAST OF SR 434 TO EAST OF US 17/92
FPID NO.: 432100-1-22-01

Name: Brenda Carey
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Longwood FL 32771
City State Zip
Affiliation: Seminole County Commissioner

Note: In order to allow all persons the opportunity to speak, please limit your comments to 3 minutes. Public Participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. All verbal or written comments provided become part of the study’s project file. This information may be provided to other individuals who make a public records request.

SPEAKER REQUEST CARD
To be completed prior to making a recorded statement
PUBLIC HEARING – NOVEMBER 14, 2016
I-4 BEYOND THE ULTIMATE PD&E STUDY
FROM EAST OF SR 434 TO EAST OF US 17/92
FPID NO.: 432100-1-22-01

Name: Bob Walling
Address: 1st Street
Sanford FL
City State Zip
Affiliation: County Commissioner (Seminole)

Note: In order to allow all persons the opportunity to speak, please limit your comments to 3 minutes. Public Participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. All verbal or written comments provided become part of the study’s project file. This information may be provided to other individuals who make a public records request.
I-4 BEYOND THE ULTIMATE
PD&E REEVALUATION STUDY
SEGMENT 3: FROM EAST OF SR 434 TO EAST OF US 17/92
FDOT PROJECT NUMBER: 432100-1-22-01

PUBLIC HEARING
DATE: \ NOVEMBER 14, 2016
REPORTER: \ KAYLYN REINHOLD
PLACE: \ LAKE MARY CITY HALL
100 NORTH COUNTRY CLUB ROAD
LAKE MARY, FLORIDA 32746
PROCEEDINGS

MS. STYS-PALASZ: Good evening. The Florida Department of Transportation would like to welcome you to the public hearing for the Interstate 4, Beyond the Ultimate Project Development and Environment Study. My name is Beata Stys-Palasz, and I am the project manager for the Department of Transportation for the Beyond the Ultimate, BTU, Project. This project -- this public hearing is relative to Financial Project Number 432100-1-22-01 and Federal Aid Project Number 0041-227-I. The proposed improvement involves widening I-4 from the existing six lanes to ten lanes. It would be three general use lanes and two express lanes in each direction. This public hearing is, specifically, for the section in Seminole County that is east of State Road 434, what is the end of the project Interstate Ultimate, being constructed right now; two, is of US 17/92, particularly, to Lake Monroe Bridge. Here with me tonight is Luis Diaz, the consultant project manager behind you. We have, also, representative of the design field, who is under design. The project manager is Abhay Thorat. We also have a representative from FHWA, Marvin -- thank you. At this time, of course, I have a representative from FDOT, me, Beata Stys-Palasz. We have the design project manager, Catalina Chacon. We have a representative from Right-of-Way who can (coughs) -- I'm sorry -- who can help you if you have any question with relocation or right-of-way acquisition. And at this time, I would like to recognize any state, county or city official -- elected appointed official tonight. Could you please stand up to be recognized? Thank you.

MR. DALLARI: My name is Bob Dallari. Nice to meet you, Seminole County Commissioner.

MS. STYS-PALASZ: Now, we would like to begin the official presentation. Thank you.

(VIDEO)

RECORDING: The State of Florida Department of Transportation, also known as FDOT, would like to welcome you to the public hearing for the Interstate 4, Beyond the Ultimate Project Development and Environment Study. This public hearing is being held relative to FDOT Financial Project ID Number 432100-1-22-01 and Federal Aid Project Number 0041-227-I. This public hearing was advertised consistent with federal and state requirements, and is being conducted consistent with the Americans with Disabilities Act of 1990. Advertisements for
Florida's statutes. NEPA is a United States Environmental Policy Act, or NEPA, of 1969 and state's procedure for complying with the National PD&E process was established by the FDOT as the a planned transportation improvement project. The economic, and environmental impacts associated with Transportation follows to evaluate social, cultural, and environmental effects of the proposed conceptual design, and potential social, economic, and environmental effects of the proposed improvement on the community. There is a court reporter present at this hearing and tonight's proceedings are being recorded. An official transcript of the hearing will be produced. Following this presentation, the floor will be open for public comments. All written material received at this public hearing and at the Florida Department of Transportation office, postmarked no later than November 25, 2016 or through the project website, will become a part of the public record for this hearing. The Project Development and Environment Study, or PD&E, is the second step of the project development process that the Florida Department of Transportation follows to evaluate social, cultural, economic, and environmental impacts associated with a planned transportation improvement project. The PD&E process was established by the FDOT as the state's procedure for complying with the National Environmental Policy Act, or NEPA, of 1969 and Florida's statutes. NEPA is a United States environmental law that requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. This phase involves the preparation of all preliminary engineering and environmental documentation required for study approval and subsequent funding. During a PD&E study, several alternatives are developed to meet the purpose and need for the project. These alternatives are developed with input from the public, local government, and environmental agencies throughout the study process. Keeping the public involved and informed throughout the study is paramount to the success of a PD&E study. This study is a reevaluation of PD&E studies that were previously done 14 to 17 years ago. The section from State Road 435, Kirkman Road, to State Road 434 in Orange and Seminole counties received approval from the Federal Highway Administration and are currently under construction to include the addition of express lanes. The study limits are along Interstate 4 from east of State Road 434 to east of US 17/92. This study proposes to widen the Interstate 4 to ten lanes. This includes six general use lanes and four express lanes. The MetroPlan Orlando Metropolitan Planning Organization works with the Florida Department of Transportation and local governments to fund and implement projects identified through various plans developed by the MPO. It should be noted that the I-4 Beyond the Ultimate segment three, was number two on the MetroPlan Orlando priority list, adopted September 14, 2016. This project segment is identified on the MetroPlan Orlando, 2040 Long Range Transportation Plan. The project is consistent with the MetroPlan Orlando Transportation Improvement Program and the Transportation Element of the Seminole County and City of Stanford Comprehensive Plans. The purpose of this study is to accommodate future traffic needs based on anticipated population and employment growth, and enhance safety and mobility along the study corridor. The original PD&E study included high occupancy vehicle, or HOV, lanes in the median. This reevaluation includes six general use lanes, three in each direction; and four express lanes, two in each direction. The widening of I-4 is proposed to meet the design year 2040 projected traffic volumes. The goal of the project is to maintain acceptable levels of service along the corridor for the design year 2040. Levels of service are measured on an "A" through "F" grading scale with
"A" being the best and "F" failing. Drivers will experience levels of service "E" and "F" under the "Original Build" condition in the design year 2040 along some portions of the corridor. Levels of service can be improved to "D" or better with the express lanes widening improvements of the recommended "build" alternative. Typical sections are detailed cross section depictions of a roadway's principal elements that are standard between certain segment limits and show typical conditions only.

The existing typical section consists of three 12-foot travel lanes in each direction with 12-foot inside and outside shoulders. Guardrail is provided on the inside shoulder of the eastbound lanes. The existing right-of-way varies from 300 to 350 feet.

The following is a summary of meetings and presentations held with local agencies and stakeholders to discuss the study which includes the cities of Sanford and Lake Mary, Seminole County, MetroPlan Orlando, Florida's Turnpike Enterprise, utility companies, St. Johns River Water Management District, and Markham Woods Homeowners Association. A website, www.14express.com, was developed to allow the public to communicate with the study team and provide comments. An alternative public meeting was held on March 20, 2014. 58 members of the public attended this meeting and three written comments were received. Public input from these meetings has factored into the study decision-making process. Today's hearing will provide the public with another opportunity to comment on the proposed improvements under consideration. A "No Build" and "Build" alternative, are being considered as part of this PD&E study. The "No Build" alternative maintains the existing facility, as-is. No improvements are made and there is no congestion relief along the corridor. The "No Build" alternative is also evaluated as a baseline for comparison with the "Build" alternative. We will now discuss the recommended "Build" alternative which proposes to widen Interstate 4 to ten lanes with five lanes in each direction, three general use lanes, and two express lanes. An evaluation matrix comparing the "No Build" alternative with the recommended roadway "Build" alternative is on display here tonight. The proposed typical section consist of two 12-foot wide express lanes with 4-foot inside and 10-foot outside shoulders, and three 12-foot wide general use lanes with 10-foot inside, and 12-foot outside shoulders in each direction. A 2-foot wide barrier wall separates the general use from the express lanes.

The minimum right-of-way width required to accommodate this typical section is 300 feet. The proposed horizontal alignment of I-4 segment three closely follows the existing I-4 alignment. Right-of-way will be required for the roadway mainline improvements, stormwater management facilities, and floodplain compensation sites. The total anticipated right-of-way impacts involved full or partial acquisition of 49 parcels for a total of, approximately, 43 acres. The recommended alternative for the EE Williamson Road overpass proposes a new, single bridge that will carry both vehicular and pedestrian traffic. The proposed bridge will accommodate one 11-foot travel lane in each direction with a 14-foot two-way left turn lane. In addition, 6-foot and 10-foot wide sidewalks are proposed on the south and north side of the road, respectively. The recommended alternative for Lake Mary Boulevard proposes modifying the existing partial cloverleaf interchange to a diverging diamond interchange, also known as a DDI. A DDI is designed so that each direction of traffic is split and crosses over itself. The traffic will temporarily drive on the opposite side of the roadway and cross back over on the other side of the interchange. In order to avoid wrong-way movements through this type of interchange, the opposite directions of the roadway are intersected at an angle that is large enough to appear to the driver as if they are making a through movement and that the other side of the roadway is an intersecting street. A new ramp connection will be provided between I-4 Eastbound and Lake Emma Road. This will provide relief to the congestion intersection of Lake Mary Boulevard and Lake Emma Road. The recommended alternative for County Road 46A proposes a DDI, similar to Lake Mary Boulevard. County Road 46A will also be widened to three through lanes in each direction from International Parkway to the east of Rinehart Road. The recommended alternative for State Road 46 proposes to leave the existing interchange as it is with widening an eastbound State Road 46 for an additional left turn lane from eastbound State Road 46 to eastbound I-4. The existing two-lane eastbound ramp between County Road 46A, State Road 417, and State Road 46 will be modified through the new Wekiva Parkway interchange. The recommended alternative for 17/92, proposes a tight urban approach...
it improves mobility and relieves congestion. An archaeological survey was performed within the existing and proposed right-of-way. The results indicate that there are no archaeological sites or artifact occurrences within the study limits. There are 30 historic resources constructed before 1971 within the study area. Three historic resources are recommended eligible for the national register of historic places. No adverse effects to cultural resources are anticipated. The project was evaluated in accordance with the Executive Order 11990, entitled "Protection of Wetlands." There are, approximately, 11.86 and 6.75 acres of direct and secondary wetland impacts, respectively, associated with the recommended alternative. This project was evaluated for impacts to wildlife and habitat resources, including protected species, in accordance with Title 50 Code of Federal Regulation, Part 402, of the Endangered Species Act of 1973, as amended. It was determined that the project has either a "No effect," or "May affect, but not likely to adversely affect" determination for all federally or state listed species that may be impacted by the project. To avoid and/or minimize impacts to wildlife, FDOT will continue to coordinate with the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission. FDOT will also conduct monitoring and assessment for specific species during the design and the construction phases. The proposed stormwater facilities will be designed to meet the current requirements of the St. Johns River Water Management District. Stormwater treatment will be provided by a combination of dry swales, wet or dry retention ponds, and wet detention ponds located on or off-site. The treatment facilities and locations are on exhibit here this evening, as well as in the documents on display. In accordance with the current FDOT standards for road and bridge construction, all best management practices for erosion control and water quality considerations will be adhered to during the construction phase of the project. Pond siting evaluation criteria were developed to screen the various potential pond sites. Each of the criteria are evaluated for impacts which are then used for comparison, in order to identify overall suitability and select recommended ponds. Design criteria as set forth by the St. Johns River Water Management District and FDOT was used to determine pond sizing. The recommended pond sites for this study are labeled and illustrated on the design concept boards on display. To comply with various executive orders and other federal and state requirements, engineering and environmental information was reviewed and evaluated to determine if there were any substantial impacts to social and economic, cultural, physical, and natural resources that may result from construction of the proposed improvements. The project improvements will have positive socioeconomic impacts on the study area as...
the proposed improvements. 294 potential
contamination sites have been identified. Two sites
are ranked as high risk, 14 as medium risk, two as
low/medium risk, and 276 as no risk or low risk of
potential contamination. And air quality analysis
was performed on the project. The analysis was
carried out using the established FDOT Air Quality
Screening Model. Air quality impacts are not
expected to occur as a result of this project.
Right-of-way acquisition is anticipated for the
recommended alternative for roadway and drainage
improvements. Approximately, 18 acres of additional
right-of-way is anticipated for roadway improvements
and, approximately, 23 acres of additional right-of-
way is anticipated for off-site ponds. In addition,
there is a potential for four residential and/or
business relocations. These anticipated relocations
are displayed on the aerials available at tonight's
hearing. All right-of-way acquisition will be
conducted in accordance with the Federal Uniform
Relocation Assistance and Real Property Acquisition
Act of 1970 and FDOT Real Estate Acquisition
Process. Right-of-way requirements for the project
are on display here tonight. One of the unavoidable
consequences on a project, such as this, is the
necessary relocation of families or businesses. On
this project, we anticipate the relocation of three
families and one business. All right-of-way
acquisition will be conducted in accordance with the
Federal Uniform Relocation Assistance and Real
Property Acquisition Policies Act of 1970, commonly
known as the Uniform Act. If you are required to
make any type of move as a result of the Department
of Transportation project, you can expect to be
treated in a fair and helpful manner, and in
compliance with the Uniform Relocation Assistance
Act. If a move is required, you will be contacted
by an appraiser who will inspect your property. We
encourage you to be present during the inspection
and provide information about the value of your
property. You may also be eligible for relocation
advisory services and payment benefits. If you are
being moved and you are unsatisfied with the
department's determination of your eligibility for
payment or the amount of that payment, you may
appeal that determination. A special word of
cautions -- if you move before you receive
notification of the relocation benefits that you
might be entitled to, your benefits may be
jeopardized. The relocation specialists who are
supervising this program are here tonight. They
will be happy to answer your questions and will also
furnish you with copies of relocation assistant
brochures. The estimated total cost for the
recommended alternative will be, approximately,
$504.4 million. This includes $405 million for
construction and utility relocations, $35.2 million
for right-of-way acquisition for roadway and pond
improvements, and $64.2 million for final design and
construction engineering and inspection. Over the
next several months, FDOT will continue to finalize
the analysis and will seek to approve the documents
and improvements presented here at tonight's public
hearing. Following approval, FDOT will continue
with the design, right-of-way acquisition, and
construction phases. Currently, there is no funding
available for the construction phases. The study is
anticipated to be completed in November 2016.
Design is fully funded for this segment of I-4.
Draft documents for this public hearing were
available for review starting September 14, 2016,
and will remain on display until November 25, 2016,
at the Seminole County Public Library, Northwest
Branch, and also on the study website,
www.I4express.com. These documents are also on
display here tonight. No final decisions will be
made until after we review your comments. You may
provide your comments in several ways. You may
provide an oral statement to the court reporter
present here tonight. Complete a speaker card and
make an oral statement at the microphone during the
public comment period. Complete a common form and
drop it in the comment box provided here at the
hearing or mail your comments to the FDOT project
manager at the address shown on the comment form.
You may e-mail your comments to the FDOT at the
address shown on the comment form or visit the
project website and submit comments electronically.
There is a dedicated page on the website for
comments. All written material received at this
public hearing and at the Florida Department of
Transportation office, postmarked no later than ten
days following the date of this public hearing or
through the project website, will become a part of
the public record for this hearing. This concludes
our presentation. Thank you.

MS. JARRELL: Okay. So as the presentation
indicated, there are several ways for you to make
comments tonight. You can do it with your comment
form and leave it with us. You can e-mail or mail
that comment form in. You can give a verbal
statement up here at the microphone. I need you to
fill out a speaker card if you want to do that. Or
you could speak directly to the court reporter on
the side. So I'll give a few minutes. If anybody
wants a speaker card, I have one. If anybody else
wants to come up and give a public statement, you're
welcome to do so. Just let me know, and I'll give
you a speaker card. All right. We'll go ahead and
get started. The first card I have is from Mr.
Jaeger. Do you want to come up to the microphone
and you can --
MR. JAEGGER: Do I speak to the --
MS. JARRELL: You can come to this one, if you
would like.
MR. JAEGGER: Okay. My name is Harry Jaeger and
I live at North Ridge Subdivision in Longwood. And
we --
UNIDENTIFIED SPEAKER: We can't hear you. We
can't hear you back here. I'm sorry.
MR. JAEGGER: I live in Northridge Subdivision
in Longwood. And we're unfortunate enough to share
about 200 or 300 yards of fence line with the
interstate. And the reason I'm speaking is because
there's apparently a plan for FDOT to purchase land
that is part of the lake that we have as part of our
subdivision, and turn that piece of land into a
retention pond, and I'm -- it really upsets us. And
I'd like to just say that about 20 years ago, when
the last widening took place, we worked with FDOT to
minimize the amount of green buffer area that was
taken down, and they put in some long narrow ponds.
And about now, about 20 years later, we finally have
these nice trees to keep us from staring at the road
bed. And according to what shown as one of the
alternative plans for a new retention pond, right in
the lake itself, is the acquisition of land in that
lake and to turn it into a retention pond, which I'm
sure would mean the destruction of whatever
greenbelt we have there now. And I strongly urge
FDOT to look for alternatives so that they can find
other places to put the stormwater, other than
building up part of our lake and destroying what we
have; what little we have left, really, to keep us
from having the roadway rights in our faces. Thank
you.
MS. JARRELL: Thank you, Mr. Jaeger. The next
person I have is Mr. Gumbs.
MR. GUMBS: Good evening. Thank you for the
opportunity. My name is Hugo Gumbs and I reside in
Huntington Point Subdivision. And I have three of
my -- three or four of my neighbors here with me.
We live in a very nice subdivision area and we are
cconcerned now. The two questions I have is, as
indicated on the presentation, that there will be
three homes that are going to be affected. And I
would like to know, certain of you, that the three
homes -- are they going to be on Pine Bay? Is it
our subdivision that is going to be affected by
these three homes? And also, the 12-foot wall -- if
someone could address the concerns of how that wall
is going to be. Is that going to be parallel to --
to the I-4 at this current time? And how far into
the -- the present home's alignment, the barrier --
will that barrier be? Thank you.
MS. JARRELL: Thank you. And then we have
Commissioner Carey.
MS. CAREY: Thank you. I'm County Commissioner
Brenda Carey; 1011 East 1st Street,
Sanford, Florida. You know, we've been
talking about this for a while. And I know we've made a
lot of changes, and DOT has worked hard to try to deal
with some of the more complicated areas of this,
particularly, the 46A interchange and Rinehart Road. We
are still a little concerned about what's being
proposed. And my first question is: Other than the
PD&E that's going on right now, where are you at in the
funding for this? Because with the changes that are
happening right now, I'm not sure this will ever be
funded. And then, you know, how is this going to,
again, the impact some of our residents? And
particularly at the intersections, we've got a number of
businesses that are going to be completely impacted by
their legal access -- that the Board County Commission
has granted them as their legal access. And so, just
got -- still got some concerns. And I would still like
to have some further discussion from DOT with the County
regarding this before you get too far into the plans. I
know I asked some of the technicians to look at lights
with flashing left turns lanes. Does that clear the
intersections? Does that help us put this off for
awhile so we can maybe wait and see how the expansion
goes before we jump in to doing all the side roads and
the access? I know that the City of Lake Mary has asked
you to look at taking the 46A and Rinehart Road project
forward quicker. And again, I have some serious
concerns about those Texas U-turns. Thank you.
MS. JARRELL: Thank you, Commissioner. We have
Commissioner Bob Dallari.
MR. DALLARI: Thank you. For the record, my
name is Bob Dallari, County Commissioner in Seminole County. My office is in Sanford. For the past year-and-a-half, almost two years, both in MetroPlan and Board of County Commissioners meeting, I've asked the same basic questions I'm asking here tonight. I'd like to better understand cross access when it comes to pedestrians crossing I-4 on existing roads. I've not yet heard anything. I'd also like to better understand that with bicyclist. I've not heard anything yet. I'd also like to understand how emergency management vehicles access I-4, as well as the limited access through lanes. These are the same questions I've been asking the past year-and-a-half to two years. You-all know where my office is. I'm available for meetings. I'd just like to better understand this. I'd also like to understand because you also have segments -- what is it? Hold on a minute. Two, one, and five -- two, one, and five. I believe, two, one, and five is going to be scheduled first before the northern section. I'd like to know how all of this is going to be scheduled. And look forward to hearing your comments. And I'll be addressing it again tomorrow on the Board of County Commissioners meeting.

**MS. JARRELL:** Thank you. Do we have anyone else who wants to make a public statement for the record, here tonight? Okay. Seeing none, we'll close this portion of the public hearing. We've got plenty of project teams, both from the PD&E side and the design team. If anybody has additional questions to take up at the display boards, we'll be here for awhile to address any questions. Thank you.

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My name is Judy M. Woodward and I am the property owner (for 30 years) of Mandarin Lot 31, Section 1, address being 1218 Sunshine Tree Blvd., Longwood, Fl. 32779. My comments are regarding:

1. Disposition of FPC Pond 300-B (currently listed as the “second alternative” flood plain compensation pond for Basin 300)
2. Disposition of entry/exit ramps to/from I-4 at EE Williamson Rd.
3. Need for sight/sound barriers
4. Proposed tolls on the new I-4 express lanes
5. “Proving” the effectiveness of the new “express lane tolls”
6. Slip Ramps: Location, Safety, and Congestion

1. Disposition of FPC Pond 300-B (currently listed as the “second alternative” flood plain compensation pond for Basin 300)

First I want to state that I am extremely pleased to see that FPC Pond 300-A is now the currently recommended alternative for the Basin 300 pond.

However, I feel that it is important to once again reinforce the fact that I am strongly opposed to the establishment of a pond on site 300-B which would lie east, to the rear, and adjacent to my property, along with the properties at 1216 and 1214 Sunshine Tree Blvd. It would mean the removal of those beautiful trees that buffer the view of I-4 from the backside of our homes. This would be devastating to the ambience, privacy, and values of our properties.

Let me once again reinforce my reasons for opposing a pond on site 300-B:

1. We would lose our natural treed barrier between our homes and I-4 significantly increasing traffic visibility and the perception of noise for the effected residents.

2. The unsightliness of 10 lanes of traffic roaring up and down I-4 would significantly impact the aesthetic rural setting of this section of Mandarin and negatively impact our property values and the attractiveness of our area.

3. This natural area (although it may seem small in the grand scheme of things) has been and continues to be habitat to many of nature’s creatures: bear, deer, fox, squirrel, armadillo, opossum, raccoon, hawks, and many varieties of song birds, which add to the ambiance of the area.

4. The pond could cause significant problems with insects, snakes, algae, bacteria, and possible smells which could come from standing stagnant water, all of which would be highly undesirable to homeowners.

5. Concern that depending on how the land would be excavated for this pond, there could be negative impacts on the drainage already established within Mandarin which could affect the properties in close proximity to the pond.

6. Concern about possible overflow or spillage from the pond directly effecting adjoining properties.

7. Even though the pond would most likely be enclosed by fence, there is always concern for the safety of children near residential pond areas.
2. Disposition of Entry/Exit Ramps to/from I-4 at EE Williamson Rd.

First I want to state that I am extremely pleased to see that this alternative has been removed from the project plans.

However, I feel that it is important to once again reinforce the fact I am strongly opposed to the addition of entry/exit ramps to/from I-4 at EE Williamson Rd.

Let me once again reinforce my reasons for opposing the entry/exit ramps to/from I-4 at EE Williamson Rd:

1. There would be significant impact on the quiet rural setting of this area.
2. This would create unbearable traffic volume and congestion (especially during rush hours) on EE Williamson Rd.
3. The close proximity of the Woodlands Elementary school to increased traffic.
4. The close proximity of the Seminole Wekiva Trail (which crosses EE Williamson Rd. very near to I-4) to increased traffic.
5. Increased difficulty (especially during rush hours) when attempting to enter into or exit from the Mandarin sub-division at the EE Williamson Rd. entrance.

3. Need for sight/sound barriers

With this expansion going from 6 lanes of traffic to 10, there will be a significant increase in noise, and the traffic lanes will be moved closer to residential areas along this stretch of I-4, which will significantly impact the quality of life of many homeowners along the route, many of them being in my subdivision, Mandarin.

I have already had a discussion with 2 sound experts from Stantec regarding this issue. I do now understand all of the factors that play into the decision on whether or not sound barriers are “feasible”, regardless of whether or not they are “recommended”. I understand that they were “recommended for Mandarin”, however, they are not “cost effective” due to the low density of our homes (being on acre plus lots), and therefore are not currently in the plan. And I understand that the “rules” and “constraints” for “cost” are set by the state, and that those constraints govern the entire state and all FDOT projects within the state.

However, I still feel strongly compelled to voice my opinion regarding “the need” for sight/sound barriers for Mandarin, and many other homes along this section of I-4:

1. Whether residents live in high density mobile home communities or low density rural communities, the effect of “highway noise” is the same on their “hearing” and their “quality of life”.
2. Everyone has the right to be able to enjoy their home and enjoy being outside their home without experiencing unbearable noise.
3. Everyone has the right to be free from worry about whether long term exposure to the noise will adversely affect their hearing and their quality of life.
4. When I-4 was expanded from 4 lanes to 6 lanes back in the late 1990’s, sight/sound barriers were denied for the same reasons, and as such we have been exposed to increased noise levels since that time.
5. I am making a plea to the FDOT to re-visit these restrictions with the governing state entities that set these rules, to see if any changes or exceptions are possible.
4. Proposed Tolls for the new I-4 express lanes

I understand that “toll lanes” have already been approved for the first phase of the I-4 Ultimate expansion from Kirkman Rd. to SR 434. I also realize that these projects are not “funded” by the government, and as such the “tolls” are supposed to “pay for the projects”. However, I feel that it is important once again to reiterate my opinion regarding “toll lanes” in general in the Orlando area, with the hope that it may still have some small impact on this additional I-4 segment and/or future toll road considerations in the Orlando area.

I do not feel that having tolls on every possible I-4 alternative is the right thing to do.

We have the 417 that can get vehicles from Sanford to the west side of Disney…..but it is a toll road, which deters many motorists from using it.

We have the 429 which currently can be accessed via Maitland Blvd. (414) and can get vehicles from the Maitland exit to the west side of Disney….but they are both toll roads, which again deters many motorists from using them.

And construction is underway for the Wekiva Parkway to allow access to the 429 in Sanford to get vehicles to the west side of Disney….but guess what….more tolls.

Now we are proposing 4 new express lanes on I-4, and what are we doing? We want to make them toll lanes, guess what that will do….deter many motorists from using them.

I am a simple person, one in a million, but I have driven the Orlando thoroughfares regularly, and I know what the congestion is all about. I have also driven beltways around Atlanta, Jacksonville, Richmond, Washington, and Baltimore….and experienced express lanes on I-81 in Pennsylvania…and not one of them has a toll (at least not at the time I drove on them, which for some is in the last 6 months), imagine that. It seems to me that if our existing alternatives were not toll roads, we might not have to keep spending more money on additional “toll” alternatives, seems like a vicious cycle to me. I for one would be thrilled to use our beltways if they were NOT toll roads, but currently I avoid them, and I do not think I am alone.

How is it that other cities/states seem to be able to build roads and not assess “tolls”? How do they get the funding they need? Could it be poor planning over the years that has put us into this vicious cycle? I wish I had the answer, but I do not. It seems that the persons with the training to plan and manage our highways could find a better way?

The comment was made to me at the FDOT meeting on March 20, 2014 that our alternatives to I-4, the 417 and 429, do not have any “easy access” to downtown. I guess I would have to agree with that. Did anyone ever consider improving this access as an option, then lifting the “tolls” from our alternatives and see what happened? Are these “tolls” still needed to pay for loans used to build those alternatives in the first place…I do not know the answer to that? The only major highway alternative access from our beltways to I-4, the 408 and the 528 are also toll roads, we are already inundated with toll roads.

Based on my own travels, and my being a part of “through traffic” in several major cities, and having the choice of using “non-toll” beltways as an alternative, the beltways have been my choice even though the “miles traveled” on those beltways is greater than traveling directly through the city. I firmly believe that if the 417 and the 429 were not toll roads, that a much larger percentage of Orlando “through traffic” would use those alternatives, and thus relieve traffic and congestion through the city.

And if the tolls on the new I-4 express lanes will require a “sun pass like” transponder (no cash), how can we expect that “through traffic” vehicles from outside the area will be able to use them?

If what we are looking to do is alleviate the traffic congestion on I-4, it does not seem to me that more “toll lanes” are the answer.
5. “Proving” the effectiveness of new “express lane tolls”

I would also like to reiterate my opinion regarding “proving” the effectiveness of the “toll lane concept” in “reducing I-4 traffic congestion” along the Kirkman Rd to 434 stretch of I-4 before it is carried forward into any additional stretches of I-4.

I feel that the “already approved” I-4 Ultimate project from Kirkman Rd. to SR 434 should be completed and the concept evaluated and proven for Orlando before this I-4 “toll” concept is taken any further.

I feel that the Beyond I-4 Ultimate segment 3 from east of SR 434 to US 17/92 should not be approved or implemented until it is a “proven concept” for the Orlando area, meaning that these “express toll lanes” achieve their intended goal of reducing congestion and improving throughput on I-4 through downtown.

This will only be a success if public acceptance and widespread use of these toll lanes is proven. The Orlando area already has enough toll roads that are not widely used. The cost, economic impact, and environmental impact for this project are staggering. We need a traffic solution, but it must be a proven solution that will work here in the greater Orlando area.

I was told at the FDOT meeting back in 2014 that this “toll” lane concept is in place in Miami, and was given an example of the “toll” cost being $9.00 to go 10 miles during peak hours. If a commuter needed to pay that in two directions 5 days a week, that would cost $90.00 a week, $4,680.00 a year, tell me how many commuters want to pay that kind of fee? It may work in Miami, but Orlando is not Miami, and I am not convinced that will work here.

6. Slip Ramps: Location, Safety, and Congestion

I have reviewed the Segment 3 display board posted on the website, and it appears that there will be 2 “slip ramps” along the stretch of I-4 west of Lake Mary Blvd. to state road 434, one entering the express lanes west bound, and one exiting the express lanes east bound.

I can see other “slip ramps” between Lake Mary Blvd. and 17/92. There appear to be 2 allowing access to and from the express lanes just east of Lake Mary Blvd. and 2 allowing access to and from the express lanes at the Wekiva Parkway.

I have given much thought to the impact of the “slip ramps” that will merge traffic from the “express lanes” directly back into the “general use lanes” of I-4, particularly since this will be merging back into the “fastest moving” general use lanes. Using the east bound “slip ramp” that is just west of Lake Mary Blvd. as an example, I have concerns about the “congestion” that will be created by that merge of traffic directly back into the general use lanes from the express lanes, due to the volume of traffic that uses the Lake Mary exit. In today’s world, traffic has ample time to move to the correct right hand lanes for exiting at Lake Mary. Now there is a potential for a large volume of traffic to exit the express lanes via the “slip ramps” thus having to get themselves over to the right hand lanes for exiting at Lake Mary. It seems to me that we may possibly reduce a little congestion in some areas, and create nasty bottlenecks in other areas.

Historically from my experience, “merging traffic” always causes congestion.

Is it believed that this will not be an issue?

Leaves me wondering how much this will increase the risk of collisions?
Hello Colleen,

Please find attached my comments for the meeting last night.

I know it sounds like the design phase tries to stay as close to your recommendations as possible, but I still felt compelled in my comments to "reinforce" my reasons that I had before, and state the fact that I am "very pleased" that the pond 300-B that was to be by my house is no longer the "recommended" site, and the entry/exit ramps at EE Williamson were removed from the plan.

I did feel for that one man who got up and spoke, said he had 5 other neighbors with him, talking about a pond by the Northridge subdivision (just east of us) and losing their buffer of trees, etc. I wondered if they spoke out back 2 years ago? I wonder if that is pond 304 they are talking about...it is the only one I see by Northridge? If so, I don't see any alternative for it. I fear it may be too late in the game for them, but I do hope someone will at least look into it and respond to him. It really hit home with me and my pond issue.

I was talking to a young man last night just before I left, sorry I cannot remember what his name was, and we got talking about the tolls. I had thought I understood that the tolls would change based on peak "hours" (like from 5:00 to 6:00 for instance), but he seemed to think it changes based on "actual traffic flow" somehow? Is there someone who can explain to me exactly how the "variable" tolls will be controlled, and an idea of what they expect them to be? Is there any document out there that talks about that? I just feel that the "toll aspect" of this has really been downplayed somehow, if I had not gotten into a discussion about it with Beata at the 2014 meeting, I surely would not know much about it. I sure would like to know exactly how it is going to work.

Maybe I need to ask these questions of the design team....but thought I would throw them at you first.....

- Do you know when this project will be presented for "final approval" by the Federal Highway Administration?

- Do you know if there will be a public meeting in the future for the design phase?

- Do you have any idea how long the design phase is expected to last?

I want to thank you so much for introducing me to the design people last night. And thank you so much for being so helpful and patiently working with me over these past 2 years. I always
felt I could get with you about any issue I had and knew you would help me get to the right place. I hope I will not need to bother you beyond this point, but so appreciate your offering to continue to direct me if necessary. Hopefully I will see an additional group of documents appear on the website from the "design phase" that I can reference to keep track of progress.

It has been a pleasure working with you!
Take care!
Judy Woodward
407-682-5602

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**Police Urge Americans to Carry This With Them at All Times**
Smart Trends
http://thirdpartyoffers.netzero.net/TGL3232/582b39a9e0d4739a95b8fsl02vuc
February 3, 2017

Ms. Judy Woodward
1218 Sunshine Tree Boulevard
Longwood, FL 32779

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study
From East of State Road (SR) 434 to East of US 17/92
Seminole County
Financial Project ID Number: 432100-1-22-01
Design Project ID Number: 242592-4-32-01
Federal Aid Project Number: 0041-227-I

Dear Ms. Woodward

On behalf of the Florida Department of Transportation (FDOT), District Five, we would like to thank you for your involvement in the “I-4 Beyond the Ultimate” PD&E Study. The FDOT values your input and considers interaction with the public to be an essential component of transportation improvements.

We are writing to thank you for the comment letter you submitted after the public hearing. You had several comments in the letter, to include your disposition on FPC Pond 300-B, disposition of the entry/exit ramps to/from EE Williamson Road, noise barriers, tolls on the future express lanes, the safety of express lanes and slip ramps.

A preliminary drainage analysis is performed during the PD&E study phase and FPC Pond 300-A is the recommended alternative for Basin 300. FPC Pond 300-B remained an alternative into the design phase for this basin. The design team has been informed of your opposition for FPC Pond 300-B to be considered. The Department is reviewing the other options for this pond location. If you’d like to check the progress of the design plans the design Project Manager is Catalina Chacon, PE and she can be reached at 386-943-5039 or via email at catalina.chacon@dot.state.fl.us.

As noted in your comment letter, the entry/exit ramps to/from EE Williamson have been removed from the recommended alternative and will not be included in the design phase.

With respect to the noise barrier, several barrier types (barrier and ground mounted) and options (various heights mounted on the shoulder and at the ROW) were modelled. The most cost reasonable option for Noise Sensitive Area C (adjacent to your property) was a 14-foot barrier mounted wall on the I-4 westbound shoulder. This wall costs $1,116,866 and provides a noise reduction of at least 5 dBA's to a total of nine (9) benefitted receivers. The average cost per benefitted receiver is $124,096. Since this cost well exceeds the FDOT threshold of $42,000 (by $82,096 per benefitted receiver), the wall was determined to not be cost reasonable. As stated in your letter, the density of the homes along the west side of the interstate is low and therefore results in higher cost per home. The $42,000 threshold for a noise barrier to be considered cost reasonable has been set by FHWA and is used statewide when determining the cost reasonableness of noise barriers.
You stated you disagree with putting tolls on I-4. Florida Statue FS 338.151 outlines where tolls may be implemented. Except where otherwise authorized by law, the Department may not establish tolls on lanes of limited access roadways on the state highway system that existed on July 1, 2012, unless tolls were already established by that date. However, the Department may establish tolls on new limited access facilities, lanes added to existing limited access facilities, and on new or replacement major bridges on the SHS constructed after that date. On August 30, 2013 the statewide directive 525-030-020a: Tolling for New and Existing Facilities on the State Highway System was published, outlining FDOT’s direction on the State Highway System (SHS). The directive established where and how tolls may be implemented along the SHS. It states that all additional capacity (new lanes) on interstate highways within Florida shall be express lanes. It also states that all additional capacity on non-interstate limited access facilities in Florida shall be express lanes, where deemed appropriate through the transportation planning process. While not required or defined in the directive, express lanes are also being considered and deployed on tolled facilities in the state where deemed necessary and appropriate.

The statewide directive defines express lanes as “a type of managed travel lane physically separated from a general use lane or general toll lane within a roadway corridor. Express lanes use dynamic pricing through electronic tolling in which toll amounts are set based on traffic conditions.” Express lanes can provide a high degree of operational flexibility, which enables them to be actively managed to respond to changing traffic demands. Express lanes can be located within tolled or non-tolled facilities, include congestion pricing, have vehicle restrictions, and may be operated as reversible flow or bi-directional facilities to best meet peak demands. Express lane facilities can be adjusted at any time to better match local and regional objectives. These adjustments allow FDOT to offer Florida drivers new and reliable mobility choices.

You commented on the effectiveness of express lanes and referenced the cost of the tolls to the Orlando area commuters. Express lanes will be constructed in addition to the general use (or free) lanes. Drivers will be provided the choice of either utilizing the express lanes or remaining in the general use lane.

You questioned the safety of the slip ramps that provide access between the general use and express lanes. There are several things to consider when determining the slip ramp locations, with safety being of utmost importance. The slip ramp locations have been strategically placed to allow access, while still providing sufficient distance for drivers to merge back into traffic when exiting the express lanes. The slip ramp design will allow for deceleration and acceleration lanes, similar to standard ramp design.

Again, we sincerely appreciate your participation and input into this project. If you have additional questions or comments, please do not hesitate to contact me at 386-943-5418 or beata.stys-palasz@dot.state.fl.us.

Sincerely,

Beata Stys-Palasz, P.E.
FDOT Project Manager
MR. GUMBS: Good evening. Thank you for the opportunity. My name is Hugo Gumbs and I reside in Huntington Point Subdivision. And I have three of my -- three or four of my neighbors here with me. We live in a very nice subdivision area and we are concerned now. The two questions I have is, as indicated on the presentation, that there will be three homes that are going to be affected. And I would like to know, certain of you, that the three homes -- are they going to be on Pine Bay? Is it our subdivision that is going to be affected by these three homes? And also, the 12-foot wall -- if someone could address the concerns of how that wall is going to be. Is that going to be parallel to the I-4 at this current time? And how far into the -- the present home's alignment, the barrier -- will that barrier be? Thank you.
January 30, 2017

Mr. Hugo Gumbs
446 Palm Crest Lane
Lake Mary, FL 32746

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study
From East of State Road (SR) 434 to East of US 17/92
Seminole County
Financial Project ID Number: 432100-1-22-01
Design Project ID Number: 242592-4-32-01
Federal Aid Project Number: 0041-227-I

Dear Mr. Gumbs:

On behalf of the Florida Department of Transportation (FDOT), District Five, we would like to thank you for your involvement in the “I-4 Beyond the Ultimate” PD&E Study. The FDOT values your input and considers interaction with the public to be an essential component of transportation improvements.

We are writing you to thank you for the verbal comments you made during the public hearing. You asked if any of the proposed residential impacts where within the Huntington Pointe Subdivision and requested additional details on the potential noise barrier.

There are no anticipated right-of-way impacts to the Huntington Pointe Subdivision as a result of the recommended improvements to I-4. FDOT has conducted multiple noise studies along the study segment to determine locations where a noise barrier could help reduce sound between the interstate and adjacent neighborhoods. Based upon the completed noise studies a noise barrier along the east side of I-4, from the rest area to Emma Oaks Drive (adjacent to the Huntington Pointe Subdivision) was determined to be feasible and cost reasonable. Two different sized barriers were evaluated, a 12-foot and a 10-foot barrier. Due to the residential areas being at a lower level than the adjacent roadway, it was determined the 10-foot tall barrier would provide adequate sound abatement. Additional analyses will be completed during the design phase of the I-4 widening project. The design team will coordinate with residents of Huntington Pointe Subdivision in order to coordinate the aesthetics (color and design pattern) of the barrier.

Again, we sincerely appreciate your participation and input into this project. If you have additional questions or comments, please do not hesitate to contact me at 386-943-5418 or beata.stys-palasz@dot.state.fl.us.

Sincerely,

Beata Stys-Palasz, P.E.
FDOT Project Manager

www.dot.state.fl.us
MR. DALLARI: Thank you. For the record, my name is Bob Dallari, County Commissioner in Seminole County. My office is in Sanford. For the past year-and-a-half, almost two years, both in MetroPlan and Board of County Commissioners meeting, I've asked the same basic questions I'm asking here tonight. I'd like to better understand cross access when it comes to pedestrians crossing I-4 on existing roads. I've not yet heard anything. I'd also like to better understand that with bicyclist. I've not heard anything yet. I'd also like to understand how emergency management vehicles access I-4, as well as the limited access through lanes. These are the same questions I've been asking the past year-and-a-half to two years. You-all know where my office is. I'm available for meetings. I'd just like to better understand this. I'd also like to understand because you also have segments -- what is it? Hold on a minute. Two, one, and five -- two, one, and five. I believe, two, one, and five is going to be scheduled first before the northern section. I'd like to know how all of this is going to be scheduled. And look forward to hearing your comments. And I'll be addressing it again tomorrow on the Board of County Commissioners meeting.
January 30, 2017

The Honorable Bob Dallari
1011 East 1st Street
Sanford, FL 32771

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study From East of State Road (SR) 434 to East of US 17/92 Seminole County
Financial Project ID Number: 432100-1-22-01
Design Project ID Number: 242592-4-32-01
Federal Aid Project Number: 0041-227-I

Dear Commissioner Dallari:

On behalf of the Florida Department of Transportation (FDOT), District Five, we would like to thank you for your involvement in the “I-4 Beyond the Ultimate” PD&E Study. The FDOT values your input and considers interaction with the public to be an essential component of transportation improvements.

We are writing you to thank you for the verbal comments you made during the public hearing. You asked about pedestrian and bicycle access crossing I-4 on existing roads and emergency management vehicles accessing I-4 and the express lanes. You also asked about the funding status for this segment of the I-4 BtU Project.

We appreciate your concerns for pedestrian and bicycle access, specifically at the interchanges. We recognized some of the existing interchanges within Segment 3 accommodate pedestrians and bicycles to the greatest extent and this was a priority for the Department when developing the concept alternatives for this project. The recommended concepts at each interchange do take into consideration pedestrian and bicycles and provide bike lanes, sidewalks and crosswalks to accommodate them.

Emergency vehicles will have access to the express lanes within Segment 3 at several locations along the I-4 corridor. The Department is currently scheduling meetings with the first responders to coordinate and evaluate the potential location for these access points. The location of removable barriers, required spacing and types of the removable barriers will be topics of discussion at these meetings. In addition to the emergency access locations along the corridor, the express lanes are being designed with incident investigation sites that will provide safe stopping areas for the first responders. These sites will be located approximately every two miles and will provide additional shoulder width where vehicles can safely stop.

With regards to funding of Segment 3, the project is currently in the preliminary design phase with right- of-way acquisition funded in fiscal years 2022 through 2025. Construction of improvements are not currently funded at this time. As you’re aware, this can change and there is the potential of funding becoming available and projects moving forward as priorities within MetroPlan are updated.
Again, we sincerely appreciate your participation and input into this project. If you have additional questions or comments or would like to meet to discuss specific details, please do not hesitate to contact me at 386-943-5418 or beata.stys-palasz@dot.state.fl.us.

Sincerely,

Beata Stys-Palasz, P.E.
FDOT Project Manager
MS. CAREY: Thank you. I'm County Commissioner Brenda Carey; 1011 East 1st Street, Sanford, Florida. You know, we've been talking about this for a while. And I know we've made a lot of changes, and DOT has worked hard to try to deal with some of the more complicated areas of this, particularly, the 46A interchange and Rinehart Road. We are still a little concerned about what's being proposed. And my first question is: Other than the PD&E that's going on right now, where are you at in the funding for this? Because with the changes that are happening right now, I'm not sure this will ever be funded. And then, you know, how is this going to, again, the impact some of our residents? And particularly at the intersections, we've got a number of businesses that are going to be completely impacted by their legal access -- that the Board County Commission has granted them as their legal access. And so, just got -- still got some concerns. And I would still like to have some further discussion from DOT with the County regarding this before you get too far into the plans. I know I asked some of the technicians to look at lights with flashing left turns lanes. Does that clear the intersections? Does that help us put this off for a while so we can maybe wait and see how the expansion goes before we jump in to doing all the side roads and the access? I know that the City of Lake Mary has asked you to look at taking the 46A and Rinehart Road project forward quicker. And again, I have some serious concerns about those Texas U-turns. Thank you.
January 30, 2017

The Honorable Brenda Carey
16 Old Post Road
Longwood, FL 32779

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study
   From East of State Road (SR) 434 to East of US 17/92
   Seminole County
   Financial Project ID Number: 432100-1-22-01
   Design Project ID Number: 242592-4-32-01
   Federal Aid Project Number: 0041-227-I

Dear Commissioner Carey:

On behalf of the Florida Department of Transportation (FDOT), District Five, we would like to thank you for your involvement in the “I-4 Beyond the Ultimate” PD&E Study. The FDOT values your input and considers interaction with the public to be an essential component of transportation improvements.

We are writing you to thank you for the verbal comments you made during the public hearing. You expressed concerns regarding the recommended concept for CR 46A at Rinehart Road, specifically with regards to access impacts to surrounding businesses and vehicle turning movements. You also asked about the funding status for this segment of the I-4 BtU Project.

We understand and appreciate your concerns for surrounding property owners and proposed traffic changes as a result of the recommended concepts. The Department has completed detailed traffic simulations of several alternatives (for all interchanges within Segment 3) and through our extensive coordination efforts with Seminole County Commissioners, Seminole County staff (planning and engineering) as well as the Cities of Sanford and Lake Mary, we have gained consensus from all regarding the recommended alternative. The close proximity of the I-4 eastbound interchange ramps to the intersection of CR 46A at Rinehart Road creates a challenge in maintaining access while improving safety for all users. Fortunately, the County and Cities have been considerate of access management with new developments along both Rinehart Road and CR 46A and the recommended alternative does not prohibit any of the properties from maintaining their current access to these roadways. The existing full median opening on Rinehart Road (approximately 1,000 feet north of CR 46A) is recommended to be modified to be a directional opening as part of the recommended concept. This median opening currently serves Sanford Infiniti and the closure of the median opening will result in driver’s who want to travel south on Rinehart Road having to turn right from the driveway and travel approximately 1,100 feet to complete a U-turn to continue south. There is also the potential that the currently undeveloped properties adjacent to Sanford Infiniti could develop and complete the connection to Cherry Laurel Drive which would allow drivers access to CR 46A.

With regards to funding of Segment 3, the project is currently in the preliminary design phase with right-of-way acquisition funded in fiscal years 2022 through 2025. Construction of improvements are not currently funded at this time. As you’re aware, this can change and there is the potential of funding becoming available and projects moving forward as priorities within MetroPlan are updated.

www.dot.state.fl.us
Again, we sincerely appreciate your participation and input into this project. If you have additional questions or comments or would like to meet to discuss specific details, please do not hesitate to contact me at 386-943-5418 or beata.stys-palasz@dot.state.fl.us.

Sincerely,

Beata Stys-Palasz, P.E.
FDOT Project Manager
MR. JAEGER: I live in Northridge Subdivision in Longwood. And we're unfortunate enough to share about 200 or 300 yards of fence line with the interstate. And the reason I'm speaking is because there's apparently a plan for FDOT to purchase land that is part of the lake that we have as part of our subdivision, and turn that piece of land into a retention pond, and I'm -- it really upsets us. And I'd like to just say that about 20 years ago, when the last widening took place, we worked with FDOT to minimize the amount of green buffer area that was taken down, and they put in some long narrow ponds. And about now, about 20 years later, we finally have these nice trees to keep us from staring at the road bed. And according to what shown as one of the alternative plans for a new retention pond, right in the lake itself, is the acquisition of land in that lake and to turn it into a retention pond, which I'm sure would mean the destruction of whatever greenbelt we have there now. And I strongly urge FDOT to look for alternatives so that they can find other places to put the stormwater, other than building up part of our lake and destroying what we have; what little we have left, really, to keep us from having the roadway rights in our faces. Thank you.
Begin forwarded message:

From: "Stys-Palasz, Beata" <Beata.Stys-Palasz@dot.state.fl.us>
Date: November 29, 2016 at 12:44:19 PM EST
To: "Diaz, Luis" <ldiaz@hntb.com>
Subject: FW: Beyond the Ultimate I-4 - Segment 3

Beata Stys-Palasz, P.E.
Senior Project Manager
State of Florida Department of Transportation
719 South Woodland Boulevard
Mail Station 542
Deland, Florida 32720
Phone (386) 943-5418
Fax: (386) 736-5153
Email: beata.stys-palasz@dot.state.fl.us

Your source for information on roadway projects in Central Florida: CFLRoads.com, i4express.com, i4ultimate.com

From: Chacon, Catalina
Sent: Tuesday, November 22, 2016 3:03 PM
To: Harry Jaeger
Cc: bdallari@seminolecountyfl.gov; Judy Parr; Mark Kamrath; Stys-Palasz, Beata
Subject: RE: Beyond the Ultimate I-4 - Segment 3

Mr. Jaeger,

Likewise, it was very nice meeting you last week at the public hearing. We are actively looking into a potential alternative to the location of pond 300. At this point I do not have a design that I can share with you but believe me, this is a big priority for this project right now.

As for keeping you abreast of the changes we make, I can offer that once we have a better idea of what alternatives we have, I will reach out to you as well the local
governments for input. My estimate is that within a couple of weeks, perhaps maybe 3, we will have a better idea of the potential new design.

Finally, the right of way phase for this project is currently funded for Fiscal Years 2022-2025.

I hope this information is useful to you. Do not hesitate to contact me if you have any further questions.

Thank you,

Catalina Chacon, P.E.
Consultant Project Manager Supervisor
Florida Department of Transportation, D5
719 South Woodland Blvd.
Deland, Florida 32720
☎ Phone: (386) 943-5039

From: Harry Jaeger [mailto:hjaeger@cfl.rr.com]
Sent: Tuesday, November 22, 2016 1:05 PM
To: Chacon, Catalina
Cc: bdallari@seminolecountyfl.gov; Judy Parr; Mark Kamrath
Subject: Beyond the Ultimate I-4 - Segment 3

Dear Ms. Chacon,

It was my pleasure to meet you at the FDOT Public Hearing in Lake Mary last week. As you may have seen from the email that I have sent to Ms. Beata Stys-Palasz, I represent a group of concerned residents who live near to Grace Lake, just north of E.E. Williamson Road in Longwood. In those emails I expressed our concern over plans to acquire land to be used for retention ponds along the FDOT right of way in that area, especially that shown as pond no. 300 to be located within Grace Lake itself, and the FPC pond also in that area.

In her reply to my email, Ms. Stys-Palasz indicated that the design will be reevaluated and that she would respond. She gave me no idea of the timing of the reevaluation process, nor of her response.

As Project Manager of this part of the project, could you please tell me how we may be kept apprised of the design reevaluation process and the revisions being made to the design? We have become very anxious over the potential damage to be done to the environment around Grace Lake and to the quality of life of those residents who would be affected. Please let me know how we can stay close to the process and to continue to provide our input.
Also, could you please confirm whether or not there is already funding to implement the land acquisition planned for the Segment 3 project?

Thank you.

Harry Jaeger
Northridge Subdivision
Longwood, FL
From: Harry Jaeger [mailto:hjaeger@cfl.rr.com]
Sent: Monday, November 14, 2016 11:58 PM
To: Beata.Stys-Palasz@dot.state.fl.us
Cc: catalina.chacon@dot.state.fl.us; 'Judy Parr' <parrjx@hotmail.com>; 'Mark Peebles' <NOSUBT2@aol.com>; bdallari@seminolecountyfl.gov; BCarey@seminolecountyfl.gov; 'Lee Constantine' <lee.constantine22@yahoo.com>; tjack1397@gmail.com; frank.odea@dot.state.fl.us; 'Bill' <bill4216@usa.net>; 'Downs, Noranne' <Noranne.Downs@dot.state.fl.us>; jhoran@seminolecountyfl.gov; Carlton Henley <chenley@seminolecountyfl.gov>; Mark Kamrath <markamrath@gmail.com>; Roberta Policard <rleepolicard@hotmail.com>; Bob Katz <bobkatz@digido.com>; marykent@digido.com; 'Thorat, Abhay P.' <thorat@pbworld.com>; Luis Diaz <ldiaz@HNTB.com>
Subject: RE: Added comment on I-4 Beyond the Ultimate - Segment 3

Dear Ms. Stys-Palasz,

Thank you for your prompt reply to my email of November 14, 2016 concerning the proposed design of the retention pond (pond #300) to be located in Grace Lake in Longwood. As a concerned resident of Northridge subdivision, which is located on Grace Lake, I am cautiously encouraged that you say that you will “reevaluate the design”.

May I ask that you please keep us informed concerning this reevaluation, and please provide your assurance to us that FDOT will not proceed with any of the proposed land that affects Grace Lake and also with respect to Flood Plain Compensation (FPC) area #300-A, (a parcel of land that adjoins Northridge Drive in Northridge Subdivision) without further input from the public.

Please take note that I am copying the Seminole County Board of Commissioners on this email with hope that they will continue to monitor the situation and help us prevent such land acquisition and destruction of the beautiful green-belt buffer between Northridge and the interstate roadway.

I look forward to learning about your design reevaluation in the near future.

Respectfully,

Harry Jaeger
Longwood, FL
Dear Ms. Stys.Palasz,

It was my pleasure to meet you and your staff at the public hearing in Lake Mary this evening. Thank you for the opportunity to learn about the Segment 3 project, and to speak and provide comment.

I want to clarify my spoken comments to ensure that it is understood that I was urging FDOT not to install a new retention pond in GRACE LAKE, just north of the E.E. Williamson bridge. I believe that the proposed retention pond in question was labeled as #300 on the drawing, and would be located partially on land located in Grace Lake east of the current right of way. As a resident of Northridge subdivision, which is located on Grace Lake, I strongly object to the proposal since it would mean destruction of the stand of trees that currently occupies that land and, thereby, would result in the removal the remaining greenbelt buffer between residents of Northridge (and North Cove subdivision, as well) and the I-4 roadway.

As I mentioned in my comments, the small amount of buffer that we now enjoy is growth that has grown back after the last time that I-4 was widened, some 20 years ago, when many trees were removed to install several small retention ponds. The new proposal, as I understand, would be to greatly expand those ponds into one large pond, which would physically place it within Grace Lake itself. We respectfully ask that this be avoided.

Finally, since Grace Lake is now full of water, and had recently reached flood levels after the heavy rainfall associated with Hurricane Matthew, is it really reasonable for FDOT to consider using part of Grace Lake as a retention pond? It is my understanding from talking with FDOT engineers and consultants at the meeting that existing wet lands are not suitable sites for retention ponds. Is that not so? It is also my understanding that the current study and recommendations were based on obsolete data obtained when the Grace Lake was dry. Since that time Grace Lake has returned to its natural condition and has been full for more than one year. Moreover, Seminole County officials have told us to expect it to remain stable for the foreseeable future.

Thank you.

Respectfully,

Harry Jaeger
1215 Baypoint Court
Longwood, FL
Begin forwarded message:

From: "Stys-Palasz, Beata" <Beata.Stys-Palasz@dot.state.fl.us>
Date: November 29, 2016 at 12:43:56 PM EST
To: "Diaz, Luis" <ldiaz@hntb.com>
Subject: FW: Added comment on I-4 Beyond the Ultimate - Segment 3

Beata Stys-Palasz, P.E.
Senior Project Manager
State of Florida Department of Transportation
719 South Woodland Boulevard
Mail Station 542
Deland, Florida 32720

Phone (386) 943-5418
Fax: (386) 736-5153
Email: beata.stys-palasz@dot.state.fl.us

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Your source for information on roadway projects in Central Florida: CFLRoads.com, i4express.com, i4ultimate.com

From: Chacon, Catalina
Sent: Tuesday, November 22, 2016 2:34 PM
To: Harry Jaeger; Stys-Palasz, Beata
Cc: 'Judy Parr'; 'Mark Peebles'; bdallari@seminolecountyfl.gov;
BCarey@seminolecountyfl.gov; 'Lee Constantine'; tjack1397@gmail.com; O'Dea, Frank;
'Bill'; Downs, Noranne; jhoran@seminolecountyfl.gov; Carlton Henley; Mark Kamrath;
Roberta Policard; Bob Katz; marykent@digido.com; 'Thorat, Abhay P.'; Diaz, Luis;
Phillips, Suzanne; Olson, Steve; Ottaviano, Jessica
Subject: RE: Added comment on I-4 Beyond the Ultimate - Segment 3

Mr. Jaeger,

Thank you for your email. We are reevaluating the design as we speak. I will make sure we keep you posted as we come up with an alternate design. Do not hesitate to contact me if you have any further questions.
Thank you,

Catalina Chacon, P.E.
Consultant Project Manager Supervisor
Florida Department of Transportation, D5
719 South Woodland Blvd.
Deland, Florida 32720
Phone: (386) 943-5039

From: Harry Jaeger [mailto:hjaeger@cfl.rr.com]
Sent: Monday, November 21, 2016 6:12 PM
To: Stys-Palasz, Beata
Cc: Chacon, Catalina; 'Judy Parr'; 'Mark Peebles'; bdallari@seminolecountyfl.gov; BCarey@seminolecountyfl.gov; 'Lee Constantine'; tjack1397@gmail.com; O'Dea, Frank; 'Bill'; Downs, Noranne; jhoran@seminolecountyfl.gov; Carlton Henley; Mark Kamrath; Roberta Policard; Bob Katz; marykent@digido.com; 'Thorat, Abhay P.'; Diaz, Luis
Subject: RE: Added comment on I-4 Beyond the Ultimate - Segment 3

Dear Ms. Stys-Palasz,

Thank you for your prompt reply to my email of November 14, 2016 concerning the proposed design of the retention pond (pond #300) to be located in Grace Lake in Longwood.

As a concerned resident of Northridge subdivision, which is located on Grace Lake, I am cautiously encouraged that you say that you will “reevaluate the design”. May I ask that you please keep us informed concerning this reevaluation, and please provide your assurance to us that FDOT will not proceed with any of the proposed land that affects Grace Lake and also with respect to Flood Plain Compensation (FPC) area #300-A, (a parcel of land that adjoins Northridge Drive in Northridge Subdivision) without further input from the public.

Please take note that I am copying the Seminole County Board of Commissioners on this email with hope that they will continue to monitor the situation and help us prevent such land acquisition and destruction of the beautiful green-belt buffer between Northridge and the interstate roadway.

I look forward to learning about your design reevaluation in the near future.

Respectfully,

Harry Jaeger
Longwood, FL
Dear Ms. Stys.Palasz,

It was my pleasure to meet you and your staff at the public hearing in Lake Mary this evening. Thank you for the opportunity to learn about the Segment 3 project, and to speak and provide comment.

I want to clarify my spoken comments to ensure that it is understood that I was urging FDOT **not to install a new retention pond in GRACE LAKE**, just north of the E.E. Williamson bridge. I believe that the proposed retention pond in question was labeled as #300 on the drawing, and would be located partially on land located in Grace Lake east of the current right of way. As a resident of Northridge subdivision, which is located on Grace Lake, I strongly object to the proposal since it would mean destruction of the stand of trees that currently occupies that land and, thereby, would result in the removal the remaining greenbelt buffer between residents of Northridge (and North Cove subdivision, as well) and the I-4 roadway.

As I mentioned in my comments, the small amount of buffer that we now enjoy is growth that has grown back after the last time that I-4 was widened, some 20 years ago, when many trees were removed to install several small retention ponds. The new proposal, as I understand, would be to greatly expand those ponds into one large pond, which would physically place it within Grace Lake itself. We respectfully ask that this be avoided.

Finally, since Grace Lake is now full of water, and had recently reached flood levels after the heavy rainfall associated with Hurricane Matthew, is it really reasonable for FDOT to consider using part of Grace Lake as a retention pond? It is my understanding from talking with FDOT engineers and consultants at the meeting that existing wetlands are not suitable sites for retention ponds. Is that not so? It is also my understanding that the current study and recommendations were based on obsolete data obtained when the Grace Lake was dry. Since that time Grace Lake has returned to its natural condition and has been full for more than one year. Moreover, Seminole County officials have told us to expect it to remain stable for the foreseeable future.

Thank you.

Respectfully,

Harry Jaeger
1215 Baypoint Court
Longwood, FL
January 30, 2017

Mr. Harry Jaeger
1215 Baypoint Court
Longwood, FL 32750

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study
From East of State Road (SR) 434 to East of US 17/92
Seminole County
Financial Project ID Number: 432100-1-22-01
Design Project ID Number: 242592-4-32-01
Federal Aid Project Number: 0041-227-I

Dear Mr. Jaeger:

On behalf of the Florida Department of Transportation (FDOT), District Five, we would like to thank you for your involvement in the “I-4 Beyond the Ultimate” PD&E Study. The FDOT values your input and considers interaction with the public to be an essential component of transportation improvements.

We are writing you to thank you for the verbal comments you made during the public hearing. You expressed concerns regarding potential impacts to Grace Lake and the natural tree buffer as a result of the expansion of the existing drainage pond (Pond 300).

Since the public hearing we have communicated via email and as I’ve stated, the Department is currently reevaluating the drainage design in an effort to develop an alternate design. Once alternatives are identified, FDOT will reach out to those who have expressed concern and local governments and for input. I look forward to continuing communications with you with regards to the drainage design.

Again, we sincerely appreciate your participation and input into this project. If you have additional questions or comments, please do not hesitate to contact me at 386-943-5418 or beata.stys-palasz@dot.state.fl.us.

Sincerely,

Beata Stys-Palasz, P.E.
FDOT Project Manager

www.dot.state.fl.us
Please provide your comments below. If more space is needed, please use an additional sheet of paper. You may place your comments in the “Comment Box” provided at the meeting, or send to the address below. Comments are also acceptable through the project website. Written comments, exhibits and/or statements must be postmarked or e-mailed no later than November 25, 2016.

Note: Grace Lake (between 434 & 246 Mary Blvd) is a full lake. Water studies were most likely done prior to 2016 and show Grace Lake as a dry lake bed.

We, the residents of Northridge Subdivision, would like to retain the natural tree buffer for our lake as we are concerned with water and air quality.

PLEASE RETURN COMMENTS TO:
Beata Styś-Palasz, P.E., Project Manager
Florida Department of Transportation – District Five

Florida Department of Transportation
719 S. Woodland Boulevard
DeLand, Florida 32720

(386) 943-5418
Toll Free: 1-800-780-7102

Beata.Stys-Palasz@dot.state.fl.us
www.i4express.com

Name: Marianne King
Address: 1339 Grace View Ct
Longwood, FL 32750
Phone Number: 407-620-24

Email:  

PUBLIC HEARING NOVEMBER 14, 2016
January 30, 2017

Ms. Marianne King
1339 Grace View Court
Longwood, FL 32750

Subject: “I-4 Beyond the Ultimate” Project Development and Environment (PD&E) Reevaluation Study
From East of State Road (SR) 434 to East of US 17/92
Seminole County
Financial Project ID Number: 432100-1-22-01
Design Project ID Number: 242592-4-32-01
Federal Aid Project Number: 0041-227-I

Dear Ms. King:

On behalf of the Florida Department of Transportation (FDOT), District Five, we would like to thank you for your involvement in the “I-4 Beyond the Ultimate” PD&E Study. The FDOT values your input and considers interaction with the public to be an essential component of transportation improvements.

We are writing you to thank you for the comment you submitted at the public hearing. You stated, as a resident of Northridge Subdivision, you would prefer to maintain the natural tree buffer around Grace Lake. You also expressed concerned for water and air quality as a result of any potential impacts from the recommended alternative.

A preliminary drainage analysis is performed during the PD&E study phase. Based on this analysis, expansion of the existing FDOT pond (located adjacent to I-4) was recommended in order to accommodate the widening of I-4. Based on your comment and additional comments received from residents within the Northridge subdivision, the Department is currently reevaluating the drainage design in an effort to develop an alternate design. Once alternatives are identified, FDOT will reach out to those who have expressed concern and local governments and for input.

Again, we sincerely appreciate your participation and input into this project. If you have additional questions or comments, please do not hesitate to contact me at 386-943-5418 or beata.stys-palasz@dot.state.fl.us.

Sincerely,

Beata Stys-Palasz, P.E.
FDOT Project Manager

www.dot.state.fl.us
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Appendix C - Conceptual Signing Plan
EXISTING LA ROW
PROPOSED LA ROW
EXISTING R/W
PROPOSED R/W
PARCEL LINES
FUTURE EXISTING CONDITION

GENERAL USE LANES
EXPRESS LANES
EXISTING BRIDGE
PROPOSED BRIDGE
BARRIER WALL
PARCEL NUMBERS

MATCH LINE STA. 2205 +00.00
MATCH LINE STA. 2280 +00.00

EXISTING LA/W
PROPOSED FDOT R/W
PARCEL LINES
GENERAL USE LANES
EXPRESS LANES
EXISTING BRIDGE
PROPOSED BRIDGE
BARRIER WALL
PARCEL NUMBERS

EXISTING R/W
PROPOSED LA/W
BARRIER WALL
EXISTING BRIDGE
PROPOSED BRIDGE
PARCEL LINES
GENERAL USE LANES
EXPRESS LANES

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ENGINEER OF RECORD: ROBERT M. DENNEY, P.E.

HNTB CORPORATION
FL. REGISTRATION NO. 58593
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Appendix D - Long Range Estimates (LRE)
FDOT Long Range Estimating System - Production
R3: Project Details by Sequence Report

Project: 242592-4-52-01
Letting Date: 01/2099

Description: SR 400 (I-4) from 1 mile east of SR 434 to East of SR 15/600 US 17/92 (Seminole / Volusia County line) Seminole County (77160).

District: 05  County: 77 SEMINOLE  Market Area: 08  Units: English
Project Manager: HJJ

Version 25 Project Grand Total
$482,750,307.73

I-4 (SR 400) ULTIMATE PROJECT FROM 1 MI E OF SR 434 TO WEST END OF ST. JOHNS

Description: RIVER BRIDGE (STA. 2043+70 TO 2578+48) - HNTB August 2016 Update: Express Lanes with Asphalt Pavement

Sequence: 1 NDR - New Construction, Divided, Rural
Net Length: 2.576 MI

Description: Construct 4 GUL in each direction from station 2285+00 to 2352+00 and 2485+00 to 2554+00 for a total distance of 13600'.

EARTHWORK COMPONENT

User Input Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>150.00 / 150.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
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Alignment Number
Distance
1
2,600

Top of Structural Course For Begin Section
Top of Structural Course For End Section
Horizontal Elevation For Begin Section
Horizontal Elevation For End Section
Front Slope L/R
Median Slope L/R
Median Shoulder Cross Slope L/R
Outside Shoulder Cross Slope L/R
Roadway Cross Slope L/R
1 to 1 / 1 to 1
1 to 1 / 1 to 1
5.00 % / 5.00 %
6.00 % / 6.00 %
2.00 % / 2.00 %

Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>93.67 AC</td>
<td>AC</td>
<td>$10,000.00</td>
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<td>EMBANKMENT</td>
<td>97,967.08 CY</td>
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<td>$930,687.26</td>
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Earthwork Component Total
$1,867,387.26

ROADWAY COMPONENT

User Input Data

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<td>Roadway Pavement Width L/R</td>
<td>48.00 / 48.00</td>
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<tr>
<td>Structural Spread Rate</td>
<td>550</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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</table>
### Pay Items

<table>
<thead>
<tr>
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<th>Description</th>
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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>217,603.58</td>
<td>SY</td>
<td>$3.25</td>
<td>$707,211.64</td>
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<tr>
<td>285-711</td>
<td>OPTIONAL BASE, BASE GROUP 11</td>
<td>147,063.76</td>
<td>SY</td>
<td>$38.58</td>
<td>$5,673,719.86</td>
</tr>
<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22, PMA</td>
<td>39,893.99</td>
<td>TN</td>
<td>$109.37</td>
<td>$4,363,205.69</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC, INC BIT, FC-5, PG76-22, PMA</td>
<td>5,802.76</td>
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<td>$812,386.40</td>
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### X-Items

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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>521-8-1</td>
<td>CONC TRAF RAIL BAR, JCT SLAB, 32&quot; SHAPE</td>
<td>70,244.00</td>
<td>LF</td>
<td>$240.44</td>
<td>$16,889,467.36</td>
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</table>

**Comment:** I-4 Mainline

### Pavement Marking Subcomponent

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

### Pay Items

<table>
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<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>2,434.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$9,103.16</td>
</tr>
<tr>
<td>710-11-11</td>
<td>PAINTED PAVT MARK, STD, WHITE, SOLID, 6&quot;</td>
<td>10.30</td>
<td>NM</td>
<td>$908.42</td>
<td>$9,356.73</td>
</tr>
<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK, STD, WHITE, SKIP, 6&quot;</td>
<td>15.45</td>
<td>GM</td>
<td>$383.54</td>
<td>$5,925.69</td>
</tr>
<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>10.30</td>
<td>NM</td>
<td>$3,138.35</td>
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<tr>
<td>711-11-131</td>
<td>THERMOPLASTIC, STD, WHITE, SKIP, 6&quot;</td>
<td>15.45</td>
<td>GM</td>
<td>$1,027.15</td>
<td>$15,869.47</td>
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</tbody>
</table>

### Peripherals Subcomponent

**Description**
- Off Road Bike Path(s): 0
- Off Road Bike Path Width L/R: 0.00 / 0.00
- Bike Path Structural Spread Rate: 0
- Noise Barrier Wall Length: 1,802.00
- Noise Barrier Wall Begin Height: 12.00
- Noise Barrier Wall End Height: 12.00

### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>339-1</td>
<td>MISCELLANEOUS ASPHALT PAVEMENT</td>
<td>51.33</td>
<td>TN</td>
<td>$232.34</td>
<td>$11,926.01</td>
</tr>
<tr>
<td>534-72-101</td>
<td>SOUND/NOISE BARRIER-INC FOUNDATION, PERM</td>
<td>21,624.00</td>
<td>SF</td>
<td>$23.58</td>
<td>$509,893.92</td>
</tr>
<tr>
<td>536-1-1</td>
<td>GUARDRAIL- ROADWAY, GEN TL-3</td>
<td>1,500.00</td>
<td>LF</td>
<td>$17.75</td>
<td>$26,625.00</td>
</tr>
<tr>
<td>536-85-22</td>
<td>GUARDRAIL END ANCH ASSY/END TREAS-FLARED</td>
<td>4.00</td>
<td>EA</td>
<td>$1,600.00</td>
<td>$6,400.00</td>
</tr>
<tr>
<td>544-75-1</td>
<td>CRASH CUSHION</td>
<td>3.00</td>
<td>EA</td>
<td>$15,521.81</td>
<td>$46,565.43</td>
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</table>
### FENCING, TYPE B, 5.1-6.0', STANDARD

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>550-10-220</td>
<td>27,200.00</td>
<td>LF</td>
<td>$12.11</td>
<td>$329,392.00</td>
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</table>

**Roadway Component Total**

$29,449,373.37

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### SHOULDER COMPONENT

#### User Input Data

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<th>Description</th>
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<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>12.00 / 12.00</td>
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<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>12.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>2</td>
</tr>
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</table>

#### Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-705</td>
<td>OPTIONAL BASE, BASE GROUP 05</td>
<td>37,264.61</td>
<td>SY</td>
<td>$22.52</td>
<td>$839,199.02</td>
</tr>
<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>5,984.10</td>
<td>TN</td>
<td>$105.00</td>
<td>$628,330.50</td>
</tr>
<tr>
<td>546-72-51</td>
<td>RUMBLE STRIPS, GROUND-IN, 16&quot; MIN. WIDTH</td>
<td>5.15</td>
<td>PM</td>
<td>$1,428.02</td>
<td>$7,354.30</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>X-Items</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>570-1-2</td>
<td>PERFORMANCE TURF, SOD</td>
<td>147,511.00</td>
<td>SY</td>
<td>$2.25</td>
<td>$331,899.75</td>
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**Comment:** 20' each side of road x sequence length

#### Erosion Control

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<th>Quantity</th>
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<th>Extended Amount</th>
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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>35,360.58</td>
<td>LF</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>643.95</td>
<td>LF</td>
<td>$9.63</td>
<td>$6,201.24</td>
</tr>
<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>643.95</td>
<td>LF</td>
<td>$4.69</td>
<td>$3,020.13</td>
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<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>3.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$6,647.34</td>
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<tr>
<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>16.00</td>
<td>EA</td>
<td>$94.06</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>62.44</td>
<td>AC</td>
<td>$35.63</td>
<td>$2,224.74</td>
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<tr>
<td>107-2</td>
<td>MOWING</td>
<td>62.44</td>
<td>AC</td>
<td>$55.77</td>
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**Shoulder Component Total**

$1,874,064.99

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### MEDIAN COMPONENT

#### User Input Data

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<tbody>
<tr>
<td>Total Median Width</td>
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<tr>
<td>Performance Turf Width</td>
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<tr>
<td>Total Median Shoulder Width L/R</td>
<td>12.00 / 12.00</td>
</tr>
<tr>
<td>Paved Median Shoulder Width L/R</td>
<td>12.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>2</td>
</tr>
</tbody>
</table>
### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
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<td>SY</td>
<td>$16.00</td>
<td>$596,233.76</td>
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<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>5,984.10</td>
<td>TN</td>
<td>$105.00</td>
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</tr>
<tr>
<td>521-1-1</td>
<td>MEDIAN BARRIER WALL CONC, PRECAST</td>
<td>15,129.00</td>
<td>LF</td>
<td>$111.97</td>
<td>$1,693,994.13</td>
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<tr>
<td>546-72-51</td>
<td>RUMBLE STRIPS, GROUND-IN, 16&quot; MIN. WIDTH</td>
<td>5.00</td>
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**Median Component Total**

$2,925,698.49

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### DRAINAGE COMPONENT

**X-Items**

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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
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<td>INLETS, SPECIAL, &lt;10'</td>
<td>90.00</td>
<td>EA</td>
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<td></td>
<td><strong>Comment:</strong> (TOTAL DIST/300' INTERVAL)X 2</td>
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<tr>
<td>430-174-154</td>
<td>PIPE CULV, OPT MATL, ROUND, 54&quot; SD</td>
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<td>LF</td>
<td>$272.63</td>
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</tr>
<tr>
<td>430-982-141</td>
<td>MITERED END SECT, OPTIONAL RD, 48&quot; CD</td>
<td>2.00</td>
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<td>$3,424.94</td>
<td>$6,849.88</td>
</tr>
<tr>
<td>430-982-142</td>
<td>MITERED END SECT, OPTIONAL RD, 54&quot; CD</td>
<td>2.00</td>
<td>EA</td>
<td>$5,219.90</td>
<td>$10,439.80</td>
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**EX-Items**

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<th>Extended Amount</th>
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</thead>
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<td>430-174-124</td>
<td>24&quot; RCP SD</td>
<td>10.00</td>
<td>MI</td>
<td>$300,000.00</td>
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<tr>
<td></td>
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### Retention Basin 1

<table>
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<tr>
<td>Multiplier</td>
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<tr>
<td>Depth</td>
<td>6.00</td>
</tr>
<tr>
<td>Description</td>
<td>POND 300</td>
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### Pay Items

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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>4.00</td>
<td>AC</td>
<td>$10,000.00</td>
<td>$40,000.00</td>
</tr>
<tr>
<td>120-1</td>
<td>REGULAR EXCAVATION</td>
<td>38,720.00</td>
<td>CY</td>
<td>$5.50</td>
<td>$212,960.00</td>
</tr>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>36.00</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$46,857.24</td>
</tr>
<tr>
<td>425-1-541</td>
<td>INLETS, DT BOT, TYPE D, &lt;10'</td>
<td>2.00</td>
<td>EA</td>
<td>$3,512.69</td>
<td>$7,025.38</td>
</tr>
<tr>
<td>425-2-71</td>
<td>MANHOLES, J-7, &lt;10'</td>
<td>2.00</td>
<td>EA</td>
<td>$5,745.70</td>
<td>$11,491.40</td>
</tr>
<tr>
<td>430-175-142</td>
<td>PIPE CULV, OPT MATL, ROUND, 42&quot; S/CD</td>
<td>112.00</td>
<td>LF</td>
<td>$133.10</td>
<td>$14,907.20</td>
</tr>
<tr>
<td>430-175-160</td>
<td>PIPE CULV, OPT MATL, ROUND, 60&quot; S/CD</td>
<td>400.00</td>
<td>LF</td>
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<td>$86,752.00</td>
</tr>
<tr>
<td>550-10-220</td>
<td>FENCING, TYPE B, 5.1-6.0&quot;, STANDARD</td>
<td>2,360.00</td>
<td>LF</td>
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<td>$28,579.60</td>
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<tr>
<td>550-60-234</td>
<td>FENCE GATE, TYP B, SLIDE/CANT, 18.1-20&quot; OPEN</td>
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<td>$2,128.82</td>
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<tr>
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<td>PERFORMANCE TURF</td>
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### Retention Basin 2
### Description

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<tbody>
<tr>
<td></td>
<td>2 AC</td>
<td>1</td>
<td>8.00</td>
</tr>
</tbody>
</table>

**Description**: POND 301

### Pay Items

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<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>2.00 AC</td>
<td></td>
<td>$10,000.00</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>120-1</td>
<td>REGULAR EXCAVATION</td>
<td>25,813.33 CY</td>
<td>$5.50</td>
<td>$141,973.32</td>
<td></td>
</tr>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>18.00 CY</td>
<td></td>
<td>$1,301.59</td>
<td>$23,428.62</td>
</tr>
<tr>
<td>425-1-541</td>
<td>INLETS, DT BOT, TYPE D, &lt;10'</td>
<td>1.00 EA</td>
<td></td>
<td>$3,512.69</td>
<td>$3,512.69</td>
</tr>
<tr>
<td>425-2-71</td>
<td>MANHOLES, J-7, &lt;10'</td>
<td>1.00 EA</td>
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<td>$5,745.70</td>
<td>$5,745.70</td>
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<td>PIPE CULV, OPT MATL, ROUND, 42&quot;S/CD</td>
<td>56.00 LF</td>
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<td>$133.10</td>
<td>$7,453.60</td>
</tr>
<tr>
<td>430-175-160</td>
<td>PIPE CULV, OPT MATL, ROUND, 60&quot;S/CD</td>
<td>200.00 LF</td>
<td></td>
<td>$216.88</td>
<td>$43,376.00</td>
</tr>
<tr>
<td>550-10-220</td>
<td>FENCING, TYPE B, 5.1-6.0', STANDARD</td>
<td>1,180.00 LF</td>
<td></td>
<td>$12.11</td>
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</tr>
<tr>
<td>550-60-234</td>
<td>FENCE GATE, TYPE B, SLIDE/CANT, 18.1-20'OPEN</td>
<td>1.00 EA</td>
<td></td>
<td>$2,128.82</td>
<td>$2,128.82</td>
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<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>9,680.00 SY</td>
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### Retention Basin 3

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<td></td>
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**Description**: POND 302

### Pay Items

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<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>18.00 CY</td>
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<td>$1,301.59</td>
<td>$23,428.62</td>
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<tr>
<td>425-1-541</td>
<td>INLETS, DT BOT, TYPE D, &lt;10'</td>
<td>1.00 EA</td>
<td></td>
<td>$3,512.69</td>
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</tr>
<tr>
<td>425-2-71</td>
<td>MANHOLES, J-7, &lt;10'</td>
<td>1.00 EA</td>
<td></td>
<td>$5,745.70</td>
<td>$5,745.70</td>
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<tr>
<td>430-175-142</td>
<td>PIPE CULV, OPT MATL, ROUND, 42&quot;S/CD</td>
<td>56.00 LF</td>
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<td>$133.10</td>
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<tr>
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<td>PIPE CULV, OPT MATL, ROUND, 60&quot;S/CD</td>
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<td></td>
<td>$216.88</td>
<td>$43,376.00</td>
</tr>
<tr>
<td>550-10-220</td>
<td>FENCING, TYPE B, 5.1-6.0', STANDARD</td>
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<td>$12.11</td>
<td>$14,289.80</td>
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<td></td>
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<td>$2,128.82</td>
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<tr>
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<td>9,680.00 SY</td>
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### Retention Basin 4

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**Description**: POND 303A1

### Pay Items

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<td>Multiplier</td>
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Description: POND 304

### Pay Items

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<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>2.50 AC</td>
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<td>REGULAR EXCAVATION</td>
<td>32,266.67 CY</td>
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<td>$177,466.68</td>
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<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>18.00 CY</td>
<td>$1,301.59</td>
<td>$23,428.62</td>
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<tr>
<td>425-1-361</td>
<td>INLETS, CURB, TYPE P-6, &lt;10'</td>
<td>1.00 EA</td>
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<td>$5,040.98</td>
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<td>425-2-71</td>
<td>MANHOLES, J-7, &lt;10'</td>
<td>1.00 EA</td>
<td>$5,745.70</td>
<td>$5,745.70</td>
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</tr>
<tr>
<td>430-175-142</td>
<td>PIPE CULV, OPT MATL, ROUND, 42&quot;S/CD</td>
<td>56.00 LF</td>
<td>$133.10</td>
<td>$7,453.60</td>
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<tr>
<td>430-175-160</td>
<td>PIPE CULV, OPT MATL, ROUND, 60&quot;S/CD</td>
<td>200.00 LF</td>
<td>$216.88</td>
<td>$43,376.00</td>
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</tr>
<tr>
<td>550-10-220</td>
<td>FENCING, TYPE B, 5.1-6.0', STANDARD</td>
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<td>$2,128.82</td>
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<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>12,100.00 SY</td>
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### Retention Basin 6

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Description: POND 306

### Pay Items

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<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>3.00 AC</td>
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<td>$10,000.00</td>
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<td>REGULAR EXCAVATION</td>
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<td>$212,960.00</td>
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<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>36.00 CY</td>
<td>$1,301.59</td>
<td>$46,857.24</td>
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<tr>
<td>425-1-541</td>
<td>INLETS, DT BOT, TYPE D, &lt;10'</td>
<td>2.00 EA</td>
<td>$3,512.69</td>
<td>$7,025.38</td>
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<tr>
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<td>MANHOLES, J-7, &lt;10'</td>
<td>2.00 EA</td>
<td>$5,745.70</td>
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<td>PIPE CULV, OPT MATL, ROUND, 42&quot;S/CD</td>
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FENCING, TYPE B, 5.1-6.0'.
### Retention Basin 7

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#### Pay Items

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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>10.00 AC</td>
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<td>$100,000.00</td>
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<tr>
<td>120-1</td>
<td>REGULAR EXCAVATION</td>
<td>129,066.67 CY</td>
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<td>$709,866.68</td>
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<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>36.00 CY</td>
<td>$1,301.59</td>
<td>$46,857.24</td>
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</tr>
<tr>
<td>425-1-541</td>
<td>INLETS, DT BOT, TYPE D, &lt;10'</td>
<td>2.00 EA</td>
<td>$3,512.69</td>
<td>$7,025.38</td>
<td></td>
</tr>
<tr>
<td>425-2-71</td>
<td>MANHOLES, J-7, &lt;10'</td>
<td>2.00 EA</td>
<td>$5,745.70</td>
<td>$11,491.40</td>
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<tr>
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<td>PIPE CULV, OPT MATL, ROUND, 42&quot;S/CD</td>
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<td>400.00 LF</td>
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<td>FENCING, TYPE B, 5.1-6.0', STANDARD</td>
<td>2,780.00 LF</td>
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<td>3.00 EA</td>
<td>$2,128.82</td>
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<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>48,400.00 SY</td>
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### Retention Basin 8

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#### Pay Items

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<th>Unit</th>
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<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>12.00 AC</td>
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<td>REGULAR EXCAVATION</td>
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<td>CONC CLASS II, ENDWALLS</td>
<td>108.00 CY</td>
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<td>425-1-541</td>
<td>INLETS, DT BOT, TYPE D, &lt;10'</td>
<td>6.00 EA</td>
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<td>MANHOLES, J-7, &lt;10'</td>
<td>6.00 EA</td>
<td>$5,745.70</td>
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<td>PIPE CULV, OPT MATL, ROUND, 42&quot;S/CD</td>
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<td>PIPE CULV, OPT MATL, ROUND, 60&quot;S/CD</td>
<td>1,200.00 LF</td>
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<td>550-10-220</td>
<td>FENCING, TYPE B, 5.1-6.0', STANDARD</td>
<td>7,080.00 LF</td>
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### Retention Basin 9

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file:///C:/Users/amourad/AppData/Local/Microsoft/Windows Temporary%20Internet%20Files/Content.IE5/YAD2QDW9/R3.htm

7/91 D-7
Multiplier: 3  
Depth: 8.00  
Description: POND 310

### Pay Items

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<td>$10,000.00</td>
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<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>54.00 CY</td>
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<td>425-1-541</td>
<td>INLETS, DT BOT, TYPE D, &lt;10'</td>
<td>3.00 EA</td>
<td>$3,512.69</td>
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<td>425-2-71</td>
<td>MANHOLES, J-7, &lt;10'</td>
<td>3.00 EA</td>
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<td>430-175-142</td>
<td>PIPE CULV, OPT MATL, ROUND, 42&quot;S/CD</td>
<td>168.00 LF</td>
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<tr>
<td>430-175-160</td>
<td>PIPE CULV, OPT MATL, ROUND, 60&quot;S/CD</td>
<td>600.00 LF</td>
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<td>550-10-220</td>
<td>FENCING, TYPE B, 5.1-6.0', STANDARD</td>
<td>3,540.00 LF</td>
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<td>FENCE GATE, TYP B, SLIDE/CANT, 18.1-20'OPEN</td>
<td>3.00 EA</td>
<td>$2,128.82</td>
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**Drainage Component Total**  
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<th>Unit Price</th>
<th>Extended Amount</th>
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<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>62.00 AS</td>
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<tr>
<td>700-2-14</td>
<td>MULTI-POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>6.00 AS</td>
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**Signing Component Total**  
$183,569.26

### INTELLIGENT TRAFFIC SYSTEM (ITS) COMPONENT

Description of Work  
$750,000 per mile from FDOT. ITS FOR Entire Project. Per mile cost from FDOT.

**EX-Items**

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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<td>ITS</td>
<td>ITS - ALL ITEMS</td>
<td>10.20 MI</td>
<td>$108,600.00</td>
<td>$1,107,720.00</td>
<td></td>
</tr>
</tbody>
</table>

**Comment:** Per mile cost from FDOT

**Intelligent Traffic System (ITS) Component Total**  
$1,107,720.00

### LIGHTING COMPONENT

**Rural Lighting Subcomponent**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplier (Number of Poles)</td>
<td>334</td>
</tr>
</tbody>
</table>

**Pay Items**

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file:///C:/Users/amourad/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.IE5/YAD2QDW9/R3.htm  
8/91  
D-8
<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>715-1-13</td>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
<td>200,400.00</td>
<td>LF</td>
<td>$2.15</td>
<td>$430,860.00</td>
</tr>
<tr>
<td>715-2-11</td>
<td>LIGHTING-CONDUIT, F&amp;I, UNDERGROUND</td>
<td>66,800.00</td>
<td>LF</td>
<td>$4.29</td>
<td>$286,572.00</td>
</tr>
<tr>
<td>715-4-122</td>
<td>LIGHT POLE COMP, F&amp;I, WS130, 45'</td>
<td>334.00</td>
<td>EA</td>
<td>$4,688.07</td>
<td>$1,565,815.38</td>
</tr>
<tr>
<td>715-14-11</td>
<td>LIGHTING - PULL BOX,F&amp;I,ROADSIDE-MOULDED</td>
<td>334.00</td>
<td>EA</td>
<td>$330.70</td>
<td>$110,453.80</td>
</tr>
<tr>
<td>715-500-1</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>334.00</td>
<td>EA</td>
<td>$553.54</td>
<td>$1,84,882.36</td>
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</table>

Subcomponent Total: $2,578,583.54

Lighting Component Total: $2,578,583.54

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**LANDSCAPING COMPONENT**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Cost %</td>
<td>3.00</td>
</tr>
<tr>
<td>Component Detail</td>
<td>N</td>
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</table>

Landscaping Component Total: $1,865,855.13

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**RETAINING WALLS COMPONENT**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>521-8-1</td>
<td>CONC TRAF RAIL BAR, JCT SLAB,32&quot;F SHAPE</td>
<td>27,200.00</td>
<td>LF</td>
<td>$240.44</td>
<td>$6,539,968.00</td>
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</tbody>
</table>

Retaining Wall 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>27,200.00</td>
</tr>
<tr>
<td>Begin height</td>
<td>3.00</td>
</tr>
<tr>
<td>End Height</td>
<td>3.00</td>
</tr>
<tr>
<td>Multiplier</td>
<td>2</td>
</tr>
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</table>

Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>163,200.00</td>
<td>SF</td>
<td>$29.09</td>
<td>$4,747,488.00</td>
</tr>
</tbody>
</table>

Retaining Walls Component Total: $11,287,456.00

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**ARCHITECTURAL COMPONENT**

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<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TOLL GANTRY, 80'</td>
<td>3.00</td>
<td>EA</td>
<td>$500,000.00</td>
<td>$1,500,000.00</td>
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</tbody>
</table>

Comment: THREE 40' SPAN TOLL GANTRY

Architectural Component Total: $1,500,000.00

Sequence 1 Total: $64,061,025.97
**Sequence:** 2 NDR - New Construction, Divided, Rural  
**Description:** Mainline 3 GUL in each direction from 2554+00.00 to 2583+00.00.

### EARTHWORK COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>150.00 / 150.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Alignment Number                                | 1          |
| Distance                                         | 0.560      |
| Top of Structural Course For Begin Section       | 103.00     |
| Top of Structural Course For End Section         | 103.00     |
| Horizontal Elevation For Begin Section           | 100.00     |
| Horizontal Elevation For End Section             | 100.00     |
| Front Slope L/R                                  | 1 to 1 / 1 to 1 |
| Median Slope L/R                                 | 1 to 1 / 1 to 1 |
| Median Shoulder Cross Slope L/R                  | 5.00 % / 5.00 % |
| Outside Shoulder Cross Slope L/R                 | 6.00 % / 6.00 % |
| Roadway Cross Slope L/R                          | 2.00 % / 2.00 % |

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>20.36</td>
<td>AC</td>
<td>$10,000.00</td>
<td>$203,600.00</td>
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<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>19,284.91</td>
<td>CY</td>
<td>$9.50</td>
<td>$183,206.64</td>
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**Earthwork Component Total**  
$386,806.65

### ROADWAY COMPONENT

**User Input Data**

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<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Number of Lanes</td>
<td>6</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>36.00 / 36.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>550</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>38,109.87</td>
<td>SY</td>
<td>$3.25</td>
<td>$123,857.08</td>
</tr>
<tr>
<td>285-711</td>
<td>OPTIONAL BASE,BASE GROUP 11</td>
<td>24,088.06</td>
<td>SY</td>
<td>$38.58</td>
<td>$929,317.35</td>
</tr>
<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22,PMA</td>
<td>6,504.96</td>
<td>TN</td>
<td>$109.37</td>
<td>$711,447.48</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>946.18</td>
<td>TN</td>
<td>$140.00</td>
<td>$132,465.20</td>
</tr>
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</table>

**Pavement Marking Subcomponent**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
<td>4</td>
</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
<td>4</td>
</tr>
</tbody>
</table>

**Pay Items**
<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>378.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$1,413.72</td>
</tr>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>2.24</td>
<td>NM</td>
<td>$908.42</td>
<td>$2,034.86</td>
</tr>
<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK,STD,WHITE,SKIP, 6&quot;</td>
<td>2.24</td>
<td>GM</td>
<td>$383.54</td>
<td>$859.13</td>
</tr>
<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>2.24</td>
<td>NM</td>
<td>$3,138.35</td>
<td>$7,029.90</td>
</tr>
<tr>
<td>711-11-131</td>
<td>THERMOPLASTIC, STD, WHITE, SKIP, 6&quot;</td>
<td>2.24</td>
<td>GM</td>
<td>$1,027.15</td>
<td>$2,300.82</td>
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**Peripherals Subcomponent**

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<th>Description</th>
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<tbody>
<tr>
<td>Off Road Bike Path(s)</td>
<td>0</td>
</tr>
<tr>
<td>Off Road Bike Path Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Bike Path Structural Spread Rate</td>
<td>0</td>
</tr>
<tr>
<td>Noise Barrier Wall Length</td>
<td>1,746.00</td>
</tr>
<tr>
<td>Noise Barrier Wall Begin Height</td>
<td>10.00</td>
</tr>
<tr>
<td>Noise Barrier Wall End Height</td>
<td>10.00</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>534-72-101</td>
<td>SOUND/NOISE BARRIER-INC FOUNDATION, PERM</td>
<td>17,460.00</td>
<td>SF</td>
<td>$23.58</td>
<td>$411,706.80</td>
</tr>
<tr>
<td>544-75-1</td>
<td>CRASH CUSHION</td>
<td>10.00</td>
<td>EA</td>
<td>$15,521.81</td>
<td>$155,218.10</td>
</tr>
<tr>
<td>550-10-220</td>
<td>FENCING, TYPE B, 5.1-6.0', STANDARD</td>
<td>53,726.00</td>
<td>LF</td>
<td>$12.11</td>
<td>$650,621.86</td>
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**Roadway Component Total**

$3,128,272.30

**SHOULDER COMPONENT**

<table>
<thead>
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<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>12.00 / 12.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>12.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>2</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-705</td>
<td>OPTIONAL BASE,BASE GROUP 05</td>
<td>8,101.63</td>
<td>SY</td>
<td>$22.52</td>
<td>$182,448.71</td>
</tr>
<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>1,300.99</td>
<td>TN</td>
<td>$105.00</td>
<td>$136,603.95</td>
</tr>
<tr>
<td>546-72-51</td>
<td>RUMBLE STRIPS, GROUND-IN, 16&quot; MIN. WIDTH</td>
<td>1.12</td>
<td>PM</td>
<td>$1,428.02</td>
<td>$1,599.38</td>
</tr>
</tbody>
</table>

**X-Items**

<table>
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<tr>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>570-1-2</td>
<td>PERFORMANCE TURF, SOD</td>
<td>21,026.00</td>
<td>SY</td>
<td>$2.25</td>
<td>$47,308.50</td>
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**Erosion Control**

Comment: 32' each side of road x sequence length
### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>7,687.68</td>
<td>LF</td>
<td>$1.25</td>
<td>$9,609.60</td>
</tr>
<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>140.00</td>
<td>LF</td>
<td>$9.63</td>
<td>$1,348.20</td>
</tr>
<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER-NYL REINF PVC</td>
<td>140.00</td>
<td>LF</td>
<td>$4.69</td>
<td>$656.60</td>
</tr>
<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
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<tr>
<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>4.00</td>
<td>EA</td>
<td>$94.06</td>
<td>$376.24</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>13.57</td>
<td>AC</td>
<td>$35.63</td>
<td>$483.50</td>
</tr>
<tr>
<td>107-2</td>
<td>MOWING</td>
<td>13.57</td>
<td>AC</td>
<td>$55.77</td>
<td>$756.80</td>
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**Shoulder Component Total**

$383,407.26

### MEDIAN COMPONENT

**User Input Data**

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<tr>
<td>Total Median Width</td>
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<tr>
<td>Performance Turf Width</td>
<td>0.00</td>
</tr>
<tr>
<td>Total Median Shoulder Width L/R</td>
<td>10.00 / 10.00</td>
</tr>
<tr>
<td>Paved Median Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>2</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
<td>4,159.23</td>
<td>SY</td>
<td>$16.00</td>
<td>$66,547.68</td>
</tr>
<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>650.50</td>
<td>TN</td>
<td>$105.00</td>
<td>$68,302.50</td>
</tr>
<tr>
<td>521-1-1</td>
<td>MEDIAN BARRIER WALL CONC, PRECAST</td>
<td>46,393.00</td>
<td>LF</td>
<td>$111.97</td>
<td>$5,194,624.21</td>
</tr>
<tr>
<td>546-72-51</td>
<td>RUMBLE STRIPS, GROUND-IN, 16&quot; MIN. WIDTH</td>
<td>1.00</td>
<td>PM</td>
<td>$1,428.02</td>
<td>$1,428.02</td>
</tr>
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**Median Component Total**

$5,330,902.41

### DRAINAGE COMPONENT

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>10.08</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$13,120.03</td>
</tr>
<tr>
<td>425-1-551</td>
<td>INLETS, DT BOT, TYPE E, &lt;10'</td>
<td>4.00</td>
<td>EA</td>
<td>$3,814.23</td>
<td>$15,256.92</td>
</tr>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;SD</td>
<td>448.00</td>
<td>LF</td>
<td>$72.48</td>
<td>$32,471.04</td>
</tr>
<tr>
<td>430-175-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;SD</td>
<td>192.00</td>
<td>LF</td>
<td>$75.40</td>
<td>$14,476.80</td>
</tr>
<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;SD</td>
<td>168.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$18,693.36</td>
</tr>
<tr>
<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24&quot; SD</td>
<td>6.00</td>
<td>EA</td>
<td>$1,198.82</td>
<td>$7,192.92</td>
</tr>
<tr>
<td>524-1-1</td>
<td>CONCRETE DITCH PAVT, NR, 3&quot;</td>
<td>1,120.00</td>
<td>SY</td>
<td>$51.90</td>
<td>$58,128.00</td>
</tr>
<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>394.24</td>
<td>SY</td>
<td>$1.25</td>
<td>$492.80</td>
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</tbody>
</table>

**Drainage Component Total**

$159,831.87
### SIGNING COMPONENT

<table>
<thead>
<tr>
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<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$643.04</td>
</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>14.00</td>
<td>AS</td>
<td>$1,053.87</td>
<td>$14,754.18</td>
</tr>
<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$4,188.78</td>
<td>$8,377.56</td>
</tr>
<tr>
<td>700-2-15</td>
<td>MULTI- POST SIGN, F&amp;I GM, 51-100 SF</td>
<td>4.00</td>
<td>AS</td>
<td>$5,697.97</td>
<td>$22,791.88</td>
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</table>

**Signing Component Total**: $46,566.66

### LANDSCAPING COMPONENT

**User Input Data**

<table>
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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Cost %</td>
<td>3.00</td>
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<tr>
<td>Component Detail</td>
<td>N</td>
</tr>
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</table>

**Landscaping Component Total**: $721,499.14

### BRIDGES COMPONENT

**Bridge 0086**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Estimate Type</td>
<td>SF Estimate</td>
</tr>
<tr>
<td>Primary Estimate</td>
<td>YES</td>
</tr>
<tr>
<td>Length (LF)</td>
<td>248.00</td>
</tr>
<tr>
<td>Width (LF)</td>
<td>84.00</td>
</tr>
<tr>
<td>Type</td>
<td>Medium Level, Widen</td>
</tr>
<tr>
<td>Cost Factor</td>
<td>1.25</td>
</tr>
<tr>
<td>Structure No.</td>
<td></td>
</tr>
<tr>
<td>Removal of Existing Structures area</td>
<td>0.00</td>
</tr>
<tr>
<td>Default Cost per SF</td>
<td>$145.00</td>
</tr>
<tr>
<td>Factored Cost per SF</td>
<td>$181.25</td>
</tr>
<tr>
<td><strong>Final Cost per SF</strong></td>
<td><strong>$186.12</strong></td>
</tr>
<tr>
<td><strong>Basic Bridge Cost</strong></td>
<td><strong>$3,775,800.00</strong></td>
</tr>
</tbody>
</table>

**Description**: ORANGE BLVD INSIDE WIDENING FOR 4 EXPRESS LANES.

**Bridge Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>186.67</td>
<td>CY</td>
<td>$379.38</td>
<td>$70,818.86</td>
</tr>
<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>32,667.25</td>
<td>LB</td>
<td>$0.94</td>
<td>$30,707.22</td>
</tr>
</tbody>
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**Bridge 0086 Total**: $3,877,326.08

**Bridge 0196**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Estimate Type</td>
<td>SF Estimate</td>
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<tr>
<td>Primary Estimate</td>
<td>YES</td>
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<tr>
<td>Length (LF)</td>
<td>491.00</td>
</tr>
<tr>
<td>Width (LF)</td>
<td>84.00</td>
</tr>
</tbody>
</table>
Type: Medium Level, Widen  
Cost Factor: 1.25  
Structure No.: Removal of Existing Structures area 0.00  
Default Cost per SF: $145.00  
Factored Cost per SF: $181.25  
Final Cost per SF: $183.71  
Basic Bridge Cost: $7,475,475.00  

Description: US 17/92 INSIDE WIDENING FOR 4 EXPRESS LANES.

### Bridge Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>186.67 CY</td>
<td>CY</td>
<td>$379.38</td>
<td>$70,818.86</td>
</tr>
<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>32,667.25 LB</td>
<td>LB</td>
<td>$0.94</td>
<td>$30,707.22</td>
</tr>
</tbody>
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**Bridge 0196 Total**: $7,577,001.08

**Bridges Component Total**: $11,454,327.16

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### RETAINING WALLS COMPONENT

#### X-Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>521-8-1</td>
<td>CONC TRAF RAIL BAR, JCT SLAB,32”F SHAPE</td>
<td>5,914.00 LF</td>
<td>LF</td>
<td>$240.44</td>
<td>$1,421,962.16</td>
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</tbody>
</table>

**Retaining Wall 1**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>5,914.00</td>
</tr>
<tr>
<td>Begin height</td>
<td>3.00</td>
</tr>
<tr>
<td>End Height</td>
<td>3.00</td>
</tr>
<tr>
<td>Multiplier</td>
<td>1</td>
</tr>
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</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>17,742.00 SF</td>
<td>SF</td>
<td>$29.09</td>
<td>$516,114.78</td>
</tr>
</tbody>
</table>

**Retaining Wall 2**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>800.00</td>
</tr>
<tr>
<td>Begin height</td>
<td>1.00</td>
</tr>
<tr>
<td>End Height</td>
<td>16.50</td>
</tr>
<tr>
<td>Multiplier</td>
<td>6</td>
</tr>
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</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>42,000.00 SF</td>
<td>SF</td>
<td>$29.09</td>
<td>$1,221,780.00</td>
</tr>
</tbody>
</table>

**Retaining Walls Component Total**: $3,159,856.94

**Sequence 2 Total**: $24,771,470.39
**Sequence:** 3 NDR - New Construction, Divided, Rural  

**Net Length:** 32,500 MI  
171,600 LF

**Description:** Mainline auxiliary lanes only  

**Special Conditions:** This is pavement for GUL aux. lanes

---

**EARTHWORK COMPONENT**

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alignment Number</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance</td>
<td>32,500</td>
</tr>
<tr>
<td>Top of Structural Course For Begin Section</td>
<td>103.00</td>
</tr>
<tr>
<td>Top of Structural Course For End Section</td>
<td>103.00</td>
</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>0 to 1 / 0 to 1</td>
</tr>
<tr>
<td>Median Slope L/R</td>
<td>0 to 1 / 0 to 1</td>
</tr>
<tr>
<td>Median Shoulder Cross Slope L/R</td>
<td>0.00 % / 0.00 %</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>0.00 % / 0.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>0.00 % / 0.00 %</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>119,611.56 CY</td>
<td>$9.50</td>
<td>$1,136,309.82</td>
<td></td>
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</table>

**Earthwork Component Total**  
$1,136,309.82

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**ROADWAY COMPONENT**

**User Input Data**

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<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Number of Lanes</td>
<td>1</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>550</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>228,800.00 SY</td>
<td>$3.25</td>
<td>$743,600.00</td>
<td></td>
</tr>
<tr>
<td>285-711</td>
<td>OPTIONAL BASE,BASE GROUP 11</td>
<td>253,968.00 SY</td>
<td>$38.58</td>
<td>$9,798,085.44</td>
<td></td>
</tr>
<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22,PMA</td>
<td>62,920.00 TN</td>
<td>$109.37</td>
<td>$6,881,560.40</td>
<td></td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>9,152.00 TN</td>
<td>$140.00</td>
<td>$1,281,280.00</td>
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</table>

**Pavement Marking Subcomponent**

<table>
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<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
<td>0</td>
</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
<td>0</td>
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</tbody>
</table>
## SHOULDER COMPONENT

### User Input Data

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<th>Description</th>
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<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>2</td>
</tr>
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### Erosion Control

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>446,160.00</td>
<td>LF</td>
<td>$1.25</td>
<td>$557,700.00</td>
</tr>
<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>8,125.00</td>
<td>LF</td>
<td>$9.63</td>
<td>$78,243.75</td>
</tr>
<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>8,125.00</td>
<td>LF</td>
<td>$4.69</td>
<td>$38,106.25</td>
</tr>
<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>33.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$73,120.74</td>
</tr>
<tr>
<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>195.00</td>
<td>EA</td>
<td>$94.06</td>
<td>$18,341.70</td>
</tr>
<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>787.80</td>
<td>AC</td>
<td>$35.63</td>
<td>$28,069.31</td>
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<tr>
<td>107-2</td>
<td>MOWING</td>
<td>787.80</td>
<td>AC</td>
<td>$55.77</td>
<td>$43,935.61</td>
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**Shoulder Component Total**: $837,517.36

### DRAINAGE COMPONENT

<table>
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<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>585.00</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$761,430.15</td>
</tr>
<tr>
<td>425-1-551</td>
<td>INLETS, DT BOT, TYPE E, &lt;10'</td>
<td>195.00</td>
<td>EA</td>
<td>$3,814.23</td>
<td>$743,774.85</td>
</tr>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;SD</td>
<td>26,000.00</td>
<td>LF</td>
<td>$72.48</td>
<td>$1,884,480.00</td>
</tr>
<tr>
<td>430-175-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;/CD</td>
<td>11,184.00</td>
<td>LF</td>
<td>$75.40</td>
<td>$843,273.60</td>
</tr>
<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;/CD</td>
<td>9,624.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$1,070,862.48</td>
</tr>
<tr>
<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24&quot; SD</td>
<td>1,300.00</td>
<td>EA</td>
<td>$1,198.82</td>
<td>$1,558,466.00</td>
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<tr>
<td>524-1-1</td>
<td>CONCRETE DITCH PAVT, NR, 3&quot;</td>
<td>65,000.00</td>
<td>SY</td>
<td>$51.90</td>
<td>$3,373,500.00</td>
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<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>22,880.00</td>
<td>SY</td>
<td>$1.25</td>
<td>$28,600.00</td>
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**Drainage Component Total**: $10,264,387.08

### SIGNING COMPONENT

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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>000-1-1</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12</td>
<td></td>
<td></td>
<td></td>
<td></td>
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**Signing Component Total**: $0.00
<table>
<thead>
<tr>
<th>Sequence</th>
<th>Description</th>
<th>SF</th>
<th>AS</th>
<th>$</th>
<th>SF</th>
<th>AS</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SF</td>
<td>65.00</td>
<td>$321.52</td>
<td>$20,898.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>780.00 AS</td>
<td>$1,053.87</td>
<td>$822,018.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>65.00 AS</td>
<td>$4,188.78</td>
<td>$272,270.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>700-2-15</td>
<td>MULTI- POST SIGN, F&amp;I GM, 51-100 SF</td>
<td>195.00 AS</td>
<td>$5,697.97</td>
<td>$1,111,104.15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Signing Component Total**

$2,226,292.25

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**LANDSCAPING COMPONENT**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost %</td>
<td>3.00</td>
</tr>
<tr>
<td>Component Detail</td>
<td>N</td>
</tr>
</tbody>
</table>

**Landscaping Component Total**

$995,070.97

---

**Sequence 3 Total**

$34,164,103.32

---

**Sequence: 4 NUR - New Construction, Undivided, Rural**

**Net Length:** 0.246 MI

1,300 LF

**Description:** Reconstruct E E Williamson Rd. bridge

---

**EARTHWORK COMPONENT**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
<tr>
<td>Alignment Number</td>
<td>1</td>
</tr>
<tr>
<td>Distance</td>
<td>0.246</td>
</tr>
<tr>
<td>Top of Structural Course For Begin Section</td>
<td>105.00</td>
</tr>
<tr>
<td>Top of Structural Course For End Section</td>
<td>105.00</td>
</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>6 to 1 / 6 to 1</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>6.00 % / 6.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>2.00 % / 2.00 %</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>2.98</td>
<td>AC</td>
<td>$10,000.00</td>
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<td>10,908.67</td>
<td>CY</td>
<td>$9.50</td>
<td>$103,632.36</td>
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**Earthwork Component Total**

$133,432.37

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**ROADWAY COMPONENT**

<table>
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<tbody>
<tr>
<td>Number of Lanes</td>
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<tr>
<td>Roadway Pavement Width L/R</td>
<td>12.00 / 12.00</td>
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<tr>
<td>Structural Spread Rate</td>
<td>275</td>
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## Pay Items

<table>
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<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
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<td>SY</td>
<td>$3.25</td>
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<td>285-712</td>
<td>OPTIONAL BASE, BASE GROUP 12</td>
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<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAFFIC E, PG76-22, PMA</td>
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<td>TN</td>
<td>$97.88</td>
<td>$46,653.52</td>
</tr>
<tr>
<td>337-7-33</td>
<td>ASPH CONC FC, TRAFFIC C, FC-12.5, RUBBER</td>
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<td>TN</td>
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## Pavement Marking Subcomponent

<table>
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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
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</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
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</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
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## Pay Items

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<tr>
<th>Pay Item</th>
<th>Description</th>
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<th>Unit</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>33.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$123.42</td>
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<td>710-11-111</td>
<td>PAINTED PAVT MARK, STD, WHITE, SOLID, 6&quot;</td>
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<td>NM</td>
<td>$908.42</td>
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<tr>
<td>711-11-111</td>
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<td>NM</td>
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## Peripherals Subcomponent

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<tr>
<td>Off Road Bike Path Width L/R</td>
<td>0.00 / 0.00</td>
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<tr>
<td>Bike Path Structural Spread Rate</td>
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<td>Noise Barrier Wall Length</td>
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<td>Noise Barrier Wall Begin Height</td>
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<tr>
<td>Noise Barrier Wall End Height</td>
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## Pay Items

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<tr>
<th>Pay Item</th>
<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>339-1</td>
<td>MISCELLANEOUS ASPHALT PAVEMENT</td>
<td>34.67</td>
<td>TN</td>
<td>$232.34</td>
<td>$8,055.23</td>
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<tr>
<td>521-72-3</td>
<td>SHLDR CONC BARRIER WALL, RIGID-SHLDR</td>
<td>610.00</td>
<td>LF</td>
<td>$186.18</td>
<td>$113,569.80</td>
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<tr>
<td>536-1-1</td>
<td>GUARDRAIL- ROADWAY, GEN TL-3</td>
<td>1,000.00</td>
<td>LF</td>
<td>$17.75</td>
<td>$17,750.00</td>
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<tr>
<td>536-8</td>
<td>GUARDRAIL- BRIDGE ANCHORAGE ASSEM, F&amp;I</td>
<td>4.00</td>
<td>EA</td>
<td>$2,292.42</td>
<td>$9,169.68</td>
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**Roadway Component Total**: $307,877.93

## SHOULDER COMPONENT

**User Input Data**

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<thead>
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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>110</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>165</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>T</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
</tbody>
</table>

### X-Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>520-6</td>
<td>SHOULDER GUTTER- CONCRETE</td>
<td>2,400.00</td>
<td>LF</td>
<td>$21.35</td>
<td>$51,240.00</td>
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<td>522-1</td>
<td>CONCRETE SIDEWALK AND DRIVEWAYS, 4&quot;</td>
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<td>SY</td>
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### Erosion Control

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<th>Extended Amount</th>
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<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>3,379.83</td>
<td>LF</td>
<td>$1.25</td>
<td>$4,224.79</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>61.55</td>
<td>LF</td>
<td>$9.63</td>
<td>$592.73</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>61.55</td>
<td>LF</td>
<td>$4.69</td>
<td>$288.67</td>
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<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
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**Shoulder Component Total**

$92,069.34

### DRAINAGE COMPONENT

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<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;SD</td>
<td>200.00</td>
<td>LF</td>
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<td>$14,496.00</td>
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<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;S/CD</td>
<td>48.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$5,340.96</td>
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**Drainage Component Total**

$19,836.96

### SIGNING COMPONENT

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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>1.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$321.52</td>
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<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>5.00</td>
<td>AS</td>
<td>$1,053.87</td>
<td>$5,269.35</td>
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<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>1.00</td>
<td>AS</td>
<td>$4,188.78</td>
<td>$4,188.78</td>
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**Signing Component Total**

$9,779.65

### LANDSCAPING COMPONENT
## Bridges Component

### Bridge EEWILL

<table>
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<th>Value</th>
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<tbody>
<tr>
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<td>SF Estimate</td>
</tr>
<tr>
<td>Primary Estimate</td>
<td>YES</td>
</tr>
<tr>
<td>Length (LF)</td>
<td>280.00</td>
</tr>
<tr>
<td>Width (LF)</td>
<td>51.00</td>
</tr>
<tr>
<td>Type</td>
<td>Overpass Bridge</td>
</tr>
<tr>
<td>Cost Factor</td>
<td>1.25</td>
</tr>
<tr>
<td>Removal of Existing Structures area</td>
<td>9,993.00</td>
</tr>
<tr>
<td>Default Cost per SF</td>
<td>$120.00</td>
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<tr>
<td>Factored Cost per SF</td>
<td>$150.00</td>
</tr>
<tr>
<td>Final Cost per SF</td>
<td>$165.03</td>
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<tr>
<td>Basic Bridge Cost</td>
<td>$2,142,000.00</td>
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### Bridge Pay Items

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<tr>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-3</td>
<td>REMOVAL OF EXISTING STRUCTURES/BRIDGES</td>
<td>9,993.00</td>
<td>SF</td>
<td>$20.00</td>
<td>$199,860.00</td>
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<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>113.33</td>
<td>CY</td>
<td>$379.38</td>
<td>$42,995.14</td>
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<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>19,832.75</td>
<td>LB</td>
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### Bridge X-Items

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<tr>
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<tr>
<td>506-2</td>
<td>BRIDGE DRAINAGE PIPE</td>
<td>1,320.00</td>
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<td>BRIDGE DRAINS</td>
<td>5.00</td>
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### Bridge EEWILL Total

- $2,556,533.53

- Bridges Component Total

- $2,556,533.53

## Retaining Walls Component

### Retaining Wall 1

<table>
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<th>Value</th>
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<tr>
<td>Length</td>
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<tr>
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<tr>
<td>End Height</td>
<td>16.50</td>
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<tr>
<td>Multiplier</td>
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### Pay Items

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<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>1,848.00</td>
<td>SF</td>
<td>$29.09</td>
<td>$53,758.32</td>
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### Retaining Walls Component Total

- $53,758.32
Sequence: 5 NUR - New Construction, Undivided, Rural  
Net Length: 0.241 MI  
1,270 LF

Description: One-lane ramps - Rest Area Access

---

### EARTHWORK COMPONENT

**User Input Data**

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<th>Description</th>
<th>Value</th>
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<tbody>
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<tr>
<td>Incidental Clearing and Grubbing Area</td>
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**Alignment Number**

1

**Distance**

0.240

**Top of Structural Course For Begin Section**

103.00

**Top of Structural Course For End Section**

103.00

**Horizontal Elevation For Begin Section**

100.00

**Horizontal Elevation For End Section**

100.00

**Front Slope L/R**

6 to 1 / 6 to 1

**Outside Shoulder Cross Slope L/R**

6.00 % / 6.00 %

**Roadway Cross Slope L/R**

2.00 % / 2.00 %

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>2.91 AC</td>
<td>$10,000.00</td>
<td>$29,100.00</td>
<td></td>
</tr>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
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**Earthwork Component Total**

$68,104.44

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### ROADWAY COMPONENT

**User Input Data**

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<tbody>
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</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>7.50 / 7.50</td>
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<tr>
<td>Structural Spread Rate</td>
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</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>3,809.52 SY</td>
<td>$3.25</td>
<td>$12,380.94</td>
<td></td>
</tr>
<tr>
<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>2,209.52 SY</td>
<td>$20.00</td>
<td>$44,190.40</td>
<td></td>
</tr>
<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAF E, PG76-22,PMA</td>
<td>523.81 TN</td>
<td>$97.88</td>
<td>$51,270.52</td>
<td></td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
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<td>$11,852.40</td>
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**Pavement Marking Subcomponent**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
<td>2</td>
</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
<td>0</td>
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### Pay Items

<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>710-11-11</td>
<td>PAINTED PAVT MARK, STD, WHITE, SOLID, 6&quot;</td>
<td>0.48</td>
<td>NM</td>
<td>$908.42</td>
<td>$436.04</td>
</tr>
<tr>
<td>711-11-11</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>0.48</td>
<td>NM</td>
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**Roadway Component Total**

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### SHOULDER COMPONENT

**User Input Data**

<table>
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<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
</tbody>
</table>

### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
<td>1,786.24</td>
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<td>186.24</td>
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### Erosion Control

**Pay Items**

<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
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<th>Unit</th>
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<th>Extended Amount</th>
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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>3,301.58</td>
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<td>$1.25</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>60.12</td>
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<td>$578.96</td>
</tr>
<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>60.12</td>
<td>LF</td>
<td>$4.69</td>
<td>$281.96</td>
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<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>2.91</td>
<td>AC</td>
<td>$35.63</td>
<td>$103.68</td>
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<td>107-2</td>
<td>MOWING</td>
<td>2.91</td>
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**Shoulder Component Total**

$55,604.69

### DRAINAGE COMPONENT

<table>
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<tr>
<th>Pay Items</th>
<th>Description</th>
<th>Quantity</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>4.33</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$5,635.88</td>
</tr>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;SD</td>
<td>200.00</td>
<td>LF</td>
<td>$72.48</td>
<td>$14,496.00</td>
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<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;S/CD</td>
<td>48.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$5,340.96</td>
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<tr>
<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24&quot; SD</td>
<td>10.00</td>
<td>EA</td>
<td>$1,198.82</td>
<td>$11,988.20</td>
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<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>169.31</td>
<td>SY</td>
<td>$1.25</td>
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**Drainage Component Total**

$37,672.68
## SIGNING COMPONENT

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<th>Unit</th>
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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>1.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$321.52</td>
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<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>5.00</td>
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<td>$1,053.87</td>
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<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
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<td>$4,188.78</td>
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**Signing Component Total** $9,779.65

## LIGHTING COMPONENT

### Rural Lighting Subcomponent

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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>715-1-13</td>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
<td>3,000.00</td>
<td>LF</td>
<td>$2.15</td>
<td>$6,450.00</td>
</tr>
<tr>
<td>715-2-11</td>
<td>LIGHTING-CONDUIT, F&amp;I, UNDERGROUND</td>
<td>1,000.00</td>
<td>LF</td>
<td>$4.29</td>
<td>$4,290.00</td>
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<tr>
<td>715-4-122</td>
<td>LIGHT POLE COMP, F&amp;I, WS130, 45'</td>
<td>5.00</td>
<td>EA</td>
<td>$4,688.07</td>
<td>$23,440.35</td>
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<tr>
<td>715-14-11</td>
<td>LIGHTING - PULL BOX,F&amp;I,ROADSIDE-MOULDED POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>5.00</td>
<td>EA</td>
<td>$330.70</td>
<td>$1,653.50</td>
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<tr>
<td>715-500-1</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>5.00</td>
<td>EA</td>
<td>$553.54</td>
<td>$2,767.70</td>
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**Lighting Component Total** $38,601.55

## LANDSCAPING COMPONENT

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<tr>
<td>Cost %</td>
<td>3.00</td>
</tr>
<tr>
<td>Component Detail</td>
<td>N</td>
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**Landscaping Component Total** $9,941.99

**Sequence 5 Total** $341,341.71

**Sequence:** 6 NUR - New Construction, Undivided, Rural  
**Net Length:** 0.227 MI 1,200 LF  
**Description:** One-lane ramps - HOV In-Out Ramps W of Lk. Mary Blvd.

## EARTHWORK COMPONENT

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Alignment Number** 1
Distance: 0.230
Top of Structural Course For Begin Section: 103.00
Top of Structural Course For End Section: 103.00
Horizontal Elevation For Begin Section: 100.00
Horizontal Elevation For End Section: 100.00
Front Slope L/R: 0 to 1 / 0 to 1
Outside Shoulder Cross Slope L/R: 6.00% / 6.00%
Roadway Cross Slope L/R: 2.00% / 2.00%

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>2,261.48 CY</td>
<td>$9.50</td>
<td>$21,484.06</td>
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</table>

Earthwork Component Total: $21,484.06

ROADWAY COMPONENT

User Input Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Lanes</td>
<td>1</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>7.50 / 7.50</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>495</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
</tbody>
</table>

Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>3,600.43 SY</td>
<td>$3.25</td>
<td>$11,701.40</td>
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</tr>
<tr>
<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>2,088.25 SY</td>
<td>$20.00</td>
<td>$41,765.00</td>
<td></td>
</tr>
<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAF E, PG76-22,PMA</td>
<td>495.06 TN</td>
<td>$97.88</td>
<td>$48,456.47</td>
<td></td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>80.01 TN</td>
<td>$140.00</td>
<td>$11,201.40</td>
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</table>

Pavement Marking Subcomponent

Description: Value
Y
Asphalt
1
2
1
0

Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>0.45 NM</td>
<td>$908.42</td>
<td>$408.79</td>
<td></td>
</tr>
<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>0.45 NM</td>
<td>$3,138.35</td>
<td>$1,412.26</td>
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</tr>
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</table>

Roadway Component Total: $114,945.32

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 | 0.00 / 0.00
Paved Outside Shoulder Width L/R | 6.00 / 6.00
Structural Spread Rate | 220
Friction Course Spread Rate | 80
Total Width (T) / 8" Overlap (O) |
Rumble Strips No. of Sides | 0

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE,BASE GROUP 08</td>
<td>1,688.20</td>
<td>SY</td>
<td>$16.00</td>
<td>$27,011.20</td>
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<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAF E, PG76-22,PMA</td>
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<td>TN</td>
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**Erosion Control**

<table>
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<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>3,120.37</td>
<td>LF</td>
<td>$1.25</td>
<td>$3,900.46</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>56.82</td>
<td>LF</td>
<td>$9.63</td>
<td>$547.18</td>
</tr>
<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>56.82</td>
<td>LF</td>
<td>$4.69</td>
<td>$266.49</td>
</tr>
<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
</tr>
<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>2.75</td>
<td>AC</td>
<td>$35.63</td>
<td>$97.98</td>
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<tr>
<td>107-2</td>
<td>MOWING</td>
<td>2.75</td>
<td>AC</td>
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**Shoulder Component Total**

$52,406.90

**DRAINAGE COMPONENT**

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<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND,24&quot;SD</td>
<td>184.00</td>
<td>LF</td>
<td>$72.48</td>
<td>$13,336.32</td>
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<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;S/CD</td>
<td>40.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$4,450.80</td>
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**X-Items**

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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>425-1-901</td>
<td>INLETS, SPECIAL, &lt;10'</td>
<td>4.00</td>
<td>EA</td>
<td>$4,822.27</td>
<td>$19,289.08</td>
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**Comment**: TOTAL DIST/300' INTERVAL

**Drainage Component Total**

$37,076.20

**LANDSCAPING COMPONENT**

**User Input Data**

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<tbody>
<tr>
<td>Cost %</td>
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<tr>
<td>Component Detail</td>
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### Landscaping Component Total

<table>
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<tbody>
<tr>
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<td>$6,777.37</td>
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### Sequence 6 Total

| Sequence: 7 NDU - New Construction, Divided, Urban |
| Net Length: 0.633 MI |
| Description: Lake Mary Blvd. DDI bridge and approach roadway. |

#### EARTHWORK COMPONENT

<table>
<thead>
<tr>
<th>User Input Data</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
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</tr>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>105.00 / 105.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
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#### Pay Items

<table>
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<tr>
<th>Pay item</th>
<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>16.11 AC</td>
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<td>$10,000.00</td>
<td>$161,100.00</td>
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#### Earthwork Component Total

| Earthwork Component Total | $161,100.00 |

#### ROADWAY COMPONENT

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</thead>
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<td>Description</td>
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</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>48.00 / 48.00</td>
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<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
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#### Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>39,458.05 SY</td>
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<td>$128,238.66</td>
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<tr>
<td>285-712</td>
<td>OPTIONAL BASE, BASE GROUP 12</td>
<td>35,628.03 SY</td>
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<td>$712,560.60</td>
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<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAFFIC E, PG76-22, PMA</td>
<td>5,878.63 TN</td>
<td>$97.88</td>
<td>$575,400.30</td>
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</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC, INC BIT, FC-5, PG76-22, PMA</td>
<td>1,425.12 TN</td>
<td>$140.00</td>
<td>$199,516.80</td>
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#### Pavement Marking Subcomponent

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
</tbody>
</table>
## Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>598.00</td>
<td>EA</td>
<td>$3.74</td>
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</tr>
<tr>
<td>710-11-11</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>2.53</td>
<td>NM</td>
<td>$908.42</td>
<td>$2,298.30</td>
</tr>
<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK,STD,WHITE,SKIP, 6&quot;</td>
<td>3.80</td>
<td>GM</td>
<td>$383.54</td>
<td>$1,457.45</td>
</tr>
<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>2.53</td>
<td>NM</td>
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<tr>
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<td>THERMOPLASTIC, STD, WHITE, SKIP, 6&quot;</td>
<td>3.80</td>
<td>GM</td>
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## Peripherals Subcomponent

<table>
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<tbody>
<tr>
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<tr>
<td>Off Road Bike Path Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Bike Path Structural Spread Rate</td>
<td>0</td>
</tr>
<tr>
<td>Noise Barrier Wall Length</td>
<td>0.00</td>
</tr>
<tr>
<td>Noise Barrier Wall Begin Height</td>
<td>0.00</td>
</tr>
<tr>
<td>Noise Barrier Wall End Height</td>
<td>0.00</td>
</tr>
</tbody>
</table>

## Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
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<td>MISCELLANEOUS ASPHALT PAVEMENT</td>
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<td>TN</td>
<td>$232.34</td>
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**Roadway Component Total**

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## SHOULDER COMPONENT

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<td>Total Outside Shoulder Perf. Turf Width L/R</td>
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<td>Sidewalk Width L/R</td>
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## Pay Items

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<th>Extended Amount</th>
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<tbody>
<tr>
<td>520-1-10</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
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<td>LF</td>
<td>$19.00</td>
<td>$63,462.47</td>
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<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
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## Erosion Control

### Pay Items
### Pay Items

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**Shoulder Component Total**

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### MEDIAN COMPONENT

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**Median Component Total**

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### DRAINAGE COMPONENT

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<td>425-1-351</td>
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<td>MANHOLES, P-7, &lt;10'</td>
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**Drainage Component Total**

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### SIGNING COMPONENT

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<tr>
<td>Type</td>
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<tr>
<td>Multiplier</td>
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<th>Pay Item</th>
<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp; I, OPEN TRENCH</td>
<td>700.00</td>
<td>LF</td>
<td>$6.43</td>
<td>$4,501.00</td>
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<tr>
<td>630-2-12</td>
<td>CONDUIT, F&amp; I, DIRECTIONAL BORE</td>
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<td>LF</td>
<td>$17.13</td>
<td>$5,139.00</td>
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<tr>
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<td>$4,446.59</td>
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<td>AS</td>
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<td>EA</td>
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<td>$3,583.00</td>
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<td>665-1-11</td>
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<td>EA</td>
<td>$196.31</td>
<td>$1,570.48</td>
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<tr>
<td>670-5-111</td>
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<td>700-3-101</td>
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Signalization 2

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<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp; I, OPEN TRENCH</td>
<td>700.00</td>
<td>LF</td>
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<th>Extended Amount</th>
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<tr>
<td>632-7-1</td>
<td>SIGNAL CABLE- NEW OR RECO, FUR &amp; INSTALL</td>
<td>1.00 PI</td>
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<td>$4,446.59</td>
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<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
<td>22.00 EA</td>
<td>$535.14</td>
<td>$11,773.08</td>
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<tr>
<td>639-1-112</td>
<td>ELECTRICAL POWER SRV,F&amp;I,OH,M,PUR BY CON</td>
<td>1.00 AS</td>
<td>$1,774.62</td>
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<td>639-2-1</td>
<td>ELECTRICAL SERVICE WIRE, F&amp;I</td>
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<td>649-31-105</td>
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<td>650-1-311</td>
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<td>PEDESTRIAN SIGNAL, F&amp;I, LED-COUNT DWN, 1</td>
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<td>LOOP DETECTOR INDUCTIVE, F&amp;I, TYPE 2</td>
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<td>LOOP ASSEMBLY, F&amp;I, TYPE F</td>
<td>20.00 AS</td>
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<td>$17,026.40</td>
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<td>665-1-11</td>
<td>PEDESTRIAN DETECTOR, F&amp;I, STANDARD</td>
<td>8.00 EA</td>
<td>$196.31</td>
<td>$1,570.48</td>
<td></td>
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<tr>
<td>670-5-111</td>
<td>TRAF CNTL ASSEM, F&amp;I, NEMA, 1 PREEMPT</td>
<td>1.00 AS</td>
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<td>$23,075.08</td>
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<tr>
<td>700-3-101</td>
<td>SIGN PANEL, F&amp;I GM, UP TO 12 SF</td>
<td>4.00 EA</td>
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**Signalizations Component Total**: $516,298.40

### LIGHTING COMPONENT

**Conventional Lighting Subcomponent**

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<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
<td>3,340.13 LF</td>
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**Subcomponent Total**: $191,332.91

**Lighting Component Total**: $191,332.91

### LANDSCAPING COMPONENT

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**Landscaping Component Total**: $462,749.24
# BRIDGES COMPONENT

## Bridge LKMARY

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<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate Type</td>
<td>SF Estimate</td>
</tr>
<tr>
<td>Primary Estimate</td>
<td>YES</td>
</tr>
<tr>
<td>Length (LF)</td>
<td>300.00</td>
</tr>
<tr>
<td>Width (LF)</td>
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</tr>
<tr>
<td>Type</td>
<td>Overpass Bridge</td>
</tr>
<tr>
<td>Cost Factor</td>
<td>1.25</td>
</tr>
<tr>
<td>Removal of Existing Structures area</td>
<td>39,242.00</td>
</tr>
<tr>
<td>Default Cost per SF</td>
<td>$120.00</td>
</tr>
<tr>
<td>Factored Cost per SF</td>
<td>$150.00</td>
</tr>
<tr>
<td>Final Cost per SF</td>
<td>$154.03</td>
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</table>

### Basic Bridge Cost
- **Description**: LK. MARY BLVD. OVER I-4
- **Value**: $8,685,000.00

### Bridge Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-3</td>
<td>REMOVAL OF EXISTING STRUCTURES/BRIDGES</td>
<td>39,242.00</td>
<td>SF</td>
<td>$20.00</td>
<td>$784,840.00</td>
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<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>428.89</td>
<td>CY</td>
<td>$379.38</td>
<td>$162,712.29</td>
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<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>75,055.75</td>
<td>LB</td>
<td>$0.94</td>
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**Bridge LKMARY Total**: $9,703,104.70

## Bridge LKM1

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<tr>
<td>Primary Estimate</td>
<td>YES</td>
</tr>
<tr>
<td>Length (LF)</td>
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<td>Width (LF)</td>
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<tr>
<td>Type</td>
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<tr>
<td>Cost Factor</td>
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</tr>
<tr>
<td>Removal of Existing Structures area</td>
<td>0.00</td>
</tr>
<tr>
<td>Default Cost per SF</td>
<td>$120.00</td>
</tr>
<tr>
<td>Factored Cost per SF</td>
<td>$150.00</td>
</tr>
<tr>
<td>Final Cost per SF</td>
<td>$157.19</td>
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### Basic Bridge Cost
- **Description**: LAKE EMMA BRIDGE TO I-4 WB
- **Value**: $819,000.00

### Bridge Pay Items

<table>
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<tr>
<th>Pay item</th>
<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>72.22</td>
<td>CY</td>
<td>$379.38</td>
<td>$27,398.82</td>
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<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>12,638.50</td>
<td>LB</td>
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**Bridge LKM1 Total**: $858,279.01

## Bridge LKM2

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<td>Primary Estimate</td>
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<tr>
<td>Length (LF)</td>
<td>132.00</td>
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<tr>
<td>Width (LF)</td>
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<td>Type</td>
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<td>Cost Factor</td>
<td>1.25</td>
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<tr>
<td>Structure No.</td>
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<tr>
<td>Removal of Existing Structures area</td>
<td>0.00</td>
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<tr>
<td>Default Cost per SF</td>
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<tr>
<td>Factored Cost per SF</td>
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<td>Final Cost per SF</td>
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<tr>
<td>Basic Bridge Cost</td>
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**Description:** LAKE EMMA BRIDGE TO I-4 EB

**Bridge Pay Items**

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<tr>
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<th>Extended Amount</th>
</tr>
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<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>71.11 CY</td>
<td>$379.38</td>
<td>$26,977.71</td>
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<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>12,444.25 LB</td>
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<td>$11,697.60</td>
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**Bridge LKM2 Total**

$672,275.31

**Bridges Component Total**

$11,233,659.02

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**RETTAINING WALLS COMPONENT**

**Retaining Wall 1**

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<td>Length</td>
<td>183.00</td>
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<tr>
<td>Begin height</td>
<td>16.50</td>
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<tr>
<td>End Height</td>
<td>16.50</td>
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<tr>
<td>Multiplier</td>
<td>2</td>
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</table>

**Pay Items**

<table>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>6,039.00 SF</td>
<td>$29.09</td>
<td>$175,674.51</td>
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</table>

**Retaining Wall 2**

<table>
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<tr>
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<tbody>
<tr>
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<tr>
<td>Begin height</td>
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<td>End Height</td>
<td>16.50</td>
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<tr>
<td>Multiplier</td>
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**Pay Items**

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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>1,890.00 SF</td>
<td>$29.09</td>
<td>$54,980.10</td>
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**Retaining Walls Component Total**

$230,654.64

---

**Sequence 7 Total**

$15,887,724.05

**Sequence:** 8 NUR - New Construction, Undivided, Rural

**Description:** One-lane ramps - Lk. Mary Blvd.

**Net Length:** 1.136 MI

6,000 LF
### Earthwork Component

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
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<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
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<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alignment Number</td>
<td>1</td>
</tr>
<tr>
<td>Distance</td>
<td>1.136</td>
</tr>
<tr>
<td>Top of Structural Course For Begin Section</td>
<td>105.00</td>
</tr>
<tr>
<td>Top of Structural Course For End Section</td>
<td>105.00</td>
</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
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<tr>
<td>Front Slope L/R</td>
<td>6 to 1 / 6 to 1</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>6.00% / 6.00%</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>2.00% / 2.00%</td>
</tr>
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</table>

#### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>13.77</td>
<td>AC</td>
<td>$10,000.00</td>
<td>$137,700.00</td>
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<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>70,559.64</td>
<td>CY</td>
<td>$9.50</td>
<td>$670,316.58</td>
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**Earthwork Component Total**

$808,016.58

### Roadway Component

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<tbody>
<tr>
<td>Number of Lanes</td>
<td>1</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>24.00 / 24.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>495</td>
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<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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</table>

#### Pay Items

<table>
<thead>
<tr>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>40,001.28</td>
<td>SY</td>
<td>$3.25</td>
<td>$130,004.16</td>
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<tr>
<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>32,441.04</td>
<td>SY</td>
<td>$20.00</td>
<td>$648,820.80</td>
</tr>
<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAFFIC, PG76-22, PMA</td>
<td>7,920.25</td>
<td>TN</td>
<td>$97.88</td>
<td>$775,234.07</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC, INC BIT, FC-5, PG76-22, PMA</td>
<td>1,280.04</td>
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#### Pavement Marking Subcomponent

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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
<td>2</td>
</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
<td>0</td>
</tr>
</tbody>
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#### Pay Items

<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVEMENT MARK, STD, WHITE, SOLID, 6&quot;</td>
<td>2.27</td>
<td>NM</td>
<td>$908.42</td>
<td>$2,062.11</td>
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<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>2.27</td>
<td>NM</td>
<td>$3,138.35</td>
<td>$7,124.05</td>
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</tbody>
</table>
### Peripherals Subcomponent

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

### Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>339-1</td>
<td>MISCELLANEOUS ASPHALT PAVEMENT</td>
<td>34.00</td>
<td>TN</td>
<td>$232.34</td>
<td>$7,899.56</td>
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<td>536-1-1</td>
<td>GUARDRAIL- ROADWAY, GEN TL-3</td>
<td>1,000.00</td>
<td>LF</td>
<td>$17.75</td>
<td>$17,750.00</td>
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<tr>
<td>536-85-22</td>
<td>ASSY/END ANCH</td>
<td>2.00</td>
<td>EA</td>
<td>$1,600.00</td>
<td>$3,200.00</td>
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**Roadway Component Total**: $1,771,300.35

### SHOULDER COMPONENT

**User Input Data**

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<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
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<tr>
<td>Rumble Strips No. of Sides</td>
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</table>

### Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE,BASE GROUP 08</td>
<td>8,440.27</td>
<td>SY</td>
<td>$16.00</td>
<td>$135,044.32</td>
</tr>
<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>880.03</td>
<td>TN</td>
<td>$105.00</td>
<td>$92,403.15</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>35.20</td>
<td>TN</td>
<td>$140.00</td>
<td>$4,928.00</td>
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### Erosion Control

### Pay Items

<table>
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<th>Extended Amount</th>
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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>15,600.50</td>
<td>LF</td>
<td>$1.25</td>
<td>$19,500.62</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>284.10</td>
<td>LF</td>
<td>$9.63</td>
<td>$2,735.88</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER-NYL REINF PVC</td>
<td>284.10</td>
<td>LF</td>
<td>$4.69</td>
<td>$1,332.43</td>
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<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>2.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$4,431.56</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>13.77</td>
<td>AC</td>
<td>$35.63</td>
<td>$490.63</td>
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<tr>
<td>107-2</td>
<td>MOWING</td>
<td>13.77</td>
<td>AC</td>
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**Shoulder Component Total**: $261,634.55

### DRAINAGE COMPONENT

### Pay Items
### Pay Item Details

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<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>20.46 CY</td>
<td>$1,301.59</td>
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</tr>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND,24&quot;SD</td>
<td>912.00 LF</td>
<td>$72.48</td>
<td>$66,101.76</td>
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<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, ROUND, 36&quot;S/CD</td>
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<td>$21,363.84</td>
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<tr>
<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24&quot; SD</td>
<td>46.00 EA</td>
<td>$1,198.82</td>
<td>$55,145.72</td>
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<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>800.03 SY</td>
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<td>$1,000.04</td>
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**Drainage Component Total**

$170,241.89

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### Signing Component

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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>3.00 AS</td>
<td>$321.52</td>
<td>$964.56</td>
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</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>23.00 AS</td>
<td>$1,053.87</td>
<td>$24,239.01</td>
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<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>3.00 AS</td>
<td>$4,188.78</td>
<td>$12,566.34</td>
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**Signing Component Total**

$37,769.91

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### Lighting Component

#### Rural Lighting Subcomponent

<table>
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<table>
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<tr>
<th>Pay Items</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F &amp; I, OPEN TRENCH PULL &amp; SPLICE BOX, F &amp; I, 13&quot; x 24&quot;</td>
<td>400.00 LF</td>
<td>$6.43</td>
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<tr>
<td>635-2-11</td>
<td>LIGHTING CONDUCTORS, F &amp; I, INSUL, NO.4-2</td>
<td>2.00 EA</td>
<td>$535.14</td>
<td>$1,070.28</td>
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<td>715-1-13</td>
<td>LIGHT POLE COMP, F &amp; I, WS130, 45'</td>
<td>1,200.00 LF</td>
<td>$2.15</td>
<td>$2,580.00</td>
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</tr>
<tr>
<td>715-4-122</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>2.00 EA</td>
<td>$4,688.07</td>
<td>$9,376.14</td>
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**Subcomponent Total**

$16,705.50

**Lighting Component Total**

$16,705.50

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### Landscaping Component

**User Input Data**

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<td>Component Detail</td>
<td>N</td>
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**Landscaping Component Total**

$91,970.06

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**Sequence 8 Total**

$3,157,638.84
Sequence: 9 NUR - New Construction, Undivided, Rural  
Description: Two-lane ramps - Lk. Mary Blvd.

**EARTHWORK COMPONENT**

### User Input Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
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<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Alignment Number | 1      |
| Distance         | 1.136  |
| 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

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>13.77 AC</td>
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**Earthwork Component Total**

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**ROADWAY COMPONENT**

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<td>Roadway Pavement Width L/R</td>
<td>24.00 / 24.00</td>
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<tr>
<td>Structural Spread Rate</td>
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<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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### Pay Items

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<tr>
<th>Pay item</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>45,334.78 SY</td>
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<td>$147,338.04</td>
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</tr>
<tr>
<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>32,441.04 SY</td>
<td>$20.00</td>
<td>$648,820.80</td>
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<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAF E, PG76-22, PMA</td>
<td>7,920.25 TN</td>
<td>$97.88</td>
<td>$775,234.07</td>
<td></td>
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<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>1,280.04 TN</td>
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### Pavement Marking Subcomponent

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<td>Include Thermo/Tape/Other</td>
<td>Y</td>
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<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
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<tr>
<td>Solid Stripe No. of Paint Applications</td>
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<tr>
<td>Solid Stripe No. of Stripes</td>
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<tr>
<td>Skip Stripe No. of Paint Applications</td>
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<tr>
<td>Skip Stripe No. of Stripes</td>
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### Pay Items

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<th>Extended Amount</th>
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<tr>
<td></td>
<td>RETRO-REFLECTIVE PAVEMENT</td>
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<td></td>
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</tr>
<tr>
<td>Pay Item</td>
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<td>Quantity</td>
<td>Unit</td>
<td>Unit Price</td>
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<td>----------</td>
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<tr>
<td>339-1</td>
<td>MISCELLANEOUS ASPHALT PAVEMENT</td>
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<td>GUARDRAIL- ROADWAY, GEN TL-3</td>
<td>2,000.00</td>
<td>LF</td>
<td>$17.75</td>
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<td>536-85-22</td>
<td>GUARDRAIL END ANCH ASSY/END TREA- FLARED</td>
<td>4.00</td>
<td>EA</td>
<td>$1,600.00</td>
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**Roadway Component Total**

$1,819,664.20

**SHOULDER COMPONENT**

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<td>8.00 / 12.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>8.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>0</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
</tbody>
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**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE,BASE GROUP 08</td>
<td>13,773.77</td>
<td>SY</td>
<td>$16.00</td>
<td>$220,380.32</td>
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<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>1,466.71</td>
<td>TN</td>
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**Erosion Control**

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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
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<td>$1.25</td>
<td>$19,500.62</td>
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<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>284.10</td>
<td>LF</td>
<td>$9.63</td>
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<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
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<td>LF</td>
<td>$4.69</td>
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<td>SOIL TRACKING PREVENTION DEVICE</td>
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<td>EA</td>
<td>$2,215.78</td>
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<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>13.77</td>
<td>AC</td>
<td>$35.63</td>
<td>$490.63</td>
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### Shoulder Component Total

- **MOWING**
  - 13.77 AC
  - $55.77
  - $767.95

### DRAINAGE COMPONENT

<table>
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<th>Pay Items</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>20.46 CY</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$26,630.53</td>
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<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot; SD</td>
<td>912.00 LF</td>
<td>LF</td>
<td>$72.48</td>
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<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot; S/CD</td>
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<td>LF</td>
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<tr>
<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24&quot; SD</td>
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<td>EA</td>
<td>$1,198.82</td>
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<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>800.03 SY</td>
<td>SY</td>
<td>$1.25</td>
<td>$1,000.04</td>
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**Drainage Component Total**

- $170,241.89

### SIGNING COMPONENT

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<th>Description</th>
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<th>Extended Amount</th>
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<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>3.00 AS</td>
<td>AS</td>
<td>$321.52</td>
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<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>23.00 AS</td>
<td>AS</td>
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<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>3.00 AS</td>
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<td>$4,188.78</td>
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**Signing Component Total**

- $37,769.91

### LIGHTING COMPONENT

**Rural Lighting Subcomponent**

- Multiplier (Number of Poles): 2

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<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F &amp; I, OPEN TRENCH</td>
<td>400.00 LF</td>
<td>LF</td>
<td>$6.43</td>
<td>$2,572.00</td>
</tr>
<tr>
<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F &amp; I, 13&quot; x 24&quot;</td>
<td>2.00 EA</td>
<td>EA</td>
<td>$535.14</td>
<td>$1,070.28</td>
</tr>
<tr>
<td>715-1-13</td>
<td>LIGHTING CONDUCTORS, F &amp; I, INSUL, NO.4-2</td>
<td>1,200.00 LF</td>
<td>LF</td>
<td>$2.15</td>
<td>$2,580.00</td>
</tr>
<tr>
<td>715-4-122</td>
<td>LIGHT POLE COMP, F &amp; I, WS130, 45'</td>
<td>2.00 EA</td>
<td>EA</td>
<td>$4,688.07</td>
<td>$9,376.14</td>
</tr>
<tr>
<td>715-500-1</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>2.00 EA</td>
<td>EA</td>
<td>$553.54</td>
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**Subcomponent Total**

- $16,705.50

**Lighting Component Total**

- $16,705.50

### LANDSCAPING COMPONENT

**User Input Data**

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<td>Cost %</td>
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### Component Detail

**Landscaping Component Total**

$98,722.76

**Sequence 9 Total**

$3,389,481.40

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**Sequence**: 10 NUR - New Construction, Undivided, Rural  
**Net Length**: 0.388 MI  
**2,050 LF**  
**Description**: One-lane ramps - HOV In-Out Ramps E of Lk. Mary Blvd.

---

#### EARTHWORK COMPONENT

**User Input Data**

<table>
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<tr>
<th>Description</th>
<th>Value</th>
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</thead>
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<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Alignment Number**

1

**Distance**

0.388

**Top of Structural Course For Begin Section**

103.00

**Top of Structural Course For End Section**

103.00

**Horizontal Elevation For Begin Section**

100.00

**Horizontal Elevation For End Section**

100.00

**Front Slope L/R**

0 to 1 / 0 to 1

**Outside Shoulder Cross Slope L/R**

6.00 % / 6.00 %

**Roadway Cross Slope L/R**

2.00 % / 2.00 %

---

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>120-6</td>
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<td>3,815.02</td>
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**Earthwork Component Total**

$36,242.69

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#### ROADWAY COMPONENT

**User Input Data**

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<th>Description</th>
<th>Value</th>
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<tbody>
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<tr>
<td>Roadway Pavement Width L/R</td>
<td>7.50 / 7.50</td>
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<tr>
<td>Structural Spread Rate</td>
<td>495</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
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**Pay Items**

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<th>Quantity</th>
<th>Unit</th>
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<th>Extended Amount</th>
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<tbody>
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<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>6,150.67</td>
<td>SY</td>
<td>$3.25</td>
<td>$19,989.68</td>
</tr>
<tr>
<td>285-712</td>
<td>OPTIONAL BASE, BASE GROUP 12</td>
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<td>TN</td>
<td>$97.88</td>
<td>$82,779.07</td>
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<td>TN</td>
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<td>$19,135.20</td>
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#### Pavement Marking Subcomponent

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<th>Value</th>
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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
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</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
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<td>Solid Stripe No. of Paint Applications</td>
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### Pay Items

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<th>Extended Amount</th>
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<td>NM</td>
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<tr>
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<td>0.78</td>
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<td>$3,138.35</td>
<td>$2,447.91</td>
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**Roadway Component Total**

$196,408.23

### SHOULDER COMPONENT

#### User Input Data

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<tr>
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<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
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#### Pay Items

<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
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<td>SY</td>
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**Shoulder Component Total**

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### SIGNING COMPONENT

#### Pay Items

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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>700-20-11</td>
<td>SINGLE POST SIGN, F&amp;I, LESS THAN 12 SF</td>
<td>1.00</td>
<td>AS</td>
<td>$241.18</td>
<td>$241.18</td>
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<tr>
<td>700-20-12</td>
<td>SINGLE POST SIGN, F&amp;I, 12-20 SF</td>
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<td>700-21-11</td>
<td>MULTI- POST SIGN, F&amp;I, 50 OR &lt;</td>
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<td>$2,749.17</td>
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#### X-Items

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<td>700-22-154</td>
<td>OHD TRUSS SPAN SGN, F&amp;I, T&gt;200, S&gt;700</td>
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<td>AS</td>
<td>$278,281.34</td>
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<td>700-23-144</td>
<td>OHD TRUSS CANT SGN, F&amp;I, T&gt;50, S&gt;300</td>
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<td>$70,000.67</td>
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**Signing Component Total**

$704,679.33

### LANDSCAPING COMPONENT

#### User Input Data

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<td>Cost %</td>
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### Landscaping Component Total

| Sequence 10 Total | $1,045,498.85 |

### Sequence: 11 NUR - New Construction, Undivided, Rural

| Net Length: | 1.240 MI 6,547 LF |
| Description: | One-lane ramps - SR46A/46 interchange. Wekiva and SR 417 ramps not included. |
| Special Conditions: | Assume reconstruction of 500’ of ramp at each I-4 tie-in |

#### EARTHWORK COMPONENT

**User Input Data**

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<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
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<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
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<tr>
<td>Alignment Number</td>
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<tr>
<td>Distance</td>
<td>1.240</td>
</tr>
<tr>
<td>Top of Structural Course For Begin Section</td>
<td>105.00</td>
</tr>
<tr>
<td>Top of Structural Course For End Section</td>
<td>105.00</td>
</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>6 to 1 / 6 to 1</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>6.00 % / 6.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>2.00 % / 2.00 %</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>15.03 AC</td>
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<td>$10,000.00</td>
<td>$150,300.00</td>
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<td>120-6</td>
<td>EMBANKMENT</td>
<td>55,302.02 CY</td>
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<td>$9.50</td>
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**Earthwork Component Total**

|                   | $675,669.19 |

#### ROADWAY COMPONENT

**User Input Data**

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<td>Number of Lanes</td>
<td>1</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>7.50 / 7.50</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>275</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
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**Pay Items**

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<tr>
<th>Pay Item</th>
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<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>19,641.60 SY</td>
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<td>$63,835.20</td>
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<tr>
<td>285-708</td>
<td>OPTIONAL BASE,BASE GROUP 08</td>
<td>11,392.13 SY</td>
<td></td>
<td>$16.00</td>
<td>$182,274.08</td>
</tr>
<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAF E, PG76-22,PMA</td>
<td>1,500.40 TN</td>
<td></td>
<td>$97.88</td>
<td>$146,859.15</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>436.48 TN</td>
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<td>$140.00</td>
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</table>

**Pavement Marking Subcomponent**

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<tr>
<th>Description</th>
<th>Value</th>
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</thead>
</table>

Include Thermo/Tape/Other: N
Pavement Type: Asphalt
Solid Stripe No. of Paint Applications: 2
Solid Stripe No. of Stripes: 2
Skip Stripe No. of Paint Applications: 2
Skip Stripe No. of Stripes: 0

Pay Items
<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK, STD, WHITE, SOLID, 6&quot;</td>
<td>4.96 NM</td>
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<td>$908.42</td>
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Roadway Component Total: $458,581.39

SHOULDER COMPONENT

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<th>Description</th>
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<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>0</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
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</table>

Pay Items
<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
<td>9,209.73 SY</td>
<td>SY</td>
<td>$16.00</td>
<td>$147,355.68</td>
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<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>960.26 TN</td>
<td>TN</td>
<td>$105.00</td>
<td>$100,827.30</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC, INC BIT, FC-5, PG76-22, PMA</td>
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Erosion Control
Pay Items
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<th>Unit</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>17,022.72 LF</td>
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<td>$1.25</td>
<td>$21,278.40</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>310.00 LF</td>
<td>LF</td>
<td>$9.63</td>
<td>$2,985.30</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>310.00 LF</td>
<td>LF</td>
<td>$4.69</td>
<td>$1,453.90</td>
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<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>2.00 EA</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$4,431.56</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>15.03 AC</td>
<td>AC</td>
<td>$35.63</td>
<td>$535.52</td>
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<td>MOWING</td>
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<td>AC</td>
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Shoulder Component Total: $285,083.28

DRAINAGE COMPONENT

Pay Items
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>22.32 CY</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$29,051.49</td>
</tr>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot; SD</td>
<td>992.00 LF</td>
<td>LF</td>
<td>$72.48</td>
<td>$71,900.16</td>
</tr>
<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot; SD</td>
<td>216.00 LF</td>
<td>LF</td>
<td>$111.27</td>
<td>$24,034.32</td>
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Sho ulder Component Total: $285,083.28

Roadway Component Total: $458,581.39

DRAINAGE COMPONENT

Pay Items
<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
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Roadway Component Total: $458,581.39

DRAINAGE COMPONENT

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<th>Pay Item</th>
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<td>CY</td>
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<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot; SD</td>
<td>216.00 LF</td>
<td>LF</td>
<td>$111.27</td>
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Roadway Component Total: $458,581.39

DRAINAGE COMPONENT

Pay Items
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<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
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<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot; SD</td>
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<td>$72.48</td>
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<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot; SD</td>
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Roadway Component Total: $458,581.39

DRAINAGE COMPONENT

Pay Items
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<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>22.32 CY</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$29,051.49</td>
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<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot; SD</td>
<td>992.00 LF</td>
<td>LF</td>
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<td>$71,900.16</td>
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<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot; SD</td>
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## SIGNING COMPONENT

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<th>Extended Amount</th>
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<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>3.00</td>
<td>AS</td>
<td>$321.52</td>
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<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>25.00</td>
<td>AS</td>
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<td>3.00</td>
<td>AS</td>
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**Signing Component Total**

$39,877.65

## LIGHTING COMPONENT

### Rural Lighting Subcomponent

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<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
<td>2,000.00</td>
<td>LF</td>
<td>$6.43</td>
<td>$12,860.00</td>
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<td>635-2-11</td>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
<td>6,000.00</td>
<td>LF</td>
<td>$2.15</td>
<td>$12,900.00</td>
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<tr>
<td>715-1-13</td>
<td>LIGHT POLE COMP, F&amp;I, WS130, 45'</td>
<td>10.00</td>
<td>EA</td>
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<tr>
<td>715-4-122</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>10.00</td>
<td>EA</td>
<td>$553.54</td>
<td>$5,535.40</td>
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**Subcomponent Total**

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**Lighting Component Total**

$83,527.50

## LANDSCAPING COMPONENT

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<th>Description</th>
<th>Value</th>
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<td>Component Detail</td>
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**Landscaping Component Total**

$51,862.72

**Sequence 11 Total**

$1,780,619.90

**Sequence**: 12 NUR - New Construction, Undivided, Rural  
**Net Length**: 1.563 MI  
**Description**: Two-lane ramps - SR46A/46 interchange. Wekiva and SR 417 GUL ramps not included.  
**Special Conditions**: Assume reconstruction of 500’ of ramp at each I-4 tie-in
### EARTHWORK COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Alignment Number                                  | 1              |
| Distance                                         | 1.560          |
| 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**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>18.95 AC</td>
<td>$10,000.00</td>
<td>$189,500.00</td>
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<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>82,084.29 CY</td>
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**Earthwork Component Total**

$969,300.76

### ROADWAY COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Lanes</td>
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</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>12.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>495</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
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**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>40,338.50 SY</td>
<td>$3.25</td>
<td>$131,100.12</td>
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<tr>
<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>22,607.89 SY</td>
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<td>$123,215.40</td>
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**Pavement Marking Subcomponent**

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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
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</tr>
<tr>
<td>Pavement Type</td>
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<tr>
<td>Solid Stripe No. of Paint Applications</td>
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</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
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</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
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<tr>
<td>Skip Stripe No. of Stripes</td>
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**Pay Items**

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<th>Unit</th>
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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>211.00 EA</td>
<td>$3.74</td>
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</tr>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>3.13 NM</td>
<td>$908.42</td>
<td>$2,843.35</td>
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### Roadway Component Total

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>Mark, Std, White, Skip, 6&quot;</td>
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<td>$383.54</td>
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<tr>
<td>Thermoplastic, Std, White, Solid, 6&quot;</td>
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<tr>
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### Shoulder Component

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<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>8.00 / 12.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>8.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>0</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
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#### Pay Items

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<th>Unit</th>
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<th>Extended Amount</th>
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<tbody>
<tr>
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<td>Optional Base, Base Group 08</td>
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<td>Superpave Asphaltic Conc, Traffic B</td>
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<td>TN</td>
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<td>$211,776.60</td>
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<td>Asph Conc FC, INC Bit, FC-5, PG76-22, PMA</td>
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#### Erosion Control

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<tr>
<td>104-10-3</td>
<td>Sediment Barrier</td>
<td>21,452.75</td>
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<td>104-11</td>
<td>Floating Turbidity Barrier</td>
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<td>LF</td>
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<td>Staked Turbidity Barrier-Nyl Reinfl PVC</td>
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<td>LF</td>
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<td>104-15</td>
<td>Soil Tracking Prevention Device</td>
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<td>EA</td>
<td>$2,215.78</td>
<td>$4,431.56</td>
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<tr>
<td>107-1</td>
<td>Litter Removal</td>
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<td>AC</td>
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<td>107-2</td>
<td>Mowing</td>
<td>18.94</td>
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Shoulder Component Total: $560,179.31

### Drainage Component

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<th>Description</th>
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<th>Unit</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>400-2-2</td>
<td>Conc Class II, Endwalls</td>
<td>28.13</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$36,613.73</td>
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<tr>
<td>430-174-124</td>
<td>Pipe Culv, Opt Matl, Round, 24&quot; SD</td>
<td>1,256.00</td>
<td>LF</td>
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<tr>
<td>430-175-136</td>
<td>Pipe Culv, Opt Matl, Round, 36&quot; SC</td>
<td>264.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$29,375.28</td>
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<tr>
<td>430-984-129</td>
<td>Mitered End Sect, Optional Rd, 24&quot; SD</td>
<td>63.00</td>
<td>EA</td>
<td>$1,198.82</td>
<td>$75,525.66</td>
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<td>570-1-1</td>
<td>Performance Turf</td>
<td>1,100.14</td>
<td>SY</td>
<td>$1.25</td>
<td>$1,375.18</td>
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Drainage Component Total: $233,924.73
### Signing Component

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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>4.00</td>
<td>AS</td>
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<td>$1,286.08</td>
</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
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<td>AS</td>
<td>$1,053.87</td>
<td>$33,723.84</td>
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<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>4.00</td>
<td>AS</td>
<td>$4,188.78</td>
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**Signing Component Total** $51,765.04

### Lighting Component

**Rural Lighting Subcomponent**

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<tr>
<td>Multiplier (Number of Poles)</td>
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<table>
<thead>
<tr>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F &amp; I, OPEN TRENCH</td>
<td>2,000.00 LF</td>
<td>LF</td>
<td>$6.43</td>
<td>$12,860.00</td>
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<tr>
<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
<td>10.00</td>
<td>EA</td>
<td>$535.14</td>
<td>$5,351.40</td>
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<tr>
<td>715-1-13</td>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
<td>6,000.00 LF</td>
<td>LF</td>
<td>$2.15</td>
<td>$12,900.00</td>
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<td>715-4-122</td>
<td>LIGHT POLE COMP, F&amp;I, WS130, 45'</td>
<td>10.00</td>
<td>EA</td>
<td>$4,688.07</td>
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<td>715-500-1</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
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**Subcomponent Total** $83,527.50

**Lighting Component Total** $83,527.50

### Landscaping Component

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<td>Component Detail</td>
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**Landscaping Component Total** $94,615.56

### Earthwork Component

**User Input Data**

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<td>Incidental Clearing and Grubbing Area</td>
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**Sequence 12 Total** $3,248,467.55

**Sequence: 13 NUR - New Construction, Undivided, Rural**

**Net Length:** 0.644 MI 3,400 LF

**Description:** One-lane ramps - US 17/92. Alt 8-recommended concept.

**Special Conditions:** I4 not included.
Alignment Number: 1
Distance: 6.44
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

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
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<td>CY</td>
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Earthwork Component Total: $269,479.19

ROADWAY COMPONENT

User Input Data

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<td>7.50 / 7.50</td>
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<tr>
<td>Structural Spread Rate</td>
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<tr>
<td>Friction Course Spread Rate</td>
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Pay Items

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<tr>
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<td>TYPE B STABILIZATION</td>
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<tr>
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<td>OPTIONAL BASE,BASE GROUP 12</td>
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<td>SY</td>
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<td>$118,312.80</td>
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<tr>
<td>334-1-25</td>
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<tr>
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Pavement Marking Subcomponent

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<tbody>
<tr>
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</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
<td>2</td>
</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
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Pay Items

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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>1.29 NM</td>
<td>$908.42</td>
<td>$1,171.86</td>
<td></td>
</tr>
<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>1.29 NM</td>
<td>$3,138.35</td>
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Roadway Component Total: $325,680.01

SHOULDER COMPONENT
**User Input Data**

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<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE,BASE GROUP 08</td>
<td>4,782.37</td>
<td>SY</td>
<td>$16.00</td>
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<tr>
<td>334-1-12</td>
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**Erosion Control**

<table>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
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<td>SEDIMENT BARRIER</td>
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<td>LF</td>
<td>$1.25</td>
<td>$11,049.32</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>160.98</td>
<td>LF</td>
<td>$9.63</td>
<td>$1,550.24</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER-NYL REINF PVC</td>
<td>160.98</td>
<td>LF</td>
<td>$4.69</td>
<td>$755.00</td>
</tr>
<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
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<td>EA</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
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<td>MOWING</td>
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**Shoulder Component Total**

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**DRAINAGE COMPONENT**

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<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
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<td>CONC CLASS II, ENDWALLS</td>
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<td>CY</td>
<td>$1,301.59</td>
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<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND,24&quot;SD</td>
<td>520.00</td>
<td>LF</td>
<td>$72.48</td>
<td>$37,689.60</td>
</tr>
<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;S/CD</td>
<td>112.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$12,462.24</td>
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<tr>
<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24&quot; SD</td>
<td>26.00</td>
<td>EA</td>
<td>$1,198.82</td>
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<td>PERFORMANCE TURF</td>
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**Drainage Component Total**

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**SIGNING COMPONENT**

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<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$643.04</td>
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</tbody>
</table>
### LANDSCAPING COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost %</td>
<td>3.00</td>
</tr>
<tr>
<td>Component Detail</td>
<td>N</td>
</tr>
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</table>

**Landscaping Component Total**

$25,884.14

### Sequence 13 Total

$888,688.87

### Sequence: 14 NUR - New Construction, Undivided, Rural

Net Length: 0.233 MI

1,230 LF

**Description:** Two-lane ramps - US 17/92. Alt 8-recommended Concept.

**Special Conditions:** I4 GUL AND EXPRESS LANES NOT INCLUDED

### EARTHWORK COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alignment Number</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance</td>
<td>0.233</td>
</tr>
<tr>
<td>Top of Structural Course For Begin Section</td>
<td>125.00</td>
</tr>
<tr>
<td>Top of Structural Course For End Section</td>
<td>125.00</td>
</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>2 to 1 / 2 to 1</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>6.00 % / 6.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>2.00 % / 2.00 %</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>100,814.98 CY</td>
<td>$9.50</td>
<td>$957,742.31</td>
</tr>
</tbody>
</table>

**Earthwork Component Total**

$957,742.31

### ROADWAY COMPONENT

**User Input Data**

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<th>Description</th>
<th>Value</th>
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<tr>
<td>Number of Lanes</td>
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</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>12.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>495</td>
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<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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**Earthwork Component Total**

$957,742.31
## Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>6,014.51</td>
<td>SY</td>
<td>$3.25</td>
<td>$19,547.16</td>
</tr>
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<td>285-712</td>
<td>OPTIONAL BASE, BASE GROUP 12</td>
<td>3,370.86</td>
<td>SY</td>
<td>$20.00</td>
<td>$67,417.20</td>
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<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAF E, PG76-22, PMA</td>
<td>811.96</td>
<td>TN</td>
<td>$97.88</td>
<td>$79,474.64</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC, INC BIT, FC-5, PG76-22, PMA</td>
<td>131.23</td>
<td>TN</td>
<td>$140.00</td>
<td>$18,372.20</td>
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## X-Items

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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>521-8-1</td>
<td>CONC TRAF RAIL BAR, JCT SLAB, 32°F SHAPE</td>
<td>2,500.00</td>
<td>LF</td>
<td>$240.44</td>
<td>$601,100.00</td>
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</table>

**Comment:** Length x 2 for barrier on both sides

## Pavement Marking Subcomponent

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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
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<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
<td>2</td>
</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
<td>1</td>
</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
<td>1</td>
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</table>

## Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>31.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$115.94</td>
</tr>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK, STD, WHITE, SOLID, 6&quot;</td>
<td>0.47</td>
<td>NM</td>
<td>$908.42</td>
<td>$426.96</td>
</tr>
<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK, STD, WHITE, SKIP, 6&quot;</td>
<td>0.23</td>
<td>GM</td>
<td>$383.54</td>
<td>$88.21</td>
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<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
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<td>NM</td>
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<tr>
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<td>THERMOPLASTIC, STD, WHITE, SKIP, 6&quot;</td>
<td>0.23</td>
<td>GM</td>
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**Roadway Component Total**

$788,253.57

## SHOULDER COMPONENT

### User Input Data

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<th>Value</th>
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<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>8.00 / 12.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>8.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>0</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
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## Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
<td>2,824.08</td>
<td>SY</td>
<td>$16.00</td>
<td>$45,185.28</td>
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</table>
### Erosion Control

<table>
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<tr>
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<th>Unit</th>
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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>3,198.62</td>
<td>LF</td>
<td>$1.25</td>
<td>$3,998.28</td>
</tr>
<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>58.25</td>
<td>LF</td>
<td>$9.63</td>
<td>$560.95</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER-INY REINF PVC</td>
<td>58.25</td>
<td>LF</td>
<td>$4.69</td>
<td>$273.19</td>
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<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>2.82</td>
<td>AC</td>
<td>$35.63</td>
<td>$100.48</td>
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<tr>
<td>107-2</td>
<td>MOWING</td>
<td>2.82</td>
<td>AC</td>
<td>$55.77</td>
<td>$157.27</td>
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**Shoulder Component Total**

$85,078.68

### DRAINAGE COMPONENT

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<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>4.19</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$5,453.66</td>
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<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24”SD</td>
<td>192.00</td>
<td>LF</td>
<td>$72.48</td>
<td>$13,916.16</td>
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<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36”S/CD</td>
<td>40.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$4,450.80</td>
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<tr>
<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24” SD</td>
<td>10.00</td>
<td>EA</td>
<td>$1,198.82</td>
<td>$11,988.20</td>
</tr>
<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>164.03</td>
<td>SY</td>
<td>$1.25</td>
<td>$205.04</td>
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**Drainage Component Total**

$36,013.86

### SIGNING COMPONENT

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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>1.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$321.52</td>
</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>5.00</td>
<td>AS</td>
<td>$1,053.87</td>
<td>$5,269.35</td>
</tr>
<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>1.00</td>
<td>AS</td>
<td>$4,188.78</td>
<td>$4,188.78</td>
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**Signing Component Total**

$9,779.65

### LANDSCAPING COMPONENT

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<tbody>
<tr>
<td>Description</td>
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</tr>
<tr>
<td>Cost %</td>
<td>3.00</td>
</tr>
<tr>
<td>Component Detail</td>
<td>N</td>
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</table>
## Landscaping Component Total

$266,336.98

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### BRIDGES COMPONENT

#### Bridge A

<table>
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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Estimate Type</td>
<td>SF Estimate</td>
</tr>
<tr>
<td>Primary Estimate</td>
<td>YES</td>
</tr>
<tr>
<td>Length (LF)</td>
<td>435.00</td>
</tr>
<tr>
<td>Width (LF)</td>
<td>48.00</td>
</tr>
<tr>
<td>Type</td>
<td>Low Level</td>
</tr>
<tr>
<td>Cost Factor</td>
<td>1.25</td>
</tr>
<tr>
<td>Removal of Existing Structures area</td>
<td>0.00</td>
</tr>
<tr>
<td>Default Cost per SF</td>
<td>$135.00</td>
</tr>
<tr>
<td>Factored Cost per SF</td>
<td>$168.75</td>
</tr>
<tr>
<td>Final Cost per SF</td>
<td>$171.53</td>
</tr>
</tbody>
</table>

**Basic Bridge Cost**

$3,523,500.00

Description: US 17-92 TO EB I-4

#### Bridge Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>106.67 CY</td>
<td>$379.38</td>
<td>$40,468.46</td>
</tr>
<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>18,667.25 LB</td>
<td>$0.94</td>
<td>$17,547.22</td>
</tr>
</tbody>
</table>

**Bridge A Total**

$3,581,515.68

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#### Bridge B

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate Type</td>
<td>SF Estimate</td>
</tr>
<tr>
<td>Primary Estimate</td>
<td>YES</td>
</tr>
<tr>
<td>Length (LF)</td>
<td>415.00</td>
</tr>
<tr>
<td>Width (LF)</td>
<td>48.00</td>
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<tr>
<td>Type</td>
<td>Low Level</td>
</tr>
<tr>
<td>Cost Factor</td>
<td>1.25</td>
</tr>
<tr>
<td>Removal of Existing Structures area</td>
<td>0.00</td>
</tr>
<tr>
<td>Default Cost per SF</td>
<td>$135.00</td>
</tr>
<tr>
<td>Factored Cost per SF</td>
<td>$168.75</td>
</tr>
<tr>
<td>Final Cost per SF</td>
<td>$171.66</td>
</tr>
</tbody>
</table>

**Basic Bridge Cost**

$3,361,500.00

Description: US 17-92 TO WB I-4

#### Bridge Pay Items

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<tr>
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<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>106.67 CY</td>
<td>$379.38</td>
<td>$40,468.46</td>
</tr>
<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>18,667.25 LB</td>
<td>$0.94</td>
<td>$17,547.22</td>
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</table>

**Bridge B Total**

$3,419,515.68

**Bridges Component Total**

$7,001,031.36
### EARTHWORK COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>0.00 / 150.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Alignment Number                                  | 1           |
| Distance                                          | 0.174       |
| Top of Structural Course For Begin Section         | 103.00      |
| Top of Structural Course For End Section           | 103.00      |
| Horizontal Elevation For Begin Section             | 100.00      |
| Horizontal Elevation For End Section               | 100.00      |
| Front Slope L/R                                    | 0 to 1 / 6 to 1 |
| Median Slope L/R                                   | 0 to 1 / 1 to 1 |
| Median Shoulder Cross Slope L/R                    | 5.00 % / 5.00 % |
| Outside Shoulder Cross Slope L/R                   | 6.00 % / 6.00 % |
| Roadway Cross Slope L/R                            | 2.00 % / 2.00 % |

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>3.16 AC</td>
<td>$10,000.00</td>
<td>$31,600.00</td>
<td></td>
</tr>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>2,471.02 CY</td>
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<td>$23,474.69</td>
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**Earthwork Component Total**

$55,074.69

### ROADWAY COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Number of Lanes</td>
<td>4</td>
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<tr>
<td>Roadway Pavement Width L/R</td>
<td>0.00 / 48.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>550</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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</tbody>
</table>

**Pay Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>7,358.21 SY</td>
<td>$3.25</td>
<td>$23,914.18</td>
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</tr>
<tr>
<td>285-711</td>
<td>OPTIONAL BASE,BASE GROUP 11</td>
<td>4,972.92 SY</td>
<td>$38.58</td>
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<td></td>
</tr>
<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22, PMA</td>
<td>1,349.00 TN</td>
<td>$109.37</td>
<td>$147,540.13</td>
<td></td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22, PMA</td>
<td>196.22 TN</td>
<td>$140.00</td>
<td>$27,470.80</td>
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**X-Items**

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>521-72-3</td>
<td>SHLDR CONC BARRIER WALL, RIGID-SHLDR</td>
<td>920.00 LF</td>
<td>$186.18</td>
<td>$171,285.60</td>
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</table>

**Pavement Marking Subcomponent**

<table>
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<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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1/25/2017

LRE - R3: Project Details by Sequence Report

Sequence: 14 Total

$9,144,236.41

Sequence: 15 NDR - New Construction, Divided, Rural

Net Length: 0.174 MI

920 LF

Description: 4 GUL in the EB direction. (STA 2043+70.30 to 2052+90.8)
Include Thermo/Tape/Other: N
Pavement Type: Asphalt
Solid Stripe No. of Paint Applications: 2
Solid Stripe No. of Stripes: 4
Skip Stripe No. of Paint Applications: 2
Skip Stripe No. of Stripes: 2

### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>71.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$265.54</td>
</tr>
<tr>
<td>710-11-11</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>1.39</td>
<td>NM</td>
<td>$908.42</td>
<td>$1,262.70</td>
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<tr>
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Roadway Component Total: $563,862.68

### SHOULDER COMPONENT

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<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>0.00 / 12.00</td>
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<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>0.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>110</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>0</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
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#### Pay Items

<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-705</td>
<td>OPTIONAL BASE,BASE GROUP 05</td>
<td>1,260.09</td>
<td>SY</td>
<td>$22.52</td>
<td>$28,377.23</td>
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<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>67.45</td>
<td>TN</td>
<td>$105.00</td>
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#### Erosion Control

#### Pay Items

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<th>Extended Amount</th>
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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>2,391.42</td>
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<td>FLOATING TURBIDITY BARRIER</td>
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<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>43.55</td>
<td>LF</td>
<td>$4.69</td>
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<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
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<td>$2,215.78</td>
<td>$2,215.78</td>
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<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
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<td>EA</td>
<td>$94.06</td>
<td>$188.12</td>
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<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>4.22</td>
<td>AC</td>
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Shoulder Component Total: $41,862.00

### MEDIAN COMPONENT

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<td>Performance Turf Width</td>
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file:///C:/Users/amourad/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.IE5/YAD2QDW9/R3.htm
**Total Median Shoulder Width L/R**
0.00 / 12.00

**Paved Median Shoulder Width L/R**
0.00 / 12.00

**Structural Spread Rate**
110

**Friction Course Spread Rate**
80

**Total Width (T) / 8" Overlap (O)**

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<th>Pay Item</th>
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<td>521-1-1</td>
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**Median Component Total**
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**DRAINAGE COMPONENT**

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**Drainage Component Total**
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**SIGNING COMPONENT**

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<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
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<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
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**Signing Component Total**
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**LANDSCAPING COMPONENT**

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Landscaping Component Total  

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Sequence 15 Total  

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Sequence: 16 NDR - New Construction, Divided, Rural  

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<tr>
<td></td>
<td>0.501 MI</td>
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Description: 3 GUL in the EB direction. (STA 2052+90.8 to 2079+37.1)

**EARTHWORK COMPONENT**

**User Input Data**

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<td>0.00 / 150.00</td>
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<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
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<tr>
<td>Alignment Number</td>
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<tr>
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<tr>
<td>Top of Structural Course For End Section</td>
<td>103.00</td>
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<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>0 to 1 / 6 to 1</td>
</tr>
<tr>
<td>Median Slope L/R</td>
<td>0 to 1 / 1 to 1</td>
</tr>
<tr>
<td>Median Shoulder Cross Slope L/R</td>
<td>5.00 % / 5.00 %</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>6.00 % / 6.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>2.00 % / 2.00 %</td>
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**Pay Items**

<table>
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<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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Earthwork Component Total  

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**ROADWAY COMPONENT**

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<tr>
<td>Structural Spread Rate</td>
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<tr>
<td>Friction Course Spread Rate</td>
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**Pay Items**

<table>
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<tr>
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<th>Extended Amount</th>
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<tbody>
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<td>160-4</td>
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<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22,PMA</td>
<td>2,910.39 TN</td>
<td>$109.37</td>
<td>$318,309.35</td>
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<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
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**Pavement Marking Subcomponent**

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<tr>
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</table>
### Pavement Type
- Asphalt

### Solid Stripe No. of Paint Applications
- 2

### Solid Stripe No. of Stripes
- 4

### Skip Stripe No. of Paint Applications
- 2

### Skip Stripe No. of Stripes
- 1

### Pay Item Description

<table>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>135.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$504.90</td>
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<td>710-11-111</td>
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<td>NM</td>
<td>$908.42</td>
<td>$3,642.76</td>
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<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK, STD, WHITE, SKIP, 6&quot;</td>
<td>1.00</td>
<td>GM</td>
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<td>$383.54</td>
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**Roadway Component Total**

$855,219.28

### SHOULDER COMPONENT

#### User Input Data

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<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>0.00 / 12.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>0.00 / 12.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>110</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>T</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
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### Pay Items

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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>285-705</td>
<td>OPTIONAL BASE, BASE GROUP 05</td>
<td>3,624.76</td>
<td>SY</td>
<td>$22.52</td>
<td>$81,629.60</td>
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### Erosion Control

#### Pay Items

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<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>6,879.10</td>
<td>LF</td>
<td>$1.25</td>
<td>$8,598.88</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>125.28</td>
<td>LF</td>
<td>$9.63</td>
<td>$1,206.45</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
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<td>$587.56</td>
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<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
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<td>$2,215.78</td>
</tr>
<tr>
<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
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<td>$94.06</td>
<td>$376.24</td>
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<tr>
<td>107-1</td>
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<td>MOWING</td>
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**Shoulder Component Total**

$116,098.17

### MEDIAN COMPONENT

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<tr>
<td>Performance Turf Width</td>
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<tr>
<td>Total Median Shoulder Width L/R</td>
<td>0.00 / 12.00</td>
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### Pay Items

<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<td>104-10-3</td>
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<td>$8,598.88</td>
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<td>INLET PROTECTION SYSTEM</td>
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**Median Component Total**

$116,098.17
### Paved Median Shoulder Width L/R

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<td>0.00 / 12.00</td>
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### Structural Spread Rate

<table>
<thead>
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<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
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### Friction Course Spread Rate

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</thead>
<tbody>
<tr>
<td>80</td>
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### Total Width (T) / 8" Overlap (O)

<table>
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<tr>
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<tbody>
<tr>
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### Rumble Strips No. of Sides

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### Pay Items

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<th>Unit Price</th>
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<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
<td>3,624.76</td>
<td>SY</td>
<td>$16.00</td>
<td>$57,996.16</td>
</tr>
<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>194.03</td>
<td>TN</td>
<td>$105.00</td>
<td>$20,373.15</td>
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<tr>
<td>521-1-1</td>
<td>MEDIAN BARRIER WALL CONC, PRECAST</td>
<td>2,531.00</td>
<td>LF</td>
<td>$111.97</td>
<td>$283,396.07</td>
</tr>
<tr>
<td>546-72-51</td>
<td>RUMBLE STRIPS, GROUND-IN, 16&quot; MIN. WIDTH</td>
<td>1.00</td>
<td>PM</td>
<td>$1,428.02</td>
<td>$1,428.02</td>
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#### Median Component Total

$363,193.40

### DRAINAGE COMPONENT

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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;SD</td>
<td>400.00</td>
<td>LF</td>
<td>$72.48</td>
<td>$28,992.00</td>
</tr>
<tr>
<td>430-175-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;S/CD</td>
<td>176.00</td>
<td>LF</td>
<td>$75.40</td>
<td>$13,270.40</td>
</tr>
<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;S/CD</td>
<td>152.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$16,913.04</td>
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#### X-Items

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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>425-1-901</td>
<td>INLETS, SPECIAL, &lt;10'</td>
<td>9.00</td>
<td>EA</td>
<td>$4,822.27</td>
<td>$43,400.43</td>
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#### Drainage Component Total

$102,575.87

### SIGNING COMPONENT

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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$643.04</td>
</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>13.00</td>
<td>AS</td>
<td>$1,053.87</td>
<td>$13,700.31</td>
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<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$4,188.78</td>
<td>$8,377.56</td>
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<tr>
<td>700-2-15</td>
<td>MULTI- POST SIGN, F&amp;I GM, 51-100 SF</td>
<td>4.00</td>
<td>AS</td>
<td>$5,697.97</td>
<td>$22,791.88</td>
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#### Signing Component Total

$45,512.79

### LANDSCAPING COMPONENT

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<tr>
<td>Cost %</td>
<td>3.00</td>
</tr>
<tr>
<td>Component Detail</td>
<td>N</td>
</tr>
</tbody>
</table>
### Landsaping Component Total

| Sequence 16 Total | $1,685,347.95 |

---

### Sequence: 17 NDU - New Construction, Divided, Urban  
**Net Length:** 0.985 MI  
5,200 LF

**Description:** Reconstruct US 17/92 roadway. Alt 8-recommended concept.

**Special Conditions:** US 17/92 ONLY

---

#### EARTHWORK COMPONENT

**User Input Data**

<table>
<thead>
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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Alignment Number | 1 |
| Distance | 0.980 |
| 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 |

| 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

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>11.94 AC</td>
<td>$10,000.00</td>
<td>$119,400.00</td>
<td></td>
</tr>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>28,443.87 CY</td>
<td>$9.50</td>
<td>$270,216.76</td>
<td></td>
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**Earthwork Component Total**

| $389,616.77 |

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#### ROADWAY COMPONENT

**User Input Data**

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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Number of Lanes</td>
<td>4</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>24.00 / 24.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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#### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>33,694.34 SY</td>
<td>$3.25</td>
<td>$109,506.60</td>
<td></td>
</tr>
<tr>
<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>27,731.97 SY</td>
<td>$20.00</td>
<td>$554,639.40</td>
<td></td>
</tr>
<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAFFIC, PG76-22,PMA</td>
<td>4,575.77 TN</td>
<td>$97.88</td>
<td>$447,876.37</td>
<td></td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>1,109.28 TN</td>
<td>$140.00</td>
<td>$155,299.20</td>
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**Pavement Marking Subcomponent**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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---
Include Thermo/Tape/Other: Y
Pavement Type: Asphalt
Solid Stripe No. of Paint Applications: 1
Solid Stripe No. of Stripes: 4
Skip Stripe No. of Paint Applications: 1
Skip Stripe No. of Stripes: 2

<table>
<thead>
<tr>
<th>Pay Items</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>399.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$1,492.26</td>
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<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>3.94</td>
<td>NM</td>
<td>$908.42</td>
<td>$3,579.17</td>
</tr>
<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK,STD,WHITE,SKIP,6&quot;</td>
<td>1.97</td>
<td>GM</td>
<td>$383.54</td>
<td>$755.57</td>
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<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>3.94</td>
<td>NM</td>
<td>$3,138.35</td>
<td>$12,365.10</td>
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<tr>
<td>711-11-131</td>
<td>THERMOPLASTIC, STD, WHITE, SKIP, 6&quot;</td>
<td>1.97</td>
<td>GM</td>
<td>$1,027.15</td>
<td>$2,023.49</td>
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### Peripherals Subcomponent

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<tr>
<td>Off Road Bike Path(s)</td>
<td>0</td>
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<tr>
<td>Off Road Bike Path Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Bike Path Structural Spread Rate</td>
<td>0</td>
</tr>
<tr>
<td>Noise Barrier Wall Length</td>
<td>0.00</td>
</tr>
<tr>
<td>Noise Barrier Wall Begin Height</td>
<td>0.00</td>
</tr>
<tr>
<td>Noise Barrier Wall End Height</td>
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**Roadway Component Total:** $1,287,537.17

### SHOULDER COMPONENT

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<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>7.25 / 7.25</td>
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<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Sidewalk Width L/R</td>
<td>5.00 / 5.00</td>
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<table>
<thead>
<tr>
<th>Pay Items</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>520-1-10</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
<td>5,199.74</td>
<td>LF</td>
<td>$19.00</td>
<td>$98,795.06</td>
</tr>
<tr>
<td>520-1-10</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
<td>5,199.74</td>
<td>LF</td>
<td>$19.00</td>
<td>$98,795.06</td>
</tr>
<tr>
<td>522-1</td>
<td>CONCRETE SIDEWALK AND DRIVEWAYS, 4&quot;</td>
<td>5,777.49</td>
<td>SY</td>
<td>$41.59</td>
<td>$240,285.81</td>
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### Erosion Control

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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>10,399.49</td>
<td>LF</td>
<td>$1.25</td>
<td>$12,999.36</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>246.20</td>
<td>LF</td>
<td>$9.63</td>
<td>$2,370.91</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>246.20</td>
<td>LF</td>
<td>$4.69</td>
<td>$1,154.68</td>
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<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
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<tr>
<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>51.00</td>
<td>EA</td>
<td>$94.06</td>
<td>$4,797.06</td>
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</table>
### Shoulder Component Total

<table>
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<th>Extended Amount</th>
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<tbody>
<tr>
<td>LITTER REMOVAL</td>
<td>25.06 AC</td>
<td>$35.63</td>
<td>$892.89</td>
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<tr>
<td>MOWING</td>
<td>25.06 AC</td>
<td>$55.77</td>
<td>$1,397.60</td>
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**Shoulder Component Total**

$463,704.21

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### MEDIAN COMPONENT

**User Input Data**

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<tr>
<td>Total Median Width</td>
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<tr>
<td>Performance Turf Width</td>
<td>0.00</td>
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<table>
<thead>
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<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>520-1-7</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE E</td>
<td>10,399.49</td>
<td>LF</td>
<td>$17.00</td>
<td>$176,791.33</td>
</tr>
<tr>
<td>520-5-11</td>
<td>TRAF SEP CONC-TYPE I, 4' WIDE</td>
<td>2,541.00</td>
<td>LF</td>
<td>$36.25</td>
<td>$92,111.25</td>
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**Median Component Total**

$298,444.18

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### DRAINAGE COMPONENT

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<th>Extended Amount</th>
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<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>17.73 CY</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$23,077.19</td>
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<tr>
<td>425-1-351</td>
<td>INLETS, CURB, TYPE P-5, &lt;10'</td>
<td>36.00 EA</td>
<td>EA</td>
<td>$4,578.47</td>
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<tr>
<td>425-1-451</td>
<td>INLETS, CURB, TYPE J-5, &lt;10'</td>
<td>10.00 EA</td>
<td>EA</td>
<td>$6,642.37</td>
<td>$66,423.70</td>
</tr>
<tr>
<td>425-1-521</td>
<td>INLETS, DT BOT, TYPE C, &lt;10'</td>
<td>5.00 EA</td>
<td>EA</td>
<td>$2,939.36</td>
<td>$14,696.80</td>
</tr>
<tr>
<td>425-2-41</td>
<td>MANHOLES, P-7, &lt;10'</td>
<td>5.00 EA</td>
<td>EA</td>
<td>$3,683.97</td>
<td>$18,418.10</td>
</tr>
<tr>
<td>430-175-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;/CD</td>
<td>2,608.00</td>
<td>LF</td>
<td>$75.40</td>
<td>$196,643.20</td>
</tr>
<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;/CD</td>
<td>240.00</td>
<td>LF</td>
<td>$111.27</td>
<td>$26,704.80</td>
</tr>
<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>299.38 SY</td>
<td>SY</td>
<td>$1.25</td>
<td>$374.22</td>
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**Drainage Component Total**

$511,162.94

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### SIGNING COMPONENT

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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>24.00 AS</td>
<td>AS</td>
<td>$321.52</td>
<td>$7,716.48</td>
</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>2.00 AS</td>
<td>AS</td>
<td>$1,053.87</td>
<td>$2,107.74</td>
</tr>
<tr>
<td>700-2-15</td>
<td>MULTI- POST SIGN, F&amp;I GM, 51-100 SF</td>
<td>2.00 AS</td>
<td>AS</td>
<td>$5,697.97</td>
<td>$11,395.94</td>
</tr>
<tr>
<td>700-2-16</td>
<td>MULTI- POST SIGN, F&amp;I GM, 101-200 SF</td>
<td>2.00 AS</td>
<td>AS</td>
<td>$8,881.39</td>
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**Signing Component Total**

$38,982.94
### SIGNALIZATIONS COMPONENT

#### Signalization 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Type</strong></td>
<td>2 Lane Mast Arm</td>
</tr>
<tr>
<td><strong>Multiplier</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>17-92 at orange blvd</td>
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</tbody>
</table>

#### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
<td>800.00 LF</td>
<td>$6.43</td>
<td>$5,144.00</td>
<td></td>
</tr>
<tr>
<td>630-2-12</td>
<td>CONDUIT, F&amp;I, DIRECTIONAL BORE</td>
<td>200.00 LF</td>
<td>$17.13</td>
<td>$3,426.00</td>
<td></td>
</tr>
<tr>
<td>632-7-1</td>
<td>SIGNAL CABLE- NEW OR RECO, FUR &amp; INSTALL</td>
<td>1.00 PI</td>
<td>$4,446.59</td>
<td>$4,446.59</td>
<td></td>
</tr>
<tr>
<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13'' x 24''</td>
<td>12.00 EA</td>
<td>$535.14</td>
<td>$6,421.68</td>
<td></td>
</tr>
<tr>
<td>639-1-112</td>
<td>ELECTRICAL POWER SRV,F&amp;I,OH,M,PUR BY CON</td>
<td>1.00 AS</td>
<td>$1,774.62</td>
<td>$1,774.62</td>
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</tr>
<tr>
<td>639-2-1</td>
<td>ELECTRICAL SERVICE WIRE, F&amp;I</td>
<td>60.00 LF</td>
<td>$3.30</td>
<td>$198.00</td>
<td></td>
</tr>
<tr>
<td>649-31-111</td>
<td>M/ARM,F&amp;I, WS-150, DBL ARM, W/0 LU 36-46</td>
<td>4.00 EA</td>
<td>$34,125.08</td>
<td>$136,500.32</td>
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<tr>
<td>650-1-311</td>
<td>TRAFFIC SIGNAL, F&amp;I, 3 SECT, 1 WAY, ALUMINUM</td>
<td>8.00 AS</td>
<td>$931.67</td>
<td>$7,453.36</td>
<td></td>
</tr>
<tr>
<td>653-191</td>
<td>PEDESTRIAN SIGNAL, F&amp;I, LED-COUNT DWN, 1</td>
<td>8.00 AS</td>
<td>$595.51</td>
<td>$4,764.08</td>
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<tr>
<td>660-1-102</td>
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<td>$1,570.48</td>
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<tr>
<td>665-1-11</td>
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<td>8.00 EA</td>
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<td>$1,570.48</td>
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<td>670-5-111</td>
<td>TRAFFIC CNTL ASSEM, F&amp;I, NEMA, 1 PREEMPT</td>
<td>1.00 AS</td>
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<tr>
<td>700-3-101</td>
<td>SIGN PANEL, F&amp;I GM, UP TO 12 SF</td>
<td>4.00 EA</td>
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#### Signalization 2

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<th>Description</th>
<th>Value</th>
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<td><strong>Type</strong></td>
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<tr>
<td><strong>Multiplier</strong></td>
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<tr>
<td><strong>Description</strong></td>
<td>EB I4 ramps at us 17-92</td>
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#### Pay Items

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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
<td>750.00 LF</td>
<td>$6.43</td>
<td>$4,822.50</td>
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</tr>
<tr>
<td>630-2-12</td>
<td>CONDUIT, F&amp;I, DIRECTIONAL BORE</td>
<td>250.00 LF</td>
<td>$17.13</td>
<td>$4,282.50</td>
<td></td>
</tr>
<tr>
<td>632-7-1</td>
<td>SIGNAL CABLE- NEW OR RECO, FUR &amp; INSTALL</td>
<td>1.00 PI</td>
<td>$4,446.59</td>
<td>$4,446.59</td>
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<tr>
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<td>$1,774.62</td>
<td>$1,774.62</td>
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<tr>
<td>639-2-1</td>
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<td>$198.00</td>
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<tr>
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<td>M/ARM,F&amp;I, WS-150, SING ARM, W/0 LUM-60</td>
<td>4.00 EA</td>
<td>$34,227.85</td>
<td>$136,911.40</td>
<td></td>
</tr>
<tr>
<td>650-1-311</td>
<td>TRAFFIC SIGNAL, F&amp;I, 3 SECT, 1 WAY, ALUMINUM</td>
<td>12.00 AS</td>
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<td>$11,180.04</td>
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<tr>
<td>653-191</td>
<td>PEDESTRIAN SIGNAL, F&amp;I, LED-COUNT DWN, 1</td>
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<td>Pay Item</td>
<td>Description</td>
<td>Quantity</td>
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<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
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<td>$4,822.50</td>
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<tr>
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<td>CONDUIT, F&amp;I, DIRECTIONAL BORE</td>
<td>250.00 LF</td>
<td>$17.13</td>
<td>$4,282.50</td>
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<tr>
<td>632-7-1</td>
<td>SIGNAL CABLE- NEW OR RECO, FUR &amp; INSTALL</td>
<td>1.00 PI</td>
<td>$4,446.59</td>
<td>$4,446.59</td>
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<tr>
<td>639-1-112</td>
<td>ELECTRICAL SERVICE WIRE, F&amp;I</td>
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<tr>
<td>649-31-103</td>
<td>M/ARM,F&amp;I, WS-150,SING ARM</td>
<td>4.00 EA</td>
<td>$34,227.85</td>
<td>$136,911.40</td>
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<tr>
<td>650-1-311</td>
<td>TRAFFIC SIGNAL,F&amp;I,3 SECT,1 WAY,ALUMINUM</td>
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<td>$931.67</td>
<td>$11,180.04</td>
<td></td>
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<tr>
<td>653-191</td>
<td>PEDESTRIAN SIGNAL, F&amp;I, LED-COUNT DWN, 1</td>
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<td>$4,764.08</td>
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<td>LOOP DETECTOR INDUCTIVE, F&amp;I, TYPE 2</td>
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<td>$2,149.80</td>
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<tr>
<td>660-2-106</td>
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<td>12.00 AS</td>
<td>$179.15</td>
<td>$2,149.80</td>
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</tr>
<tr>
<td>665-1-11</td>
<td>PEDESTRIAN DETECTOR, F&amp;I, STANDARD</td>
<td>8.00 EA</td>
<td>$196.31</td>
<td>$1,570.48</td>
<td></td>
</tr>
<tr>
<td>670-5-111</td>
<td>TRAF CNTL ASSEM, F&amp;I, NEMA, 1 PREEMPT</td>
<td>1.00 AS</td>
<td>$23,075.08</td>
<td>$23,075.08</td>
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</tr>
<tr>
<td>700-3-101</td>
<td>SIGN PANEL, F&amp;I GM, UP TO 12 SF</td>
<td>4.00 EA</td>
<td>$209.21</td>
<td>$836.84</td>
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**Signalization 4**

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<tr>
<th>Description</th>
<th>Value</th>
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<tr>
<td>Type</td>
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<tr>
<td>Multiplier</td>
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<tr>
<td>Description</td>
<td>US 17-92 WITH OLD US 17-92</td>
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<table>
<thead>
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<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
<td>800.00 LF</td>
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<td>$3,426.00</td>
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<tr>
<td>632-7-1</td>
<td>SIGNAL CABLE- NEW OR RECO, FUR &amp; INSTALL</td>
<td>1.00 PI</td>
<td>$4,446.59</td>
<td>$4,446.59</td>
<td></td>
</tr>
<tr>
<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
<td>12.00 EA</td>
<td>$535.14</td>
<td>$6,421.68</td>
<td></td>
</tr>
<tr>
<td>639-1-112</td>
<td>ELECTRICAL POWER SRV,F&amp;I,OH,M,PUR BY CON</td>
<td>1.00 AS</td>
<td>$1,774.62</td>
<td>$1,774.62</td>
<td></td>
</tr>
<tr>
<td>639-2-2</td>
<td>ELECTRICAL SERVICE WIRE, F&amp;I</td>
<td>60.00 LF</td>
<td>$3.30</td>
<td>$198.00</td>
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### LRE - R3: Project Details by Sequence Report

**Signalizations Component Total**

<table>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>M/ARM,F&amp;I, WS-150, DBL ARM, W/0 LU 36-46</td>
<td>4.00 EA</td>
<td>$34,125.08</td>
<td>$136,500.32</td>
<td></td>
</tr>
<tr>
<td>TRAFFIC SIGNAL, F&amp;I, 3 SECT, 1 WAY, ALUMINUM</td>
<td>8.00 AS</td>
<td>$931.67</td>
<td>$7,453.36</td>
<td></td>
</tr>
<tr>
<td>PEDESTRIAN SIGNAL, F&amp;I, LED-COUNT DWN, 1</td>
<td>8.00 AS</td>
<td>$595.51</td>
<td>$4,764.08</td>
<td></td>
</tr>
<tr>
<td>LOOP DETECTOR INDUCTIVE, F&amp;I, TYPE 2</td>
<td>8.00 EA</td>
<td>$179.15</td>
<td>$1,433.20</td>
<td></td>
</tr>
<tr>
<td>LOOP ASSEMBLY, F&amp;I, TYPE F</td>
<td>8.00 AS</td>
<td>$851.32</td>
<td>$6,810.56</td>
<td></td>
</tr>
<tr>
<td>PEDESTRIAN DETECTOR, F&amp;I, STANDARD</td>
<td>8.00 EA</td>
<td>$196.31</td>
<td>$1,570.48</td>
<td></td>
</tr>
<tr>
<td>TRAFFIC SIGNAL, F&amp;I, 3 SECT, 1 WAY, ALUMINUM</td>
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<td></td>
<td></td>
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<tr>
<td>LOOP DETECTOR INDUCTIVE, F&amp;I, TYPE 2</td>
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<tr>
<td>LOOP ASSEMBLY, F&amp;I, TYPE F</td>
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<tr>
<td>PEDESTRIAN DETECTOR, F&amp;I, STANDARD</td>
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</tr>
<tr>
<td>TRAF CNTL ASSEM, F&amp;I, NEMA, 1 PREEMPT</td>
<td>1.00 AS</td>
<td>$23,075.08</td>
<td>$23,075.08</td>
<td></td>
</tr>
<tr>
<td>SIGN PANEL, F&amp;I GM, UP TO 12 SF</td>
<td>4.00 EA</td>
<td>$209.21</td>
<td>$836.84</td>
<td></td>
</tr>
</tbody>
</table>

**Lighting Component Total**

### LIGHTING COMPONENT

**Conventional Lighting Subcomponent**

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<th>Description</th>
<th>Value</th>
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<td>Spacing</td>
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<tr>
<td>Pay Items</td>
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</tr>
<tr>
<td>Pay Item</td>
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</tr>
<tr>
<td>Description</td>
<td>Value</td>
</tr>
<tr>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
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</tr>
<tr>
<td>CONDUIT, F&amp;I, DIRECTIONAL BORE</td>
<td></td>
</tr>
<tr>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
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</tr>
<tr>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
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</tr>
<tr>
<td>LIGHT POLE COMP, F&amp;I, WS150, 40'</td>
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<tr>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
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**Subcomponent Total**

**Lighting Component Total**

$293,226.63

### LANDSCAPING COMPONENT

**User Input Data**

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<td>Component Detail</td>
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**Landscaping Component Total**

$1,666,043.40

### BRIDGES COMPONENT

**Bridge 17-92L**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Estimate Type</td>
<td>SF Estimate</td>
</tr>
<tr>
<td>Primary Estimate</td>
<td>YES</td>
</tr>
<tr>
<td>Length (LF)</td>
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</tr>
<tr>
<td>Width (LF)</td>
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<tr>
<td>Type</td>
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<td>Cost Factor</td>
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file:///C:/Users/amourad/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content_IE5/YAD2QDW9/R3.htm
Structure No.
Removal of Existing Structures area 0.00
Default Cost per SF $135.00
Factored Cost per SF $168.75
Final Cost per SF $169.38
Basic Bridge Cost $38,355,187.50

Description ALT 8-RECOMMENDED US 17-92 REALIGNMENT. RAMP BRIDGES NOT INCLUDED.

Bridge Pay Items

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<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>264.44 CY</td>
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<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>46,277.00 LB</td>
<td>$0.94</td>
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Bridge 17-92L Total $38,499,011.13

Bridge 17-92S

Description
Value
Estimate Type SF Estimate
Primary Estimate YES
Length (LF) 720.00
Width (LF) 94.00
Type Low Level
Cost Factor 1.25

Removal of Existing Structures area 0.00
Default Cost per SF $135.00
Factored Cost per SF $168.75

Final Cost per SF $170.43
Basic Bridge Cost $11,421,000.00

Description EXTENSION OF US 17-92 BRIDGE OVER LAKE MONROE.

Bridge Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
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Bridge 17-92S Total $11,534,611.10

Bridges Component Total $50,033,622.23

RETAINING WALLS COMPONENT

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<td>Multiplier</td>
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Pay Items

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<tr>
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<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>12,480.00 SF</td>
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<td>$363,043.20</td>
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Retaining Wall 2

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>Length</td>
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<td>Begin height</td>
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<td>End Height</td>
<td>25.00</td>
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<tr>
<td>Multiplier</td>
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Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>548-12</td>
<td>RET WALL SYSTEM, PERM, EX BARRIER</td>
<td>35,000.00</td>
<td>SF</td>
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Retaining Walls Component Total

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Sequence 17 Total

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Sequence: 18 NDU - New Construction, Divided, Urban

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<td>Net Length:</td>
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Description: Reconstruct US 17/92 side roads roadway. ALT 8-RECOMMENDED

Special Conditions: ALL ROADS Not INCLUDING US 17/92, I-4, AND MONROE FOR ALT 8-RECOMMENDED.

EARTHWORK COMPONENT

User Input Data

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<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
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<td>Incidental Clearing and Grubbing Area</td>
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<tr>
<td>Alignment Number</td>
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<tr>
<td>Top of Structural Course For Begin Section</td>
<td>103.00</td>
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<tr>
<td>Top of Structural Course For End Section</td>
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</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
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<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>6 to 1 / 6 to 1</td>
</tr>
<tr>
<td>Median Shoulder Cross Slope L/R</td>
<td>4.00 % / 4.00 %</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>2.00 % / 2.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>2.00 % / 2.00 %</td>
</tr>
</tbody>
</table>

Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>10.56 AC</td>
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<td>$10,000.00</td>
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<td>120-6</td>
<td>EMBANKMENT</td>
<td>45,825.41 CY</td>
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<td>$9.50</td>
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Earthwork Component Total

<p>| | |</p>
<table>
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<tr>
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<tr>
<td></td>
<td>$540,941.40</td>
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ROADWAY COMPONENT

User Input Data

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<tr>
<td>Number of Lanes</td>
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</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>24.00 / 24.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
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### Pay Items

<table>
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<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>29,807.59</td>
<td>SY</td>
<td>$3.25</td>
<td>$96,874.67</td>
</tr>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
<td>24,532.99</td>
<td>SY</td>
<td>$16.00</td>
<td>$392,527.84</td>
</tr>
<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAFFIC E, PG76-22, PMA</td>
<td>4,047.94</td>
<td>TN</td>
<td>$97.88</td>
<td>$396,212.37</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC, INC BIT, FC-5, PG76-22, PMA</td>
<td>981.32</td>
<td>TN</td>
<td>$140.00</td>
<td>$137,384.80</td>
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### Pavement Marking Subcomponent

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

<table>
<thead>
<tr>
<th>Pay Items</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>353.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$1,320.22</td>
</tr>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK, STD, WHITE, SOLID, 6&quot;</td>
<td>3.48</td>
<td>NM</td>
<td>$908.42</td>
<td>$3,161.30</td>
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<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK, STD, WHITE, SKIP, 6&quot;</td>
<td>1.74</td>
<td>GM</td>
<td>$383.54</td>
<td>$667.36</td>
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<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>3.48</td>
<td>NM</td>
<td>$3,138.35</td>
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<tr>
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<td>THERMOPLASTIC, STD, WHITE, SKIP, 6&quot;</td>
<td>1.74</td>
<td>GM</td>
<td>$1,027.15</td>
<td>$1,787.24</td>
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</tbody>
</table>

### Peripherals Subcomponent

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

**Roadway Component Total**: $1,040,857.26

### Shoulder Component

**User Input Data**

**Description**  
- Total Outside Shoulder Width L/R: 12.25 / 19.25  
- Total Outside Shoulder Perf. Turf Width L/R: 5.00 / 5.00  
- Sidewalk Width L/R: 5.00 / 12.00  

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<th>Pay Items</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
<td>4,599.94</td>
<td>LF</td>
<td>$19.00</td>
<td>$87,398.86</td>
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<tr>
<td>520-1-10</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
<td>4,599.94</td>
<td>LF</td>
<td>$19.00</td>
<td>$87,398.86</td>
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<tr>
<td></td>
<td>CONCRETE SIDEWALK AND</td>
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### Erosion Control Pay Items

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<th>Extended Amount</th>
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<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>9,199.87</td>
<td>LF</td>
<td>$1.25</td>
<td>$11,499.84</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>217.80</td>
<td>LF</td>
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<td>$2,097.41</td>
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<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>217.80</td>
<td>LF</td>
<td>$4.69</td>
<td>$1,021.48</td>
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<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
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<tr>
<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>45.00</td>
<td>EA</td>
<td>$94.06</td>
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<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>22.17</td>
<td>AC</td>
<td>$35.63</td>
<td>$789.92</td>
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<td>107-2</td>
<td>MOWING</td>
<td>22.17</td>
<td>AC</td>
<td>$55.77</td>
<td>$1,236.42</td>
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**Shoulder Component Total**

$570,757.05

### MEDIAN COMPONENT

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<td>Total Median Width</td>
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<td>Performance Turf Width</td>
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**Pay Items**

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<td>520-1-7</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE E</td>
<td>9,199.87</td>
<td>LF</td>
<td>$17.00</td>
<td>$156,397.79</td>
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<td>570-1-2</td>
<td>PERFORMANCE TURF, SOD</td>
<td>5,111.04</td>
<td>SY</td>
<td>$2.25</td>
<td>$11,499.84</td>
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**X-Items**

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<th>Extended Amount</th>
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<tr>
<td>520-5-16</td>
<td>TRAF SEP CONC-TYPE I, 8.5' WIDE</td>
<td>440.00</td>
<td>LF</td>
<td>$67.14</td>
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**Median Component Total**

$197,439.23

### DRAINAGE COMPONENT

**Pay Items**

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<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>15.68</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$20,408.93</td>
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<tr>
<td>425-1-351</td>
<td>INLETS, CURB, TYPE P-5, &lt;10'</td>
<td>32.00</td>
<td>EA</td>
<td>$4,578.47</td>
<td>$146,511.04</td>
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<td>425-1-451</td>
<td>INLETS, CURB, TYPE J-5, &lt;10'</td>
<td>9.00</td>
<td>EA</td>
<td>$6,642.37</td>
<td>$59,781.33</td>
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<tr>
<td>425-1-521</td>
<td>INLETS, DT BOT, TYPE C, &lt;10'</td>
<td>5.00</td>
<td>EA</td>
<td>$2,939.36</td>
<td>$14,696.80</td>
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<tr>
<td>425-2-41</td>
<td>MANHOLES, P-7, &lt;10'</td>
<td>5.00</td>
<td>EA</td>
<td>$3,683.62</td>
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<tr>
<td>430-175-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;S/CD</td>
<td>2,312.00</td>
<td>LF</td>
<td>$75.40</td>
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<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot;S/CD</td>
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<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>264.84</td>
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**Drainage Component Total**

$457,616.21
## Signing Component

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<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>21.00</td>
<td>AS</td>
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<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
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<td>700-2-15</td>
<td>MULTI- POST SIGN, F&amp;I GM, 51-100 SF</td>
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<td>AS</td>
<td>$5,697.97</td>
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<td>700-2-16</td>
<td>MULTI- POST SIGN, F&amp;I GM, 101-200 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$8,881.39</td>
<td>$17,762.78</td>
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**Signing Component Total**

$38,018.38

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## Lighting Component

### Conventional Lighting Subcomponent

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<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp; I, OPEN TRENCH</td>
<td>4,599.94</td>
<td>LF</td>
<td>$6.43</td>
<td>$29,577.61</td>
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<tr>
<td>630-2-12</td>
<td>CONDUIT, F&amp; I, DIRECTIONAL BORE</td>
<td>913.02</td>
<td>LF</td>
<td>$17.13</td>
<td>$15,640.03</td>
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<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
<td>31.00</td>
<td>EA</td>
<td>$535.14</td>
<td>$16,589.34</td>
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<tr>
<td>715-1-13</td>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
<td>16,800.22</td>
<td>LF</td>
<td>$2.15</td>
<td>$36,120.47</td>
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<td>715-4-111</td>
<td>LIGHT POLE COMP, F&amp;I, WS150, 40'</td>
<td>31.00</td>
<td>EA</td>
<td>$4,662.25</td>
<td>$144,529.75</td>
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<td>715-500-1</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>31.00</td>
<td>EA</td>
<td>$553.54</td>
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**Subcomponent Total**

$259,616.95

**Lighting Component Total**

$259,616.94

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## Landscaping Component

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<td>Cost %</td>
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<td>Component Detail</td>
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**Landscaping Component Total**

$93,157.39

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**Sequence 18 Total**

$3,198,403.86

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**Sequence: 19 NDR - New Construction, Divided, Rural**

**Net Length:**

9.453 MI

49,911 LF

**Description:**

2 Express lanes in each direction from station 2079+37.09 to 2578+48.33.

**Special Conditions:**

August 2016 Update: Express Lanes with Asphalt Pavement

---

## Earthwork Component

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
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---
Standard Clearing and Grubbing Limits L/R 0.00 / 0.00
Incidental Clearing and Grubbing Area 0.00

Alignment Number 1
Distance 9.450
Top of Structural Course For Begin Section 103.00
Top of Structural Course For End Section 103.00
Horizontal Elevation For Begin Section 100.00
Horizontal Elevation For End Section 100.00
Front Slope L/R 1 to 1 / 1 to 1
Median Slope L/R 1 to 1 / 1 to 1
Median Shoulder Cross Slope L/R 5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R 6.00 % / 6.00 %
Roadway Cross Slope L/R 2.00 % / 2.00 %

Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>242,198.88 CY</td>
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<td>$2,300,889.36</td>
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Earthwork Component Total $2,300,889.36

ROADWAY COMPONENT

User Input Data

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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Number of Lanes</td>
<td>4</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>24.00 / 24.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>550</td>
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<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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Pay Items

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<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>443,651.41 SY</td>
<td>$3.25</td>
<td>$1,441,867.08</td>
</tr>
<tr>
<td>285-711</td>
<td>OPTIONAL BASE,BASE GROUP 11</td>
<td>273,511.10 SY</td>
<td>$38.58</td>
<td>$10,552,058.24</td>
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<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAFFIC D, PG76-22,PMA</td>
<td>73,202.48 TN</td>
<td>$109.37</td>
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<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>10,647.63 TN</td>
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Pavement Marking Subcomponent

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<th>Value</th>
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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
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<tr>
<td>Pavement Type</td>
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<td>Solid Stripe No. of Paint Applications</td>
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<td>Solid Stripe No. of Stripes</td>
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Pay Items

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<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>3,828.00 EA</td>
<td>$3.74</td>
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<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
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### Peripherals Subcomponent

<table>
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<tr>
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<th>Value</th>
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<tbody>
<tr>
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<tr>
<td>Off Road Bike Path Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Bike Path Structural Spread Rate</td>
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<tr>
<td>Noise Barrier Wall Length</td>
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<tr>
<td>Noise Barrier Wall Begin Height</td>
<td>0.00</td>
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<tr>
<td>Noise Barrier Wall End Height</td>
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### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>339-1</td>
<td>MISCELLANEOUS ASPHALT PAVEMENT</td>
<td>66.67</td>
<td>TN</td>
<td>$232.34</td>
<td>$15,490.11</td>
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<tr>
<td>536-1-3</td>
<td>GUARDRAIL- ROADWAY, DOUBLE FACE</td>
<td>2,000.00</td>
<td>LF</td>
<td>$23.60</td>
<td>$47,200.00</td>
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**Roadway Component Total**

$21,650,951.96

### SHOULDER COMPONENT

#### User Input Data

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>10.00 / 10.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>10.00 / 10.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>2</td>
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#### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-705</td>
<td>OPTIONAL BASE,BASE GROUP 05</td>
<td>114,572.98</td>
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<td>$22.52</td>
<td>$2,580,183.51</td>
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<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>18,300.62</td>
<td>TN</td>
<td>$105.00</td>
<td>$1,921,565.10</td>
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<tr>
<td>546-72-51</td>
<td>RUMBLE STRIPS, GROUND-IN, 16&quot; MIN. WIDTH</td>
<td>18.91</td>
<td>PM</td>
<td>$1,428.02</td>
<td>$27,003.86</td>
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#### Erosion Control

#### Pay Items

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<th>Extended Amount</th>
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<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>129,768.04</td>
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<td>FLOATING TURBIDITY BARRIER</td>
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<td>LF</td>
<td>$9.63</td>
<td>$22,757.62</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>2,363.20</td>
<td>LF</td>
<td>$4.69</td>
<td>$11,083.41</td>
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<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>10.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$22,157.80</td>
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<tr>
<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>57.00</td>
<td>EA</td>
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<td>$5,361.42</td>
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<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>229.14</td>
<td>AC</td>
<td>$35.63</td>
<td>$8,164.26</td>
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<tr>
<td>107-2</td>
<td>MOWING</td>
<td>229.14</td>
<td>AC</td>
<td>$55.77</td>
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**Shoulder Component Total**

$4,773,266.17
### MEDIAN COMPONENT

<table>
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<tbody>
<tr>
<td>Total Median Width</td>
<td>12.00</td>
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<tr>
<td>Performance Turf Width</td>
<td>0.00</td>
</tr>
<tr>
<td>Total Median Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Paved Median Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>330</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>O</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>2</td>
</tr>
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#### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE, BASE GROUP 08</td>
<td>70,207.84</td>
<td>SY</td>
<td>$16.00</td>
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<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>10,980.37</td>
<td>TN</td>
<td>$105.00</td>
<td>$1,152,938.85</td>
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<td>521-1-1</td>
<td>MEDIAN BARRIER WALL CONC, PRECAST</td>
<td>30,170.00</td>
<td>LF</td>
<td>$111.97</td>
<td>$3,378,134.90</td>
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<tr>
<td>546-72-51</td>
<td>RUMBLE STRIPS, GROUND-IN, 16&quot; MIN. WIDTH</td>
<td>19.00</td>
<td>PM</td>
<td>$1,428.02</td>
<td>$27,132.38</td>
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**Median Component Total**

$5,681,531.57

### DRAINAGE COMPONENT

#### X-Items

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<tr>
<th>Pay Item</th>
<th>Description</th>
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<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>446-1-1</td>
<td>EDGEDRAIN DRAINCRETE, STANDARD</td>
<td>99,822.00</td>
<td>LF</td>
<td>$25.36</td>
<td>$2,531,485.92</td>
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<td></td>
<td><strong>Comment:</strong> TOTAL DIST. X 2 SIDES</td>
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<tr>
<td>446-71-1</td>
<td>EDGEDRAIN OUTLET PIPE, 4&quot;</td>
<td>2,000.00</td>
<td>LF</td>
<td>$28.30</td>
<td>$56,600.00</td>
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**Drainage Component Total**

$2,588,085.92

### SIGNING COMPONENT

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</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>19.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$6,108.88</td>
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<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>227.00</td>
<td>AS</td>
<td>$1,053.87</td>
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<tr>
<td>700-2-14</td>
<td>MULTI-POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>19.00</td>
<td>AS</td>
<td>$4,188.78</td>
<td>$79,586.82</td>
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<tr>
<td>700-2-15</td>
<td>MULTI-POST SIGN, F&amp;I GM, 51-100 SF</td>
<td>57.00</td>
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<td>$5,697.97</td>
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**Signing Component Total**

$649,708.48
## LIGHTING COMPONENT

### Rural Lighting Subcomponent

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<th>Description</th>
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<tbody>
<tr>
<td>Multiplier (Number of Poles)</td>
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### Pay Items

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<thead>
<tr>
<th>Pay Item</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
<td>66,800.00 LF</td>
<td>$6.43</td>
<td>$429,524.00</td>
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<tr>
<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
<td>334.00 EA</td>
<td>$535.14</td>
<td>$178,736.76</td>
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<tr>
<td>715-1-13</td>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
<td>200,400.00 LF</td>
<td>$2.15</td>
<td>$430,860.00</td>
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<tr>
<td>715-4-122</td>
<td>LIGHT POLE COMP, F&amp;I, WS130, 45'</td>
<td>334.00 EA</td>
<td>$4,688.07</td>
<td>$1,565,815.38</td>
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<tr>
<td>715-500-1</td>
<td>POLE CABLE DIST SYS, CONVENTIONAL</td>
<td>334.00 EA</td>
<td>$553.54</td>
<td>$184,882.36</td>
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**Subcomponent Total**

$2,789,818.50

**Lighting Component Total**

$2,789,818.50

## LANDSCAPING COMPONENT

### User Input Data

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<td>Cost %</td>
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<tr>
<td>Component Detail</td>
<td>N</td>
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**Landscaping Component Total**

$1,213,027.56

## Sequence 19 Total

$41,647,279.52

**Sequence:** 20 NDR - New Construction, Divided, Rural

**Net Length:** 0.675 MI / 3,566 LF

**Description:** 2 Express Lanes in the EB direction. (STA 2043+70.30 to 2079+37.09

**Special Conditions:** August 2016 Update: Express Lanes with Asphalt Pavement

## EARTHWORK COMPONENT

### User Input Data

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<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
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</tbody>
</table>

| Alignment Number | 1 |
| Distance | 0.680 |
| Top of Structural Course For Begin Section | 103.00 |
| Top of Structural Course For End Section | 103.00 |
| Horizontal Elevation For Begin Section | 100.00 |
| Horizontal Elevation For End Section | 100.00 |
| Front Slope L/R | 1 to 1 / 1 to 1 |
| Median Slope L/R | 0 to 1 / 6 to 1 |
| Median Shoulder Cross Slope L/R | 5.00 % / 5.00 % |
| Outside Shoulder Cross Slope L/R | 6.00 % / 6.00 % |
| Roadway Cross Slope L/R | 2.00 % / 2.00 % |

### Pay Items

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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### EMBANKMENT

<table>
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<tr>
<td>Earthwork Component Total</td>
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<td>$9.50</td>
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### ROADWAY COMPONENT

**User Input Data**

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<th>Value</th>
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<tbody>
<tr>
<td>Number of Lanes</td>
<td>2</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>0.00 / 24.00</td>
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<tr>
<td>Structural Spread Rate</td>
<td>550</td>
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<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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**Pay Items**

<table>
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<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
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<td>$51,510.52</td>
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<tr>
<td>285-711</td>
<td>OPTIONAL BASE,BASE GROUP 11</td>
<td>9,771.15</td>
<td>SY</td>
<td>$38.58</td>
<td>$376,970.97</td>
</tr>
<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22,PMA</td>
<td>2,615.15</td>
<td>TN</td>
<td>$109.37</td>
<td>$286,018.96</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>380.39</td>
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<td>$140.00</td>
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**Pavement Marking Subcomponent**

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<tr>
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<td>Pavement Type</td>
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<td>Solid Stripe No. of Stripes</td>
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<td>Skip Stripe No. of Paint Applications</td>
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<tr>
<td>Skip Stripe No. of Stripes</td>
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**Pay Items**

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<th>Extended Amount</th>
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<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>91.00</td>
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<td>NM</td>
<td>$908.42</td>
<td>$4,905.47</td>
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**Roadway Component Total**

$773,000.86

### SHOULDER COMPONENT

**User Input Data**

<table>
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<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>0.00 / 10.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>0.00 / 10.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>110</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>T</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
</tbody>
</table>

**Pay Items**

<table>
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<tr>
<th>Pay item</th>
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<th>Quantity</th>
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<th>Unit Price</th>
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<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>Pay Item</td>
<td>Description</td>
<td>Quantity</td>
<td>Unit</td>
<td>Unit Price</td>
<td>Extended Amount</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
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<td>------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>9,271.89</td>
<td>LF</td>
<td>$1.25</td>
<td>$11,589.86</td>
</tr>
<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>168.85</td>
<td>LF</td>
<td>$9.63</td>
<td>$1,626.03</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
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<td>LF</td>
<td>$4.69</td>
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<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
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<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>16.37</td>
<td>AC</td>
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<td>$583.26</td>
</tr>
<tr>
<td>107-2</td>
<td>MOWING</td>
<td>16.37</td>
<td>AC</td>
<td>$55.77</td>
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**Shoulder Component Total**

$133,249.35

## MEDIAN COMPONENT

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<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Total Median Width</td>
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<tr>
<td>Performance Turf Width</td>
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</tr>
<tr>
<td>Total Median Shoulder Width L/R</td>
<td>0.00 / 6.00</td>
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<tr>
<td>Paved Median Shoulder Width L/R</td>
<td>0.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>110</td>
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<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>T</td>
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<tr>
<td>Rumble Strips No. of Sides</td>
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**Median Component Total**

$53,860.52

## DRAINAGE COMPONENT

<table>
<thead>
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<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>446-1-1</td>
<td>EDGEDRAIN DRAINCRETE, STANDARD</td>
<td>3,566.00</td>
<td>LF</td>
<td>$25.36</td>
<td>$90,433.76</td>
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<td>EDGEDRAIN OUTLET PIPE, 4&quot;</td>
<td>72.00</td>
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**Drainage Component Total**

$92,471.36

## SIGNING COMPONENT
### Pay Items

<table>
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<tr>
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<th>Description</th>
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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$321.52</td>
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<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
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<td>$1,053.87</td>
<td>$17,915.79</td>
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<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
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<td>$5,697.97</td>
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**Signing Component Total**

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### Landscaping Component

**User Input Data**

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<td>Component Detail</td>
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**Landscaping Component Total**

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### Sequence 20 Total

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<td>$1,218,747.35</td>
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### Sequence: 21 NUR - New Construction, Undivided, Rural

- **Net Length:** 0.993 MI 5,245 LF
- **Description:** One-lane Express ramps - Wekiva area
- **Special Conditions:** August 2016 Update: Express Lanes with Asphalt Pavement Assume reconstruction of 500’ of ramp at each I-4 tie-in

### Earthwork Component

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

| Alignment Number | 1 |
| Distance | 1.240 |
| Top of Structural Course For Begin Section | 103.00 |
| Top of Structural Course For End Section | 103.00 |
| Horizontal Elevation For Begin Section | 100.00 |
| Horizontal Elevation For End Section | 100.00 |
| Front Slope L/R | 1 to 1 / 1 to 1 |
| Outside Shoulder Cross Slope L/R | 6.00 % / 6.00 % |
| Roadway Cross Slope L/R | 2.00 % / 2.00 % |

**Pay Items**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>13,506.63 CY</td>
<td>$9.50</td>
<td>$128,312.98</td>
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**Earthwork Component Total**

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<tr>
<td></td>
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### Roadway Component
### User Input Data

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<tbody>
<tr>
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<tr>
<td>Roadway Pavement Width L/R</td>
<td>7.50 / 7.50</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>550</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
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### Pay Items

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<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
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<td>$3.25</td>
<td>$51,140.24</td>
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<tr>
<td>285-711</td>
<td>OPTIONAL BASE,BASE GROUP 11</td>
<td>9,126.56</td>
<td>SY</td>
<td>$38.58</td>
<td>$352,102.68</td>
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<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22,PMA</td>
<td>2,404.03</td>
<td>TN</td>
<td>$109.37</td>
<td>$262,928.76</td>
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<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>349.68</td>
<td>TN</td>
<td>$140.00</td>
<td>$48,955.20</td>
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### Pavement Marking Subcomponent

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>N</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
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<tr>
<td>Solid Stripe No. of Stripes</td>
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<tr>
<td>Skip Stripe No. of Paint Applications</td>
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<td>Skip Stripe No. of Stripes</td>
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<tr>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>3.97</td>
<td>NM</td>
<td>$908.42</td>
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**Roadway Component Total**

$718,733.32

### SHOULDER COMPONENT

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<tbody>
<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
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<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>6.00 / 6.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
<td>0</td>
</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>285-705</td>
<td>OPTIONAL BASE,BASE GROUP 05</td>
<td>7,378.18</td>
<td>SY</td>
<td>$22.52</td>
<td>$166,156.61</td>
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<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>769.29</td>
<td>TN</td>
<td>$105.00</td>
<td>$80,775.45</td>
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### Erosion Control

<table>
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<tr>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
</table>
104-10-3  SEDIMENT BARRIER  13,637.40 LF  $1.25  $17,046.75
104-11  FLOATING TURBIDITY BARRIER  248.35 LF  $9.63  $2,391.61
104-12  STAKED TURBIDITY BARRIER-NYL REINF PVC  248.35 LF  $4.69  $1,164.76
104-15  SOIL TRACKING PREVENTION DEVICE  1.00 EA  $2,215.78  $2,215.78
107-1  LITTER REMOVAL  12.04 AC  $35.63  $428.99
107-2  MOWING  12.04 AC  $55.77  $671.47

Shoulder Component Total  $270,851.42

DRAINAGE COMPONENT

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>446-1-1</td>
<td>EDGEDRAIN DRAINCRETE, STANDARD</td>
<td>5,245.00</td>
<td>LF</td>
<td>$25.36</td>
<td>$133,013.20</td>
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Comment: TOTAL DIST.

<table>
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<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>446-71-1</td>
<td>EDGEDRAIN OUTLET PIPE, 4&quot;</td>
<td>105.00</td>
<td>LF</td>
<td>$28.30</td>
<td>$2,971.50</td>
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Comment: TOTAL DIST. X 6' PIPE / 300' INTERVAL

Drainage Component Total  $135,984.70

SIGNING COMPONENT

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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$321.52</td>
<td>$643.04</td>
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<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>20.00</td>
<td>AS</td>
<td>$1,053.87</td>
<td>$21,077.40</td>
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<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-2-14</td>
<td>MULTI- POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>2.00</td>
<td>AS</td>
<td>$4,188.78</td>
<td>$8,377.56</td>
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Signing Component Total  $30,098.00

LANDSCAPING COMPONENT

User Input Data

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<td>Cost %</td>
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<td>Component Detail</td>
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Landscaping Component Total  $173,825.01

BRIDGES COMPONENT

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<tr>
<td>Primary Estimate</td>
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<tr>
<td>Length (LF)</td>
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<tr>
<td>Width (LF)</td>
<td>31.00</td>
</tr>
<tr>
<td>Type</td>
<td>Low Level</td>
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</table>
Cost Factor 1.25
Structure No. 0.00
Removal of Existing Structures area
Default Cost per SF $135.00
Factored Cost per SF $168.75
Final Cost per SF $170.16
Basic Bridge Cost $4,472,718.75
Description SR 417 & WEKIVA EXPRESS RAMP ONTO EB I-4.

Bridge Pay Items

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<tr>
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<th>Unit Price</th>
<th>Extended Amount</th>
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<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>68.89</td>
<td>CY</td>
<td>$379.38</td>
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<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>12,055.75</td>
<td>LB</td>
<td>$0.94</td>
<td>$11,332.40</td>
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Bridge EB EXP Total $4,510,186.65
Bridges Component Total $4,510,186.65

Sequence 21 Total $5,967,992.09

Sequence: 22 NDR - New Construction, Divided, Rural
Net Length: 5.136 MI
27,116 LF
Description: Express auxiliary lanes only
Special Conditions: August 2016 Update: Express Lanes with Asphalt Pavement This is pavement for 12' wide aux.

EARTHWORK COMPONENT

User Input Data

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<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
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<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
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<tr>
<td>Alignment Number</td>
<td>1</td>
</tr>
<tr>
<td>Distance</td>
<td>5.140</td>
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<tr>
<td>Top of Structural Course For Begin Section</td>
<td>103.00</td>
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<tr>
<td>Top of Structural Course For End Section</td>
<td>103.00</td>
</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>0 to 1 / 0 to 1</td>
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<tr>
<td>Median Slope L/R</td>
<td>0 to 1 / 0 to 1</td>
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<td>Median Shoulder Cross Slope L/R</td>
<td>0.00 % / 0.00 %</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>0.00 % / 0.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>0.00 % / 0.00 %</td>
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</table>

Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>18,917.03</td>
<td>CY</td>
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<td>$179,711.78</td>
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Earthwork Component Total $179,711.79

ROADWAY COMPONENT

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<tbody>
<tr>
<td>Number of Lanes</td>
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</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>6.00 / 6.00</td>
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<tr>
<td>Structural Spread Rate</td>
<td>550</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
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### Pay Items

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<tr>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>36,154.62</td>
<td>SY</td>
<td>$3.25</td>
<td>$117,502.52</td>
</tr>
<tr>
<td>285-711</td>
<td>OPTIONAL BASE,BASE GROUP 11</td>
<td>40,131.63</td>
<td>SY</td>
<td>$38.58</td>
<td>$1,548,278.29</td>
</tr>
<tr>
<td>334-1-24</td>
<td>SUPERPAVE ASPH CONC, TRAF D, PG76-22,PMA</td>
<td>9,942.52</td>
<td>TN</td>
<td>$109.37</td>
<td>$1,087,413.41</td>
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<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
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### Pavement Marking Subcomponent

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>N</td>
</tr>
<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
</tr>
<tr>
<td>Solid Stripe No. of Paint Applications</td>
<td>2</td>
</tr>
<tr>
<td>Solid Stripe No. of Stripes</td>
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</tr>
<tr>
<td>Skip Stripe No. of Paint Applications</td>
<td>2</td>
</tr>
<tr>
<td>Skip Stripe No. of Stripes</td>
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**Roadway Component Total**  
$2,955,659.42

### SHOULDER COMPONENT

#### User Input Data

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<tr>
<td>Total Outside Shoulder Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>0.00 / 0.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
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</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
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</tr>
<tr>
<td>Rumble Strips No. of Sides</td>
<td>0</td>
</tr>
</tbody>
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#### Erosion Control

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
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<td>LF</td>
<td>$1.25</td>
<td>$88,126.90</td>
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<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>1,283.90</td>
<td>LF</td>
<td>$9.63</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER-NYL REINF PVC</td>
<td>1,283.90</td>
<td>LF</td>
<td>$4.69</td>
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<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>6.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$13,294.68</td>
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<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>31.00</td>
<td>EA</td>
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<td>107-1</td>
<td>LITTER REMOVAL</td>
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<td>$35.63</td>
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<tr>
<td>107-2</td>
<td>MOWING</td>
<td>124.49</td>
<td>AC</td>
<td>$55.77</td>
<td>$6,942.81</td>
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**Shoulder Component Total**  
$134,101.28

### LANDSCAPING COMPONENT
## User Input Data

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<tbody>
<tr>
<td>Cost %</td>
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<tr>
<td>Component Detail</td>
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**Landscaping Component Total** $98,084.17

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**Sequence 22 Total** $3,367,556.66

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**Sequence: 24 MIS - Miscellaneous Construction**

**Net Length:** 0.474 MI 2,500 LF

**Description:** 15' wide pedestrian bridge along ST. John's River Bridge

---

### LANDSCAPING COMPONENT

<table>
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<tr>
<td>Component Detail</td>
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**Landscaping Component Total** $175,200.08

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### BRIDGES COMPONENT

**Bridge PED**

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<th>Description</th>
<th>Value</th>
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<tbody>
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<td>Estimate Type</td>
<td>SF Estimate</td>
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<td>Primary Estimate</td>
<td>YES</td>
</tr>
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<td>Length (LF)</td>
<td>2,500.00</td>
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<tr>
<td>Width (LF)</td>
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<td>Removal of Existing Structures area</td>
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</tr>
<tr>
<td>Default Cost per SF</td>
<td>$135.00</td>
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<tr>
<td>Factored Cost per SF</td>
<td>$155.25</td>
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<td>Final Cost per SF</td>
<td>$155.73</td>
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<td>Basic Bridge Cost</td>
<td>$5,821,875.00</td>
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**Bridge PED**

**Description** PED BRIDGE

**Bridge Pay Items**

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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>33.33 CY</td>
<td>$379.38</td>
<td>$12,644.74</td>
<td></td>
</tr>
<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>5,832.75 LB</td>
<td>$0.94</td>
<td>$5,482.78</td>
<td></td>
</tr>
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</table>

**Bridge PED Total** $5,840,002.53

**Bridges Component Total** $5,840,002.53

---

**Sequence 24 Total** $6,015,202.61

---

**Sequence: 25 NUR - New Construction, Undivided, Rural**

**Net Length:** 0.233 MI 1,230 LF

---
Description: Three-lane ramps - US 17/92. Alt 8-recommended Concept.
Special Conditions: I4 GUL AND EXPRESS LANES NOT INCLUDED

EARTHWORK COMPONENT

User Input Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>50.00 / 50.00</td>
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<tr>
<td>Incidental Clearing and Grubbing Area</td>
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<tr>
<td>Alignment Number</td>
<td>1</td>
</tr>
<tr>
<td>Distance</td>
<td>0.233</td>
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<tr>
<td>Top of Structural Course For Begin Section</td>
<td>125.00</td>
</tr>
<tr>
<td>Top of Structural Course For End Section</td>
<td>125.00</td>
</tr>
<tr>
<td>Horizontal Elevation For Begin Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Horizontal Elevation For End Section</td>
<td>100.00</td>
</tr>
<tr>
<td>Front Slope L/R</td>
<td>2 to 1 / 2 to 1</td>
</tr>
<tr>
<td>Outside Shoulder Cross Slope L/R</td>
<td>6.00 % / 6.00 %</td>
</tr>
<tr>
<td>Roadway Cross Slope L/R</td>
<td>2.00 % / 2.00 %</td>
</tr>
</tbody>
</table>

Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>116,765.27 CY</td>
<td>$9.50</td>
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Earthwork Component Total

$1,109,270.07

ROADWAY COMPONENT

User Input Data

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<th>Description</th>
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<tbody>
<tr>
<td>Number of Lanes</td>
<td>3</td>
</tr>
<tr>
<td>Roadway Pavement Width L/R</td>
<td>18.00 / 18.00</td>
</tr>
<tr>
<td>Structural Spread Rate</td>
<td>495</td>
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<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
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Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>8,201.60 SY</td>
<td>$3.25</td>
<td>$26,655.20</td>
</tr>
<tr>
<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>5,011.18 SY</td>
<td>$20.00</td>
<td>$100,223.60</td>
</tr>
<tr>
<td>334-1-25</td>
<td>SUPERPAVE ASPH CONC, TRAF E, PG76-22,PMA</td>
<td>1,217.94 TN</td>
<td>$97.88</td>
<td>$119,211.97</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>196.84 TN</td>
<td>$140.00</td>
<td>$27,557.60</td>
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X-Items

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<th>Extended Amount</th>
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<tbody>
<tr>
<td>521-8-1</td>
<td>CONC TRAF RAIL BAR, JCT SLAB,32°F SHAPE</td>
<td>2,000.00 LF</td>
<td>$240.44</td>
<td>$480,880.00</td>
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Comment: Length x 2 for barrier on both sides

Pavement Marking Subcomponent

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<tbody>
<tr>
<td>Include Thermo/Tape/Other</td>
<td>Y</td>
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<tr>
<td>Pavement Type</td>
<td>Asphalt</td>
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### Pay Items

<table>
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<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>126.00</td>
<td>EA</td>
<td>$3.74</td>
<td>$471.24</td>
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<tr>
<td>710-11-111</td>
<td>PAINTED PAVT MARK,STD,WHITE,SOLID,6&quot;</td>
<td>0.47</td>
<td>NM</td>
<td>$908.42</td>
<td>$426.96</td>
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<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK,STD,WHITE,SKIP, 6&quot;</td>
<td>0.47</td>
<td>GM</td>
<td>$383.54</td>
<td>$180.26</td>
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<tr>
<td>711-11-111</td>
<td>THERMOPLASTIC, STD, WHITE, SOLID, 6&quot;</td>
<td>0.47</td>
<td>NM</td>
<td>$3,138.35</td>
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<tr>
<td>711-11-131</td>
<td>THERMOPLASTIC, STD, WHITE, SKIP, 6&quot;</td>
<td>0.47</td>
<td>GM</td>
<td>$1,027.15</td>
<td>$482.76</td>
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**Roadway Component Total**

$757,564.61

### SHOULDER COMPONENT

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<tr>
<td>Total Outside Shoulder Perf. Turf Width L/R</td>
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<tr>
<td>Paved Outside Shoulder Width L/R</td>
<td>12.00 / 12.00</td>
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<tr>
<td>Structural Spread Rate</td>
<td>220</td>
</tr>
<tr>
<td>Friction Course Spread Rate</td>
<td>80</td>
</tr>
<tr>
<td>Total Width (T) / 8&quot; Overlap (O)</td>
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<tr>
<td>Rumble Strips No. of Sides</td>
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#### Pay Items

<table>
<thead>
<tr>
<th>Pay item</th>
<th>Description</th>
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<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>285-708</td>
<td>OPTIONAL BASE,BASE GROUP 08</td>
<td>3,370.86</td>
<td>SY</td>
<td>$16.00</td>
<td>$53,933.76</td>
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<tr>
<td>334-1-12</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC B</td>
<td>360.87</td>
<td>TN</td>
<td>$105.00</td>
<td>$37,891.35</td>
</tr>
<tr>
<td>337-7-22</td>
<td>ASPH CONC FC,INC BIT,FC-5,PG76-22,PMA</td>
<td>7.22</td>
<td>TN</td>
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#### Erosion Control

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<tbody>
<tr>
<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
<td>3,198.62</td>
<td>LF</td>
<td>$1.25</td>
<td>$3,998.28</td>
</tr>
<tr>
<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>58.25</td>
<td>LF</td>
<td>$9.63</td>
<td>$560.95</td>
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<tr>
<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
<td>58.25</td>
<td>LF</td>
<td>$4.69</td>
<td>$273.19</td>
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<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>1.00</td>
<td>EA</td>
<td>$2,215.78</td>
<td>$2,215.78</td>
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<tr>
<td>107-1</td>
<td>LITTER REMOVAL</td>
<td>2.82</td>
<td>AC</td>
<td>$35.63</td>
<td>$100.48</td>
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<td>107-2</td>
<td>MOWING</td>
<td>2.82</td>
<td>AC</td>
<td>$55.77</td>
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**Shoulder Component Total**

$100,141.86
### Drainage Component

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<th>Extended Amount</th>
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<tbody>
<tr>
<td>400-2-2</td>
<td>CONC CLASS II, ENDWALLS</td>
<td>4.19 CY</td>
<td>CY</td>
<td>$1,301.59</td>
<td>$5,453.66</td>
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<tr>
<td>430-174-124</td>
<td>PIPE CULV, OPT MATL, ROUND, 24&quot;SD</td>
<td>192.00 LF</td>
<td>LF</td>
<td>$72.48</td>
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<tr>
<td>430-175-136</td>
<td>PIPE CULV, OPT MATL, ROUND, 36&quot; SD</td>
<td>40.00 LF</td>
<td>LF</td>
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<td>430-984-129</td>
<td>MITERED END SECT, OPTIONAL RD, 24&quot; SD</td>
<td>10.00 EA</td>
<td>EA</td>
<td>$1,198.82</td>
<td>$11,988.20</td>
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<tr>
<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
<td>164.03 SY</td>
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Drainage Component Total: $36,013.86

### Signing Component

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<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-1-11</td>
<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
<td>1.00 AS</td>
<td>AS</td>
<td>$321.52</td>
<td>$321.52</td>
</tr>
<tr>
<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
<td>5.00 AS</td>
<td>AS</td>
<td>$1,053.87</td>
<td>$5,269.35</td>
</tr>
<tr>
<td>700-2-14</td>
<td>MULTI-POST SIGN, F&amp;I GM, 31-50 SF</td>
<td>1.00 AS</td>
<td>AS</td>
<td>$4,188.78</td>
<td>$4,188.78</td>
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Signing Component Total: $9,779.65

### Landscaping Component

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<tr>
<td>Cost %</td>
<td>3.00</td>
</tr>
<tr>
<td>Component Detail</td>
<td>N</td>
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Landscaping Component Total: $309,556.53

### Bridges Component

**Description of Bridge C**

- **Estimate Type**: SF Estimate
- **Primary Estimate**: YES
- **Length (LF)**: 510.00
- **Width (LF)**: 60.00
- **Type**: Low Level
- **Cost Factor**: 1.25
- **Structure No.**: 
- **Removal of Existing Structures area**: 0.00
- **Default Cost per SF**: $135.00
- **Factored Cost per SF**: $168.75
- **Final Cost per SF**: $171.12
- **Basic Bridge Cost**: $5,163,750.00
- **Description**: I-4 WB TO US 17-92

**Bridge Pay Items**

<table>
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<th>Value</th>
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</thead>
<tbody>
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<tr>
<td></td>
<td></td>
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<tr>
<td></td>
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## Bridge C Total
$5,236,265.53

## Bridge D

<table>
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<td>SF Estimate</td>
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<td>Primary Estimate</td>
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<td>Length (LF)</td>
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<tr>
<td>Width (LF)</td>
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<tr>
<td>Type</td>
<td>Low Level</td>
</tr>
<tr>
<td>Cost Factor</td>
<td>1.25</td>
</tr>
<tr>
<td>Structure No.</td>
<td></td>
</tr>
<tr>
<td>Removal of Existing Structures area</td>
<td>0.00</td>
</tr>
<tr>
<td>Default Cost per SF</td>
<td>$135.00</td>
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<tr>
<td>Factored Cost per SF</td>
<td>$168.75</td>
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<tr>
<td>Final Cost per SF</td>
<td>$172.83</td>
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</table>

### Description
$2,997,000.00

### Bridge Pay Items

<table>
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<th>Description</th>
<th>Quantity Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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</thead>
<tbody>
<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>133.33 CY</td>
<td>$379.38</td>
<td>$50,582.74</td>
</tr>
<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>23,332.75 LB</td>
<td>$0.94</td>
<td>$21,932.78</td>
</tr>
</tbody>
</table>

### Bridge D Total
$3,069,515.53

### Bridges Component Total
$8,305,781.06

## Sequence 25 Total
$10,628,107.64

### Sequence: 26 NDU - New Construction, Divided, Urban

**Net Length:** 2.367 MI

**12,500 LF**

**Description:** CR 46A DDI Interchange

### EARTHWORK COMPONENT

**User Input Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Standard Clearing and Grubbing Limits L/R</td>
<td>105.00 / 105.00</td>
</tr>
<tr>
<td>Incidental Clearing and Grubbing Area</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Alignment Number**

| Distance | 2.367 |
| Top of Structural Course For Begin Section | 105.00 |
| Top of Structural Course For End Section | 105.00 |
| Horizontal Elevation For Begin Section | 100.00 |
| Horizontal Elevation For End Section | 100.00 |
| Front Slope L/R | 6 to 1 / 6 to 1 |
| Outside Shoulder Cross Slope L/R | 2.00% / 2.00% |

**Median Shoulder Cross Slope L/R**
4.00% / 4.00%
Roadway Cross Slope L/R

### Earthwork Component Total

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-1-1</td>
<td>CLEARING &amp; GRUBBING</td>
<td>60.25 AC</td>
<td>AC</td>
<td>$10,000.00</td>
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<tr>
<td>120-6</td>
<td>EMBANKMENT</td>
<td>292,470.73 CY</td>
<td>$9.50</td>
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Earthwork Component Total: $3,380,971.94

### ROADWAY COMPONENT

#### User Input Data

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<td>Roadway Pavement Width L/R</td>
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<td>Structural Spread Rate</td>
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<td>Friction Course Spread Rate</td>
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#### Pay Items

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<tr>
<td>160-4</td>
<td>TYPE B STABILIZATION</td>
<td>125,443.16 SY</td>
<td>$3.25</td>
<td>$407,690.27</td>
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<td>285-712</td>
<td>OPTIONAL BASE,BASE GROUP 12</td>
<td>111,109.97 SY</td>
<td>$20.00</td>
<td>$2,222,199.40</td>
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<td>334-1-13</td>
<td>SUPERPAVE ASPHALTIC CONC, TRAFFIC C</td>
<td>36,666.29 TN</td>
<td>$100.00</td>
<td>$3,666,629.00</td>
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<td>337-7-43</td>
<td>ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22</td>
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#### Pavement Marking Subcomponent

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<td>Solid Stripe No. of Stripes</td>
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<tr>
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#### Pay Items

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<tr>
<td>706-3</td>
<td>RETRO-REFLECTIVE PAVEMENT MARKERS</td>
<td>959.00 EA</td>
<td>$3.74</td>
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<tr>
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<td>18.94 NM</td>
<td>$908.42</td>
<td>$17,205.47</td>
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<tr>
<td>710-11-131</td>
<td>PAINTED PAVT MARK,STD,WHITE,SKIP, 6&quot;</td>
<td>9.47 GM</td>
<td>$383.54</td>
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Roadway Component Total: $6,838,937.74

### SHOULDER COMPONENT

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<td>Total Outside Shoulder Perf. Turf Width L/R</td>
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<td>Sidewalk Width L/R</td>
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#### Pay Items
### Pay Item Details

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<th>Extended Amount</th>
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<tr>
<td>520-1-10</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
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<td>LF</td>
<td>$19.00</td>
<td>$237,497.53</td>
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<tr>
<td>520-1-10</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE F</td>
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<td>LF</td>
<td>$19.00</td>
<td>$237,497.53</td>
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<tr>
<td>522-1</td>
<td>CONCRETE SIDEWALK AND DRIVEWAYS, 4&quot;</td>
<td>13,888.75</td>
<td>SY</td>
<td>$41.59</td>
<td>$577,633.11</td>
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<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
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**Erosion Control**

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<td>104-10-3</td>
<td>SEDIMENT BARRIER</td>
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<td>$31,249.68</td>
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<td>104-11</td>
<td>FLOATING TURBIDITY BARRIER</td>
<td>591.85</td>
<td>LF</td>
<td>$9.63</td>
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<td>104-12</td>
<td>STAKED TURBIDITY BARRIER- NYL REINF PVC</td>
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<td>LF</td>
<td>$4.69</td>
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<tr>
<td>104-15</td>
<td>SOIL TRACKING PREVENTION DEVICE</td>
<td>3.00</td>
<td>EA</td>
<td>$2,215.78</td>
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<td>104-18</td>
<td>INLET PROTECTION SYSTEM</td>
<td>121.00</td>
<td>EA</td>
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<td>107-1</td>
<td>LITTER REMOVAL</td>
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<td>AC</td>
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<td>107-2</td>
<td>MOWING</td>
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**Shoulder Component Total**

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### Median Component

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<td>520-1-7</td>
<td>CONCRETE CURB &amp; GUTTER, TYPE E</td>
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<td>MEDIAN CONC BARRIER WALL</td>
<td>10,733.00</td>
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<td>570-1-1</td>
<td>PERFORMANCE TURF</td>
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<td>SY</td>
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<td>$9,270.74</td>
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**Median Component Total**

$2,061,389.12

### Drainage Component

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<td>425-1-521</td>
<td>INLETS, DT BOT, TYPE C, &lt;10'</td>
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<td>425-2-41</td>
<td>MANHOLES, P-7, &lt;10'</td>
<td>12.00</td>
<td>EA</td>
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<td>PIPE CULV, OPT MATL, ROUND, 24&quot;S/CD</td>
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**Drainage Component Total**

$879,91 D-87
### Drainage Component Total

$3,122,055.02

### SIGNING COMPONENT

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<td>SINGLE POST SIGN, F&amp;I GM, &lt;12 SF</td>
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<td>700-1-12</td>
<td>SINGLE POST SIGN, F&amp;I GM, 12-20 SF</td>
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<td>MULTI- POST SIGN, F&amp;I GM, 51-100 SF</td>
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**Signing Component Total**

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### SIGNALIZATIONS COMPONENT

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<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
<td>9,800.00</td>
<td>LF</td>
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<td>630-2-12</td>
<td>CONDUIT, F&amp;I, DIRECTIONAL BORE</td>
<td>4,200.00</td>
<td>LF</td>
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<td>632-7-1</td>
<td>SIGNAL CABLE- NEW OR RECO, FUR &amp; INSTALL</td>
<td>14.00</td>
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<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
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<td>ELECTRICAL POWER SRV,F&amp;I,OH,M,PUR BY CON</td>
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<td>639-2-1</td>
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<td>LF</td>
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<td>641-2-11</td>
<td>STEEL STRAIN POLE, F&amp;I, PEDESTAL</td>
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<td>M/ARM,F&amp;I, WS-150,SINGLE ARM,W/0 LUM-78</td>
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<td>650-1-311</td>
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<td>653-191</td>
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<td>660-2-106</td>
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<td>665-1-11</td>
<td>TRAF CNTL ASSEM, F&amp;I, NEMA, 1 PREEMPT</td>
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**Signalizations Component Total**

$3,614,088.80
LIGHTING COMPONENT

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<th>Extended Amount</th>
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<tbody>
<tr>
<td>630-2-11</td>
<td>CONDUIT, F&amp;I, OPEN TRENCH</td>
<td>12,499.87</td>
<td>LF</td>
<td>$6.43</td>
<td>$80,374.16</td>
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<td>630-2-12</td>
<td>CONDUIT, F&amp;I, DIRECTIONAL BORE</td>
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<td>635-2-11</td>
<td>PULL &amp; SPLICE BOX, F&amp;I, 13&quot; x 24&quot;</td>
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<td>EA</td>
<td>$535.14</td>
<td>$44,416.62</td>
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<td>715-1-13</td>
<td>LIGHTING CONDUCTORS, F&amp;I, INSUL, NO.4-2</td>
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<td>LF</td>
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<td>715-4-111</td>
<td>LIGHT POLE COMP, F&amp;I, WS150, 40'</td>
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Subcomponent Total

Lighting Component Total: $698,355.39

LANDSCAPING COMPONENT

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Landscaping Component Total: $1,211,702.83

BRIDGES COMPONENT

Bridge 46A

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<td>Length (LF)</td>
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<tr>
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<tr>
<td>Default Cost per SF</td>
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<td>Final Cost per SF</td>
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<tr>
<td>Basic Bridge Cost</td>
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Bridge Pay Items

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<tr>
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<th>Description</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tbody>
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<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>166.67</td>
<td>CY</td>
<td>$379.38</td>
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<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>29,167.25</td>
<td>LB</td>
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<td>$27,417.22</td>
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Bridge 46A Total: $11,228,148.48
Description | Value
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Estimate Type | SF Estimate
Primary Estimate | YES
Length (LF) | 744.00
Width (LF) | 60.00
Type | High Level
Cost Factor | 1.25
Structure No. | Removal of Existing Structures area 0.00
Default Cost per SF | $135.00
Factored Cost per SF | $168.75
Final Cost per SF | $170.37
Basic Bridge Cost | $7,533,000.00
Description | I-4 EB OFF RAMP

Bridge Pay Items

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<tr>
<th>Pay item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
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<tr>
<td>400-2-10</td>
<td>CONC CLASS II, APPROACH SLABS</td>
<td>133.33 CY</td>
<td>$379.38</td>
<td>$50,582.74</td>
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<tr>
<td>415-1-9</td>
<td>REINF STEEL- APPROACH SLABS</td>
<td>23,332.75 LB</td>
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Bridge RAMP Total $7,605,515.53

Bridges Component Total $18,833,664.01

RETAINING WALLS COMPONENT

Retaining Wall 1

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<tr>
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<th>Value</th>
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<td>End Height</td>
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<td>Multiplier</td>
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Pay Items

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<th>Unit</th>
<th>Unit Price</th>
<th>Extended Amount</th>
</tr>
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<tbody>
<tr>
<td>548-12</td>
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<td>21,000.00 SF</td>
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Retaining Walls Component Total $610,890.00

Sequence 26 Total $41,601,797.18

Date: 1/25/2017 2:05:26 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 242592-4-52-01

Letting Date: 01/2099

Description: SR 400 (I-4) from 1 mile east of SR 434 to East of SR 15/600 US 17/92 (Seminole / Volusia County line) Seminole County (77160).

District: 05
County: 77 SEMINOLE
Market Area: 08
Units: English
Contract Class: 9
Lump Sum Project: N
Design/Build: Y
Project Length: 10.210 MI
**Project Manager:** HJJ

**Version 25 Project Grand Total**

$482,750,307.73

I-4 (SR 400) ULTIMATE PROJECT FROM 1 MI E OF SR 434 TO WEST END OF ST. JOHNS

**Description:** RIVER BRIDGE (STA. 2043+70 TO 2578+48) - HNTB August 2016 Update: Express Lanes with Asphalt Pavement

<table>
<thead>
<tr>
<th>Project Sequences Subtotal</th>
<th>$338,864,256.18</th>
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<tr>
<td>102-1 Maintenance of Traffic</td>
<td>10.00 %</td>
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<tr>
<td>101-1 Mobilization</td>
<td>10.00 %</td>
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**Project Sequences Total**

$410,025,749.98

| Project Unknowns | 10.00 % | $41,002,575.00 |
| Design/Build | 7.00 % | $31,571,982.75 |

**Non-Bid Components:**

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<th>Extended Amount</th>
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<td>INITIAL CONTINGENCY AMOUNT (DO NOT BID)</td>
<td>LS</td>
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**Project Non-Bid Subtotal**

$150,000.00

**Version 25 Project Grand Total**

$482,750,307.73
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<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Quantity</th>
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<th>Remarks</th>
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</thead>
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<td>0110</td>
<td>Clearing &amp; Grubbing</td>
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<td>$7,724</td>
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<tr>
<td>0110</td>
<td>Removal of Existing Structure</td>
<td>SF</td>
<td>$24</td>
<td>0</td>
<td>-</td>
<td>Area of existing bridge</td>
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<tr>
<td>160</td>
<td>Stabilization Type B LBR 40</td>
<td>SY</td>
<td>$2.90</td>
<td>706,777</td>
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<tr>
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<tr>
<td>334</td>
<td>Superpave asphaltic concrete (Traff 8)</td>
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<td>Used 110 lb /sy*inch lift (3&quot; thk) - Roadway</td>
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<td>Total Cost</td>
<td>Remarks</td>
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</tr>
<tr>
<td>0110 1 1</td>
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<td>AC</td>
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<td>LS</td>
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<tr>
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<td>2,903</td>
<td>$340,287</td>
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<td>52,000</td>
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<td>5,989</td>
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<td>-</td>
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<td>Assume 5% of Construction Subtotal Cost</td>
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<td>Assume 5% of Construction Subtotal Cost</td>
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<td>Assume 5% of Construction Subtotal Cost</td>
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<tr>
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<td>$1,013,472</td>
<td>Used 110 lb /sy*inch lift (3&quot; thk) - Roadway</td>
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<td>$1,013,472</td>
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<td>11,306</td>
<td>$1,013,472</td>
<td>Used 110 lb /sy*inch lift (0.75&quot; thk) - Roadway</td>
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<td>Remarks</td>
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<td>0110 1 1</td>
<td>Clearing &amp; Grubbing</td>
<td>AC</td>
<td>$7,724</td>
<td>14</td>
<td>$108,889</td>
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<td>6,259</td>
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<td>TN</td>
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<td>$275,095</td>
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<td>Vehicle Impact Attenuator</td>
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<td>At gores</td>
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<td>Fencing</td>
<td>LF</td>
<td>$10.00</td>
<td>-</td>
<td>$-</td>
<td>LA R/W fence</td>
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<tr>
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<td>Embankment</td>
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<td>2,591</td>
<td>$232,301</td>
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Subtotal Cost LS $12,409,716
Compensable Utility Relocation LS $620,486 Assume 5% of Construction Subtotal Cost
Mobilization LS $1,240,972 Assume 10% of Construction Subtotal Cost
Maintenance of Traffic (MOT) LS $1,240,972 Assume 10% of Construction Subtotal Cost
Lighting LS $620,486 Assume 5% of Construction Subtotal Cost
Signage LS $620,486 Assume 5% of Construction Subtotal Cost
Drainage LS $2,481,943 Assume 20% of Construction Subtotal Cost
ITS LS $620,486 Assume 5% of Construction Subtotal Cost
Erosion Control LS $124,097 Assume 1% of Construction Subtotal Cost
Construction Subtotal LS $19,979,643
Contingency LS $2,996,946 Assume 15% of Construction Subtotal

Grand Total $22,976,589
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<td>LA R/W fence</td>
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<tr>
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<td>Base optional (base group 5) ML</td>
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<td>Embankment</td>
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<td>Item</td>
<td>Description</td>
<td>Unit</td>
<td>Unit Cost</td>
<td>Quantity</td>
<td>Total Cost</td>
<td>Remarks</td>
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<td>0110 1 1</td>
<td>Clearing &amp; Grubbing</td>
<td>AC</td>
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<td>10</td>
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<td>$2.90</td>
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<td>LF</td>
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<td>6,238</td>
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<td>521 1</td>
<td>Fencing</td>
<td>LF</td>
<td>$10.00</td>
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<td>LA R/W fence</td>
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<td>At gores</td>
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<td>1,571</td>
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<td>LF</td>
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<td>Fencing</td>
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