October 14, 2026

EXHIBIT A

SCOPE OF SERVICES

FOR

ENGINEERING DESIGN SERVICES

CAPITAL IMPROVEMENT PROGRAM PROJECT: 69703000

Tampa Bypass Canal Trail - Segment 6

COUNTY COMMISSIONER DISTRICT(S): 3

HILLSBOROUGH COUNTY

Approved By:	**County Project Manager**	**Consultant Project Manager**
	Signature	Signature
	Printed Name	Printed Name
	Date	Date

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SCOPE OF SERVICES FOR CONSULTING ENGINEERING SERVICES

TRANSPORTATION DESIGN SERVICES

This Exhibit forms an integral part of the agreement between Hillsborough County (hereinafter referred to as the COUNTY or HILLSBOROUGH COUNTY) and [Consultant Name] (hereinafter referred to as the CONSULTANT) relative to the transportation facility described as follows:

Capital Improvement Project ID: 69660000

Federal Aid Project No: 439482-2-38-01

County Commissioner District No(s): 3 – Commissioner(s) Gwen Myers

Name and Limits: Tampa Bypass Canal Trail Segment 6 from Morris Bridge Road (CR 579) to Bruce B. Downs Boulevard (CR 881)

Bridge No(s): N/A

Railroad Crossing No: N/A

Context Classification: N/A

1 PURPOSE

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

Design and preparation of a complete set of signed and sealed design drawings, post design, construction and incidental engineering services, as necessary, for completion of the Trail Improvements outlined in the Final Preliminary Engineering Report (PER), and this scope for Tampa Bypass Canal Trail - Segment 6, a distance of approximately 4.7 miles.

2 PROJECT DESCRIPTION

A *Final Preliminary Engineering Report, dated April 2023* is available from the COUNTY. 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. The CONSULTANT shall use the approved concepts as a basis for the design unless otherwise directed by the COUNTY at the initial scope clarification meeting or follow-up discussions.

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The CONSULTANT shall provide professional engineering services associated with the preliminary design recommendations for the project, and for the design and plans preparation for ***Tampa Bypass Canal Trail - Segment 6***

This project is to be designed and developed using CADD software and utilizing the COUNTY's current CADD standards. The project shall be designed, delivered and signed and sealed in compliance with the FDOT's CADD Manual published at:

http://www.fdot.gov/cadd/downloads/publications/CADDManual/default.shtm.

The consultant shall coordinate with the county in regard to researching license agreements along the corridor, per SWFWMD. Coordination with easement owners should take place to ensure the TBCT will not interfere with the rights afforded under their agreements and easements. Per Appendix K of the PER. The following easement owners include:

City of Tampa
Tampa Bay Water
Tampa Electric Company
Florida Gas Transmission Company

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

In connection with the recommended trail project, following preliminary investigation, CONSULTANT will prepare design plans for:

a. Trail new construction and rehabilitation including temporary and permanent connections to existing roadways and trailhead facilities.

b. Miscellaneous trail signing and pavement markings.

Public Involvement: Support of County led Public Involvement efforts. Other Agency Presentations/Meetings: 4
Typical Section: 3
Pavement Designs: 3
Cross-Slope Correction: N/A
Access Management Classification: 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): Level I
Temporary Lighting: N/A
Temporary Drainage: N/A
Design Deviations: 2

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Design Exceptions: N/A
Sidewalk Profiles: N/A

2.2 Drainage (Activities 6a and 6b)

Drainage System Design: The CONSULTANT shall prepare the project's drainage design. Open conveyance systems will convey runoff to existing and/or proposed stormwater ponds or outfalls, as appropriate. FDOT standard inlets shall be utilized, and all proposed storm sewer piping shall be Reinforced Concrete Pipe (RCP). No Optional Culvert Materials analysis is required.

Drainage Evaluation: The CONSULTANT shall perform an inventory and field verification of the existing drainage system. In accordance with Condition No. 2 of the SWFWMD letter dated March 8, 2023, "The District (SWFWMD) would require replacement of any culverts that would be paved over by the TBCT with exceptions for ones that were recently replaced by the District. Age threshold should be determined by the COUNTY through an inspection and provided in report format for District concurrence."

Hydrologic, Hydraulic, and Floodplain Analysis: The CONSULTANT shall utilize the Hillsborough County SWMM model, or other COUNTY approved modeling platform as directed. The analyses shall demonstrate that the proposed improvements do not adversely impact adjacent properties or increase flood stages. Floodplain compensation shall be provided as required within floodplain compensation (FPC) sites, roadside swales, or other approved locations. Hydraulic modeling shall document compliance with applicable floodplain and permitting requirements, including any required stormwater attenuation.

Erosion and Sediment Control: The CONSULTANT shall prepare project specific erosion and sediment control plan sheets.

Agency Coordination: The CONSULTANT shall coordinate with the COUNTY, SWFWMD, and other applicable agencies throughout design, including attendance at coordination meetings as required.

2.3 Selective Clearing and Grubbing (Activity 6c)

Selective Clearing and Grubbing: N/A

2.4 Utilities Coordination (Activity 7)

The CONSULTANT is responsible to certify that all necessary arrangements for utility work on this project have been made and will not conflict with the physical construction schedule. The CONSULTANT should coordinate with COUNTY personnel to coordinate transmittals to utility companies and meet production schedules.

The CONSULTANT shall ensure COUNTY standards, policies, procedures, practices, and design criteria are followed concerning utility coordination.

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The CONSULTANT may employ more than one individual or utility engineering consultant to provide utility coordination and engineering design expertise. The CONSULTANT shall identify a dedicated person responsible for managing all utility coordination activities. This person shall be contractually referred to as the Utility Coordination Manager and shall be identified in the CONSULTANT proposal. The Utility Coordination Manager shall have experience coordinating utilities on County or FDOT projects.
Expected Utilities: List or N/A

2.5 Environmental Permits and Environmental Clearances (Activity 8)

Expected Permits:

- U.S. Army Corps of Engineers – Section 404 Permit
- Southwest Florida Water Management District – Environmental Resource Permit (ERP)
- Environmental Protection Commission of Hillsborough County – Miscellaneous Activities in Wetlands (MAIW) Permit

Mitigation:
The COUNTY will provide compensatory wetland mitigation in accordance with Section 373.4137, Florida Statutes.

Expected Environmental Clearance (NEPA/PD&E): List or N/A

2.6 Structures (Activities 9 - 18) – N/A

2.7 Signing and Pavement Markings (Activities 19 & 20)

Sign Structure Types: Single post signs

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

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

2.10 Landscape (Activities 25 & 26)

Planting Plans: Describe limits or N/A
Irrigation Plans: Describe limits or N/A
Hardscape Plans: Describe limits or N/A
Outdoor Advertising: Describe limits or N/A

2.11 Survey (Activity 27)

Design Survey: Describe limits or N/A

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Subsurface Utility Exploration: Describe limits or N/A
Right of Way Survey: Describe limits or N/A
Vegetation Survey: Describe limits or N/A

2.12 Photogrammetry (Activity 28) – N/A

2.13 Mapping (Activity 29)

Control Survey Map: Describe limits or N/A
Right of Way Map: Describe limits or N/A
Legal Descriptions: Describe limits or N/A
Maintenance Map: Describe limits or N/A
Miscellaneous Items: Describe limits or N/A

2.14 Terrestrial Mobile LiDAR (Activity 30)

2.15 Architecture (Activity 31) – N/A

2.16 Noise Barriers (Activity 32) - N/A

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

2.18 Geotechnical (Activity 35)

2.19 Project Schedule

Within fourteen (14) calendar days after the Notice to Proceed, the CONSULTANT shall submit to the COUNTY a detailed project activity / event schedule for COUNTY and CONSULTANT scheduled activities required to meet the current COUNTY Production Date [January 2029]. Said schedule shall be prepared showing all precedents relationships and dependents, portions of the work including receivables, COUNTY review periods, public meetings, etc. Periodically, throughout the life of the project, the schedule may be reviewed and adjusted as necessary to incorporate progress to date. For purposes of scheduling the CONSULTANT shall allow 15 working days of COUNTY review time for 60% submittal and 10 working days for the 100%, Final, and S&S submittals. Following approval of a new schedule, prior schedules become null and void.

The schedule shall indicate all required submittals, and list at a minimum:

(i) Typical Section Package
(ii) 60%, 100%, Final, S&S

All fees and price proposals are to be based on the negotiated schedule of 24 months, or

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sooner, for Final Plans.

Periodically, throughout the life of the contract, the project schedule and budget may be reviewed and, with the approval of the COUNTY, 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 budget, shall be submitted with each invoice.

2.20 Submittals

The CONSULTANT shall furnish construction contract documents as required by the COUNTY to adequately control, coordinate, and approve the work concepts. The CONSULTANT shall distribute submittals as directed by the COUNTY.

2.21 Provisions for Work

The services performed by the CONSULTANT must comply with all applicable COUNTY manuals, procedures, policies, and guidelines.

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 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.

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.

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.

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Technical Meetings: The CONSULTANT shall attend all technical meetings necessary to execute the Scope of Services of this contract. This includes meetings with COUNTY 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 COUNTY'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 COUNTY that design CONSULTANTS, including their subconsultant(s), are held responsible for their work, including plans review.

It is the CONSULTANT'S responsibility to independently and continually QC their plans and other deliverables. The CONSULTANT should regularly communicate with the COUNTY'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, without additional compensation, correct all errors or deficiencies in the designs, maps, drawings, specifications and/or other products and services.

Supervision: The CONSULTANT shall supervise all technical design activities.

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

Project General Tasks

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

3.1 Public Involvement

Public involvement includes communicating to all interested persons, groups, and government organizations information regarding the development of the project. The CONSULTANT shall provide to the COUNTY drafts of all meeting graphics associated with the following tasks for review and approval at least 10 business days prior to printing and / or distribution.

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3.1.1 Community Awareness Plan - N/A

3.1.2 Notifications – N/A

3.1.3 Preparing Mailing Lists – N/A

3.1.4 Median Modification Letters – N/A

3.1.5 Driveway Modification Letters – N/A

3.1.6 Newsletters – N/A

3.1.7 Renderings and Fly-Throughs – N/A

3.1.8 PowerPoint Presentations – N/A

3.1.9 Public Meeting Preparations

The CONSULTANT shall prepare the necessary graphical representations supporting the proposed design for use in public meetings.

3.1.10 Public Meeting Attendance and Follow-up

The CONSULTANT shall attend public meeting(s), assist with meeting setup and take down.

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

It is estimated for this project there will be 1 Public meeting during the design.

3.1.11 Other Agency Meetings

In addition to scheduled public meetings the CONSULTANT may be required to participate in meetings with local governing authorities and/or Metropolitan Planning Organization (MPO). The CONSULTANT's participation may include, but not be limited to, presentations during the meeting, note taking, and summarizing the meeting in a memo to the file. It is estimated for this project there will be 4 meetings with local governing authorities and/or MPOs during the design.

3.1.12 Web Site – N/A

3.2 Joint Project Agreements

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

3.3 Specifications & Estimates – N/A

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3.3.1 Specifications Package Preparation – N/A

3.3.2 Estimated Quantities Report Preparation

The CONSULTANT shall prepare an Estimated Quantities (EQ) Report in accordance with FDOT FDM Section 902.

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.

3.7 Plans Update – N/A

3.8 Post-Design Services

Post-Design Services may include, but are not limited to, meetings, construction assistance, plans revisions, shop drawing review, survey services, as-built drawings, and load ratings. Specific services will be negotiated as necessary as a contract amendment.

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

3.9 Digital Delivery

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

3.10 Risk Assessment Workshop – N/A

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

3.12 Landscape and Existing Vegetation Coordination – N/A

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3.13 Other Project General Tasks

Describe other project general tasks.

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 prepare a Typical Section Package.

The Typical Section Package shall be approved by the COUNTY prior to the 60% submittal.

4.2 Pavement Type Selection Report -N/A

4.3 Pavement Design Package

The CONSULTANT shall prepare a Pavement Design Package.

Prior to the draft submittal of a pavement design, the Pavement Design Package EOR shall meet with the COUNTY Pavement Design Engineer and /or present the proposed design to the Design Decision Meeting for concurrence.

The final signed and sealed Pavement Design Package shall be approved by the COUNTY prior to the 60% plans submittal.

4.4 Cross-Slope Analysis – N/A

4.5 Safety Analysis – N/A

4.6 Design Analysis – N/A

4.7 Operational Analysis – N/A

4.8 Design Reports – N/A

4.9 Design Deviations and Exceptions

The CONSULTANT shall prepare the documentation necessary to gain COUNTY approval of all appropriate Design Deviation Memorandums, Formal Design Deviations and/or Design Exceptions.

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A Project Design Deviation Memorandum (Design Deviation Memorandum Short Form) shall be prepared to document all non-controlling design elements for a project that do not meet criteria. Those elements requiring a more detailed analysis, as per FDM Section 122.2, shall be submitted as Formal Design Variations or Design Exceptions.

Project Design Deviation Memorandums, Formal Design Deviation, and Design Exceptions, should be reviewed and approved by the COUNTY prior to the 60% plans submittal, if possible, however, at the latest, these documents shall be submitted with the 60% plans.

4.10 Master Design File Setup & Maintenance, Model Management Plan

4.11 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 project Utility Coordinator in the format requested by the COUNTY.

4.12 Temporary Traffic Control Plan (TTCP) Analysis and Master Design Files

The CONSULTANT shall design a safe and effective TTCP to move vehicular and pedestrian traffic during all phases of construction. The design shall include construction phasing of roadways ingress and egress to existing property owners and businesses, routing, signing and pavement markings, and detour quantity tabulations, roadway pavement, drainage structures, ditches, front slopes, back slopes, drop offs within clear zone, transit stops, and traffic monitoring sites. Special consideration shall be given to the construction of the drainage system when developing the construction phases. Positive drainage must be maintained at all times. The design shall include construction phasing of roadways to accommodate the construction or relocation of utilities when necessary.

The CONSULTANT shall consider the local impact of any lane closures or alternate routes. When the need to close a road is identified during this analysis, the CONSULTANT shall notify the COUNTY's Project Manager as soon as possible. Proposed road closings must be reviewed and approved by the COUNTY. Diligence shall be used to minimize negative impacts by appropriate specifications, recommendations or plans development. Local impacts to consider will be local events, holidays, peak seasons, detour route deterioration and other eventualities. CONSULTANT shall be responsible to obtain local authorities permission for use of detour routes not on state highways.

Master TTCP Design Files: The CONSULTANT shall develop master TTCP files showing each phase of the TTCP. This includes all work necessary for designing lane

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configurations, diversions, lane shifts, signing and pavement markings, temporary traffic control devices, and temporary pedestrian ways.

The CONSULTANT may need to provide a temporary drainage design.

Local impacts to consider also shall include emergency vehicle response time and transit agency routes and features.

4.13 Utility Data Collection and Analysis

4.14 Roadway Quantities for EQ Report

The CONSULTANT shall determine roadway pay items and quantities and the supporting documentation.

TTCP Quantities for EQ Report: - N/A – Lump Sum

4.15 Cost Estimate

4.16 Technical or Modified Special Provisions – N/A

4.17 Other Roadway Tasks – N/A

4.18 Quality Assurance/Quality Control

4.19 Supervision

4.20 Roadway Meetings

4.21 Field Reviews

4.22 Coordination

5 ROADWAY PLANS

The CONSULTANT shall prepare Roadway, TTCP, 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.

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5.1 Key Sheet & Signature Sheet

5.2 Typical Section Sheets

5.3 Cross Slope Correction Details – N/A

5.4 General Notes/Pay Item Notes

5.5 Project Layout/Model Management – N/A

5.6 Plan View (Plan Sheets)

5.7 Profile View (Plan/Profile Sheets)

5.8 Special Profiles

5.9 Sidewalk Profiles

5.10 Interchange Layout Sheet – N/A

5.11 Details

5.12 Soil Survey Sheets

5.13 Cross Sections

5.14 Temporary Traffic Control Plan

5.15 Utility Adjustment Sheets

5.16 Project Control Sheets

5.17 Utility Verification Data (SUE Data)

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5.18 Quality Assurance/Quality Control

5.19 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 COUNTY's Drainage Manual.

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

6a.1 Base Clearance Analysis

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.2 Hydroplaning Analysis - N/A

6a.3 Existing Permit Analysis

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

6a.4 Utility Conflict Matrix (for drainage structures)

6a.5 Noise Barrier Drainage Analysis – N/A

6a.6 Temporary Drainage Analysis

Evaluate and address drainage to adequately drain the road and maintain existing offsite drainage during all construction phases. Provide documentation.

6a.7 Pond Siting Analysis and Report – N/A

6a.8 Analysis of Pipe Video Inspection Report

6a.9 Bridge Hydraulic Report – N/A

6a.10 Design of Cross Drains – N/A

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6a.11 Design of Ditches and Side Drains

Design roadway conveyance and outfall ditches. This task includes capacity calculations, longitudinal grade adjustments, flow changes, additional adjustments for ditch convergences, selection of suitable channel lining, design of side drain pipes, and documentation. (Design of linear stormwater management facilities in separate task.)

6a.12 Design of Stormwater Management Facility – N/A

6a.13 Design of Floodplain Compensation

Determine floodplain encroachments, coordinate with regulatory agencies, and develop proposed compensation area layout (shape, contours, slopes, volumes, etc.). Document the design following the requirements of the regulatory agency.

6a.14 Design of Storm Drains

Delineate contributing drainage areas, determine runoff, inlet locations, and spread. Calculate hydraulic losses (friction, utility conflict and, if necessary, minor losses). Determine design tailwater and, if necessary, outlet scour protection.

6a.15 Optional Culvert Material – N/A

6a.16 Design of Trench Drains – N/A

6a.17 French Drain Systems – N/A

6a.18 Design of Drainage Wells – N/A

6a.19 Stormwater Runoff Control Concept

Includes analysis and design of the Stormwater Runoff Control Concept. Includes creating the design file.

6a.20 Other Drainage Tasks – N/A

6a.21 Drainage Design Documentation Report

Compile drainage design documentation into report format. Include documentation for all the drainage design tasks and associated meetings and decisions, except for stand-alone reports, such as the Pond Siting Analysis Report and Bridge Hydraulics Report.

6a.22 Drainage Quantities for EQ Report

The CONSULTANT shall determine drainage pay items and quantities and the supporting documentation.

6a.23 Cost Estimate

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

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6a.24 Technical or Modified Special Provisions – N/A

6a.25 Quality Assurance/Quality Control

6a.26 Supervision

6a.27 Drainage Meetings

Meetings with COUNTY staff, regulatory agencies, local governments such as meetings with COUNTY Drainage Engineer, the Water Management District, FDEP, etc.

6a.28 Field Reviews

6a.29 Coordination

6b DRAINAGE PLANS

The CONSULTANT shall prepare Drainage 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.

6b.1 Drainage Map (Including Interchanges)

6b.2 Bridge Hydraulics Recommendation Sheets – N/A

6b.3 Drainage Structures

6b.4 Lateral Ditches – N/A

6b.5 Retention/Detention/Floodplain Compensation Ponds

6b.6 Quality Assurance/Quality Control

6b.7 Supervision

6c SELECTIVE CLEARING AND GRUBBING – N/A

7 UTILITIES

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

7.1 Utility Kickoff Meeting

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Before any contact with the UAO(s), the CONSULTANT shall meet with the COUNTY Utility Office (DUO) to receive guidance, as may be required, to assure that all necessary coordination will be accomplished in accordance with COUNTY procedures. CONSULTANT shall bring a copy of the design project work schedule reflecting utility activities. The CONSULTANT shall be prepared to discuss the projects applied utility schedule logic and current UAO contact information.

7.2 Identify Existing Utility Agency Owner(s)

The CONSULTANT shall identify all Utility Agency Owners (UAOs) in the corridor and within and adjacent to the project limits that may be impacted by the project. Identification shall include the updated UAO contact information. The CONSULTANT shall contact Sunshine 811, perform a field visit, and review prior County utility permits, reports, existing plans, and surveys provided.

7.3 Make Utility Contacts

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

Second Contact: At a minimum of 4 weeks prior to the meeting, the CONSULTANT shall transmit 60% plans and the utility conflict information (when applicable and in the format requested by the COUNTY) to each UAO having facilities located within the project limits, and one set to the COUNTY Offices as required by the COUNTY.

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

Not all projects will have all contacts as described above.

7.4 Exception Processing

The CONSULTANT shall be responsible for transmitting/coordinating the appropriate design reports including, but not limited to, the Resurfacing, Restoration and Rehabilitation (RRR) report, Preliminary Engineering Report, Project Scope and/or the Concept Report (if applicable) to each UAO to identify any condition that may require a Design Alternative. The CONSULTANT shall identify and communicate to the UAO any facilities in conflict with their location or project schedule. The CONSULTANT shall assist with the processing

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of design alternative involving Utilities with the UAO and the COUNTY. Assist with processing per the UAM.

7.5 Preliminary Utility Meeting

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

7.6 Individual/Field Meetings

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

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

The CONSULTANT shall review UAOs marked plans and data individually as they are received for content, accuracy, utility type, material, and size. Provide to the EOR for inclusion in the plans.

7.8 Subordination of Easements Coordination

The CONSULTANT, if requested by the COUNTY, shall transmit to and secure from the UAO the executed subordination agreements prepared by the appropriate COUNTY office.

7.9 Utility Design Meeting

The CONSULTANT shall schedule (time and place), notify participants, and conduct a Utility meeting with all affected UAO(s). The CONSULTANT shall be prepared to discuss impacts to existing trees/vegetation and proposed landscape, drainage, traffic signalization, temporary traffic control plans (TTCP) (construction phasing), review the current design schedule and letting date, evaluate the utility information collected, discuss with each UAO the utility work by highway contractor option, discuss any future design issues that may impact utilities, etc., to the extent that they may have an effect on existing or proposed utility facilities with particular emphasis on drainage and TTCP with each UAO. The intent of this meeting shall be to assist the UAOs in identifying and resolving conflicts between utilities and proposed construction before completion of the plans, including utility adjustment details. Also, to work with the UAOs to recommend potential resolution

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between known utility conflicts with proposed construction plans as may be deemed practical by the UAO. The CONSULTANT shall keep accurate minutes of all meetings and distribute a copy to all attendees within 3 days.

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

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

7.11 Utility Coordination/Follow-up

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

7.12 Utility Constructability Review

The CONSULTANT shall review utility schedules against construction contract time, and phasing for compatibility. Coordinate with and obtain written concurrence from the construction office.

7.13 Additional Utility Services - N/A

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

7.15 Contract Plans to UAO(s)

If requested by the COUNTY, the CONSULTANT shall transmit the contract plans as processed for letting to the UAO(s). Transmittals to UAO(s) via electronic delivery or another agreeable format.

7.16 Certification/Close-Out

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

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

OR

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

OR

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

7.17 Other Utilities- N/A

8 ENVIRONMENTAL PERMITS and ENVIRONMENTAL CLEARANCES

The CONSULTANT shall notify the COUNTY Project Manager and other appropriate COUNTY personnel in advance of all scheduled meetings with the regulatory agencies to allow a COUNTY representative to attend. The CONSULTANT shall copy in the Project Manager on all permit related correspondence and meetings. The CONSULTANT shall use current regulatory guidelines and policies for all permits required as identified in Section 2.5.

8.1 Preliminary Project Research

The CONSULTANT shall perform preliminary project research and shall be responsible for regulatory agency coordination to assure that design efforts are properly directed toward permit requirements.

The CONSULTANT shall research any existing easements or other restrictions that may exist both within or adjacent to the proposed project boundary. The CONSULTANT shall determine if any Sovereign Submerged Lands easements need to be modified or acquired. Any applicable information will be shown on the plans as appropriate.

8.2 Field Work

8.2.1 Establish Wetland Jurisdictional Lines and Assessments

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

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- Determine landward extent of wetlands and other surface waters as detailed in Rule Chapter 62-340, F.A.C., as ratified in Section 373.4211, F.S..; United States Army Corps of Engineers (USACE) Wetland Delineation Manual (Technical Report Y-87-1); Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (ERD/EL TR-10-20).
- Collect all data and information necessary to determine the jurisdictional boundaries of wetlands and other surface waters as defined by the rules or regulations of each permitting agency processing a COUNTY permit application for the project.
- Set seasonal high-water levels in adjacent wetlands with biological indicators
- Obtain a jurisdictional determination as defined by the rules or regulations of each permitting agency processing a COUNTY permit application for the project.
- Prepare aerial maps showing the jurisdictional boundaries of wetlands and other surface waters. When necessary, a wetland specific survey will be prepared by a registered professional surveyor and mapper. All surveyed jurisdictional boundaries are to be tied to the project's baseline of survey.

8.2.2 Species Surveys

The CONSULTANT shall conduct wildlife surveys as defined by rules or regulations of any permitting agency or commenting agency that is processing a COUNTY permit.

8.3 Agency Verification of Wetland Data

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

8.4 Complete and Submit All Required Permit Applications

The CONSULTANT shall collect the data and information necessary to prepare the permit applications and obtain the environmental permits and authorizations required to construct the project as identified in the Project Description and as described in 8.4.1, 8.4.2, and 8.15 (Other Environmental Permits). The CONSULTANT shall prepare each application in accordance with the rules and/or regulations of the regulatory agency responsible for issuing a specific permit and/or authorization to perform work. The application packages must be approved by the COUNTY prior to submittal to regulatory agencies.

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

8.4.1 Complete and Submit all Required Wetland Permit Applications

The CONSULTANT shall prepare, complete, and submit required wetland permit (e.g. ERP, Section 404, EPC) application packages to the appropriate regulatory agencies.

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This includes, but is not limited to, applications submitted to WMDs and/or DEP, USACE, and EPC. The application package may include but is not limited to attachments (e.g. project location map, aerials, affidavit of ownership, pictures, additional technical analysis, etc.), a cover letter with project description as well as completion of applicable agency forms. The CONSULTANT shall prepare and respond to agency Requests for Additional Information (RAIs), including necessary revisions to the application package. All responses and completed application packages must be approved by the COUNTY prior to submittal to the regulatory agencies.

8.4.2 Complete and Submit all Required Species Permit Applications (N/A)

8.5 Coordinate and Review Dredge **and Fill Sketches**

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

8.6 Complete and Submit Documentation for Coordination and/or USCG Bridge Permit Application (N/A)

8.6.1 Prepare and submit required documents for USCG Coordination

8.6.2 Complete and submit USCG Bridge Permit Application

8.7 Prepare Water Management District or Local Water Control District Right of Way Occupancy Permit Application (N/A)

8.8 Prepare USACE Section 408 Application to Alter a Civil Works Project (N/A)

8.9 Compensatory Mitigation Plan

If impacts cannot be avoided, the CONSULTANT shall prepare a mitigation plan to be included as a part of the application(s).

Prior to the development of mitigation alternatives, the CONSULTANT shall meet with the Project Manager to determine the COUNTY's policies in proposing mitigation. The CONSULTANT shall develop a mitigation plan based upon the general guidelines provided by the COUNTY and that meets federal, state, and local requirements.

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

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Prior to selection of a final mitigation site, the CONSULTANT will provide the following services in the development of a mitigation plan (as defined in 33 CFR 332.4(c)/40 CFR 230.92.4(c)):

- Preliminary jurisdictional determination for each proposed site
- Selection of alternative sites
- Coordination of alternative sites with the COUNTY/all environmental agencies
- Written narrative listing potential sites with justifications for both recommended and non-recommended sites
- Establish baseline report of selected alternative
    - May include, but not limited to: location maps, topographic maps, soil maps, aerial photographs, a delineation of aquatic resources, and data sheets that describe the existing condition of aquatic resources on the project site.

8.10 Mitigation Coordination and Meetings (N/A)

8.11 Regulatory Agency Support (N/A)

8.12 Other Environmental Permits (N/A)

8.13 Preparation of Environmental Clearances (NEPA/PD&E) (N/A)

8.14 Contamination Impact Analysis (N/A)

8.15 Asbestos Survey (N/A)

8.16 Technical Meetings (N/A)

8.17 Quality Assurance/Quality Control

8.18 Supervision

8.19 Coordination

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

10 STRUCTURES - BRIDGE DEVELOPMENT REPORT – N/A

11 STRUCTURES - TEMPORARY BRIDGE – N/A

12 STRUCTURES - SHORT SPAN CONCRETE BRIDGE – N/A

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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

The CONSULTANT shall prepare plans for Miscellaneous Structure(s) as specified in Section 2.6.

Concrete Box Culverts

18.1 Concrete Box Culverts

18.2 Concrete Box Culverts Extensions

18.3 Concrete Box Culvert Data Table Plan Sheets

18.4 Concrete Box Culvert Special Details Plan Sheets

Strain Poles

18.5 Steel Strain Poles

18.6 Concrete Strain Poles

18.7 Strain Pole Data Table Plan Sheets

18.8 Strain Pole Special Details Plan Sheets

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Mast Arms

18.9 Mast Arms

18.10 Mast Arms Data Table Plan Sheets

18.11 Mast Arms Special Details Plan Sheets

Overhead/Cantilever Sign Structure

18.12 Cantilever Sign Structures

18.13 Overhead Span Sign Structures

18.14 Special (Long Span) Overhead Sign Structures

18.15 Monotube Overhead Sign Structure

18.16 Bridge Mounted Signs (Attached to Superstructure)

18.17 Overhead/Cantilever Sign Structures Data Table Plan Sheets

18.18 Overhead/Cantilever Sign Structures Special Details Plan Sheets

High Mast Lighting

18.19 Non-Standard High Mast Lighting Structures

18.20 High Mast Lighting Special Details Plan Sheets

Noise Barrier Walls (Ground Mount)

18.21 Horizontal Wall Geometry

18.22 Vertical Wall Geometry

18.23 Summary of Quantities - Aesthetic Requirements

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18.24 Control Drawings

18.25 Design of Noise Barrier Walls Covered by Standards

18.26 Design of Noise Barrier Walls not Covered by Standards

18.27 Aesthetic Details

Special Structures

18.28 Fender System

18.29 Fender System Access

18.30 Special Structures

18.31 Other Structures

18.32 Condition Evaluation of Signal and Sign Structures, and High Mast Light Poles

18.33 Condition Evaluation of Signal and Sign Structures, and High Mast Light Poles (No As built or Design Plans Available)

18.34 Analytical Evaluation of Signal and Sign Structures, and High Mast Light Poles

18.35 Ancillary Structures Report

19 SIGNING AND PAVEMENT MARKING ANALYSIS

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

19.1 Traffic Data Analysis

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The CONSULTANT shall review the approved preliminary engineering report and proposed geometric design alignment to identify proposed sign placements and trail markings.

19.2 No Passing Zone Study – N/A

19.3 Signing and Pavement Marking Master Design File

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

19.4 Multi-Post Sign Support Calculations – N/A

19.5 Sign Panel Design Analysis

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

19.6 Sign Lighting/Electrical Calculations – N/A

19.7 S&PM Quantities for EQ Report

The CONSULTANT shall determine signing and pavement marking pay items and quantities and the supporting documentation.

19.8 Cost Estimate

19.9 Technical Special Provisions and Modified Special Provisions -N/A

19.10 Other Signing and Pavement Marking Analysis _N/A

19.11 Field Reviews

19.12 Technical Meetings

19.13 Quality Assurance/Quality Control

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19.14 Independent Peer Review – N/A

19.15 Supervision

19.16 Coordination

20 SIGNING AND PAVEMENT MARKING PLANS

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

20.1 Key Sheet & Signature Sheet

20.2 General Notes/Pay Item Notes

20.3 Project Layout – N/A

20.4 Plan Sheet

20.5 Special Details – N/A

20.6 Service Point Details – N/A

20.7 Guide Sign Data

20.8 Cross Sections (Sign Installations) – N/A

20.9 Quality Assurance/Quality Control

20.10 Supervision

21 SIGNALIZATION ANALYSIS – N/A

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22 SIGNALIZATION PLANS -N/A

23 LIGHTING ANALYSIS – N/A

24 LIGHTING PLANS – N/A

25 LANDSCAPE ANALYSIS – N/A

26 LANDSCAPE PLANS – N/A

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 COUNTY. Field books submitted to the COUNTY must be of an approved type. The field books shall be certified by the surveyor in responsible charge of work being performed before the final product is submitted.

The survey notes shall include documentation of decisions reached from meetings, telephone conversations or site visits. All like work (such as bench lines, reference points, etc.) shall be recorded contiguously. The COUNTY 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 COUNTY 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 COUNTY Surveyor (DS) or COUNTY 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 COUNTY Surveyor (DS) or the COUNTY Location Surveyor (DLS).; may include primary or secondary vertical control points. Includes analysis and processing of all field collected data, and preparation of forms.

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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 COUNTY 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 comparison with DTM.

27.9 Side Street Surveys

Refer to tasks of this document as applicable.

27.10 Underground Utilities

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

27.11 Outfall Survey

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

27.12 Drainage Survey

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

27.13 Bridge Survey (Minor/Major)

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

27.14 Channel Survey

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

27.15 Pond Site Survey

Refer to tasks of this document as applicable.

27.16 Mitigation Survey

Refer to tasks of this document as applicable.

27.17 Jurisdiction Line Survey

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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 COUNTY 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 COUNTY 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.

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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 COUNTY 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 (N/A)

27.31 Supplemental Surveys (N/A)

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)

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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 COUNTY 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 COUNTY Surveying Office.

28 PHOTOGRAMMETRY – N/A

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 required for this project in accordance with all applicable COUNTY Manuals, Procedures, Handbooks, COUNTY 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 COUNTY size and format requirements utilizing COUNTY 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 COUNTY 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

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29.4 Property Lines

29.5 Existing Right of Way

29.6 Topography

29.7 Parent Tract Properties and Existing Easements

29.8 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.

29.9 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.

29.10 Jurisdictional/Agency Lines

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

Sheet Files

29.11 Control Survey Cover Sheet

29.12 Control Survey Key Sheet

29.13 Control Survey Detail Sheet

29.14 Right of Way Map Cover Sheet

29.15 Right of Way Map Key Sheet

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29.16 Right of Way Map Detail Sheet

29.17 Maintenance Map Cover Sheet

29.18 Maintenance Map Key Sheet

29.19 Maintenance Map Detail Sheet

29.20 Reference Point Sheet

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

29.21 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.

29.22 Table of Ownerships Sheet

Miscellaneous Surveys and Sketches

29.23 Parcel Sketches

29.24 TIITF Sketches

29.25 Other Specific Purpose Survey(s)

29.26 Boundary Survey(s) Map

29.27 Right of Way Monumentation Map

29.28 Title Search Map

29.29 Title Search Report

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29.30 Legal Descriptions

29.31 Quality Assurance/Quality Control

29.32 Supervision

29.33 Mapping Meetings

29.34 Field Reviews

29.35 Coordination

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; 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.

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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

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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

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PHASE – N/A

33 INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS – N/A

34 INTELLIGENT TRANSPORTATION SYSTEMS PLANS – N/A

35 GEOTECHNICAL

The CONSULTANT shall, for each project, be responsible for a complete geotechnical investigation. All work performed by the CONSULTANT shall be in accordance with COUNTY standards, or as otherwise directed by the COUNTY Geotechnical Engineer. The COUNTY 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 COUNTY's Geotechnical Engineer or representative to review the project scope and COUNTY requirements. 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 COUNTY in adequate time to schedule a representative to attend all related meetings and field activities.

35.1 Document Collection and Review

CONSULTANT will 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, 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 COUNTY Geotechnical Engineer.

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Obtain pavement cores as directed in writing by the COUNTY Geotechnical Engineer.

If required by the COUNTY Geotechnical Engineer, a preliminary roadway exploration shall be performed before the Phase I plans submittal. The preliminary roadway exploration will 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 COUNTY Geotechnical Engineer.

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

All laboratory testing and classification will be performed in accordance with applicable COUNTY 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 COUNTY Geotechnical Project Manager for boring plan approval. If the drilling program expects to encounter artesian conditions, the CONSULTANT shall submit a methodology(s) for plugging the borehole to the COUNTY 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

Probe standing water and surficial muck in a detailed pattern sufficient for determining removal limits to be shown in the Plans.

35.5 Coordinate and Develop TTCP for Field Investigation

Coordinate and develop Temporary Traffic Control Plan (TTCP). All work zone traffic control will be performed in accordance with the DEPARTMENT's Standard Plans Index 102 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

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Notify property tenants in person of drilling and field activities, if applicable. Written notification to property owners/tenants is the responsibility of the COUNTY'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) testing. Deliver Resilient Modulus samples to the District Materials Office or the State Materials Office in Gainesville, as directed by the COUNTY.

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 Design LBR

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

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

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Delineate limits of unsuitable material(s) in both horizontal and vertical directions. Assist the Engineer of Record with detailing these limits on the cross-sections. If requested, prepare a plan view of the limits of unsuitable material.

35.17 Electronic Files for Cross-Sections

Create electronic files of boring data for cross-sections.

35.18 Embankment Settlement and Stability

Estimate the total magnitude and time rate of embankment settlements. Calculate the factor of safety against slope stability failure.

35.19 Monitor Existing Structures

Provide Roadway EOR guidance on the radius to review existing structures for monitoring.

Optional services (may be negotiated at a later date if needed): Identify existing structures in need of settlement, vibration and/or groundwater monitoring by the contractor during construction and coordinate with the EOR and structural engineer (when applicable) to develop mitigation strategies. When there is risk of damage to the structure or facility, provide recommendations in the geotechnical report addressing project specific needs and coordinate those locations with the EOR. See FDM Chapter 117 and Chapter 9 of the Soils and Foundations Handbook.

35.20 Stormwater Volume Recovery and/or Background Seepage Analysis

Perform stormwater volume recovery analysis as directed by the COUNTY.

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 (e.g. 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

If a pavement evaluation is performed, submit the report in accordance with Section 3.2 of the Materials Manual: Flexible Pavement Coring and Evaluation. Enter all core information into the Pavement Coring and Reporting (PCR) system.

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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.

- 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 Plans Indices 120-001 and 120-002.
- 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 calculation/graphs, and other pertinent calculations.
- The CONSULTANT will respond in writing to any changes and/or comments from the COUNTY and submit any responses and revised reports.

35.24 Final Report

The Final Roadway Report shall include the following:

- 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 Plans Indices 120-001 and 120-002.
- 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 calculation/graphs, and other pertinent calculations.
- The CONSULTANT will respond in writing to any changes and/or comments from the COUNTY and submit any responses and revised reports.

35.25 Auger Boring Drafting

Draft auger borings as directed by the COUNTY.

35.26 SPT Boring Drafting

Draft SPT borings as directed by the COUNTY.

Structures

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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 COUNTY Geotechnical Engineer.

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

All laboratory testing and classification will be performed in accordance with applicable COUNTY 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 through 35.48):

35.27 Develop Detailed Boring Location Plan

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

35.28 Stake Borings/Utility Clearance

Stake borings and obtain utility clearance.

35.29 Coordinate and Develop TTCP for Field Investigation

Coordinate and develop TTCP plan. All work zone traffic control will be performed in accordance with the FDOT's Standard Plans Index 102 series.

35.30 Drilling Access Permits

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

35.31 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 COUNTY's Project Manager.

35.32 Collection of Corrosion Samples

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Collect corrosion samples for determination of environmental classifications.

35.33 Coordination of Field Work

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

35.34 Soil and Rock Classification - Structures

Soil profiles recorded in the field should be refined based on the results of laboratory testing.

35.35 Tabulation of Laboratory Data

Laboratory test results should be tabulated for inclusion in the geotechnical report and for the necessary calculations and analyses.

35.36 Estimate Design Groundwater Level for Structures

Review encountered groundwater levels, estimate seasonal high groundwater levels, and evaluate groundwater levels for structure design.

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 COUNTY methods. Assist in selection of the most economical, feasible foundation alternative.

35.38 Detailed Analysis of Selected Foundation Alternate(s)

Detailed analysis and basis for the selected foundation alternative. Foundation analyses shall be performed using approved COUNTY methods and shall include:

- GRS-IBS (including the parameters identified in the Instructions for Developmental Design Standard D6025 to be provided by the Geotechnical Engineer)
- Spread footings (including soil bearing capacity, minimum footing width, and minimum embedment depth).

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- For pile and drilled shaft foundations, provide graphs of ultimate axial soil resistance versus tip elevations. Calculate scour resistance and/or downdrag (negative skin friction), if applicable.
- CONSULTANT shall assist the Engineer of Record in preparing the Pile Data Table (including test pile lengths, scour resistance, downdrag, minimum tip elevation, etc.)
- Provide the design soil profile(s), which include the soil model/type of each layer and all soil-engineering properties required for the Engineer of Record to run the FBPier computer program. Review lateral analysis of selected foundation for geotechnical compatibility.
- Estimated maximum driving resistance anticipated for pile foundations.
- Provide settlement analysis.

35.39 Bridge Construction and Testing Recommendations

Provide construction and testing recommendations including potential constructability problems.

35.40 Lateral Load Analysis (Optional)

Perform lateral load analyses as directed by the COUNTY.

35.41 Walls

Provide the design soil profile(s), which include the soil model/type of each layer and all soil engineering properties required by the Engineer of Record for conventional wall analyses and recommendations. Review wall design for geotechnical compatibility and constructability.

Evaluate the external stability of conventional retaining walls and retained earth wall systems. For retained earth wall systems, calculate and provide minimum soil reinforcement lengths versus wall heights, and soil parameters assumed in analysis. Estimate differential and total (long term and short term) settlements.

Provide wall construction recommendations.

35.42 Sheet Pile Wall Analysis (Optional)

Analyze sheet pile walls as directed by the COUNTY.

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

- Provide the design soil profile(s) that include the soil model/type of each layer and all soil properties required by the Engineer of Record for foundation design. Review design for geotechnical compatibility and constructability.

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35.44 Box Culvert Analysis

- Provide the design soil profile(s) that include the soil model/type of each layer and all soil properties required by the Engineer of Record for foundation design. Review design for geotechnical compatibility and constructability.
- Provide lateral earth pressure coefficients.
- Provide box culvert construction and design recommendations.
- Estimate differential and total (long term and short term) settlements.
- Evaluate wingwall stability.

35.45 Preliminary Report - BDR

The preliminary structures report shall contain the following discussions as appropriate for the assigned project:

- Copies of U.S.G.S. and S.C.S. maps with project limits shown.
- Summary of structure background data, S.C.S., U.S.G.S., geologic and potentiometric data.
- The results of all tasks discussed in all previous sections regarding data interpretation and analysis).
- Recommendations for foundation installation, or other site preparation soils-related construction considerations with plan sheets as necessary.
- Any special provisions required for construction that are not addressed in the FDOT's Standard specification.
- An Appendix which includes SPT and CPT boring/sounding profiles, data from any specialized field tests, engineering analysis, notes/sample calculations, sheets showing ultimate bearing capacity curves versus elevation for piles and drilled shafts, a complete FHWA check list, pile driving records (if available), and any other pertinent information.

35.46 Final Report - Bridge and Associated Walls

The final structures report shall include the following:

- Copies of U.S.G.S. and S.C.S. maps with project limits shown.
- Summary of structure background data, S.C.S., U.S.G.S., geologic and potentiometric data.
- The results of all tasks discussed in all previous sections regarding data interpretation and analysis.
- Recommendations for foundation installation, or other site preparation soils-related construction considerations with plan sheets as necessary.
- Any special provisions required for construction that are not addressed in the FDOT's Standard specification.
- An Appendix which includes SPT and CPT boring/sounding profiles, data from any specialized field tests, engineering analysis, notes/sample calculations, sheets showing ultimate bearing capacity curves versus elevation for piles and drilled shafts, a complete

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FHWA check list, pile driving records (if available), and any other pertinent information.

35.47 Final Reports - Signs, Signals, Box Culvert, Walls, and High Mast Lights

The final reports shall include the following:

- Copies of U.S.G.S. and S.C.S. maps with project limits shown.
- Summary of structure background data, S.C.S., U.S.G.S., geologic and potentiometric data.
- The results of all tasks discussed in all previous sections regarding data interpretation and analysis).
- Recommendations for foundation installation, or other site preparation soils-related construction considerations with plan sheets as necessary.
- Any special provisions required for construction that are not addressed in the FDOT's Standard specification.
- An Appendix which includes SPT and CPT boring/sounding profiles, data from any specialized field tests, engineering analysis, notes/sample calculations, sheets showing ultimate bearing capacity curves versus elevation for piles and drilled shafts, a complete FHWA check list, pile driving records (if available), and any other pertinent information.

Final reports will incorporate comments from the COUNTY and contain any additional field or laboratory test results, recommended foundation alternatives along with design parameters and special provisions for the contract plans. These reports will be submitted to the COUNTY Geotechnical Engineer for review prior to project completion. After review by the COUNTY Geotechnical Engineer, the reports will be submitted to the COUNTY Geotechnical Engineer in final form and will include the following:

- All original plan sheets (11" x 17")
- One set of all plan and specification documents, in electronic format, according to COUNTY requirements
- Two sets of record prints
- Six sets of any special provisions
- All reference and support documentation used in preparation of contract plans package

Additional final reports (up to four), aside from stated above, may be needed and requested for the COUNTY's Project Manager and other disciplines.

The final reports, special provisions, as well as record prints, will be signed and sealed by a Professional Engineer licensed in the State of Florida.

Draft the detailed boring/sounding standard sheet, including environmental classification, results of laboratory testing, and specialized construction requirements, for inclusion in final plans.

35.48 SPT Boring Drafting

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Prepare a complete set of drawings to include all SPT borings, auger borings and other pertinent soils information in the plans. Include these drawings in the Final Geotechnical Report. Draft borings, location map, S.C.S. map and U.S.D.A. map as directed by the COUNTY. Soil symbols must be consistent with those presented in the latest Florida Department of Transportation Soils and Foundations Handbook.

35.49 Other Geotechnical

Other geotechnical effort specifically required for the project as determined by the COUNTY and included in the geotechnical upset limit.

35.50 Technical Special Provisions and Modified Special Provisions

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 PROJECT REQUIREMENTS

36.1 Liaison Office – N/A

36.2 Key Personnel

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

36.3 Progress Reporting

The CONSULTANT shall meet with the COUNTY 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

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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 COUNTY approves the monthly progress report and the payout curve or with earned value analysis. The Project Manager will make judgment on whether work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished.

36.4 Correspondence

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

36.5 Professional Endorsement

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

36.6 Computer Automation

The project will be developed utilizing Computer Aided Drafting and Design (CADD) systems. 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.

36.7 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.

36.8 Optional Services - N/A

37 INVOICING LIMITS

Payment for the work accomplished shall be in accordance with Method of Compensation of time and materials. Invoices shall be submitted to the COUNTY, in a format prescribed by the COUNTY. The COUNTY 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 COUNTY.

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 COUNTY.

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