

EXHIBIT "A"



SCOPE OF SERVICES

FOR

FINANCIAL PROJECT ID: 436494-1-32-01

FEDERAL PROJECT NO. N/A (DESIGN FUNDING)

US 92/SR 600/DALE MABRY HWY FROM S. OF MCKAY AVE. TO S. OF W. CLEVELAND ST.

DISTRICT SEVEN

HILLSBOROUGH COUNTY

09/25/15

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**SCOPE OF SERVICES FOR CONSULTING ENGINEERING SERVICES
HIGHWAY AND BRIDGE/STRUCTURAL DESIGN**

This Exhibit forms an integral part of the agreement between the State of Florida Department of Transportation (hereinafter referred to as the DEPARTMENT or FDOT) and _____ (hereinafter referred to as the CONSULTANT) relative to the transportation facility described as follows:

Financial Project ID: **436494-1-32-01**
Federal Aid Project No.: **N/A (design funding)**
County Section No.: **10130 000**
Description: **US 92/SR 600/Dale Mabry Hwy. from S. of McKay Ave. to S. of W. Cleveland St.**
Hillsborough County
Bridge No(s): **N/A**
Railroad Crossing No(s): **N/A**

1 PURPOSE

The purpose of this Exhibit is to describe the scope of work and the responsibilities of the CONSULTANT and the DEPARTMENT in connection with the design and preparation of a complete set of construction contract documents and incidental engineering services, as necessary, for improvements to the transportation facility described herein.

Major Work Mix includes: **Resurfacing**
Major Work Types include: **3.1**
Minor Work Types include: **4.1.1, 7.1, 7.2, 7.3 and 8.2**

Known Alternative/*Innovative* Construction Contracting Methods: **None at this time**

The general objective is for the CONSULTANT to prepare a set of contract documents including plans, specifications, supporting engineering analysis, calculations and other technical documents in accordance with FDOT policy, procedures and requirements. These Contract documents will be used by the **construction** contractor to build the project and test the project components. These Contract documents will be used by the DEPARTMENT or its Construction Engineering Inspection (CEI) representatives for inspection and final acceptance of the project. The CONSULTANT shall follow a systems engineering process to ensure that all required project components are included in the development of the Contract documents and the project can be built as designed and to specifications.

The Scope of Services establishes which items of work in the Plans Preparation Manual and other pertinent manuals are specifically prescribed to accomplish the work included in this contract, and also indicates which items of work will be the responsibility of the CONSULTANT and/or the DEPARTMENT. **Where a type of service is noted herein to be provided by the DEPARTMENT, the CONSULTANT shall communicate to the DEPARTMENT in writing the specific nature of such DEPARTMENT services as are necessary to support the CONSULTANT's responsibilities under this contract, and shall do so by such time as will support the DEPARTMENT's original project schedule or any subsequent DEPARTMENT-approved revisions thereto.**

The CONSULTANT shall be aware that as a project is developed, certain modifications and/or improvements to the original concept may be required. The CONSULTANT shall incorporate these refinements into the design and consider such refinements to be an anticipated and integral part of the work. This shall not be a basis for any supplemental fee request(s).

The CONSULTANT shall demonstrate good project management practices while working on this project. These include communication with the DEPARTMENT and others as necessary, management of time and resources, and documentation. The CONSULTANT shall set up and maintain throughout the design of the

project a contract file in accordance with DEPARTMENT procedures. CONSULTANTS are expected to know the laws and rules governing their professions and are expected to provide services in accordance with current regulations, codes, ordinances and recognized standards applicable to such professional services. The CONSULTANT shall provide qualified technical and professional personnel to perform to DEPARTMENT standards and procedures, the duties and responsibilities assigned under the terms of this agreement. The CONSULTANT shall minimize to the maximum extent possible the DEPARTMENT's need to apply its own resources to assignments authorized by the DEPARTMENT.

The DEPARTMENT will provide contract administration, management services and technical reviews of all work associated with the development and preparation of contract documents, including Construction documents. The DEPARTMENT's technical reviews are for high-level conformance and are not meant to be comprehensive reviews. The CONSULTANT shall be fully responsible for all work performed and work products developed under this Scope of Services. The DEPARTMENT may provide job-specific information and/or functions as outlined in this contract, if favorable.

2 PROJECT DESCRIPTION

The CONSULTANT shall investigate the status of the project(s) and become familiar with concepts and commitments (typical sections, alignments, etc.) developed from prior studies and/or activities. If a Preliminary Engineering Report is available from a prior or current Project Development and Environmental (PD&E) study, the CONSULTANT shall use the approved concepts as a basis for the design unless otherwise *noted herein or* directed by the DEPARTMENT.

The purpose of this RRR project is to preserve and extend the life of the existing pavement through milling and resurfacing, bring ADA features into conformance with current standards and perform general safety modification work. SR 600 is an urban minor arterial on the State Highway System. This project is within the Hillsborough County urban area boundary.

Generally, Basic Services under this Agreement will authorize only the preparation of Phase II (60% complete) plans, along with all supporting documents and services typical for that intermediate stage of completion (all applicable disciplines). These Basic Services shall include identification of any additional right-of-way necessary for compliance with the Americans with Disabilities Act (ADA) at intersection corners where existing right of way is inadequate. All remaining services necessary to support a construction letting (post-Phase II Plans) may be provided by one or more Optional Services authorizations (see the remainder of this document for more information).

At the option of the CONSULTANT with the approval of the DEPARTMENT Project Manager, this project may be designed and delivered using either 1) Autodesk AutoCAD Civil 3D 2014, or the DEPARTMENT's current Autodesk AutoCAD Civil 3D standard, or 2) Bentley MicroStation GEOPAK Corridor Modeler, or the DEPARTMENT's current MicroStation/GEOPAK Corridor Modeler standard. See <http://www.dot.state.fl.us/ecso/main/Version/CurrentVersions.shtm> for current versions of acceptable software. In either case, the project shall be designed, delivered and signed and sealed in compliance with the DEPARTMENT's CADD Production Criteria Handbook (CPCH) published at <http://www.dot.state.fl.us/ecso/downloads/publications/CriteriaHandBook/CPCH2010MR4/CPCHFDDOT2010MR4.shtm>. The DEPARTMENT provides a "State Kit" for both Autodesk and Bentley products that can be downloaded from <http://www.dot.state.fl.us/ecso/downloads/software>.

The CONSULTANT shall deliver a Three-Dimensional (3D) Model of the design project in accordance with the specifications/criteria defined within the CPCH, specifically in Chapter 8 (Section 8.6.5).

In the event any of this project's proposed improvements are funded for construction with Federal Safety funds, those improvements alone shall be constructed under FP ID -1-52-02 (Work Program Sequence 02), while all other project improvements shall be constructed under FP ID -1-52-01 (Work Program Sequence* 01 with State and/or Federal non-Safety construction funds). In this case, two separate LRE files and later two separate Trns*port files shall be prepared to accommodate this division of work. In the event Federal Safety funds are applied to the project and then withdrawn, all allowable*

*project improvements shall be constructed under FP ID -1-52-01. *Not to be confused with a Work Program Segment (seventh digit of the FP ID number).*

2.1 Project General and Roadway (Activities 3, 4 and 5)

Public Involvement:

Community Awareness Plan

Fact Sheet (internal use only): A fact sheet will be created and forwarded to District Public Information Office.

YES NO - Explain: _____

Project Brochure (public distribution): An informational brochure will be created for this project and posted on the mytbi website.

YES Not Applicable

Elected Officials Design Phase Submittal Notification:

An email notification will be sent from the District Secretary to local elected officials at each phase review.

YES NO - Explain: _____

Maintenance of Access Plan (business & residential): - Access to the State Highway System will be maintained.

Local events will be considered when implementing the MOT plan.

Detour will be needed. NO YES If YES please provide details. _____

This Project Is Located Near:

Raymond James Stadium	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	Ybor City	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Tropicana Field	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	Plant City	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Downtown Tampa	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Gulf Blvd. in Pinellas County	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Downtown St. Petersburg	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	Florida State Fairgrounds	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

If YES to any of the above a special events traffic control plan will be needed.

Corridor Open House:

This project will participate in a corridor open house. YES NO

Roll Plot w/Design Overlay:

A roll plot with design overlay will be created and used at the open house. YES NO

Frequently Asked Questions Handout:

A frequently asked questions handout will be created and used at the open house. YES NO

Special Concerns List: A special concerns list is needed

YES NO

Other: _____

Other Agency Presentations/Meetings: *Local governing authorities.*

Joint Project Agreements: *N/A*

Specification Package Preparation: *A specification package will be prepared.*

Value Engineering: *N/A*

Risk Assessment Workshop: *N/A*

Plan Type: *The roadway plans shall be prepared in a Plan format. Profile sheets shall be provided, if necessary, to show the vertical controls that are needed for the construction of these projects. The plan (and profile) sheets shall be plotted at a horizontal scale of 1" = 40'.*

Limits: US 92/SR 600/Dale Mabry Highway from the end of the concrete pavement section south of McKay Avenue (MP 7.908) to the beginning of the concrete pavement section south of West Cleveland Street (MP 8.365). The concrete pavement section from south of Dale Avenue (MP 8.133) to north of Dale Avenue (MP 8.173) is excluded from the project. Project Length = 0.417 miles.

Typical Section: *Four-lane urban divided roadway, with 10- to 12-foot lanes, variable width (0- to 12-foot) flush median, curb and gutter, and variable width sidewalks both sides.*

The CONSULTANT shall evaluate the Safety Assessment Report (SAR) prepared by the DEPARTMENT for the project and advise the DEPARTMENT in writing regarding the design feasibility of implementing each of the report's recommendations within the constraints of a resurfacing project and its funding source. The CONSULTANT shall then implement any DEPARTMENT-approved recommendations in the design of the project.

Pavement Design: *Two:*

- *One for milling/resurfacing of asphalt over existing concrete pavement*
- *One for milling/resurfacing of full depth asphalt pavement.*

Pavement Type Selection Report(s): *N/A*

Cross Slope: *Evaluate existing cross slope, identify deficiencies, and prepare report for determination of resolution.*

Access Management Classification: *7*

Transit Route Features: *On an existing or planned (adopted) bus route roadway, coordinate with the transit agency and design as requested their proposed engineering and right-of-way-feasible, ADA-compliant bus landing pads, rider shelter pads and incidental universal sidewalk connections, etc. All transit agency contact shall be coordinated in advance with the DEPARTMENT's Public Transit Coordinator.*

Major Intersections/Interchanges: *N/A*

Roadway Alternative Analysis: *N/A*

Level of TCP Plans: *I*

Temporary Signals: *N/A*

Temporary Lighting: *N/A*

Temporary Drainage: *N/A*

Design Variations/Exceptions: *Design variation and/or exception requests shall be prepared for any situations not meeting current DEPARTMENT and/or FHWA requirements, as appropriate. The CONSULTANT shall prepare design Variation and Exception reports for the purpose of estimating design and construction needs based on initial observations. The CONSULTANT shall recommend, to the DEPARTMENT, either correction of any deficiencies, or obtaining the appropriate design variations or exceptions, including applicable benefit-cost analyses, in accordance with DEPARTMENT procedures. Currently known or suspected features requiring analysis include:*

- *Roadway Cross Slope*
- *Lateral Offset*
- *Bicycle Lane*
- *Lane Width*
- *Border Width*

Back of Sidewalk Profiles: *N/A*

2.2 Drainage (Activity 6)

System Type: *Dale Mabry is drained by a closed drainage system. Minor ponding occurs in the gutter in some areas where the gutter has subsided due to utility connections or where ADA ramps were constructed below the original gutter line.*

This project may require the relocation of some curb inlets due to the reconstruction of ADA ramps. Curb return profiles shall be developed for all of the ADA ramps that are reconstructed with this project.

Photographs shall be taken during flooding events. The rainfall depth, duration, and date shall be documented for the flooding event. Minutes of a meeting minutes with the District Maintenance Office shall be provided in the project documentation.

The drainage documentation shall report on the operation of the existing drainage system and document the proposed project actions that are intended to improve or maintain the existing drainage conditions. All drainage structures that are damaged at a flooding location, or where work is proposed should be addressed in the report.

The CONSULTANT shall notify the DEPARTMENT if video inspection of the storm sewer system is recommended. Video inspection services will be performed by others under the DEPARTMENT's Districtwide video inspection contract. Within three weeks following the Notice-To-Proceed, the CONSULTANT shall provide to the DEPARTMENT figures showing the locations of the pipes to be inspected, and shall quantify the length and pipe sizes for the required work. Prior to the first phase submittal of plans, the CONSULTANT shall review the inspection report and provide to the DEPARTMENT recommendations and construction cost estimates for any pipe repair. The design implementation of any approved recommendations not included in this Scope of Services may be added to the Agreement as an Optional Service.

2.3 Utilities Coordination (Activity 7)

Utilities anticipated on the project: *Verizon, Level 3 Communications, TECO Peoples Gas, City of Tampa Water Department, City of Tampa Wastewater Department, Tampa Electric Company, Bright House Networks and XO Communications. If needed, SUE will be authorized under Optional Services.*

2.4 Environmental Permits, Compliances, and Clearances (Activity 8) – N/A

No environmental permits are anticipated for this project.

2.5 Structures (Activities 9 – 18)

Bridge(s): *N/A*

Retaining Walls: *N/A*

Noise Barrier Walls: *N/A*

Miscellaneous: *The CONSULTANT shall analyze the existing strain pole signal structures for the additional loading from adding back plates (in all directions), and adding LED internally illuminated overhead street name signs to the poles (servicing all applicable directions) at the following intersections with US 92/SR 600/Dale Mabry Hwy:*

W. Azeele Street

W. Swann Avenue

The design of any necessary signal replacements will be authorized under Optional Services.

2.6 Signing and Pavement Markings (Activities 19 & 20)

See Sections 19 and 20 for those activities that are Optional Services only.

Provide (relocate out of sidewalk/replace) single post next signal sign for Azeele St. on US 92/SR 600 Dale Mabry Hwy. Northbound.

Provide (replace) single post next signal sign for Kennedy on US 92/SR 600 Dale Mabry Hwy. Northbound.

Provide (replace) single post next signal sign for Swann Ave. on US 92/SR 600 Dale Mabry Hwy. Southbound.

The final locations of all proposed sign assemblies and the development of the specific sign panel legends shall be coordinated with the DEPARTMENT as needed.

2.7 Signals (Activities 21 & 22)

See Sections 21 and 22 for those activities that are Optional Services only.

Intersections:

At the intersection of Dale Mabry Hwy. and Swann Ave., remove existing back plates on East/West approaches (Swann Ave.) and replace with back plates with reflective borders. Also, add internally illuminated signs.

At the intersection of Dale Mabry Hwy and Azeele St., remove existing back plates on East/West approaches (Azeele St.) and replace with back plates with reflective borders; also analyze existing concrete signal strain poles to determine if back plates can be installed on North South approaches (Dale Mabry Hwy.). Also, add internally illuminated signs.

At the intersection of Dale Mabry Hwy. and Swann Ave., Relocate Pedestrian Signal Pedestal Pole on NE corner to east side of existing sidewalk and closer to Swann Ave.

Provide/replace all vehicle loop detectors at intersection of US 92/SR 600 Dale Mabry Hwy. and Azeele St.

Provide/replace all vehicle loop detectors at intersection of US 92/SR 600 Dale Mabry Hwy. and Swann Ave.

Traffic Data Collection: *N/A*

Traffic Studies: *N/A*

Portable Traffic Monitoring Sites or Stations: *N/A*

2.8 Lighting (Activities 23 & 24)

See Sections 23 and 24 for those activities that are Optional Services only.

The CONSULTANT shall conduct photometric analysis at the Dale Mabry Hwy intersections with Azele Street and Swann Avenue to provide adequately illuminated crosswalks at these signalized intersections on an existing pole (preferred) or a separate pole if necessary, and provide recommendations to the DEPARTMENT. Three quadrants at Azele St. do not have a luminaire, and likewise two at Swann Ave.

The electrical service for added luminaires should be on a separate circuit through the signal power, if approved by the local maintaining agency, and the CONSULTANT shall coordinate and confirm their preference for power supply. The CONSULTANT shall also coordinate with the local utility company to determine if any luminaires can be installed on existing utility poles.

The CONSULTANT shall coordinate with the DEPARTMENT Project Manager regarding confirmation that the local government with jurisdiction will commit to maintaining or funding the maintenance of any additional highway lighting provided by this project. Such confirmation must come directly from the local government, not from a private power company.

2.9 Landscape Architecture (Activities 25 & 26) – N/A

2.10 Survey (Activity 27)

Design Survey: *Will be provided by the DEPARTMENT.*

Subsurface Utility: *If needed, SUE will be authorized under Optional Services.*

Right-of-Way Survey: *Will be provided by the DEPARTMENT.*

2.11 Photogrammetry (Activity 28)

All necessary services will be provided by the DEPARTMENT.

2.12 Mapping (Activity 29)

All necessary services will be provided by the DEPARTMENT.

2.13 Terrestrial Mobile LiDAR (Activity 30)

All necessary services will be provided by the DEPARTMENT.

2.14 Architecture (Activity 31) – N/A

2.15 Noise Barriers (Activity 32) – N/A

2.16 Intelligent Transportation Systems (Activities 33 & 34) – N/A

2.17 Geotechnical (Activity 35)

The DEPARTMENT will provide all necessary Geotechnical services for this project. The CONSULTANT shall request from the DEPARTMENT all Geotechnical data and recommendations necessary for this project by such time as will support the DEPARTMENT's original project schedule or any subsequent DEPARTMENT-approved revisions thereto.

2.18 Project Schedule

Within ten (10) days after the Notice-To-Proceed, and prior to the CONSULTANT beginning work, the CONSULTANT shall provide a detailed project activity/event schedule for DEPARTMENT and CONSULTANT scheduled activities required to meet the current DEPARTMENT Production Date. The schedule shall be based upon *the current anticipated "Production Date" of September 26, 2017 (subject to change)*. The schedule shall be accompanied by an anticipated payout and fiscal progress curve. For the purpose of scheduling, the CONSULTANT shall allow for a *four* week review time for each phase submittal and any other submittals as appropriate.

The schedule shall indicate all required submittals.

Periodically, throughout the life of the contract, the project schedule and payout and fiscal progress curves shall be reviewed, and with the approval of the DEPARTMENT, adjusted as necessary to incorporate changes in the Scope of Services, *project milestones* and progress to date.

The approved schedule and schedule status report, along with progress and payout curves, shall be submitted with the monthly progress report.

The schedule shall be submitted in an FDOT system-compatible format.

The above schedule submittal shall reflect project-specific input from each affected DEPARTMENT discipline, including Permits, Utilities, Right-of-Way, and Modal Planning and Development (noise walls, etc.). The CONSULTANT shall be responsible for ensuring that such input is received and reviewed with the DEPARTMENT Project Manager in advance.

2.19 Submittals

The CONSULTANT shall furnish construction contract documents as required by the DEPARTMENT to adequately control, coordinate, and approve the work concepts. The CONSULTANT shall distribute submittals as directed by the DEPARTMENT. The DEPARTMENT will determine the specific number of copies required prior to each submittal.

All plans and specifications deliverables provided for herein shall support a fully electronic advertisement, bidding and letting process for the construction contract in a manner acceptable to the DEPARTMENT, including compliance with Volume 1, Chapter 20 of the FDOT Plans Preparation Manual ("Plans Processing and Revisions") and the CADD Production Criteria Handbook (C.P.C.H.). In addition to any required hard copies, the CONSULTANT shall provide .pdf files for all plans phase submittals thru Phase III. Beginning with the Phase IV submittal, the CONSULTANT shall provide the electronic CADD files. In addition to any required hard-copies, all other documents that require DEPARTMENT review shall be submitted in an electronic medium acceptable to the DEPARTMENT Project Manager, including processing through the Department's Electronic Review and Comment system (ERC).

The CONSULTANT shall provide a Constructability and Biddability review of the design with the Phase III or other designated plans submittal. The CONSULTANT's comments and

responses developed from this review shall be forwarded to the DEPARTMENT's Construction Services Unit.

The CONSULTANT shall have their Quality Control, Quality Assurance and applicable Constructability documents complete and available for review by the DEPARTMENT at the time of each phase submittal.

The DEPARTMENT reserves the right to visit the premises of the CONSULTANT at any time to review the project's status, upon one-hour notice.

2.20 Provisions for Work

All work shall be prepared with English units in accordance with the latest editions of standards and requirements utilized by the DEPARTMENT which include, but are not limited to, publications such as:

- General
 - Title 29, Part 1910, Standard 1910.1001, Code of Federal Regulations (29 C.F.R. 1910.1001) – Asbestos Standard for Industry, U.S. Occupational Safety and Health Administration (OSHA)
 - 29 C.F.R. 1926.1101 – Asbestos Standard for Construction, OSHA
 - 40 C.F.R. 61, Subpart M - National Emission Standard for Hazardous Air Pollutants (NESHAP), Environmental Protection Agency (EPA)
 - 40 C.F.R. 763, Subpart E – Asbestos-Containing Materials in Schools, EPA
 - 40 C.F.R. 763, Subpart G – Asbestos Worker Protection, EPA
 - ADA Standards for Accessible Design
 - AASHTO – A Policy for Geometric Design of Highways and Streets
 - AASHTO – Highway Safety Manual
 - Rule Chapter 5J-17, F.A.C., Standards of Practice for Professional Surveyors and Mappers
 - Chapter 469, Florida Statutes (F.S.) – Asbestos Abatement
 - Rule Chapter 62-257, F.A.C., Asbestos Program
 - Rule Chapter 62-302, F.A.C., Surface Water Quality Standards
 - Code of Federal Regulations (C.F.R.)
 - Florida Administrative Codes (F.A.C.)
 - Chapters 20, 120, 215, 455, Florida Statutes (F.S.) – Florida Department of Business & Professional Regulations Rules
 - Florida Department of Environmental Protection Rules
 - FDOT Basis of Estimates Manual
 - FDOT CADD Manual
 - FDOT CADD Production Criteria Handbook
 - FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System
 - FDOT Flexible Pavement Design Manual
 - FDOT Handbook for Preparation of Specifications Package
 - FDOT Instructions for Design Standards
 - FDOT Instructions for Structures Related Design Standards
 - FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (“Florida Greenbook”)
 - FDOT Materials Manual
 - FDOT Pavement Type Selection Manual
 - FDOT Plans Preparation Manual
 - FDOT Procedures and Policies
 - FDOT Project Development and Environmental Manual
 - FDOT Project Traffic Forecasting Handbook
 - FDOT Public Involvement Handbook

- FDOT Rigid Pavement Design Manual
- FDOT Standard Specifications for Road and Bridge Construction
- FDOT Utility Accommodation Manual
- FHWA - Manual on Uniform Traffic Control Devices (MUTCD)
- FHWA - NCHRP Report 672, Roundabouts: An Informational Guide
- FHWA Roadway Construction Noise Model (RCNM) and Guideline Handbook
- Florida Fish and Wildlife Conservation Commission - Standard Manatee Construction Conditions 2005
- Florida Statutes (F.S.)
- Florida's Level of Service Standards and Guidelines Manual for Planning
- Model Guide Specifications – Asbestos Abatement and Management in Buildings, National Institute for Building Sciences (NIBS)
- Quality Assurance Guidelines
- Safety Standards
- Any special instructions from the DEPARTMENT
- Roadway
 - FDOT – Florida Intersection Design Guide
 - FDOT - Project Traffic Forecasting Handbook
 - FDOT - Quality/Level of Service Handbook
 - Florida's Level of Service Standards and Highway Capacity Analysis for the SHS
 - Transportation Research Board (TRB) - Highway Capacity Manual
- Permits
 - Chapter 373, F.S. – Water Resources
 - US Fish and Wildlife Service Endangered Species Programs
 - Florida Fish and Wildlife Conservation Commission Protected Wildlife Permits
 - Bridge Permit Application Guide, COMDTPUB P16591.3C
 - Building Permit
- Drainage
 - FDOT Bridge Hydraulics Handbook
 - FDOT Culvert Handbook
 - FDOT Drainage Manual
 - FDOT Erosion and Sediment Control Manual
 - FDOT Exfiltration Handbook
 - FDOT Hydrology Handbook
 - FDOT Open Channel Handbook
 - FDOT Optional Pipe Materials Handbook
 - FDOT Storm Drain Handbook
 - FDOT Stormwater Management Facility Handbook
 - FDOT Temporary Drainage Handbook
- Survey and Mapping
 - All applicable Florida Statutes and Administrative Codes
 - Applicable Rules, Guidelines Codes and authorities of other Municipal, County, State and Federal Agencies.
 - FDOT Aerial Surveying Standards for Transportation Projects Topic 550-020-002
 - FDOT Right of Way Mapping Handbook
 - FDOT Surveying Procedure Topic 550-030-101
 - Florida Department of Transportation Right of Way Procedures Manual
 - Florida Department of Transportation Surveying Handbook
 - Right of Way Mapping Procedure 550-030-015
- Traffic Engineering and Operations and ITS
 - AASHTO - An Information Guide for Highway Lighting

- AASHTO - Guide for Development of Bicycle Facilities
- FHWA Standard Highway Signs Manual
- FDOT - Florida Roundabout Guide
- FDOT Manual on Uniform Traffic Studies (MUTS)
- FDOT Median Handbook
- FDOT Traffic Engineering Manual
- Minimum Specifications for Traffic Control Signal Devices
- National Electric Safety Code
- National Electrical Code
- Florida's Turnpike Enterprise
 - Florida's Turnpike Plans Preparation and Practices Handbook (TPPPH)
 - Florida's Turnpike Traffic Pacing Design Guide Drawings
 - Florida's Turnpike Lane Closure Policy
 - Florida's Turnpike Drainage Manual Supplement
 - Rigid Pavement Design Guide for Toll Locations with Electronic Toll Collection
 - Flexible Pavement Design Guide for Toll Locations with Electronic Toll Collection
- Traffic Monitoring
 - American Institute of Steel Construction (AISC) Manual of Steel Construction, referred to as "AISC Specifications"
 - American National Standards Institute (ANSI) RP-8-00 Recommended Practice for Roadway Lighting
 - AASHTO AWS D1.1/ANSI Structural Welding Code – Steel
 - AASHTO D1.5/AWS D1.5 Bridge Welding Code
 - FHWA Traffic Detector Handbook
 - FDOT General Interest Roadway Data Procedure
 - FHWA Traffic Monitoring Guide
 - FDOT's Traffic/Polling Equipment Procedures
- Structures
 - AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications and Interims
 - AASHTO LRFD Movable Highway Bridge Design Specifications and Interims
 - AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, and Interims.
 - AASHTO/-AWS-D1. 5M/D1.5: An American National Standard Bridge Welding Code
 - AASHTO Guide Specifications for Structural Design of Sound Barriers
 - AASHTO Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges
 - FDOT Structures Manual
 - FDOT Structures Design Office Temporary Design Bulletins (available on FDOT Structures web site only)
 - FDOT Preferred Details (available on FDOT Structures web site only)
- Geotechnical
 - FHWA Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Specifications
 - Manual of Florida Sampling and Testing Methods
 - Soils and Foundation Handbook
- Landscape Architecture
 - Florida Department of Agriculture and Consumer Services Grades and Standards for Nursery Plants
- Architectural

- Building Codes
- Florida Building Code:
 - Building
 - Fuel Gas
 - Mechanical
 - Plumbing
 - Existing Building
- Florida Accessibility Code for Building Construction
- Rule Chapter 60D, F.A.C., Division of Building Construction
- Chapter 553, F.S. – Building Construction Standards
- ANSI A117.1 2003 Accessible and Usable Building and Facilities
- Titles II and III, Americans With Disabilities Act (ADA), Public Law 101-336; and the ADA Accessibility Guidelines (ADAAG)
- Architectural – Fire Codes and Rules
 - National Fire Protection Association (NFPA) - Life Safety Code
 - NFPA 70 - National Electrical Code
 - NFPA 101 - Life Safety Code
 - NFPA 10 - Standard for Portable Fire Extinguishers
 - NFPA 11 - Standard for Low-Expansion Foam Systems
 - NFPA 11A - Standard for High- and Medium-Expansion Foam Systems
 - NFPA 12 - Standard for Carbon Dioxide Extinguishing Systems
 - NFPA 13 - Installation of Sprinkler Systems
 - NFPA 30 - Flammable and Combustible Liquids Code
 - NFPA 54 - National Gas Fuel Code
 - NFPA 58 - LP-Gas Code
 - Florida Fire Prevention Code as adopted by the State Fire Marshal –
Consult with the Florida State Fire Marshal’s office for other frequently used codes.
- Architectural – Extinguishing Systems
 - NFPA 10 - Fire Extinguishers
 - NFPA 13 - Sprinkler
 - NFPA 14 - Standpipe and Hose System
 - NFPA 17 - Dry Chemical
 - NFPA 20 - Centrifugal Fire Pump
 - NFPA 24 - Private Fire Service Mains
 - NFPA 200 - Standard on Clean Agent Fire Extinguishing Systems
- Architectural – Detection and Fire Alarm Systems
 - NFPA 70 - Electrical Code
 - NFPA 72 - Standard for the Installation, Maintenance and Use of Local Protective Signaling Systems
 - NFPA 72E - Automatic Fire Detectors
 - NFPA 72G - Installation, Maintenance, and Use of Notification Appliances
 - NFPA 72H - Testing Procedures for Remote Station and Proprietary Systems
 - NFPA 74 - Household Fire Warning Equipment
 - NFPA 75 - Protection of Electronic Computer Equipment
- Architectural – Mechanical Systems
 - NFPA 90A - Air Conditioning and Ventilating Systems
 - NFPA 92A - Smoke Control Systems
 - NFPA 96 - Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment
 - NFPA 204M - Smoke and Heating Venting

- Architectural – Miscellaneous Systems
 - NFPA 45 - Laboratories Using Chemicals
 - NFPA 80 - Fire Doors and Windows
 - NFPA 88A - Parking Structures
 - NFPA 105- Smoke and Draft-control Door Assemblies
 - NFPA 110 - Emergency and Standby Power Systems
 - NFPA 220 - Types of Building Construction
 - NFPA 241 - Safeguard Construction, Alteration, and Operations
 - Rule Chapter 69A-47, F.A.C., Uniform Fire Safety For Elevators
 - Rule Chapter 69A-51, F.A.C., Boiler Safety
- Architectural – Energy Conservation
 - Rule Chapter 60D-4, F.A.C., Rules For Construction and Leasing of State Buildings To Insure Energy Conservation
 - Section 255.255, F.S., Life-Cycle Costs
- Architectural – Elevators
 - Rule Chapter 61C-5, F.A.C., Florida Elevator Safety Code
 - ASME A-17.1, Safety Code for Elevators and Escalators
 - Architectural – Flood Plain Management Criteria
 - Section 255.25, F.S., Approval Required Prior to Construction or Lease of Buildings
 - Rules of the Federal Emergency Management Agency (FEMA)
- Architectural – Other
 - Rule Chapter 64E-6, F.A.C., Standards for On Site Sewage Disposal Systems (Septic Tanks)
 - Rule Chapter 62-600, F.A.C., Domestic Wastewater Facilities
 - Rule Chapter 62-761, F.A.C., Underground Storage Tank Systems
 - American Concrete Institute
 - American Institute of Architects - Architect’s Handbook of Professional Practice
 - American Society for Testing and Materials - ASTM Standards
 - Brick Institute of America
 - DMS - Standards for Design of State Facilities
 - Florida Concrete Products Association
 - FDOT – ADA/Accessibility Procedure
 - FDOT – Building Code Compliance Procedure
 - FDOT – Design Build Procurement and Administration
 - LEED (Leadership in Energy and Environmental Design) Green Building Rating System
 - National Concrete Masonry Association
 - National Electrical Code
 - Portland Cement Association - Concrete Masonry Handbook
 - United State Green Building Council (USGBC)

2.21 Services To Be Performed By The DEPARTMENT

When appropriate and/or available, the DEPARTMENT will provide project data, including *the following, except as otherwise noted herein*:

- Numbers for field books.
- Preliminary Horizontal Network Control.
- Access for the CONSULTANT to utilize the DEPARTMENT’s Information Technology Resources.
- All Department agreements with Utility Agency Owner (UAO).
- All certifications necessary for project letting.
- Building Construction Permit Coordination (Turnpike)
- All information that may come to the DEPARTMENT pertaining to future improvements.

- All future information that may come to the DEPARTMENT during the term of the CONSULTANT's Agreement, which in the opinion of the DEPARTMENT is necessary for the prosecution of the work.
- Available traffic and planning data.
- All approved utility relocations.
- Project utility certification to the DEPARTMENT's Central Office.
- Any necessary title searches.
- Engineering standards review services.
- All available information in the possession of the DEPARTMENT pertaining to utility companies whose facilities may be affected by the proposed construction.
- All future information that may come to the DEPARTMENT pertaining to subdivision plans so that the CONSULTANT may take advantage of additional areas that can be utilized as part of the existing right of way.
- Systems traffic for Projected Design Year, with K, D, and T factors.
- Existing right of way maps.
- Existing cross slope data for all RRR projects.
- Existing pavement evaluation report for all RRR projects.
- PD&E Documents
- Design Reports
- Letters of authorization designating the CONSULTANT as an agent of the DEPARTMENT in accordance with F.S. 337.274.
- Phase reviews of plans and engineering documents.
- Regarding Environmental Permitting Services:
 - Approved Permit Document when available.
 - Approval of all contacts with environmental agencies.
 - General philosophies and guidelines of the DEPARTMENT to be used in the fulfillment of this contract. Objectives, constraints, budgetary limitations, and time constraints will be completely defined by the Project Manager.
 - Appropriate signatures on application forms.

3 PROJECT COMMON AND PROJECT GENERAL TASKS

PROJECT COMMON TASKS

Project Common Tasks, as listed below, are work efforts that are applicable to many project activities, 4 Roadway Analysis through 35 Geotechnical. These tasks are to be included in the project scope in each applicable activity when the described work is to be performed by the CONSULTANT.

Cost Estimates: The CONSULTANT shall be responsible for producing a construction cost estimate (*Engineer's Estimate and LRE or TRNS*PORT estimate*) and reviewing and updating *those* cost estimates *within twenty-one (21) days after Notice-To-Proceed*, when scope changes occur, at *production* milestones of the project, *for the annual Work Program Update Cycle, and when directed by the DEPARTMENT Project Manager*. Prior to 60% plans and completion of quantities, the DEPARTMENT's Long Range Estimate (L.R.E.) system *shall* be used to produce a conceptual estimate, according to District policy. Once the quantities have been developed (beginning at 60% plans and no later than 90% plans) the CONSULTANT shall be responsible for inputting the pay items and quantities into TRNS*PORT PES (Proposal Estimating System) *as approved by the DEPARTMENT* through the use of the DEPARTMENT's Designer Interface. A Summary of Pay Items sheet shall be prepared with all required Phase II, III, and IV Plans submittals. *Each Engineer's Estimate and LRE/TRNS*PORT submittal shall be accompanied by an equal number of copies of the Preliminary Project Report (PPR) updated by the CONSULTANT in the District standard format, including the updated Record Page.*

At each plans phase submittal and for the annual Work Program Update Cycle, the CONSULTANT shall provide a copy of the plans and the most current Right-of-Way Maps to the District Right-of-Way Cost Estimate Coordinator.

Construction Duration: *The CONSULTANT shall develop an estimate of construction contract duration based on the guidelines set forth in Chapter 1.2 of the DEPARTMENT's Construction Project Administration Manual (CPAM). This estimate shall be based on quantities per MOT phase and submitted to the Construction Services Unit with the Phase III or other designated submittal package.*

Technical Special Provisions: The CONSULTANT shall provide Technical Special Provisions for all items of work not covered by the Standard Specifications for Road and Bridge Construction and the workbook of implemented modifications.

A Technical Special Provision shall not modify the first nine sections of the Standard Specifications and implemented modifications in any way. All modifications to other sections must be justified to the appropriate District Specifications Office to be included in the project's specifications package.

The Technical Special Provisions shall be technical in nature and shall provide a description of work, materials, equipment and specific requirements, method of measurement and basis of payment. Proposed Technical Special Provisions **shall** be submitted to the District Specifications Office for initial review at the time of the Phase III plans review submission to the DEPARTMENT's Project Manager. This timing **shall** allow for adequate processing time prior to final submittal. The Technical Special Provisions **shall** be reviewed for suitability in accordance with the Handbook for Preparation of Specification Packages. The District Specifications Office will forward the Technical Special Provisions to the District Legal Office for their review and comment. All comments will be returned to the CONSULTANT for correction and resolution. Final Technical Special Provisions shall be **digitally** signed and sealed in accordance with applicable Florida Statutes.

The CONSULTANT shall contact the appropriate District Specifications Office for details of the current format to be used before starting preparations of Technical Special Provisions.

Field Reviews: The CONSULTANT shall make as many trips to the project site as required to obtain necessary data for all elements of the project.

Technical Meetings: The CONSULTANT shall attend all technical meetings necessary to execute the Scope of Services of this contract. This includes meetings with DEPARTMENT and/or Agency staff, between disciplines and subconsultants, such as access management meetings, pavement design meetings, local governments, railroads, airports, progress review meetings (phase review), and miscellaneous meetings. The CONSULTANT shall prepare, and submit to the DEPARTMENT's Project Manager for review, the meeting minutes for all meetings attended by them. The meeting minutes are due within five (5) days of attending the meeting.

The CONSULTANT shall arrange a Local Government Coordination Meeting for discussion of the plans and solicitation of local government input. The meeting shall coincide with a Plans Phase Submittal or other submittal as directed by the DEPARTMENT's Project Manager. As a minimum, attendees shall include the Project Manager, local government representatives (preferably Director of Public Works/Municipal Engineer level) and the CONSULTANT. The CONSULTANT, via the DEPARTMENT's Project Manager, shall give adequate advance notification to the DEPARTMENT's District Public Information Office of the meeting's time, date, place and participants, so that local elected officials are aware of the meeting. The CONSULTANT shall prepare timely meeting minutes for attendee approval, so that all parties are aware of project agreements and limitations.

Quality Assurance/Quality Control: It is the intention of the DEPARTMENT that design CONSULTANTS, including their subconsultant(s) are held responsible for their work, including plans review. Detailed checking of CONSULTANT plans or assisting in designing portions of the project for the CONSULTANT is not the intent of having external design consultants. The purpose of CONSULTANT plan reviews is to ensure that CONSULTANT plans follow the plan preparation procedures outlined in the Plans Preparation Manual, that state and federal design criteria are followed with the DEPARTMENT concept, and that the CONSULTANT submittals are complete. All subconsultant document submittals

shall be submitted by the subconsultant directly to the CONSULTANT for their independent Quality Assurance/Quality Control review and subsequent submittal to the DEPARTMENT.

It is the CONSULTANT'S responsibility to independently and continually QC their plans and other deliverables. The CONSULTANT should regularly communicate with the DEPARTMENT's Design Project Manager to discuss and resolve issues or solicit opinions from those within designated areas of expertise.

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of all surveys, designs, drawings, specifications and other services furnished by the CONSULTANT and their subconsultant(s) under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all maps, design drawings, specifications, and other documentation prepared as part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan shall be one specifically designed for this project, and may be one utilized by the CONSULTANT as part of their normal operation. The CONSULTANT shall submit a Quality Control Plan for approval within twenty (20) business days of the written Notice to Proceed, and it shall be signed by the CONSULTANT's Project Manager and the CONSULTANT QC Manager. The Quality Control Plan shall include the names of the CONSULTANT's staff that will perform the quality control reviews. The Quality Control reviewer shall be a Florida Licensed Professional Engineer fully prequalified under F.A.C. 14-75 in the work type being reviewed. A marked up set of prints from a Quality Control Review indicating the reviewers for each component (structures, roadway, drainage, signals, geotechnical, signing and marking, lighting, surveys, etc.) and a written resolution of comments on a point-by-point basis will be required, if requested by the DEPARTMENT, with each phase submittal. The responsible Professional Engineer, Landscape Architect, or Professional Surveyor & Mapper that performed the Quality Control review *shall* sign a statement certifying that the review was conducted and found to meet required specifications.

The CONSULTANT shall, without additional compensation, correct all errors or deficiencies in the designs, maps, drawings, specifications, and/or other services.

Independent Peer Review: When directed by the DEPARTMENT, a subconsultant may perform Independent Peer Reviews.

An Independent Peer Review and a Constructability/Bidability Review for design Phase Plans document submittals are required on this project. These separate reviews shall be completed by someone who has not worked on the plan component that is being reviewed. These could include, but are not limited to a separate office under the Prime *CONSULTANT's* umbrella, a subconsultant that is qualified in the work group being reviewed, or a CEI. It does not include persons who have knowledge of the day-to-day design efforts. The Constructability/Bidability Review shall be performed by a person with experience working on DEPARTMENT construction projects (CEI, Contractor, etc.).

The Independent Peer Review for design Phase Plans submittals shall ensure the plans *comply with* the PPM, Design Standards and CADD Manual. The Constructability/Bidability Review shall ensure the project can be constructed and paid for as designed. Constructability/Bidability Reviews should be conducted prior to the Phase III and Phase IV submittals, using the Phase Review Checklist (Guidance Document 1-1-A) from the Construction Project Administration Manual (CPAM) as a minimum guideline. The CONSULTANT shall submit this checklist, as well as the "marked-up" set of plans during this review, and review comments and comment responses from any previous Constructability/Bidability reviews. These items will be reviewed by District Design and District Construction.

Supervision: The CONSULTANT shall supervise all technical design activities.

Coordination: The CONSULTANT shall coordinate with all disciplines of the project to produce a final set of construction documents.

Project General Tasks

Project General Tasks, described in Sections 3.1 through 3.7 below, represent work efforts that are applicable to the project as a whole and not to any one or more specific project activity. The work described in these tasks shall be performed by the CONSULTANT when included in the project scope.

3.1 Public Involvement

Public involvement includes communicating to all interested persons, groups, and government organizations information regarding the development of the project. The CONSULTANT shall provide to the DEPARTMENT drafts of all Public Involvement documents (i.e., newsletters, property owner letters, advertisements, etc.) associated with the following tasks for review and approval at least *five (5)* business days prior to printing and / or distribution.

In accordance with F.S. 335.199, if the project is on the State Highway System and will divide a highway, erect median barriers that modify currently available vehicle turning movements, or have the effect of closing or modifying an existing access to an abutting property owner, then 1) all affected property owners and local governments shall be so notified at least 180 days before the project design is finalized, 2) the applicable local government shall be consulted with regarding the final project design in a manner that allows such government to present alternatives to relieve impacts to commercial business properties, and 3) at least one advertised and recorded public hearing shall be held to determine how the project will affect access to businesses and the potential economic impact of the project on the local business community. All comments from such public hearing shall be taken into consideration in the final design of the project. The CONSULTANT shall support the DEPARTMENT in implementing the above activities.

In accordance with the Community Awareness Plan, the CONSULTANT shall prepare and mail notification letters and necessary graphics to abutting property owners along those portions of the project where construction activity is proposed outside of the existing roadway pavement and no right-of-way will be acquired. The letters shall inform the owners about the proposed construction and the DEPARTMENT's intent to utilize the existing right-of-way, including border areas, to the fullest extent possible, notwithstanding any existing amenities, such as parking, landscaping, walls, etc. The letter format shall be reviewed and approved by the DEPARTMENT prior to the mailings.

3.1.1 Community Awareness Plan

See Section 2.1 Public Involvement. The Plan shall be reviewed and updated periodically as directed by the DEPARTMENT throughout the life of the project.

3.1.2 Notifications

In addition to public involvement data collection, the CONSULTANT shall *prepare* notifications, flyers, and/or letters to elected officials and other public officials, private property owners, and tenants at intervals during plans production as identified by the DEPARTMENT. All letters and notices shall be reviewed by the DEPARTMENT to ensure that they are addressed to the correct and current public officials.

3.1.3 Preparing Mailing Lists

At the beginning of the project, the CONSULTANT shall identify all impacted property owners and tenants (within a minimum of 300 feet of the project corridor). The CONSULTANT shall prepare a mailing list of all such entities and shall update the mailing list as needed during the life of the project.

3.1.4 Median Modification Letters – N/A**3.1.5 Driveway Modification Letters**

The CONSULTANT shall prepare a driveway modification letter to be sent to property owners along the corridor. In addition, the CONSULTANT shall prepare a sketch of each proposed driveway modification for inclusion in the letter. The letters *shall* be sent *by the CONSULTANT* on DEPARTMENT letterhead *upon approval by the DEPARTMENT*.

3.1.6 Newsletters – N/A**3.1.7 Renderings and Fly-Throughs – N/A****3.1.8 PowerPoint Presentations – N/A****3.1.9 Public Meeting Preparations – N/A****3.1.10 Public Meeting Attendance and Follow-up – N/A****3.1.11 Other Agency Meetings**

In addition to scheduled public meetings, the CONSULTANT may be required to participate in meetings with the local governing authorities and/or Metropolitan Planning Organization (MPO). The CONSULTANT's participation may include, but not be limited to, presentations during the meeting, note taking, and summarizing the meeting in a memo to the file. It is estimated for this project, there will be *one (1)* meetings with local governing authorities and/or the MPO during the design.

3.1.12 Web Site – N/A**3.2 Joint Project Agreements – N/A****3.3 Specifications Package Preparation**

The CONSULTANT shall prepare and provide a specifications package prepared in accordance with the DEPARTMENT's Handbook for the Preparation of Specification Packages and associated training. The CONSULTANT shall provide *to* the DEPARTMENT *the* names of at least two team members who have successfully completed the Specifications Package Preparation Training and will be responsible for preparing the Specifications Package for the project. The Specifications Package shall be prepared using the DEPARTMENT's Specs on the Web application. The CONSULTANT shall be able to document that the procedure defined in the Handbook for the Preparation of Specifications Packages is followed, which includes the quality assurance/quality control procedures. The specifications package shall address all items and areas of work and include any Mandatory Specifications, Modified Special Provisions, and Technical Special Provisions.

The specifications package must be submitted for review to the District Specifications Office at least 30 days prior to the contract package to Tallahassee or District due date, or sooner if required by the District Specifications Office. This submittal does not require signing and sealing and shall be coordinated through the District's Project Manager. The CONSULTANT shall coordinate with the DEPARTMENT *regarding* the submittal requirements, *which shall, as a minimum*, consist of (1) the complete specifications package, (2) a copy of the marked-up workbook used to prepare the package, and (3) a copy of the final project plans.

Final submittal of the specifications package must occur at least 10 working days prior to the contract package to Tallahassee due date. This submittal shall be electronically/digitally signed, dated, and sealed in accordance with applicable Florida Statutes.

3.4 Contract Maintenance and Electronic Document Management System (EDMS)

Contract maintenance includes project management effort for complete setup and maintenance of files, developing monthly progress reports, schedule updates, work effort to develop and execute subconsultant agreements, etc.

3.5 Value Engineering (Multi-Discipline Team) Review – N/A

3.6 Prime Consultant Project Manager Meetings

Includes only the Prime CONSULTANT Project Manager's time for travel and attendance at Activity Technical Meetings and other meetings listed in the meeting summary for Task 3.6 on tab 3.0 Project General Task of the staff hour forms. Staff hours for other personnel attending Activity Technical Meetings are included in the meeting task for that specific Activity.

3.7 Plans Update (*Optional Services*)

The effort needed for Plans Update services will vary from project to project, depending on size and complexity of the project, as well as the duration of time spent "on the shelf." Specific services will be negotiated as necessary *at a later date* as a contract amendment, *task work order, or Optional Services Authorization*.

3.8 Post Design Services (*Optional Services*)

Post Design Services may include, but not limited to, meetings, construction assistance, plans revisions, shop drawing review, survey services, as-built drawings and load ratings. Specific services will be negotiated at a later date as necessary as a contract amendment, *task work order, or Optional Services Authorization*.

Post Design Services are not intended for instances of CONSULTANT errors and/or omissions.

3.9 Electronic/Digital Delivery

The CONSULTANT shall deliver final contract plans in electronic/digital format using the DEPARTMENT's Electronic/Digital Delivery software *in accordance with Chapter 8 of the CADD Production Criteria Handbook*. The final contract plans shall be electronically *and digitally* signed and sealed files delivered to the DEPARTMENT on acceptable electronic media, as determined by the DEPARTMENT.

3.10 Risk Assessment Workshop – N/A

3.11 Railroad, Transit and/or Airport Coordination – N/A

3.12 Other Project General Tasks

The CONSULTANT shall prepare encroachment letters to be sent to property owners along the corridor. The letters shall be sent by the CONSULTANT on DEPARTMENT letterhead upon approval by the DEPARTMENT.

4 ROADWAY ANALYSIS

The CONSULTANT shall analyze and document Roadway Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

4.1 Typical Section Package

The CONSULTANT shall provide an approved Typical Section Package prior to the Phase I plans submittal date.

4.2 Pavement Type Selection Report – N/A

4.3 Pavement Design Package

The CONSULTANT shall provide an approved Pavement Design Package in accordance with applicable FDOT pavement design manuals prior to the Phase II plans submittal date.

4.4 Cross-Slope Correction

The CONSULTANT shall coordinate with the DEPARTMENT to obtain existing cross slope data and determine roadway limits where cross slope is potentially out of tolerance.

4.5.1 Horizontal/Vertical Master Design Files

The CONSULTANT shall design the geometrics using the design standards that are most appropriate, with proper consideration given to the design traffic volumes, design speed, capacity and levels of service, functional classification, adjacent land use, design consistency and driver expectancy, aesthetics, pedestrian and bicycle concerns, ADA requirements, elder road user policy, access management, PD&E documents and scope of work.

4.5.2 Horizontal/Vertical Master Design Files (Skeletal Plans) – N/A

4.6 Access Management

The CONSULTANT shall incorporate access management standards for each project in coordination with DEPARTMENT staff. The CONSULTANT shall review adopted access management standards and the existing access conditions (interchange spacing, signalized intersection spacing, median opening spacing, and connection spacing). Median openings that will be closed, relocated, or substantially altered shall be shown on plan sheets and submitted with supporting documentation for review with the Phase I plans submittal.

The DEPARTMENT shall provide access management classification information and information derived from PD&E studies and public hearings to be used by the CONSULTANT.

4.7 Cross Section Design Files

The CONSULTANT shall establish and develop cross section design files in accordance with the CADD manual.

4.8 Traffic Control Analysis

The CONSULTANT shall design a safe and effective Traffic Control Plan to move vehicular and pedestrian traffic during all phases of construction. The design shall include construction phasing of *the* roadways' ingress and egress to existing property owners and businesses, *and transit agency features (bus stops, etc.)*, routing, signing and pavement markings, detour quantity tabulations, roadway pavement, drainage structures, ditches, front slopes, back slopes, drop offs within clear zone, and traffic monitoring sites. Special consideration shall be given to the construction of the drainage system when developing the construction phases. Positive drainage

must be maintained at all times; *the CONSULTANT may need to provide a temporary drainage design.* The design shall include construction phasing of roadways to accommodate the construction or relocation of utilities when the contract includes Joint Project Agreements (JPAs) *or Utility Work By Highway Contractor (UWHC).*

In the analysis, the CONSULTANT shall investigate the need for temporary traffic signals *(including temporary timings), temporary signal detection,* temporary lighting, alternate detour roads, and the use of materials such as sheet piling in the analysis. The Traffic Control Plan shall be prepared by a certified designer who has completed training as required by the DEPARTMENT. Before proceeding with the Traffic Control Plan, the CONSULTANT shall meet with the appropriate DEPARTMENT personnel. The purpose of this meeting is to provide information to the CONSULTANT that will better coordinate the Preliminary and Final Traffic Control Plan efforts.

Every effort will be made to maintain signal detection throughout the life of the project. Type of detection and location shall be included on the Traffic Control Plan.

The CONSULTANT shall consider the local impact of any lane closures or alternate routes. When the need to close a road is identified during this analysis, the CONSULTANT shall notify the DEPARTMENT's Project Manager as soon as possible. Proposed road closings must be reviewed and approved by the DEPARTMENT. Diligence shall be used to minimize negative impacts by appropriate specifications, recommendations or plans development. Local impacts to consider *shall include emergency vehicle response time,* local events, holidays, peak seasons, detour route deterioration, *transit agency routes and features* and other eventualities. The CONSULTANT shall be responsible to obtain the local authorities' permission for use of detour routes not on state highways. *Affected transit agencies shall be notified in advance about bus route lane closures and detours. The DEPARTMENT's Construction Services Unit will provide the lane closure calculations to the CONSULTANT.*

4.9 Master TCP Design Files

The CONSULTANT shall develop master Traffic Control Plan (TCP) files (for Level II and Level III only) showing each phase of the Traffic Control Plan.

4.10 Design Variations and Exceptions

If available, the DEPARTMENT shall furnish the Variation/Exception Report. The CONSULTANT shall prepare the documentation necessary to gain DEPARTMENT approval of all appropriate Design Variations and/or Design Exceptions before the Phase I submittal.

4.11 Design Report

The CONSULTANT shall prepare all applicable report(s) as listed in the Project Description section of this scope.

The CONSULTANT shall submit to the DEPARTMENT design notes, data, and calculations to document the design conclusions reached during the development of the contract plans.

The design notes, data, and computations shall be recorded on size 8½"x11" sheets, fully titled, numbered, dated, indexed and signed by the designer and the checker. Computer output forms and other oversized sheets shall be folded to 8½"x11" size. The data shall be in a hardback folder for submittal to the DEPARTMENT.

4.12 Quantities

The CONSULTANT shall prepare all required summary of quantities *plans* sheets. This includes all efforts required to develop accurate quantities, *the required plans sheets* and their supporting documentation, including construction days when required.

4.13 Cost Estimate

4.14 Technical Special Provisions

4.15 Other Roadway Analysis

The CONSULTANT shall perform field reviews to identify existing structures within the project limits which may require settlement, vibration or groundwater monitoring by the contractor during construction. The CONSULTANT shall identify the necessary pay items to be included in the bid documents for the Protection of Existing Structures.

The CONSULTANT shall identify any existing structures beyond the limits described in Section 108 of the Standard Specifications which may require settlement, vibration or groundwater monitoring by the contractor during construction. Any identified structures shall be summarized and submitted to the DEPARTMENT for approval prior to being shown on the contract plans.

The list of structures identified for protection is provided in the plans for informational purposes for contractor bidding. The contractor is responsible for the construction methods and protection of all structures. The CONSULTANT shall be responsible only for identifying necessary pay items and coordinating with the DEPARTMENT to identify a list of additional structures which may require settlement, vibration or groundwater monitoring.

All existing driveways shall be analyzed for conformance with Standard Index 515. The findings shall be summarized in a driveway matrix to be submitted to the DEPARTMENT for concurrence.

4.16 Field Reviews

4.17 Technical Meetings

4.18 Quality Assurance/Quality Control

4.19 Independent Peer Review – N/A

4.20 Supervision

4.21 Coordination

5 ROADWAY PLANS

The CONSULTANT shall prepare Roadway, Drainage, Traffic Control, Utility Adjustment Sheets, plan sheets, notes, and details. The plans shall include the following sheets necessary to convey the intent and scope of the project for the purposes of construction.

5.1 Key Sheet

5.2 Summary of Pay Items Including Quantity Input

5.3 Drainage Map (Including Interchanges) – N/A

5.4 Typical Section Sheets

- 5.4.1 Typical Sections
- 5.4.2 Typical Section Details
- 5.5 General Notes/Pay Item Notes**
- 5.6 Summary of Quantities (*Optional Services*)**
- 5.7 Box Culvert Data Sheet – *N/A***
- 5.8 Bridge Hydraulics Recommendation Sheets – *N/A***
- 5.9 Summary of Drainage Structures**
- 5.10 Optional Pipe/Culvert Material**
- 5.11 Project Layout – *N/A***
- 5.12 Plan/Profile Sheet**
- 5.13 Profile Sheet**
- 5.14 Plan Sheet**

The CONSULTANT shall depict all lane lines for the entire plan portion of the roadway plans to include all intersections with directional arrows preceding and following the intersection proper. In addition, directional arrows should be indicated at the beginning and end of each sheet to provide ease of reviewing. A note shall be added to the first plan sheet stating that these lane lines and directional arrows are for informational purposes only. All phase submittals shall include this information except for the final contract documents.

- 5.15 Special Profile – *N/A***
- 5.16 Back of Sidewalk Profile Sheet – *N/A***
- 5.17 Interchange Layout Sheet – *N/A***
- 5.18 Ramp Terminal Details (Plan View) – *N/A***
- 5.19 Intersection Layout Details – *N/A***
- 5.20 Special Details**

For projects with required right-of-way acquisition, the CONSULTANT shall provide a set of visual aid maps. These maps shall provide a clean and clear view of the DEPARTMENT's intentions for the Project's development. The following map features are required: Baseline/Centerline call-out with bearing and curve information; Begin and End Project with stations; North arrow and scale/ratio; label existing and proposed right-of-way with station and offset; labeling of existing and proposed sidewalks (if applicable), existing and proposed driveways, proposed curb and gutter (Urban) or shoulders (Rural), proposed traffic separators (if applicable), directional arrows for each travel lane; shading of all property takings/impacts and labeled by parcel ID; legend for proposed design indicated in red; existing features in black; property lines in magenta; and a "FOR VISUAL AID ONLY" stamp on each sheet.

The CONSULTANT shall furnish a minimum of one set of prints for the Phase II review. Two sets shall be required for the Phase IV submittal. At each submittal, the CONSULTANT shall

include one or more single session CD-ROM disk(s) written in acceptable format, containing CADD design files in Micro Station format on acceptable media.

- 5.21 Drainage Structure Sheet (Per Structure) – N/A
- 5.22 Miscellaneous Drainage Detail Sheets
 - Provide special gutter profiles along Dale Mabry and provide curb return profiles at ADA ramps that pond water or ADA ramps to be reconstructed.*
- 5.23 Lateral Ditch Plan/Profile – N/A
- 5.24 Lateral Ditch Cross Sections – N/A
- 5.25 Retention/Detention Ponds Detail Sheet – N/A
- 5.26 Retention Pond Cross Sections – N/A
- 5.27 Cross-Section Pattern Sheet – N/A
- 5.28 Roadway Soil Survey Sheet
- 5.29 Cross Sections
- 5.30 Temporary Traffic Control Plan Sheets – N/A
- 5.31 Temporary Traffic Control Cross Section Sheets – N/A
- 5.32 Temporary Traffic Control Detail Sheets
- 5.33 Utility Adjustment Sheets
- 5.34 Selective Clearing and Grubbing – N/A
- 5.35 Erosion Control Plan
- 5.36 SWPPP – N/A
- 5.37 Project Network Control Sheet – N/A
- 5.38 Environmental Detail Sheets – N/A
- 5.39 Utility Verification Sheet (SUE Data) – N/A
- 5.40 Quality Assurance/Quality Control
- 5.41 Supervision

6 DRAINAGE ANALYSIS

The CONSULTANT shall analyze and document Drainage Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

The CONSULTANT shall be responsible for designing a drainage and stormwater management system. All design work shall comply with the requirements of the appropriate regulatory agencies and the DEPARTMENT's Drainage Manual.

The CONSULTANT shall coordinate fully with the appropriate permitting agencies and the DEPARTMENT's staff. All activities and submittals should be coordinated through the DEPARTMENT's Project Manager. The work will include the engineering analyses for any or all of the following:

6.1 Determine Base Clearance Water Elevation – N/A

6.2 Pond Siting Analysis and Report – N/A

6.3 Design of Cross Drains – N/A

6.4 Design of Ditches – N/A

6.5 Design of Stormwater Management Facility (Offsite or Infield Pond) – N/A

6.6 Design of Stormwater Management Facility (Roadside Ditch as Linear Pond) – N/A

6.7 Design of Flood Plain Compensation – N/A

6.8 Design of Storm Drains

Develop a “working drainage map,” determine runoff, inlet locations, and spread. Calculate hydraulic losses (friction, utility conflict and, if necessary, minor losses). Determine Design Tailwater and, if necessary, outlet scour protection.

6.9 Optional Culvert Material

Determine acceptable options for pipe materials.

6.10 French Drain Systems – N/A

6.11 Drainage Wells – N/A

6.12 Drainage Design Documentation Report

Compile drainage design documentation into report format. Include documentation for all the drainage design tasks and associated meetings and decisions, except for stand-alone reports, such as the Pond Siting Analysis Report and Bridge Hydraulics Report. *The report shall include in an appendix a copy of the project scope, negotiated staff-hours and the Long Range Estimate (LRE).*

6.13 Bridge Hydraulic Report – N/A

6.14 Temporary Drainage Analysis – N/A

6.15 Cost Estimate

6.16 Technical Special Provisions – N/A

6.17 Other Drainage Analysis – N/A

6.18 Field Reviews

6.19 Technical Meetings

6.20 Quality Assurance/Quality Control

6.21 Independent Peer Review – N/A**6.22 Supervision****6.23 Coordination****7 UTILITIES**

The CONSULTANT shall identify utility facilities and secure agreements, utility work schedules, and plans from the Utility Agency Owners (UAO) ensuring all conflicts that exist between utility facilities and the DEPARTMENT's construction project are addressed. The CONSULTANT shall certify all utility negotiations have been completed and that arrangements have been made for utility work to be undertaken.

7.1 Kickoff Meeting - N/A**7.2 Identify Existing UAO(s)**

The Consultant shall identify all utilities within and adjacent to the project limits that may be impacted by the project. The CONSULTANT shall identify interconnect communications and other DEPARTMENT joint use facilities and fully coordinate the relocation/adjustment of the affected UAO's.

7.3 Make Utility Contacts

Second Contact: At a minimum of 4 weeks prior to the meeting, the CONSULTANT shall transmit *an electronic set (both pdf and dgn files)* of Phase II plans, *List of Plan Changes since first contact* and the Utility Conflict Matrix (when applicable) to each UAO having facilities located within the project limits. *Hard copies of plans shall be sent upon request of a utility.*

Third Contact: Identify agreements and assemble packages. At a minimum of 4 weeks prior to the meeting, the CONSULTANT shall transmit an electronic set (both pdf and dgn files) of Phase III plans, agreements, List of Plan Changes since previous contact and the Utility Conflict Matrix to each UAO having facilities located within the project limits. Hard copies of plans shall be sent upon request of a utility.

Final Contact (Phase IV): Transmit an electronic set (both pdf and dgn files) of Phase IV (100%) plans to each of the involved UAO(s).

7.4 Exception Processing - N/A**7.5 Preliminary Utility Meeting - N/A****7.6 Individual/Field Meetings**

The CONSULTANT shall meet with each UAO as necessary, separately or together, throughout the project design duration to provide guidance in the interpretation of plans, review changes to the plans and schedules, optional clearing and grubbing work, and assist in the development of the UAO(s) plans and work schedules. The CONSULTANT is responsible for motivating the UAO to complete and return the necessary documents after each Utility Contact or Meeting. *This includes any negotiated phase review office and field meetings.*

7.7 Collect and Review Plans and Data from UAO(s)

The CONSULTANT shall review utility marked plans and data individually as they are received

for *compliance with information requested*. Ensure information from the UAO (utility type, material and size) is sent to the designer for inclusion in the plans. Forward all requests for utility reimbursement and supporting documentation to the DUO.

7.8 Subordination of Easements Coordination

The District Right of Way Office will handle processing of all Subordinations of Easements. The CONSULTANT shall refer all UAOs to the District Right of Way Office.

7.9 Utility Design Meeting

The CONSULTANT shall schedule (time and place), notify participants, and conduct a Utility meeting with all affected UAO(s). The CONSULTANT shall be prepared to discuss drainage, traffic signalization, maintenance of traffic (construction phasing), review the current design schedule and letting date, evaluate the utility information collected, provide follow-up information on compensable property rights from FDOT Legal Office, discuss with each UAO the utility work by highway contractor option, discuss any future design issues that may impact utilities, etc., to the extent that they may have an effect on existing or proposed utility facilities with particular emphasis on drainage and maintenance of traffic with each UAO. The intent of this meeting shall be to assist the UAOs in identifying and resolving conflicts between utilities and proposed construction before completion of the plans, including utility adjustment details. Also to work with the UAOs to recommend potential resolution between known utility conflicts with proposed construction plans as may *be* deemed practical by the UAO. ***The CONSULTANT shall be prepared to discuss all findings from Utility Designating and Locating efforts, and the possible need for additional verification.*** The CONSULTANT shall keep accurate minutes of all meetings and distribute a copy to all attendees within 3 days. See Task 4.5. ***Horizontal/Vertical Master Design Files*** for utility conflict location identification and adjustments.

7.10 Review Utility Markups & Work Schedules and Processing of Schedules & Agreements (Optional Services)

The CONSULTANT shall review utility marked up plans and work schedules as they are received for content and coordinate review with the designer. Send color markups and schedules to the appropriate DEPARTMENT office(s) for review and comment if required by the District. Coordinate with the District for execution. Distribute Executed Final Documents. Prepare Work Order for UAO(s). The CONSULTANT shall coordinate with the DUO the programming of necessary Work Program funds.

7.11 Utility Coordination/Follow-up (Optional Services)

The CONSULTANT shall provide utility coordination and follow up. This includes follow-up, interpreting plans, and assisting the UAOs with completion of their work schedules and agreements. Includes phone calls, face-to-face meetings, etc., to motivate and ensure the UAO(s) complete and return the required documents in accordance with the project schedule. Ensure the resolution of all known conflicts. The CONSULTANT shall keep accurate minutes of all meetings and distribute a copy to all attendees. This task can be applied to all phases of the project.

7.12 Utility Constructability Review (Optional Services)

The CONSULTANT shall review utility schedules against construction contract time, and phasing for compatibility. Coordinate with and obtain written concurrence from the construction office. See Task 4.7 ***Horizontal/Vertical Master Design Files*** for utility conflict identification and adjustments.

7.13 Additional Utility Services - N/A

7.14 Processing Utility Work by Highway Contractor (UWHC) - N/A

7.15 Contract Plans to UAO(s) (Optional Services)

If requested by the District, the CONSULTANT shall transmit the contract plans as processed for letting to the UAO(s). Transmittals to UAO(s) may be by certified mail, return receipt requested.

7.16 Certification/Close-Out (Optional Services)

This includes hours for transmitting utility files to the DUO and preparation of the Utility Certification Letter. The CONSULTANT shall certify to the appropriate DEPARTMENT representative the following:

All utility negotiations (Full execution of each agreement, approved Utility Work Schedules, technical special provisions written, etc.) have been completed with arrangements made for utility work to be undertaken and completed as required for proper coordination with the physical construction schedule.

OR

An on-site inspection was made and no utility work will be involved.

OR

Plans were sent to the Utility Companies/Agencies and no utility work is required.

Upon request from the District Utility Engineer, the CONSULTANT shall make available for inspection, all utility files.

7.17 Other Utilities - N/A**8 ENVIRONMENTAL PERMITS, COMPLIANCE AND CLEARANCES – N/A (Except As Otherwise Noted)**

The CONSULTANT shall notify the DEPARTMENT Project Manager, Environmental Permit Coordinator and other appropriate personnel in advance of all scheduled meetings with the regulatory agencies to allow a DEPARTMENT representative to attend. The CONSULTANT shall copy in the Project Manager and the Environmental Permit Coordinator on all permit related correspondence and meetings.

8.1 Preliminary Project Research

The CONSULTANT shall perform preliminary project research and shall be responsible for early identification of and coordination with the appropriate regulatory agencies to assure that design efforts are properly directed toward permit requirements.

8.2 Complete Permit Involvement Form

The CONSULTANT shall document permit involvement in coordination with the District Permit Coordinator and DEPARTMENT Project Manager. This *shall* be done upon completion of preliminary project research.

8.3 Field Work**8.3.1 Pond Site Alternatives**

The CONSULTANT shall review alternative pond sites as directed by the DEPARTMENT.

8.3.2 Establish Wetland Jurisdictional Lines and Assessments

The CONSULTANT shall collect all data and information necessary to determine the boundaries of wetlands and surface waters defined by the rules or regulations of each agency processing or reviewing a permit application necessary to construct a DEPARTMENT project.

The CONSULTANT shall be responsible for, but not limited to, the following activities:

- Determine landward extent of state waters as defined in Rule Chapter 62-340, F.A.C. as ratified in Section 373.4211, F.S.
- Determine the jurisdictional boundaries of wetlands and surface waters as defined by rules or regulations of any other permitting authority that is processing a DEPARTMENT permit application.
- Prepare aerial maps showing the jurisdictional boundaries of wetlands and surface waters. Aerial maps shall be reproducible, of a scale no greater than 1"=200' and be recent photography. The maps shall show the jurisdictional limits of each agency. Xerox copies of aerials are not acceptable. All jurisdictional boundaries are to be tied to the project's baseline of survey. When necessary, a survey *shall* be prepared by a registered surveyor and mapper.
- Prepare a written assessment of the current condition and relative value of the function being performed by wetlands and surface waters. Prepare data in tabular form which includes the ID number for each wetland impacted, size of wetland to be impacted, type of impact and identify any wetland within the project limits that will not be impacted by the project. Prepare appropriate Agency Forms.

The CONSULTANT shall provide the following at the time of the Phase I plans submittal:

- *Surveyed and approved jurisdictional boundaries on plan sheets.*
- *Detailed estimate of wetland impacts, including, but not limited to, the acreage and type of impact. This shall be provided in writing to the District Environmental Permit Coordinator based on the approved jurisdictional boundaries.*
- *For projects with one or more acres of wetland impact, WRAP or UMAM assessments (whichever is appropriate based on coordination with the agencies) shall be provided to District Environmental Permit Coordinator for submittal to SWFWMD.*

8.3.3 Species Surveys

The CONSULTANT shall conduct Wildlife surveys as defined by rules or regulations of any permitting authority that is processing a Department permit.

8.3.4 Archeological Surveys:

The CONSULTANT shall conduct Archeological field surveys as required, in accordance with Part 2, Chapter 12 of the PD&E Manual.

8.4 Agency Verification of Wetland Data

The CONSULTANT shall be responsible for verification of wetland data identified in Section 8.3 and coordinating regulatory agency field reviews, including finalization of wetland assessments with applicable agencies.

8.5 Complete and Submit All Required Permit Applications

The CONSULTANT shall prepare permit packages as identified in the Project Description section.

The CONSULTANT shall collect all of the data and information necessary to obtain the environmental permits required to construct a project. The CONSULTANT *shall* complete field survey or agency required forms (such as the US Army Corps of Engineers (USACE) “Wetland Determination Data Form – Atlantic and Gulf Coastal Plain Region”; the USACE “Approved Jurisdictional Determination Form”; UMAMs and/or project specific data forms, as required) for use in Permit Applications.

The CONSULTANT shall prepare each permit application for DEPARTMENT approval in accordance with the rules and/or regulations of the environmental agency responsible for issuing a specific permit and/or authorization to perform work.

The CONSULTANT *shall* submit all permit applications, as directed by the DEPARTMENT, and be responsible for payment of all permit fees.

Local Permits:

The CONSULTANT shall evaluate the project to determine if a “Storm Water Discharges Associated with Industrial Activity Permit” is required as defined in 40 CFR Part 122.26(b)(14)(x) and/or Chapter 62-621.300(4)(a) FAC. If no permit is required, this determination shall be documented to the Project Manager and the Environmental Permit Coordinator in writing. If a permit is required, the CONSULTANT shall prepare a Storm Water Pollution Prevention Plan for each construction project.

The CONSULTANT shall be responsible for the payment of all permit application fees.

- 8.6 Prepare Dredge and Fill Sketches**
- 8.7 Prepare USCG Permit Sketches**
- 8.8 Prepare Water Management District Right-of-Way Occupancy Sketches**
- 8.9 Prepare Coastal Construction Control Line (CCCL) Permit Application**
- 8.10 Prepare Tree Permit Information**
- 8.11 Mitigation Design**

If wetland impacts cannot be avoided, the CONSULTANT shall prepare a mitigation plan to be included as a part of the Environmental Resource Permit and or Section 404 applications.

Prior to the development of alternatives, the CONSULTANT shall meet with the Project Manager to determine the DEPARTMENT’s policies in proposing mitigation. The CONSULTANT shall proceed in the development of a mitigation plan based upon the general guidelines provided by the DEPARTMENT.

The CONSULTANT will be directed by the DEPARTMENT to investigate the following methods of mitigation:

- Payment to DEP/WMD per acre of wetlands impacted as defined in Section 373.4137, F.S.
- Monetary participation in offsite regional mitigation plans
- Monetary participation in a private mitigation bank
- Creation/restoration on public lands
- Creation/restoration on right of way purchased by the DEPARTMENT
- Creation/restoration on existing DEPARTMENT right of way

In the event that physical creation or restoration is the only feasible alternative to offset wetland impacts, the CONSULTANT shall collect all of the data and information necessary to prepare alternative mitigation plans that may be acceptable to all permitting agencies and commenting agencies who are processing or reviewing a permit application for a DEPARTMENT project.

Prior to selection of a final mitigation site, the CONSULTANT *shall* provide the following services in the development of alternative mitigation plans:

- Preliminary jurisdictional determination for each proposed site
- Selection of alternative sites
- Coordination of alternative sites with the DEPARTMENT/all environmental agencies
- Written narrative listing potential sites with justifications for both recommended and non-recommended sites.

8.12 Mitigation Coordination and Meetings

The CONSULTANT shall coordinate with DEPARTMENT personnel prior to approaching any environmental permitting or reviewing agencies. Once a mitigation plan has been reviewed and approved by the DEPARTMENT, the CONSULTANT *shall* be responsible for coordinating the proposed mitigation plan with the environmental agencies.

The CONSULTANT shall provide complete and timely responses to the DEPARTMENT's semi-annual requests for updated information for the project regarding whether or not it will have, or potentially have impacts to be mitigated for using the Seventh District Wetland Impact Inventory (F.S. 373.4137). The CONSULTANT shall inform the DEPARTMENT immediately of wetland impact changes that could affect the project's status on the mitigation inventory between formal update requests. The CONSULTANT shall communicate to the DEPARTMENT any design or jurisdictional review issues that may impact their wetland impact estimates as the project progresses through design.

8.13 Other Environmental Permits

Environmental Clearances, Reevaluations and Technical Support

8.14 Technical Support To Department For Environmental Clearances and Reevaluations

The DEPARTMENT will provide all such necessary services.

8.15 Preparation of Environmental Clearances and Reevaluations

The DEPARTMENT will provide all such necessary services.

8.16 Contamination Impact Analysis

The DEPARTMENT will provide all such necessary services.

8.17 Asbestos Survey – N/A

8.18 Technical Meetings

8.19 Quality Assurance/Quality Control

8.20 Supervision

8.21 Coordination

9 STRUCTURES – SUMMARY AND MISCELLANEOUS TASKS AND DRAWINGS

The CONSULTANT shall analyze, design and develop contract documents for all structures in accordance with applicable provisions as defined in Section 2.20, Provisions for Work. Individual tasks identified in Sections 9 through 18 are defined in the Staff Hour Estimation Handbook and within the provision defined in Section 2.20, Provisions for Work. Contract documents shall display economical solutions for the given conditions *and be of such quality that they may be reproduced and used by the DEPARTMENT as bid documents for construction.*

The CONSULTANT shall provide Design Documentation to the DEPARTMENT with each submittal consisting of structural design calculations and other supporting documentation developed during the development of the plans. The design calculations submitted shall adequately address the complete design of all structural elements. These calculations shall be neatly and logically presented on digital media or, at the DEPARTMENT's request, on 8 ½"x11" paper and all sheets shall be numbered. The final design calculations shall be signed and sealed by a Florida-licensed professional engineer. A cover sheet indexing the contents of the calculations shall be included and the engineer shall sign and seal that sheet. All computer programs and parameters used in the design calculations shall include sufficient backup information to facilitate the review task.

- 9.1 Key Sheet and Index of Drawings**
- 9.2 Project Layout**
- 9.3 General Notes and Bid Item Notes**
- 9.4 Miscellaneous Common Details**
- 9.5 Incorporate Report of Core Borings**
- 9.6 Existing Bridge Plans – N/A**
- 9.7 Assemble Plan Summary Boxes and Quantities**
- 9.8 Cost Estimate**
- 9.9 Technical Special Provisions**
- 9.10 Field Reviews**
- 9.11 Technical Meetings**
- 9.12 Quality Assurance/Quality Control**
- 9.13 Independent Peer Review - N/A**
- 9.14 Supervision**
- 9.15 Coordination**
- 10 STRUCTURES – BRIDGE DEVELOPMENT REPORT – N/A**
- 11 STRUCTURES – TEMPORARY BRIDGE – N/A**
- 12 STRUCTURES – SHORT SPAN CONCRETE BRIDGE – N/A**
- 13 STRUCTURES – MEDIUM SPAN CONCRETE BRIDGE – N/A**

- 14 STRUCTURES – STRUCTURAL STEEL BRIDGE – *N/A*
- 15 STRUCTURES – SEGMENTAL CONCRETE BRIDGES – *N/A*
- 16 STRUCTURES – MOVABLE SPAN – *N/A*
- 17 STRUCTURES – RETAINING WALLS – *N/A*
- 18 STRUCTURES – MISCELLANEOUS

The CONSULTANT shall prepare plans for Miscellaneous Structure(s) as specified in Section 2.5.

Concrete Box Culverts – *N/A*

- 18.1 Concrete Box Culverts
- 18.2 Concrete Box Culverts Extensions

Strain Poles

- 18.3 Steel Strain Poles
- 18.4 Concrete Strain Poles

Mast Arms

- 18.5 Mast Arms

Overhead/Cantilever Sign Structure – *N/A*

- 18.6 Cantilever Sign Structures
- 18.7 Overhead Span Sign Structures
- 18.8 Special (Long Span) Overhead Sign Structures
- 18.9 Monotube Overhead Sign Structure
- 18.10 Bridge Mounted Signs (Attached to Superstructure)

High Mast Lighting – *N/A*

- 18.11 Non-Standard High Mast Lighting Structures

Noise Barrier Walls (Ground Mount) – *N/A*

- 18.12 Horizontal Wall Geometry
- 18.13 Vertical Wall Geometry
- 18.14 Summary of Quantities – Aesthetic Requirements
- 18.15 Control Drawings
- 18.16 Design of Noise Barrier Walls Covered by Standards

18.17 Design of Noise Barrier Walls Not Covered by Standards**18.18 Aesthetic Details****Special Structures****18.19 Fender System – N/A****18.20 Fender System Access – N/A****18.21 Special Structures****18.22 Other Structures****19 SIGNING AND PAVEMENT MARKING ANALYSIS**

The CONSULTANT shall analyze and document Signing and Pavement Markings Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

19.1 Traffic Data Analysis

The CONSULTANT shall review the approved preliminary engineering report, typical section package, traffic technical memorandum and proposed geometric design alignment to identify proposed sign placements and roadway markings. ~~Perform queue analysis.~~

19.2 No Passing Zone Study - N/A**19.3 Reference and Master Design File**

The CONSULTANT shall prepare the Signing & Marking Design file to include all necessary design elements and all associated reference files.

19.4 Multi-Post Sign Support Calculations (*Optional Services*)

Single post and offset Next Signal signs.

19.5 Sign Panel Design Analysis

Establish sign layout, letter size and series for non-standard signs.

19.6 Sign Lighting/Electrical Calculations - N/A**19.7 Quantities (*Optional Services*)**

The CONSULTANT shall provide quantity take off for the project at phases III, IV, and final for the signing and pavement-marking component of the entire project.

19.8 Cost Estimate

The CONSULTANT shall be responsible for producing an accurate engineer's construction cost estimate for the signing and pavement marking component at phases III, IV and final.

19.9 Technical Special Provisions - N/A**19.10 Other Signing and Pavement Marking Analysis – N/A**

19.11 Field Reviews

The CONSULTANT shall conduct field reviews of the project. This includes all trips required to obtain necessary data for all elements of the project.

19.12 Technical Meetings

The CONSULTANT shall attend phase review meetings for the plan submittal phases of the project with a representative from the District Traffic Design Engineer's office to resolve technical issues during the design process.

19.13 Quality Assurance/Quality Control

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by CONSULTANT under the contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications, and other documentation prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project. The CONSULTANT shall utilize the District's quality control checklist for traffic design drawings. The responsible Professional Engineer that performed the Quality Control review shall sign a statement certifying that the review was conducted.

The CONSULTANT shall, without additional compensation, correct all errors or deficiencies in the designs, maps, drawings, specifications and/or other services.

19.14 Independent Peer Review - N/A**19.15 Supervision**

The CONSULTANT shall provide all efforts required to supervise all technical design activities including the work of the subconsultants.

19.16 Coordination

The CONSULTANT shall provide all efforts to coordinate with all disciplines of the project to produce a final set of construction documents and to ensure high degree of accuracy for the design plans is achieved.

20 SIGNING AND PAVEMENT MARKING PLANS

The CONSULTANT shall prepare a set of Signing and Pavement Marking Plans in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda that include the following:

20.1 Key Sheet

The CONSULTANT shall prepare the key sheet in accordance with the latest format depicted in the Plans Preparation Manual.

20.2 Summary of Pay Items Including TRNS*Port Input

The CONSULTANT shall include all project pertinent pay items, descriptions, proper units, sheet numbers and related information in accordance with the Basis of Estimate Manual and enter the same information in the DEPARTMENT Contract Estimating System.

20.3 Tabulation of Quantities (Optional Services)

The CONSULTANT shall include all project quantities in the tabulation of quantities sheets and provide updating of the tabulation of quantities sheets.

20.4 General Notes/Pay Item Notes

The CONSULTANT shall include all pertinent general notes and pay item notes as deemed fit and as established by the District Traffic Design Engineer's office.

20.5 Project Layout - N/A

20.6 Plan Sheet

The CONSULTANT shall prepare the Signing & Marking plan sheets utilizing the Design file to include all necessary information related to the project design elements and all associated reference files. All traffic plans shall be prepared at a scale of 1" = 40'.

20.7 Typical Details - N/A

20.8 Guide Sign Work Sheet(s)

The CONSULTANT shall prepare Guide Sign Work Sheet for the advanced street name signs approaching the signalized intersections utilizing the District's Traffic Design Guidelines. The CONSULTANT shall utilize the guide sign design software approved by the DEPARTMENT.

20.9 Traffic Monitoring Site - N/A

20.10 Cross Sections - N/A

20.11 Special Service Point Details - N/A

20.12 Special Details - N/A

20.13 Interim Standards - N/A

The CONSULTANT shall list web address for FDOT interim standards in the key sheet.

20.14 Quality Assurance/Quality Control

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.

The CONSULTANT shall utilize the District's quality control checklist for traffic design drawings in addition to the QC effort described in the analysis section.

20.15 Supervision

The CONSULTANT shall provide all efforts required to supervise all technical design activities including the work of the sub-consultants.

21 SIGNALIZATION ANALYSIS

The CONSULTANT shall analyze and document Signalization Analysis Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

21.1 Traffic Data Collection – N/A

21.2 Traffic Data Analysis

The CONSULTANT shall determine *pedestrian clearance timings*.

21.3 Signal Warrant Study – N/A

21.4 Systems Timings – N/A

21.5 Reference and Master Signalization Design File

The CONSULTANT shall prepare the Signalization Design file to include all necessary design elements and all associated reference files.

21.6 Reference and Master Interconnect Communication Design File – N/A

21.7 Overhead Street Name Sign Design

The CONSULTANT shall design Signal Mounted Overhead Street Name signs.

21.8 Pole Elevation Analysis – N/A

21.9 Traffic Signal Operation Report – N/A

21.10 Quantities (*Optional Services*)

The CONSULTANT shall provide quantity take-offs for the project at phases III, IV and final for the signalization component of the entire project.

21.11 Cost Estimate

The CONSULTANT shall be responsible for producing an accurate engineer's construction cost estimate for the signalization component at phase III, IV and final.

21.12 Technical Special Provisions – N/A

21.13 Other Signalization Analysis – N/A

21.14 Field Reviews

The CONSULTANT shall collect information from the maintaining agencies and conduct a field review. The review should include, but is not limited to, the following:

- Existing Signal and Pedestrian Phasing
- Controller Make, Model, Capabilities and Condition/Age
- Condition of Signal Structure(s)
- Type of Detection as Compared with Current District Standards
- Interconnect Media
- Controller Timing Data

21.15 Technical Meetings

The CONSULTANT shall attend phase review meetings for the plan submittal phases of the project with a representative from the District Traffic Design Engineer's office to resolve technical issues during the design process.

21.16 Quality Assurance/Quality Control

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.

The CONSULTANT shall utilize the District's quality control checklist for traffic design drawings. The responsible Professional Engineer that performed the Quality Control review shall sign a statement certifying that the review was conducted.

The CONSULTANT shall, without additional compensation, correct all errors or deficiencies in the designs, maps, drawings, specifications and/or other services.

21.17 Independent Peer Review – N/A

21.18 Supervision

The CONSULTANT shall provide all efforts required to supervise all technical design activities.

21.19 Coordination

The CONSULTANT shall provide all efforts to coordinate with all disciplines of the project to produce a final set of construction documents and to ensure a high degree of accuracy for the design plans is achieved.

22 SIGNALIZATION PLANS

The CONSULTANT shall prepare a set of Signalization Plans in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda, which include the following:

22.1 Key Sheet

The CONSULTANT shall prepare the key sheet in accordance with the latest format depicted in the Plans Preparation Manual with the lighting elements included.

22.2 Summary of Pay Items Including TRNS*Port Input

The CONSULTANT shall include all project pertinent pay items, descriptions, proper units, sheet numbers and related information in accordance with the Basis of Estimates Handbook and enter the same information in the DEPARTMENT Contract Estimating System.

22.3 Tabulation of Quantities (Optional Services)

The CONSULTANT shall include all project quantities in the tabulation of quantities sheets and provide updating of the tabulation of quantities sheets.

22.4 General Notes/Pay Item Notes

The CONSULTANT shall include all pertinent general notes and pay item notes as deemed fit and as established by the District Traffic Design Engineer's office.

22.5 Plan Sheet

The CONSULTANT shall prepare the Signalization Plan Sheets utilizing the design files to include all necessary information related to the project design elements and all associated reference files and include the necessary intersection lighting design elements on these plan sheets.

22.6 Interconnect Plans – N/A**22.7 Traffic Monitoring Site – N/A****22.8 Guide Sign Worksheet**

The CONSULTANT shall prepare guide sign worksheets for the internally illuminated overhead street name signs in accordance with D7 traffic design guidelines at the following intersections with US 92/SR600 Dale Mabry Road:

- *W. Azele Street*
- *W. Swann Avenue*

22.9 Special Details – N/A**22.10 Special Service Point Details – N/A****22.11 Mast Arm/Monotube Tabulation Sheet – N/A****22.12 Strain Pole Schedule – N/A****22.13 TCP Signal (Temporary) – N/A****22.14 Temporary Detection Sheet – N/A****22.15 Utility Conflict Sheet – N/A****22.16 Interim Standards – N/A****22.17 Quality Assurance/Quality Control**

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.

The CONSULTANT shall utilize the District's quality control checklist for traffic design drawings in addition to the QC effort described in the analysis section.

22.18 Supervision

The CONSULTANT shall provide all efforts required to supervise all technical design activities including the work of the subconsultants.

23 LIGHTING ANALYSIS

The CONSULTANT shall analyze and document Lighting Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

23.1 Lighting Justification Report – N/A

23.2 Lighting Design Analysis Report

The CONSULTANT shall conduct photometric analysis at the location indicated in Section 2.9 2.8 to provide adequately illuminated crosswalks at these signalized intersections and provide recommendations to the DEPARTMENT with the Phase II plans submittal. The report shall provide analyses for each signalized intersection. Each lighting calculation shall be properly identified as to the area that it covers.

The report shall include the Lighting Design Criteria that will be used and shall include the evaluation of one lighting design alternative (as needed and appropriate) and a recommendation on the alternative to use. Each alternative shall be properly described; the alternative shall consider different pole heights, lamp wattage, and arm lengths. Each alternative shall be provided with a cost estimate that includes initial cost in addition to operations and maintenance cost for one year.

After approval of the preliminary report, the CONSULTANT shall submit a revised report *for each submittal only as/if needed*. The Lighting Design Analysis Report shall include voltage drop calculations and load analysis calculations for each branch circuit.

23.3 Aeronautical Evaluation – N/A

23.4 Voltage Drop Calculations

The CONSULTANT shall submit voltage drop calculations showing the equation or equations used along with the number of luminaries per circuit, the length of each circuit, the size conductor or conductors used and their ohm resistance values. The voltage drop incurred on each circuit (total volts and percentage of drop) shall be calculated, and all work necessary to calculate the voltage drop values for each circuit should be presented in such a manner as to be duplicated by the District.

The Voltage Drop Calculations shall be submitted as part of the Lighting Design Analysis Report. *All electrical calculations for sizing the conductors, conduit, load centers, main breaker, branch circuit breakers shall be signed and sealed by an electrical engineer licensed in Florida with expertise and licensure by examination in electrical engineering in the State of Florida.*

23.5 FDEP Coordination and Report – N/A

23.6 Reference and Master Design Files

The CONSULTANT shall prepare the Lighting Design file to include all necessary design elements and all associated reference files.

23.7 Temporary Lighting – N/A

23.8 Design Documentation

The CONSULTANT shall submit a Design Documentation with each plans submittal under a separate cover and not part of the roadway documentation book. At a minimum, the design documentation shall include:

- Phase submittal checklist.
- Structural calculations for special conventional pole concrete foundations.
- Correspondence with the power company concerning new electrical service.

23.9 Quantities (Optional Services)

The CONSULTANT shall provide quantity take off for the project at phases III, IV and final for the lighting component of the entire project.

23.10 Cost Estimate

The CONSULTANT shall be responsible for producing an accurate engineer's construction cost estimate for the lighting component at phases III, IV and final.

23.11 Technical Special Provisions – N/A

23.12 Other Lighting Analysis – N/A

23.13 Field Reviews

The CONSULTANT shall collect information from the maintaining agencies and conduct a field review. The review should include, but is not limited to, the following:

- Existing Lighting Equipment
- Load Center, Capabilities and Condition/Age
- Condition of Lighting Structure(s)
- Verification of horizontal clearances
- Verification of breakaway requirements

23.14 Technical Meetings

The CONSULTANT shall attend phase review meetings for the plan submittal phases of the project with a representative from the District Traffic Design Engineer's office to resolve technical issues during the design process.

23.15 Quality Assurance/Quality Control

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check and review all design drawings, specifications and documentation prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operations, or it may be one specifically designed for this project. The CONSULTANT shall utilize the District's quality control checklist for traffic design drawings. The responsible Professional Engineer that performed the Quality Control review shall sign a statement certifying that the review was conducted.

The CONSULTANT shall, without additional compensation, correct all errors or deficiencies in the design, maps, drawings, specifications and/or other services.

23.16 Independent Peer Review – N/A**23.17 Supervision**

The CONSULTANT shall provide all efforts required to supervise all technical design activities.

23.18 Coordination

The CONSULTANT shall provide all efforts to coordinate with all disciplines of the project to produce a final set of construction documents, and to ensure a high degree of accuracy for the design plans is achieved.

24 LIGHTING PLANS

The CONSULTANT shall prepare a set of Lighting Plans in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

24.1 Key Sheet - N/A**24.2 Summary of Pay Item Sheet Including TRNS*Port Input**

The CONSULTANT shall include all project pertinent pay items, descriptions, proper units, sheet numbers and related information in accordance with the Basis of Estimates Manual and enter the same information in the DEPARTMENT Contract Estimating System.

24.3 Tabulation of Quantities

The CONSULTANT shall include all project quantities in the tabulation of quantities sheets and provide updating of the tabulation of quantities sheets.

24.4 General Notes/Pay Item Notes

The CONSULTANT shall include all pertinent general notes and pay item notes as deemed fit and as established by the District Traffic Design Engineer's Office.

24.5 Pole Data and Legend & Criteria

The CONSULTANT shall complete the Pole Data and Legend Criteria sheets in the standard format as necessary to provide a complete lighting design.

24.6 Service Point Details

The CONSULTANT shall prepare any service point details necessary to provide a complete lighting design. The CONSULTANT shall identify the power source after coordination with the local power company and provide the necessary details from the power source to the load center.

24.7 Project Layout – N/A

24.8 Plan Sheet – N/A

The lighting plans shall be included with the signal plans.

24.9 Special Details – N/A

24.10 Temporary Lighting Data and Details – N/A

24.11 Traffic Control Plan Sheets – N/A

24.12 Interim Standards – N/A

24.13 Quality Assurance/Quality Control

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of traffic design drawings, specifications and other services furnished by the CONSULTANT under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all design drawings, specifications and other services prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project.

The CONSULTANT shall utilize the District's quality control checklist for traffic design drawings in addition to the QC effort described in the analysis section.

24.14 Supervision

The CONSULTANT shall provide all efforts required to supervise all technical design activities including the work of the subconsultants.

25 LANDSCAPE ARCHITECTURE ANALYSIS - N/A

26 LANDSCAPE ARCHITECTURE PLANS - N/A

27 SURVEY

Unless noted otherwise, all necessary services will be provided by the DEPARTMENT (see Section 27.10).

The CONSULTANT shall perform survey tasks in accordance with all applicable statutes, manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

The CONSULTANT shall submit all survey notes and computations to document the surveys. All field survey work shall be recorded in approved media and submitted to the DEPARTMENT. Field books submitted to the DEPARTMENT must be of an approved type. The field books shall be certified by the surveyor in responsible charge of the work being performed before the final product is submitted.

The survey notes shall include documentation of decisions reached from meetings, telephone conversations or site visits. All like work (such as bench lines, reference points, etc.) shall be recorded contiguously. The DEPARTMENT may not accept field survey radial locations of section corners, platted subdivision lot and block corners, alignment control points, alignment control reference points and certified section corner references. The DEPARTMENT may instead require that these points be surveyed by true line, traverse or parallel offset.

27.1 Horizontal Project Control (HPC)

Establish or recover HPC, for the purpose of establishing horizontal control on the Florida State Plane Coordinate System or datum approved by the District Surveyor (DS) or District Location Surveyor (DLS); may include primary or secondary control points. Includes analysis and processing of all field collected data, and preparation of forms.

27.2 Vertical Project Control (VPC)

Establish or recover VPC, for the purpose of establishing vertical control on datum approved by the District Surveyor (DS) or the District Location Surveyor (DLS); may include primary or secondary vertical control points. Includes analysis and processing of all field collected data, and preparation of forms.

27.3 Alignment and/or Existing Right-of-Way (R/W) Lines

Establish, recover or re-establish project alignment. Also includes analysis and processing of all field collected data, existing maps, and/or reports for identifying mainline, ramp, offset, or secondary alignments. Depict alignment and/or existing R/W lines (in required format) per DEPARTMENT R/W Maps, platted or dedicated rights-of-way.

27.4 Aerial Targets

Place, locate, and maintain required aerial targets and/or photo identifiable points. Includes analysis and processing of all field collected data, existing maps, and/or reports. Placement of the targets will be at the discretion of the aerial firm.

27.5 Reference Points

Reference Horizontal Project Network Control (HPNC) points, project alignment, vertical control points, section, ¼ section, center of section corners and General Land Office (G.L.O.) corners as required.

27.6 Topography/Digital Terrain Model (DTM) (3D)

Locate all above ground features and improvements for the limits of the project by collecting the required data for the purpose of creating a DTM with sufficient density. Shoot all break lines; high and low points. Effort includes field edits, analysis and processing of all field collected data, existing maps, and/or reports.

27.7 Planimetric (2D)

Locate all above ground features and improvements. Deliver in appropriate electronic format. Effort includes field edits, analysis and processing of all field-collected data, existing maps, and/or reports.

27.8 Roadway Cross Sections/Profiles

Perform cross sections or profiles. May include analysis and processing of all field-collected data for comparison with DTM.

27.9 Side Street Surveys

Refer to tasks of this document as applicable.

27.10 Underground Utilities (*Optional Services*)

If needed, SUE will be authorized under Optional Services.

Designation includes two-dimensional collection of existing utilities and selected three-dimensional verification as needed for designation. Location includes non-destructive excavation to determine size, type and location of existing utility, as necessary for final three-dimensional verification. Survey includes collection of data on points as needed for designates and locates. Includes analysis and processing of all field-collected data, and delivery of all appropriate electronic files.

Soil removed for obtaining locates on utility lines shall be placed back in the excavation in a way to not disturb or damage the utility. Locates through asphalt pavement shall be finished with cold pack asphalt to at least the same thickness as the base and asphalt that was removed. Locates through concrete pavement, sidewalks, etc. shall be finished using a high strength concrete mix to the same depth as what was removed. The cuts made in asphalt and concrete for locates shall be made in a manner that provides a patch with regular sides that will be level with no protruding or jagged edges.

27.11 Outfall Survey

Locate all above ground features and improvements for the limits of the project by collecting the required data for the purpose of a DTM Survey with sufficient density of shots. Shoot all break lines, high and low points. Includes field edits, analysis and processing of all field collected data, existing maps, and/or reports.

27.12 Drainage Survey

Locate underground data (XYZ, pipe size, type, condition and flow line) that relates to above ground data. Includes field edits, analysis and processing of all field collected data, existing maps, and/or reports.

27.13 Bridge Survey (Minor/Major)

Locate required above ground features and improvements for the limits of the bridge. Includes field edits, analysis and processing of all field collected data, existing maps, and/or reports.

27.14 Channel Survey

Locate all topographic features and improvements for the limits of the project by collecting the required data. Includes field edits, analysis and processing of all field collected data, maps, and/or reports.

27.15 Pond Site Survey

Refer to tasks of this document as applicable.

27.16 Mitigation Survey

Refer to tasks of this document as applicable.

27.17 Jurisdiction Line Survey

Perform field location (two-dimensional) of jurisdiction limits as defined by respective authorities. Also includes field edits, analysis and processing of all field collected data, and preparation of reports.

27.18 Geotechnical Support

Perform three-dimensional (X, Y, Z) field location, or stakeout, of boring sites established by the geotechnical engineer. Includes field edits, analysis and processing of all field collected data and/or reports.

27.19 Sectional/Grant Survey

Perform field location/placement of section corners, 1/4 section corners, and fractional corners where pertinent. Includes analysis and processing of all field-collected data and/or reports.

27.20 Subdivision Location

Survey all existing recorded subdivision/condominium boundaries, tracts, units, phases blocks, street R/W lines and common areas. Includes analysis and processing of all field collected data and/or reports. If an unrecorded subdivision is on file in the public records of the subject county, tie the existing monumentation of the beginning and end of unrecorded subdivision.

27.21 Maintained R/W

Perform field location (two-dimensional) of maintained R/W limits as defined by respective authorities, if needed. Also includes field edits, analysis and processing of all field-collected data, and preparation of reports.

27.22 Boundary Survey

Perform boundary survey as defined by DEPARTMENT standards. Includes analysis and processing of all field-collected data and preparation of reports.

27.23 Water Boundary Survey

Perform Mean High Water, Ordinary High Water and Safe Upland Line surveys as required by DEPARTMENT standards.

27.24 Right-of-Way Staking, Parcel/Right of Way Line

Perform field staking and calculations of existing/proposed R/W lines for on-site review purposes.

27.25 Right-of-Way Monumentation

Set R/W monumentation as depicted on final R/W maps for corridor and water retention areas.

27.26 Line Cutting

Perform all efforts required to clear vegetation from the line of sight.

27.27 Work Zone Safety

Provide work zone as required by DEPARTMENT standards.

27.28 Miscellaneous Surveys**27.29 Supplemental Surveys****27.30 Document Research**

Perform research of documentation to support field and office efforts involving surveying and mapping.

27.31 Field Review

Perform verification of the field conditions as related to the collected survey data.

27.32 Technical Meetings

Attend meetings as required and negotiated by the Surveying and Mapping Department.

27.33 Quality Assurance/Quality Control (QA/QC)

Establish and implement a QA/QC plan. Also includes subconsultant review, response to comments, any resolution meetings if required, and preparation of submittals for review, etc.

27.34 Supervision

Perform all activities required to supervise and coordinate project. These activities must be performed by the project supervisor, a Florida P.S.M. or their delegate as approved by the District Surveying Office.

27.35 Coordination

Coordinate survey activities with other disciplines and *any and all adjacent and integral consultants so as to produce a final and complete survey product for the project(s) described herein*. These activities must be performed by the project supervisor, a Florida P.S.M. or their delegate as approved by the District Surveying Office.

The CONSULTANT shall coordinate their work with any and all adjacent and integral consultants so as to produce a final and complete survey product for the project(s) described herein.

28 PHOTOGRAMMETRY

All necessary services will be provided by the DEPARTMENT.

29 MAPPING

All necessary services will be provided by the DEPARTMENT.

30 TERRESTRIAL MOBILE LiDAR

All necessary services will be provided by the DEPARTMENT.

31 ARCHITECTURE DEVELOPMENT – N/A**32 NOISE BARRIERS IMPACT DESIGN ASSESSMENT IN THE DESIGN PHASE - N/A****33 INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS - N/A****34 INTELLIGENT TRANSPORTATION SYSTEM PLANS - N/A****35 GEOTECHNICAL**

The DEPARTMENT will provide all necessary Geotechnical services for this project. The CONSULTANT shall request from the DEPARTMENT all Geotechnical data and recommendations necessary for this project by such time as will support the DEPARTMENT's original project schedule or any subsequent DEPARTMENT-approved revisions thereto.

36 PROJECT REQUIREMENTS**36.1 Liaison Office**

The DEPARTMENT and the CONSULTANT *shall* designate a Liaison Office and a Project Manager who shall be the representative of their respective organizations for the Project. While it is expected the CONSULTANT shall seek and receive advice from various state, regional, and local agencies, the final direction on all matters of this project remain with the DEPARTMENT Project Manager.

36.2 Key Personnel

The CONSULTANT's work shall be performed and directed by the key personnel identified in the proposal presentations by the CONSULTANT. Any changes in the indicated personnel shall be subject to review and approval by the DEPARTMENT.

36.3 Progress Reporting

The CONSULTANT shall meet with the DEPARTMENT as required and shall provide a written monthly progress report with approved schedule, schedule status, and payout curve or by using the earned value method that describe the work performed on each task. The report will include assessing project risk through monthly documentation of identifying and updating the risk category and approach for monitoring those tasks. Invoices shall be submitted after the DEPARTMENT approves the monthly progress report and the payout curve or with earned value analysis. The Project Manager will make judgment on whether work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished.

36.4 Correspondence

Copies of all written correspondence between the CONSULTANT and any party pertaining specifically to this contract shall be provided to the DEPARTMENT for their records within one (1) week of the receipt or mailing of said correspondence.

36.5 Professional Endorsement

The CONSULTANT shall have a *Licensed* Professional Engineer in the State of Florida sign and seal all reports, documents, technical special provisions and plans as required by DEPARTMENT standards.

36.6 Computer Automation

The project *shall* be developed utilizing Computer Aided Drafting and Design (CADD) systems. The DEPARTMENT makes available software to help assure quality and conformance with policy and procedures regarding CADD. It is the responsibility of the CONSULTANT to meet the requirements in the DEPARTMENT's CADD Manual *and CADD Production Criteria Handbook (including the minimum 95% compliance threshold for all design files)*. The CONSULTANT *shall* submit final documents and files as described herein.

36.7 Coordination With Other Consultants

The CONSULTANT *firm* shall coordinate *its* work with any and all adjacent and integral consultants so as to effect complete and homogenous plans and specifications for the project(s) described herein.

36.8 Optional Services

At the DEPARTMENT's option, the CONSULTANT may be requested to provide optional services. The fee for these services shall be negotiated in accordance with the terms detailed in Exhibit B, Method of Compensation, for a fair, competitive and reasonable cost, considering the scope and complexity of the project(s). Additional services may be authorized by a Letter of Authorization or supplemental amendment in accordance with paragraph 2.00 of the Standard Consultant Agreement. The additional services may include Construction Assistance, Review of Shop Drawings, *Plans Update, Expert Witness Testimony*, Final Bridge Load Rating, update (Category II) bridge plans electronically (CADD) for the Final "As-Built" conditions, based on documents provided by the DEPARTMENT (CADD Services Only), or other Services as required. *When Optional Services are noted herein, such services shall be construed to include all incidental technical discipline services necessary to accomplish the generally-stated purpose, whether or not specifically described herein.*

37 INVOICING LIMITS

Payment for the work accomplished *shall* be in accordance with the Method of Compensation of this contract. Invoices shall be submitted to the DEPARTMENT in a format prescribed by the DEPARTMENT. The DEPARTMENT Project Manager and the CONSULTANT shall monitor the cumulative invoiced billings to insure the reasonableness of the billings compared to the project schedule and the work accomplished and accepted by the DEPARTMENT.

The CONSULTANT *shall* provide a list of key events and the associated total percentage of work considered to be complete at each event. This list will be used to control invoicing. Payments will not be made that exceed the percentage of work for any event until those events have actually occurred and the results are acceptable to the DEPARTMENT.

Each invoice shall be accompanied by a certification by the CONSULTANT's Project Manager, Engineer-of-Record or Project Principal that the invoicing is consistent with the project's progress and Prima Vera schedule.

For projects with lump sum invoicing for Basic Services, a 100% complete payout will not be approved before the "Plans Package In Tallahassee" or "Plans To District Contracts" schedule milestone is achieved and the DEPARTMENT's Central Office or District Contracts Office has approved that package.