January 31, 2019

EXHIBIT A

SCOPE OF SERVICES

FOR

TCN: 20204

DISTRICT 2

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SCOPE OF SERVICES FOR CONSULTING ENGINEERING SERVICES

FOR 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’s: To be assigned per Task Work Order

Federal Aid Project No.: N/A

County Section No.: Various

Description: District Wide Moveable & Complex Bridge Repairs

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: 0024 Bridge Repair / Rehabilitation

Major work groups include: 4.3.2 Complex Bridge Design

Minor work groups include: 4.1.2 Minor Bridge Design

4.2.1 Major Bridge Design – Concrete

4.2.2 Major Bridge Design – Steel

4.2.3 Major Bridge Design – Segmental

4.3.1 Complex Bridge Design – Concrete

4.3.2 Complex Bridge Design – Steel

4.4 Movable Span Bridge Design

5.4 Bridge Load Rating

Known alternative construction contracting methods include: N/A

The general objective is for the CONSULTANT to prepare sets 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 projects 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 projects 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.

The CONSULTANT shall incorporate the following into the design of these facilities: All plans and designs are to be prepared in accordance with the latest standard specifications adopted by AASHTO, FDOT Standard Specifications, Florida Design Manual, Structures Design Guidelines, Structures Detailing Manual, and directions from the State Structures Design Engineer, Structures Design Office and/or District Structures Design Engineer.

The CONSULTANT will provide one or more of the following engineering services or elements therein, as required by the DEPARTMENT.

Provide all necessary engineering and drafting services required for all phases of construction for each project. Plans will meet the minimum requirements as listed:

1. Painting - Provide a key sheet, plan, elevation, details, and incidental items.
2. Fender Replacements - Provide a key sheet, plan, elevation, details, the bill of materials, and incidental items.
3. Pile Jacket - Provide a key sheet, plan, elevation, details, and incidental items.
4. Moveable Bridge Repairs – Provide a key sheet, detailed plan, details of various repair items including mechanical and electrical, and structural repairs, summary of pay items, and incidental items.
5. Piling Replacement - Provide a key sheet, detailed plan, details of replacement, summary of pay items, and incidental items.
6. Cathodic Protection System - Provide a key sheet, detailed plan, details of electrical system, summary of pay items, and incidental items.
7. Saddle Bents Installation - Provide a key sheet, detailed plan, details of installation, summary of pay items, and incidental items.
8. Bridge Deck Replacement - Provide detailed plans, a key sheet, structural drawings, summary of pay items, and incidental items.
9. Joint Repairs - Provide a key sheet, detailed plan, details of installation, summary of pay
items and incidental items.

10. Beam Replacements - Provide detailed plans, a key sheet, summary of pay items, and other related services for beam replacements due to impact damage.

11. Scour Countermeasures - Provide scour analysis, unknown foundation analysis, and detailed plans, a key sheet, summary of pay items, and other related services for scour countermeasures.


13. Provide all calculations/reports required to document design decisions reached in completing the plan’s package.

14. Perform load ratings on simple and complex steel or concrete structures using Load Resistance Factor Rating (LRFR) method and all current FDOT guidelines for both FL 120 and Florida legal loads.

15. Provide preliminary prints adequately to control, coordinate and approve the design and to negotiate with utility companies, railroads, and others.

16. Prepare required permit drawings for other agencies’ coordination and approval.

17. Provide post design services for technical assistance and review of construction shop drawings.


19. Provide Technical Special Provisions and Specifications according to the Florida Department of Transportation’s Standard Specifications for Road and Bridge Construction dated 2010 or as updated, and all Supplements as noted on the plans.

The Consultant shall provide Technical Special Provisions for all items of work not covered by the Standard Specifications, Supplemental Specifications or Recurring Special Provisions. The current Supplemental Specifications are accessible on the Department’s mainframe computer. Standard Specifications should not be modified unless necessary to control project specific requirements. Each modification must be justified to the Department’s Specification Office to be included in the project’s Specifications Package as Technical Special Provisions. Prior to drafting Technical Special Provisions, the Consultant A-7
shall confer with the District Specifications Office. Technical Special Provisions shall be submitted in conformity with FDOT Handbook for Preparation of Specifications Package and FDOT procedure No. 700-020-010-c. If any portion of the project is Federally funded, all Technical Special Provisions must also conform to chapter 23, Part 635 of the Code of Federal Regulations for this project.

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

Public Involvement: Assist as needed.

Other Agency Presentations/Meetings: As needed.

Joint Project Agreements: As needed.


Value Engineering: N/A.

Risk Assessment Workshop: N/A.

Plan Type: As directed.

Typical Section: N/A.

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

Cross Slope: N/A.

Access Management Classification: N/A

Selective Clearing and Grubbing: As needed.

2.2 Drainage (Activities 6a and 6b) N/A.

2.3 Utilities Coordination (Activity 7) by the DEPARTMENT with Consultant assistance as noted
The CONSULTANT should coordinate with DEPARTMENT personnel to coordinate transmittals to Utility Companies and meet production schedules.

The CONSULTANT will attend Utility Design meetings with the DEPARTMENT and prepare meeting minutes.

The CONSULTANT will sign off on all Utility Work Schedules, and provide a Utility Conflict Matrix to the DEPARTMENT and update throughout the project duration as needed.

Utilities located within the project limits will be confirmed during design.

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

As needed – None anticipated.

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

2.5 Structures (Activities 9 – 18)

Bridge(s): Bridge repair/rehabilitation as needed.

Retaining Walls: N/A.

Noise Barrier Walls: N/A

Miscellaneous: N/A

2.6 Signing and Pavement Markings (Activities 19 & 20) N/A.

2.7 Signalization (Activities 21 & 22) N/A.

2.8 Lighting (Activities 23 & 24) N/A.

2.9 Landscape Architecture (activities 25 & 26) – Coordinate with the District Landscape Architect on any impacts to existing landscape, or irrigation.
2.10  Survey (Activity 27)

Design Survey: *As needed.*

Subsurface Utility Exploration: *As needed.*

Right of Way Survey: *N/A.*

Vegetation Survey: *N/A.*

2.11  Photogrammetry (Activity 28) *N/A.*

2.12  Mapping (Activity 29) *N/A.*

2.13  Terrestrial Mobile LiDAR (Activity 30) *N/A.*

2.14  Architecture (Activity 31) *N/A.*

2.15  Noise Barriers (Activity 32) *N/A.*

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

2.17  Geotechnical (Activity 35) *N/A.*

2.18  3D Modeling (Activity 36) *N/A.*

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 24 month design schedule provided by the DEPARTMENT. The current production date is *TBD* for each individual task. The schedule shall be accompanied by an anticipated payout and fiscal progress curve. For the purpose of scheduling, the CONSULTANT shall allow for a *five 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 general schedule of 24 months for final construction contract documents. However, the contract deadline is 120 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.)
o Chapters 20, 120, 215, 455, Florida Statutes (F.S.) – Florida Department of Business & Professional Regulations Rules
o Florida Department of Environmental Protection Rules
o FDOT Basis of Estimates Manual
o FDOT Computer Aided Design and Drafting (CADD) Manual
o FDOT Standard Plans
o FDOT Flexible Pavement Design Manual
o FDOT - Florida Roundabout Guide
o FDOT Handbook for Preparation of Specifications Package
o FDOT Standard Plans Instructions
o FDOT Materials Manual
o FDOT Pavement Type Selection Manual
o FDOT Design Manual
o FDOT Procedures and Policies
o FDOT Procurement Procedure 001-375-030, Compensation for
o Consultant Travel Time on Professional Services Agreements
o FDOT Project Development and Environmental Manual
o FDOT Project Traffic Forecasting Handbook
o FDOT Public Involvement Handbook
o FDOT Rigid Pavement Design Manual
o FDOT Standard Specifications for Road and Bridge Construction
o FDOT Utility Accommodation Manual
o Manual on Speed Zoning for Highways, Roads, and Streets in Florida
o Federal Highway Administration (FHWA) - Manual on Uniform Traffic
  Control Devices (MUTCD)
o FHWA – National Cooperative Highway Research Program (NCHRP) Report
  672, Roundabouts: An Informational Guide
o FHWA Roadway Construction Noise Model (RCNM) and Guideline
  Handbook
o Florida Fish and Wildlife Conservation Commission - Standard Manatee
  Construction Conditions 2005
o Florida Statutes (F.S.)
o Florida’s Level of Service Standards and Guidelines Manual for Planning
o Model Guide Specifications – Asbestos Abatement and Management in
  Buildings, National Institute for Building Sciences (NIBS)
o Quality Assurance Guidelines
o Safety Standards
o Any special instructions from the DEPARTMENT
o Roadway
o 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](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
- AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications and Interims
- AASHTO LRFD Movable Highway Bridge Design Specifications and Interims
- AASHTO/-AWS-D1. 5M/D1.5: An American National Standard Bridge Welding Code
- AASHTO Guide Specifications for Structural Design of Sound Barriers
- AASHTO Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges
- FDOT Bridge Load Rating Manual
- FDOT Structures Manual
- FDOT Structures Design Bulletins (available on FDOT Structures web site only)
  - Geotechnical
    - FHWA Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Specifications
    - Manual of Florida Sampling and Testing Methods
    - Soils and Foundation Handbook
  - Landscape Architecture
    - Florida Department of Agriculture and Consumer Services Grades and Standards for Nursery Plants
  - Architectural
    - Building Codes
      - Florida Building Code:
        - Building
        - Fuel Gas
        - Mechanical
        - Plumbing
        - Existing Building
      - Florida Accessibility Code for Building Construction
      - Rule Chapter 60D, F.A.C., Division of Building Construction
      - Chapter 553, F.S. – Building Construction Standards
      - ANSI A117.1 2003 Accessible and Usable Building and Facilities
      - Titles II and III, Americans With Disabilities Act (ADA), Public Law 101-336; and the ADA Accessibility Guidelines (ADAAG)
  - Architectural – Fire Codes and Rules
    - National Fire Protection Association (NFPA) - Life Safety Code
    - NFPA 70 - National Electrical Code
    - NFPA 10 - Standard for Portable Fire Extinguishers
    - NFPA 11 - Standard for Low-Expansion Foam Systems
    - NFPA 11A - Standard for High- and Medium-Expansion Foam Systems
    - NFPA 12 - Standard for Carbon Dioxide Extinguishing Systems
    - NFPA 13 - Installation of Sprinkler Systems
    - NFPA 30 - Flammable and Combustible Liquids Code
    - NFPA 54 - National Gas Fuel Code
    - NFPA 58 - LP-Gas Code
    - Florida Fire Prevention Code as adopted by the State Fire Marshal – Consult with the Florida State Fire Marshal’s office for other frequently used codes.
  - Architectural – Extinguishing Systems
    - NFPA 10 - Fire Extinguishers
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

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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 (*Tasks 3.1 – 3.13 as needed*)

**Project Common Tasks**

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

Cost Estimates: The CONSULTANT shall be responsible for producing a construction cost estimate and reviewing and updating the cost estimate when scope changes occur and/or at milestones of the project and/or when more than 6 months has lapsed between project milestones. Prior to 60% plans and 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 Phase II, III, and IV Plans submittals.

Technical Special Provisions: The CONSULTANT shall provide Technical Special A-20
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. If the EOR desires to have other offices review the Technical Special Provisions, they must be submitted to those offices and reviewed before the Phase III Specifications Office submittal. 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. There shall be a minimum of an initial field review and a 60% Plans-in-hand field review.

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
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 attend the meeting.
services.

Project General Tasks

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

3.1 Public Involvement

Public involvement includes communicating to all interested persons, groups, and government organizations information regarding the development of the project. The CONSULTANT shall provide to the DEPARTMENT drafts of all Public Involvement documents (i.e., newsletters, property owner letters, advertisements, etc.) associated with the following tasks for review and approval at least 15 business days prior to printing and / or distribution.

3.1.1 Community Awareness Plan

N/A

3.1.2 Notifications

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

3.1.3 Preparing Mailing Lists

N/A

3.1.4 Median Modification Letters

N/A

3.1.5 Driveway Modification Letters

N/A

3.1.6 Newsletters

N/A

3.1.7 Renderings and Fly-Throughs (As Needed)

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The CONSULTANT shall prepare renderings and fly-throughs for use in public meetings.

3.1.8 PowerPoint Presentations

N/A

3.1.9 Public Meeting Preparations

The CONSULTANT shall prepare the necessary materials for use in public meetings.

The CONSULTANT will investigate potential meeting sites to advise the DEPARTMENT on their suitability. The DEPARTMENT will pay all costs for meeting site rents and insurance. No DEPARTMENT meetings will be held on public school system properties.

3.1.10 Public Meeting Attendance and Follow-up

The CONSULTANT shall attend public meeting(s), assist with meeting setup and take down. The CONSULTANT shall also prepare a summary of the public meeting that includes all copies of all materials shown or provided at the public meeting. The summary shall also include a listing of all written comments made during or after the meeting and responses to those written comments.

The CONSULTANT will attend the meetings with an appropriate number of personnel to assist the DEPARTMENT’s Project Manager.

3.1.11 Other Agency Meetings

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

3.1.12 Web Site N/A.

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
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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 N/A.

3.11 Railroad, Transit and/or Airport Coordination As needed.

3.12 Landscape and Existing Vegetation Coordination

Coordinate to ensure preservation and protection of existing vegetation. Relocation of existing vegetation may be necessary in some cases. Space for proposed landscape should be preserved and conflicts with drainage, utilities, ITS, and signage should be minimized. Coordination with the District Landscape Architect may be necessary as defined in 4.12. Additionally, coordination with the Florida Scenic Highways program should be included to ensure any requirements of the FSH program are met.

3.13 Other Project General Tasks N/A.

4 ROADWAY ANALYSIS N/A.

5 ROADWAY PLANS N/A.

6 DRAINAGE ANALYSIS N/A.

7 UTILITIES (Coordination by the Department - Tasks 7.1 – 7.17 as needed)

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

Before any contact with the UAO(s), the CONSULTANT shall meet with the District Utility Office to receive guidance, as may be required, to assure that all necessary coordination will be accomplished in accordance with DEPARTMENT procedures. CONSULTANT shall bring a copy of the design project work schedule reflecting utility activities.

7.2 Identify Existing Utility Agency Owner(s)

The Consultant shall identify all utilities within and adjacent to the project limits that may be impacted by the project.

7.3 Make Utility Contacts

First Contact: The CONSULTANT shall send letters and two sets of plans to each utility, one set for the utility office, and one set to the DEPARTMENT Offices as required by the District. Includes contact by phone for meeting coordination. Request type, size, location, easements, and cost for relocation if reimbursement is claimed. Request the voltage level for power lines in the project area. Send UAO requests for reimbursement to FDOT for a legal opinion. Include the meeting schedule (if applicable) and the design schedule. Include typical meeting agenda. If scheduling a meeting, give 4 weeks advance notice.

Second Contact: At a minimum of 4 weeks prior to the meeting, the CONSULTANT shall transmit two complete sets of Phase II plans and the utility conflict information (when applicable and in the format requested by the DEPARTMENT) to each UAO having facilities located within the project limits, and one set to the DEPARTMENT Offices as required by the District.

Third Contact: Identify agreements and assemble packages. The CONSULTANT shall send agreements, letters, the utility conflict information (when applicable and in the format requested by the DEPARTMENT) and two sets of plans to the UAO(s) including all component sets, one set for the utility office, one set to construction and maintenance if required. Include the design schedule.

Not all projects will have all contacts as described above.

7.4 Exception Processing

The CONSULTANT shall be responsible for transmitting/coordinating the appropriate design reports including, but not limited to, the Resurfacing, Restoration and Rehabilitation (RRR) report, Preliminary Engineering Report, Project Scope and/or the Concept Report (if applicable) to each UAO to identify any condition that may require a Utility Exception. The CONSULTANT shall identify and communicate to the UAO any facilities in conflict with their location or project A-27
schedule. The CONSULTANT shall assist with the processing of design exceptions involving Utilities with the UAO and the DEPARTMENT. Assist with processing per the UAM.

7.5 Preliminary Utility Meeting

The CONSULTANT shall schedule (time and place), notify participants, and conduct a preliminary utility meeting with all UAO(s) having facilities located within the project limits for the purpose of presenting the project, review the current design schedule, evaluate the utility information collected, provide follow-up information on compensable property rights from the FDOT Legal Office, discuss the utility work by highway contractor option with each utility, and discuss any future design issues that may impact utilities. This is also an opportunity for the UAO(s) to present proposed facilities. The CONSULTANT shall keep accurate minutes and distribute a copy to all attendees.

7.6 Individual/Field Meetings

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

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

The CONSULTANT shall review utility marked plans and data individually as they are received for content. Ensure information from the UAO (utility type, material and size) is sent to the designer for inclusion in the plans. Forward all requests for utility reimbursement and supporting documentation to the DUO.

7.8 Subordination of Easements Coordination

The CONSULTANT, if requested by the DEPARTMENT, shall transmit to and secure from the UAO the executed subordination agreements prepared by the appropriate DEPARTMENT office. The CONSULTANT shall coordinate with the DUO the programming of the necessary work program funds to compensate the UAO.

7.9 Utility Design Meeting

The CONSULTANT shall schedule (time and place), notify participants, and conduct a Utility meeting with all affected UAO(s). The CONSULTANT shall be prepared to discuss impacts to existing trees/vegetation and proposed landscape, drainage, traffic signalization, maintenance of traffic (construction phasing), review the current design schedule and letting date, evaluate the utility information collected, provide follow-up information on compensable property rights from FDOT Legal Office, discuss with each UAO the utility work by highway contractor option, discuss any future design issues that may impact utilities, etc., to the extent that they may have an effect on existing or proposed utility facilities with particular emphasis on drainage and maintenance of traffic with each UAO. The intent of this meeting shall be to assist the UAOs in identifying and resolving
conflicts between utilities and proposed construction before completion of the plans, including utility adjustment details. Also to work with the UAOs to recommend potential resolution between known utility conflicts with proposed construction plans as may be deemed practical by the UAO. The CONSULTANT shall keep accurate minutes of all meetings and distribute a copy to all attendees within 3 days. See Task 4.5 (Horizontal/Vertical Master Design File) and Task 4.9 (Cross Section Design Files) for utility conflict location identification and adjustments.

7.10 Review Utility Markups & Work Schedules and Processing of Schedules & Agreements

The CONSULTANT shall review utility marked up plans and work schedules as they are received for content and coordinate review with the designer. Send color markups and schedules to the appropriate DEPARTMENT office(s) such as survey, geotechnical, drainage, structures, lighting, roadway, signals, utilities, landscape architecture, municipalities, maintaining agency, and District Traffic Operations for review and comment if required by the District. Coordinate with the District for execution. Distribute Executed Final Documents. Prepare Work Order for UAO(s). The CONSULTANT shall coordinate with the DUO the programming of necessary Work Program funds.

7.11 Utility Coordination/Follow-up

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

7.12 Utility Constructability Review

The CONSULTANT shall review utility schedules against construction contract time, and phasing for compatibility. Coordinate with and obtain written concurrence from the construction office. See Task 4.9 (Cross Section Design Files) for utility conflict identification and adjustments.

7.13 Additional Utility Services

The CONSULTANT shall provide additional utility services. Additional services will be determined when the services are required and requested. 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.

7.14 Processing Utility Work by Highway Contractor (UWHC)

This includes coordination of utility design effort between the DEPARTMENT and the UAO(s). The CONSULTANT shall conduct additional coordination meetings, prepare and process the agreements, review tabulation of quantities, perform UWHC constructability and bidability review, A-29
review pay items, cost estimates and Technical Special Provisions (TSP) or Modified Special Provision (MSP) prepared by the UAO. This does not include utility 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)

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

7.16 Certification/Close-Out N/A. (By DEPARTMENT)

7.17 Other Utilities

The CONSULTANT shall provide other utility services. This includes all efforts for a utility task not covered by an existing defined task. Required work will be defined in the scope and negotiated on a case-by-case basis.

8 ENVIRONMENTAL PERMITS, COMPLIANCE, AND ENVIRONMENTAL CLEARANCES (Tasks 8.1 – 8.20 as needed)

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.

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8.2 Field Work

8.2.1 Pond Site Alternatives:
The CONSULTANT shall review alternative pond sites as directed by the DEPARTMENT and information shall be included in the Pond Siting Report.

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.

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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

The CONSULTANT shall review Dredge and Fill Detail sheets to ensure information on the sketch(es) meet the requirements of the regulatory agencies and are appropriate for environmental permit application submittal and acquisition. The CONSULTANT will also provide environmental data/information as needed to support the preparation of the Dredge and Fill sketches.

8.6 Prepare USCG Permit Application

8.7 Prepare Water Management District or Local Water Control District Right of Way Occupancy Permit Application

8.8 Prepare Coastal Construction Control Line (CCCL) Permit Application

The CONSULTANT shall be responsible for the preparation of the CCCL permit application and acquire the final “Notice to Proceed” authorization from the Florida Department of Environmental Protection (FDEP). Legal advertisements shall be published one time in a newspaper that meets the notification requirements of the FDEP.

8.9 Prepare Tree Permit Information

8.10 Compensatory Mitigation Plan

If impacts cannot be avoided, the CONSULTANT shall prepare a mitigation plan to be included as a part of the applications.

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

The CONSULTANT will be directed by the DEPARTMENT to investigate the mitigation options that meet federal and state requirements in accordance with section 373.4137, F.S. Below are mitigation options:

- Purchase of mitigation credits from a mitigation bank
- Payment to DEP/WMD for mitigation services
- Monetary participation in offsite regional mitigation plans
- Creation/restoration of wetlands

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

Prior to selection of a final creation/restoration mitigation site, the CONSULTANT will provide the following services in the development of a mitigation plan:

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

8.11 Mitigation Coordination and Meetings

The CONSULTANT shall coordinate with DEPARTMENT personnel prior to approaching any environmental permitting or commenting agencies. Once a mitigation plan has been reviewed and approved by the DEPARTMENT, the CONSULTANT will be responsible for coordinating the proposed mitigation plan with the environmental agencies. The CONSULTANT will provide mitigation information needed to update the FDOT Environmental Impact Inventory.

8.12 Other Environmental Permits

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)

The CONSULTANT shall provide engineering and environmental support for the DEPARTMENT to obtain environmental clearances for all changes to the project after the PD&E study was approved. These changes include but are not limited to pond and/or mitigation sites identified, land use or environmental changes, and significant design changes.

8.13.1 NEPA or SEIR Re-evaluation: During the development of the final design plans, the CONSULTANT shall be responsible for coordinating with the District Project Manager to provide necessary engineering information required in the preparation of the re-evaluation by the DEPARTMENT. The preparation of environmental re-evaluations includes those as listed in Part 1, Chapter 13 of the DEPARTMENT’s PD&E Manual: Right of Way, Design Change, and Construction Advertisement.
Re-evaluations will be completed in accordance with Part 1, Chapter 13 of the PD&E Manual. The CONSULTANT shall provide information to update the Project Commitment Record for incorporation into the re-evaluation.

It is the responsibility of the CONSULTANT to provide the District Project Manager with engineering information on major design changes including changes in typical section, roadway alignment, pond site selection, right of way requirements, bridge to box culvert, drainage, and traffic volumes that may affect noise models.

8.13.2 Archaeological and Historical Features: The CONSULTANT shall provide necessary technical information to the District's Project Manager to analyze the impacts to all cultural and historical resources due to changes in the project in accordance with Part 2, Chapter 8 of the PD&E Manual.

8.13.3 Wetland Impact Analysis: The CONSULTANT shall provide necessary technical information to the District’s Project Manager to analyze the impacts to wetlands and other surface waters in accordance with Part 2, Chapter 9 of the PD&E Manual due to changes in the project.

8.13.4 Essential Fish Habitat Impact Analysis: The CONSULTANT shall provide necessary technical information to the District’s Project Manager to analyze the impacts to essential fish habitat in accordance Part 2, Chapter 17 of the PD&E Manual due to changes in the project.

8.13.5 Protected Species and Habitat Impact Analysis: The CONSULTANT shall provide necessary technical information to the District’s Project Manager to analyze the impacts to all protected species and habitat in accordance with Part 2, Chapter 16 of the PD&E Manual due to changes in the project. The CONSULTANT shall perform the necessary analysis to complete agency consultation in accordance with Section 7 or Section 10 of the Endangered Species Act.

8.14 Preparation of Environmental Clearances and Re-evaluations (use when CONSULTANT prepares all documents associated with a re-evaluation)

The CONSULTANT shall prepare reports and clearances for all the changes to the project that occurred after the PD&E study was approved. These changes could include but are not limited to pond and/or mitigation sites identified, land use or environmental changes, and significant design changes.

8.14.1 NEPA or SEIR Re-evaluation: During the development of the final design plans, the CONSULTANT shall be responsible for collecting the data and preparing a re-evaluation in accordance with Part 1, Chapter 13 of the PD&E Manual.
8.14.2 Archaeological and Historical Features: The CONSULTANT shall collect data necessary to completely analyze the impacts, due to changes in the project or project area, to all cultural and historic resources, and prepare a Cultural Resource Assessment Report, in accordance with Part 2, Chapter 8 of the PD&E Manual.

8.14.3 Wetland Impact Analysis: The CONSULTANT shall analyze the impacts to wetlands due to changes to the project and complete the wetlands section of a Natural Resources Report, in accordance with Part 2, Chapter 9 of the PD&E Manual.

8.14.4 Essential Fish Habitat Impact Analysis: The CONSULTANT shall analyze the impacts to essential fish habitat due to changes to the project and complete the Essential Fish Habitat section of a Natural Resources Report, in accordance with Part 2, Chapter 17 of the PD&E Manual.

8.14.5 Protected Species and Habitat Impact Analysis: The CONSULTANT shall collect data necessary to prepare the protected species and habitat section of the Natural Resources Report, and analyze the impacts to protected species and habitat by the changes to the project, in accordance with Part 2, Chapter 16 of the PD&E Manual. The CONSULTANT shall perform the necessary analysis to complete agency consultation in accordance with Section 7 or Section 10 of the Endangered Species Act.

8.15 Contamination Impact Analysis

The CONSULTANT shall prepare Contamination Screening Evaluation for the project limits including stormwater ponds and floodplain compensation sites as described in Part 2, Chapter 20, of the PD&E Manual. The appropriate level of analysis and deliverable type will be approved by the DEPARTMENT’s Project Manager and District Contamination Impact Coordinator. The draft Level 1 Contamination Screening Evaluation document shall be submitted to the DEPARTMENT’s Project Manager and District Contamination Impact Coordinator for review and final approval. The CONSULTANT shall include an evaluation of any new contamination impacts due to changes to the project from the PD&E design concept, if applicable, and any new discharges or new potential contamination impacts not evaluated in any previously completed Contamination Screening Evaluation. The project impacts, conclusions and recommendations, figures, tables and appendices will be provided in a Level I Contamination Screening Evaluation Report.

The DEPARTMENT will provide Level II assessment services. If contamination is identified within the limits of construction, the CONSULTANT shall coordinate with the District Contamination Impact Coordinator to properly mark identified contamination areas in the plans and develop specifications as appropriate.
8.16 Asbestos Survey

The Department will provide asbestos and metal based coatings survey services.

If asbestos or metal based coatings above threshold levels are found on the bridge(s), the CONSULTANT shall coordinate with the District Contamination Impact Coordinator to obtain plan notes, general notes, specifications, pay item notes, and Operation and Maintenance (O&M) plan for any asbestos to remain in place.

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 as needed)

The CONSULTANT shall analyze, design, and develop contract documents for all structures in accordance with applicable provisions as defined in Section 2.19, Provisions for Work. Individual tasks identified in Sections 9 through 18 are defined in the Staff Hour Estimation Handbook and within the provision defined in Section 2.20, Provisions for Work. Contract documents shall display economical solutions for the given conditions.

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

9.1 Key Sheet and Index of Drawings

9.2 Project Layout

9.3 General Notes and Bid Item Notes
9.4 Miscellaneous Common Details
9.5 Incorporate Report of Core Borings
9.6 Standard Plans- Bridges
9.7 Existing Bridge Plans
9.8 Assemble Plan Summary Boxes and Quantities
9.9 Cost Estimate
9.11 Field Reviews
9.12 Technical Meetings
9.13 Quality Assurance/Quality Control
9.14 Independent Peer Review
9.15 Supervision
9.16 Coordination

10 STRUCTURES - BRIDGE DEVELOPMENT REPORT (tasks 10.1 – 10.35 are not applicable).

11 STRUCTURES - TEMPORARY BRIDGE (tasks 11.1 – 11.8 are not applicable).

12 STRUCTURES - SHORT SPAN CONCRETE BRIDGE (tasks 12.1 – 12.28 as needed).
   The CONSULTANT shall prepare plans for Short Span Concrete Bridge(s) at the location(s) specified in Section 2.5.

General Layout Design and Plans

12.1 Overall Bridge Final Geometry
12.2 Expansion/Contraction Analysis
12.3 General Plan and Elevation
A-38
12.4 Construction Staging
12.5 Approach Slab Plan and Details
12.6 Miscellaneous Details

End Bent Design and Plans
12.7 End Bent Geometry
12.8 End Bent Structural Design
12.9 End Bent Plan and Elevation
12.10 End Bent Details

Intermediate Bent Design and Plans
12.11 Bent Geometry
12.12 Bent Stability Analysis
12.13 Bent Structural Design
12.14 Bent Plan and Elevation
12.15 Bent Details

Miscellaneous Substructure Design and Plans
12.16 Foundation Layout

Superstructure Design and Plans
12.17 Finish Grade Elevation Calculation
12.18 Finish Grade Elevations

Cast-In-Place Slab Bridges
12.19 Bridge Deck Design

A-39
12.20 Superstructure Plan
12.21 Superstructure Sections and Details

Prestressed Slab Unit Bridges
12.22 Prestressed Slab Unit Design
12.23 Prestressed Slab Unit Layout
12.24 Prestressed Slab Unit Details and Schedule
12.25 Deck Topping Reinforcing Layout
12.26 Superstructure Sections and Details

Reinforcing Bar Lists
12.27 Preparation of Reinforcing Bar List

Load Rating
12.28 Load Rating

13 STRUCTURES - MEDIUM SPAN CONCRETE BRIDGE (tasks 13.1 – 13.55 as needed)

The CONSULTANT shall prepare plans for Medium Span Concrete Bridge(s) at the location(s) specified in Section 2.5.

General Layout Design and Plans
13.1 Overall Bridge Final Geometry
13.2 Expansion/Contraction Analysis
13.3 General Plan and Elevation
13.4 Construction Staging
13.5 Approach Slab Plan and Details
13.6 Miscellaneous Details

A-40
End Bent Design and Plans
13.7 End Bent Geometry
13.8 Wingwall Design and Geometry
13.9 End Bent Structural Design
13.10 End Bent Plan and Elevation
13.11 End Bent Details

Intermediate Bent Design and Plans
13.12 Bent Geometry
13.13 Bent Stability Analysis
13.14 Bent Structural Design
13.15 Bent Plan and Elevation
13.16 Bent Details

Pier Design and Plans
13.17 Pier Geometry
13.18 Pier Stability Analysis
13.19 Pier Structural Design
13.20 Pier Plan and Elevation
13.21 Pier Details

Miscellaneous Substructure Design and Plans
13.22 Foundation Layout

Superstructure Deck Design and Plans
A-41
13.23  Finish Grade Elevation (FGE) Calculation
13.24  Finish Grade Elevations
13.25  Bridge Deck Design
13.26  Bridge Deck Reinforcing and Concrete Quantities
13.27  Diaphragm Design
13.28  Superstructure Plan
13.29  Superstructure Section
13.30  Miscellaneous Superstructure Details

Reinforcing Bar Lists
13.31  Preparation of Reinforcing Bar List

Continuous Concrete Girder Design
13.32  Section Properties
13.33  Material Properties
13.34  Construction Sequence
13.35  Tendon Layouts
13.36  Live Load Analysis
13.37  Temperature Gradient
13.38  Time Dependent Analysis
13.39  Stress Summary
13.40  Ultimate Moments
13.41  Ultimate Shear
A-42
The CONSULTANT shall prepare plans for Structural Steel Bridge(s) at the location(s) specified in Section 2.5.
14.1 Overall Bridge Final Geometry
14.2 Expansion/Contraction Analysis
14.3 General Plan and Elevation
14.4 Construction Staging
14.5 Approach Slab Plan and Details
14.6 Miscellaneous Details
  End Bent Design and Plans
14.7 End Bent Geometry
14.8 Wingwall Design and Geometry
14.9 End Bent Structural Design
14.10 End Bent Plan and Elevation
14.11 End Bent Details
Intermediate Bent Design and Plans
14.12 Bent Geometry
14.13 Bent Stability Analysis
14.14 Bent Structural Design
14.15 Bent Plan and Elevation
14.16 Bent Details
Pier Design and Plans
14.17 Pier Geometry
14.18 Pier Stability Analysis
A-44
14.19 Pier Structural Design
14.20 Pier Plan and Elevation
14.21 Pier Details

Miscellaneous Substructure Design and Plans
14.22 Foundation Layout

Superstructure Deck Design and Plans
14.23 Finish Grade Elevation (FGE) Calculation
14.24 Finish Grade Elevations
14.25 Bridge Deck Design
14.26 Bridge Deck Reinforcing and Concrete Quantities
14.27 Superstructure Plan
14.28 Superstructure Section
14.29 Miscellaneous Bridge Deck Details

Reinforcing Bar Lists
14.30 Preparation of Reinforcing Bar List

Structural Steel Plate Girder Design
14.31 Unit Modeling
14.32 Section Design
14.33 Stiffener Design and Locations

A-45
14.34 Cross-frame Design
14.35 Connections
14.36 Bearing Assembly Design and Detailing (With Jacking Analysis)
14.37 Splice Design
14.38 Shear Stud Connectors
14.39 Deflection Analysis
14.40 Framing Plan
14.41 Girder Elevation
14.42 Structural Steel Details
14.43 Splice Details
14.44 Girder Deflections and Camber

Structural Steel Box Girder Design
14.45 Unit Modeling
14.46 Section Design
14.47 Stiffener Design and Locations
14.48 Interior Cross-Frame Design
14.49 Exterior Cross-Frame Design
14.50 Connections
14.51 Bearing Assembly Design and Detailing (with Jacking Analysis)
14.52 Splice Design
14.53 Shear Stud Connectors
14.54 Deflection Analysis
14.55 Framing Plan

A-46
14.56 Girder Elevation
14.57 Structural Steel Details
14.58 Splice Details
14.59 Girder Deflections and Camber

Erection Scheme
14.60 Erection Scheme Analysis
14.61 Erection Scheme

Load Rating
14.62 Load Rating

15 STRUCTURES - SEGMENTAL CONCRETE BRIDGE tasks (15.1 – 15.77 as needed).

The CONSULTANT shall prepare plans for Segmental Concrete Bridge(s) at the location(s) specified in Section 2.5.

General Layout Design and Plans
15.1 Final Bridge Geometry
15.2 Casting Geometry Calculation
15.3 Finish Grade Geometry Calculation
15.4 Finish Grade Elevations
15.5 Construction Schedule
15.6 General Plan and Elevation
15.7 Approach Slab Plan and Details
15.8 Miscellaneous Details

A-47
15.9 Existing Bridge Plans

End Bent Design and Plans

15.10 End Bent Geometry

15.11 Wingwall Geometry and Design

15.12 End Bent Structural Design

15.13 End Bent Plan and Elevation

15.14 End Bent Details

Pier Design and Plans

15.15 Pier Geometry

15.16 Pier Stability Analysis

15.17 Pier Construction Loads

15.18 Pier Structural Design

15.19 Pier Plan and Elevation

15.20 Pier Details

Miscellaneous Substructure Design and Plans

15.21 Foundation Layout

Longitudinal Analysis

15.22 Section Properties

15.23 Material Properties

15.24 Superimposed Dead Loads

15.25 Construction Sequence

A-48
15.26 Tendon Layouts
15.27 Live Load Analysis
15.28 Temperature Gradient
15.29 Time Dependent Analysis
15.30 Stress Summary
15.31 Ultimate Moments
15.32 Ultimate Shear
15.33 Construction Loading

Transverse Analysis
15.34 Time Dependent Analysis
15.35 Live Load Analysis
15.36 Temperature Gradient
15.37 Stress Summary
15.38 Ultimate Moments
15.39 Construction Loading

Superstructure Design
15.40 Typical Segment
15.41 Pier Segment
15.42 Expansion Joint Segment
15.43 Blister Details
15.44 Deviator Blocks
15.45 Bearings
15.46 Expansion Joints

A-49
15.47 Special Analysis

Superstructure Plans

15.48 Typical Sections
15.49 Finish Grade Elevations
15.50 Segment Layout / Designations
15.51 Typical Segments
15.52 Variable Depth Segments
15.53 Pier Segments
15.54 Expansion Joint Segments
15.55 CIP Closure Joint Details
15.56 Casting Geometry
15.57 Integrated 3-D Drawings

Post-Tensioning Details

15.58 Bulkhead Details
15.59 Transverse Tendon Layout
15.60 Longitudinal Tendon Layout
15.61 Temporary Post-Tensioning
15.62 Quantities and Stressing Schedule
15.63 Future Post-Tensioning
15.64 Anchorage Blisters
15.65 Deviation Blocks
15.66 PT Grouting Plan Details

Miscellaneous Details

A-50
15.67 Erection Sequence and Details
15.68 Access Opening Details
15.69 Bearings
15.70 Expansion Joints
15.71 Vermin Screen Details
15.72 Railing Details
15.73 Lighting and Luminaries
15.74 Architectural Details
15.75 Special Systems

Reinforcing Bar Lists
15.76 Preparation of Reinforcing Bar Lists

Load Rating
15.77 Load Rating (LRFR)

16 STRUCTURES - MOVABLE SPAN (tasks 16.1 – 16.102 as needed).

The CONSULTANT shall prepare plans for Movable Span Bridge(s) at the location(s) specified in Section 2.5.

Final Design Bascule Pier
16.1 Pier Deck
16.2 Leaf/Pier Clearance Diagrams
16.3 Load Shoe Columns
16.4 Trunnion Columns
16.5 Foundations
16.6 Footing
16.7 Seal
16.8 Back Wall (Approach Span Bearings) Closed Piers only
16.9 Bascule Pier Deck Elevations

Bascule Pier Dimensions – Detailing

16.10 Pier Plan Views
16.11 Pier Elevations Views
16.12 Pier Sections

Bascule Pier Reinforcing Details
16.13 Pier Reinforcing

Bascule Pier Miscellaneous Details
16.14 Pier Barrier Details
16.15 Stair Details
16.16 Handrail Details
16.17 Ladder and Hatch Details
16.18 Pier Equipment
16.19 Bascule Pier Notes and Summary of Quantities
16.20 Miscellaneous Details

Bascule Leaf Design
16.21 Deck Design
16.22 Sidewalk Design

A-52
16.23 Stringer Design
16.24 Typical Floorbeam Design
16.25 End Floorbeam Design
16.26 Deep Floorbeam Design
16.27 Sidewalk Bracket Design
16.28 Roadway Bracket Design
16.29 Main Girder Influence Lines
16.30 Main Girder Design
16.31 Trunnion Girder Design
16.32 Main Girder Camber Data
16.33 Leaf Lateral Bracing Design
16.34 Counterweight Design
16.35 Live Load Shoe Design
16.36 Barrier Design
16.37 Deck Elevations
16.38 Balance Calculations

Bascule Leaf Detailing
16.39 Bascule GP&E
16.40 Bascule Leaf Notes
16.41 Framing Plan
16.42 Flooring Plan and Details
16.43 Typical Section and Finish Grade Elevations
16.44 Girder Elevation

A-53
Girder Details
Camber Layout
Floor Beams
Counterweight Girder/Box
Trunnion Girder
Cylinder Girder
Lateral Bracing Details
Counterweight Bracing Details
Joint Details
Traffic Barrier Details
Pedestrian Rail and Support Details
Curb and Sidewalk Details
Barrier and Sidewalk Bracket Details
Counterweight Details
Stress Table or Influence Lines

Mechanical Design
Final Power Requirements
Trunnion Assembly
Span Locks
Sump Pumps

Mechanical Drive Design
Drive Shafts, Couplings, Keys, Bearings and Supports
Rack and Pinion, Bearings and Supports
16.66  Drive Train
16.67  Motor Brakes and Machinery Brakes

Hydraulic Drive Design
16.68  Hydraulic Drive

Machinery Detailing
16.69  Machinery Layout
16.70  Machinery Elevation
16.71  Machinery Section
16.72  Trunnion Assembly
16.73  Drive Details
16.74  Span Locks

Electrical Design
16.75  Load Analysis
16.76  Power Distribution
16.77  Drive Equipment
16.78  Bridge Controls
16.79  Grounding
16.80  Lightning and Surge Suppression
16.81  Pier Lighting

Electrical Detailing
16.82  Electrical Plan and Elevation
16.83  Electrical Symbols and Abbreviations
16.84  Single/Three Line Diagram

A-55
16.85 Panel Board and Light Fixture Schedules
16.86 Wire and Conduit Schedules and Diagrams
16.87 Control Desk/Panel Layout
16.88 Control Schematics
16.89 PLC Logic
16.90 Communication System
16.91 Navigation Lighting Details
16.92 Pedestrian Gate, Traffic Gate, and Barrier Details
16.93 Submarine Cable
16.94 Miscellaneous Details

Control House
16.95 Architectural Design
16.96 Architectural Details
16.97 Structural Design
16.98 Structural Details
16.99 HVAC/Plumbing Design
16.100 HVAC/Plumbing/Electrical Cables

Reinforcing Bar Lists
16.101 Preparation of Reinforcing Bar List

Load Rating
16.102 Load Rating

17 STRUCTURES - RETAINING WALLS (tasks 17.1 – 17.21 are not applicable).
STRUCTURES – MISCELLANEOUS (tasks 18.1 – 18.4 as needed) (tasks 18.5 - 18.35 are not applicable).

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

Concrete Box Culverts
18.1 Concrete Box Culverts
18.2 Concrete Box Culverts Extensions
18.3 Concrete Box Culvert Data Table Plan Sheets
18.4 Concrete Box Culvert Special Details Plan Sheets

SIGNING AND PAVEMENT MARKING ANALYSIS (tasks 19.1 – 19.16 are not applicable).

SIGNING AND PAVEMENT MARKING PLANS (tasks 20.1 – 20.15 are not applicable).

SIGNALIZATION ANALYSIS (tasks 21.1 – 21.19 are not applicable).

SIGNALIZATION PLANS (tasks 22.1 – 22.18 are not applicable).

LIGHTING ANALYSIS (tasks 23.1 – 23.18 are not applicable).

LIGHTING PLANS (tasks 24.1 – 24.14 are not applicable).

LANDSCAPE ARCHITECTURE ANALYSIS (tasks 25.1 – 25.17 are not applicable).

LANDSCAPE ARCHITECTURE PLANS (tasks 26.1 – 26.16 are not applicable).

SURVEY (tasks 27.1 – 27.35 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)

Locate all above ground features and improvements for the limits of the project by collecting the required data for the purpose of creating a DTM with sufficient density. Shoot all break lines, high A-58
and low points. Effort includes field edits, analysis and processing of all field collected data, existing maps, and/or reports.

27.7 Planimetric (2D)

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

27.8 Roadway Cross Sections/Profiles

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

27.9 Side Street Surveys

Refer to tasks of this document as applicable.

27.10 Underground Utilities

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

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

27.12 Drainage Survey

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

27.13 Bridge Survey (Minor/Major)

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

27.14 Channel Survey

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

Refer to tasks of this document as applicable.

27.16 Mitigation Survey

Refer to tasks of this document as applicable.

27.17 Jurisdiction Line Survey

Perform field location (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

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

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

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

27.23 Water Boundary Survey

Perform Mean High Water, Ordinary High Water and Safe Upland Line surveys as required by A-60
DEPARTMENT standards.

27.24  Right of Way Staking, Parcel / Right of Way Line
Perform field staking and calculations of existing/proposed R/W lines for on-site review purposes.

27.25  Right of Way Monumentation
Set R/W monumentation as depicted on final R/W maps for corridor and water retention areas.

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

27.27  Work Zone Safety
Provide work zone as required by DEPARTMENT standards.

27.28  Miscellaneous Surveys
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 PHOTOGRAMMETRY (tasks 28.1 through 28.25 are not applicable).

29 MAPPING (tasks 29.1 – 29.36 are not applicable).

30 TERRESTRIAL MOBILE LiDAR (tasks 30.1 – 30.19 are not applicable).

31 ARCHITECTURE DEVELOPMENT (tasks 31.1 – 31.143 are not applicable).

32 NOISE BARRIERS IMPACT DESIGN ASSESSMENT IN THE DESIGN PHASE (tasks 32.1 – 32.9 are not applicable).

33 INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS (tasks 33.1 – 33.21 are not applicable).

34 INTELLIGENT TRANSPORTATION SYSTEMS PLANS (tasks 34.1 – 34.21 are not applicable).

35 GEOTECHNICAL (tasks 35.1 – 35.55 are not applicable).

36 3D MODELING (tasks 36.1 – 36.9 are not applicable).

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.