This Scope of Services is an attachment which is incorporated into the agreement between the State of Florida Department of Transportation (hereinafter referred to as the DEPARTMENT or FDOT) and TBD (hereinafter referred to as the CONSULTANT) relative to the transportation facility described as follows:

Financial Project ID: 441250-1-22-01 & 256931-4-32-01
Federal Aid Project No.: TBD
ETDM No.: 14335
County Section No.: 10130000, 10130001, 15090000, 15090010, 15241000
Bridge No.: 300, 585
Railroad Crossing No.: NA
Project Type: Highway
Lead Agency: FL Department of Transportation
Federal Funding: No
Anticipated Class of Action: Type 2 Categorical Exclusion
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1.0 SCOPE OF SERVICES PURPOSE

The Scope of Services describes the responsibilities of the CONSULTANT and the Florida Department of Transportation (FDOT or DEPARTMENT) when conducting Project Development and Environment (PD&E) Studies necessary to comply with DEPARTMENT procedures and underlying laws and regulations and to obtain FL Department of Transportation approval of the Environmental Document.

All activities encompassed by this Scope of Services include:

- Major work groups include:
  - 2.0- Proj. Dev. & Environ. (PD&E) Studies
  - 3.2- Major Highway Design
  - 4.2.1- Major Bridge Design- Concrete
  - 4.2.2- Major Bridge Design- Steel

- Minor work groups include:
  - 4.1.1- Miscellaneous Structures
  - 4.1.2- Minor Bridge Design
  - 6.3.1- Intelligent Transportation System Analysis and Design
  - 7.1- Signing, Pavement Marking and Channelization
  - 7.2- Lighting
  - 7.3- Signalization
  - 8.1- Control Surveying
  - 8.2- Design, Right of Way, Construction Surveying
  - 8.3- Photogrammetric Mapping
  - 8.4- Right of Way Mapping
  - 9.1- Soil Exploration
  - 9.2- Geotechnical Classification Lab Testing
  - 9.3- Highway Materials Testing
  - 9.4.1- Standard Foundation Studies
  - 9.4.2- Non-Redundant Drilled Shaft Bridge Foundation Studies
  - 9.5- Geotechnical Specialty Lab Testing

This contract includes a PD&E Study from 4th Street North to West Shore Boulevard and 15% Line and Grade design for the project segment from 4th Street North to west of the Gandy Bridge (FPID 256931-4-32-01) to be funded as part of the PD&E (FPID 441250-1). Additionally the contract has an option for additional design services necessary to accelerate the project development.

The Project development process and all tasks identified in this Scope of Services must follow the guidance provided in the DEPARTMENT's current version of the PD&E Manual and FDOT Design Manual (FDM). As discussed in Part 1, Chapter 1, of the PD&E Manual, the
PD&E Manual satisfies state and federal processes and incorporates the requirements of the National Environmental Policy Act (NEPA); federal law, regulations, and Executive Orders included in the FHWA Federal-Aid Policy Guide; and applicable state laws and regulations including Section 339.155 of the Florida Statutes and Rule Chapter 14 of the Florida Administrative Code. As such, Project documents prepared by the CONSULTANT must comply with all applicable state and federal laws, regulations, and Executive Orders.

The Scope of Services defines the Project tasks to be performed consistent with the PD&E Manual and other pertinent manuals as specifically prescribed in Section 2. The Scope of Services also outlines work activities that will be the responsibility of the CONSULTANT and/or the DEPARTMENT.

The CONSULTANT must demonstrate good project management practices while working on this Project, including effective communication with the DEPARTMENT and others as necessary, effective management of time and resources, and quality of documentation. Throughout the PD&E Study, the CONSULTANT shall set up and maintain a contract file in accordance with DEPARTMENT procedures. The CONSULTANT and any subconsultants are expected to know the laws and rules governing their profession and are expected to provide professional services in accordance with current and applicable regulations, codes, ordinances, and standards.

The DEPARTMENT will provide contract administration and management, as well as technical reviews of all work associated with the development of this Project and performed under this Scope of Services. The DEPARTMENT's technical reviews will focus on high-level conformance and are not meant to substitute CONSULTANT quality reviews of deliverables. The CONSULTANT is fully responsible for all work performed and work products developed under this Scope of Services. The DEPARTMENT may provide task-specific information as outlined in this Scope of Services.

2.0 PROJECT DESCRIPTION AND OBJECTIVES

The purpose of this project is to reduce traffic congestion and improve bicycle and pedestrian accommodations along US 92/SR 600/Gandy Boulevard from 4th Street North in Pinellas County to West Shore Boulevard in Hillsborough County including the US 92/SR 600/Gandy Boulevard bridges ID #300 and ID #585, a distance of approximately 7 miles. US 92/SR 600/Gandy Boulevard is currently a four-lane divided facility throughout the entire study area. This portion of US 92/SR 600/Gandy Boulevard is functionally classified by the Florida Department of Transportation (FDOT) as an urban principal arterial and is part of FDOT's Strategic Intermodal System (SIS). The improvements will consider grade separations at major intersections along the corridor and widening up to six lanes. Bridge widening and/or replacement will be evaluated as part of this project. Up to three alternatives will be developed. Managed lanes will be an optional service.

2.1 PROJECT OBJECTIVES

The PD&E Study has the following project objectives:
The CONSULTANT is to study multimodal transportation improvements alternatives along US 92/SR 600/Gandy Blvd from 4th Street North to West Shore Boulevard, including existing bridges #300 and #585. New grade separations and roadway improvements are to be considered at intersections along the corridor.

The CONSULTANT shall consider the need for managed lanes (i.e., tolled or non-tolled express lanes, high occupancy vehicle (HOV) lanes, and truck/transit-only lanes, or special use multimodal lanes) when evaluating the impacts of widening Gandy Boulevard and the Gandy Boulevard bridges over Tampa Bay. The proposed improvements to extend the existing controlled access facility on Gandy Boulevard from 4th Street North to the West Shore Boulevard including the Gandy Boulevard bridges over Tampa Bay and to provide for pedestrian and bicycle accommodations across Tampa Bay are identified in the Forward Pinellas 2040 Long Range Transportation Plan and in the 2018 Forward Pinellas Multimodal Transportation Project Priorities, respectively. The widening of the Gandy Boulevard bridges over Tampa Bay is identified in the SIS 2045 Multimodal Unfunded Needs Plan.

The CONSULTANT will analyze and assess the Project’s impact on the social, economic, cultural, natural, and physical environment, in order to develop the Location and Design Concept of the Project in accordance with FDOT policy, procedures, and requirements.

The CONSULTANT shall review and become familiar with Project documents and materials that have been prepared prior to the PD&E phase. The CONSULTANT will review the Efficient Transportation Decision Making Process (ETDM) Programming Screen Summary Report, including comments received from the Environmental Technical Advisory Team (ETAT), Lead Agency, and/or any responses from the District pertaining to this Project. The CONSULTANT shall also review concepts and reports (e.g., typical sections, alignments, planning reports) developed from prior planning studies. The CONSULTANT shall use resource agencies’ comments to assess the level of effort for work activities required to adequately address potential resources of concern to this Project.

2.2 PROJECT REQUIREMENTS AND PROVISIONS FOR WORK

The CONSULTANT will conduct the appropriate level of engineering and environmental analyses related to the anticipated Class of Action for this Project, as outlined in the PD&E Manual, the FDM, and directed by the Project objectives. The level of analysis depends on complexity of the Project, level of controversy, potential for significant impacts, and degree and quality of information/data available. If the Class of Action for the Project was not determined during ETDM screening, the Lead Agency will determine it after completion of the environmental analyses.

The CONSULTANT upon direction from DEPARTMENT will assist with updating data, technical studies or Environmental Document to ensure compliance with NEPA, other federal laws, regulations and Executive Orders.
The CONSULTANT will maximize the use of existing information available from State, regional, local agencies, private sources, and its own files. Examples include the Programming Screen Summary Report, Concept Reports, previously completed planning products, listed species reports, Florida Department of Environmental Protection OCULUS Electronic Document Management System, and other sources as appropriate.

The DEPARTMENT will allow the CONSULTANT to use the DEPARTMENT's computer facilities upon proper authorization as described in DEPARTMENT Procedure No. 325-060-401; Planning studies relevant to this project which the CONSULTANT is required to review include:

- 256931-1: SR 694 (Gandy Blvd) From US 19 TO 4TH ST
- 255822-1: SR 600 Selmon West Extension (Gandy Connector) SEIR Re-evaluation
- WPN #7113846 & #7117117 Westbound Gandy Bridge (SR 600/US 92) Replacement (Bridge #1000068)

### 2.2.1 Governing Regulations

Services performed by the CONSULTANT must comply with all applicable DEPARTMENT Manuals and Guidelines. The CONSULTANT will use the latest editions of the following Manuals and Guidelines to perform work for this Project.

- Florida Statutes
- Florida Administrative Codes
- Applicable Federal Regulations, U.S. Codes, and Technical Advisories
- PD&E Manual
- ETDM Manual
- Socio Cultural Effects Evaluation Handbook
- Public Involvement Handbook
- FDOT Design Manual (FDM)
- Interchange Access Request User’s Guide
- Highway Capacity Manual (HCM)
- Manual on Uniform Traffic Studies (MUTS)
- Manual of Uniform Traffic Control Devices (MUTCD)
- Minimum Standards for Design, Construction, and Maintenance Streets and Highways (Florida Greenbook)
- A Policy on Geometric Design of Highways and Streets
- AASHTO Guide for the Development of Bicycle Facilities
- AASHTO Guide for the Development of Pedestrian Facilities
- AASHTO Guide Specifications for Bridges Vulnerable to Coastal Storms
- Highway Safety Manual (HSM)
- Right of Way Mapping Handbook
- Right of Way Procedures Manual
- Survey and Mapping Handbook
- Soils and Foundation Handbook
- Electronic Field Book (EFB) User Handbook
- Drainage Manual
2.2.2 Liaison Office

The DEPARTMENT and the CONSULTANT will designate their respective Liaison Offices for this Project.

2.2.3 Personnel

The DEPARTMENT will designate a Project Manager to represent the DEPARTMENT for this Project. The DEPARTMENT Project Manager shall be responsible for coordination with the CONSULTANT pertaining to all contractual matters, invoicing and reporting. The DEPARTMENT Project Manager shall also be responsible for approval of any additional staffing to be provided (approval must be coordinated with the Procurement Office), and shall give approval of all products and services. The CONSULTANT will assign a Project Manager who will communicate regularly with the DEPARTMENT Project Manager regarding development of this Project. Final direction on all matters of this Project remains with the DEPARTMENT Project Manager.

The CONSULTANT must maintain staffing levels and personnel qualifications necessary to complete the required activities for this Scope of Services. The CONSULTANT's work must be performed to DEPARTMENT standards and procedures by personnel identified in the contract. Any changes in the identified personnel will be subject to review and approval by the DEPARTMENT. To the extent possible, the CONSULTANT must minimize the DEPARTMENT’s need to apply its own resources to the Scope of Services activities unless otherwise identified.

The CONSULTANT shall assign only competent technical and professional personnel qualified by the necessary experience and education to perform assigned work. The CONSULTANT is responsible for ensuring that staff
assigned to work under this Agreement has the training established by the DEPARTMENT as a prerequisite for CONSULTANT staff to perform work. If the required training is such that it can be applied by the trainee to work on other contracts, (regardless of whether or not the trainee would work on other agreements), the cost of the trainee's time and expenses associated with the training is not directly billable to the DEPARTMENT on this contract, and shall only be recoverable through overhead for the CONSULTANT firm.

The CONSULTANT must request approval from the DEPARTMENT's Project Manager for any modifications or additions to the list of available staff prior to the initiation of any work by that individual. If applicable, new job classifications may be added to the contract via contract amendment and must be approved by Procurement. The CONSULTANT shall submit a copy of the resume and payroll register before new staff can be added.

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

The CONSULTANT and its employees, agents, representatives, or subconsultants are not employees of the DEPARTMENT and are not entitled to the benefits of State of Florida employees. Except to the extent expressly authorized herein, CONSULTANT and its employees, agents, representatives, or subconsultants are not agents of the DEPARTMENT or the State for any purpose or authority such as to bind or represent the interests thereof, and shall not represent that it is an agent or that it is acting on the behalf of the DEPARTMENT or the State. The DEPARTMENT shall not be bound by any unauthorized acts or conduct of CONSULTANT.

2.2.4 Subconsultant

Services assigned to any subconsultants must be approved in writing and in advance by the DEPARTMENT Project Manager, Procurement Office, and the CONSULTANT Project Manager in accordance with this Scope of Services. All subconsultants must be technically qualified by the DEPARTMENT to perform all work assigned to them. Additional subconsultants with specialized areas of expertise may be required to complete specific assignments. Any subconsultants to be hired and all work assignments to be performed, and all rates of compensation shall be agreed to by the DEPARTMENT Project Manager, Procurement Office and the CONSULTANT Project Manager and documented in the contract file prior to any work being performed by the subconsultants.
2.2.5 Lead Agency, Cooperating Agencies and Participating Agencies

The CONSULTANT Project Manager will support The DEPARTMENT Project Manager in coordination with the Lead Agency, Cooperating Agencies and Participating Agencies.

The Lead Agency for this Project is FL Department of Transportation.

2.2.6 Meetings and Presentations

Led by the DEPARTMENT Project Manager, the CONSULTANT will attend the Notice to Proceed Meeting, where DEPARTMENT representatives will outline relevant contract and Project information provided by the DEPARTMENT Project Manager.

The CONSULTANT shall attend meetings necessary to undertake the activities of this Scope of Services. This includes meetings with DEPARTMENT staff and/or resources agency staff, other consultants, or other miscellaneous meetings. It is anticipated that 30 progress and miscellaneous review meetings will be needed.

The CONSULTANT will attend meetings or make presentations at the request of the DEPARTMENT with at least five (5) business days' notice. The CONSULTANT will prepare meeting notes for all meetings identified in this Exhibit and submit within five (5) working days to the DEPARTMENT's Project Manager for review.

2.2.7 Communication

The DEPARTMENT Project Manager will be the representative of the DEPARTMENT for the Project. The CONSULTANT must regularly communicate with the DEPARTMENT Project Manager to discuss and resolve issues or solicit opinions regarding this Project. The CONSULTANT must include the DEPARTMENT when seeking and receiving advice from various State, regional, local agencies, and citizen groups. The final direction on all matters for this Project remains with the DEPARTMENT Project Manager.

All written correspondence between the CONSULTANT and any party pertaining specifically to this Project must be reviewed and approved by the DEPARTMENT. The CONSULTANT must respond to information requests relative to the PD&E Study from third parties at the direction, and with the approval, of the DEPARTMENT. The CONSULTANT will assist the DEPARTMENT in preparing the content of the letters from DEPARTMENT personnel to other agencies, public officials, and others as needed or requested.
2.2.8 Quality Control

The DEPARTMENT requires that all Project documents, technical studies, calculations, maps, reports, conceptual plans, design, and the Environmental Document are correct and complete, appropriate for the intended purposes, and conform to requirements of this Scope of Services. The CONSULTANT, is responsible for the quality of all (including the subconsultants) deliverables. The CONSULTANT will independently and continually review deliverables for accuracy and completeness. The CONSULTANT must develop and follow an internal Quality Control (QC) process. The QC process is intended to ensure that quality is achieved through checking, reviewing, and verifying work activities and deliverables by qualified individuals who were not directly responsible for performing the initial work.

Within twenty (20) business days from the Notice to Proceed, the CONSULTANT must submit its QC Plan to the DEPARTMENT Project Manager for approval. The QC Plan will identify the deliverables, the personnel to perform the reviews, and the method of documentation. The QC Plan will be signed by the CONSULTANT Project Manager and the CONSULTANT QC Manager.

The CONSULTANT must include document reviews and written resolution of comments with each submittal or deliverable to show the QC process was followed. At a minimum, a quality review checklist must be provided and should include letters, exhibits, technical studies, reports, design calculations, Environmental Document or any documents used or referenced in the QC Plan. The CONSULTANT must maintain documentation which show the QC Plan process was followed. The DEPARTMENT Project Manager may request from the CONSULTANT document reviews and written resolution of comments at any time during the PD&E Study.

2.2.9 Schedule

Within ten (10) business days after the Notice to Proceed, and prior to the CONSULTANT beginning work, the CONSULTANT shall submit a detailed Project activity / event schedule to the DEPARTMENT. The schedule must indicate all required submittals, critical path activities, and key project milestones / activity codes. When applicable, the CONSULTANT Project Manager will receive a Statewide Acceleration and Transformation (SWAT) preliminary Project schedule from the DEPARTMENT Project Manager during the Notice to Proceed meeting. The Project schedule shall contain at a minimum, the following information for each schedule activity: project FPID, project description, FDOT activity id with correct Project Schedule Management (PSM) codes, activity description, original duration, remaining duration, start date, finish date, activity percent complete and total float. Only two open-ended activities (the first and the last) are allowed. The project schedule must include a column displaying each
activity's Predecessor and Successor. The schedule must be based on the DEPARTMENT’s expected production date and must be approved by the DEPARTMENT. The anticipated date for final approval of the Environmental Document is 04/30/2023. The schedule must be based upon consideration of the Project's environmental issues (social, cultural, natural and physical resources) and regulatory requirements, and in coordination with the DEPARTMENT's District Environmental Management Office (DEMO).

The schedule must be accompanied by an anticipated payout and fiscal progress curve. For the purpose of scheduling, the CONSULTANT shall allow for a review period of at least 60 days for each draft technical report or memorandum submitted for District reviews.

In developing the schedule for this Project, the CONSULTANT, in coordination with the DEPARTMENT, must include adequate time to meet regulatory reviews and formal consultations timeframes.

Periodically throughout the life of the contract, the CONSULTANT must review the project schedule, payout, and fiscal progress curves to monitor the progress of the project. The CONSULTANT shall submit monthly progress reports with the approved schedule and schedule status report, which includes critical-path review and progress and payout curves, to the Department Project Manager. Any adjustments or changes to the approved schedule must be approved by the DEPARTMENT Project Manager.

2.2.10 Submittals

The CONSULTANT will compile and transmit draft documents identified in this Scope of Services to the DEPARTMENT for review. For each submittal, the CONSULTANT will include a Transmittal Cover Letter that includes, at a minimum, the file name and format of each electronic file and the number of hardcopies (if any) as directed by the DEPARTMENT Project Manager.

The CONSULTANT will also submit to the DEPARTMENT 3 hard copies of each draft document submitted electronically to the DEPARTMENT for review.

The DEPARTMENT will review draft submittals and provide the CONSULTANT with review comments. The CONSULTANT will address comments, prepare a matrix of comments and responses as applicable, and submit revised documents. The CONSULTANT will assist the DEPARTMENT in resolving the comments received from the Lead Agency, Cooperating Agencies, resource agencies and the public, including preparation of individual responses.

PD&E Provisions for Work:

- Quality Control Plan
- Project Schedule

Public Involvement:
- Public Involvement Plan
- Public Hearing Transcript
- Comment and Coordination Report
- Meeting Agendas, Handouts, Notes, and Summaries
- Agency Coordination Meeting Summaries

PD&E Engineering:
- Traffic Analysis Methodology Technical Memorandum
- Project Traffic Analysis Report (PTAR)
- Preliminary Engineering Report (PER)
- Location Hydraulics Report (LHR)
- Stormwater Management Facility (SMF) Siting Report (SMFSR)
- Typical Section Package
- Bridge Concept Report
- Utilities Assessment Package (UAP)
- Value Engineering Information Report (Optional Services)
- Risk Analysis Report (Optional Services)
- Roundabout Evaluation Technical Memorandum (Optional Services)
- Geotechnical Report
- Existing Conditions Assessment Technical Memorandum

Environment:
- Type II Categorical Determination Exclusion Form
- SocioCultural Effects Evaluation (SCE) (Optional Services)
- Noise Study Report
- Air Quality Technical Memorandum
- Level I Contamination Assessment Report (Contamination Screening Evaluation Report)
- Conceptual Stage Relocation Plan (Optional Services)
- Natural Resource Evaluation (Wetlands, Species and EFH)
- Cultural Resource Assessment Survey
- Research Design and Survey Methodology
- Section 4(f) Determination of Applicability (DOA)

General:
- Project Commitments Record
- Planning Consistency Form

Other Submittals:
- Scrapbook
- SWEPT Submittal Form
The CONSULTANT will submit to the DEPARTMENT final reports and other deliverables identified in this section. The CONSULTANT will submit to the DEPARTMENT two (2) sets of CDs/DVDs or other portable storage drives such as flash drives or USB drives containing PDFs of all submittals outlined in this section.

Upon completion of the Project, the CONSULTANT will transfer to the DEPARTMENT, in an organized manner, all project electronic files, data, maps, sketches, worksheets, and other materials used or generated during the PD&E Study in an acceptable portable storage drive.

Additionally, the CONSULTANT will upload all final submittals and appropriate supporting project files to the Statewide Environmental Project Tracker (SWEPT) upon completion of technical studies and Environmental Document and as directed by the DEPARTMENT.

2.2.11 Computer Automation

The CONSULTANT shall develop concept plans and alternative designs utilizing Computer Aided Drafting and Design (CADD) systems. The DEPARTMENT makes software available to help assure quality and conformance with the policy and procedures regarding CADD. It is the responsibility of the CONSULTANT to meet the CADD production requirements in the FDOT CADD Manual. The CONSULTANT must submit final documents and files as described in the FDOT CADD Manual. Additional related information is found in the FDM. Concept plans and alternatives designs shall also be displayed using Google Earth-ready KMZ files. The concept plans must have both existing and proposed engineering and environmental features.

Upon DEPARTMENT approval, the CONSULTANT may also use computer tools and software to conduct some of the engineering and environmental analyses. Prior to using these tools, the CONSULTANT must agree to provide original electronic files in a format and standard consistent with the DEPARTMENT's policies and procedures.

All electronic files must be scanned for viruses prior to submitting to the DEPARTMENT. Failure to scan for viruses may result in a lower CONSULTANT work performance evaluation.

2.2.12 Conflict of Interest

The CONSULTANT or any affiliate is not eligible to pursue advertised work in the CONSULTANT's area of oversight or any project for which the CONSULTANT developed the Scope of Services. Subconsultants are also ineligible to pursue projects where they participated in the development of the Scope of Services, or have an oversight responsibility. The term "affiliate" is
defined in FDOT Procedure No. 375-030-006, Conflict of Interest Procedure for Department Contracts.

The CONSULTANT and its subconsultants will not enter into another contract during the term of the Contract for this Project which would create or involve a conflict of interest with the services herein. The CONSULTANT and its subconsultants must comply with FDOT Procedure No. 375-030-006, Conflict of Interest Procedure for Department Contracts.

2.3 COORDINATION WITH OTHER CONSULTANTS AND ENTITIES

The CONSULTANT will coordinate work activities with any ongoing and/or planned DEPARTMENT projects that may affect this Project. The DEPARTMENT and CONSULTANT shall coordinate with local governmental entities to ensure Project concepts are compatible with local improvements and right of way activities. The CONSULTANT will inform the DEPARTMENT Project Manager of all coordination activities with other agencies or entities prior to holding such activities. The DEPARTMENT Project Manager shall be included in all such coordination activities.

The CONSULTANT shall coordinate with the following pertinent projects and studies:

- O-17-00217 (FDOT 439023-1-52-01): Selmon West Extension- from the Gandy Bridge to the Western Terminus of the Selmon Expressway

2.4 CONTRACT MANAGEMENT

The CONSULTANT is responsible for maintaining Project files, including copies of submittals and underlying data, calculations, information and supporting project documentation. The CONSULTANT is responsible for preparing monthly progress reports and schedule updates. Progress reports will be delivered to the DEPARTMENT in a format prescribed by the DEPARTMENT Project Manager with the corresponding invoice.

The CONSULTANT will regularly communicate the status of the project with the DEPARTMENT while managing subconsultant efforts and executing subconsultant agreements.

2.5 ADDITIONAL SERVICES

The CONSULTANT will be requested to provide the following additional services for this Project.

2.5.1 Alternative Corridor Evaluation - N/A

Alternative Corridor Evaluation is not required or conducted prior to the PD&E for this project.
2.5.2 Advance Notification - N/A

Advance Notification is not required for this project.

2.5.3 Scoping - N/A

Scoping is not applicable for this project.

2.5.4 Notice of Intent - N/A

Notice of Intent is not applicable for this project.

2.5.5 Transit Coordination Plan - N/A

2.5.6 Miscellaneous Services - N/A

2.6 SERVICES TO BE PERFORMED BY THE DEPARTMENT

The DEPARTMENT will provide the following services and materials:

- Lead and participate in coordination efforts with the Public Transit Office, Office of Environmental Management, Federal Transit Administration, environmental resource and regulatory agencies, the public, and other stakeholders, as appropriate.
- Provide project data currently on file and available from study partners, such as:
  - Travel market analysis or ridership forecasting;
  - Planned new development or redevelopment including Developments of Regional Impact (DRIs) data, Community Reinvestment Act (CRA) plans, streetscape, landscape, road diet, or context sensitive design efforts;
  - ACER, planning studies, environmental evaluations, etc.;
  - Efficient Transportation Decision Making (ETDM) Programming Summary Report;
  - Recently completed roadway studies for the study area including PD&E studies, access management, intersection plans, design files, and capacity improvements;
  - Multimodal or small area studies including freight, interchange, intersection, transit, pedestrian, bicycle, land use, and signal priority, Transportation Management Plan;
  - Traffic analyses for the study area/corridors;
  - Previously conducted transit vision plans, transit feasibility studies, comprehensive operations analyses, transit development plans, etc.;
  - All information in its the possession of the DEPARTMENT pertaining to prior and on-going studies that may affect the project such as existing construction and as-built plans, bridge inspection reports and load ratings, prior environmental studies, existing permit information, existing drainage
and geotechnical reports and any agreements with third parties related to the Project corridor

- 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 is in possession or may become available 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;
- Advance Notification and all environmental and engineering documents including the Permit Coordination Packages;
- Coordination with the State Historic Preservation Officer;
- Existing FDOT right of way maps and information on existing surplus right of way under ownership by the DEPARTMENT or participating local agency (counties and cities partnering with FDOT for the PD&E Study);
- Existing Horizontal Network Control;
- FDOT crash data;
- Available traffic and planning data;
- Proposed right of way cost data;
- Construction cost database, as applicable;
- Project Electronic File Root Directory Structure for delivery of project design files to the DEPARTMENT;
- All applicable DEPARTMENT agreements with Utility Agency Owners;
- Letters of authorization designating the CONSULTANT as an agent of the DEPARTMENT to enter lands, waters, and premises of another in the performance of duties in accordance with Section 337.274, F.S.;
- Reviews of technical reports and Environmental Documents;

2.7 OPTIONAL SERVICES

At the DEPARTMENT'S option, the CONSULTANT may be requested to provide professional services not explicitly outlined in this Exhibit. These services may include but are not limited to re-evaluation of previous PD&E Studies, environmental analysis not specifically listed in this Scope of Services, final design services, expert witness services for right of way acquisition, additional design analysis, and design plan preparation for utilities review. CONSULTANT may also be requested to provide services for Request for Proposal (RFP) development for Design-Build Procurement and / or support the DEPARTMENT in the acquisition of a Design-Build contract. The fee for such 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. A supplemental agreement for the optional services shall be executed in accordance with Section 2 of the Standard Professional Services Agreement Terms.
3.0 PUBLIC INVOLVEMENT

Public involvement includes communicating to and receiving input from all interested and affected persons, groups, business owners, and government organizations regarding the development of the project. The CONSULTANT will coordinate and perform the appropriate level of public involvement for this Project as outlined in Part 1, Chapter 11, and Part 2, Chapter 4 of the PD&E Manual, and the FDOT Public Involvement Handbook.

The CONSULTANT will provide the DEPARTMENT drafts of all public involvement materials (e.g., newsletters, property owner letters, advertisements, handouts, exhibits) associated with the following tasks for review and approval at least 10 days business days prior to printing and/or distribution.

3.1 PUBLIC INVOLVEMENT

3.1.1 Public Involvement Plan

The CONSULTANT is responsible for creating the PIP using existing work developed by the DEPARTMENT as a starting reference. The PIP must include a public involvement schedule and identify potentially affected stakeholders and communities in the vicinity of the project to establish the appropriate outreach methods. This includes consideration of the demographics of the Study Area and any reasonable accommodations including, but not limited to, disabled, transit-dependent, limited English proficient (LEP), elderly, low income, or minority.

The CONSULTANT will review and attach the Sociocultural Data Report (SDR) to the PIP. A sample template for the PIP is located in Part 1, Chapter 11 of the PD&E Manual. At a minimum, the PIP must include the following:

- Project background
- Project goals
- Identification of elected officials and agencies
- Identification of affected communities and stakeholders
- Identification of media (e.g. television, radio, newspaper) for news and/or advertisement
- Proposed involvement activities. This project will have a regional impact and activities should include options for outreach to users of the corridor and the greater region.
- Anticipated schedule of involvement activities
- Methodology for collecting and responding to public comments
- Discussion of public comments will be analyzed and incorporated, as appropriate

The CONSULTANT will assist the DEPARTMENT with including this project on the DEPARTMENT website (URL TBD), to be hosted on the FDOT District 7 Studies website. The DEPARTMENT will host and maintain the actual website. The CONSULTANT will provide graphic support and data to support the
Department. The CONSULTANT will provide initial information for the Department to set up the website including but not limited to project descriptions, schedule, location map, public involvement activities, frequently asked questions, etc. The Consultant will update the project website before and after the alternatives public meeting, before and after the Public Hearing, and at other applicable project milestones. The website must meet FDOT requirements.

The DEPARTMENT requires that the CONSULTANT create and submit a Project Plan that demonstrates how the creation and maintenance of the application will be carried out. The Project Plan template may be found at http://www.dot.state.fl.us/ois/PDM/2_Planning/Project%20Plan_Template.docx

No work may begin prior to the submission and approval of the Project Plan. After the Project Plan is approved, the CONSULTANT shall keep the Project Plan updated as necessary or upon notification by the DEPARTMENT of a deficiency in the Project Plan. Any change to the Project Plan must be approved by the DEPARTMENT.

3.1.2 Public Involvement Data Collection

The CONSULTANT will assist the DEPARTMENT with collecting data specific to the public involvement process and preparing responses to any public inquiries received throughout the Project. The CONSULTANT will maintain and regularly update both an electronic and paper public involvement project file, which will document a record of all public involvement activities for this project.

The CONSULTANT is responsible for identifying and maintaining the Project mailing list that may include officials and interested parties (any person or institution expressing an interest in the project), affected parties, and potential permit and review agencies.

The CONSULTANT will work with the DEPARTMENT to generate or obtain mailing labels of property owners using the ETDM Environmental Screening Tool (EST) or the Hillsborough and Pinellas County Property Appraisers' Offices.

The CONSULTANT will investigate potential meeting locations to advise the DEPARTMENT of their suitability. The DEPARTMENT will ultimately approve the meeting location(s). The CONSULTANT will pay all costs for meeting location rental and insurance (if required). The CONSULTANT will be responsible for logistics associated with setting up the meeting.

3.2 SCHEDULED PUBLIC MEETINGS

The CONSULTANT will actively support the DEPARTMENT in conducting various public meetings, which may be conducted during weekends or after normal working hours. The CONSULTANT will support the DEPARTMENT in preparation, scheduling,
attendance, note taking, documentation, and follow-up services for each meeting, which may include:

- 1 Project Kick-off Meeting(s)
- 16 Presentations to Local MPO’s (includes associated technical, citizen, and bicycle pedestrian advisory committees, as applicable)
- 8 Coordination Meetings with Key Agencies
- 1 Visioning Charrette
- N/A Corridor Workshop(s) or Public Informational Meeting(s)
- 2 Alternatives Public Information Meeting(s) – assumes one (1) meeting on the Pinellas County side of the bridge and one (1) on the Hillsborough County side.
- 3 Additional Coordination and Consensus Building Meeting(s) via a Project Advisory Group (PAG)
- N/A Community / Stakeholder Forum(s)
- N/A Environmental Forum(s)
- 20 Other Public and Agency Meetings (Specify) or informal meetings

For any of the listed meetings, the CONSULTANT will prepare and/or be responsible for the following:

- Agenda
- Presentation scripts
- Handouts
- Graphics for presentation
- Meeting equipment set-up and tear-down
- Display advertisements (The CONSULTANT will pay the cost of publishing)
- Letters for notification of elected and appointed officials, property owners, and other interested parties (the CONSULTANT will pay the cost of first class postage)
- News releases or project fact sheets. The DEPARTMENT must review new releases and fact sheets at least two (2) weeks before the meeting or mail out
- Meeting summaries provided to the DEPARTMENT no later than five (5) business days after the meeting
- Preparation of response letters for DEPARTMENT signature on public comments

Any materials prepared by the CONSULTANT for such meetings as listed above are subject to review and approval by the DEPARTMENT. The CONSULTANT shall provide the DEPARTMENT with a draft of any proposed materials at least two weeks prior to the meeting.

The CONSULTANT will assist the DEPARTMENT when facilitating the Alternatives Public Information Meeting(s) to present Project results and obtain comments related to the Project and / or Project alternatives.
The meeting format will be developed by the CONSULTANT and approved by the DEPARTMENT upon review. The CONSULTANT will participate in briefing and debriefing meetings with the DEPARTMENT staff related to the public meeting.

The CONSULTANT will attend the meetings with a suitable number of personnel with appropriate technical expertise (based on project issues), as authorized by the DEPARTMENT Project Manager, to assist the DEPARTMENT in such meetings.

The DEPARTMENT may request the CONSULTANT to identify the effect of the Project to individual properties on aerial maps or plans in response to requests from property owners. The DEPARTMENT may also request the CONSULTANT to meet with individual property owners.

### 3.3 PUBLIC HEARING

In compliance with the PD&E Manual, 23 CFR 771 and Section 339.155, F.S., a formal Public Hearing will be held for this PD&E Study. Only one (1) Public Hearing will be held for this project.

The CONSULTANT will send notifications to the Lead Agency, local governments, and regulatory agencies at least 25 but no more than 30 calendar days prior to the Public Hearing date.

The CONSULTANT will prepare the Public Hearing notifications on the DEPARTMENT’s letterhead for DEPARTMENT review and signature 15 days prior to mailing or as directed by the DEPARTMENT. The CONSULTANT will first prepare an initial sample draft notification for review and approval by the DEPARTMENT prior to submitting all notifications for review.

Notifications to elected officials will be signed by the District Secretary. All other notifications may be signed by the DEPARTMENT Project Manager. The notification letters must have the DEPARTMENT’s return address. After the DEPARTMENT signs the notifications, the CONSULTANT will send them by First Class US Mail. The DEPARTMENT Project Manager will also send the notification letters by email.

The CONSULTANT will prepare the Public Hearing notifications to property owners on the DEPARTMENT's letterhead for DEPARTMENT review and signature 15 days prior to mailing or as directed by the DEPARTMENT. After the DEPARTMENT Project Manager signs the letters, the CONSULTANT will send them by First Class US Mail. The CONSULTANT will obtain a list of names and addresses of property owners from the Environmental Screening Tool (EST) and/or the Hillsborough and Pinellas County Property Appraisers' Offices. The letters must have the DEPARTMENT's return address. The CONSULTANT will send notification letters to property owners at least 17 to 24 calendar days prior to the Public Hearing.

The CONSULTANT will provide the following:
• Public Hearing Notice and publication in the Florida Administrative Register (FAR)
• Notification on the Department's Public Notices webpages through the District Public Information Officer (PIO)
• Presentation with script
• Proposed typical sections and aerials depicting alternative corridors and alternative alignments, as specified by the DEPARTMENT
• Identification of the website(s) and/or locations where the technical reports and Environmental Documents will be available for public view
• Meeting location signs
• Brochures or handouts
• Title VI compliance signs
• NEPA Assignment compliance signs
• Display advertisements; any press releases and/or advertisements will indicate that the meeting is a DEPARTMENT activity; the CONSULTANT will pay the cost of publishing
• Expenses associated with arranging for a court reporter to be present and obtaining transcripts of comments made during the Public Hearing
• Response to public comments

The CONSULTANT will participate in briefing and debriefing meetings with the DEPARTMENT related to the Public Hearing. The CONSULTANT will prepare response letters for DEPARTMENT signature for all public comments. Any such response letters would need to be reviewed and approved by the DEPARTMENT Project Manager.

3.4 COMMENTS AND COORDINATION REPORT

The CONSULTANT will prepare Comments and Coordination Report containing transcript, errata, and signed certification, as well as documentation for all public involvement activities conducted throughout the project in accordance with Part 1, Chapter 11 of the PD&E Manual.

3.5 NOTIFICATION OF APPROVED ENVIRONMENTAL DOCUMENT – N/A

Notification of approved Environmental Document is not required for this project.

3.6 ADDITIONAL PUBLIC INVOLVEMENT REQUIREMENTS

The DEPARTMENT will identify and list any special or additional public involvement requirements.

- Microsimulation
- Videos, Rendering, Fly-Through, 3-Dimensional Visualization
- User Preference Survey(s)
- Other
- Alternative Public Workshop invitation
- Public Hearing invitation
• Project Newsletters - Up to three newsletters will be prepared/distributed to adjacent property owners and individuals/officials on the project mailing and email contact list. The CONSULTANT will pay for the cost of postage (no greater than first-class). The newsletters will also be posted on the project website.

4.0 ENGINEERING ANALYSES AND CONSIDERATIONS

CONSULTANT activities to conduct and prepare engineering analyses and reports shall be done under the direction of the DEPARTMENT Project Manager. The CONSULTANT shall perform engineering activities essential to developing and evaluating Project alternatives as outlined in Part 2, Chapter 3 of the PD&E Manual and as specified in this section. The CONSULTANT will gather and review existing data from the DEPARTMENT, such as transportation planning data developed for long range plans or any previously completed technical studies within the project area. The CONSULTANT will collect additional data necessary to supplement existing data. The CONSULTANT will use data to evaluate the Location and Design Concept for this project.

The CONSULTANT will verify the purpose and need for the Project based on the information obtained from the existing data, safety analysis, evaluation of existing conditions, evaluation of traffic projections, input received through the public involvement process and from the Programming Screen Summary Report.

The CONSULTANT shall develop and analyze conceptual design alternatives to address the Project needs and objectives. Development of the conceptual design alternatives will follow Context Sensitive Solution and Complete Streets approaches. Based on engineering analysis, the public involvement process, and environmental analysis, the DEPARTMENT will recommend a proposed design concept to advance to the Design Phase.

4.1 REVIEW OF PREVIOUS PLANNING STUDIES

The CONSULTANT shall review and summarize previous completed (or concurrent) planning studies and other studies that are related to this Project and appropriately incorporate their results in the analysis of the Project as described in the PD&E Manual. The following studies were conducted for this Project: FPID# 255822-1: Selmon West Extension (Gandy Connector) SEIR Re-evaluation; FPID# 256931-1: Gandy Boulevard (SR 694) from West of US 19 to 4th Street North; WPN #7113846 & #7117117 Westbound Gandy Bridge (SR 600/US 92) Replacement (Bridge #1000068)

4.2 EXISTING CONDITIONS ANALYSIS

The CONSULTANT will conduct field observations to review existing field conditions, verify desktop data, and obtain additional data required to understand the Project area, assess Project needs, identify physical and environmental constraints, develop and analyze Project alternatives, and assess constructability issues.
The CONSULTANT will collect data describing existing conditions and characteristics of the Project including roadway geometrics, typical section elements, signalization and other operational features, access features, right of way requirements, and other data applicable to modes and sub-modes of transportation, including walking/pedestrians, bicyclists, public transit users (including transit vehicles and riders), paratransit users (carpools, vanpools, taxis, shuttles, jitneys, school buses, coach buses), and freight (including loading/unloading and parking, emergency response vehicles, service vehicles, and freight handler vehicles).

The CONSULTANT will analyze existing conditions to identify and verify current transportation deficiencies as they relate to the needs and objectives of this Project.

The CONSULTANT will furnish necessary exhibits for use in this Project, such as a Project Location Map, Corridor Maps, and Concept Plans.

4.3 SURVEY

Refer to section 8.0 Design Services of this Scope of Services

4.4 GEOTECHNICAL INVESTIGATION

Refer to section 8.0 Design Services of this Scope of Services

4.5 TRAFFIC ANALYSIS

4.5.1 Traffic Analysis Methodology

The CONSULTANT will perform traffic analysis in accordance with guidance from the PD&E Manual, Traffic Analysis Handbook, and Project Traffic Forecasting Handbook. The CONSULTANT will prepare a forecast and analysis methodology which must be agreed upon by the DEPARTMENT prior to beginning any analysis. The methodology must state the type of documentation, Project Study Area to be analyzed, and method and assumptions that will be used to analyze existing and future traffic conditions. The development of future forecast data must use the currently adopted version of the Tampa Bay Regional Planning Model (TBRPM) The CONSULTANT will validate the travel demand model at a subarea level.

Microsimulation traffic analysis software such as SimTraffic, CORSIM, and/or VISSIM (Optional Services)

Capacity analysis will be based on the latest Highway Capacity Manual procedures. Traffic analysis methodology will include an approach or procedure to evaluate safety performance of the project alternatives.
All traffic analysis documentation must be written in plain language and in a format that can be easily followed. The CONSULTANT must submit all traffic analysis files for assumptions, inputs, outputs, network data, calculations, and results to the DEPARTMENT.

### 4.5.2 Traffic Counts

The CONSULTANT will collect the following traffic data.

- Current corridor traffic counts
- 72-hour traffic machine counts (approach volumes and departure volumes at 15-minute increments) and 4-hour (2 hour AM and 2 hour PM) manual vehicle turning movement counts for peak hours at a minimum at the following intersections:
  - 4th Street North and North Frontage Road;
  - 4th Street North and South Frontage Road;
  - Gandy Boulevard and Brighton Bay Boulevard;
  - Gandy Boulevard and San Martin Boulevard/Mangrove Cay Lane; and
  - Gandy Boulevard and West Shore Boulevard.

Since this study examines the feasibility of continuing the existing grade separation of Gandy Boulevard from its current terminus at 4th Street North eastward to the Gandy Bridge, it is recommended that traffic volumes be collected at existing median openings along Gandy Boulevard. The traffic volumes at these median openings can be used to estimate traffic volumes accessing the Gandy Boulevard study corridor under design year traffic conditions. Under the Build Alternative, traffic at these median locations will be diverted to the proposed grade separations at appropriate locations in order to achieve a controlled access highway facility on Gandy Boulevard. The CONSULTANT will need to determine the laneage and traffic control features needed on the proposed north and south frontage roads to sufficiently accommodate these diverted traffic volumes. In addition, the CONSULTANT will need to evaluate the effect of U-turn or additional left-turn traffic on the highway capacity of the ramp terminal intersections of the grade separated locations associated with the diverted median opening traffic. Two-hour AM and two-hour PM peak period turning movements only (no through movements on Gandy Boulevard) should be collected at the following list of median openings:

- Oak Street eastbound directional left turn;
- Tortuga Pointe Apartments/Derby Lane bi-directional median opening;
- Goodwill full median opening;
- Peridot Palms Apartments/TRAK Motel Apartments full median opening;
- Snug Harbor Road full median opening;
- San Fernando Boulevard full median opening;
- CBS 10 News Center full median opening;
• RaceTrac/Galati Yacht Sales full median opening;
• The Grand Veranda Apartments/I.C. Sharks Restaurant full median opening;
• West beach access full median opening;
• Mid1 beach access full median opening;
• Mid2 beach access full median opening;
• East beach access full median opening;
• U.S. Marine Corps Reserve Center/Gandy Park South full median opening; and
• Culbreath Key Way/Bridge Street bi-directional median opening.

Existing recreational facilities are located adjacent to Gandy Boulevard, both on the east (Hillsborough County) and west (Pinellas County) sides of the Gandy Bridge. To ensure that the lane geometry and traffic control features of the Recommended Build Alternative will accommodate “peak” traffic generated by these recreational uses, it is recommended that vehicle turning movement counts be collected during a weekend peak period. This additional data will aid in the sizing of turn lanes to better accommodate peak traffic conditions associated with the ingress and egress of traffic movements between Gandy Boulevard and the recreational uses. The weekend peak period vehicle turning movements counts should be collected, at a minimum, the following locations:

• West beach access full median opening;
• Mid1 beach access full median opening;
• Mid2 beach access full median opening;
• East beach access full median opening; and
• U.S. Marine Corps Reserve Center/Gandy Park South full median opening.

The CONSULTANT shall perform a check of the traffic count data, which includes the following:

• Consistency of volume flows between count locations (no major drops or additions of traffic between count locations);
• 72-hour approach counts for intersections should be within 10 to 15 percent of turning movement count approach volumes for the same time period;
• Total daily directional traffic flows should be approximately equal (balanced) in both directions (if not, some reasonable explanation should be provided), and;
• Calculated design hourly volume for intersections/roadway segments should be within 5 percent of the calculated Directional Design Hour Traffic Volumes (DDHV).
The CONSULTANT shall summarize, seasonally adjust and balance existing traffic count information and provide tabular and graphic representations of existing 2019 AM and PM peak hour traffic volumes. Annual Average Daily Traffic (AADT) volume information shall be provided for all intersection approaches, frontage roads/ramps and the Gandy Boulevard mainline in the study area.

**4.5.3 Vehicle Classification Counts on Roadway Segments and Ramps**

The CONSULTANT will collect the following existing classification data.

- Current corridor traffic counts
- 72-hour traffic machine counts at the following locations:
  - On Gandy Boulevard at the 4th Street North Bridge;
  - On Gandy Boulevard Bridge; and
  - On Gandy Boulevard west of West Shore Boulevard.

**4.5.4 Pedestrian, Bicycle, and Other Multimodal Data**

The CONSULTANT will collect the following additional existing traffic data during the peak period data collection of manual vehicle turning movement counts:

- Pedestrian Volumes
- Bicycle Volumes

**4.5.5 Calibration and Validation Data Collection**

Not applicable, as traffic microsimulation analysis will not be employed for this study.

**4.5.6 Existing Traffic Operational Analysis**

The CONSULTANT shall utilize the DEPARTMENT approved design hour traffic factors (K, D, and T) documented in the Traffic Analysis Methodology to develop existing design hour traffic volumes. The existing design hour traffic volumes will be used to analyze the operational performance of the existing condition, to identify deficiencies related to the purpose and need for the project, and to establish a baseline to compare future operational performance. The CONSULTANT will evaluate the operational effectiveness of the existing condition using agreed upon performance measures of effectiveness (MOEs). The
analysis should include multimodal evaluation for pedestrian, bicycle, freight, and transit modes, as appropriate.

4.5.7 Calibration and Validation (Optional Services)

4.5.8 Future Demand Forecasting

The CONSULTANT shall develop traffic forecasts using the latest version of the Tampa Bay Regional Planning Model (TBRPM), which is to be validated for the subarea by the CONSULTANT. The CONSULTANT shall provide a Traffic Forecasting Technical Memorandum documenting the methodology and procedures employed to develop opening year (2025), interim year (2035), and design year (2045) Annual Average Daily Traffic (AADT) and AM/PM peak hour traffic volumes for the No Build and Build Alternatives. The CONSULTANT shall submit the Traffic Forecasting Technical Memorandum for review and approval by the DEPARTMENT prior to conducting future conditions traffic analysis.

4.5.9 No Build Analysis

The CONSULTANT will analyze the operational performance of the No Build Alternative for the analysis years to identify deficiencies related to the purpose and need for the project. The CONSULTANT will evaluate the operational effectiveness of the No Build Alternative using agreed upon performance measures of effectiveness (MOEs). The analysis should include multimodal evaluation for pedestrian, bicycle, freight, and transit modes, as appropriate.

4.5.10 Development and Screening of Alternatives

The CONSULTANT will identify, develop, assess, and screen preliminary potential Project alternatives that would meet the purpose and need for this Project in accordance with Part 2, Chapter 3 of the PD&E Manual. Development of alternatives will consider previously completed planning products.

By considering project goals and objectives, purpose and need, and results of ETDM Programming screen event, the CONSULTANT in consultation with the DEPARTMENT, will identify and document alternatives to be eliminated from further detailed study. Only viable or feasible alternatives should be carried forward for detailed study.

4.5.11 Operational Evaluation of Build Alternatives

The CONSULTANT will analyze the operational performance of viable or feasible alternative(s) for opening, interim, and design years. The analysis must include multimodal evaluation for pedestrian, bicycle, and transit modes as
appropriate. The analysis will also include evaluation of access management in relation to traffic safety and operational efficiency within the Study Area. The CONSULTANT will evaluate the operational effectiveness of Build Alternatives using agreed upon performance MOEs. The CONSULTANT shall conduct a vehicle queuing analysis using the DEPARTMENT approved methodology and procedure documented in the Traffic Analysis Methodology to size the turn lanes for the Recommended Build Alternative.

4.5.12 Project Traffic Analysis Report

As described in Part 2, Chapters 2 and 3 of the PD&E Manual, the CONSULTANT will prepare the Project Traffic Analysis Report to document development of design traffic volumes and results of the traffic analysis for No Build and Build Alternatives, which includes the transit, bicycle, and pedestrian analysis. The results must be shown on diagrams for each alternative and discussed in the report. The Project Traffic Analysis Report will also summarize the comparison of the operational and safety performance of all alternatives evaluated in detail and how they perform against each other.

4.5.13 Interchange Access Request- N/A

4.5.14 Traffic Data for Noise Study

The CONSULTANT will provide traffic data required for the noise study and will include the following data for each road segment (i.e., intersection to intersection), ramps, cross streets, and frontage roads, for the existing year, opening year, and the design year for Build and No Build alternatives:

- LOS C directional hourly volumes
- Demand peak hourly volumes (peak and off-peak directions)
- Existing and proposed posted speed
- Percentage of heavy trucks (HT) in the design hour
- Percentage of medium trucks (MT) in the design hour
- Percentage of buses in the design hour
- Percentage of motorcycles (MC) in the design hour

4.5.15 Traffic Data for Air Analysis

The CONSULTANT will collect traffic data required for the air quality analysis which will include the following:

- Intersection type and approach speeds
- Intersections - peak hour volumes for each approach
- Interchanges - peak hour volumes for each ramp (on or off) regardless of percent turning volumes
- Toll plaza - peak hour volumes for each approach
4.5.16 Signalization Analysis- (Optional Services)

In coordination with the DEPARTMENT’s Traffic Operations office, the CONSULTANT shall perform signalization analysis and/or warrant studies at the intersection in accordance with all applicable manuals, procedures, guidelines, and current design memorandums. The CONSULTANT will propose preliminary signal timing plan and signal operation plan for each intersection that requires signalization on the recommended alternative.

4.6 SIGNAGE

Refer to section 8.0 Design Services of this Scope of Services

4.7 MANAGED LANES CONCEPTS (Optional Services)

The CONSULTANT will perform the following activities to support development of tolling alternatives/concepts, as requested by the Department:

- Review sketch level and/or planning level traffic and revenue studies performed for the corridor.
- Work with Florida's Turnpike Enterprise to evaluate the tolling concepts along the corridor for both mainline general purpose lanes and managed lanes.
- Prepare preliminary "sketch" level improvement alternatives capable of meeting the travel options and mobility needs.
- Perform high-level analysis of the cost and other impacts associated with each alternative, including input from key stakeholders, as compared to the No-Build Alternative.
- Review the impacts the proposed mainline and interchange improvements will have on ramp and mainline toll facilities.
- Prepare recommended alternatives for location of tolling points along the corridor to address tolling equity throughout the corridor.
- The dynamic signing concept for active traffic management and incident management purposes, if the corridor is part of the District's detour routes.
- Evaluate the dynamic signing concept for active traffic management and incident management purposes, if the corridor is part of the District's detour routes.

4.8 SAFETY

4.8.1 Crash Data

The CONSULTANT will obtain the most recent five (5) years of available data from the DEPARTMENT's crash database and other local sources for this Project. The crash data will include the number and type of crashes, crash locations, number of fatalities and injuries, and estimates of property damage and economic loss.
4.8.2 Safety Analysis

The CONSULTANT will perform safety analysis in accordance with Part 1, Chapter 2 of the PD&E Manual. Based on the information obtained from the crash data, the CONSULTANT will identify project safety needs associated with the existing and future conditions. The CONSULTANT will use the Highway Safety Manual (HSM) procedures to estimate the safety performance of the Project alternatives as agreed upon in the Traffic Analysis Methodology.

4.8.3 Documentation of Safety Analysis

The CONSULTANT will document the results of the safety analysis in the PTAR or a standalone Safety Analysis Memorandum.

4.9 UTILITIES AND RAILROAD

The CONSULTANT will obtain information regarding utilities and railroad in accordance with Part 2, Chapter 21 of the PD&E Manual.

4.9.1 Utilities

Prior to starting utility coordination, the CONSULTANT and the DEPARTMENT Project Manager shall meet with the District Utility Office (DUO) for guidance to ensure that all necessary utility coordination will be accomplished in accordance with DEPARTMENT procedures.

It is anticipated that the following Utility Agency Owners (UAOs) are within or adjacent to the Project, but it is the responsibility of the CONSULTANT to determine the final list of UAOs within the project area: Florida Gas Transmission, Duke Energy Distribution, Duke Energy Transmission, Frontier Communications, Wide Open West (WOW), Bright House Communications, and Fiberlight Communications.

The CONSULTANT will prepare a Utility Assessment Package. The Utility Assessment Package must contain items specified in Part 2, Chapter 21 of the PD&E Manual. The CONSULTANT will provide a PD&E Request Package to the District Utility Office.

The CONSULTANT will notify the UAOs within the Project and request existing and planned utility information for major above ground and subsurface facilities within the Project.

The CONSULTANT and DUO will meet with each UAO as necessary, separately or together, to understand utility conflicts and project potential impacts on utilities. The CONSULTANT will evaluate and consider potentially significant utility conflicts as they may affect the chosen corridor and/or alignment. While
evaluating potential impacts and recommending mitigation strategies, the CONSULTANT should refrain from making any compensability determinations in any of the documentation/assessments that they create.

4.9.2 Railroads - N/A

Potential Railroad Crossing is not anticipated on this project.

4.10 ROADWAY ANALYSIS

4.10.1 Design Controls and Criteria

The CONSULTANT will prepare design control and criteria for developing alternatives and designing geometrics and other roadway elements according to the DEPARTMENT standards.

4.10.2 Typical Section Analysis

The CONSULTANT will develop conceptual typical sections for the Project alternatives which address transportation needs and context. Development of typical sections must consider Context Sensitive Solutions and Complete Streets approaches and the needs of all Project users.

4.10.3 Geometric Design

The CONSULTANT will perform geometric design using the established Project design controls and criteria. The CONSULTANT will also use Project traffic data and results of traffic analysis to design appropriate roadway elements. The CONSULTANT will establish both preliminary vertical profile and horizontal alignments of the mainline. The design of Project alternatives must consider environmental constraints, physical constraints, Context Sensitive Solutions, Complete Streets, and any additional information, as required. See Part 2, Chapter 3 of the PD&E Manual for more engineering and design considerations.

For each alternative evaluated in detail, the CONSULTANT shall prepare sketches of plan, profile, and typical sections as appropriate to show existing features, proposed geometry, and location of any environmental and geometric design constraints.

4.10.4 Intersections and Interchange Evaluation

The CONSULTANT will propose appropriate intersection control based on the results of project traffic analysis to establish an overall intersection/interchange footprint at several intersections along US 92/SR 600/Gandy Blvd within the project limit.
4.10.5 Access Management

The CONSULTANT will review the DEPARTMENT’S State Highway System Access Management Classification System and Standards and evaluate their application to the project. The CONSULTANT will recommend the proper access classification and standard to be applied to the Project. The proposed access management plan will be presented as part of the public involvement process. If an Access Management Classification / Reclassification Public Hearing is required, it will be combined with the PD&E Study Public Hearing.

4.10.6 Multimodal Accommodations

The CONSULTANT will review, evaluate, and document the location and condition of existing pedestrian, bicycle, and public transit accommodations and freight services in the study area. This activity includes reviewing existing plans, reports, and studies that outline strategies or define projects associated with alternative modes of travel.

The CONSULTANT will consider freight, pedestrian, bicycle, and transit in the development and evaluation of Project alternatives commensurate with the context with a goal of improving overall mobility, access, connectivity, safety and efficiency. Multimodal accommodation may include analysis of on-street parking and loading zone modifications and/or removal, park and ride needs, as necessary. The CONSULTANT will consider and evaluate the existing and anticipated future use of the Project by bicyclists and pedestrians, the potential impacts of the Project alternatives on bicycle and pedestrian travel, and propose measures to avoid or reduce adverse impacts to bicyclists and pedestrians that would use the Project.

The CONSULTANT will also consider supportive Transportation Demand Management and parking management strategies consistent with the transportation context and the needs of all users of the project. The CONSULTANT will assist the DEPARTMENT with coordination with local agencies, transit operators and Metropolitan Planning Organizations (MPOs) as requested by the DEPARTMENT.

4.10.7 Maintenance of Traffic

The CONSULTANT will evaluate alternatives for constructability and the ability to maintain traffic during construction according to Part 2, Chapter 3 of the PD&E Manual. The CONSULTANT will include the estimated cost to maintain traffic in the construction cost estimate for the Project alternative.
4.10.8 Lighting

The CONSULTANT will evaluate the need for lighting in accordance with applicable manuals, guidelines, standards and current design memorandums. The CONSULTANT will include the estimated cost for lighting in the construction cost estimate for the Project alternative.

4.11 IDENTIFY CONSTRUCTION SEGMENTS

The CONSULTANT will identify project segments and/or construction segments along with a definition of implementation phasing. This will include reviewing financing, staging, and sequencing plans that were created by others. If required, the CONSULTANT will identify shorter (i.e., minimum operable segment) intermediate-cost alternatives in the segment determination.

4.12 TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (Optional Services)

The CONSULTANT will study or investigate a broader range of systems as it relates to the PD&E study such as traffic signal system, communication system, travel time systems, Transit Signal Priority (TSP), Adaptive Traffic Control System (ATCS) and other systems referenced in the ITS Architecture. The CONSULTANT will use a Systems Engineering approach for determining the Transportation System Management and Operations (TSM&O) Systems and required systems engineering documents for the Project. The CONSULTANT will develop a Preliminary Systems Engineering Management Plan (PSEMP) and a high-level Project ConOps according to Part 2, Chapter 3 of the PD&E Manual. The ConOps must be reviewed by the District TSM&O engineer. The ConOps document template can be found at the following location: http://www.dot.state.fl.us/trafficoperations/its/projects_deploy/semp.shtm. The CONSULTANT will evaluate the need for improvements, preservations, or modifications to the existing TSM&O system in relation to the alternatives being considered. This includes reviewing the existing as-built information provided by the DEPARTMENT, identifying impacts to the existing TSM&O infrastructure due to the other project work, identifying opportunities to preserve or enhance TSM&O infrastructure, and developing a high-level cost estimate for the changes necessary to the infrastructure in order to meet project TSM&O needs and goals. These items will be documented in the ConOps. The CONSULTANT will identify the delivery method for both equipment and technology and prepare implementation schedule that includes engineering, design, construction, and Project activation (testing and start-up). The CONSULTANT will coordinate with both the District TSM&O Engineer and the County Traffic Engineer concerning existing and proposed Intelligent Transportation Systems (ITS) and Advanced Traffic Management System (ATMS) infrastructure. The CONSULTANT will consider the presence of the ITS infrastructure when analyzing the traffic for the corridor, as well as any proposed improvements that may impact the underground fiber optic cable infrastructure and associated roadside devices.
4.13 STRUCTURES

4.13.1 Existing Structures

The CONSULTANT will collect the existing structures data as identified in Part 2, Chapter 3 of the PD&E Manual. The following existing structures have been identified for evaluation:

- 100585- Gandy Boulevard over Old Tampa Bay (southbound)
- 100300- Gandy Boulevard over Old Tampa Bay (northbound)

4.13.2 Structure Typical Sections

The CONSULTANT will develop typical sections options for the bridges. These will include the DEPARTMENT’s standard typical sections, and any typical sections that may result in minimizing right of way and environmental impacts. Coordination with the District’s Structures Design Engineer is required.

4.13.3 Structure Design Alternatives

The CONSULTANT will evaluate conceptual vertical and horizontal geometry and clearance requirements for the bridges and up to 4 overpasses. The CONSULTANT will document structural design calculations and design assumptions used in the analysis. The following bridges have been identified for evaluation.

- 100585- Gandy Boulevard over Old Tampa Bay (southbound)
- 100300 - Gandy Boulevard over Old Tampa Bay (northbound)

The CONSULTANT shall perform a life cycle cost analysis for Bridges 100585 and 100300 and include results along with a recommendation for widening or replacement in the PER. The CONSULTANT shall also address trail connectivity across Tampa Bay when evaluating bridge alternatives.

The CONSULTANT shall provide a Bridge Concept Report for the proposed grade separated intersection within the project limits.

The Bridge Concept Report shall also provide a wall type justification including approximate quantities, cost and a wall location plan.

4.14 DRAINAGE

The CONSULTANT will perform Drainage analysis in accordance with the Drainage Manual and Part 2, Chapters 11 and 13 of the PD&E Manual. The CONSULTANT
shall incorporate/consider the Contamination Screening Evaluation Report and any other related report findings into the Drainage Reports.

4.14.1 Floodplain and Environmental Permit Data Collection

The CONSULTANT will gather data (permits, maps, studies, etc.) from relevant sources including local government, local agencies, and regulatory agencies.

4.14.2 Drainage Analysis

The CONSULTANT will perform drainage analysis by delineating the basin boundaries using LiDAR information, existing survey, and field observations. The CONSULTANT will analyze and determine high water elevations in each basin and use the information to establish the preliminary roadway profile. Drainage analysis will also include checking the capacity and structural adequacy of existing cross drains, and preliminary drainage design.

4.14.3 Floodplain Compensation Analysis

For each roadway alternative, the CONSULTANT will determine the base floodplain elevations, estimate encroachments and determine appropriate compensation provisions, including incorporating floodplain compensation site requirements into the Stormwater Management Facility (SMF) Siting Report.

4.14.4 Stormwater Management Analysis

The CONSULTANT will schedule an Environmental Look Around (ELA) meeting (See Part 2, Chapter 11 of the PD&E Manual) with DEPARTMENT staff, regulatory agencies, local governments, and other stakeholders to discuss regional stormwater needs and design and permitting approaches that benefit the watershed as a whole. The CONSULTANT will document the meeting notes in the project file.

The CONSULTANT will calculate the stormwater management requirements, and estimate the stormwater management facility needs for each roadway alternative. If the ELA reveals no regional pond sites, the CONSULTANT will identify three (3) practical stormwater management facility (SMF) sites (including any inflow or outfall easement requirements) in each basin for each project alternative, estimate construction cost, compare the sites, and identify a preferred SMF site for each basin. The CONSULTANT will attend a SMF Siting Meeting to discuss pond site alternatives with the DEPARTMENT.

The CONSULTANT will prepare a Stormwater Management Facility (SMF) Siting Report or Conceptual Drainage Design Report in accordance with the Drainage Manual and the FDOT Drainage Design Guide.
4.14.5 Drainage Design

This task includes conducting 15% design level drainage design for FPID 256931-4-32-01 to include the following:

Base Clearance Calculations - Analyze, determine, and document high water elevations per basin which will be used to set roadway profile grade and roadway materials. Determine surface water elevations at cross drains, floodplains, outfalls and adjacent stormwater ponds. Determine groundwater elevations at intervals between the above-mentioned surface waters. Document findings in a Base Clearance Report.

4.14.6 Location Hydraulic Report

The CONSULTANT will prepare a Location Hydraulic Report for the project in accordance with Part 2, Chapter 13 of the PD&E Manual.

4.14.7 Bridge Hydraulic Evaluation

The CONSULTANT will conduct a coastal analysis to determine the 100-year maximum wave crest elevation, including the storm surge elevation and wind setup. This elevation must incorporate sea level rise analysis to assess the vulnerability of flooding over the design life of the facility. A scour analysis will not be required.

The CONSULTANT will prepare a Bridge Hydraulics Technical Memorandum documenting the establishment of the 100-year maximum wave crest elevation.

4.15 LANDSCAPING ANALYSIS (Optional Services)

The CONSULTANT will research and collect data necessary to complete initial landscaping design and analysis of the preferred alternative. The research and data collection must include identification of opportunities and constraints of the proposed Project based on existing site conditions.

4.16 CONSTRUCTION AND RIGHT OF WAY COST ESTIMATES

4.16.1 Construction Cost Estimates

The CONSULTANT will develop construction cost estimates using the Department's Long Range Estimate (LRE) program. The CONSULTANT will be responsible for reviewing and updating the cost estimate when scope changes occur, at project milestones, and during the DEPARTMENT's annual Work Program update cycle. Construction costs must include traffic management and right of way costs.
4.16.2 Right of Way Cost Estimates

Based on typical section analysis and DEPARTMENT design standards, the CONSULTANT will establish construction limits and determine the minimum (proposed) right of way requirements throughout the limits of the Project. Establishment of construction limits will consider location drainage features, the transportation management plan, utility relocations, stormwater pond requirements, and identified environmental issues, among other factors.

The CONSULTANT will compare the existing right of way width with the proposed right of way requirements to estimate the amount of right of way that the DEPARTMENT must acquire.

The DEPARTMENT will estimate the cost for right of way acquisition, and cost estimates for relocations and business damages, if any. The CONSULTANT will submit concept plans for the Build Alternative that include the parcel identification number, existing right of way lines, proposed right of way lines, acreage and square footage of property required. Additionally, the CONSULTANT will provide a spreadsheet with the following parcel information: owner, address, acreage of parent parcel and required amount of property for the Project, estimated business damages and right of way property costs.

The DEPARTMENT's Right of Way Office staff and CONSULTANT will conduct an interactive field trip to review conditions in the corridor as they pertain to actual conditions that might impact the cost of right of way acquisition for the Project.

The CONSULTANT will jointly meet with the District Roadway Engineer, Traffic Operations staff, Right of Way Office staff, and DEPARTMENT's Office of General Counsel staff prior to the development of right of way cost estimates. The purpose of the meeting is to jointly review the proposed design parameters, the proposed alternative alignments to identify those alternatives for which right of way cost estimates will be developed by the DEPARTMENT. The goal is to evaluate the alternatives necessary to comply with PD&E requirements and to satisfy the evaluation needed for eminent domain considerations for each alternative.

The DEPARTMENT's Right of Way Office will estimate the cost for right of way acquisition, as well as cost estimates for relocations and business damages, if any.

4.17 ALTERNATIVES EVALUATION

4.17.1 Comparative Alternatives Evaluation

The CONSULTANT will establish evaluation criteria at the beginning of the Project, which must be agreed upon with the DEPARTMENT before use in the
comparative evaluation of alternatives. After developing the viable alternatives, analyzing alternatives and estimating costs, the CONSULTANT will prepare a matrix which compares the impacts, performance, and costs of the alternatives evaluated in detail in the PD&E Study. The matrix will include the performance of the No Build Alternative as the baseline for comparison.

4.17.2 Selection of Recommended Alternative

The DEPARTMENT will select a recommended alternative based on review and analysis of engineering, environmental, and public involvement issues related to this Project.

4.17.3 Value Engineering (Optional Service)

The DEPARTMENT will conduct a Value Engineering (VE) study for the Project according to Value Engineering Program, Topic No. 625-030-002. The CONSULTANT will prepare relevant project information and submit to the VE team. The information will be logically organized to facilitate the VE team's understanding of the Project development.

The CONSULTANT will submit to the VE team the following minimum information, if available:

- Project traffic report
- Environmental studies reports
- Environmental document
- Engineering analysis documentation
- Copies of all alternative concept plans/drawings
- Drainage analysis documentation
- Bridge hydraulics report and location hydraulics report
- Typical section package
- Other miscellaneous reports prepared for this project

At the request of the DEPARTMENT, the CONSULTANT will meet with the VE team to explain development of Project alternatives and rationale of selecting the recommended alternative. The CONSULTANT will be available to the VE team for clarification of the information used during the VE study. The CONSULTANT will respond to questions or proposals developed as part of the VE and recommend inclusion or denial of the VE proposals into the project.

The CONSULTANT will include VE study recommendations concerning modified or additional concepts, into the comparative evaluation of the alternatives.
4.18 CONCEPT PLANS

The CONSULTANT will prepare concept plans for all viable Project alternatives in appropriate scales overlaid on the base map.

4.18.1 Base Map

The CONSULTANT will produce a base map of the project area using DEPARTMENT’s CADD standards. The base map will contain an aerial photo and existing characteristics for the project. The base map must show environmental issues that are specific to the Study Area such as cemeteries, wetlands, historic properties, high-risk contamination sites, public parks, and property lines.

The CONSULTANT will prepare base maps for the following uses (at noted scales):
- Overall Project Location Map
- Overall Drainage Map 200 scale
- Corridor Maps (Roll Plots) 100 scale

4.18.2 Alternatives Concept Plans

The CONSULTANT will prepare and overlay alternative concept plans on the base map. The concept plan must show potential location for bridges, culverts, retaining walls, right of way lines (existing and proposed), major utility facilities, intersection, critical driveways, and median openings, among other roadway elements, at appropriate scale according to the DEPARTMENT CADD Manual.

4.18.3 Preferred Alternative

The CONSULTANT will finalize the preferred alternative concept plans by incorporating comments received from the Public Hearing as directed by the DEPARTMENT.

4.18.4 Typical Section Package

Refer to section 8.0 Design Services of this Scope of Services

4.18.5 Design Exceptions and Design Variations

Refer to section 8.0 Design Services of this Scope of Services
4.19 TRANSPORTATION MANAGEMENT PLAN (Optional Services)

The CONSULTANT will prepare a conceptual Transportation Management Plan in accordance with as per Part 2, Chapter 3 of the PD&E Manual.

4.20 RISK MANAGEMENT (Optional Services)

The DEPARTMENT Project Manager will coordinate with the Cost Risk Assessment (CRA) regional team and a representative from that team lead the Risk Assessment for this Project. The CONSULTANT and key SUBCONSULTATANTS may be asked to attend and participate in the Risk Assessment Workshop for this Project. The CONSULTANT will support the Risk Assessment Workshop by providing materials requested by the DEPARTMENT Project Manager to conduct the Workshop and associated meetings.

4.21 ENGINEERING ANALYSIS DOCUMENTATION

The CONSULTANT will document the results of alternative analysis in a memorandum that will be signed and seal and included in the design documentations/design report for this project.

The CONSULTANT shall include sufficient back up information related to all computer programs and parameters used in the analyses to facilitate the review of the engineering documentation. The engineering documentation shall be neatly and logically presented. The final engineering analysis documentation prepared by the CONSULTANT shall be signed and sealed by a Florida-licensed professional engineer.

4.22 PLANNING CONSISTENCY

4.22.1 Transportation Plans

The CONSULTANT will coordinate with the DEPARTMENT to obtain and review transportation plans throughout the life of the Project for all modes of transportation including freight, transit, and non-motorized. The following plans or studies should be reviewed as appropriate:

- MPO's adopted Long Range Transportation Plan (LRTP) Cost Feasible and Needs Plans
- Local Government Transportation Improvement Plan (TIP)
- State Transportation Improvement Program (STIP)

4.22.2 Planning Consistency Form

The CONSULTANT will assist the DEPARTMENT's finalization of Planning Requirements for Environmental Document approval in the appropriate form.
4.23 TRANSIT SYSTEM AND SERVICES - N/A

5.0 ENVIRONMENTAL ANALYSIS AND REPORTS

Tasks described within this section direct work efforts applicable to the environmental analysis and documentation for this Project. Prior to beginning environmental work, the CONSULTANT must review the ETDM Programming Screen Summary Report, summary degree of effect, resource agencies' comments, permits that may be required, and GIS information from the Environmental Screening Tool (EST). This review will support the CONSULTANT's ability to adequately assess the potential for Project alternatives to affect known environmental resource issues.

CONSULTANT activities to conduct and prepare environmental analysis and reports shall be done under the direction of the DEPARTMENT Project Manager. The CONSULTANT will collect pertinent environmental data, conduct analyses, and document the results of this analysis within technical reports or memoranda. The analyses and reporting will be performed and presented in accordance with the procedures in the PD&E Manual. The CONSULTANT will analyze all Build Alternatives and the No Build Alternative with respect to impacts to natural, cultural, social and physical resources and document all analyses in the reports. Wherever appropriate the CONSULTANT will describe proposed measures to avoid, minimize, or mitigate project impacts on the environmental issues. Additionally, the CONSULTANT will summarize results of the environmental analysis in the Environmental Document. The CONSULTANT must verify and record in the Environmental Document any environmental resource that is identified as "No Involvement". The CONSULTANT will summarize in the Environmental Document the results of analysis of environmental resources that were completed as part of another study or performed by others concurrent with this project.

5.1 SOCIOCULTURAL EFFECTS

THE CONSULTANT will conduct a Sociocultural Effects (SCE) evaluation in accordance with Part 2, Chapter 4 of the PD&E Manual. The CONSULTANT will document the results of the SCE Evaluation in the Environmental Document and in the Project file and / or complete a stand-alone SCE report if required. If no involvement for a particular issue is indicated, then standard statements to that effect from Part 2, Chapter 4 of the PD&E Manual will be included in the Environmental Document.

5.1.1 Social

5.1.2 Economic

5.1.3 Land Use Changes

5.1.4 Mobility
5.1.5 Aesthetics

5.1.6 Relocation Potential (Optional Services)

The CONSULTANT will identify residences, businesses, and institutional or community facilities that may require relocation to accommodate the Project. The CONSULTANT will obtain additional site-specific information needed to evaluate the effect of each Project alternative on the displacement of residences and businesses.

The CONSULTANT will collect the data and perform the analysis necessary to complete a CSRP for the proposed recommended alternative according to Chapter 9 of the Right of Way Procedures Manual.

5.2 CULTURAL RESOURCES

The CONSULTANT will prepare a Research Design and Survey Methodology for the project, to be submitted to the DEPARTMENT for approval prior to the initiation of field work. The CONSULTANT shall identify and map out the zones of probability for the Project Study Area, and identify any previously recorded resources. The Area of Potential Effect (APE) will be determined (including pond sites). The CONSULTANT will summarize each of the cultural resource issues in the Environmental Document. If noninvolvement for a particular issue is indicated, then a statement to that effect will be included. The CONSULTANT will use a professional qualified under the provisions of 36 CFR 61 in compliance with the National Historic Preservation Act of 1966 (Public Law 89-665, as amended) and the implementing regulations (36 CFR 800), as well as with the provisions contained in Chapter 267, Florida Statutes, to perform all work in this task.

The CONSULTANT will assess the direct and indirect effects and will document the severity of the following items in the Environmental Document and Project file:

5.2.1 Archaeological and Historic Resources

The CONSULTANT will identify and analyze impacts to archaeological sites and historic resources within the Project's Area of Potential Effects (APE). The APE must include potential pond sites. The CONSULTANT will prepare a research design methodology and perform a Cultural Resources Assessment Survey, including an underwater survey (Optional Services), in accordance with Part 2, Chapter 8 of the PD&E Manual. All work will be documented and coordinated with appropriate agencies as per Part 2, Chapter 8 of the PD&E Manual, and the DEPARTMENT's Cultural Resource Management Handbook. In addition, attendance at public meetings may be required. The CONSULTANT will review and address any resources issues or comments by the State Historic Preservation Office (SHPO) listed in the Programming Screen Summary Report.
The CONSULTANT will assist the DEPARTMENT in meetings by providing technical support in Section 106 Meetings, such as Cultural Resource Committee Meeting.

The CONSULTANT will prepare Cultural Resources Assessment Survey (CRAS) documentation detailing the results of the survey and assessments of resource significance, including a Florida Master Site File (FMSF) form. The Research Design and Survey Methodology and the Pond Site Technical Memo will be included in the CRAS appendix.

5.2.2 Recreational, Section 4(f)

- **Section 4(f) Determination of Applicability**: The CONSULTANT will complete the documentation and coordination required for a Section 4(f) Determination of Applicability in accordance with Part 2, Chapter 7 of the PD&E Manual.
- **Section 4(f) "de minimis" Documentation**: The CONSULTANT will prepare Section 4(f) "de minimis" documentation in accordance with Part 2, Chapter 7 of the PD&E Manual. (Optional Services)
- **Section 4(f) Evaluation**: The CONSULTANT will complete the documentation for Section 4(f) requirements in accordance with Part 2, Chapter 7 of the PD&E Manual. (Optional Services)

5.3 NATURAL RESOURCES

The CONSULTANT will assess and summarize each of the natural resource issues in the Environmental Document. If no involvement for a particular issue is indicated, then a statement to that effect will be included.

The CONSULTANT will identify the natural resource evaluation area. The CONSULTANT will assess the direct and indirect effects and will document the severity of the following items in the Environmental Document and project file:

5.3.1 Wetlands

**Wetlands and Surface Waters**: The CONSULTANT will identify the type, quality, and function of wetlands, or reference previously completed documentation relevant to the Project. The CONSULTANT will establish Uniform Mitigation Assessment Method (UMAM) for representative wetlands in accordance with Part 2, Chapter 9 of the PD&E Manual. The CONSULTANT will evaluate alternatives that avoid wetland impacts and, where unavoidable, identify practicable measures to minimize impacts. Any impact to wetlands requires development of a Conceptual Mitigation Plan. The CONSULTANT will document the results of a Wetlands Evaluation in the Natural Resources Evaluation (NRE) Report to document all coordination activities with resource agencies, wetland impact assessment, and mitigation analysis.
5.3.2 Essential Fish Habitat

The CONSULTANT will conduct field review, survey, and appropriate coordination with resource agencies to assess impacts to essential fish habitat (EFH) in accordance with Part 2, Chapter 11 of the PD&E Manual. The CONSULTANT will prepare the EFH Assessment as a component of the NRE to document potential adverse effects to EFH and measures to address those effects.

5.3.3 Wildlife and Habitat

Analysis and Report: The CONSULTANT will perform research, field reviews, survey, and coordination necessary to determine Project involvement with and any potential impacts to federal and state protected, threatened or endangered species and their habitats. Additionally, the CONSULTANT will develop a study design (which will be approved by the DEPARTMENT) to evaluate the magnitude of Project involvement with wildlife and their habitat. If required, the CONSULTANT will prepare the Biological Assessment as a part of the NRE.

The CONSULTANT will assess project’s potential impacts to wildlife and habitat in accordance with Part 2, Chapter 16 of the PD&E Manual. The CONSULTANT will assist the DEPARTMENT in consultations, if required.

Conservation Measures and Mitigation Plan: The DEPARTMENT Project Manager will provide a description of the habitat conservation measures to be considered. The CONSULTANT will provide an analysis of wildlife and habitat conservation measures.

5.3.4 Natural Resource Evaluation Report

The CONSULTANT will document the results of the Wetlands and EFH, Wildlife and Habitat, evaluations in a Natural Resources Evaluation (NRE) report in accordance with Part 2, Chapter 16 of the PD&E Manual.

5.3.5 Water Quality

This resource is not present or will not be impacted by the project. The CONSULTANT must verify and record in the Environmental Document.

5.3.6 Special Designations

This resource is not present or will not be impacted by the project. The CONSULTANT must verify and record in the Environmental Document.
5.3.7 Identify Permit Needs

The CONSULTANT will review the Programming Screen Summary Report and identify permits required for the project.

The CONSULTANT will perform activities that will inform and accelerate the permitting process, including activities to acquire permits during PD&E (as required by the DEPARTMENT).

List expected permits, e.g., USCG, COE and WMD.

5.3.8 Farmland

This resource is not present or will not be impacted by the project. The CONSULTANT must verify and record in the Environmental Document.

5.4 PHYSICAL EFFECTS

The CONSULTANT will summarize each of the physical effect issues in the Environmental Document. If no involvement for a particular issue is indicated, then a statement to that effect will be included. The CONSULTANT will identify the physical effect evaluation area. The CONSULTANT will assess the direct and indirect effects and will document the severity of the following:

5.4.1 Noise

The CONSULTANT will perform the noise analysis, noise abatement evaluation, and assessment of construction noise and vibration in accordance with the Part 2, Chapter 18 of the PD&E Manual and the current version of FDOT's Traffic Noise Modeling and Analysis Practitioner's Handbook. The CONSULTANT will attend a noise study methodology meeting with the DEPARTMENT prior to beginning analysis.

The CONSULTANT will document methodology and results of noise analysis and noise abatement evaluation in the Noise Study Report (NSR). The CONSULTANT will provide an electronic copy of the NSR, in PDF format, as well as all Traffic Noise Model (TNM) input/output files, and "readme" file that support the information documented in the report.

If the Project is determined to be a Type III project, the CONSULTANT will document that in the Project File.

5.4.2 Transit Noise and Vibration Analysis- N/A

This resource is not present or will not be impacted by the project. The CONSULTANT must verify and record in the Environmental Document.
5.4.3 Air Quality

The CONSULTANT will gather data, perform the air quality screening analysis, and prepare the Air Quality Technical Memorandum to document the results of the screening analysis in accordance with Part 2, Chapter 19 of the PD&E Manual. Traffic data shall be prepared by the project's Traffic Engineer.

The CONSULTANT will coordinate air quality monitoring if the project fails the Screening Analysis.

5.4.4 Construction Impact Analysis

The CONSULTANT will evaluate and document the potential impacts of construction of the Project alternatives in accordance with Part 2, Chapter 3 of the PD&E Manual.

5.4.5 Contamination

The CONSULTANT will gather data, review data, and investigate contamination issues within the limits of the project and identify potentially contaminated sites in accordance with Part 2, Chapter 20 of the PD&E Manual.

The CONSULTANT will document data reviewed, findings, risk rating of potential contamination sites, and recommendation for additional assessment actions in the Contamination Screening Evaluation Report.

5.5 CUMULATIVE EFFECTS EVALUATION (OPTIONAL SERVICES)

The CONSULTANT will perform and document cumulative effects evaluation of each resource of concern identified based on context and in consultation with the DEPARTMENT as per the process outlined in the Cumulative Effects Evaluation Handbook. The cumulative effects evaluation should build upon information derived from the direct and indirect effects analyses.

5.6 PROJECT COMMITMENTS RECORD

The CONSULTANT will assist the DEPARTMENT in filling out Form No. 700-011-35 Project Commitments Record (PCR) to document project commitments in the Commitments section of the Environmental Document. DEPARTMENT Procedure 700-011-035 will be used by the CONSULTANT for recording the project commitments. The CONSULTANT will forward the completed PCR form to the DEPARTMENT Project Manager.
6.0 ENVIRONMENTAL DOCUMENT

The CONSULTANT will assist the DEPARTMENT in completing the SWEPT Type 2 Categorical Exclusion Form and all attachments in accordance with Part 1, Chapter 5 of the PD&E Manual.

7.0 METHOD OF COMPENSATION

Payment for the work accomplished will be in accordance with Exhibit B of this contract. The DEPARTMENTs Project Manager and the CONSULTANT will monitor the cumulative invoiced billings to ensure the reasonableness of the billings compared to the study schedule and the work accomplished and accepted by the DEPARTMENT. The DEPARTMENT Project Manager will decide whether work of sufficient quality and quantity has been accomplished by comparing the reported Scope of Services percent complete against actual work accomplished.

Payments will not be made that exceed the percentage of work identified in the approved payout curve and schedule provided. 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.

8.0 DESIGN SERVICES

Design services for 15% line and grade will be funded under FPID #441250-1-32-01. The 15% line and grade plans limits will be from 4th Street North to the Gandy bridge and will be prepared under FPID #256931-4-32-01. All necessary services beyond 15% line and grade will be authorized by a Supplemental Amendment. Sections designated N/A under 8.0 Design Services will be included as a Supplemental Amendment to the contract as necessary.

1 PURPOSE

The CONSULTANT shall prepare Roadway, Master Signing Plans, plan sheets, notes, and details for up to 15% Line and Grade submittal. Line and Grade submittal requires the CONSULTANT to prepare and submit the following deliverables; roll plots with plan and profile view, back of sidewalk profiles, cross sections, driveway half-sections with proposed profiles, typical section package, Design High Water (DHW) report, Base Clearance Water Elevation (BCWE) report, Pavement Type Selection Report, and a Master Signing Plan roll plot.

2 PROJECT DESCRIPTION

This roadway has been designated as a Strategic Intermodal System (SIS) facility. SIS/NHS (National Highway System) standards shall be followed to the greatest extent feasible in the design of specific improvements. Detailed design criteria for the development and modernization of the SIS/NHS are based on standards established in the FDOT Design
Specific SIS criteria can be found in Strategic Intermodal System Highway Component Standards and Criteria Procedure 525-30-260-a.

At the option of the CONSULTANT with the approval of the DEPARTMENT Project Manager, this project may be designed and delivered using either 1) Autodesk AutoCAD Civil 3D 2014, or the DEPARTMENT's current Autodesk AutoCAD Civil 3D standard, or 2) Bentley MicroStation GEOPAK Corridor Modeler, or the DEPARTMENT's current MicroStation/GEOPAK Corridor Modeler standard. See http://www.dot.state.fl.us/ecso/main/Version/CurrentVersions.shtm for current versions of acceptable software. In either case, the project shall be designed, delivered and signed and sealed in compliance with the DEPARTMENT’s CADD Manual published at http://www.fdot.gov/cadd/downloads/publications/CADDManual/default.shtm. The DEPARTMENT provides a “State Kit” for both Autodesk and Bentley products that can be downloaded from http://www.fdot.gov/cadd/downloads/software/FDOT2017CADDSoftware.shtm.

The CONSULTANT shall deliver a Three-Dimensional (3D) Model of the design project in accordance with the specifications/criteria defined within the CADD Manual, specifically in Chapter 5 (Section 5.10.4).

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

Public Involvement: N/A

Other Agency Presentations/Meetings: Local Government Coordination Meeting

Joint Project Agreements: N/A

Specification Package Preparation: N/A

Value Engineering: N/A

Risk Assessment Workshop: N/A

Plan Type: Prepare 1”=100’ scale roll plots for the 15% Line and Grade submittal.

Limits: US 92/SR 600 Gandy Blvd. from 4th Street North (MP 1.499) to Gandy Bridge over Old Tampa Bay (MP 10.304). Project Length = 3.405 miles.

Typical Section: TBD

Pavement Design: N/A

Pavement Type Selection Report(s): Prepare a Pavement Type Selection Report in support of the 15% Line and Grade design.
Cross Slope: TBD

Access Management Classification: TBD

Transit Route Features: TBD

Major Intersections/Interchanges: TBD

Roadway Alternative Analysis: N/A

Level of TTCP Plans: Develop conceptual TCP phasing for the 15% Line and Grade submittal.

Temporary Signals: N/A

Temporary Lighting: N/A

Temporary Drainage: N/A

Design Variations/Exceptions: Identify required Design Variations and Exceptions in the 15% Line and Grade submittal.

Back of Sidewalk Profiles: Prepare Back of Sidewalk Profiles for 15% Line and Grade submittal. Prepare sheets at 1”=50’ scale.

Selective Clearing and Grubbing: N/A

2.2 Drainage (Activities 6a and 6b) –

System Type: TBD

The CONSULTANT shall notify the DEPARTMENT if video inspection of the storm sewer system is recommended. Video inspection services will be performed by others under the DEPARTMENT’s Districtwide video inspection contract. Prior to the Phase I submittal of plans, the CONSULTANT shall review the inspection report and provide to the DEPARTMENT recommendations and construction cost estimates for any pipe repair. The design implementation of any approved recommendations not included in this Scope of Services may be added to the Agreement as a Supplemental Amendment.

2.3 Utilities Coordination (Activity 7) – N/A

2.4 Environmental Permits, Compliances, and Clearances (Activities 8a and 8b) – N/A
2.5 Structures (Activities 9 – 18) – Prepare a Bridge Concept Report for bridges over Tampa Bay

2.6 Signing and Pavement Markings (Activities 19 & 20)

CONSULTANT will prepare a master signing plan to be submitted with the 15% Line and Grade submittal. All other Signing and Pavement marking to be completed as a Supplemental Amendment.

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

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

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

2.10 Survey (Activity 27a except as otherwise noted)

Design Survey:

The CONSULTANT shall provide horizontal and vertical project control (NAD 1983, 1999 adjustment & NAVD 1988); recover/re-establish the historic alignment; reference the alignment and all control points; may provide aerial or terrestrial LiDAR targeting; provide 3D topographic/DTM survey through the project limits; perform DTM check cross sections; provide a drainage survey; perform jurisdictional line surveys; and provide geotechnical support.

The final Survey Line shall be recorded in field books furnished by the CONSULTANT. Field books shall be 6-1/2" by 8-3/4" cross section book with 10 by 10 grid on both sides of opening.

Project Control sheets shall be prepared depicting the horizontal project control, the vertical project control, and the alignment reference points, pursuant to the Plans Preparation Manual, Volume 2, Chapter 12.

The methodology that is proposed to perform and prepare the topographic/DTM survey is the discretion of the CONSULTANT. This methodology must be approved by the District Surveying and Mapping Dept., the District Location Surveyor, or his designee. While utilizing conventional survey instruments and technologies, the CONSULTANT shall follow the Florida Department of Transportation Surveying and Mapping Procedure, Topic No. 550-030-101. If Terrestrial Static LiDAR instruments and technologies are utilized, the CONSULTANT shall follow the applicable FDOT Terrestrial Mobile LiDAR Surveying & Mapping Guidelines, latest release.
Main-line project limits shall be from the westerly curb/pavement return of 4th Street N. to the Gandy Bridge. Lateral limits shall be to 25 feet beyond the existing and proposed Right of Way lines.

Subsurface Utility Exploration (Activity 27b): – N/A

Right-of-Way Survey:

Provide a Right-of-Way Control Survey for the limits as described below. The Right-of-Way Control Survey shall abut and be in complete agreement with existing Right-of-Way Control Survey(s). Existing monumentation shall be held unless it is in the signing surveyor’s opinion the previous Control Survey is in error.

a. Tie section lines, quarter section lines, (and quarter-quarter section lines when pertinent) to the Survey Line. Ties shall be made by closed traverse, appropriate redundancy, or an approved procedure. All corners shall be found or set in the field with corners properly identified with size and type and recorded in the field book.

b. Tie all subdivisions including condominium boundaries, at the beginning and end; block lines, and street right of way lines to the Survey Line. Ties shall be made by closed traverse, appropriate redundancy, or an approved procedure. All block corners shall be found or set in the field with corners properly identified with size and type and recorded in a field book. A sufficient amount of field ties must be made in order to establish the original block boundaries or existing right of way as shown on existing right of way maps in each subdivision and or condominium. Efforts should be made to identify all vacated streets within a subdivision, along with the recording data of vacation. It should be noted that 90° ties from the centerline of the side streets or radial ties to any corner will not be accepted by the DEPARTMENT. All ties must be shown as intersecting the Survey Line with the respective subdivision lines.

c. Make individual property line ties where apparent property line disputes may occur. If information is available from local surveyors, submit copies of their surveys.

The Right-of-Way Control Survey limits along SR 694 shall be from the west boundary of the northeast ¼ of Section 19, Township 30 South, Range 17 East (4th Street North), being Survey Line station 194+18.97 as shown on prior Right of Way Control Survey (FPN 256931-2) to abut and tie to the westerly limits of prior Right of Way Control Survey (FPN 416838-1).
Vegetation Survey: N/A

2.11 Photogrammetry (Activity 28)

If photogrammetric instruments and technologies are utilized, the CONSULTANT shall follow the FDOT Surveying and Mapping Procedure, Topic No. 550-030-101. The CONSULTANT shall provide Low Altitude Mapping Photogrammetry for the project limits and deliverables as summarized in Task 4.3.5 above. The Surveyor shall furnish to the Photogrammetrist the target positions in x, y, and z, and station/offset format so the Photogrammetrist can obtain surface elevations as close as feasible to the stations the designer will use for cross slope correction.

2.12 Mapping (Activity 29)

Control Survey Map:

The field Control Survey shall be presented in the form of a 24” x 36” certified drawing. The CONSULTANT shall certify this drawing as a Control Survey, which meets the Standards of Practice adopted by the Florida Department of Agriculture and Consumer Services, Board of Professional Surveyors and Mappers, Chapter 5J-17 of the Florida Administrative Code. These survey drawings shall be at a scale of 1 inch = 400 feet for a key map and a scale of 1 inch = 40 feet for detail sheets or a scale acceptable to the DEPARTMENT. Unless otherwise directed, the surveyor shall furnish the DEPARTMENT with a signed, sealed and certified copy of the above map along with the CADD drawing files on disk.

The Right-of-Way Control Survey shall abut and be in complete agreement with existing Right-of-Way Control Survey(s). Existing monumentation shall be held unless it is in the signing surveyor’s opinion the previous Control Survey is in error.

All existing right-of-way shall be plotted on the Control Survey with ties by station/offset to the Survey Line at all breaks, including any maintained right of way. Utilize existing monumentation to establish the position of the existing right-of-way. All secondary monumentation located shall be depicted on the map. When utilized to support or determine the position of a primary corner (i.e. block corner, section corner or parent tract corner), and the secondary monument is on-line between two primary corners, then a single in-line distance is sufficient. If the secondary monument is found to not occupy a proper corner position, then a station/offset to the Survey Line can be used, unless the monument can be positioned, by fallings, to a nearby accepted corner.

The CONSULTANT shall acquire a last deed of record for each property adjoining the project limits and research any additional rights of way that may
have been acquired by a local governmental agency (i.e. city or county). All deeds, documentation from local government agencies, and supporting documents shall be delivered to the DEPARTMENT.

a. The Cover Sheet (sheet one) shall contain among other things a vicinity map, legend, index of sheets, all pertinent general survey notes, and the Certification that the Control Survey was made for the purpose of surveying, referencing, describing and mapping the Survey Line and providing horizontal position data for the support or control of right of way related maps for the transportation facility shown and depicted hereon. “I further certify said survey was done under my responsible charge and meets the Standards of Practice set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17 Florida Administrative Code pursuant to Section 472.027 Florida Statutes.”

b. The Key Sheet(s) shall be at a scale of 1 inch = 400 feet, or a scale acceptable to the DEPARTMENT, and shall depict the following:

1) Complete Survey Line alignment data, including beginning of survey station, all curve data, bearings on all tangent lines along the Survey line, all intermediate control point stations, and end of survey station. All control points must be identified as to type and size of material found or set at each respective point.

2) All section lines, quarter section lines, and when pertinent. quarter-quarter section lines must be shown with the station where their intersection with Survey Line occurs, with a distance from the nearest corner to Survey Line, and bearings and distances between all corners. Type of corner, either found or set, should be spelled out or identified by a legend. All ties shall be shown to depict a closed traverse to assure acceptable closure.

c. The Detail Sheet(s) shall be at a scale of 1 inch = 40 feet, or a scale acceptable to the DEPARTMENT, and along with information shown on the Key Sheets shall depict the following:

1) All existing right of way shall be shown with ties to all breaks in the right of way, including any maintained right of way.

2) All subdivisions, including condominium boundaries, must be shown with a station where the Survey Line and each subdivision line intersect. A distance from Survey Line to the existing right of way line or nearest found or set corner, and bearings and distances on all subdivision lines which were intersected with the Survey Line. All lot and block numbers, street names, plat book, page, recording date, and name of each subdivision must be shown. All ties shall be shown to depict a closed traverse to assure acceptable closure.
d. The Reference Sheet(s) shall be separate sheet(s), does not need to be plotted to scale, and shall depict the following:

1) All of the Survey Line control points and reference lines/points, along with the type and size of material used for each respective reference point;
2) Reference points for Public Land Survey corners that may potentially be removed during planned construction if any, along with the type and size of material used for each respective reference point shall be shown.

The complete Control Survey shall be submitted to the DEPARTMENT for review and approval.

Right-of-Way Map: N/A

Legal Descriptions: N/A

Maintenance Map: N/A

Miscellaneous Items: N/A

2.13 Terrestrial Mobile LiDAR (Activity 30)

If Terrestrial Mobile LiDAR instruments and technologies are utilized, the CONSULTANT shall follow the FDOT Terrestrial Mobile LiDAR Surveying & Mapping Guidelines for the limits and deliverables as summarized in Section 2.10 above.

2.14 Architecture (Activity 31) – N/A

2.15 Noise Barriers (Activity 32) – N/A

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

2.17 Geotechnical (Activity 35)

The consultant is responsible for all geotechnical services for this project.

Borings for SHWT estimates for roadway and ponds to support 15% line and grade submittal is required. Detailed Borings for Pond area are also required. Review of existing bridge borings data to support Bridge Concept Report also required. No new bridge borings at this time is anticipated.

2.18 3D Modeling (Activity 36) – N/A
2.19 Project Schedule

*If the DEPARTMENT decides to pursue design services beyond 15% line and grade, the CONSULTANT will coordinate with the DEPARTMENT Project Manager to develop scheduled activities required to meet the DEPARTMENT Production Date.*

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.

*All plans and specifications deliverables provided for herein shall support a fully electronic advertisement, bidding and letting process for the construction contract in a manner acceptable to the DEPARTMENT, including compliance with Section 131 of the FDOT Design Manual and with the CADD Production Criteria Handbook (C.P.C.H.). In addition to any required hard copies, the CONSULTANT shall provide .pdf files for all plans phase submittals thru Phase III. Beginning with the Phase IV submittal, the CONSULTANT shall provide the electronic CADD files. In addition to any required hard-copies, all other documents that require DEPARTMENT review shall be submitted in an electronic medium acceptable to the DEPARTMENT Project Manager, including processing through the Department’s Electronic Review and Comment system (ERC).*

*The CONSULTANT shall provide a Constructability and Biddability review of the design with the Phase III or other designated plans submittal. The CONSULTANT’s comments and responses developed from this review shall be forwarded to the DEPARTMENT’s Construction Services Unit.*

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

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

2.21 Provisions for Work

All *design* work shall be prepared with English units in accordance with the latest editions of standards and requirements utilized by the DEPARTMENT which include, but are not limited to, publications such as:
- General
  - 29 C.F.R. 1926.1101 – Asbestos Standard for Construction, OSHA
  - 40 C.F.R. 61, Subpart M - National Emission Standard for Hazardous Air Pollutants (NESHAP), Environmental Protection Agency (EPA)
  - 40 C.F.R. 763, Subpart E – Asbestos-Containing Materials in Schools, EPA
  - 40 C.F.R. 763, Subpart G – Asbestos Worker Protection, EPA
  - Americans With Disabilities Act (ADA) Standards for Accessible Design
  - AASHTO – A Policy on Design Standards Interstate System
  - AASHTO – Roadside Design Guide
  - AASHTO – Roadway Lighting Design Guide
  - AASHTO – A Policy for Geometric Design of Highways and Streets
  - AASHTO – Highway Safety Manual
  - Rule Chapter 5J-17, Florida Administrative Code (F.A.C.), Standards of Practice for Professional Surveyors and Mappers
  - Chapter 469, Florida Statutes (F.S.) – Asbestos Abatement
  - Rule Chapter 62-257, F.A.C., Asbestos Program
  - Rule Chapter 62-302, F.A.C., Surface Water Quality Standards
  - Code of Federal Regulations (C.F.R.)
  - Florida Administrative Codes (F.A.C.)
  - Chapters 20, 120, 215, 455, Florida Statutes (F.S.) – Florida Department of Business & Professional Regulations Rules
  - Florida Department of Environmental Protection Rules
  - FDOT Basis of Estimates Manual
  - FDOT Computer Aided Design and Drafting (CADD) Manual
  - FDOT Standard Plans
  - FDOT Flexible Pavement Design Manual
  - FDOT - Florida Roundabout Guide
  - FDOT Handbook for Preparation of Specifications Package
  - FDOT Standard Plans Instructions
  - FDOT Materials Manual
  - FDOT Pavement Type Selection Manual
  - FDOT Design Manual
  - FDOT Procedures and Policies
  - FDOT Procurement Procedure 001-375-030, Compensation for Consultant Travel Time on Professional Services Agreements
  - FDOT Project Development and Environmental Manual
  - FDOT Project Traffic Forecasting Handbook
  - FDOT Public Involvement Handbook
  - FDOT Rigid Pavement Design Manual
  - FDOT Standard Specifications for Road and Bridge Construction
- FDOT Utility Accommodation Manual
- Manual on Speed Zoning for Highways, Roads, and Streets in Florida
- Federal Highway Administration (FHWA) - Manual on Uniform Traffic Control Devices (MUTCD)
- FHWA Roadway Construction Noise Model (RCNM) and Guideline Handbook
- Florida Fish and Wildlife Conservation Commission - Standard Manatee Construction Conditions 2005
- Florida Statutes (F.S.)
- Florida’s Level of Service Standards and Guidelines Manual for Planning
- Model Guide Specifications – Asbestos Abatement and Management in Buildings, National Institute for Building Sciences (NIBS)
- Quality Assurance Guidelines
- Safety Standards
- Any special instructions from the DEPARTMENT

### Roadway
- FDOT – Florida Intersection Design Guide
- FDOT - Project Traffic Forecasting Handbook
- FDOT - Quality/Level of Service Handbook
- Florida’s Level of Service Standards and Highway Capacity Analysis for the SHS
- Transportation Research Board (TRB) - Highway Capacity Manual

### Permits
- Chapter 373, F.S. – Water Resources
- US Fish and Wildlife Service Endangered Species Programs
- Florida Fish and Wildlife Conservation Commission Protected Wildlife Permits
- Bridge Permit Application Guide, COMDTPUB P16591.3C
- Building Permit

### Drainage
- FDOT Drainage Design Guide
- FDOT Drainage Manual
- FDOT Erosion and Sediment Control Manual
- 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.
- Florida Department of Transportation Surveying and Mapping Procedure Topic 550-030-101
o Florida Department of Transportation Surveying and Mapping Handbook
o Florida Department of Transportation Right of Way Procedures Manual

- Traffic Engineering and Operations and ITS
  o AASHTO - An Information Guide for Highway Lighting
  o AASHTO - Guide for Development of Bicycle Facilities
  o FHWA Standard Highway Signs Manual
  o FDOT Manual on Uniform Traffic Studies (MUTS)
  o FDOT Median Handbook
  o FDOT Traffic Engineering Manual
  o National Electric Safety Code
  o National Electrical Code

- Florida’s Turnpike Enterprise
  o Florida’s Turnpike Plans Preparation and Practices Handbook (TPPPH)
  o Florida’s Turnpike Lane Closure Policy
  o Florida’s Turnpike Drainage Manual Supplement
  o Rigid Pavement Design Guide for Toll Locations with Electronic Toll Collection
  o Flexible Pavement Design Guide for Toll Locations with Electronic Toll Collection
  o Florida’s Turnpike General Tolling Requirements (GTR)
  o Additional Florida’s Turnpike Enterprise standards, guides, and policies for design and construction can be found on the FTE Design Website: http://design.floridasturnpike.com

- Traffic Monitoring
  o American Institute of Steel Construction (AISC) Manual of Steel Construction, referred to as “AISC Specifications”
  o American National Standards Institute (ANSI) RP-8-00 Recommended Practice for Roadway Lighting
  o AASHTO AWS D1.1/ANSI Structural Welding Code – Steel
  o AASHTO D1.5/AWS D1.5 Bridge Welding Code
  o FHWA Traffic Detector Handbook
  o FDOT General Interest Roadway Data Procedure
  o FHWA Traffic Monitoring Guide
  o FDOT’s Traffic/Polling Equipment Procedures

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

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

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

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

- Architectural – Fire Codes and Rules
  o National Fire Protection Association (NFPA) - Life Safety Code
  o NFPA 70 - National Electrical Code
  o NFPA 101 - Life Safety Code
  o NFPA 10 - Standard for Portable Fire Extinguishers
  o NFPA 11 - Standard for Low-Expansion Foam Systems
  o NFPA 11A - Standard for High- and Medium-Expansion Foam Systems
  o NFPA 12 - Standard for Carbon Dioxide Extinguishing Systems
  o NFPA 13 - Installation of Sprinkler Systems
  o NFPA 30 - Flammable and Combustible Liquids Code
  o NFPA 54 - National Gas Fuel Code
  o NFPA 58 - LP-Gas Code
Florida Fire Prevention Code as adopted by the State Fire Marshal – Consult with the Florida State Fire Marshal’s office for other frequently used codes.

- **Architectural – Extinguishing Systems**
  - NFPA 10 - Fire Extinguishers
  - NFPA 13 - Sprinkler
  - NFPA 14 - Standpipe and Hose System
  - NFPA 17 - Dry Chemical
  - NFPA 20 - Centrifugal Fire Pump
  - NFPA 24 - Private Fire Service Mains
  - NFPA 200 - Standard on Clean Agent Fire Extinguishing Systems

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

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

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

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

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

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

2.22 Services To Be Performed By The DEPARTMENT

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

- Numbers for field books.
- Preliminary Horizontal Network Control.
- Access for the CONSULTANT to utilize the DEPARTMENT’s Information Technology Resources.
- All Department agreements with Utility Agency Owner (UAO).
- All certifications necessary for project letting.
- Building Construction Permit Coordination (Turnpike)
- All information that may come to the DEPARTMENT pertaining to future improvements.
- All future information that may come to the DEPARTMENT during the term of the CONSULTANT’s Agreement, which in the opinion of the DEPARTMENT is necessary for the prosecution of the work.
Available traffic and planning data.
All approved utility relocations.
Project utility certification to the DEPARTMENT’s Central Office.
Any necessary title searches.
Engineering standards review services.
All available information in the possession of the DEPARTMENT pertaining to utility companies whose facilities may be affected by the proposed construction.
All future information that may come to the DEPARTMENT pertaining to subdivision plans so that the CONSULTANT may take advantage of additional areas that can be utilized as part of the existing right of way.
Systems traffic for Projected Design Year, with K, D, and T factors.
Previously constructed Highway Beautification or Landscape Construction Plans
Landscape Opportunity Plan(s)
Existing right of way maps.
Existing cross slope data for all RRR projects.
Existing pavement evaluation report for all RRR projects.
PD&E Documents
Design Reports
Letters of authorization designating the CONSULTANT as an agent of the DEPARTMENT in accordance with F.S. 337.274.
Phase reviews of plans and engineering documents.
Regarding Environmental Permitting Services:
○ Approved Permit Document when available.
○ Approval of all contacts with environmental agencies.
○ General philosophies and guidelines of the DEPARTMENT to be used in the fulfillment of this contract. Objectives, constraints, budgetary limitations, and time constraints will be completely defined by the Project Manager.
○ Appropriate signatures on application forms.

3 PROJECT COMMON AND PROJECT GENERAL TASKS

PROJECT COMMON TASKS

Project Common Tasks, as listed below, are work efforts that are applicable to many project activities, 4 Roadway Analysis through 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 update the project cost estimate at the 15% Line and Grade submittal and for the annual Work Program Update Cycle for the annual Work Program Update Cycle. The DEPARTMENT’s Long Range Estimate (L.R.E.) system shall be used to produce the conceptual estimates. Each LRE submittal shall be accompanied by an equal number of copies of the Preliminary Project Report
(PPR) updated by the CONSULTANT in the District standard format, including the updated Record Page.

At 15% Line and Grade submittal and for the annual Work Program Update Cycle, the CONSULTANT shall provide a copy of the plans and the most current Right-of-Way Maps to the District Right-of-Way Cost Estimate Coordinator.

Construction Duration: N/A

Technical Special Provisions: N/A

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

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

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

Quality Assurance/Quality Control: It is the intention of the DEPARTMENT that design CONSULTANTS, including their subconsultant(s) are held responsible for their work, including plans review. 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 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 shall sign a statement certifying that the review was conducted and found to meet required specifications.

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

Independent Peer Review: N/A

Supervision: The CONSULTANT shall supervise all technical design activities.

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

Project General Tasks

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

3.2 Joint Project Agreements – N/A

3.3 Specifications Package Preparation – N/A

3.4 Contract Maintenance and Project Documentation

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

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

3.6 Prime Consultant Project Manager Meetings

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

3.7 Plans Update N/A

3.8 Post Design Services – N/A

3.9 Digital Delivery – N/A

3.10 Risk Assessment Workshop – N/A

3.11 Railroad, Transit and/or Airport Coordination

Coordinate with Pinellas Suncoast Transit Authority (PSTA) to determine transit related design features to be incorporated into the 15% Line and Grade.

3.11.1 Aeronautical Evaluation – N/A

3.12 Landscape and Existing Vegetation Coordination – N/A

3.13 Other Project General Tasks – N/A
4 ROADWAY ANALYSIS

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

4.1 Typical Section Package

*The CONSULTANT shall provide an approved Typical Section Package prior to the 15% Line and Grade submittal.*

4.2 Pavement Type Selection Report

4.3 Pavement Design Package – N/A

4.4 Cross-Slope Correction – N/A

4.5 Horizontal/Vertical Master Design Files

The CONSULTANT shall design the geometrics using the Standard Plans that are most appropriate with proper consideration given to the design traffic volumes, design speed, capacity and levels of service, functional classification, adjacent land use, design consistency and driver expectancy, aesthetics, existing vegetation to be preserved, pedestrian and bicycle concerns, ADA requirements, Safe Mobility For Life Program, access management, PD&E documents and scope of work. The CONSULTANT shall also develop utility conflict information to be provided to the project Utility Coordinator in the format requested by the DEPARTMENT.

4.6 Access Management

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

The DEPARTMENT shall provide access management classification information and information derived from PD&E studies and public hearings to be used by the CONSULTANT.
4.7 Roundabout Evaluation – N/A

4.8 Roundabout Final Design Analysis – N/A

4.9 Cross Section Design Files

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

If the Cross Sections are prepared using a 3D model, use Task 36.5, *rather than* Task 4.9 for the Cross Section Design Files.

*The CONSULTANT shall provide cross sections at an interval of 500’ with the 15% Line and Grade submittal. Sections shall also be provided at critical locations such as ramp gores.*

4.10 Temporary Traffic Control (TTCP) Analysis

*The CONSULTANT shall provide a conceptual TTCP phasing scheme with the 15% Line and Grade submittal.*

4.11 Master TTCP Design Files – N/A

4.12 Selective Clearing and Grubbing – N/A

4.13 Tree Disposition Plans – N/A

4.14 Design Variations and Exceptions

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

*The CONSULTANT shall identify any required Design Variations and Exceptions with the 15% Line and Grade submittal.*

4.15 Design Report

The CONSULTANT shall prepare all applicable report(s) as listed in the Project Description section of this scope. Reports shall be delivered as a signed and sealed pdf file.

4.16 Quantities – N/A

4.17 Cost Estimate
4.18 Technical Special Provisions and Modified Special Provisions – N/A

4.19 Other Roadway Analyses

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

The CONSULTANT shall provide driveway cross sections with the 15% Line and Grade submittal.

4.20 Field Reviews

4.21 Monitor Existing Structures – N/A

4.22 Technical Meetings

4.23 Quality Assurance/Quality Control

4.24 Independent Peer Review

4.25 Supervision

4.26 Coordination

5 ROADWAY PLANS

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

5.1 Key Sheet – N/A

5.2 Summary of Pay Items Including Quantity Input – N/A

5.3 Typical Section Sheets – N/A

5.4 General Notes/Pay Item Notes – N/A

5.5 Summary of Quantities Sheets – N/A

5.6 Project Layout – N/A
5.7 Plan/Profile Sheet

*Develop a 1"=100’ scale Plan/Profile roll plot to depict the 15% Line and Grade design. The CONSULTANT shall depict all lane lines for the entire plan portion of the roadway plans to include all intersections with directional arrows preceding and following the intersection proper. In addition, directional arrows should be indicated at the beginning and end of each sheet to provide ease of reviewing. A note shall be added to the stating that these lane lines and directional arrows are for informational purposes only.*

5.8 Profile Sheet – N/A

5.9 Plan Sheet - N/A

5.10 Special Profile – N/A

5.11 Back-of-Sidewalk Profile Sheet

*The CONSULTANT shall include Back of Sidewalk Profile sheets with the 15% Line and Grade submittal as applicable to proposed urban curb and gutter typical sections.*

5.12 Interchange Layout Sheet – N/A

5.13 Ramp Terminal Details (Plan View) – N/A

5.14 Intersection Layout Details – N/A

5.15 Special Details – N/A

5.16 Cross-Section Pattern Sheet(s) – N/A

5.17 Roadway Soil Survey Sheet(s) – N/A

5.18 Cross Sections

5.19 Temporary Traffic Control Plan Sheets – N/A

5.20 Temporary Traffic Control Cross Section Sheets – N/A

5.21 Temporary Traffic Control Detail Sheets – N/A

5.22 Utility Adjustment Sheets – N/A

5.23 Selective Clearing and Grubbing Sheet(s) – N/A
5.24 Tree Disposition Plan Sheet(s) – N/A
5.25 Project Network Control Sheet(s) – N/A
5.26 Environmental Detail Sheets – N/A
5.27 Utility Verification Sheet(s) (SUE Data) – N/A
5.28 Quality Assurance/Quality Control
5.29 Supervision

6a DRAINAGE ANALYSIS

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

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

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

6a.1 Drainage Map Hydrology – N/A

6a.2 Base Clearance Calculations

Analyze, determine, and document high water elevations per basin which will be used to set roadway profile grade and roadway materials. Determine surface water elevations at cross drains, floodplains, outfalls and adjacent stormwater ponds. Determine groundwater elevations at intervals between the above-mentioned surface waters. Document findings in a Base Clearance Report.

6a.3 Pond Siting Analysis and Report – N/A

6a.4 Design of Cross Drains – N/A

6a.5 Design of Ditches – N/A

6a.6 Design of Stormwater Management Facility (Offsite or Infield Pond) – N/A
6a.7 Design of Stormwater Management Facility (Roadside Treatment Swales and Linear Ponds) – N/A

6a.8 Design of Floodplain Compensation – N/A

6a.9 Design of Storm Drains – N/A

6a.10 Optional Culvert Material – N/A

6a.11 French Drain Systems – N/A

6a.11a Existing French Drain Systems – N/A

6a.12 Drainage Wells – N/A

6a.13 Drainage Design Documentation Report – N/A

6a.14 Bridge Hydraulic Report – N/A

6a.15 Temporary Drainage Analysis – N/A

6a.16 Cost Estimate

Prepare cost estimates for the drainage components, except bridges and earthwork for stormwater management and flood compensation sites.

6a.17 Technical Special Provisions / Modified Special Provisions – N/A

6a.18 Hydroplaning Analysis - N/A

6a.19 Existing Permit Analysis

Data gathering including desktop analysis of local, state and federal Drainage permits.

6a.20 Other Drainage Analysis – N/A

6a.21 Field Reviews

6a.22 Technical Meetings

6a.23 Environmental Look-Around Meetings – N/A

6a.24 Quality Assurance/Quality Control

6a.25 Independent Peer Review
6a.26 Supervision

6a.27 Coordination

6b DRAINAGE PLANS – N/A

7 UTILITIES – N/A

8 ENVIRONMENTAL PERMITS, COMPLIANCE AND ENVIRONMENTAL CLEARANCES – N/A

9 STRUCTURES – SUMMARY AND MISCELLANEOUS TASKS AND DRAWINGS – N/A

10 STRUCTURES – BRIDGE DEVELOPMENT REPORT

The CONSULTANT shall prepare a Bridge Concept Report (BCR). The BCR shall be submitted as part of the 15% Line and Grade Submittal.

11 STRUCTURES – TEMPORARY BRIDGE – N/A

12 STRUCTURES – SHORT SPAN CONCRETE BRIDGE – N/A

13 STRUCTURES – MEDIUM SPAN CONCRETE BRIDGE – N/A

14 STRUCTURES – STRUCTURAL STEEL BRIDGE – N/A

15 STRUCTURES – SEGMENTAL CONCRETE BRIDGE – N/A

16 STRUCTURES – MOVABLE SPAN – N/A

17 STRUCTURES – RETAINING WALLS – N/A

18 STRUCTURES – MISCELLANEOUS – N/A

19 SIGNING AND PAVEMENT MARKING ANALYSIS

The CONSULTANT shall develop a master signing plan as part of the 15% Line and Grade Submittal.

20 SIGNING AND PAVEMENT MARKING PLANS

The CONSULTANT shall prepare a master signing plan roll plot at the same scale as the Roadway 15% Line and Grade submittal roll plot.
The CONSULTANT shall perform survey tasks in accordance with all applicable statutes, manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

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

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

**27.1 Horizontal Project Control (HPC)**

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

**27.2 Vertical Project Control (VPC)**

Establish or recover VPC, for the purpose of establishing vertical control on datum approved by the District Surveyor (DS) or the District Location Surveyor (DLS); may include primary or secondary vertical control points. Includes analysis and processing of all field collected data, and preparation of forms.
27.3 **Alignment and/or Existing Right-of-Way (R/W) Lines**

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

27.4 **Aerial Targets**

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

27.5 **Reference Points**

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

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

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

27.7 **Planimetric (2D)**

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

27.8 **Roadway Cross Sections/Profiles**

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

27.9 **Side Street Surveys**

Refer to tasks of this document as applicable.

27.10 **Underground Utilities**

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

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

27.11 Outfall Survey

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

27.12 Drainage Survey

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

27.13 Bridge Survey (Minor/Major)

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

27.14 Channel Survey

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

27.15 Pond Site Survey

Refer to tasks of this document as applicable.

27.16 Mitigation Survey

Refer to tasks of this document as applicable.
27.17  **Jurisdiction Line Survey**

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

27.18  **Geotechnical Support**

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

27.19  **Sectional/Grant Survey**

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

27.20  **Subdivision Location**

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

27.21  **Maintained R/W**

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

27.22  **Boundary Survey**

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

27.23  **Water Boundary Survey**

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

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

27.25 Right-of-Way Monumentation

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

27.26 Line Cutting

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

27.27 Work Zone Safety

Provide work zone as required by DEPARTMENT standards.

27.28 Miscellaneous Surveys – N/A

27.29 Supplemental Surveys – N/A

27.30 Document Research

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

27.31 Field Review

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

27.32 Technical Meetings

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

27.33 Quality Assurance/Quality Control (QA/QC)

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

27.34 Supervision

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

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

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

28 PHOTOGRAMMETRY

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

In addition to the maps and photographic products, the CONSULTANT shall submit all computations to document the mapping. This shall include documentation of all decisions reached from meetings, telephone conversations, and site visits.

28.1 Flight Preparation

Review record data, create target diagrams, and plan the mission.

28.2 Control Point Coordination

Determine photo identifiable control points, and mark contact prints.

28.3 Mobilization

Perform pre- and post-flight aircraft inspection; prepare the aircraft and camera for the mission.

28.4 Flight Operations

Operate the aircraft, aerial camera, and other instruments to obtain aerial photography.

28.5 Film Processing

Process, check and annotate the aerial film.

28.6 Photo Products
Prepare contact prints, contact diapositives, and photo enlargements.

28.7 **Scanning**
Scan photographic images.

28.8 **LiDAR**
Includes data acquisition, post processing of LiDAR data to XYZ coordinates for "bare earth" classification.

28.9 **Aerial Triangulation**
Measure and adjust control within aerial images.

28.10 **Surfaces**
Includes collection of break lines and spot elevations.

28.11 **Ortho Generation**
Includes creation of final images.

28.12 **Rectified Digital Imagery (Georeferenced)**
Create the rectified digital image.

28.13 **Mosaicking – N/A**

28.14 **Sheet Clipping**
Create plot files for sheets from the database.

28.15 **Topographies (3D)**
Prepare topographic maps, including surface and planimetrics. (Photogrammetrist *shall* not propose hours for Surfaces and Topographies.)

28.16 **Planimetrics (2D)**
Prepare 2D planimetric map.

28.17 **Drainage Basin**
Includes preparing drainage basin maps in clipped "sheet" format.
28.18 CADD Edit

Perform final edit of graphics for delivery of required Microstation .dgn, CADD, and Geopak files.

28.19 Data Merging

Merge photogrammetric files, field survey files, and data from other sources.

28.20 Miscellaneous

Other tasks not specifically addressed in this document.

28.21 Field Review

Perform on-site review of maps.

28.22 Technical Meetings

Attend meetings as required.

28.23 Quality Assurance/Quality Control (QA/QC)

Establish and implement a QA/QC plan.

28.24 Supervision

Supervise all photogrammetric activities. This task must be performed by the project supervisor, a Florida P.S.M.

28.25 Coordination

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

29 MAPPING

The CONSULTANT shall be responsible for the preparation of control survey maps, right-of-way maps, maintenance maps, sketches, other miscellaneous survey maps, and legal descriptions as required for this project in accordance with all applicable DEPARTMENT Manuals, Procedures, Handbooks, District-specific requirements, and Florida Statutes. All maps, surveys and legal descriptions shall be prepared under the direction of a Florida
Professional Surveyor and Mapper (PSM) to DEPARTMENT size and format requirements utilizing DEPARTMENT approved software, and shall be designed to provide a high degree of uniformity and maximum readability. The CONSULTANT shall submit maps, legal descriptions, quality assurance check prints, checklists, electronic media files and any other documents as required for this project to the DEPARTMENT for review at stages of completion as negotiated.

**Master CADD File**

29.1 **Alignment**

29.2 **Section and 1/4 Section Lines**

29.3 **Subdivisions / Property Lines**

29.4 **Existing Right-of-Way**

29.5 **Topography**

29.6 **Parent Tract Properties and Existing Easements**

29.7 **Proposed Right-of-Way Requirements**

The ENGINEER OF RECORD (EOR) shall provide the proposed requirements. The PSM is responsible for calculating the final geometry. Notification of Final Right-of-Way Requirements along with the purpose and duration of all easements shall be specified in writing.

29.8 **Limits of Construction**

The limits of construction DGN file as provided by the EOR shall be imported or referenced to the master CADD file. Additional labeling shall be added as required. The PSM is required to advise the EOR of any noted discrepancies between the limits of construction line and the existing/proposed right-of-way lines, and for making adjustments as needed when a resolution is determined.

29.9 **Jurisdictional/Agency Lines**

These lines may include, but are not limited to, jurisdictional, wetland, water boundaries, and city/county limit lines.

**Sheet Files**

29.10 **Control Survey Cover Sheet**

29.11 **Control Survey Key Sheet**
29.12 Control Survey Detail Sheet

29.13 Right-of-Way Map Cover Sheet

29.14 Right-of-Way Map Key Sheet

29.15 Right-of-Way Map Detail Sheet

29.16 Maintenance Map Cover Sheet

29.17 Maintenance Map Key Sheet

29.18 Maintenance Map Detail Sheet

29.19 Reference Point Sheet

   This sheet(s) *shall* be included with the Control Survey Map, Right-of-Way Map and Maintenance Map.

29.20 Project Network Control Sheet

   This sheet depicts the baseline, the benchmarks, the primary and secondary control points and their reference points, including the type of material used for each point, their XYZ coordinates, scale factors and convergence angles. This sheet(s) may be included with the Control Survey Map, Right-of-Way Map and Maintenance Map.

29.21 Table of Ownerships Sheet

Miscellaneous Surveys and Sketches

29.22 Parcel Sketches

29.23 TIITF Sketches

29.24 Other Specific Purpose Survey(s) – N/A

29.25 Boundary Survey(s) Map

29.26 Right-of-Way Monumentation Map

29.27 Title Search Map

29.28 Title Search Report

29.29 Legal Descriptions
29.30 Final Map/Plans Comparison

The PSM shall perform a comparison of the final right-of-way maps with the available construction plans to review the correctness of the type of parcel to be acquired and the stations/offsets to the required right-of-way. The PSM shall coordinate with the EOR to resolve any conflicts or discrepancies and provide documentation of the review.

29.31 Field Reviews

29.32 Technical Meetings

29.33 Quality Assurance/Quality Control

29.34 Supervision

29.35 Coordination

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

29.36 Supplemental Mapping – N/A

30 TERRESTRIAL MOBILE LiDAR

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

In addition to the maps and LiDAR products, the CONSULTANT shall submit all computations and reports to support the mapping. This will include documentation of all decisions reached from meetings, telephone conversations, and site visits.

30.1 Terrestrial Mobile LiDAR Mission Planning

Research and prepare materials necessary for the successful execution of the Mobile LiDAR Mission. This includes but is not limited to route and safety planning, GPS/data acquisition scheduling, weather reports, and site terrain research.

30.2 Project Control Point Coordination

All efforts necessary to coordinate the proper placement of project ground control i.e. base stations, transformation control points, and validation points, supporting the Mobile LiDAR survey.
30.3 Terrestrial Mobile LiDAR Mobilization

Prepare the LiDAR sensor and vehicle for project data collection, and get specialized personnel and equipment on site.

30.4 Terrestrial Mobile LiDAR Mission

Perform site calibrations of LiDAR sensor and collect laser survey data, including any simultaneous base station GPS occupations and operation of any necessary safety equipment.

30.5 Terrestrial Mobile LiDAR Processing

Download and post process collected measurement data from Mobile LiDAR vehicle sensors, and any base stations occupied during mission. Analyze Mobile LiDAR measurement points and scan route overlaps. Separate any large point cloud data sets into manageable file sizes with corresponding indexes.

30.6 Terrestrial Mobile Photography Processing

Process, reference, and name digital photographic imagery files collected during Mobile LiDAR mission.

30.7 Transformation / Adjustment

Adjust LiDAR point cloud data to Project Control points. Create point cloud data file(s) in approved digital format. Prepare required reports of precision and accuracy achieved. If this task is performed by separate firm, or is the final product to be delivered, include effort for Survey Report.

30.8 Classification / Editing

Identify and attribute (classify) point cloud data into requested groups. Classify or remove erroneous points.

30.9 Specific Surface Reporting

Prepare reports, data and/or graphics of specific surface details such as, but not limited to pavement rutting, bridge structure clearance to roadway surface.

30.10 Topographic (3D) Mapping

Produce three dimensional (3D) topographic survey map(s) from collected Mobile LiDAR data. This includes final preparation of Construction Information Management (CIM) deliverable, if applicable.

30.11 Topographic (2D) Planimetric Mapping

Produce two dimensional (2D) planimetric map(s) from collected Mobile LiDAR data.
30.12 **CADD Edits**

Perform final edit of graphics for delivery of required CADD files. This includes final presentation of CIM deliverable, if applicable.

30.13 **Data Merging**

Merge Mobile LiDAR survey and mapping files, with other field survey files, and data from other sources.

30.14 **Miscellaneous**

Other tasks not specifically addressed in this document.

30.15 **Field Reviews**

Perform on site review of maps.

30.16 **Technical Meetings**

Attend meetings as required.

30.17 **Quality Assurance/ Quality Control**

Establish and implement a QA/QC plan.

30.18 **Supervision**

Supervise all Terrestrial Mobile LiDAR activities. This task must be performed by the project supervisor, a Florida P.S.M.

30.19 **Coordination**

Coordinate with all elements of the project to produce a final product.

31 **ARCHITECTURE DEVELOPMENT – N/A**

32 **NOISE BARRIERS IMPACT DESIGN ASSESSMENT IN THE DESIGN PHASE – N/A**

33 **INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS – N/A**

34 **INTELLIGENT TRANSPORTATION SYSTEMS PLANS – N/A**

35 **GEOTECHNICAL**
The CONSULTANT is responsible for all geotechnical work for this project. Borings for estimating SHWT for roadway are required, to support 15% line and grade.

Review of existing bridge borings data to support Bridge Concept Report also required.

The CONSULTANT shall, for each project, be responsible for a complete geotechnical investigation. All work performed by the CONSULTANT shall be in accordance with DEPARTMENT standards, or as otherwise directed by the District Geotechnical Engineer. The District Geotechnical Engineer will make interpretations and changes regarding geotechnical standards, policies and procedures and provide guidance to the CONSULTANT.

Before beginning each phase of investigation and after the Notice to Proceed is given, the CONSULTANT shall submit an investigation plan for approval and meet with the DEPARTMENT’s Geotechnical Engineer or representative to review the project scope and DEPARTMENT requirements (meeting can be waived at the discretion of the Geotechnical Engineer). The investigation plan shall include, but not be limited to, the proposed boring locations and depths, and all existing geotechnical information from available sources to generally describe the surface and subsurface conditions of the project site. Additional meetings may be required to plan any additional field efforts, review plans, resolve plans/report comments, resolve responses to comments, and/or any other meetings necessary to facilitate the project.

The CONSULTANT shall notify the DEPARTMENT in adequate time to schedule a representative to attend all related meetings and field activities.

35.1 Document Collection and Review

The CONSULTANT shall review printed literature including topographic maps, county agricultural maps, aerial photography (including historic photos), ground water resources, geology bulletins, potentiometric maps, pile driving records, historic construction records and other geotechnical related resources. Prior to field reconnaissance, the CONSULTANT shall review U.S.G.S., S.C.S. and potentiometric maps, and identify areas with problematic soil and groundwater conditions.

Roadway

The CONSULTANT shall be responsible for coordination of all geotechnical related field work activities. The CONSULTANT shall retain all samples until acceptance of Phase IV plans. Rock cores shall be retained as directed in writing by the District Geotechnical Engineer.

Obtain pavement cores as directed in writing by the District Geotechnical Engineer.
If required by the District Geotechnical Engineer, a preliminary roadway exploration shall be performed before the Phase I plans submittal. The preliminary roadway exploration **shall** be performed and results provided to the Engineer of Record to assist in setting roadway grades and locating potential problem areas. The preliminary roadway exploration shall be performed as directed in writing by the District Geotechnical Engineer.

The CONSULTANT shall perform specialized field-testing as required by project needs and as directed in writing by the District Geotechnical Engineer.

All laboratory testing and classification **shall** be performed in accordance with applicable DEPARTMENT standards, ASTM Standards or AASHTO Standards, unless otherwise specified in the Contract Documents.

**35.2 Develop Detailed Boring Location Plan**

Develop a detailed boring location plan. Meet with the DEPARTMENT Geotechnical Project Manager for boring plan approval. If the drilling program is **expected** to encounter artesian conditions, the CONSULTANT shall submit a methodology(s) for plugging the borehole to the DEPARTMENT for approval prior to commencing with the boring program.

**35.3 Stake Borings/Utility Clearance**

Stake borings and obtain utility clearance.

**35.4 Muck Probing – N/A**

**35.5 Coordinate and Develop TTCP Plans for Field Investigation**

Coordinate and develop Maintenance of Traffic (TTCP) plan. All work zone traffic control **shall** be performed in accordance with the DEPARTMENT’s Roadway and Traffic Design Standards Index 600 series.

**35.6 Drilling Access Permits**

Obtain all State, County, City, and Water Management District permits for performing geotechnical borings, as needed.

**35.7 Property Clearances**

Notify property tenants, in person, of drilling and field activities, if applicable. Written notification to property owners/tenants is the responsibility of the DEPARTMENT’s Project Manager.

**35.8 Groundwater Monitoring**
Monitor groundwater using piezometers.

35.9 LBR / Resilient Modulus Sampling

Collect appropriate samples for Limerock Bearing Ratio (LBR) or Resilient Modulus testing as directed by the District Geotechnical Office. Deliver Resilient Modulus samples to the District Materials Office or the State Materials Office in Gainesville, as directed by the DEPARTMENT.

35.10 Coordination of Field Work

Coordinate all field work required to provide geotechnical data for the project.

35.11 Soil and Rock Classification – Roadway

Refine soil profiles recorded in the field, based on results of laboratory testing.

35.12 Resilient Modulus or Design LBR

Determine design LBR values from the 90% and mean methods when LBR testing is required by the DEPARTMENT.

The Resilient Modulus will be provided from testing performed by the State Materials Office. Design LBR should only be determined when approved by the District Geotechnical Office.

35.13 Laboratory Data

Tabulate laboratory test results for inclusion in the geotechnical report, the report of tests sheet (Roadway Soil Survey Sheet), and for any necessary calculations and analyses.

35.14 Seasonal High Water Table

Review the encountered ground water levels and estimate seasonal high ground water levels. Estimate seasonal low ground water levels, if requested.

35.15 Parameters for Water Retention Areas

Calculate parameters for water retention areas, exfiltration trenches, and/or swales.

35.16 Delineate Limits of Unsuitable Material – N/A

35.17 Electronic Files for Cross-Sections
Create electronic files of boring data for cross-sections.

35.18 Embankment Settlement and Stability – N/A

35.19 Monitor Existing Structures – N/A

35.20 Stormwater Volume Recovery and/or Background Seepage Analysis - N/A

35.21 Geotechnical Recommendations

Provide geotechnical recommendations regarding the proposed roadway construction project, including the following; description of the site/alignment, design recommendations and discussion of any special considerations (i.e. removal of unsuitable material, consolidation of weak soils, estimated settlement time/amount, groundwater control, high groundwater conditions relative to pavement base, etc.) Evaluate and recommend types of geosynthetics and properties for various applications, as required.

35.22 Pavement Condition Survey and Pavement Evaluation Report – N/A

35.23 Preliminary Roadway Report

If a preliminary roadway investigation is performed, submit a preliminary roadway report before the Phase I plans submittal. The purpose of the preliminary roadway report will be to assist in setting road grades and locating potential problems. The report shall include, but not be limited to:

- Copies of U.S.G.S. and S.C.S. maps with project limits shown.
- A report of tests sheet that summarizes the laboratory test results, the soil stratification (i.e. soils grouped into layers of similar materials) and construction recommendations relative to Standard Indices 500 and 505.
- The results of all tasks discussed in all previous sections regarding data interpretation and analysis.
- An appendix that contains stratified soil boring profiles, laboratory test data sheets, sample embankment settlement and stability calculations, design LBR calculations/graphs, and other pertinent calculations.
- The CONSULTANT shall respond in writing to any changes and/or comments from the DEPARTMENT and submit any responses and revised reports.

35.24 Final Report – N/A

35.25 Auger Boring Drafting

Draft auger borings as directed by the DEPARTMENT.
35.26 SPT Boring Drafting

Draft SPT borings as directed by the DEPARTMENT.

Structures

The CONSULTANT shall be responsible for coordination of all geotechnical related fieldwork activities. The CONSULTANT shall retain all samples until acceptance of Phase IV plans. Rock cores shall be retained as directed in writing by the District Geotechnical Engineer.

The CONSULTANT shall perform specialized field testing as required by needs of project and as directed in writing by the District Geotechnical Engineer.

All laboratory testing and classification shall be performed in accordance with applicable DEPARTMENT standards, ASTM Standards or AASHTO Standards, unless otherwise specified in the Contract Documents.

The staff hour tasks for high embankment fills and structural foundations for bridges, box culverts, walls, high-mast lighting, overhead signs, mast arm signals, strain poles, buildings, and other structures include the following:

35.27 Develop Detailed Boring Location Plan – N/A
35.28 Stake Borings/Utility Clearance – N/A
35.29 Coordinate and Develop TTCP Plans for Field Investigation – N/A
35.30 Drilling Access Permits – N/A
35.31 Property Clearances – N/A
35.32 Collection of Corrosion Samples – N/A
35.33 Coordination of Field Work – N/A
35.34 Soil and Rock Classification – Structures – N/A
35.35 Tabulation of Laboratory Data – N/A
35.36 Estimate Design Groundwater Level for Structures – N/A
35.37 Selection of Foundation Alternatives (BDR)

Evaluation and selection of foundation alternative, including the following:
- GRS-IBS
- Spread footings
- Prestressed concrete piling – various sizes
- Steel H-piles
- Steel pipe piles
- Drilled shafts

Foundation analyses shall be performed using approved DEPARTMENT methods. Assist in selection of the most economical, feasible foundation alternative.

35.38 Detailed Analysis of Selected Foundation Alternate(s) – N/A

35.39 Bridge Construction and Testing Recommendations

Provide construction and testing recommendations, including potential constructability problems.

35.40 Lateral Load Analysis (Optional) – N/A

35.41 Walls – N/A

35.42 Sheet Pile Wall Analysis – N/A

35.43 Design Soil Parameters for Signs, Signals, High Mast Lights, and Strain Poles and Geotechnical Recommendations – N/A

35.44 Box Culvert Analysis – N/A

35.45 Preliminary Report – BDR – N/A

35.46 Final Report – Bridge and Associated Walls – N/A

35.47 Final Reports – Signs, Signals, Box Culvert, Walls, and High Mast Lights – N/A

35.48 SPT Boring Drafting – N/A

35.49 Other Geotechnical – N/A

35.50 Technical Special Provisions and Modified Special Provisions – N/A

35.51 Field Reviews
Identify and note surface soil and rock conditions, surface water conditions and locations, and preliminary utility conflicts. Observe and note nearby structures and foundation types.

35.52 Technical Meetings

35.53 Quality Assurance/Quality Control

35.54 Supervision

35.55 Coordination

36 3D MODELING – N/A

37 PROJECT REQUIREMENTS

37.1 Liaison Office

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

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

37.6 **Computer Automation**

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

37.7 **Coordination with Other Consultants**

The CONSULTANT **firm** shall coordinate **their** 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.