EXHIBIT A

SCOPE OF SERVICES

FOR

FINANCIAL PROJECT ID(S). 435757-1-32-01

DISTRICT TWO

DUVAL COUNTY
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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:** 435757-1-32-01
- **Federal Aid Project No.:** N/A
- **County Section No.:** 72292000
- **Description:** SR 202 (J Turner Butler Blvd.) from US 1 (Philips Highway) to SR A1A, Duval County
- **Bridge No(s.):** 720815, 720814, 720607, 720608, 720292, 720293, 720287, 720288, 720566, 720416, 720147, 720130, 720290, 720448, 720613, 720614, 720449, 720450, 720459, 720451, 720460, 720461, 720453, 720454, 720442, 720509, 720443, 720514, 720444, 720445, 720455, 720620
- **Rail Road Crossing No:** N/A
- **Context Classification:** N/A - Limited Access Facility

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:** 0750 – ITS Communication System
- **Major work groups include:** 6.3.1 - ITS Analysis & Design
- **Minor work groups include:** 6.3.3 – ITS Traffic Engineering Systems Communications

Known alternative construction contracting methods include: N/A

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 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 FDOT Design Manual and other pertinent manuals are specifically prescribed to accomplish the work included in this contract, and also indicate which items of work will be the responsibility of the CONSULTANT and/or the DEPARTMENT.

The CONSULTANT shall be aware that as a project is developed, certain modifications and/or improvements to the original concepts 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 and 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 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 directed by the DEPARTMENT.

Prepare construction plans for the installation of ITS conduit and fiber along SR 202 (JT Butler) from Philips Highway to SR A1A in Duval County.
2.1 Project General and Roadway (Activities 3, 4, and 5)

Public Involvement: \textit{N/A}

Other Agency Presentations/Meetings: \textit{N/A}

Joint Project Agreements: \textit{N/A}

Specification Package Preparation: \textit{Specs on the Web}

Value Engineering: \textit{N/A}

Risk Assessment Workshop: \textit{N/A}

Plan Type: \textit{Plan only}.

Typical Section: \textit{SR 202 (JT Butler) Mainline: (3) 12-foot lanes in each direction divided by a 17' paved barrier median with paved shoulders.}

\textit{SR 202 (JT Butler) Mainline: (2) 12-foot lanes in each direction divided by a 40’ grass median with guardrail and paved shoulders.}

Pavement Design: \textit{N/A}

Pavement Type Selection Report(s): \textit{N/A}

Cross Slope: \textit{N/A}

Access Management Classification: \textit{1 - Freeway & 3 - Restrictive (660 ft. connection spacing)}

Transit Route Features: \textit{N/A}

Major Intersections/Interchanges: \textit{US 1 (Philips Highway), Bonneval, Belfort, Gate Parkway, I-95, I-295, Kernan, Hodges, San Pablo, SR A1A.}

Roadway Alternative Analysis: \textit{N/A}

Level of TCP Plans: \textit{Level 1}

Temporary Lighting: \textit{N/A}

Temporary Signals: \textit{N/A}

Temporary Drainage: \textit{N/A}

Design Variations/Exceptions: \textit{N/A}

Back of Sidewalk Profiles: \textit{N/A}

Selective Clearing and Grubbing: \textit{N/A}
2.2 Drainage (Activities 6a and 6b) *(Not applicable for this project)*

2.3 Utilities Coordination (Activity 7)

*The DEPARTMENT will be responsible for performing Utility Coordination for this project.*

*The CONSULTANT shall assist by performing the following activities:*

- Attending utility coordination meetings, and keeping and distributing of minutes/ action items of all utility meetings.
- Distributing all plans, conflict matrixes and changes to The DEPARTMENT’s District Utility Office (DUO). See Design Staff Hour Estimation (SHE) Guidelines, Task 4.5 for utility conflict location identification and adjustments.

*Anticipated utilities are to be determined during design.*

2.4 Environmental Permits, Compliances, and Environmental Clearances (Activity 8)

*The CONSULTANT shall be responsible for all permit coordination and fees.*

*SJRWMD and ACOE may be required for this project.*

The DEPARTMENT will provide compensatory wetland mitigation in accordance with Section 373.4137, Florida Statutes.

2.5 Structures (Activities 9 – 18)

**Bridge(s):** *Bridge mounted conduit will be necessary at some locations.*

Retaining Walls: *N/A*

Noise Barrier Walls: *N/A*

Miscellaneous: *N/A*

2.6 Signing and Pavement Markings (Activities 19 & 20) *(Not applicable for this project)*

2.7 Signalization (Activities 21 & 22)

**Intersections:** *Existing mainline signals are located at US 1 (Philips Highway), Bonneval and I-95. These signals will be tied into the proposed fiber system.*

Traffic Data Collection: *N/A*

Traffic Studies: *N/A*

Count Stations: *N/A*
Traffic Monitoring Sites: N/A

2.8 Lighting (Activities 23 & 24) *(Not applicable for this project)*

2.9 Landscape Architecture (Activities 25 & 26) *(Not applicable for this project)*

2.10 Survey (Activity 27) *(As needed)*

Design Survey: **SR 202 (JT Butler) from US 1 (Philips Highway) to SR A1A.**

Subsurface Utility Exploration: **SR 202 (JT Butler) from US 1 (Philips Highway) to SR A1A.**

Right of Way Survey: **SR 202 (JT Butler) from US 1 (Philips Highway) to SR A1A.**

Vegetation Survey: N/A

2.11 Photogrammetry (Activity 28) *(Not applicable for this project)*

2.12 Mapping (Activity 29) *(Not applicable for this project)*

2.13 Terrestrial Mobile LiDAR (Activity 30) *(Not applicable for this project)*

2.14 Architecture (Activity 31) *(Not applicable for this project)*

2.15 Noise Barriers (Activity 32) *(Not applicable for this project)*

2.16 Intelligent Transportation Systems (Activities 33 & 34)

*This design involves a fiber optic communication system trunk line that will serve as the backbone for future ITS deployments. Materials and equipment involved in this design include conduit, fiber optic cable, pull boxes, splice vaults, network switches and locate wire. The design should incorporate a minimum of two conduits for the trunk line, 144 strand single-mode fiber optic cable, pull boxes with a maximum spacing of one-thousand feet, splice vaults with a maximum spacing of twenty-five hundred feet and locate wire for the entire length of the project. Interconnection to the ITS Master Hub at the I-295/SR 202 Interchange will also be involved.*

*The design shall incorporate documentation for testing of the deployment at a local site, sub-system and system deployment level. There shall also be documentation required related to the District’s Regional ITS Architecture and Rule 940. A Concept of Operations, System Engineering Management Plan and Requirements Traceability Verification Matrix shall also be developed under this project. This work shall be accomplished through coordination with the local agency and Department.*

The Federal Highway Administration issued Rule 940 entitled Intelligent Transportation Systems (ITS) Architecture and Standards to ensure new projects conform to the National
ITS Architecture and standards as well as with a regional ITS architecture developed to reflect the local needs, issues, problems, and objectives for implementation.

For all projects with ITS activities, the CONSULTANT shall follow the Rule 940 requirements and use a Systems Engineering approach for determining the requirements for the project. The CONSULTANT shall develop all necessary documents to support the Rule 940 requirements like Concept of Operations (ConOPS), Systems Engineering Management Plan (SEMP), Requirements Traceability Verification Matrix (RTVM) and others as deemed necessary by the Department.

_The design shall incorporate the interconnection of two existing Dynamic Message Signs, six CCTV cameras and a Master Hub located at the I-295/ŚR 202 interchange. All layer two and layer three switches are existing and should be incorporated into the design._

The ITS shall operate from the Northeast Florida Regional Transportation Management Center (NFRTMC) located at 980 North Jefferson Street, Jacksonville, FL using the SunGuide® (SunGuide) Software.

**Interchanges: Gate Parkway, Kernan, Hodges, San Pablo and SR A1A.**

**Traffic Data Collection:** N/A

**Geographical Information System (GIS) Requirements:** CONSULTANT shall include in the design the GIS data collection requirements and deliverables for integration with SunGuide software and other Department GIS based asset management applications like ITS FM software.

All design efforts shall be based on deploying “open architecture” subsystems, while remaining fully compatible with previous designs (as applicable) and the FDOT ITS Specifications. All ITS field devices and support systems shall be designed and located outside of the clear zone, or behind protective barrier, within the right of way. This includes cabinets, poles, and support hardware. Utility conflicts shall be identified and resolved during the design phase. The location of design elements will be coordinated with the District Landscape Architect to optimize landscape opportunities. The design shall minimize theft and vandalism. The CONSULTANT shall include in the design vandal resistant mechanisms to minimize theft. The CONSULTANT shall provide additional redundant power and communications systems to minimize system downtime due to vandalism.

The CONSULTANT shall design the project subsystems such that they will be monitored and controlled from the FDOT’s TMC facilities located at 980 North Jefferson Street. The CONSULTANT shall ensure that all ITS field devices and ancillary components comply with the FDOT’s Approved Product List (APL) and are supported within the SunGuide software or other specified software, unless otherwise approved by the DEPARTMENT.

The CONSULTANT shall include in the design any required upgrade to the TMC central hardware, equipment racks, and equipment wiring, as directed by the FDOT project manager, to make the subsystems fully operations from the TMC facilities.

For projects with existing ITS, the CONSULTANT shall include in the design any required upgrade to existing ITS equipment to meet the latest FDOT standards, NEC requirements or
as directed by the FDOT project manager and to make the subsystems fully operations from the TMC facilities.

ITS coordination with Landscape Architecture shall include both underground conflicts and above-ground impacts to existing and/or proposed Landscaping. The CONSULTANT shall closely coordinate with the Landscape Architect to ensure that all conflicts are identified, addressed and mitigated in the Contract Documents.

2.17 Geotechnical (Activity 35) *(Not applicable for this project)*

2.18 3D Modeling (Activity 36) *(Not applicable for this project)*

2.19 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 *production date*. The current production date is *September 29, 2020*. 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 (4)* week review time for each phase submittal and any other submittals as appropriate.

The schedule shall indicate all required submittals.

All fees and price proposals are to be based on the negotiated schedule of 12 months for final construction contract documents. However, the contract deadline is 12 months from the Notice to Proceed.

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 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.

2.20 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.

2.21 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

- 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
- Americans with Disabilities Act (ADA) Standards for Accessible Design
- AASHTO – A Policy on Design Standards Interstate System
- AASHTO – Roadside Design Guide
- AASHTO – Roadway Lighting Design Guide
- AASHTO – A Policy for Geometric Design of Highways and Streets
- AASHTO – Highway Safety Manual
- Rule Chapter 5J-17, Florida Administrative Code (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 Computer Aided Design and Drafting (CADD) Manual
- FDOT Standard Plans
- FDOT Flexible Pavement Design Manual
- FDOT - Florida Roundabout Guide
- FDOT Handbook for Preparation of Specifications Package
- FDOT Standard Plans Instructions
- FDOT Materials Manual
- FDOT Pavement Type Selection Manual
- FDOT Design Manual
- FDOT Procedures and Policies
- FDOT Procurement Procedure 001-375-030, Compensation for Consultant Travel Time on Professional Services Agreements
- 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
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- Manual on Speed Zoning for Highways, Roads, and Streets in Florida
- Federal Highway Administration (FHWA) - Manual on Uniform Traffic Control Devices (MUTCD)
- 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
  - FDOT Drainage Connection Permit Handbook
  - FDOT Bridge Scour Manual
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 Manual on Uniform Traffic Studies (MUTS)
- FDOT Median Handbook
- National Electric Safety Code
- National Electrical Code

Florida’s Turnpike Enterprise
- Florida’s Turnpike Plans Preparation and Practices Handbook (TPPPH)
- 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
- Florida’s Turnpike General Tolling Requirements (GTR)
- Additional Florida’s Turnpike Enterprise standards, guides, and policies for design and construction can be found on the FTE Design Website:
  http://design.floridasturnpike.com

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
  o AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications and Interims
  o AASHTO LRFD Movable Highway Bridge Design Specifications and Interims
  o AASHTO/-AWS-D1. 5M/D1.5: An American National Standard Bridge Welding Code
  o AASHTO Guide Specifications for Structural Design of Sound Barriers
  o AASHTO Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges
  o FDOT Bridge Load Rating Manual
  o FDOT Structures Manual
  o FDOT Structures Design Bulletins (available on FDOT Structures web site only)

• Geotechnical
  o FHWA Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Specifications
  o Manual of Florida Sampling and Testing Methods
  o Soils and Foundation Handbook

• Landscape Architecture
  o Florida Department of Agriculture and Consumer Services Grades and Standards for Nursery Plants

• Architectural
  o Building Codes
  o Florida Building Code:
    • Building
    • Fuel Gas
    • Mechanical
    • Plumbing
    • Existing Building
  o Florida Accessibility Code for Building Construction
  o Rule Chapter 60D, F.A.C., Division of Building Construction
  o Chapter 553, F.S. – Building Construction Standards
  o ANSI A117.1  2003 Accessible and Usable Building and Facilities
  o Titles II and III, Americans With Disabilities Act (ADA), Public Law 101-336; and the ADA Accessibility Guidelines (ADAAG)

• Architectural – Fire Codes and Rules
  o National Fire Protection Association (NFPA) - Life Safety Code
o NFPA 70 - National Electrical Code
o NFPA 101 - Life Safety Code
o NFPA 10 - Standard for Portable Fire Extinguishers
o NFPA 11 - Standard for Low-Expansion Foam Systems
o NFPA 11A - Standard for High- and Medium-Expansion Foam Systems
o NFPA 12 - Standard for Carbon Dioxide Extinguishing Systems
o NFPA 13 - Installation of Sprinkler Systems
o NFPA 30 - Flammable and Combustible Liquids Code
o NFPA 54 - National Gas Fuel Code
o NFPA 58 - LP-Gas Code
o 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
o NFPA 10 - Fire Extinguishers
o NFPA 13 - Sprinkler
o NFPA 14 - Standpipe and Hose System
o NFPA 17 - Dry Chemical
o NFPA 20 - Centrifugal Fire Pump
o NFPA 24 - Private Fire Service Mains
o NFPA 200 - Standard on Clean Agent Fire Extinguishing Systems

▪ Architectural – Detection and Fire Alarm Systems
o NFPA 70 - Electrical Code
o NFPA 72 - Standard for the Installation, Maintenance and Use of Local Protective Signaling Systems
o NFPA 72E - Automatic Fire Detectors
o NFPA 72G - Installation, Maintenance, and Use of Notification Appliances
o NFPA 72H - Testing Procedures for Remote Station and Proprietary Systems
o NFPA 74 - Household Fire Warning Equipment
o NFPA 75 - Protection of Electronic Computer Equipment

▪ Architectural – Mechanical Systems
o NFPA 90A - Air Conditioning and Ventilating Systems
o NFPA 92A - Smoke Control Systems
o NFPA 96 - Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment
o NFPA 204M - Smoke and Heating Venting

▪ Architectural – Miscellaneous Systems
o NFPA 45 - Laboratories Using Chemicals
o NFPA 80 - Fire Doors and Windows
o NFPA 88A - Parking Structures
o NFPA 105 - Smoke and Draft-control Door Assemblies
o NFPA 110 - Emergency and Standby Power Systems
o NFPA 220 - Types of Building Construction
o NFPA 241 - Safeguard Construction, Alteration, and Operations
o Rule Chapter 69A-47, F.A.C., Uniform Fire Safety For Elevators
o Rule Chapter 69A-51, F.A.C., Boiler Safety

- Architectural – Energy Conservation
  o Rule Chapter 60D-4, F.A.C., Rules For Construction and Leasing of State Buildings To Insure Energy Conservation
  o Section 255.255, F.S., Life-Cycle Costs

- Architectural – Elevators
  o Rule Chapter 61C-5, F.A.C., Florida Elevator Safety Code
  o ASME A-17.1, Safety Code for Elevators and Escalators
  o Architectural – Floodplain Management Criteria
  o Section 255.25, F.S., Approval Required Prior to Construction or Lease of Buildings
  o Rules of the Federal Emergency Management Agency (FEMA)

- Architectural – Other
  o Rule Chapter 64E-6, F.A.C., Standards for On Site Sewage Disposal Systems (Septic Tanks)
  o Rule Chapter 62-600, F.A.C., Domestic Wastewater Facilities
  o Rule Chapter 62-761, F.A.C., Underground Storage Tank Systems
  o American Concrete Institute
  o American Institute of Architects - Architect’s Handbook of Professional Practice
  o American Society for Testing and Materials - ASTM Standards
  o Brick Institute of America
  o DMS - Standards for Design of State Facilities
  o Florida Concrete Products Association
  o FDOT – ADA/Accessibility Procedure
  o FDOT – Building Code Compliance Procedure
  o FDOT – Design Build Procurement and Administration
  o LEED (Leadership in Energy and Environmental Design) Green Building Rating System
  o National Concrete Masonry Association
  o National Electrical Code
  o Portland Cement Association - Concrete Masonry Handbook
  o United State Green Building Council (USGBC)

2.22 Services to be Performed by the DEPARTMENT When appropriate and /or available, the DEPARTMENT will provide project data including:

- 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.
- Previously constructed Highway Beautification or Landscape Construction Plans
- Landscape Opportunity Plan(s)
- 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 36 (3D Modeling). 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 is responsible for producing a construction cost estimate and reviewing and updating the cost estimate when scope changes occur and/or at milestones of the project. Prior to 60% plans or completion of quantities, the DEPARTMENT’s Long Range Estimate (L.R.E.) system will 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 AASHTOWare Project Preconstruction through the use of the DEPARTMENT’s Designer Interface for generating the summary of quantities and the FDOT’s in-house estimates. A Summary of Pay Items sheet shall be prepared with all required Plans submittals as required.

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 Standard Specifications and implemented modifications in any way.

The Technical Special Provisions shall provide a description of work, materials, equipment and specific requirements, method of measurement and basis of payment. Proposed Technical Special Provisions will 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 will allow for adequate processing time prior to final submittal. The Technical Special Provisions will 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.

Modified Special Provisions: The CONSULTANT shall provide Modified Special Provisions as required by the project. Modified Special Provisions are defined in the Specifications Handbook.

A Modified 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 and Central Specifications Offices to be included in the project's specifications package.

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) working days of attending the meeting.

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. The purpose of CONSULTANT plan reviews is to ensure that CONSULTANT plans follow the plan preparation procedures outlined in the FDOT Design 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 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 shall be one specifically designed for this project. 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, landscape, 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 will 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 products and
Independent Peer Review: When directed by the DEPARTMENT, a subconsultant may perform Independent Peer Reviews.

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’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 meet the FDM, Standard Plans 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 (Not applicable for this project)
   3.1.1 Community Awareness Plan (Not applicable for this project)
   3.1.2 Notifications (Not applicable for this project)
   3.1.3 Preparing Mailing Lists (Not applicable for this project)
   3.1.4 Median Modification Letters (Not applicable for this project)
   3.1.5 Driveway Modification Letters (Not applicable for this project)
3.1.6 Newsletters (Not applicable for this project)

3.1.7 Renderings and Fly-Throughs (Not applicable for this project)

3.1.8 PowerPoint Presentations (Not applicable for this project)

3.1.9 Public Meeting Preparations (Not applicable for this project)

3.1.10 Public Meeting Attendance and Follow-up (Not applicable for this project)

3.1.11 Other Agency Meetings (Not applicable for this project)

3.1.12 Web Site (Not applicable for this project)

3.2 Joint Project Agreements

When the Joint Project Agreement (JPA) deliverable is not prepared by the CONSULTANT, services may include all coordination, meetings, etc., required to ensure compatibility, include JPA documents in the contract plans package and include the JPA documents in the digital delivery package.

3.3 Specifications Package Preparation

The CONSULTANT shall prepare and provide a specifications package in accordance with the DEPARTMENT’S Procedure Topic No. 630-010-005 Specifications Package Preparation and the Specifications Handbook. The CONSULTANT shall provide the DEPARTMENT 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 on the submittal requirements, but at a minimum shall 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 digitally signed, dated, and sealed in accordance with applicable Florida Statutes.

3.4 Contract Maintenance and Project Documentation

Contract maintenance includes project management effort for complete setup and maintenance of files, electronic folders and documents, developing technical monthly progress reports and schedule updates. Project documentation includes the compilation and
delivery of final documents, reports or calculations that support the development of the contract plans; includes uploading files to Electronic Document Management System (EDMS) or Project Suite Enterprise Edition (PSEE).

3.5 Value Engineering (Multi-Discipline Team) Review (*Not applicable for this project*)

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 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

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 as a contract amendment.

3.8 Post Design 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.

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

3.9 Digital Delivery

The CONSULTANT shall deliver final contract plans and documents in digital format. The final contract plans and documents shall be digitally signed and sealed files delivered to the DEPARTMENT on acceptable electronic media, as determined by the DEPARTMENT.

3.10 Risk Assessment Workshop (*Not applicable for this project*)

3.11 Railroad, Transit and/or Airport Coordination (*Not applicable for this project*)

3.11.1 Aeronautical Evaluation (*Not applicable for this project*)

3.12 Landscape and Existing Vegetation Coordination (*Not applicable for this project*)

3.13 Other Project General Tasks (*Not applicable for this project*)

4 ROADWAY ANALYSIS

*Tasks 4.1 – 4.26 are not applicable to this project.*
5 ROADWAY PLANS

Tasks 5.1 – 5.29 are not applicable to this project.

6a DRAINAGE ANALYSIS

Tasks 6a.1 – 6a.27 are not applicable to this project.

6b DRAINAGE PLANS

Tasks 6b.1 – 6b.14 are not applicable to this project.

7 UTILITIES

The DEPARTMENT 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 DEPARTMENT shall certify all utility negotiations have been completed and that arrangements have been made for utility work to be undertaken.

7.1 Utility Kickoff Meeting

To be performed by the DEPARTMENT.

7.2 Identify Existing Utility Agency Owner(s)

To be performed by the DEPARTMENT.

7.3 Make Utility Contacts

To be performed by the DEPARTMENT.

7.4 Exception Processing

To be performed by the DEPARTMENT.

7.5 Preliminary Utility Meeting (Not applicable to this project.)

7.6 Individual/Field Meetings

To be performed by the DEPARTMENT.

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

To be performed by the DEPARTMENT.

7.8 Subordination of Easements Coordination
To be performed by the DEPARTMENT.

7.9 Utility Design Meeting

The CONSULTANT shall be prepared to discuss drainage, traffic signalization, and maintenance of traffic (construction phasing), review the current design schedule and letting date, 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 deemed practical by the UAO. 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

To be performed by the DEPARTMENT. The CONSULTANT shall review and sign each Utility Work Schedule (UWS) and compare it to the construction plans for accuracy as needed.

7.11 Utility Coordination/Follow-up

To be performed by the DEPARTMENT.

7.12 Utility Constructability Review

To be performed by the DEPARTMENT.

7.13 Additional Utility Services

To be performed by The DEPARTMENT. The CONSULTANT shall assist with utility permit reviews as needed.

7.14 Processing Utility Work by Highway Contractor (UWHC)

To be performed by the DEPARTMENT.

This does not include the utility design effort. This item is not usually included in the scope at the time of negotiation. It is normally added as a supplemental agreement when the need is identified. Effort for the EOR is not included in this task, see Roadway Analysis Task Group 4.

7.15 Contract Plans to UAO(s)

To be performed by the DEPARTMENT.
7.16 Certification/Close-Out

*To be performed by the DEPARTMENT.*

7.17 Other Utilities

*To be performed by the DEPARTMENT.*

8 ENVIRONMENTAL PERMITS, Compliance, and ENVIRONMENTAL Clearances

The CONSULTANT shall notify the DEPARTMENT Project Manager, Environmental Permit Coordinator, and other appropriate DEPARTMENT 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. The Consultant shall use current regulatory guidelines and policies for all permits required as identified in Section 2.4.

8.1 Preliminary Project Research

The CONSULTANT shall perform preliminary project research and shall be responsible for regulatory agency coordination to assure that design efforts are properly directed toward permit requirements. The research shall include but should not be limited to a review of the project’s PD&E documents including the Environmental Document, Natural Resources Evaluation, and Cultural Resources Assessment Survey.

The CONSULTANT shall research any existing easements or other restrictions that may exist both within or adjacent to the proposed project boundary. Project research may include but should not be limited to review of available: federal, state, and local permit files and databases; and local government information including county and property appraiser data. The CONSULTANT shall determine if any Sovereign Submerged Lands easements need to be modified or acquired. Any applicable information will be shown on the plans as appropriate.

8.2 Field Work

8.2.1 Pond Site Alternatives: N/A

8.2.2 Establish Wetland Jurisdictional Lines and Assessments:

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

- Determine landward extent of wetlands and other surface waters as defined in Rule Chapter 62-340, F.A.C., as ratified in Section 373.4211, F.S.
- Collect all data and information necessary to determine the jurisdictional boundaries of wetlands and other surface waters as defined by the rules or regulations of each permitting agency processing a DEPARTMENT permit application for the project.
- Set seasonal high water levels
- Obtain a jurisdictional determination as defined by the rules or regulations of each permitting agency processing a DEPARTMENT permit application for the project.
- Prepare aerial maps showing the jurisdictional boundaries of wetlands and other surface waters. Aerial maps shall be reproducible, of a scale of 1”=400’ or more detailed and be recent photography. The maps shall show the jurisdictional boundaries of each agency. Photo copies of aerials are not acceptable. When necessary, a wetland specific survey will be prepared by a registered surveyor and mapper. All surveyed jurisdictional boundaries are to be tied to the project’s baseline of survey.

- Prepare a written assessment of the current condition and functional value of the wetlands and other surface waters. Prepare data in tabular form which includes the ID number for each wetland (and other surface water, if necessary) impacted, size of wetland to be impacted, type of impact, and identify any wetland (by ID number and size) within the project limits that will not be impacted by the project.

- Prepare appropriate agency forms to obtain required permits. Forms may include but are not limited to the United States Army Corps of Engineers (USACE) “Wetland Determination Data Form – Atlantic and Gulf Coastal Plain Region”; the USACE “Approved Jurisdictional Determination Form”; Uniform Mitigation Assessment Method forms and/or project specific data forms.

8.2.3 Species Surveys:
The CONSULTANT shall conduct wildlife surveys as defined by rules or regulations of any permitting agency, or commenting agency that is processing a DEPARTMENT permit.

8.3 Agency Verification of Wetland Data

The CONSULTANT shall be responsible for verification of wetland and other surface water data identified in Section 8.2 and coordinating regulatory agency field reviews, including finalization of assessments and jurisdictional determinations with applicable agencies.

8.4 Complete and Submit All Required Permit Applications

The CONSULTANT shall collect all of the data and information necessary to prepare the permit applications and obtain the environmental permits required to construct the project as identified in the Project Description and as described in 8.4.1, 8.4.2, and 8.12 (Other Permits). The CONSULTANT shall prepare each permit application in accordance with the rules and/or regulations of the regulatory agency responsible for issuing a specific permit and/or authorization to perform work. The permit application packages must be approved by the DEPARTMENT prior to submittal to regulatory agencies.

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

8.4.1 Complete and Submit all Required Wetland Permit Applications:

The CONSULTANT shall prepare, complete, and submit required wetland permit (i.e. ERP, Section 404) application packages to the appropriate regulatory agencies. This includes, but is not limited to, applications submitted to WMDs and/or DEP, and USACE. The application package may include but is not limited to attachments (i.e. project location map, aerials, affidavit of ownership, pictures, additional technical analysis, etc.), a cover letter with project description as well as completion of applicable agency forms. The CONSULTANT shall prepare and respond to agency Requests for Additional Information (RAIs), including necessary revisions to the application package. All responses and completed application packages must be approved by the District Permit Coordinator prior to submittal to the regulatory agencies. Geotechnical permitting should also be prepared, submitted, and obtained.
8.4.2 Complete and Submit all Required Species Permit Applications:

The CONSULTANT shall prepare, complete and submit required species permit applications to the appropriate agencies. This includes federal and state protected species permit application packages as required. The work includes completion of application package (i.e. project location map, aerials, affidavit of ownership, pictures, additional technical analysis, etc.), and cover letter with project description as well as completion of applicable forms. The CONSULTANT shall respond to agency RAIs, including necessary revisions to the application package. All responses and completed applications must be approved by the District Permit Coordinator prior to submittal to the regulatory agency.

8.5 Coordinate and Review Dredge and Fill Sketches (As needed)

8.6 Prepare USCG Permit Application

8.7 Prepare Water Management District or Local Water Control District Right of Way Occupancy Permit Application (Not applicable for this project)

8.8 Prepare Coastal Construction Control Line (CCCL) Permit Application (Not applicable for this project)

8.9 Prepare Tree Permit Information (Not applicable for this project)

8.10 Compensatory Mitigation Plan (Not applicable for this project)

8.11 Mitigation Coordination and Meetings (Not applicable for this project)

8.12 Other Environmental Permits (Not applicable for this project)

ENVIRONMENTAL CLEARANCES, RE-EVALUATIONS, AND TECHNICAL SUPPORT

8.13 Technical Support to the DEPARTMENT for Environmental Clearances and Re-evaluations (use when CONSULTANT provides technical support only) (Not applicable for this project)

8.14 Preparation of Environmental Clearances and Re-evaluations (use when CONSULTANT prepares all documents associated with a re-evaluation) (Not applicable for this project)

8.15 Contamination Impact Analysis (Not applicable for this project)

8.16 Asbestos Survey (Not applicable for this project)

8.17 Technical Meetings

8.18 Quality Assurance/Quality Control

8.19 Supervision
8.20 Coordination

9 STRUCTURES - SUMMARY AND MISCELLANEOUS TASKS AND DRAWINGS

Tasks 9.1 – 9.16 are not applicable to this project.

10 STRUCTURES - BRIDGE DEVELOPMENT REPORT

Tasks 10.1 – 10.35 are not applicable to this project.

11 STRUCTURES - TEMPORARY BRIDGE

Tasks 11.1 – 11.8 are not applicable to this project.

12 STRUCTURES - SHORT SPAN CONCRETE BRIDGE

Tasks 12.1 – 12.28 are not applicable to this project.

13 STRUCTURES - MEDIUM SPAN CONCRETE BRIDGE

Tasks 13.1 – 13.55 are not applicable to this project.

14 STRUCTURES - STRUCTURAL STEEL BRIDGE

Tasks 14.1 – 14.62 are not applicable to this project.

15 STRUCTURES - SEGMENTAL CONCRETE BRIDGE

Tasks 15.1 – 15.77 are not applicable to this project.

16 STRUCTURES - MOVABLE SPAN

Tasks 16.1 – 16.102 are not applicable to this project.

17 STRUCTURES - RETAINING WALLS

Tasks 17.1 – 17.21 are not applicable to this project.

18 STRUCTURES - MISCELLANEOUS
Tasks 18.1 – 18.35 are not applicable to this project.

19 SIGNING AND PAVEMENT MARKING ANALYSIS

Tasks 19.1 – 19.16 are not applicable to this project.

20 SIGNING AND PAVEMENT MARKING PLANS

Tasks 20.1 – 20.15 are not applicable to this project.

21 SIGNALIZATION ANALYSIS

Tasks 21.1 – 21.19 are not applicable to this project.

22 SIGNALIZATION PLANS

Tasks 22.1 – 22.18 are not applicable to this project.

23 LIGHTING ANALYSIS

Tasks 23.1 – 23.17 are not applicable to this project.

24 LIGHTING PLANS

Tasks 24.1 – 24.14 are not applicable to this project.

25 LANDSCAPE ARCHITECTURE ANALYSIS

Tasks 25.1 – 25.17 are not applicable to this project.

26 LANDSCAPE ARCHITECTURE PLANS

Tasks 26.1 – 26.16 are not applicable to this project.

27 SURVEY (As needed)

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 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) *(Not applicable for this project)*

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
27.8 **Roadway Cross Sections/Profiles (Not applicable for this project)**

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**

Designation includes 2-dimensional collection of existing utilities and selected 3-dimensional verification as needed for designation. Location includes non-destructive excavation to determine size, type and location of existing utility, as necessary for final 3-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.

27.11 **Outfall Survey (Not applicable for this project)**

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 (Not applicable for this project)**

27.16 **Mitigation Survey**

Refer to tasks of this document as applicable.

27.17 **Jurisdiction Line Survey**
Perform field location (2-dimensional) of jurisdiction limits as defined by respective authorities, also includes field edits, analysis and processing of all field collected data, preparation of reports.

27.18 Geotechnical Support

Perform 3-dimensional (X,Y,Z) field location, or stakeout, of boring sites established by 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 (Not applicable for this project)

27.21 Maintained R/W

Perform field location (2-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, preparation of reports.

27.22 Boundary Survey (Not applicable for this project)

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 (Not applicable for this project)

27.27 Work Zone Safety

Provide work zone as required by DEPARTMENT standards.

27.28 Miscellaneous Surveys

Refer to tasks of this document, as applicable, to perform surveys not described herein. The percent for Supplemental will be determined at negotiations. This item can only be used if authorized in writing by the District Surveyor (DS), District Location Surveyor (DLS) or
their representative.

27.29 Supplemental Surveys

Supplemental survey days and hours are to be approved in advance by DS or DLS. Refer to tasks of this document, as applicable, to perform surveys not described herein.

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 and any resolution meetings if required, 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. These activities must be performed by the project supervisor, a Florida P.S.M. or their delegate as approved by the District Surveying Office.

28 PHOTOGRAFMETRY

Tasks 28.1 – 28.25 are not applicable to this project.

29 MAPPING

Tasks 29.1 – 29.36 are not applicable to this project.

30 TERRESTRIAL MOBILE LiDAR

Tasks 30.1 – 30.19 are not applicable to this project.
31 ARCHITECTURE DEVELOPMENT

Tasks 31.1 – 31.143 are not applicable to this project.

32 NOISE BARRIERS IMPACT DESIGN ASSESSMENT IN THE DESIGN PHASE

Tasks 32.1 – 32.9 are not applicable to this project.

33 INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS

The CONSULTANT shall analyze and document Intelligent Transportation System (ITS) Analysis Tasks in accordance with all applicable manuals, guidelines, standards, handbooks, procedures, existing ITS standard operating procedures, strategic plans, Florida’s SEMP guidelines, National and regional ITS architectures, and current design memoranda.

ITS work includes the application of sensor, computer, electronics and communication technologies and management strategies, in an integrated manner, to improve the safety and efficiency of the surface transportation system. ITS includes, but is not limited to, Advanced Traffic Management Systems (ATMS), Advanced Traveler Information Systems (ATIS), Advanced Rural Transportation Systems (ARTS), Advanced Public Transportation Systems (APTS), Advanced Highway Systems (AHS), Commercial Vehicle Operation (CVO) and Electronic Toll Collection (ETC) Systems.

In instances where the CONSULTANT performs analysis or prepares the design packages for the deployment of ITS, the CONSULTANT will not be allowed to compete as a proposing firm, or participate as a subconsultant to a proposing firm during subsequent advertisements involving work performed under this contract.

33.1 ITS Analysis

The CONSULTANT shall review the approved preliminary engineering report, typical section package, traffic technical memorandum and proposed geometric design alignment to identify impacts to existing ITS components (if applicable) and proposed ITS field device placements. The CONSULTANT shall review all related District ITS plans and documentation for the project corridor to ensure all cited ITS elements are included in this project, and develop a Concept of Operations (ConOps), Project Systems Engineering Management Plan (PSEMP), RTVM, and other documents as necessary for conformance with Federal Highway Administration (FHWA) requirements. The CONSULTANT shall use applicable DEPARTMENT requirements and guidelines, including, but not limited to, the FDM, Standard Plans, and Standard Specifications for Road and Bridge Construction in the design of ITS. The CONSULTANT design is expected to include the following attributes, facilities, infrastructure, ITS devices, systems, and associated work:

144-strand fiber optics, a minimum of two conduits, interconnection to two existing Dynamic Message signs, six existing CCTV cameras and one Master Hub.

CCTV camera system shall provide 100 percent coverage of all mainline lanes, entrance and exit ramps, interchanges (includes view of crossing arterials), blind spots (such as those
caused due to existing and proposed bridges, existing and proposed signage, vegetation, and horizontal and vertical curvatures). Cameras shall be spaced to meet the Project requirements, guidance from the ConOps, and as approved by the DEPARTMENT.

Vehicle detection devices shall be spaced as required to meet the Project requirements (speed, volume, and occupancy detection), guidance from the ConOps and as approved by the DEPARTMENT.

Both expressway and arterial dynamic message signs (DMS) shall be located to meet the Project requirements, guidance from the ConOps, and as approved by the DEPARTMENT. All FDOT FDM requirements shall be met for DMS locations. DMS locations shall be designed in conjunction with the Project’s master signing design.

The CONSULTANT shall review the existing TMC Operations and develop additional incident management service requirements as necessary to support during the Construction Phase of the Project. The CONSULTANT shall coordinate with District’s Traffic Operations ITS Office for additional information regarding existing Incident Management and TMC Operational Procedures (If desired by the District).

All ITS devices shall be compatible with the latest version of the National Transportation Communications for ITS Protocol (NTCIP) and compatible with SunGuide software platform.

The CONSULTANT shall design the project such that all ITS field devices and ancillary components comply with FDOT’s Approved Product List (APL) and are supported within the SunGuide software or other software approved by the DEPARTMENT.

33.2 Communications

The CONSULTANT shall be responsible for the development of a communications plan to determine the optimal communications medium for the project corridor. The plan shall be developed prior to submittal of Phase I plans. The plan shall identify communications media alternatives and provide a cost estimate that includes initial, operations and maintenance cost for the life cycle of the communications network. The plan shall ensure that video, voice, and data will be communicated in real-time between center-to-field and center-to-center (C2C) nodes as applicable. The communications system design must utilize non-proprietary, open-architecture, standards-based, robust, scalable, and proven technology. The communication plan analysis shall address communication and connections between field devices, communications and connections between field devices and the TMC, center-to-center communications between TMCs, and any other communication links or connections required to meet project goals. The plan must include bandwidth analysis and recommendations, needs assessment, and provide recommendations regarding minimum requirements, media, network devices, protocols, network topology, communication redundancy, future needs, spare capacity, and any communications or data sharing with other agencies.

After approval of the plan, the CONSULTANT shall submit a revised plan including a detailed design analysis for each submittal. The CONSULTANT’s communications design shall include multiple redundant paths for each location, which allows for automatic switching of communications path onto a secondary path, if the primary path is impacted (if desired by the District).

The communications system components shall be in accordance with Sections 630, 633, and
635 of the latest FDOT Standard Specifications for Road and Bridge Construction (online edition).

33.3 Grounding and Lightning Protection

The CONSULTANT shall be responsible for a complete and reliable grounding and lightning protection design to provide personnel and equipment protection against faults, surge currents and lightning transients.

The grounding and lightning protection system shall be designed in accordance with the latest version of the FDOT Standard Specifications for Road and Bridge Construction, Specification 620.

33.4 Power Subsystem

The CONSULTANT shall be responsible for an electrical design in accordance with all NEC requirements. No solar power should be utilized as a power solution for the Project unless otherwise approved by the DEPARTMENT. To enhance power reliability, the CONSULTANT shall design a power distribution and backup system consisting of, at a minimum, underground power conduits and conductors, transformers, generators, automatic transfer switches, UPS, and all associated equipment. The power backup system shall supply electrical power in event of commercial power supply failure for all system components. Power equipment shall be installed in areas to avoid wet locations. All connections and equipment shall be protected from moisture and water intrusion. The CONSULTANT shall ensure that vandal resistant mechanisms for all electrical infrastructure shall be included as part of the Design.

The CONSULTANT shall submit the power system design and voltage drop calculations for the power distribution system as part of phase II, III, and IV design submittals. The CONSULTANT shall conduct a short circuit and protection coordination study for the designed power system and document the study as part of the power system design report.

33.5 Voltage Drop Calculations

The electrical design shall address allowable voltage drops per the NEC. The CONSULTANT shall submit voltage drop calculations for any electrical circuit providing power to the ITS field devices beyond the electric utility service point. The calculations shall document the length of each circuit, its load, the size conductor or conductors used and their ohm resistance values and the required voltages from the service point to the respective ITS devices to maintain voltage drops with allowable limits. 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. Load analysis calculations shall be submitted. All voltage drop calculations shall allow for future expansion of ITS infrastructure, if identified in the Project ConOps.

33.6 Design Documentation

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

- Computation books for all applicable items on plans.
- Phase submittal checklist.
- Three-way quantity check list
- Structural calculations for all structures
- Voltage drop calculations.
- Load analysis calculations.

33.7 Existing ITS

The CONSULTANT shall research any required legacy system or system components that may be impacted by new work, such as: existing communications; existing types, numbers, locations, models, manufacturers, and age of ITS devices; as-built plans; existing operating software; existing center-to-field devices; and C2C communications and capabilities.

33.8 Queue Analysis *(Not applicable for this project)*

33.9 Reference and Master ITS Design File

The CONSULTANT shall prepare the ITS design file to include all necessary design elements and the reference files for topo, R/W roadway, utilities files, etc. This effort includes the design and layout of proposed ITS devices, including but not limited to: CCTV / Detection poles, DMS, detection devices, advanced traffic controllers, conduit, cabinet-related pull boxes, service points, fiber optic sizing, and communications hubs. All existing ITS infrastructure shall be referenced to the new ITS plan sheets (if applicable).

33.10 Reference and Master Communications Design File

The CONSULTANT shall prepare the communication design file to include all necessary design elements and all associated reference files as well as reference files of topo, R/W, roadway, utilities files, existing ITS communications infrastructure, etc. This effort includes design and layout of proposed communications conduit, cabinet, pull boxes, splice boxes, standard route markers, communications plan overview, fiber optic splicing, connections, communications hubs, etc.

33.11 Pole Elevation Analysis *(Not applicable for this project)*

33.12 Sign Panel Design Analysis *(Not applicable for this project)*

33.13 Quantities

The CONSULTANT shall include all work required to determine the quantities for all items, including ITS structures and devices, interconnect, and infrastructure (such as conduits, pull boxes, splice boxes, fusion splices, splice enclosures, etc.). This work effort shall include generating accurate quantities for computing the engineer’s estimate as required by the District. Use digital submittal of plans as required by the DEPARTMENT.

33.14 Cost Estimate

The CONSULTANT shall prepare an engineer’s cost estimate for the project using historical data from the FDOT or from other Industry sources. The CONSULTANT shall also load the pay items and quantities into AASHTOWare Project Preconstruction for generating the Summary of Pay Items and the FDOT’s in-house estimates.

The CONSULTANT shall develop Technical Special Provisions (TSP) and Modified Special Provisions (MSP) for the specific items or conditions of the project that are not addressed in the FDOT’S Standard Specifications, Supplemental Specifications and Special Provisions.

33.16 Other ITS Analyses

33.17 Field Reviews

The CONSULTANT shall conduct a field review for the required phase submittals. The review shall identify necessary data for all elements of the project including, but not limited to, the following:

- Existing ITS Field Devices as compared with the latest FDOT standards and District requirements
- Device Make, Model, Capabilities, Condition / Age, Existence of SunGuide Software Driver
- Condition of Structure(s), cabinets, and other above-ground infrastructure and devices
- Type of Detection as Compared With Current District Standards
- Underground Infrastructure
- Proximity of other utilities
- Traffic Operations
- Any other field reconnaissance as necessary to develop a complete ITS design package

33.18 Technical Meetings

The CONSULTANT shall attend meetings as necessary support the project.

33.19 Quality Assurance / Quality Control

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of designs, drawings, specifications, and other services and work 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 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 may be one specifically designed for this project. The CONSULTANT shall utilize the District’s quality control checklist. 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 their works.
33.20 Supervision

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

33.21 Coordination

The CONSULTANT shall coordinate with Survey, Geotech, Drainage, Structures, Lighting, Roadway Design, Utilities, municipalities, maintaining agencies and Traffic Operations to produce a final set of construction contract documents and to ensure that a high degree of accuracy for the design plans is achieved.

34 INTELLIGENT TRANSPORTATION SYSTEMS PLANS

The CONSULTANT shall prepare a set of ITS Plans in accordance with the FDOT Design Manual that includes the following:

34.1 Key Sheet

The CONSULTANT shall prepare the key sheet in accordance with the latest format depicted in the FDOT Design Manual.

MUTCD

Standard Specs

Standard Plans

34.2 Summary of Pay Items Including Designer Interface Quantity Input

The CONSULTANT shall include quantity input into Designer Interface and create the CADD generated sheet.

34.3 Tabulation of Quantities

The CONSULTANT shall place pay item numbers, descriptions, quantities and grand totals on the tabulation sheet(s) and provide updating of the tabulation of quantities sheets during the design period.

34.4 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.

34.5 Project Layout

The CONSULTANT shall prepare plan sheet(s) with an overview of the entire project that include stations and offsets, project limits, intersection locations, devices, device identification using SunGuide nomenclature, and plan sheet coverage.

34.6 Typical and Special Details
The CONSULTANT shall prepare typical and / or special details for conditions in the project not addressed by the DEPARTMENT’s Standard Plans for Design, Construction, Maintenance, and Utility Operations on the State Highway System. The CONSULTANT shall prepare special details not addressed by FDOT Standard Plans, including block diagrams, hub cabinets, wiring diagrams, solar power service, and special mounting details.

34.7 Plan Sheet

The CONSULTANT shall prepare the ITS plan sheets utilizing the Design file to include all necessary information related to the project design elements and all associated reference files. The plan sheets shall include general and pay item notes and pay items. The plans shall depict the location of pull boxes, splice boxes, conduit runs and device locations with setbacks from the travel way. Devices shall be located by station and offset.

34.8 ITS Communications Plans

The CONSULTANT shall prepare plans for the communications network. These plans shall consist of block diagrams, splicing diagrams, port assignments, wiring diagrams, and all other information necessary to convey the design concept to the contractor. These plans shall be included in the ITS plan set and be prepared in a manner consistent with immediately adjacent ITS project installations (planned or installed).

The communication system shall be an open-architecture, non-proprietary, real-time, multimedia communications network. The communication system design must be compatible and completely interoperable with the existing systems.

The CONSULTANT’s design shall include protecting and maintaining the existing ITS infrastructure. For locations where existing ITS infrastructure is impacted, the CONSULTANT’s design shall include mitigation to minimize the downtime of existing system as per the District’s requirements.

The CONSULTANT is responsible for the design of the communication infrastructure and its integration with the DEPARTMENT’s communication system. Additionally, the CONSULTANT shall determine the most cost effective, best performing, communication connectivity option. The communication system must allow command and control as well as data and video transmission between the field devices and the TMC at 980 North Jefferson Street.

Conduit paths shall be selected to provide a continuous duct system on one side of the road unless otherwise requested by the FDOT. The various components of ITS deployment will be located on both sides of the freeway and therefore under pavement bore and lateral conduits will be necessary to access equipment locations.

The CONSULTANT shall produce fiber optic cable splicing diagrams to show the connectivity of the fiber optic cable from its termini at field devices to the TMC. The diagrams shall denote new and existing fiber routes, splices, and terminations involved in the work. The diagrams shall identify cables by size, tube color / number and stand colors / numbers. All cables shall be identified either by numbering system identified either by numbering system identified on the plans or by bounding devices. The diagrams shall denote the types of connectors in the patch panels.

34.10 Grounding and Lightning Protection Plans
The CONSULTANT shall include efforts to design a complete and reliable lightning protection design for each pole and associated devices, ITS device installation, as well as device cabinets and communications hubs, etc. if not already addressed in the FDOT’s Standard Plans for Design, Construction, Maintenance and Utility Operations on the State Highway System.

34.11 Cross Sections

The CONSULTANT shall prepare cross sections for ITS devices.

34.12 Guide Sign Work Sheet(s)

The CONSULTANT shall prepare the guide sign work sheets to include all necessary information related to the design of the static and dynamic message signs in the project corridor.

34.13 Special Service Point Details

The CONSULTANT shall design any special service point and electrical distribution system beyond the electric utility company’s service point. The plan shall depict with pay items, general and plan notes the locations of transformers, switches, disconnects, conduits, pull boxes and power conductors. The plans shall identify the location of underground and overhead service points with identifying pole and transformer numbers.

34.14 Strain Pole Schedule (Not applicable for this project)

34.15 Overhead / Cantilever Sign Structure (Not applicable for this project)

34.16 Other Overhead Sign Structures (Long Span, Monotube, etc.) (Not applicable for this project)

34.17 Traffic Control Plans

The CONSULTANT shall prepare Traffic Control Plans (TCP) to minimize impact to traffic during the construction of ITS field devices and associated communications infrastructure that will be deployed along the project corridor.

The TCP shall strive to maintain and sustain center-to-field device connectivity and operability to the ITS field devices previously deployed along the project corridor. The TCP effort shall consider and mitigate the impacts of the project’s various construction phases so as to sustain center-to-field devices connectivity and operability, maintaining operational quality as a minimum at the level provided prior to construction start and minimizing down time as much as possible. The CONSULTANT shall develop the TCP sheets for the project, providing temporary communications as necessary, notes, details, and direction applicable to the ITS elements and associated communications for inclusion in the TCP.

The CONSULTANT shall review the existing TMC Operations and develop additional incident management service requirements as necessary to support during the Construction Phase of the Project. The CONSULTANT shall coordinate with District’s Traffic Operations ITS Office for additional information regarding existing Incident Management and TMC Operational Procedures.
34.18 Interim Standards

The CONSULTANT shall adhere to all Department’s Interim Standards for ITS applications.

34.19 GIS Data and Asset Management Requirements

The CONSULTANT is responsible for providing Geographic Information System (GIS), spatial data, for the ITS components design. This information is required to integrate ITS components to the SunGuide software. A coordinate point compatible with the Florida State Plane System or FDOT’s current coordinate plane system shall be collected for all ITS components part of the Project design. All GIS information provided shall be compatible with the FDOT’s ITS FM asset management software.

The information shall be transferred to the as-built plans and submitted to the District in electronic format along with the as-built plans.

The Global Positioning System (GPS) unit shall be provided by the CONSULTANT and used to collect data with a minimum accuracy of three (3) meters when differentially corrected. The CONSULTANT shall collect spatial data points and physical address location for:

- DMS location (mainline and arterial)
- Vehicle detection pole location
- CCTV camera pole location
- Ground mounted cabinets
- Fiber optic cable path (fiber backbone)
- Communications hubs
- Standard route markers
- Lateral fiber optic cable connections
- Lateral power cable connections
- Pull boxes (power and fiber)
- Splice boxes
- Power drops (service point and cable path)

34.20 Quality Assurance / Quality Control

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

34.21 Supervision

The CONSULTANT shall supervise all technical design activities.

35 GEOTECHNICAL

Tasks 35.1 – 35.55 are not applicable to this project.

36 3D MODELING
Tasks 36.1 – 36.9 are not applicable to this project.

37 PROJECT REQUIREMENTS

37.1 Liaison Office

The DEPARTMENT and the CONSULTANT will 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.

37.2 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 DEPARTMENT.

37.3 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.

37.4 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.

37.5 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 Modified Special Provisions, and plans as required by DEPARTMENT standards.

37.6 Computer Automation

The project will 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. The CONSULTANT shall submit final documents and files as described therein.

37.7 Coordination with Other Consultants
The CONSULTANT is to coordinate his 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.

37.8 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 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, 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.

38 INVOICING LIMITS

Payment for the work accomplished shall be in accordance with 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 ensure 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 shall 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.