

September 30, 2022



EXHIBIT A

SCOPE OF SERVICES

FOR

Surveying and Mapping – Continuing Services Contract

Florida Turnpike Enterprise

Financial Project ID: ***Assigned per Task Work Order (TWO)***

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SCOPE OF SERVICES FOR CONSULTING ENGINEERING SERVICES

HIGHWAY AND BRIDGE/STRUCTURAL DESIGN

This Exhibit forms an integral part of the agreement between the State of Florida Department of Transportation (hereinafter referred to as the DEPARTMENT or FDOT) and [Consultant Name or leave blank until CONSULTANT is selected] (hereinafter referred to as the CONSULTANT) relative to the transportation facility described as follows ***as assigned under each TWO.***

Financial Project ID: ***To be assigned under TWO***

Related Financial Project ID(s): ***To be assigned under TWO***

Federal Aid Project No.: ***To be assigned under TWO (if applicable)***

Roadway: ***To be assigned under TWO***

Project Description: ***Surveying and Mapping Continuing Services Contract***

Railroad Crossing No.: ***To be assigned under TWO***

1 PURPOSE

The purpose of this Exhibit is to describe the scope of work and the responsibilities of the CONSULTANT and the DEPARTMENT in connection with the *survey efforts and required deliverables, including any ancillary deliverables, if necessary, for:*

Description: Surveying and Mapping Continuing Services Contract

- Major work groups include:
 - 8.1, 8.2, 8.4
- Minor work groups include:
 - 8.3

This contract is a general services contract for Survey Services covering multiple areas within Florida's Turnpike Enterprise system of toll roads, which includes the Turnpike Mainline from Homestead to Wildwood (SR 821 and SR 91), Sawgrass Expressway (SR 869), Beachline East and West Expressway (SR 528), Southern Connector and Seminole Expressway (SR 417), Polk Parkway (SR 570), Veterans Expressway and Suncoast Parkway (SR 589), Western Beltway (SR 429), 1-4 Connector, SR 23 First Coast Expressway and other toll facilities, including Alligator Alley, Garcon Point, Mid-Bay Bridge, Sunshine Skyway Bridge, Pinellas Bayway, and any other toll road or facility that may be under the jurisdiction of Florida's Turnpike Enterprise during the term of this Agreement. The work under this contract will be concentrated in, but not limited to those facilities that are north of the line between Township 32 South and Township 33 South being the southerly boundary of Hillsborough, Polk, and Osceola counties, and west of the west line of Orange County. This Contract will be concentrated in, but not limited to those portions of Florida's Turnpike System.

The DEPARTMENT shall request CONSULTANT services on an as-needed basis. Services to be provided on each project will be initiated and completed as directed by the Executive Director and Chief Executive Officer, Florida's Turnpike Enterprise. There is no guarantee that any or all of the services described in this Agreement will be assigned during the term of this Agreement. Further, the CONSULTANT is providing these services on a nonexclusive basis. The DEPARTMENT, at its option, may elect to have any of the services set forth herein performed by the CONSULTANT or DEPARTMENT staff. Work to be performed may be assigned individually or in groups and the DEPARTMENT will issue TWO(s) to the CONSULTANT to perform the requested services. Fees will be negotiated when the TWO is issued. TWO(s) assigned under this Contract may include all or a portion of the services described herein.

The general objective is for the CONSULTANT to *provide surveying and mapping services, reports, deliverables*, and other technical documents in accordance with FDOT policy, procedures, and requirements. *Information from assigned project(s) may be used to develop* Contract Documents will be used by the contractor to build the project and test the project components. These Contract Documents will be used by the DEPARTMENT or its Construction Engineering Inspection (CEI) representatives for inspection and final acceptance of the project. The

CONSULTANT shall follow a systems engineering process to ensure that all required project components are included in the development of the Contract Documents and the project can be built as designed and to specifications.

The Scope of Services establishes which items of work in the FDOT Design Manual (FDM) and other pertinent manuals are specifically prescribed to accomplish the work included in this contract and also indicate which items of work will be the responsibility of the CONSULTANT and/or the DEPARTMENT. ***However, the Scope of Services is supplemental to and does not limit the responsibilities of all parties as outlined in the FDM.***

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

The CONSULTANT shall demonstrate good project management practices while working on this project. These include communication with the DEPARTMENT and others as necessary, management of time and resources, and documentation. The CONSULTANT shall set up and maintain throughout the design of the project a contract file in accordance with DEPARTMENT procedures. CONSULTANTS are expected to know the laws and rules governing their professions and are expected to provide services in accordance with current regulations, codes and ordinances and recognized standards applicable to such professional services. The CONSULTANT shall provide qualified technical and professional personnel to perform to DEPARTMENT standards and procedures, the duties and responsibilities assigned under the terms of this agreement. The CONSULTANT shall minimize to the maximum extent possible the DEPARTMENT's need to apply its own resources to assignments authorized by the DEPARTMENT.

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

The DEPARTMENT's General Consultants will provide Contract administration, project management, and technical reviews of work associated with this Contract.

2 PROJECT DESCRIPTION

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

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

QA/QC Staffing Plan:

The CONSULTANT shall develop a QA/QC plan that includes the Project Staffing list using the Template on FTE's Design Website link (<https://floridasturnpike.com/business-opportunities/design>) and provide to FDOT's Project Manager.

Documents Requiring Concurrence Signatures Submittals:

Draft and Final versions of design documents requiring DEPARTMENT'S concurrence signatures (i.e., typical sections, design exceptions, design variations, etc.) must be submitted to the FDOT's Project Manager for review through the ERC process. Once the ERC process is complete, the FDOT's Project Manager can proceed with obtaining the necessary concurrence signatures.

Public Involvement: ***Not Applicable (N/A)***

CAP Level: ***N/A***

Other Agency Presentations/Meetings: ***N/A***

Joint Project Agreements: ***N/A***

Specifications Package Preparation: ***N/A***

Estimated Quantities Report Preparation: ***N/A***

Value Engineering: ***N/A***

Risk Assessment Workshop: ***N/A***

Plan Type: ***N/A***

Typical Section: ***N/A***

Number of Typical Sections: ***N/A***

Pavement Designs: ***N/A***

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

Cross-Slope Correction: ***N/A***

Access Management Classification: *N/A*

Median Crossovers: N/A

Transit Route Features: *N/A*

Major Intersections and Interchanges: *N/A*

Roadway Alternative Analysis: *N/A*

Level of Temporary Traffic Control Plan (TTCP): ***As required for survey effort, to be identified within TWO.***

Temporary Lighting: *N/A*

Temporary Signals: *N/A*

Temporary Drainage: *N/A*

Design Variations: *N/A*

Design Exceptions: *N/A*

Back of Sidewalk Profiles: *N/A*

Number of Back of Sidewalk Profiles: *N/A*

Selective Clearing and Grubbing: *N/A*

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

2.3 Utilities Coordination (Activity 7) - *N/A*

2.4 Environmental Permits and Environmental Clearances (Activity 8) - *N/A*

2.5 Structures (Activities 9 - 18) - *N/A*

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

2.7 Signalization (Activities 21 & 22) - *N/A*

2.8 Lighting (Activities 23 & 24) - *N/A*

2.9 Landscape (Activities 25 & 26) - *N/A*

2.10 Survey (Activity 27) - *As identified in TWO*

Control Survey: ***As identified in each project assigned under a TWO.***

Design Survey: ***As identified in each project assigned under a TWO.***

The CONSULTANT shall provide, as needed, 3D topography, digital terrain model (DTM), drainage and outfalls, right of way, and other appropriate surveys including field investigations.

Subsurface Utility Exploration (SUE): *As identified in each project assigned under a TWO.*

Construction Surveying: *As identified in each project assigned under a TWO.*

Right of Way Survey: *As identified in each project assigned under a TWO.*

Vegetation Survey: *As identified in each project assigned under a TWO.*

2.11 Photogrammetry (Activity 28) - *As identified in TWO*

2.12 Mapping (Activity 29)

The CONSULTANT shall submit Boundary Surveys, CTL maps, ROW Control Surveys, Specific Control Surveys, Sketches of Descriptions, Appraisal Sketches, Key Maps, Detail Sheets and Legal Descriptions to the DEPARTMENT for review at various stages of completion as specified by the DEPARTMENT.

Control Survey Map: *As identified in each project assigned under a TWO.*

Right of Way Map: *As identified in each project assigned under a TWO.*

Legal Descriptions: *As identified in each project assigned under a TWO.*

Maintenance Map: *As identified in each project assigned under a TWO.*

Miscellaneous Items: *As identified in each project assigned under a TWO.*

2.13 Terrestrial Mobile LiDAR (Activity 30) - *As identified in TWO.*

2.14a Architecture (Activity 31) – *N/A*

2.14b Toll Facility Development (Activity 31T) – *N/A*

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

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

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

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

2.19 Project Schedule

Within twenty-four (24) hours after the Notice-To-Proceed for a Task Work Order, the CONSULTANT shall provide a detailed project activity/event schedule for DEPARTMENT and CONSULTANT activities required to meet the schedule for completion of the Project assigned under a TWO. The schedule shall be identified in the TWO.

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

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

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

2.20 Submittals

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

Document Submittals are defined as Plan submittals, Engineering Document submittals, Right of Way Map submittals, etc.

The CONSULTANT shall submit all deliverables to the DEPARTMENT electronically in Portable Document Format (PDF), unless notified by the DEPARTMENT's Project Manager. Design files shall be submitted as identified in TWO. For each submittal, the CONSULTANT shall include a Transmittal Memorandum that includes, at a minimum, the file name of each PDF file as well as the number of hardcopies (if any) as directed by the DEPARTMENT's Project Manager.

A Google Earth ready KMZ file will be developed and submitted for all plan or roll plot submittals to the DEPARTMENT. The file will have both existing and proposed information for each discipline and shall follow Florida Turnpike's Enterprise (FTE's) KMZ Standards available on FTEs' Design website link <https://floridasturnpike.com/business-opportunities/design> and will be submitted as identified in the TWO.

2.21 Provisions for Work

The services performed by the CONSULTANT must comply with all applicable DEPARTMENT's manuals, procedure, policies, and guidelines. Specifically, the CONSULTANT must comply with DEPARTMENT's Project Development and Environmental (PD&E) Manual, FDOT Design Manual (FDM), Structures Manual, and Computer Aided Design and Drafting (CADD) Manual, ***and FDOT Survey Handbook***. The DEPARTMENT's manuals and guidelines incorporate, by requirement or reference, all applicable federal and state laws, regulations, and Executive Orders. The CONSULTANT will use the latest editions of the manuals, procedures, and guidelines to perform work for this project.

All work shall be prepared with English units (unless otherwise specified) in accordance with the latest editions of standards and requirements utilized by the DEPARTMENT.

The CONSULTANT must also comply with the FTE's manuals, procedures, policies, and guidelines that are outlined below:

- ***FTE's Design Handbook (TDH)***
- ***FTE's Lane Closure Policy***
- ***FTE's U-Turn Policy***
- ***FTE's Drainage Manual Supplement***
- ***FTE's Structures Manual Supplement***
- ***FTE's General Tolling Requirements (GTR)***
- ***Additional FTE guidelines, sample documents and templates for design and construction can be found on the FTE's Design Website link:
<https://floridasturnpike.com/business-opportunities/design>***

3 PROJECT COMMON AND PROJECT GENERAL TASKS

Project Common Tasks

Project Common Tasks, as listed below, are work efforts that are applicable to ***assigned TWO activities, Activity 27 Survey through Activity 30 Terrestrial Mobile LiDAR***. These tasks are to be included in the project scope ***of each TWO*** in each applicable activity when the described work is to be performed by the CONSULTANT.

Cost Estimates: The CONSULTANT is responsible for producing a construction cost estimate and reviewing and updating the cost estimate when scope changes occur and/or at milestones of the project. Prior to Phase II plans or completion of quantities, the DEPARTMENT's Long-Range Estimate (LRE) system will be used to produce a conceptual estimate, according to ***FTE's*** policy. Once the quantities have been developed (beginning at Phase II plans and no later than Phase III plans) the CONSULTANT shall be responsible for ***providing*** the category information pay items, and quantities ***to input into AASHTOWare Project Preconstruction*** through the use of the DEPARTMENT's Designer Interface ***for generating the summary of quantities and the FDOT's in-house estimates. A Summary of Pay Items sheet(s) shall be prepared with all required Plans submittals as required.***

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

A Technical Special Provision shall not modify the Standard Specifications and implemented modifications in any way.

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

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

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

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

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

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

Quality Assurance/Quality Control: It is the intention of the DEPARTMENT that design CONSULTANTS, including their subconsultant(s), are held responsible for their work, including plans review. The purpose of CONSULTANT plan reviews is to ensure that CONSULTANT plans follow the plan preparation procedures outlined in the FDOT Design Manual, that state and federal design criteria are followed with the DEPARTMENT concept, and that the CONSULTANT submittals are complete. All subconsultant document submittals shall be submitted by the subconsultant directly to the CONSULTANT for their independent Quality Assurance/Quality Control review and subsequent submittal to the DEPARTMENT. ***Written resolution of review comments shall be input in the DEPARTMENT's Electronic Review Comments (ERC) system.***

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

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

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all maps, design drawings, specifications, and other documentation prepared as a part of the Contract. The CONSULTANT shall describe how the checking and review processes are to be

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

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

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

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

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

Supervision: The CONSULTANT shall supervise all technical design activities.

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

Field Reviews: Add language for specific number of field reviews refer to specific discipline section as assigned in TWO.

Notification of Work: Traffic shall be maintained on all affected roadways throughout the duration of the Contract during the performance of any work activity by the CONSULTANT within the Florida's Turnpike Enterprise's Right-of-Way.

Prior to the CONSULTANT beginning work on this Project, a Notification of Work form shall be submitted to the DEPARTMENT's Project Manager for signature. (Note: This notification of work form shall replace the previously used General Use Permit.) A completed and signed copy of the notification of work form shall be carried at all times in any CONSULTANT vehicle while within an assigned project limits and performing work necessary for the assigned project(s). The above shall apply to all members of the CONSULTANT team under Contract to the Florida's Turnpike Enterprise, including all sub-CONSULTANTS.

Notification of Work form is available at the following internet website:

<http://www.floridasturnpike.com/content/Permits/Forms/FTE%20Notification%20of%20Work%20Form.pdf>

Any lane closures on Turnpike system shall be in accordance with the FTE's Lane Closure Policy; a copy of said policy is contained in the TDH Chapter 240.

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.

The CONSULTANT will coordinate and perform the appropriate level of public involvement for this Project as outlined in the applicable chapters of the FDOT Design Manual, PD&E Manual, and the FDOT Public Involvement Handbook.

3.1 Public Involvement – N/A

3.2 Joint Project Agreements – N/A

3.3 Specifications & Estimates – 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; includes 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 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.

Progress Meetings: The CONSULTANT shall attend all progress meetings. XX number of progress meetings are anticipated for this project. The CONSULTANT shall prepare, and submit to the DEPARTMENT's Project Manager for review, the meeting agenda and notes for all meetings attended by them. The meeting notes are due within five (5) working days of attending the meeting.

3.7 Plans Update – N/A

3.8 Post-Design Services – N/A

3.9 Digital Delivery

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

3.10 Risk Assessment Workshop – N/A

3.11 Railroad, Transit and/or Airport Coordination

As identified in each project assigned under a TWO.

3.11.1 Aeronautical Evaluation – N/A

3.12 Landscape and Existing Vegetation Coordination

As identified in each project assigned under a TWO.

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

3.13 Other Project General Tasks

As identified in each project assigned under a TWO.

3.13.1 DEPARTMENT Owned Underground Facilities

DEPARTMENT owned underground facilities will be designated and located, as needed, by the CONSULTANT. The DEPARTMENT will not locate its underground facilities as the result of a call to Sunshine State One Call. The CONSULTANT may determine the locations of existing DEPARTMENT owned underground facilities using SUE, reviewing as-built plans, field investigations, or by other means.

3.13.2 New Power Services Coordination

The CONSULTANT shall coordinate with lighting, signals, tolls, signs, and ITS to determine the location for service points, the cost to provide power service to the service point locations, and schedules for providing the service.

The CONSULTANT shall review and confirm that the power company's estimate is accurate and includes the required components needed for the individual systems (voltage, transformer size, location, etc.) and provide the cost estimate and a written request to utilize the Do-Not-Bid pay item (639-8-ABC) to the Project Manager and the District Utility Administrator.

4 ROADWAY ANALYSIS -N/A

PLANNED AD 23822

5 ROADWAY PLANS – N/A

PLANNED AD 23822

6a DRAINAGE ANALYSIS -N/A

PLANNED AD 23822

6b DRAINAGE PLANS – N/A

PLANNED AD 23822

7 UTILITIES -N/A

PLANNED AD 23822

8 ENVIRONMENTAL PERMITS and ENVIRONMENTAL CLEARANCES – N/A

PLANNED AD 23822

**9 STRUCTURES - SUMMARY AND MISCELLANEOUS TASKS AND
DRAWINGS-N/A**

PLANNED AD 23822

10 STRUCTURES - BRIDGE DEVELOPMENT REPORT -N/A

PLANNED AD 23822

11 STRUCTURES - TEMPORARY BRIDGE - N/A

PLANNED AD 23822

11 STRUCTURES - TEMPORARY BRIDGE - N/A

12 STRUCTURES - SHORT SPAN CONCRETE BRIDGE -N/A

PLANNED AD 23822

13 STRUCTURES - MEDIUM SPAN CONCRETE BRIDGE -N/A

PLANNED AD 23822

14 STRUCTURES - STRUCTURAL STEEL BRIDGE N/A

PLANNED AD 23822

14 STRUCTURES - STRUCTURAL STEEL BRIDGE N/A

15 STRUCTURES - SEGMENTAL CONCRETE BRIDGE - N/A

PLANNED AD 23822

15 STRUCTURES - SEGMENTAL CONCRETE BRIDGE - N/A

16 STRUCTURES - MOVABLE SPAN – N/A

PLANNED AD 23822

16 STRUCTURES - MOVABLE SPAN – N/A

17 STRUCTURES - RETAINING WALLS – N/A

PLANNED AD 23822

18 STRUCTURES – MISCELLANEOUS -N/A

PLANNED AD 23822

19 SIGNING AND PAVEMENT MARKING ANALYSIS -N/A

PLANNED AD 23822

20 SIGNING AND PAVEMENT MARKING PLANS -N/A

PLANNED AD 23822

21 SIGNALIZATION ANALYSIS – N/A

PLANNED AD 23822

22 SIGNALIZATION PLANS -N/A

PLANNED AD 23822

23 LIGHTING ANALYSIS -N/A

PLANNED AD 23822

24 LIGHTING PLANS -N/A

PLANNED AD 23822

25 LANDSCAPE ANALYSIS -N/A

PLANNED AD 23822

25 LANDSCAPE ANALYSIS -N/A

26 LANDSCAPE PLANS – N/A

PLANNED AD 23822

27 SURVEY

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, furnished by the CONSULTANT. The field books shall be furnished by the CONSULTANT and certified by the surveyor in responsible charge of work being performed before the final product is submitted. (Note: it is anticipated that PDF copies of the field notes will be submitted in lieu of original field book hard copies with attached certified survey report.)

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.

A database of the processed survey data, including control points, benchmarks, and alignments will be provided to the DEPARTMENT as approved by the Florida's Turnpike Enterprise's Surveyor. (Note: it is anticipated that a final surveying package of all survey information will be submitted prior to final construction plan submittal by the Engineer of Record.)

Survey requirements shall be as described for each project assigned under a TWO.

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 Control (HPC) 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 pavement cross-slope analysis and/or for comparison with DTM.

27.9 Side Street Surveys

Refer to tasks of this document as applicable.

27.10 Underground Utilities

Designation includes 2-dimensional collection of existing utilities and selected 3-dimensional verification as needed for designation. Location includes non-destructive excavation to determine size, type and location of existing utility, as necessary for final 3-dimensional verification. Survey includes collection of data on points as needed for designates and locates. Includes analysis and processing of all field collected data, and delivery of all appropriate electronic files.

DEPARTMENT-owned utility lines will be designated and located, as needed, by the CONSULTANT. The DEPARTMENT will not locate its facilities as the result of a call to Sunshine State One-Call.

27.11 Outfall Survey

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

27.12 Drainage Survey

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

27.13 Bridge Survey (Minor/Major)

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

27.14 Channel Survey

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

27.15 Pond Site Survey

Refer to tasks of this document as applicable.

27.16 Mitigation Survey

Refer to tasks of this document as applicable.

27.17 Jurisdiction Line Survey

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

27.18 Geotechnical Support

Perform 3-dimensional (X,Y,Z) field location, or stakeout, of boring sites established by geotechnical engineer. Includes field edits, analysis and processing of all field collected data and/or reports.

27.19 Sectional/Grant Survey

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

27.20 Subdivision Location

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

27.21 Maintained R/W

Perform field location (2-dimensional) of maintained R/W limits as defined by respective authorities, if needed. Also includes field edits, analysis and processing of all field collected data, preparation of reports.

27.22 Boundary Survey

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

27.23 Water Boundary Survey

Perform Mean High Water, Ordinary High Water and Safe Upland Line surveys as required by 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 Vegetation Survey

Locate vegetation within the project limits.

27.29 Tree Survey

Locate individual trees or palms within the project limits.

27.30 Miscellaneous Surveys

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

27.31 Supplemental Surveys

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

27.32 Document Research

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

27.33 Field Review

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

27.34 Technical Meetings

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

27.35 Quality Assurance/Quality Control (QA/QC)

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

27.36 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.

27.37 Coordination

Coordinate survey activities with other disciplines. These activities must be performed by the project supervisor, a Florida P.S.M. or their delegate as approved by the District Surveying Office.

28 PHOTOGRAMMETRY

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

The use of any Unmanned Aircraft System (UAS), Unmanned Aerial Vehicle (UAV), drone, or similar system to accomplish Contract activities must comply with all federal, state, and local laws and regulations. This use is limited to areas outside of the paved surfaces of the Turnpike Limited Access Rights of Way.

For FDOT Projects, if a drone is used for Surveying & Mapping, the CONSULTANT must be pre-qualified in Work Type 8.3.

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

Photogrammetry requirements shall be as described for each project assigned under a TWO.

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 Photo Products

Prepare contact prints, contact diapositives, and photo enlargements.

28.6 LiDAR

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

28.7 Aerial Triangulation

Measure and adjust control within aerial images.

28.8 Surfaces

Includes collection of break lines and spot elevations.

28.9 Ortho Generation

Includes creation of final images.

28.10 Rectified Digital Imagery (Georeferenced)

Create the rectified digital image.

28.11 Mosaicking

Create the mosaic.

28.12 Sheet Clipping

Create plot files for sheets from the database.

28.13 Topographics (3D)

Prepare topographic maps including surface and planimetrics. (Photogrammetrist will not propose hours for Surfaces and Topographics.)

28.14 Planimetrics (2D)

Prepare 2D planimetric map.

28.15 Drainage Basin

Includes preparing drainage basin maps in clipped "sheet" format.

28.16 CADD Edit

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

28.17 Data Merging

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

28.18 Miscellaneous

Other tasks not specifically addressed in this document.

28.19 Field Review

Perform on site review of maps.

28.20 Technical Meetings

Attend meetings as required.

28.21 Quality Assurance/Quality Control

Establish and implement a QA/QC plan.

28.22 Supervision

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

28.23 Coordination

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

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29 MAPPING

The CONSULTANT will be responsible for the preparation of control survey maps, right of way maps, maintenance maps, sketches, other miscellaneous survey maps, and legal descriptions as *described under a TWO for assigned* project in accordance with all applicable DEPARTMENT Manuals, Procedures, Handbooks, District specific requirements, and Florida Statutes. All maps, surveys and legal descriptions will be prepared under the direction of a Florida Professional Surveyor and Mapper (PSM) to DEPARTMENT size and format requirements utilizing DEPARTMENT approved software and will be designed to provide a high degree of uniformity and maximum readability. The CONSULTANT will 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) will 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 will be specified in writing.

29.8 Limits of Construction

The limits of construction DGN file as provided by the EOR will be imported or referenced to the master CADD file. Additional labeling will 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) will be included with the Control Survey Map, Right of Way Map and Maintenance Map.

29.20 Project 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, *and may be substituted for the Reference Point Sheet as determined by the Florida's Turnpike Enterprise's Surveyor (may also be called the CTL sheet, to Engineering CADD standards suitable for inclusion in the plans).*

29.21 Table of Ownerships Sheet

Miscellaneous Surveys and Sketches

29.22 Parcel Sketches

29.23 TITF Sketches

29.24 Other Specific Purpose Survey(s)

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 will 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 will 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

29.36 Supplemental Mapping

This task is to cover efforts resulting from major design and/or development changes after 60% map development that affect the right of way requirements/parent tract property lines and may include any number of tasks. Request and approval to utilize the Supplemental Mapping hours will be in writing and approved by the District Right of Way Surveyor prior to any work being done under this task.

30 TERRESTRIAL MOBILE LiDAR

The CONSULTANT shall perform Terrestrial Mobile (*Light Detection and Ranging*) 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.g., 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.

NOTE: The use of Unmanned Aerial Vehicle (UAV) or Unmanned Aircraft Systems (UAS) for Design Survey Data Collection (specifically Drone Lidar) will be determined on a case-by-case basis and will require final approval by the Turnpike Surveyor, the Turnpike Design Engineer, and (if appropriate) the State Surveyor. Use of any Unmanned Aircraft System, drone, or similar system, must comply with federal, state, and local laws and regulations.

31 ARCHITECTURE DEVELOPMENT – N/A

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31 ARCHITECTURE DEVELOPMENT – N/A

31T TOLL FACILITY DEVELOPMENT - N/A

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31T TOLL FACILITY DEVELOPMENT - N/A

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

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33 INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS – N/A

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34 INTELLIGENT TRANSPORTATION SYSTEMS PLANS - N/A

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35 GEOTECHNICAL – N/A

PLANNED AD 23822

36 3D MODELING - N/A

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37 PROJECT REQUIREMENTS

37.1 Liaison Office

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

37.2 Key Personnel

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

37.3 Progress Reporting

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

37.4 Correspondence

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

37.5 Professional Endorsement

The CONSULTANT shall have a Licensed Professional Engineer in the State of Florida sign and seal all reports, documents, Technical Special Provisions and Modified Special Provisions, and plans as required by DEPARTMENT standards.

37.6 Computer Automation

Each project assigned under a TWO will be developed utilizing Computer Aided Drafting and Design (CADD) systems. The DEPARTMENT makes available software to help assure quality and conformance with policy and procedures regarding CADD. It is the responsibility of the CONSULTANT to meet the requirements in the FDOT CADD Manual. The CONSULTANT shall submit final documents and files as described therein.

37.7 Coordination with Other Consultants

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

37.8 Optional Services

At the DEPARTMENT's option, the CONSULTANT may be requested to provide optional services. The fee for these services shall be negotiated in accordance with the terms detailed in Exhibit B, Method of Compensation, for a fair, competitive, and reasonable cost, considering the scope and complexity of the project(s). Additional services may be authorized by Letter of Authorization or supplemental amendment in accordance with paragraph 2.00 of the Standard Consultant Agreement. The additional services may include Construction Assistance, Review of Shop Drawings, Final Bridge Load Rating, update (Category II) bridge plans electronically (CADD) for the Final "As-Built" conditions, based on documents provided by the DEPARTMENT (CADD Services Only) or other Services as required.

38 INVOICING LIMITS

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

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

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