



EXHIBIT "A"

District Geotechnical Construction Testing Contracts Scope of Services

Scope of Services

District Geotechnical Construction Testing Contracts

1.0 Purpose:

This scope of services describes and defines the consultant services to support the Department in performing construction materials inspection and testing activities for FDOT projects.

2.0 Consultant Responsibility:

The consultant will be responsive to the Department's request for services 24 hours a day, 7 days a week, and 365 days a year. All department requests shall be responded within 24 hours.

The consultant will attend meetings as requested by the Department. Coordinate with the Department prior to attendance of meeting. Attendance at meetings not requested by the Department may not be reimbursed. When meetings are hosted by the Consultant, coordinate all activities with the stakeholders, and distribute the minutes to all participants and District Project Manager (DPM).

Perform services at the Department's facility using the Department's resources as requested. The consultant will provide expert witness services if requested by the Department.

Do not perform services during suspension of the accreditation or qualifications governing the service(s) in question. Do not allow unqualified personnel or personnel with suspended qualifications perform or oversee services. Fees shall be reimbursed to the Department for any charges for services performed without appropriate qualifications and/ or accreditations.

Provide timely and accurate supporting documentation for the work to be invoiced including accurate and timely submittal of timesheets as directed by the Department. Minimize discrepancies between reported completed work and work quantities invoiced.

Any questions or concerns should be brought to the attention of the Project Manager.

For Non-compliance with Construction Contracts, Consultant may be required at no additional cost to the Department, to provide an Engineering Analysis Report prepared by an independent engineering firm approved by the DPM when sampling and/ or testing services provided by the firm fails to meet the expectations of the Construction contract.

3.0 Department Responsibility:

The Department will provide technical administration of the contract, review actual test methods and procedures, review test results and reports, review invoice submittals, and generally determine compliance with this contract.

4.0 General (Reference Documents):

The services provided by the Consultant in the office, field, and lab shall be in compliance with the current edition -including updates- of all applicable Department Manuals and Guidelines as well as

State and Federal regulations. This shall include but not be limited to the following:

- Florida Department of Transportation (FDOT) Standard Specification for Road and Bridge Construction as amended by contract documents
- FDOT Roadway Plans Preparation Manual
- FDOT Design Standards
- FDOT Structures Manual
- FDOT Structure Design Office Standard Drawings
- FDOT Materials Manual
- FDOT Manual of Florida Sampling and Testing Methods
- FDOT Manual for Safety and Control of Equipment Containing Radioactive Materials
- FDOT Construction Project Administration Manual (CPAM)
- FDOT Construction Training and Qualification Manual (CTQM)
- FDOT Soils and Foundation Handbook
- FDOT Right of Way Procedures Manual
- FDOT Radiation Safety Manual
- FDOT Utility Accommodation Manual
- Federal Highway Administration (FHWA) Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications
- American Association of State Highway and Transportation Officials (AASHTO) Test Methods
- American Society for Testing and Materials (ASTM) Standards
- Manual on Uniform Traffic Control Devices
- Code of Federal Regulations (CFRs)
- Safe Work Practices and Compliance Standards Handbook
- Geotechnical Design / Plans Review Checklist (District 5's)
- Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1001 and 1926.58, 49 CFR 171 and 172
- Local Agency Program (LAP) manual
- Chapter 14-103 Construction Aggregate Rule
- CQC Specifications, and related directives
- FDOT Standard Operating Procedure for Evaluation, Approval, and Control of Mineral Aggregate Sources
- FDOT Standard Operating Procedure for Quality Assurance of Mineral Aggregate Sources
- FDOT Records Retention Guideline
- Southern Pine Inspection Board Standards

5.0 Terminology and Definitions:

AASHTO – American Association of State Highway Transportation Officials

ASTM – American Society of Testing Materials

AFP - FDOT Automated Fee Proposal system

CADD - Computer Aided Drafting & Design

CAPWAP - Case Pile Wave Analysis Program

CPM - Consultant Project Manager

CSL – Crosshole Sonic Logging

CSC - Continuing Services Contract; Max 5 yrs. & \$5 Million
 CTQP - Construction Training & Qualification Program
 DER - Department of Environmental Regulation (Federal & State)
 DMRE - District Materials & Research Engineer.
 DMRO - District Materials & Research Office
 DPM - Department Project Manager.
 DPSU - District Professional Services Unit
 DTE – Dynamic Testing Engineer
 DWC - District-Wide Contract; Max 5 yrs. & \$1.5 Million
 EAR - Engineering Analysis Report
 EDC – Embedded Data Collector
 FDOT - Florida Department of Transportation
 FM - Florida Method
 IA - Independent Assurance
 IV - Independent Verification
 LIMS - Laboratory Information Management System
 LOA – Letter of Authorization
 LQP - FDOT Laboratory Qualification Program
 MAC - Materials Acceptance & Certification System
 MM - FDOT Materials Manual
 PCR - Pavement Coring & Reporting
 PDA - Pile Driving Analysis
 QAR - Quality Assurance Review
 QC - Quality Control
 R - Resolution
 SA - Supplemental Amendment
 SMO - State Materials Office
 TITDS – Thermal Integrity Testing for Drilled Shafts
 TWO – Task Work Order; Must be work of a specified nature. No limit on amount or \$300,000
 V – Verification
 WEAP – Wave Equation Analysis Program

6.0 Communication and Reporting:

Maintain timely and effective communication. Report results electronically to the Department in the most efficient manner and as approved in advance by the Department.

Prepare final analysis and recommendations in the format of final reports. Submit draft recommendations to the Department's Project Manager for review prior to preparing final report. Report shall include all elements requested, as well as any additions, alterations and changes directed by the Department. Reports shall also include, as applicable, relevant testing results and graphs, copies of foundation installation logs, project photographs, and other pertaining information. Submit raw data files as requested.

The final reports shall be signed and sealed by a Professional Engineer registered by the State of Florida. Acceptable formats and number of copies are specified in Department's various policies and procedures.

Communicate assignment related issues during non-business hours directly with the Department's representative overseeing consultant's work, typically District Materials Office personnel.

7.0 Reporting Test Results:

Provide preliminary results and recommendations within 72 hours upon completion of data collection. Furnish final written letters, signed and sealed, in an agreed upon format, in conformance with CPAM or unless otherwise specified.

8.0 Personnel:

Provide qualified technical and professional personnel to perform, to Department standards and procedures, the duties and responsibilities assigned under the terms of this agreement.

All consultant personnel/technicians must be approved in writing by the Department prior to performing services. All consultant personnel will be approved under one (1) labor classification per person. Exceptions may be allowed at the sole discretion of the Department. Personnel listed in the final negotiated Contract Audit Package are considered approved without any additional documentation. Obtain written approval by the DRME for additional personnel prior to performing services. Approvals are valid for all work to be performed by authorized labor classification throughout the contract period.

All consultant personnel providing services on this Contract must perform to the satisfaction of the DPM. Personnel that do not perform services to the satisfaction of the DPM may be removed from the Contract.

All testing and inspection personnel must participate in Independent Assurance evaluations and other applicable third party audits.

8.1 Additional Requirements for Select Geotech Personnel:

Dynamic Testing equipment Operators must have at least a Rank of Basic on the Pile Driving Contractor's Association (PDCA) Dynamic Measurement and Analysis Proficiency Test. The Operator must also have experience testing at least 5 Department bridges. The experience may be obtained while working under the supervision of another qualified Operator.

The **Dynamic Testing Engineer (DTE) in responsible charge of Dynamic Testing** must be licensed by the State of Florida and have at least a Rank of Advanced on the Pile Driving Contractors Association (PDCA) Dynamic Measurement and Analysis Proficiency Test. The engineer must also have been in responsible charge of the Geotechnical foundation construction engineering and dynamic testing work on at least five (5) Department bridge projects.

The experience may be obtained while working under the supervision of another qualified Professional Engineer. The engineer's primary work activities must be dynamic pile testing, signal matching analyses (e.g. CAPWAP analyses, WEAP) and developing pile lengths and driving criteria.

Embedded Data Collector (EDC) monitoring shall be performed by an Operator who has completed the SmartPile EDC training course. The Operator shall work under the supervision of a State of Florida Registered Professional Engineer. This engineer must have been in responsible charge of the geotechnical foundation construction engineering and dynamic testing work on at least 5 Department bridge projects having driven pile foundations.

This "responsible charge" experience shall include dynamic pile testing, signal matching analyses and wave equation analyses computer program experience.

9.0 9.0 Equipment:

Use the most current model of PIT, PDA, EDC, CSL, TITDS, Vibration monitoring or any other equipment needed to complete services in this scope. Maintain equipment in good working order and perform calibrations in accordance with manufacturer's recommendations. Submit a copy of all equipment calibrations yearly prior to the end of the fiscal year.

10.0 Conflict of Interest:

It is the consultant's responsibility to prevent real or perceived Conflict-of-Interest. Any concerns or appeals must be brought to the attention of the DPM for interpretation and response.

10.0 Quality Assurance:

Prior to the start of this contract, the Consultant shall submit a quality assurance plan. The plan shall address the Consultant's procedures and methods to assure their organization is in compliance with contract requirements. The Quality Assurance Plan should address the following areas:

- A. **ORGANIZATION:** A description of the Consultant's Quality Control organization and its relationship to the performance of the contract.
- B. **QUALITY REVIEWS AND RECORDS:** Consultant's Quality Assurance methods used to monitor and assure their organization's compliance with contract requirements and records which will be maintained.
- C. **CONTROL OF SUBCONTRACTORS AND VENDORS:** Methods used by Consultant to control quality of work of their subcontractors and vendors.

11.0 Ownership of Works and Inventions:

The Department shall have full ownership of any works of authorship, inventions, improvements, ideas, data, processes, computer software programs, and discoveries (hereafter called intellectual property) conceived, created, or furnished under this Agreement, with no rights of ownership in Consultant or any sub-consultants/ subcontractors. Consultant and sub-consultants/subcontractors

shall fully and promptly disclose to the Department all intellectual property conceived, created, or furnished under this Agreement. Consultant or sub-consultants/-subcontractor hereby assigns to the Department the sole and exclusive right, title, and interest in and to all intellectual property conceived, created, or furnished under this Agreement, without further consideration. This Agreement shall operate as an irrevocable assignment by Consultant and sub-consultants/subcontractors to the Department of the copyright in any intellectual property created, published, or furnished to the Department under this Agreement, including all rights thereunder in perpetuity. Consultant and sub-consultants/subcontractors shall not patent any intellectual property conceived, created, or furnished under this Agreement. Consultant and sub-consultants/subcontractors agree to execute and deliver all necessary documents requested by the Department to effect the assignment of intellectual property to the Department or the registration or confirmation of the Department's rights in or to intellectual property under the terms of this Agreement. Consultant agrees to include this provision in all its subcontracts under this Agreement.

12.0 Consultant Not Employee or Agent:

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

13.0 Services:

Provide services that are in compliance with all applicable documents referred to in the "General" paragraph of this document. The Department, at its option, may elect to expand, decrease, or delete the extent of each work element described in this scope of services, provided such action does not alter the intent of this agreement. The Department shall request Consultant services on an as-needed basis. There is no guarantee that any or all of the services described will be assigned during the term of this agreement. Further, the Consultant shall provide these services on a nonexclusive basis. The Department, at its option, may elect to have any of the services set forth herein performed by other consultants, sub-consultants, or Department staff without Consultant recourse.

All firms providing services on this Contract must be specifically listed on the Contract. Each firm must have their own unit rates for pay items and labor classifications defined by the Department. Do not include unit rate for the services and labor classifications not provided by the firm. The Department reserves the right to decline reimbursement if these conditions are not met.

13.1 Geotechnical Testing:

13.1.1 Dynamic Pile Testing Services:

Perform the following **Dynamic Pile Testing** services for Projects as required by the District Geotechnical Engineer (DGE):

1. Review Plans, Specifications, Geotechnical Reports, etc.
2. Attend Preconstruction Conference.
3. Review Pile Installation Plan & provide comments to DGE.
4. Evaluate suitability of proposed driving system when requested.
5. Attend Pile Driving pre-work meeting. Perform Integrity and/or Dynamic Load Tests on Piles as required by Plans or specified by DGE.
6. Provide printed/plotted (PDF) and electronic copies of Test Pile data to the DGE.
7. Perform Wave Equation Analyses (CAPWAP, WEAP, etc.) of Pile data as required.
8. Develop Pile Length & Driving Criteria (on applicable projects) letters for DGE review.
9. Provide signed and sealed certification letters on any instrumented test or production pile with preliminary results submitted within 24 hours after testing.
10. Review Production Pile Driving logs as driving progresses.
11. Troubleshoot Production pile driving problems and perform Redrives/Set-Checks as needed.
12. Submit Final summary report to the DGE.

13.1.3 Major Structure Drilled Shaft Services:

Perform the following **Major Structure Drilled Shaft** services for Projects as required by the District Geotechnical Engineer (DGE):

1. Review Plans, Specifications, Geotechnical Reports, etc.
2. Attend Preconstruction Conference.
3. Review Drilled Shaft Installation Plan & provide comments to DGE.
4. Attend Drilled Shaft pre-work meeting.
5. Document any pilot hole results & provide information to DGE
6. Observe Test Shafts & Shaft Inspection Device (SID) surveys.
7. Collect/review Drilled Shaft inspectors log and test data for the DGE.
8. Recommend Drilled Shaft tip elevations to DGE.
9. Perform periodic site visits.
10. Perform and/or Review Cross-Hole Sonic Logging (CSL) results as needed.
11. Perform and/or review Thermal Integrity Testing for Drilled Shafts (TITDS) results as needed

13.1.4 Miscellaneous Drilled Shaft Services:

Perform the following **Miscellaneous Drilled Shaft** services for Projects as required by the District Geotechnical Engineer (DGE):

1. Review Plans, Specifications, Geotechnical Reports, etc.
2. Attend Preconstruction Conference.
3. Review Drilled Shaft Installation Plan & provide comments to DGE.
4. Attend Drilled Shaft pre-work meeting.
5. Observe first Drilled Shaft installed.
6. Collect/review Drilled Shaft inspectors log and test data for the DGE.
7. Perform periodic site visits.
8. Perform and/or Review Cross-Hole Sonic Logging (CSL) results as needed.
9. Perform and/or review Thermal Integrity Testing for Drilled Shafts (TITDS) results as needed

13.1.6 Auger Cast Pile Services:

Perform the following **Auger Cast Pile** services for Projects as required by the District Geotechnical Engineer (DGE):

1. Review Plans, Specifications, Geotechnical Reports, etc.
2. Attend Preconstruction Conference.
3. Review Auger Cast Pile Installation Plan & provide comments to DGE.
4. Attend Auger Cast Pile pre-work meeting.
5. Observe Demonstration Auger Cast Pile installation & provide comments to DGE.
6. Review Inspector's Logs for the DGE.
7. Perform periodic site visits.
8. Trouble shoot problems as needed.
9. Perform and/or review Integrity (PIT, Thermal, etc.) results as needed.

13.1.7 Vibration Monitoring Services:

Perform the following **Vibration Monitoring** services for Projects as required by the District Geotechnical Engineer (DGE):

1. Review Plans, Specifications, Geotechnical Reports, etc.
2. Perform building condition surveys before construction begins and after work is completed.
3. Monitor vibrations during construction activities to determine potential for structural or cosmetic damage.
4. Provide recommendations, as necessary, to mitigate vibrations during construction activities.

13.1.8 Special Assistance:

Perform the following **Special Assistance** services for Projects as required by the District Geotechnical Engineer (DGE):

1. Review Static, Statnamic, and Drop Hammer Load test results & provide comments to DGE as needed.
2. Provide general engineering consultation and training on construction materials inspection and testing procedures, data analysis and interpretation listed herein.

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