

Construction Engineering Inspections Services Guidebook

FOR STATE TRANSPORTATION AGENCIES

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Executive Summary

Research Motivation and Scope

“During recent years, most state highway agencies have reduced the total number of permanent employees” (1). That statement is just as true today as when it was first stated 25 years ago as part of the 1989 NCHRP Synthesis study by Newman on *Use of Consultants for Construction Engineering and Inspection*. Today, adequate construction staffing remains one of the most critical resources for successful performance of highway construction projects, since state transportation agencies (STAs) across the country continue to face a lack of sufficient in-house personnel.

In addition to the volume of CEI consultant services that agency personnel manage, the nature of CEI consultant services makes their management and oversight critical. The inspection portion of these services can have a long-term impact on the quality and longevity of highway assets. The construction engineering portion of these services requires the management of public funds in reviewing and approval of payments. While many agencies have been relying on private sector engineers and inspectors for more than 25 years, others are just beginning to increase their use of CEI services. There is need for guidance on the tools and practices that STA can apply to effectively manage CEI services.

This report provides the findings of a research study to summarize the state-of-practice in CEI and documents effective tools for managing the process. The findings are based on a comprehensive literature review and an electronic survey of 44 STAs that was conducted in 2014. The survey collected information on topics such as STAs’ CEI program characteristics, tools for the selection of consultants, contract administration and closeout processes, payment procedures, insurance, routine contact with CEI consultants and the general impact of CEI consultant services on STAs’ operations. The bulk of the Guide Book is described in 23 pages following the Executive Summary. The remainder of the Guide Book is appendices with specific example of CEI practices from various STAs.

CEI State-of-Practice

STAs are using CEI consultant services extensively throughout the United States. The median average budget for CEI consultant services was reported as 2% percent of overall STA state highway funding (see Figure 1); not an insignificant amount when considering overall state highway budgets. Two agencies, Michigan and Florida, manage more than 300 CEI contracts each year (see Figure 2). Other states manage large CEI programs through just a few contracts. Accordingly, a broad range of services were found in the survey. Table E1 provides a high-level summary of these services. Tables 1-4 in the body of the report provide a comprehensive list and discussion of these services.

Table E1. Common CEI Functions

Construction Administration	Construction Engineering	Inspection	Human Resources
Processing payments	Schedule support	Construction	Personnel
Budget support	Utility coordination	Geotechnical	Training
Documentation	Survey control	Materials Testing	Project Staffing
Liaison		Quality Management	Public Relations

Key Findings

The following high-level findings are based on the responses from 44 STAs and supplemented with information from the literature review. The study found that CEI practices vary from state-to-state. Therefore, these findings should not be viewed as best practices, but rather common practices that were found across the country. These findings are discussed in detail throughout the report.

Agencies are *most frequently* (55-76% of respondents) using the following CEI services:

- Construction work monitoring;
- Construction project documentation; and
- Construction inspection and testing.

Agencies are *least frequently* (25-40% of respondents) using the following CEI services:

- Personnel management;
- Budget management; and
- Quality management.

Agencies found the following *benefits* from CEI consultant services:

- Improves ability to handle peak workloads;
- Provides flexibility of adding or reducing staff quickly; and
- Brings special expertise that may not otherwise be available in-house.

Agencies found the following *challenges* from CEI consultant services:

- Developing CEI consultants' familiarity with STA procedures;
- Ensuring CEI consultant qualifications; and
- Minimizing cost of CEI consultants when compared to in-house staff.

Keys to *successful management and potential barriers* for CEI consultant services were found to be:

- Defining CEI scopes of work;
- Administering CEI contracts;
- Providing CEI training; and
- Optimizing CEI costs.

This report provides the following *example CEI documentation* as found in the state-of-practice research:

- CEI scopes of work;
- CEI requests for qualifications; and
- CEI request for proposal.

Based on the analysis done on this study, *future research* should address:

- CEI training improvements; and
- CEI certifications that can work across states.

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Introduction

State transportation agencies (STAs) have traditionally performed construction engineering inspection (CEI) with agency personnel. State employees are used, in part, due to the impact of CEI consultant services on quality and long-term performance of construction. Additionally, CEI consultant services involve the management of public funds. However, in reaction to increasing workloads and diminishing staff, STAs have needed to rely on the private engineering and technical community for these services. Some STAs are just now transitioning to external CEI services. These agencies can benefit from the STAs that have developed programs over the past 25 years. This study reports on a national CEI state-of-practice survey that provides a detailed mapping tools and practices with 44 states responding. Statistical analyses (ANOVA analysis) estimate that CEI consultant management and oversight practices vary significantly among STAs, which may imply various underlying factors of choosing one practice over another. One of the most important findings of this study is in the value that STAs are realizing from CEI consultant services. The survey found that the CEI consultant services provide STAs the improved ability to handle peak workloads, provide the flexibility of adding or reducing staff quickly, and bring special expertise that may not otherwise be available in-house. However, reported challenges of working with CEI consultants include developing and maintaining CEI consultants' familiarity with in-house processes and procedures, assuring CEI qualifications, and the relative cost of CEI consultants compared to in-house staff.

Many transportation projects come to fruition through the collaborative efforts of STAs where governmental agencies and private owners work closely with consultants. Previous studies provide numerous insights about the trends of CEI consultant services as well as arguments for and against the services, drawbacks in the present systems, and ways in which they can be overcome. Wilmot reported that between 1950 and 2000, new STAs activities completed by CEI consultants increased by more than 300% (2). A 2003 NCHRP study found that the use of CEI consultants grew or stayed at the same high levels for the 95% of all STAs' activities sampled (3). The same study reported that staff constraints, schedules, skill requirements, and workload were the main reason for the decision for using CEI consultants. Some studies claim that contracting CEI consultants for key services improves government's efficiency and is cost effective (4), (5). Others argue that private sector firms can be subject to more stringent incentives (6) such as non-performance penalties that do not exist in START government. Governments can benefit from innovation generated by the private sector as they try to complete a project in the most cost-effective manner (7), (8), (9). Outsourcing strategies are not free from limitations, however. An NCHRP web document 59 reported that cost savings in outsourcing are comparable to those of traditional methods and it may require a specialized contract and program management staff, which could be more costly than their current staff (10). Other challenges identified are: ensuring that private firms work with the best interest of the public, ensuring that consultants are well qualified and familiar with STAs procedures, and maintaining the control in providing key services to outside stakeholders (2). In order to overcome these drawbacks, numerous outsourcing practices have emerged for consultant services management such as the development of new project delivery methods, enactment of new legislatures and revision of constraining regulations. STAs' outsourcing continues to be a part of STAs efforts to deliver effective and successful projects and services to the people.

Over the years, STAs have developed and implemented various tools and practices for the management and oversight of CEI contract services. However, little has been done to summarize CEI tools and practices and evaluate their usage among STAs. This guide presents a mapping of the functions and/or activities performed by CEI consultants - the tools and/or functions being used, the level of use and frequency usage of the tools among STAs, and the primary advantage and disadvantage of using CEI consultants. The guide also presents how CEI consultant practices has changed in the last few decades since previously related studies were completed and how CEI tools and practices vary among STAs.

Which States are using CEI Consultant Services?

In order to understand various tools and practices that are used by STAs for the management and oversight of CEI services, an electronic survey was developed and distributed to all 50 states' transportation agencies. The survey collected information on topics such as STAs' CEI program characteristics, tools for the selection of consultants, contract administration and closeout processes, payment procedures, insurance, routine contact with CEI consultants, and impact of CEI consultant services on STAs' operations. The survey was organized based on the CEI functions described in Table 1-4.

The national CEI survey was conducted from January to March, 2014. A total of 44 complete responses were received from STAs with a response rate of 88%. The survey respondents consisted of STAs' project managers, supervisors, technical experts, and construction professionals. Of them, 89% had more than 10 years of experience with their agency. STAs provided an estimate of the number of CEI contracts issued in 2013. Figure 1 shows the volume of CEI consultant work estimated as the percentage of total highway funding per state transportation agency. CEI budgets varied from zero to 35.5% among reporting STAs, with the largest percentage being reported in North Dakota. As shown in Figure 2, the number of CEI contracts issued in 2013 varied from 0 to 350. Michigan (350), Florida (323), Oklahoma (100), and Wisconsin (100) issued significantly higher number of CEI contracts whereas Delaware, Minnesota, Nevada, New Hampshire, and South Dakota indicated that they did not issue any CEI contracts in 2013. Considering Michigan and Florida as outliers, the average number of CEI contracts issued in 2013 was 23. In comparison, the average number of CEI contracts was found to be 55 in Newman's 1989 study (1).

CEI Work as Percentage of STA Budget

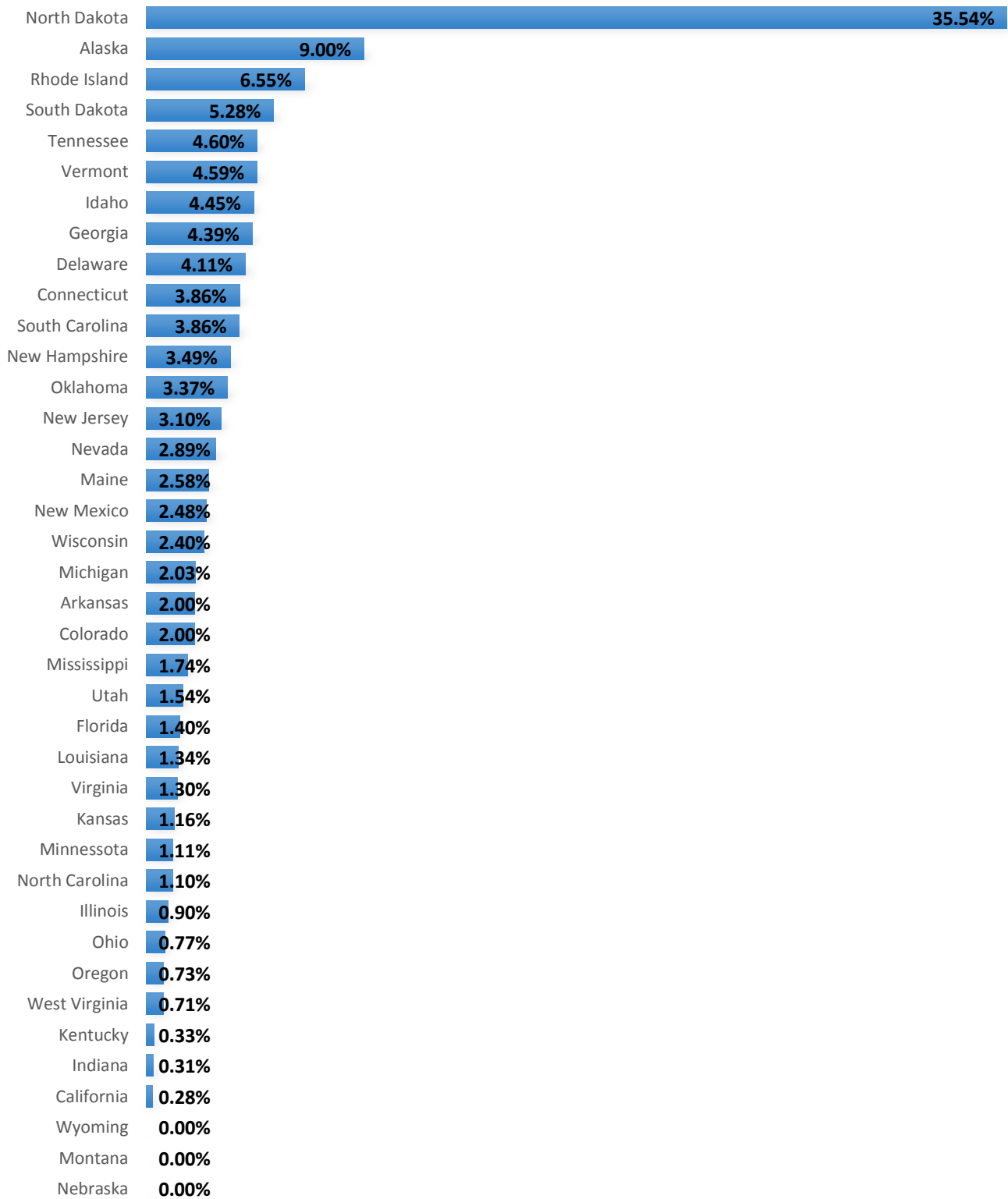


Figure 1: CEI consultant work estimated as percentage of total highway funding per state transportation agency

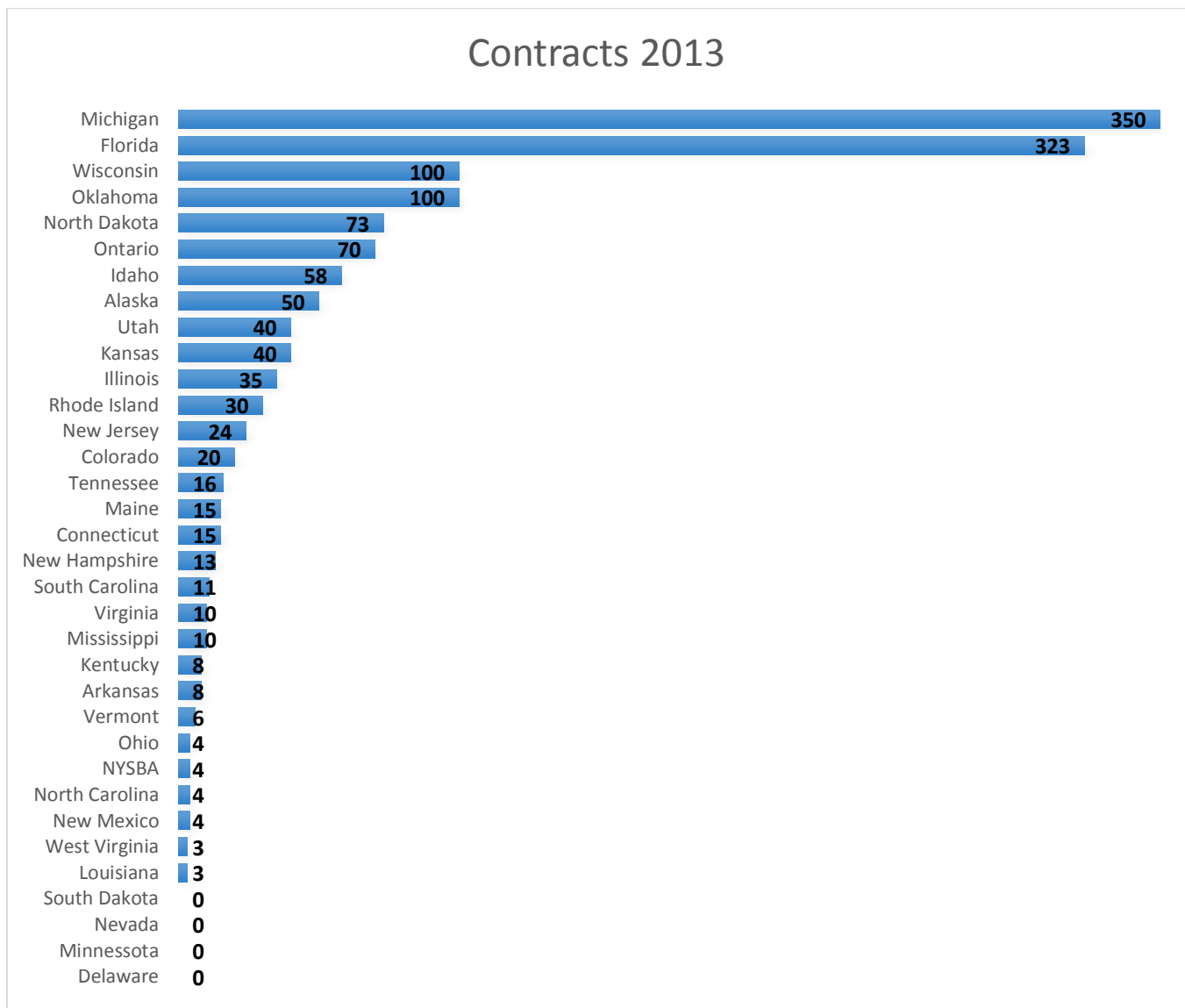


Figure 2: State transportation agencies' CEI contracts in 2013

A Review of CEI Practices

CEI services have come to be best understood through the works of Robert B Newmann(1989) and David K Witheford (1999). Newman's (1989) report in issue 146 of the National Cooperative Highway Research Program Reports focused on the use of consultants for construction engineering and inspection and presents the various approaches utilized by State DOTs to manage CEI contracts. Witheford (1999) presents practices that State DOTs use to oversee preconstruction engineering consultants through the various state DOT appointments of administrative and technical responsibilities to agency staff as well as the functions executed by project

managers. These bodies of knowledge formed the foundation of this study in terms of the contextual use of construction engineering and inspection services used by state DOTs.

Each implementation of a CEI contract under goes state DOT protocols for selection, award, execution, closeout, and warranty in accordance with state laws and CEI scope magnitudes. Newman and Witheford developed considerable insights from surveyed State Transportation Agencies (STAs) that utilized CEI services. The following practices have been abridged from both of their works and phased in accordance with contract progression.

CEI Selection Practices

The manner in which human resources are used in a project is integral in the efficient management and completion of a contract. Both Newman (1989) and Witheford (1999) found that State DOTs differ in the assignment of technical and administrative responsibilities to their project managers. The acquisition of CEI services is likely employed by project managers to meet these responsibilities under the constraints of limited resources, and quality expectations. Taylor and Maloney (2013) brings to light human resource regulation with respect to safety, training, and competency as exhibited by the requirements imposed by the Federal Highway Administration (FHWA) on federally funded projects (11).

CEI Contract Award Practices

The diversity of project delivery methods utilized by STA's adds to the complexity of CEI contract development under the regulation of state and federal laws. For example, Witheford (1999) noted discrepancies in cost plus fixed fee CEI contracts where STAs admittedly adjusted the fixed fee portion of the contract to reflect scope changes in spite of conflicting federal regulations. State transportation agencies need to be aware of the unique conditions of infrastructure projects, delivery methods, and contracts in order to develop a comprehensive and inclusive CEI contract to avoid regulatory violations.

Although CEI contract terminations exist on infrastructure projects, contractual guidelines regarding project cessation or intolerable CEI consultant performance are often overlooked by STA's (12). Regardless of whether the contract termination is executed because of changes in agency programming or CEI nonperformance, Witheford (1999) suggests that CEI contract include the time of notice before termination and the management guidelines for project deliverables, payment adjustments, and dispute resolution.

A variety payment terms are utilized in CEI service contracts including conditions of invoice, incurred expense report, ratio to contractors earning, and representative percentage of fees by stage or phase. Both Newman (1989) and Witheford (1999) found that STAs implement various degrees of retainage in CEI contract payments. Witheford's 1999 findings represent an 11% decrease in retainage use when compared to results obtained in a 1990 AASHTO survey which also supported a decrease in the use of retainage over previous years.

CEI Execution Practices

Although state DOTs make consultants accountable for the quality of their work and can request the dismissal of any consultant employee for poor execution (1), state DOTs need to properly manage contracts to produce a quality execution of CEI services. Properly managed CEI contracts vary from state to state but are all subject to timely progress reports and evaluations, acceptable change management policies and procedures, and proper contract administration and communication (12). The number of CEI contracts that a State DOT employee (CEI liaison) manages can have an effect on the resulting quality of the work. This is supported by the information found by Newman (1989), which identified several factors that can alter the number of contracts

manage by the assigned State DOT employee such as the size and complexity of the project, the agency workload, and the agency staff available to support the project.

CEI Closeout Practices

Upon completion of a CEI contract, project managers are usually required to communicate “the acceptance and approval of the consultants work to contract administrators closing out the project” (12). While the assignment of contract administration personnel differs from state to state, the process of acceptance and approval is consistent and includes confirmation of completion, disbursement of final payments, transfer of required deliverables, and final audits or commissioning. For final evaluations, both Newman (1989) and Witheford (1999) identified relational factors to aid in the development of CEI affiliations such as the general spirit of cooperation, knowledge of agency administration and procedure, staff adequacy and competency, as well as a CEI firm’s ability to meet contract requirements with minimum direction.

CEI Liability Comments

Newman (1989) found that the majority of the agencies make consultants liable for their mistakes, and few assumed accountability for their consultant’s errors (1). State DOT’s typically require CEI firms to acquire Commercial general liability (CGL) insurance to protect state agencies against negligence as well as errors and omissions (12). However, states tend to differ in the terms of insurance requirements. Some states require professional liability insurance which covers claims against losses that are “directly traceable” to the negligence attributed to the consultant for failing to follow “legal standards” (13). Professional liability insurance protects main activities such as preparing drawings and specifications in design as well as site services such as monitoring work, issuing payments, and completion certificates. Sweet (2012) identifies the following additional risks that may be covered by professional liability insurance:

- Improper documentation
- Improper fact verification
- Missed deadlines
- Misrepresentation of facts
- Breach of nondisclosure
- Loss of data, improper procedures or negligent handling of data
- Failure to prevent electronic theft of records and confidential information
- Employee theft and sale of client’s trade secrets
- Deliberate dissemination of false information
- Violations of state and federal law, such as violation of right to privacy” It is important to clarify that professional liability insurance, and errors and omissions insurance are the same.

What Practices are Included in CEI Functions?

Newman and Witheford defined how state DOTs utilized CEI services in the late 1980s and 90s by identifying the various functions, services, and protocols used in practice by state DOTs at that time. Today's state DOTs utilized CEI services and much the same way albeit too different degrees across the nation. The complexity and extent of skills and disciplines required by transportation construction and maintenance provides an innumerable application of CEI services under the unique needs of individual states. The study is not focused on the unique application of CEI services of a single state but is instead concerned with the similarities and differences between states. Therefore, this guide book contains only the functions, services, and protocols that are commonly used across the majority state DOTs.

In general, CEI services are commonly utilized in four functional areas represented throughout the transportation infrastructure life cycle. Namely, the four functional areas as defined in this guide book are construction administration, construction engineering, inspection, and human resources. CEI functions within these areas are utilized to varying extents in phases of preconstruction, construction, maintenance, and retirement of infrastructure projects. Tables 1-4 provide a detailed reference of categorized CEI functions within these functional areas along with references to individual state utilization. The CEI function tables were amalgamated from CEI functions described by Newman (1989) and Witheford (1999) and ratified through a thorough review of various state transportation agency scope of work statements, request for proposals, consultant service manuals, and pamphlets.

Newman (1989) found that CEI functions vary by agency due to differences in the “availability of in-house personnel and past experience with consultants” and, in most cases, agencies prefer to manage consultants on large over smaller projects. Furthermore, Newman suggests that state DOT's might benefit from clustering smaller projects because it simplifies the effort required managing CEI consultants.

Table 1: CEI Functions – Construction Administration

Construction Engineering and Inspection Services : Construction Administration			
Applications for Payment	Budget	Documentation	Liaison
Review & submit contractor's applications for payments ^{1, 2, 4, 5, 6, 7, 8, 10, 11}	Monitor & recommend ²	Manage contractor's RFIs ⁶	Applications for Payment
Field measure quantities for payment purposes ^{1, 2, 4, 7, 8}	Manage budget ¹¹	Track & update changes to construction documents ^{1, 5, 6}	Review & submit contractor's applications for payments ^{1, 2, 4, 5, 6, 7, 8, 10, 11}
Submit final "as-built plans" ^{1, 3, 4, 6, 7, 10}	Record Preparation & Maintenance	Review & submit and/or be responsible for approval of plans, shop drawings, drawings, and product information ^{5, 6, 7, 8}	Field measure quantities for payment purposes ^{1, 2, 4, 7, 8}
Revise & submit final estimate ^{1, 4, 6}	Maintain record-keeping & prepare required reports of contractor's activities ^{1, 2, 4, 5, 6, 7, 8, 9, 11}	Prepare project and/or closeout documentation ^{3, 4, 6, 7, 8, 11}	Submit final "as-built plans" ^{1, 3, 4, 6, 7, 10}
Submit offer of final estimate to contractor ¹	Prepare & submit field reports and records ^{3, 4, 6, 9}	Analyze & interpret contract documents ^{1, 2, 6}	Revise & submit final estimate ^{1, 4, 6}
Authorize monthly payments to contractor ¹¹	Maintain accurate record of communications between parties ¹	Prepare & distribute correspondence ^{2, 5, 8}	Submit offer of final estimate to contractor ¹
Applications for Payment	Review project records for compliance with Department's criteria ⁴	Review & submit contractor's construction plan ^{2, 8}	Authorize monthly payments to contractor ¹¹
Post Construction Support	Work Orders	Submit contractor evaluation form ⁴	Meetings
Monitor & document claims ⁶	Prepare work orders ^{2, 8}		Set, attend, assist or conduct pre-construction conference, and other meetings ^{1, 2, 4, 5, 6, 7, 11}
Prepare claim analysis support documentation ^{5, 8}	Review work orders ²		Change Orders
Assist or analyze and/or settle claims ^{1, 2, 5, 6}			Review, estimate, prepare, & manage change orders ^{7, 8, 11}
Prepare & process close out claim documentation ¹			
Assist in preparation of arbitration hearings or litigations ¹			
Provide qualified staff witnesses ^{1, 9}			
Post Construction Support			

¹ Florida Department of Transportation. "Construction Engineering and Inspection Scope of Services." Florida Department of Transportation, August 1, 2013.

² Virginia Department of Transportation. "Request for Proposal Construction Engineering Inspection Services for Salem District - District Wide Contract GTB." Virginia Department of Transportation, June 14, 2013.

³ Colorado Department of Transportation. "Construction Management & Construction Inspection Services Scope of Work." Colorado Department of Transportation, April 28, 2011.

⁴ Georgia Department of Transportation. "Request for Qualifications to Provide Construction Engineering and Inspection (CEI) Services for District 7, Chamblee." Georgia Department of Transportation, September 30, 2013.

⁵ Tennessee Department of Transportation. "TDOT Proposed Scope of Work - CEI." Tennessee Department of Transportation, July 9, 2003

⁶ Louisiana Department of Transportation. "Request for Qualification Statements for Urban Systems Project." Louisiana Department of Transportation and Development, April 5, 2013.

⁷ Platte County Public Works. "Request for Proposal Construction Engineering Inspection Services DYE Store Road, North Bridge (No. 0290004) Replacement." Platte County Missouri, March 2012.

⁸ Office of Construction - Bureau of Engineering and Highway Operations. "Information Pamphlet for Consulting Engineers." Connecticut Department of Transportation, August 2008.

⁹ Joint Committee on Performance Evaluation and Expenditure Review. A Review of the Use of Private Construction Engineering and Inspection Firms by the Mississippi Department of Transportation. Mississippi Department of Transportation, January 11, 1999.

¹⁰ Georgia Department of Transportation. "Transportation Investment Act of 2010 Manual - Process and Procedures (TIA Manual)." Georgia Department of Transportation, August 2012.

¹¹ Washington State Department of Transportation, n.d. State Department of Transportation. "Draft Exhibit A: Scope of Work 2012 Statewide on Call Construction Management and Inspection Services, Change Order Management and Scheduling Agreement 2012."

Table 2: CEI Functions - Construction Engineering

Construction Engineering and Inspection Services - Construction Engineering		
Schedule	Utilities	Survey Control
Verify conformance with contract documents ¹	Coordinate utility work or relocation ^{1, 5, 6}	Survey preparation, control, verification ^{1, 2, 5, 6, 8, 9}
Monitor & review or coordinate ^{2, 3, 6, 7, 11}	Monitor, inspect, & document work or relocation ^{1, 5}	Assist in survey work ¹¹
Inform in writing of errors, omissions, lack of logic, unreasonable durations ¹		Supply survey crew or licensed surveyor ^{6, 11}
Understand contractor's schedule before work begins ⁴		
Develop a schedule from contractor's schedule ¹¹		

¹ Florida Department of Transportation. "Construction Engineering and Inspection Scope of Services." Florida Department of Transportation, August 1, 2013.

² Virginia Department of Transportation. "Request for Proposal Construction Engineering Inspection Services for Salem District - District Wide Contract GTB." Virginia Department of Transportation, June 14, 2013.

³ Colorado Department of Transportation. "Construction Management & Construction Inspection Services Scope of Work." Colorado Department of Transportation, April 28, 2011.

⁴ Georgia Department of Transportation. "Request for Qualifications to Provide Construction Engineering and Inspection (CEI) Services for District 7, Chamblee." Georgia Department of Transportation, September 30, 2013.

⁵ Tennessee Department of Transportation. "TDOT Proposed Scope of Work - CEI." Tennessee Department of Transportation, July 9, 2003

⁶ Louisiana Department of Transportation. "Request for Qualification Statements for Urban Systems Project." Louisiana Department of Transportation and Development, April 5, 2013.

⁷ Platte County Public Works. "Request for Proposal Construction Engineering Inspection Services DYE Store Road, North Bridge (No. 0290004) Replacement." Platte County Missouri, March 2012.

⁸ Office of Construction - Bureau of Engineering and Highway Operations. "Information Pamphlet for Consulting Engineers." Connecticut Department of Transportation, August 2008.

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¹⁰ Georgia Department of Transportation. "Transportation Investment Act of 2010 Manual - Process and Procedures (TIA Manual)." Georgia Department of Transportation, August 2012.

¹¹ Washington State Department of Transportation, n.d. State Department of Transportation. "Draft Exhibit A: Scope of Work 2012 Statewide on Call Construction Management and Inspection Services, Change Order Management and Scheduling Agreement 2012."

Table 3: CEI Functions - Inspection

Construction Engineering and Inspection Services-Inspection			
Construction Work	Geotechnical	Material Sampling & Testing	Quality Management
Monitor contractor's activities daily or periodically ^{1, 3, 4, 5, 6, 7, 8, 9, 11}	Monitor progress & quality of work ¹	Perform sampling, and testing of component materials & completed work ^{1, 2, 4, 6, 7, 8, 11}	Provide or revise and submit QA Plan ^{1, 4, 8}
Monitor contractor's compliance with plans & specs. ^{4, 11}	Attend geo meetings ¹	Arrange & transport sample to be tested to appropriate location ^{1, 7}	Perform testing quality assurance ^{5, 6}
Perform final inspection and/or coordinate parties attendance ^{7, 10}	Review & make recommendations on contractor's installation plans ¹	Verify materials and/or applicable documents to ensure testing was performed ^{1, 3, 4, 7, 11}	Perform quality control of contractor's activities ^{1, 2, 3}
Report & recommend or direct on design or field construction issues ^{2, 8, 11}	Performed required tests & inspections ¹	Submit all sampled materials or certify material testing ^{4, 6, 10}	Determine if work conforms to contract documents ⁷
Coordinate inspection assignments ^{2, 11}	Observe & report on adequacy of work ^{1, 5}	Supervise material sampling & testing ^{2, 9, 11}	Observe contractor's work to determine quality of work ⁴
Identify, report & instruct contractor to correct discrepancies ^{1, 4}	Prepare & submit pile driving data & piling record ⁴		
Review constructability or bidability or other issues ^{2, 8}			
Act as inspector ⁴			

¹ Florida Department of Transportation. "Construction Engineering and Inspection Scope of Services." Florida Department of Transportation, August 1, 2013.

² Virginia Department of Transportation. "Request for Proposal Construction Engineering Inspection Services for Salem District - District Wide Contract GTB." Virginia Department of Transportation, June 14, 2013.

³ Colorado Department of Transportation. "Construction Management & Construction Inspection Services Scope of Work." Colorado Department of Transportation, April 28, 2011.

⁴ Georgia Department of Transportation. "Request for Qualifications to Provide Construction Engineering and Inspection (CEI) Services for District 7, Chamblee." Georgia Department of Transportation, September 30, 2013.

⁵ Tennessee Department of Transportation. "TDOT Proposed Scope of Work - CEI." Tennessee Department of Transportation, July 9, 2003.

⁶ Louisiana Department of Transportation. "Request for Qualification Statements for Urban Systems Project." Louisiana Department of Transportation and Development, April 5, 2013.

⁷ Platte County Public Works. "Request for Proposal Construction Engineering Inspection Services DYE Store Road, North Bridge (No. 0290004) Replacement." Platte County Missouri, March 2012.

⁸ Office of Construction - Bureau of Engineering and Highway Operations. "Information Pamphlet for Consulting Engineers." Connecticut Department of Transportation, August 2008.

⁹ Joint Committee on Performance Evaluation and Expenditure Review. A Review of the Use of Private Construction Engineering and Inspection Firms by the Mississippi Department of Transportation. Mississippi Department of Transportation, January 11, 1999.

¹⁰ Georgia Department of Transportation. "Transportation Investment Act of 2010 Manual - Process and Procedures (TIA Manual)." Georgia Department of Transportation, August 2012.

¹¹ Washington State Department of Transportation, n.d. State Department of Transportation. "Draft Exhibit A: Scope of Work 2012 Statewide on Call Construction Management and Inspection Services, Change Order Management and Scheduling Agreement 2012."

Table 4: CEI Functions – Human Resources

Construction Engineering and Inspection Services-Human Resources			
Personnel	Training	Project Staffing	Public Relations
Provide &/or, supervise &/or manage personnel ^{2, 4, 9, 11}	Consultant to provide training to their staff ^{2, 5, 6, 11}	Make recommendations or submit plan on project staffing ^{2, 8}	Keep community aware of status & traffic impacts ¹
Review compliance with EEO, wage rates, & labor policies ^{1, 3, 4, 5, 7, 8}		Coordinate staffing needs and inspector assignments ^{4, 11}	Provide current & accurate info through website linked to DOT ¹
Provide vehicles, equipment, & supplies as required by contract ^{4, 9}			
Responsible for performance & actions of staff ²			

¹ Florida Department of Transportation. "Construction Engineering and Inspection Scope of Services." Florida Department of Transportation, August 1, 2013.

² Virginia Department of Transportation. "Request for Proposal Construction Engineering Inspection Services for Salem District - District Wide Contract GTB." Virginia Department of Transportation, June 14, 2013.

³ Colorado Department of Transportation. "Construction Management & Construction Inspection Services Scope of Work." Colorado Department of Transportation, April 28, 2011.

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⁶ Louisiana Department of Transportation. "Request for Qualification Statements for Urban Systems Project." Louisiana Department of Transportation and Development, April 5, 2013.

⁷ Platte County Public Works. "Request for Proposal Construction Engineering Inspection Services DYE Store Road, North Bridge (No. 0290004) Replacement." Platte County Missouri, March 2012.

⁸ Office of Construction - Bureau of Engineering and Highway Operations. "Information Pamphlet for Consulting Engineers." Connecticut Department of Transportation, August 2008.

⁹ Joint Committee on Performance Evaluation and Expenditure Review. A Review of the Use of Private Construction Engineering and Inspection Firms by the Mississippi Department of Transportation. Mississippi Department of Transportation, January 11, 1999.

¹⁰ Georgia Department of Transportation. "Transportation Investment Act of 2010 Manual - Process and Procedures (TIA Manual)." Georgia Department of Transportation, August 2012.

¹¹ Washington State Department of Transportation, n.d. State Department of Transportation. "Draft Exhibit A: Scope of Work 2012 Statewide on Call Construction Management and Inspection Services, Change Order Management and Scheduling Agreement 2012."

How does the Usage of CEI Services Differ by Project Size (in dollar volume)?

The CEI national survey reveals that CEI services are currently being used more frequently on larger projects (\$10M to above \$40M) compared to medium and smaller projects (below \$10M) (Figure 3). The survey also found that CEI services are used predominantly for almost 50% of all projects among all sizes of projects.

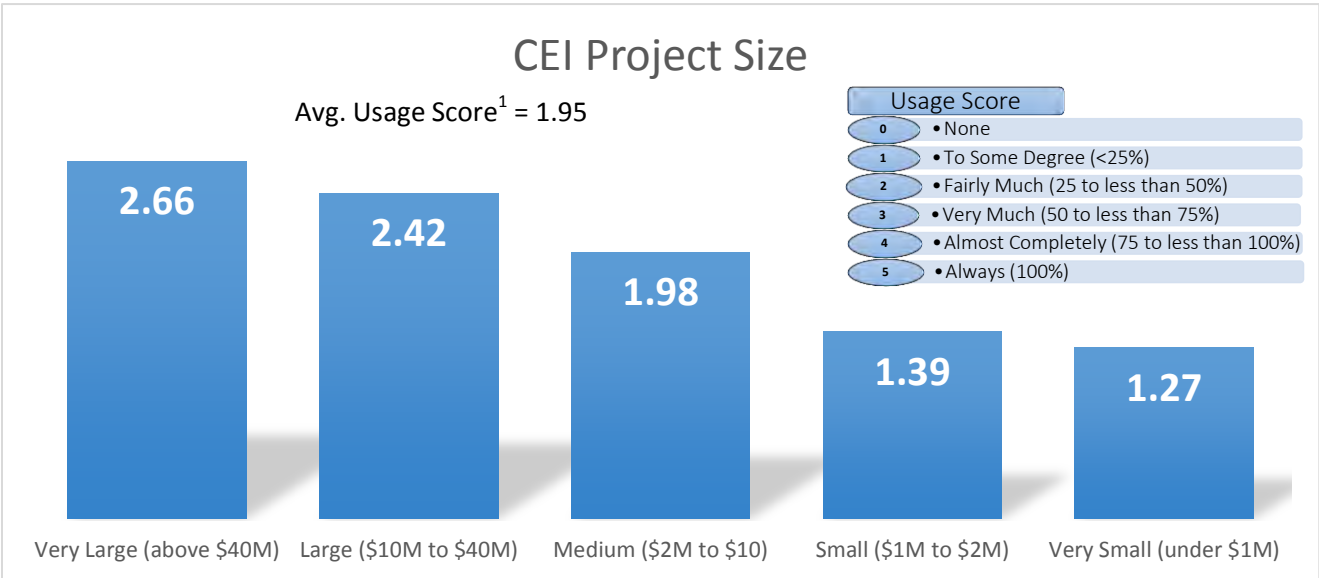


Figure 3: Use of CEI services under different project sizes

What are the most common CEI services being used?

Based on the CEI functions in Tables 1-4, the research examined which of these functions are used most frequently across the surveyed state transportation agencies. Figure 4 shows usage of CEI services among different STAs' functional categories. The survey found that STAs seek CEI services more frequently for construction monitoring and inspection (92%), scheduling (84%), review of change orders (78%), and post construction support (76%).



Figure 4: Category usage of CEI services among STAs.

How do States define CEI Consultants Scope of Work (SOW)?

The survey found that among the four processes that are widely used by STAs to define consultant scope of work, as shown in Figure 6, statement of work in the contract agreement is the most frequently used tool followed by advertisement or RFP, and written scope statement. A statistical analysis of the survey data found that tools usage differ significantly among STAs, which is due to the more frequent use of statement of work in the contract agreement and advertisement or RFP tools compared to the other tool, scoping meeting. Further analysis revealed that tool usage does not vary significantly among Low, Medium, and High user of CEI services. However, data showed that STAs who are identified as Medium user of CEI services utilize advertisement or RFP tools more frequently than other tools.

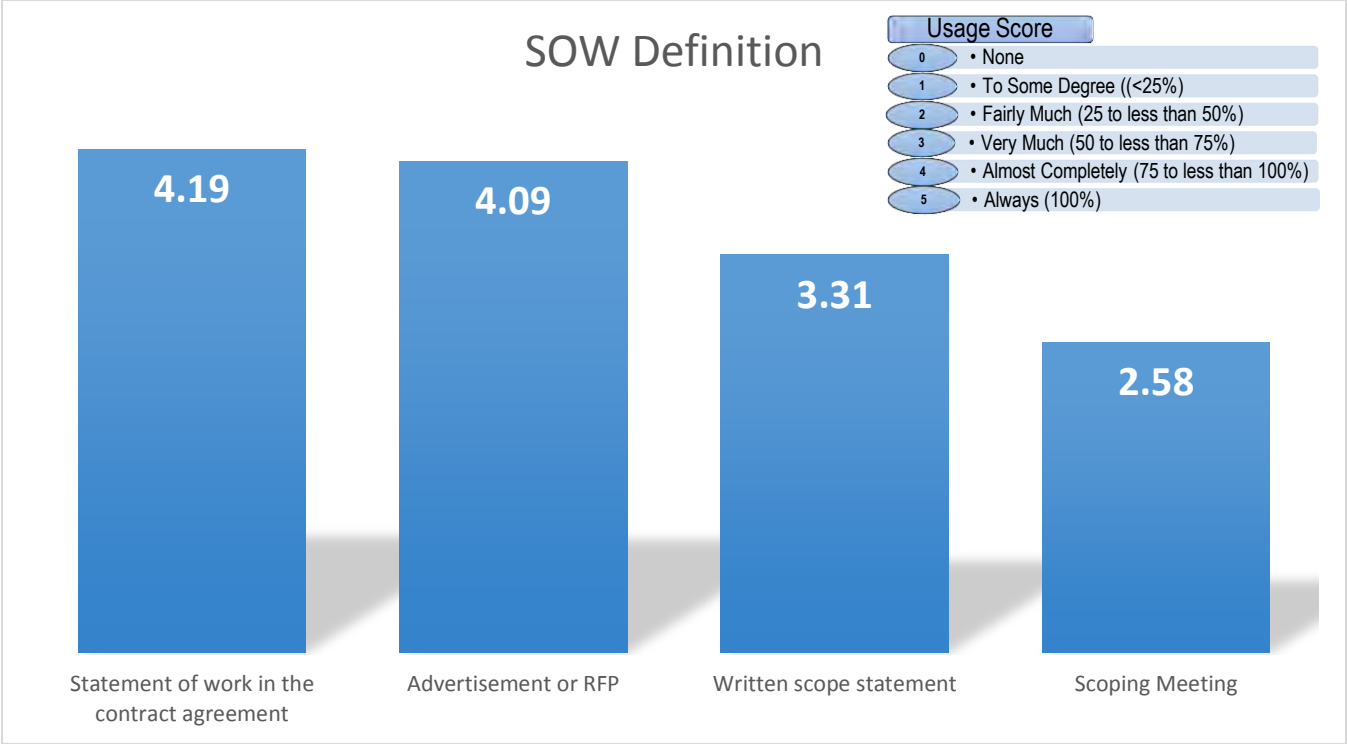


Figure 5: Processes used to define CEI consultant scope of work

How do STAs Select CEI Consultants?

For the selection of CEI consultants, data analysis revealed that STAs advertise the opportunity to bid for CEI consultant services most frequently through media outlets following by formal request for proposals. A significant number of STAs also reported that they develop a shortlist of CEI consultants based on their response to advertisements & request for proposal (Figure 6).The survey also found that STAs almost always require CEI consultants to have professional liability insurance (97%). Some STAs also require consultants to carry error and omission insurance, owner’s protection insurance, automobile insurance, and worker’s compensation insurance.

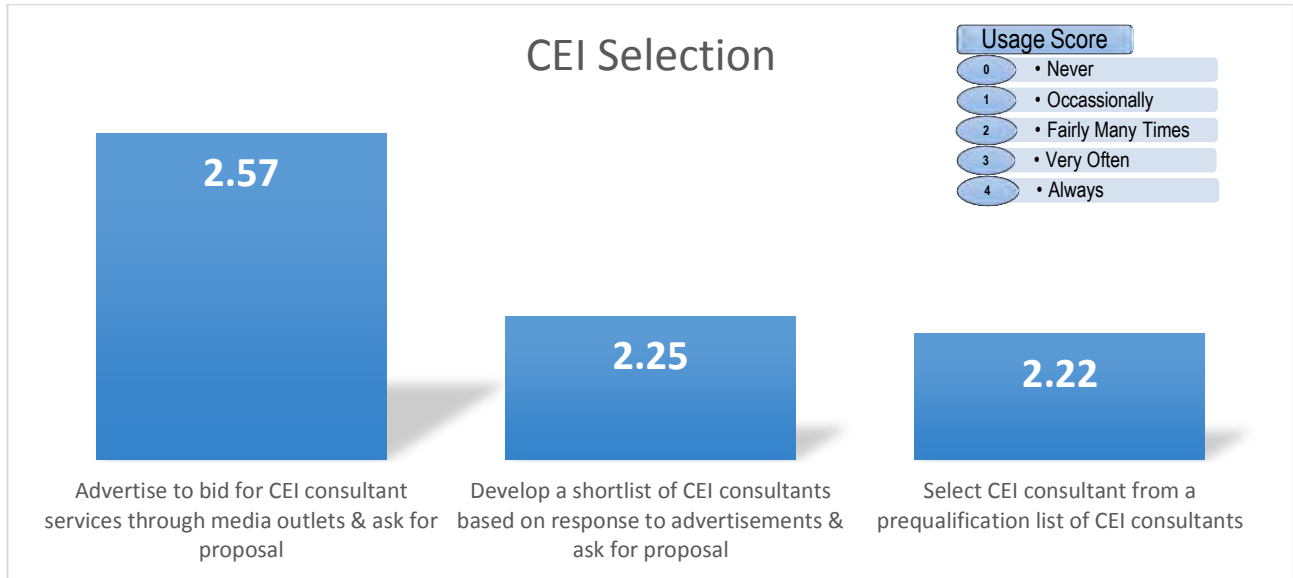


Figure 6: Processes use in the selection of CEI consultants

How do STAs administer their CEI Contracts?

During a project’s pre-construction phase, STAs most commonly prepare a list of documents (e.g. contract documents and amendments, correspondence, shop drawings, and change orders) that the CEI consultants will manage, which are later used as a closeout checklist. For the administration of contract clarification and modification (Figure 7), STAs internally review and approve changes to CEI consultant’s scope of work most frequently followed by maintaining a record of all changes to CEI consultant’s scope of work, and verifying that a CEI consultant is responding to construction contractor’s request for assistance.

For payment, 95% of STAs require CEI consultants to submit monthly applications for payment for their services.

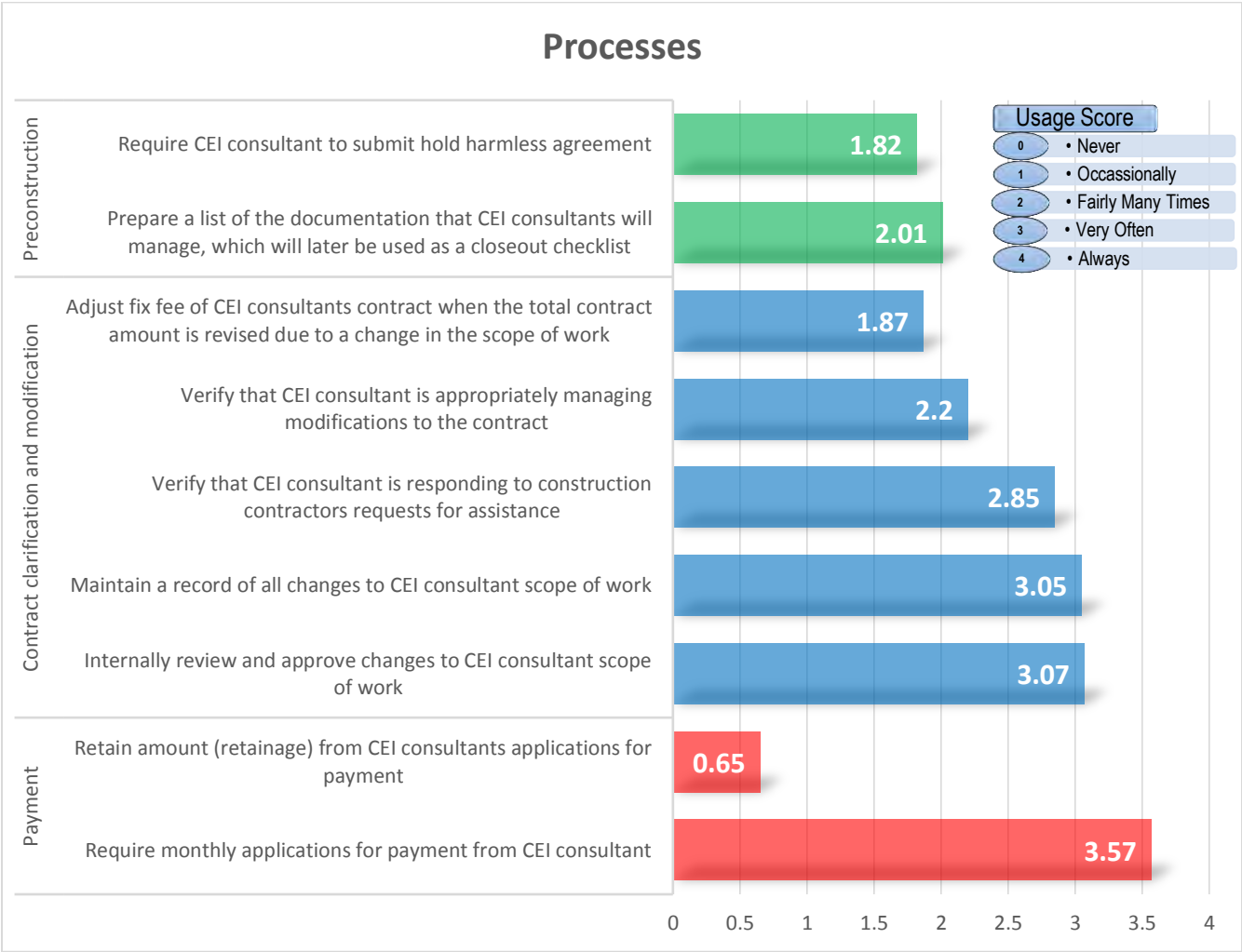


Figure 7: Processes used in the administration of pre-construction, contract clarification and modification, and payment

How do STA’s Monitor and Inspect CEI Consultants’ Work?

The survey reveals that for the monitoring and inspection of CEI services, transportation agencies most frequently verify that a CEI consultant adequately reviews the construction contractor’s application for payment (Figure 8). Many states require CEI consultants to submit progress reports and perform intermediate evaluations of CEI consultant’s performance”. Data also revealed that the process of “Verifying that CEI consultant adequately reviews construction contractor’s application for payment” is used heavily across all state transportation agencies.

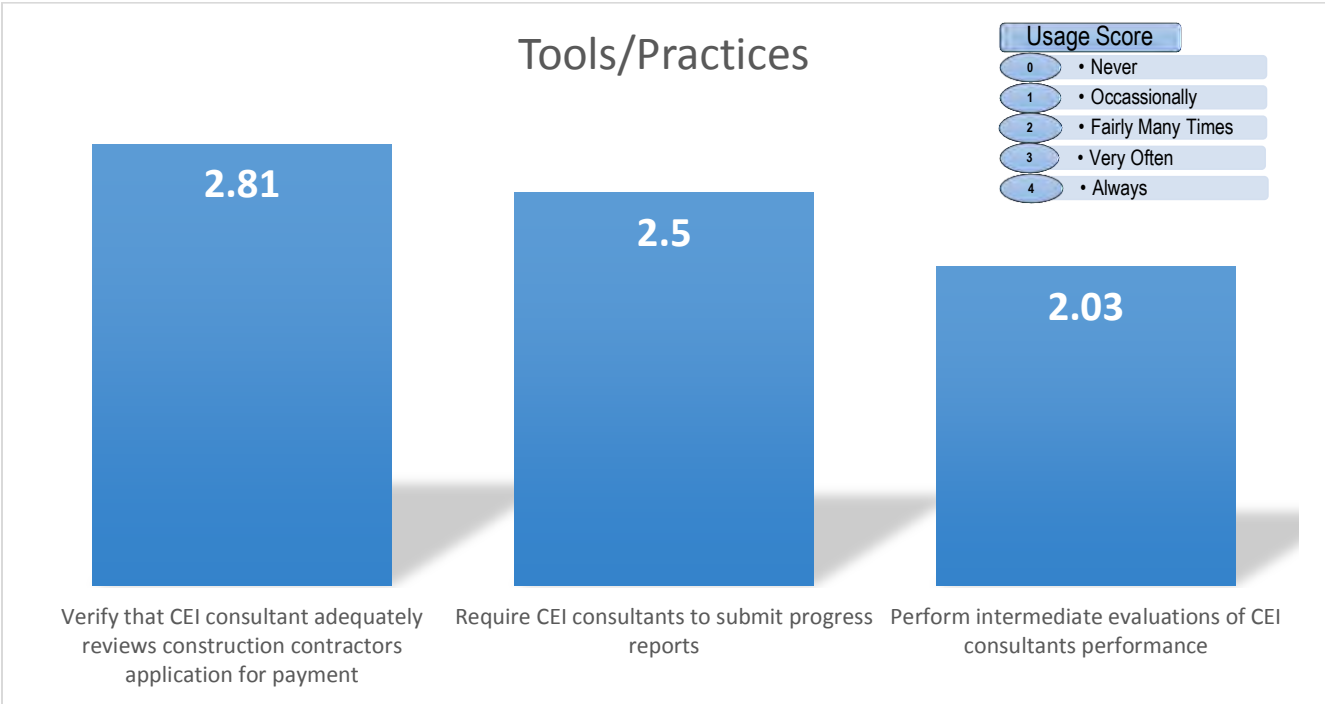


Figure 8: Processes used to administer monitoring and inspection of CEI services

How do STAs ensure that CEI Consultants have the Right Skills and Resources to do their Work?

For human resources management, STAs most occasionally provide training to a CEI consultant on their agency’s processes and procedures, provide CEI consultant access to STAs’ internal information system, and require agency’s project manager to get acquainted with the roles and skills of selected CEI consultant (Figure 9).

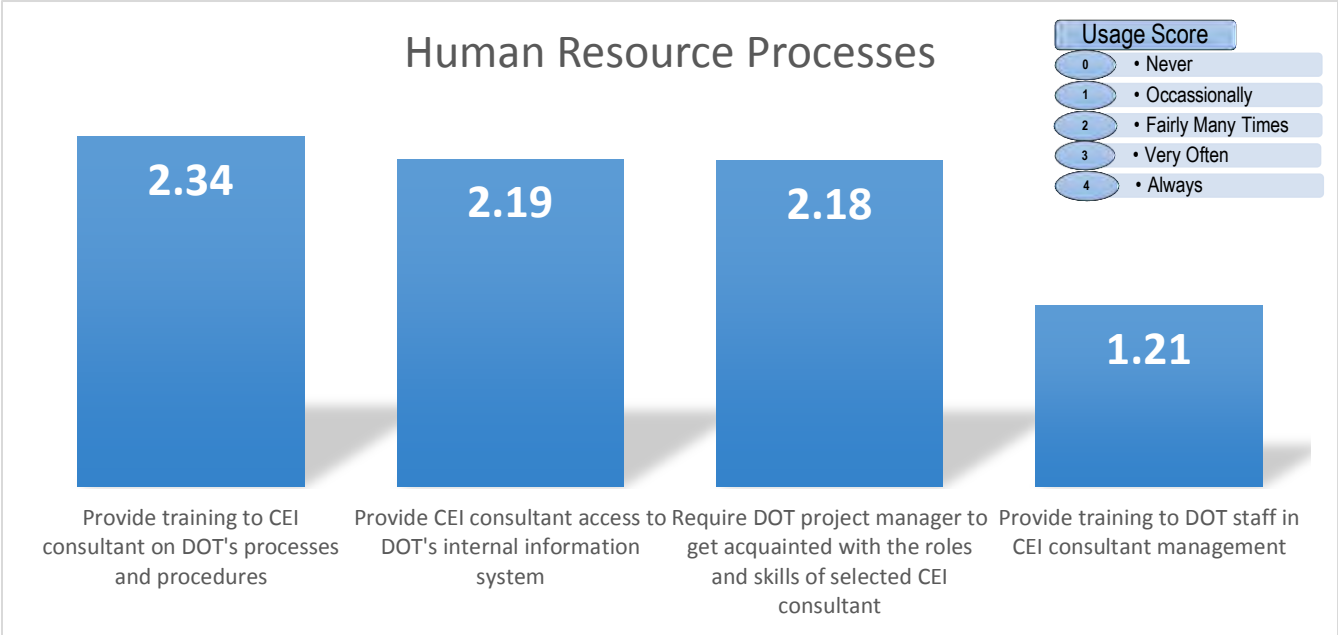


Figure 9: Processes used to administer the human resources

What do STAs do to Closeout CEI Contracts?

During a project’s administration closeout process, STAs most frequently verify that CEI consultants has delivered all project documentation and records as defined in the CEI consultants’ contract (Figure 10). A large number of STAs also almost always verify that all work assignment by CEI consultant is complete. The survey also found that the practice of retaining consultant payment is phasing out, at least in terms of the frequency of this practice as found in the previous studies by Newman (1989) and Witheford (1999).

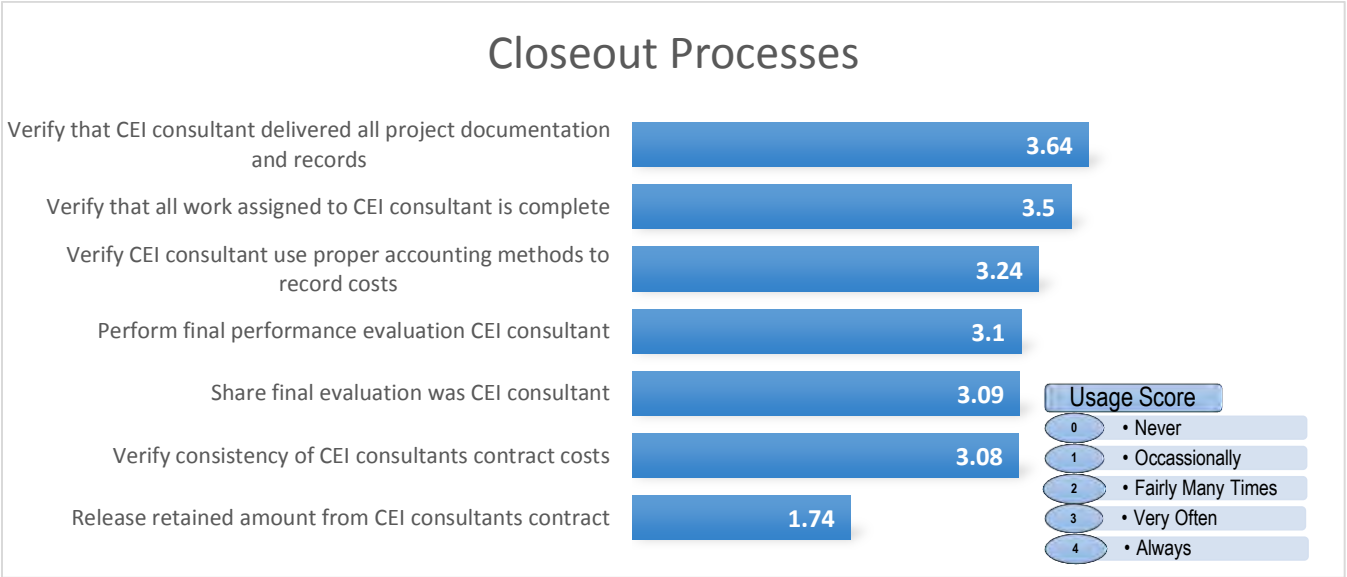


Figure 10: Processes used to administer the closeout process

Why do STAs use CEI Consultants?

There are obviously a number of reasons why STAs are motivated to use CEI consultants. In previous research, Newman (1989) identified the following primary advantages that STAs experience through the use of CEI consultants:

- Improves ability to handle peak workloads;
- Makes it easier to control in-house staff size;
- Provides flexibility to add or reduce staff more quickly;
- Provides special expertise not available in-house;
- Makes it easier to obtain equipment, office, etc.;
- Is more competitive; and
- Is in keeping with particular state's goal of increasing privatization.

The survey found that the most important reason for STAs to bring in CEI consultant services is the improved ability to handle peak workloads (Figure 11). A significant number of the STAs reported that CEI consultant services provide the flexibility of adding or reducing staff more quickly. Furthermore, the ability of CEI consultants rapidly provides a special expertise that is not available in house is another significant advantage. In contrast to previous studies, the use of CEI services for the purposes of being more competitive (i.e. efficient), being easier to obtain equipment, and promoting states' goal of increasing privatization were not found to be significant drivers this time around.

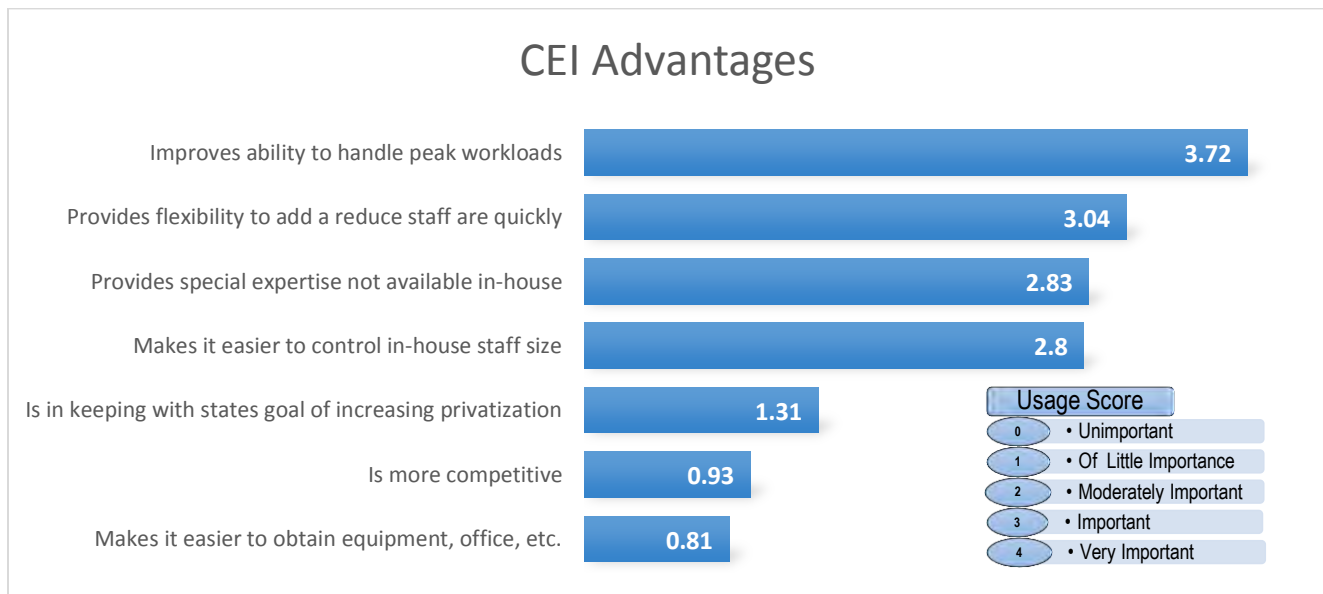


Figure 11: Advantages of CEI services as realized by STAs

What are the Main Things to Watch out for when Using CEI Services?

The use of CEI consultants is not without some caution. As before, Newman (1989) identified the following potential disadvantages of the use of CEI consultants, which included:

- Costs can be higher compared to doing the same work with in-house staff;
- CEI familiarity with specific in-house procedures can be lacking;
- Monitoring of CEI consultants' work requires a duplication of effort and increased paperwork;
- Assurances need to be verified that consultant forces are properly qualified;
- Training opportunities for in-house employees are diminished;
- CEI consultant personnel must be continually trained;
- Salary disparities between CEI consultant staff and in-house staff can cause in-house morale problems;
- Control and responsiveness of functions under the scope of CEI scope of work is diminished;
- CEI consultants can sometime actively recruit agency employees; and
- At times, consultants can be more concerned with protecting themselves than the agency.

Based on the current climate, the most significant challenge that STAs faces when they bring in CEI services is developing consultants' familiarity with in-house processes and procedures, with a usage score of 2.61 (Figure 12). One valuable lessons learned from the study's follow-up interviews was the importance of continually engaging a CEI consultant(s) in order to maintain their familiarity with an agency's in-house processes. Infrequent or the occasional use of CEI consultants can obviously be a significant challenge in this regard. Getting the CEI consultant acquainted with a STA's internal processes can be time consuming and requiring a duplication of effort, least in the short-term. A large number of the STAs reported concerns regarding CEI consultants qualifications and cost effectiveness compared to in-house staff (usage score =2.58). STAs also expressed concerns with maintain the training and professional growth opportunities for in-house staff when CEI consultants are used as well as pay disparities consultants and in-house staff, which can create low morale problems among in-house staff.

CEI Disadvantages

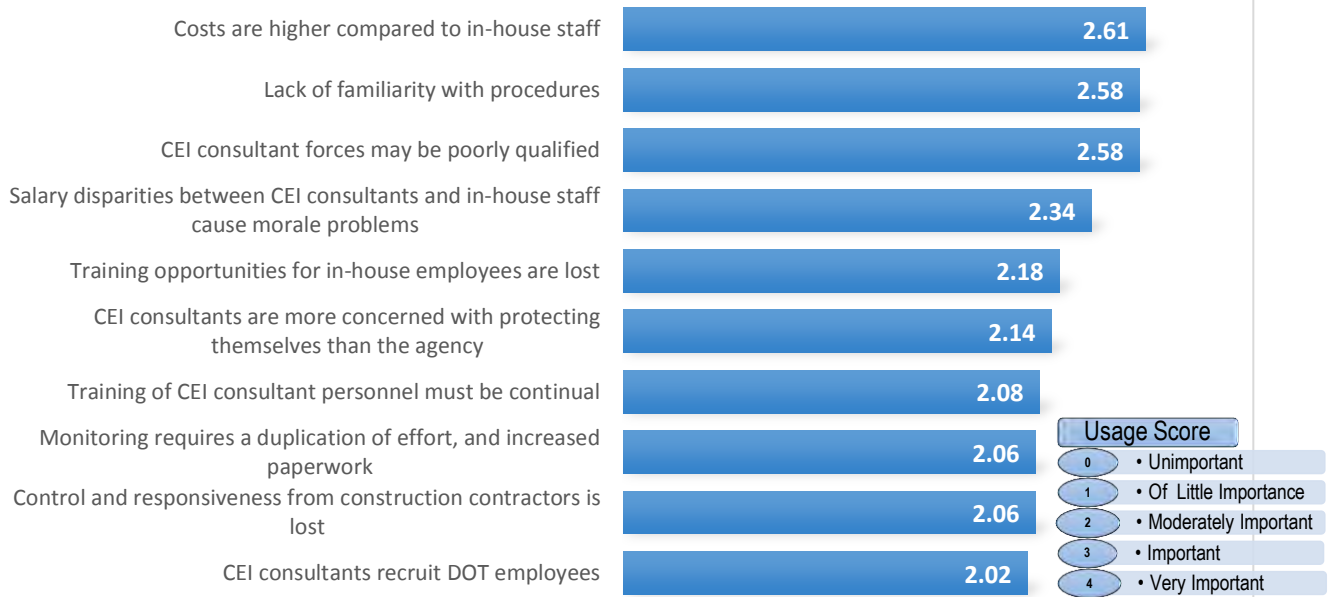


Figure 12: Disadvantages of CEI services as realized by STAs

Is the use of CEI increasing?

This study did find that some significant changes in CEI practices have occurred over the years. Newman (1989) found that the portion of work load, based on the percentage of overall dollar volume, assigned to consultants varied from 1 to 52%, with a weighted average of 26% (1). The current study found that the range of the work load declined to zero to 35%, with a weighted average of 1.05 %. Even though the percent of CEI work volume decreased over the years, the number of CEI functional activities increased in significant number. Material testing, preparing progress estimates, preparing change orders, which were largely reserved by in-house staffing is now widely performed by consultants. Witheford (1999) found the same and reported that half of their states contracted out 50 percent or more of their preconstruction engineering compared to only one-fifth by Newman's (1989) study (12). Practices related to solicitation, selection, and negotiation of CEI consultant have not change much - the most common procedure is to develop a short list of qualified firms, request proposals from three short listed firms, evaluate the proposals, make a selection, and negotiate an agreement. For payment purpose, retainage was a common practice, however, that practice has almost been phased out according to this most recent survey. Newman (1989) found training in STAs' procedures was identified as the most urgent need for most consultant personnel, and this survey again found the need for training among CEI consultants to be a significant need. Even though the top three advantages of using consultants for CEI cited by agencies remained the same, this survey found a significant shift in the disadvantages of using CEI consultants. The disadvantages most frequently cited in this survey are higher costs along with a lack of familiarity among CEI consultants with the agency methods, procedures, and requirements.

What are Specific Examples on how STAs use CEI Consultants?

During its review of state CEI practices, the study found a number of requests for qualifications and scope of work statements being currently used. These archived documents are a significant source of information describing which specific CEI practices are using and how.

Sample A: Colorado DOT Scope of Work for Construction Management & Inspection Services

Summary: The sample Colorado DOT Scope of Work was developed to outline the required CEI services and consultant requirements for two specific projects to be issued under a single contract. The general outline of the scope of work includes the following:

1. Project Description;
2. Description of Specific Construction Services to be Provided to the Project;
3. Contact Information for Contract Administrator and Project Engineering/Project Manager;
4. Section 1- General Requirements
 - a. Project Standards
 - b. Labor, Materials, Vehicles, and Equipment
 - c. Project Staffing Authority
 - d. Submittal of Final Documentation
 - e. Engineer's Certification
 - f. Task 1.0 – Construction Management Support
 - i. Traffic Control
 - ii. Daily Quality Control Inspection & Quality Control
 - iii. Project Documentation
 - iv. Materials Testing
 - v. Contaminated Material Notification
 - g. Task 2.0 – Post Construction Support
 - i. As-Constructed Drawings
 - ii. Preparation of Final Pay Estimate
 - iii. Preparation of Materials Final
 - h. Task 3.0 – Project Management
 - i. Progress Reports
 - ii. Certified Payroll
5. Section 2 – Assistant Project Engineer Requirements
 - a. General Work Description
 - b. Personnel Qualifications
 - c. Documentation Required During Scope of Services
6. Section 3 – Inspector's Requirements
 - a. General Work Description
 - b. Personnel Qualifications

- c. Documentation Required During Scope of Services
- 7. Section 4 – Materials Tester’s Requirements
 - a. Personnel Qualifications
- 8. Section 5 – Schedule Analysis Requirements
 - a. General Work Description
- 9. Construction Inspector Training and Certification Requirements
- 10. Mandatory Traffic Control Supervisor Training
- 11. Required Use of Personal Protective Equipment

SCOPE OF WORK

April 28, 2011

CONSTRUCTION MANAGEMENT & CONSTRUCTION INSPECTION SERVICES

Project IM 0252-387 SA 15790

Project CC C010-095 SA17098

Description and Overview of Project & Required Services

Services are requested to provide Construction Management and Construction Inspection to support the referenced CDOT Projects, as follows.

I-25 Southbound: Speer Boulevard to 20th Street

IM 0252-387 (15790) is proposing to add adjacent auxiliary lanes onto southbound (SB) Interstate 25 from 20th Street to Speer Boulevard, and replace one existing bridge (Structure E-16-EP), over I-25 at 15th Street (MP 211.648) in the City and County of Denver (CCD). The proposed auxiliary lanes are two lanes wide, plus shoulders. The new 15th Street bridge will span over both directions of I-25 and the new auxiliary lanes, while maintaining or improving vertical clearance over I-25. The new 15th Street bridge will also accommodate four 11-foot lanes and a 6-foot sidewalk along each side and will meet or exceed all Interstate Standards. In addition to the 15th Street Bridge being replaced, this project will also improve the HOV lane entrance onto I-25 at 20th Street by extending the acceleration lane by 1000 ft. This project will also include re-striping southbound (SB) I-25 from the BNSF railroad bridge (E-16-EM) to 20th Street to improve southbound I-25 lane balance. The ultimate goal for the project is to improve safety, reduce access deficiencies, improve traffic flow on SB I-25, and replace the 15th Street over I-25 bridge structure.

Central Street Promenade: 16th Street to 20th Street

CC C010-095 (17098) is a City and County of Denver (CCD) local agency project with CDOT oversight. This project will construct a 10-foot or wider multi-use path along Central Street from 16th Street to 20th Street and bulb-outs on Central Street at 17th and 18th Streets. This project will also provide a minimum of 20 bicycle racks and improved pedestrian lighting. Due to construction timing and overlapping vicinity with the I-25 Southbound Interim project, this project has been combined with the aforementioned project to minimize construction throw away and consolidate costs.

The two projects above are combined under one bidding/contractor.

Construction Services

Interested consultant firms are strongly encouraged to visit the project site in advance of preparing a proposal to perform this work. The selected Consultant will have strong experience in developing and analyzing critical path scheduling, public relations, bridge construction, roadway construction, utilities, environmental work and compliance, and retaining walls.

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The requested construction service is for the above project and includes an Assistant Project Engineer and three **Inspectors** to be utilized on the I-25/Central St. project. The consultant will also supply scheduling analysis and evaluation. General Requirements are outlined in **Section 1**.

The Assistant Project Engineer shall have sufficient education, training, and experience to meet the minimum qualifications comparable to CDOT's Civil Engineer Project Manager I level employee, and be experienced and competent in all aspects of highway construction within the scope of this project. Assistant Project Engineer's Requirements are outlined in **Section 2**.

The Inspectors shall have sufficient education, training, and experience to meet the minimum qualification comparable to CDOT's Engineer/Physical Science Tech I level employee, and be experienced and competent in all aspects of highway construction within the scope of this project. Inspector's Requirements are outlined in **Section 3**.

The Materials Tester shall have sufficient education and experience to meet the minimum qualifications comparable to CDOT's Engineer/Physical Science Tech I level employee, and be experienced and competent in all aspects of material and testing within the scope of the project. Materials Tester's requirements are outlined in **Section 4**.

The Consultant shall provide services, as requested by CDOT, to periodically review Contractor schedules and method statements for reasonability and compliance with contract requirements, as well as perform delay analysis on time requests. Schedule Analysis Requirements are outlined in **Section 5**.

Full time services are anticipated from approximately October 2011 through October 2013 (includes the duration of the construction, potential adjustments to construction contract time, plus pre and post construction activities as required). Work may be required night and/or day, on weekends, holidays, and/or on a split shift basis. Work weeks may be in excess of or less than the standard 40-hour week.

The Contract Administrator for this Task Order will be:

Kevin Ryburn, Project Engineer
Region 6, Central Engineering Unit
4670 Holly St.
Denver, CO 80216-5635
303- 298-1555

Active Day-to-Day administration of this contract will be delegated to the assigned Project Engineers/Project Managers as follows:

Kevin Ryburn, Project Engineer
Region 6, Central Engineering Unit
4670 Holly St.
Denver, CO 80216-5635
303- 298-1555

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The following task requirements are not intended to be a definitive listing of every activity required by the Consultant for this project. Refer to the references listed in the **Project Standards** below for more detailed information.

All work shall be performed in accordance with the Basic Contract's Scope of Work (Exhibit A) as supplemented by these task requirements.

Section 1 - General Requirements

A. Project Standards

Construction management and Inspection shall be in accordance with the latest versions of the Colorado Department of Transportation's Construction Manual, Field Materials Manual, Colorado Department of Transportation Inspector's Checklist, Standard Specifications for Road & Bridge Construction, the Supplemental Specifications, if any, Standard and Project Special Provisions, applicable M & S standards, and the plans, permits, and other documents governing the construction of the project. All Consultant activities performed shall be as authorized by the Resident Engineer. All Consultant personnel shall comply with CDOT's Safety, Sexual Harassment, Discrimination, and Workplace Violence Policies and Procedures. For the purposes of this document, Project Management and Inspection shall be known as "the work."

B. Labor, Materials, Vehicles & Equipment

The Consultant shall furnish their personnel, materials, equipment, and transportation required to perform the work. Consultant personnel shall have appropriate vehicles (equipped with flashing amber beacon), cellular phones, computers, and miscellaneous equipment and supplies (printers, calculators, manuals, office supplies, safety equipment, etc.) required to perform the work as approved by the CDOT Resident Engineer. Field Office and Field Laboratory will be provided by CDOT.

The Consultant's work shall be under the direction of, and shall be reviewed by, a Professional Engineer, registered in the State of Colorado, or as appropriate by a Licensed Professional Land Surveyor, registered in the State of Colorado.

The Consultant shall assign personnel for the duration of the Contract, unless otherwise approved by the Resident Engineer.

The Consultant Project Engineer and Consultant Inspector assigned to the project shall be competent in road and bridge construction and must be thoroughly familiar with CDOT's specifications, manuals, forms, and documentation requirements. The level of qualification provided shall be requested and approved by the CDOT Resident Engineer. A copy of work experience and/or proof of Licensing shall be provided before work begins to the CDOT Resident Engineer. Consultant personnel who do not meet all of the specified requirements, or who fail to perform their work in an acceptable manner, shall be removed from the project when determined and directed by the CDOT Resident Engineer.

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C. Project Staffing Authority

The Project Engineer is in direct charge of the work and is responsible for administration of the project contract as defined in the CDOT Standard Specifications and Standard Special Provisions, within the guideline of the Contract. The Project Engineer shall report directly to the Resident Engineer. This includes approving and setting work hours for project construction and the materials sampling, testing, and inspection, as outlined in the Project Specifications. Consultant personnel shall be on the project when the Contractor is working.

D. Submittal of Final Documentation

Final documentation shall be submitted to the CDOT Resident Engineer within 20 working days after project acceptance. A completed CDOT Form 250 shall be submitted to the CDOT Resident Engineer 10 working days after the Consultant has been notified of final quantities. Failure to submit final documentation as required may result in withholding Consultant payments received subsequent to project acceptance until this material is received.

E. Engineer's Certification

The Consultant Engineer, as specified in the Contract, shall certify in writing that all inspection, sampling, and testing activities conform to the plans, specifications, and purpose of the design. The Consultant Engineer shall be available to review work, resolve problems, and make decisions in a timely manner as requested by the CDOT. The CDOT Resident Engineer shall be the final authority regarding acceptance of work not conforming to the plans and specifications.

Task 1.0 Construction Management Support

Provide CDOT Resident Engineer with the following construction inspection support:

- 1.1 Traffic Control: Monitor the Contractor's implementation of traffic signing, barriers, and other traffic control measures.
- 1.2 Daily Quality Control Inspection & Quantity Control: Perform daily quality control inspections of construction activities to document activities performed and assessment of conformance with the contract documents in accordance with Section 2 of this Scope. Inspection items will include, but may not be limited to, rebar and concrete placement, paving, and traffic control installations.

Quantities of work elements constructed will be measured and recorded to support the preparation and processing of progress pay estimates to the Contractor. Quantities will be documented in an interim quantity book for tracking of quantities constructed as compared to the original design quantities on the project. Consultant Project Engineer and Inspector shall assist CDOT in resolving disputes in quantities with the Contractor prior to the preparation of the pay estimate.

- 1.3 Project Documentation: Prepare and review Inspector's progress reports and complete appropriate CDOT paperwork and forms.

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- 1.4 Materials Testing: Document and complete the necessary testing per CDOT's Field Materials Manual and/or specifications.
- 1.5 Contaminated Material Notification: Monitor construction operations and notify the Project engineer and CDOT Resident Engineer immediately when contaminated material or otherwise unacceptable material is encountered or developed on the project.

Task 2.0 Post Construction Support

- 2.1 As-Constructed Drawings: Complete 11"x 17" as-constructed drawings of work completed by the Contractor, including final pay quantities.
- 2.2 Preparation of Final Pay Estimate: Assist in determining final pay quantities with appropriate supporting documentation and checks.
- 2.3 Preparation of Materials Final: Prepare the final materials documentation for closing the project.

Task 3.0 Project Management

- 3.1 Progress Reports: Prepare weekly progress reports for the CDOT Resident Engineer documenting project progress in accordance with the Basic Contract.
- 3.2 Certified Payroll: Review certified payroll documentation provided by the Contractor and conduct random interviews of Contractor employees to determine if the Contractor is in conformance with CDOT's EEO/Labor Compliance policies.

Deliverables generated during the project will include the following and will be submitted throughout the duration of the project, or at specific dates commensurate with the deliverable's intent:

- Weekly Progress Reports.
- Project diaries, inspection reports, quantity records, and other documentation prepared during the course of construction in accordance with CDOT requirements.

Section 2 – Assistant Project Engineer Requirements

General Work Description

Assistant Project Manager responsibilities may include, but are not limited to the following:

- ◆ Shall support CDOT's staff through management of the construction project
- ◆ Shall certify in writing that all inspection, materials, materials testing, and construction management conforms to the plans, specifications, and purpose of design.

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- ◆ Preparing and transmitting updates of construction activities to the CDOT's Public Information Office
- ◆ Preparing routine correspondence to the Contractor, CDOT staff, local agencies, etc.
- ◆ Preparing Contract Modification Orders
- ◆ All Inspector responsibilities as delineated below (Section 3)

The consultant shall furnish to the Project Engineer, the phone number, where the Project Engineer can reasonably expect to make contact promptly with the consultant at all times during the project unless otherwise approved by the Project Engineer. Back-up Consultant resources should be available in case of loss of staff, sickness, or vacations or as required for the project.

Personnel Qualifications

The Assistant Project Manager/Inspector shall be permanently assigned to the project and shall be responsible for the administration of the CDOT construction contract. The Assistant Project Manager/Inspector shall have minimum of six (6) years of experience in related road and bridge construction and responsible for supervising the work of the project Inspectors. The Consultant Assistant Project Engineer will be required to work night shifts if necessary. The Assistant Project Manager/Inspector shall have thorough knowledge of the use and completion of CDOT forms and documentation, including the CDOT Construction Manual, the CDOT Materials Manual, and the CDOT Inspector's Checklist. The Consultant Assistant Project Engineer and the Consultant Inspector shall have the qualifications and certifications described in CDOT Policy Memo #25, dated March 4, 2005 (attached), the mandatory Traffic Control Supervisor training as described in CDOT Policy Memo #22, dated September 9, 2004 (attached), as well as other certifications relevant to the project.

Documentation

Inspection work shall conform to the CDOT Construction Manual, the Inspector Checklist and SiteManager requirements. The Consultant's Assistant Project Engineer shall maintain a daily diary for each day the Consultant performs work on the project. They shall use CDOT's Form 103, automated 103a - Project Diary, or other form approved by the CDOT Resident Engineer. SiteManager documentation procedures will apply. The contents of the diary shall be brief, with accurate statements of progress and conditions encountered during the prosecution of the work. Editorial comments are not to be incorporated in the diaries or on any written correspondence applicable to the project. A copy of the daily diary shall be given to the Project Engineer within three (3) working days of its date and will become a part of the permanent project record.

Section 3 – Inspector's Requirements

General Work Description

Inspection responsibilities may include, but are not limited to the following:

- ◆ Performing duties described in the CDOT *Inspector's Checklist*.

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- ◆ Preparing and transmitting periodic reports and billings required by CDOT Procedural Directive 400.2.
- ◆ Monitoring and documenting Contractor payroll compliance.
- ◆ Participating in weekly progress meetings with contractor, subs, utilities, and other interested parties.
- ◆ Securing project documentation from the Contractor.
- ◆ Anticipating project problems and suggesting recommended solutions to the Project Engineer.
- ◆ Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the intent of the specifications. Informing and obtaining concurrence as needed from the Project Engineer and keep relevant documentation for project records.
- ◆ Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
- ◆ Communicating with adjacent landowners to resolve issues that may arise due to construction, as required.
- ◆ Reviewing and approving the Contractor's Method of Handling Traffic (MHT).
- ◆ Monitoring compliance with and taking appropriate action to preserve safety on the project for all workers and traveling public in accordance with Method of Handling Traffic (MHT) and the Manual of Uniform Traffic Control Devices (MUTCD).
- ◆ Providing initial, follow-up, and final inspections of work in progress including interim and final measurements and coordinating with the materials testers to ensure testing requirements are met.
- ◆ Notifying contractors and the Project Engineer of non-compliance with the contract plans and specifications in a timely manner.
- ◆ Performing special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT Inspection Program.
- ◆ Preparing inspection documentation for development of progress payments for the Contractor in accordance with prescribed procedures.
- ◆ Submitting standard documentation reports no later than the following working day.
- ◆ Providing liaison and communication to contractor field crews.
- ◆ Assisting in preparing the final "As-Constructed" plans upon project completion.
- ◆ Assisting in preparing punch lists of uncompleted work, non-conformance reports, and deficiency notices.

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- ◆ Assisting in preparing responses to contractors' and suppliers' requests for information, submittals, change notices, claims, and correspondences.
- ◆ CDOT experience with the federal project requirements such as OJT, review of 205's, have done interviews to complete CDOT form 280, and have reviewed Davis-Bacon wages.

Personnel Qualifications

The Project Inspection Technicians (PITs) shall be permanently assigned to the project and shall perform all materials inspection and construction documentation as directed by the Project Engineer. The PIT performing the inspection shall have successfully completed the CDOT Inspector Qualification Program, pursuant to CDOT Policy Memo 25 issued March 4, 2005. The PIT shall have a minimum of one (1) year experience in related road and bridge construction. The PIT shall have thorough knowledge of the use and completion of CDOT forms and documentation, including the CDOT Construction Manual, the CDOT Materials Manual, and the CDOT Inspector's Checklist. References of inspection experience shall be available for all staff, and may be requested at any time during the Contract.

Personnel qualifications and staffing levels for the project shall be subject to the approval of the CDOT Resident Engineer. CDOT will reserve the right to review the resume and interview any new proposed staff to the project. The Consultant shall be certified as defined by the requirements set forth in this scope of work.

Other skills to be highly considered for all personnel:

- Utility coordination
- Wide load coordination
- Working with CDOT Public Relations representative for periodic and timely press releases for construction activities
- Wetlands (404 Permit)
- Survey experience
- Bridge-inspection experience

All the Consultant staff (except the tester) shall be familiar with and possess experience using the Site Manager program to enter CMO's, 266 inspection forms, and other areas if needed. All Consultant Staff shall be thoroughly familiar with CDOT forms and documentation requirements.

The Consultant shall also provide any other services as requested by the CDOT Project Engineer.

Back-up Consultant resources should be available in case of loss of staff, sickness, or vacations or as required for the project.

Documentation

Inspection work shall conform to the CDOT Construction Manual, the Inspector Checklist and SiteManager requirements. Each of the Consultant's field inspectors shall maintain a daily diary for each day the Consultant performs work on the project. They shall use CDOT's Form 103, automated 103a - Project Diary, or other form approved by the CDOT Resident Engineer. SiteManager documentation procedures will apply.

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The contents of the diary shall be brief, with accurate statements of progress and conditions encountered during the prosecution of the work. Editorial comments are not to be incorporated in the diaries or on any written correspondence applicable to the project. A copy of the daily diary shall be given to the Project Engineer within three (3) working days of its date and will become a part of the permanent project record.

Section 4 – Materials Tester’s Requirements

Personnel Qualifications

The Consultant Materials Testing Technician (MTT or Tester) shall have experience in precast and cast in place concrete, asphalt, earthwork, and certifications accordingly. The MTT shall review project plans, specifications, and the current version of the CDOT Field Materials Manual and the project specific CDOT Form 250 to determine the number of testers required to complete the project and the number and type of test that will need to be performed on the project. The MTT and the CDOT Project Engineer shall meet on a regular basis prior to start of project to address any questions or issues involving testing procedures, frequency, or documentation. Additional testing may be required if requested by the CDOT Project Engineer or CDOT Resident Engineer. The MTT shall be thoroughly familiar with CDOT forms and documentation requirements. The consultant-supplied Materials Testing Technician shall be permanently assigned to the project and shall provide copies of the following qualifications:

- The MTT performing concrete tests shall be certified by The American Concrete Institute (ACI).
- The MTT performing hot bituminous pavement tests shall be Level II, A&B certified by The Colorado Asphalt Technician Certification Program (LabCAT).
- WAQTC, Soils Certification

Personnel provided by the Consultant who do not meet all of the specified requirements, or who fail to perform their work in an acceptable manner, shall be removed from the project when determined and directed by the CDOT Project Engineer or CDOT Resident Engineer.

Back-up Consultant resources should be available in case of loss of staff, sickness, or vacations or as required for the project.

Section 5 – Schedule Analysis Requirements

General Work Description

- ◆ Review the Contractor’s accepted as-planned schedule, schedule updates, and method statements for compliance with contract requirements
- ◆ Assemble and review as-built data and develop a current as-built schedule
- ◆ Perform a schedule delay analysis and determine the amount of Contractor and/or CDOT excusable delays
- ◆ Prepare schedule reports and exhibits to assist in evaluation of schedule delays and remaining as-planned work
- ◆ Provide ongoing schedule review and evaluation support through project completion

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Chief Engineer
4201 E. Arkansas Ave. #262
Denver, CO 80222
(303) 757-9206
(303) 757-9656 Fax



Date: March 4, 2005

To: Region Transportation Directors, Professional Engineer III's, and Resident Engineers

From: Craig Siracusa, Chief Engineer *Craig Siracusa*

Subject: Construction Inspector Qualification Program
Policy Memo 25

As a follow up to the memo issued on October 25, 2004, I would like to communicate progress in the implementation of the CDOT Inspector Qualification Program. The Inspector Qualification Board of Directors has developed the following policies in regard to prerequisites, certification requirements and program implementation.

Required Prerequisite Classes:

- Technical Series (EPS Assistant I thru EPS Technician III)
 - Basic Highway Math
 - Basic Highway Surveying
 - Basic Highway Plan Reading
 - Erosion Control Supervisor
- Professional Series (EIT I thru EIT III)
 - Basic Highway Surveying
 - Basic Highway Plan Reading
 - Erosion Control Supervisor

The specialty certifications, such as CAPA Asphalt Inspection, WAQTC, and Major Structures, will only be required when an inspector is working on a project where those items of work are performed. For example, a person working on an asphalt overlay would need the pre-requisites plus the CAPA asphalt inspection; a person working on an embankment would need the pre-requisites plus the WAQTC soils; etc. The specialty training requirements apply to the full range of both the technical and professional series listed above.

Supervisors will be required to anticipate and incorporate the required specialty training needs into training plans as required by project assignments.

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Resident Engineers are also encouraged to look at the background of their Project Engineers (both licensed and not licensed). Resident Engineers should include the categories that they believe are appropriate in the Project Engineers' training plans as well.

Program Implementation:

- The above requirements will be mandatory on CDOT projects after March 1, 2006.
- The scopes of work in future consultant contracts must include the certification requirements for inspectors effective March 1, 2006.

The qualification program products can be accessed both internally and externally at:

<http://www.dot.state.co.us/CHREmpCorner/empdev.cfm>

I encourage you to begin to work with your employees to structure a plan that addresses the specific needs.

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DEPARTMENT OF TRANSPORTATION

Safety and Traffic Branch
4201 East Arkansas Avenue, Empire Park B770
Denver, Colorado 80222
(303) 512-5100
FAX (303) 757-9219



DATE: September 9, 2004

Timothy Harris, Director of Staff Services

FROM: Gabriela Vidal, Safety and Traffic Branch Manager

Mandatory Traffic Control Supervisor Training
Policy Memo 22

Mandatory Traffic Control Supervisor Training

September, 2004

The CDOT is always striving to improve work zone safety. Managements philosophy is, "That employees and contractors shall receive detailed training on Traffic Control Supervision so all parties involved in the construction of projects understand and utilize the best practices and procedures when setting up, working in and taking down work zones."

Note: This policy does not change the certification requirements for the TCS or other personnel that are presently required to be certified.

Definitions

- ☐ ATSSA – American Traffic Safety Services Association
- ☐ CCA – Colorado Contractor's Association
- ☐ Certificate of Achievement or Completion – The Certificate issued by CCA upon completing the 2-day Traffic Control Supervisor (TCS) training and passing the test. The Certificate of Achievement or Completion from CCA will serve as written proof from CCA that a passing score was achieved on the Traffic Control Supervisor Exam. The 1-day Traffic Control Technician (TCT) along with the 2-day Traffic Control Supervisor (TCS) training provided by ATSSA may be substituted. Written proof from ATSSA that an eighty percent or higher score was achieved on both the Traffic Control Technician and Traffic Control Supervisor Exam is required.

CDOT Personnel

In order to achieve the goal of improving work zone safety, Safety and Traffic Branch is utilizing 402 Roadway Safety Program funds to provide a 2-day Traffic Control Supervisor class for CDOT employees. The following CDOT individuals must obtain a **Certificate of Achievement or Completion** by July of 2006:

- ☐ CDOT personnel that work on construction projects, including maintenance personnel and Resident Engineers.
- ☐ CDOT new hires that work on construction projects need to complete the training within 12 months.

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After obtaining their supervisor's permission, an individual can register for a regularly scheduled CCA class by returning the attached registration form to CCA at the fax number indicated on the registration form. If the Region wishes to have a class in the Region then they need to establish a point of contact and have that person contact Terry Kish of CCA at 303-290-6611. See the attached announcement



Contractor Superintendents

By July 1, 2005, all Contractor Superintendents must obtain a Certificate of Achievement or Completion. Contractor personnel will need to arrange for their own training through either CCA or ATSSA.

All projects that have bids opened after July 1, 2005 will include a Project Special Specification, which will require the Contractor's Superintendent to have the Certification of Completion.

Continuing Training and Specifications

Continuing Training Requirements-

Once every three years a refresher course of 4-8 hours in length must be taken. The Refresher course is yet to be developed.

If there are questions relating to training please contact Dwayne Wilkinson @ 303-512-5134.

Specifications that must be used:

The Project Special Specification that will require the Contractor's Superintendent to have the Certification of Completion for the two day TCS course will be posted on the following web site prior to June 1, 2005.

http://www.dot.state.co.us/S_Standards/specs_1999/special_provisions_1999.html

If there are questions regarding the specifications please contact K.C. Matthews at 303-757-9543.

Since these Specifications may undergo change through use, it is suggested that the link above be used at the time Plans are finalized.

I Concur

Craig S. Sauer
Chief Engineer

10/12/04
Date

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COLORADO DEPARTMENT OF TRANSPORTATION		<input type="checkbox"/> POLICY DIRECTIVE <input checked="" type="checkbox"/> PROCEDURAL DIRECTIVE
Subject: Personal Protective Equipment Use		Number: 80.1
Effective: 11-01-2009	Supersedes: 06-03-04	Originating Office: Office of Transportation Safety (OTS)

PURPOSE

This document provides a procedure for the use of personal protective equipment by all CDOT personnel.

AUTHORITY

Executive Director
Governor's Executive Order DO 138 89 (Safety in the Workplace)
Policy Directive 80.0, Occupational Safety & Health

APPLICABILITY

This procedural directive applies to all CDOT employees. If CDOT cannot provide the required Personal Protective Equipment (PPE), and an employee chooses to purchase their own PPE, it must be coordinated and approved through the Region Safety Officer.

DEFINITIONS

ANSI—American National Standards Institute is a standards promulgating organization.

ASTM—American Society for Testing Materials.

Eye/face protection—Equipment designed to protect the eyes and face from injury due to flying objects and chemical sprays. Eye and face protection equipment shall comply with ANSI Z87.1-2003 (R1999), "Standard for Occupational and Educational Eye and Face Protection".

Fall protection—Equipment designed to protect the wearer from falling to the ground when working at heights of 6 feet or more above the ground/floor level. Fall protection equipment shall comply with ANSI 1264.1 2007 (R1999).

Foot protection—Equipment designed to prevent or minimize foot injury resulting from heavy object impact and sharp object puncture. Foot protection shall meet ASTM F2413-05 M/I/75/C/75 standard for industrial foot protection.

Hand protection—Gloves and hand-wear designed to protect the wearer from hand injury. Hand protection shall meet ANSI/ISEA 105-2000 standard for industrial hand protection.

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Head protection—Headwear designed to protect the wearer from falling and flying objects, and electrical contact that could injure the head. Head protection shall comply with ANSI Z89.1-2003, “American National Standard for Personnel Protection-Protective Headwear for Industrial Workers-Requirements”.

Hearing protection—Devices designed to protect the worker’s hearing from damaging noise produced by explosives, machinery and equipment by attenuating the sound entering the ear channel. These devices include earplugs, earmuffs, etc.

High-Visibility Safety Apparel—Personal protective safety clothing intended to provide conspicuity during daytime and nighttime usage, which meets ANSI/ISEA 107-2004 Standard for High-Visibility Safety Apparel.

- Performance Class 1—217 square inches of background material and 155 square inches of retro-reflective materials. Minimum width of retro-reflective material is 1 inch.
- Performance Class 2—775 square inches of background material and 201 square inches of retro-reflective materials. Minimum width of retro-reflective material is 1.375 inches.
- Performance Class 3—1,240 square inches of background material and 310 square inches of retro-reflective materials. Minimum width of retro-reflective is 2 inches.
- Performance Class E—465 square inches of background material and 108 square inches of retro-reflective materials. Minimum width of retro-reflective is 2 inches.
- Headwear—78 square inches of background material and 10 square inches of retro-reflective materials. No minimum on width of the materials.
- **NOTE:** A Performance Class 2 or Performance Class 3 vest worn with a Performance Class E pant will equal a Performance Class 3 Ensemble.

ISEA— International Safety Equipment Association

Mandatory PPE—Required protective equipment for all highway and construction related activities, e.g. safety vest, foot protection, CDOT hardhat, safety glasses, work gloves, and hearing protection.

NIOSH—National Institute of Occupational Safety and Health

PPE—Personal Protective Equipment

Protective clothing—Clothing designed to shield the wearer from cold, heat, chemicals, and other natural and manmade environments.

Respiratory protection—Equipment designed to protect the worker from the hazards of respiratory contaminants. Respiratory protection devices shall comply with ANSI Z88.2-1992 standard for respiratory protection, and must be NIOSH approved.

Special Protective Equipment—Protective equipment used in specific/special situations, e.g. avalanche control, explosive handling, confined-space operations, herbicide application, bucket trucks, etc.

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Visitor—All non-CDOT employees and non-contract personnel, and all CDOT employees and contract personnel visiting construction and maintenance areas to attend meetings; for taking official tours; or incidental/casual construction and maintenance project stop-bys

RESPONSIBILITIES

Management Responsibility

Management must ensure that all safety policies and procedures are followed by all CDOT employees, and to take appropriate actions when policy and procedure violations occur. Region Safety Leadership will insure that training is made available to all region supervisors and employees with respect to the proper wearing and use of personal protective equipment (PPE), and the recognition and avoidance of workplace hazards.

Supervisor Responsibility

Each supervisor shall ensure employees are wearing the appropriate personal protective equipment for the operations and situations encountered by the employee to reduce the risk of injury, and to promote a safer working environment for the employee. Each Supervisor shall instruct their employees in the recognition and avoidance of work related hazards, and in safety regulations applicable to the work environment. The supervisor will provide training to their employees in the proper wearing and use of personal protective equipment. The supervisor will advise employees of enforcement actions applicable to PPE noncompliance, and shall document and report violations of this procedural directive.

Employee Responsibility

Each employee is required to wear the mandated personal protective equipment specified for the work activity being performed. Each employee shall be given a copy of this directive to sign after being instructed in the use of the personal protective equipment by his or her immediate supervisor.

ACCOUNTABILITY

All CDOT employees shall comply with safety standards, rules and regulations designed to protect their safety and health in the work place. Employees, who willfully fail to obey safety rules and regulations, observe and follow procedural directive, memoranda, bulletins or other safety related instructions pertaining to safe work practices, shall be subject to corrective or disciplinary actions as provided by the State Department of Personnel Rules and Regulations.

Safety Violations and Worker's Comp

When an employee suffers a personal injury or illness due to the employee's willful failure to properly wear or use the personal protective equipment issued by CDOT, as required by this directive, or by the employee's willful failure to obey any reasonable safety rules or directives adopted and posted by CDOT, such failure may reduce any injury compensation.

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BASIC SAFETY EQUIPMENT

Available Safety Equipment

These are personal protective equipment items available to employees by CDOT:

- Hardhat
- Retro-reflective safety vest
- Retro-reflective safety pant
- Retro-reflective Arm/Leg bands
- Retro-reflective Gators
- Safety glasses
- Safety goggles
- Hearing protection
- Safety boots
- Protective clothing
- Respirators
- Gloves

The Supervisor, Branches and Regions should order and provide other personal protective equipment required to provide a safe working environment for CDOT employees. Contact the CDOT Safety Office to ensure ordered safety items meet current safety standards and specifications.

Visitors

CDOT shall provide an orange hardhat, and appropriate high-visibility apparel to all those visiting CDOT operations within the right-of-way, or in other locations presenting recognized safety hazards.

Vehicle and Equipment Operation Seatbelt Usage

All operators and passengers in CDOT or personal automobiles traveling on CDOT business shall utilize and wear the vehicles personal restraint system (seatbelt and shoulder harness). All equipment operators and passengers shall utilize and wear the factory installed, or CDOT retrofitted, operator restraint system when operating any equipment. No passengers shall ride on equipment unless, (1) the equipment is designed for passengers, and (2) the equipment has factory installed or CDOT retrofitted passenger restraint devices.

CDOT SAFETY REGULATIONS GOVERNING THE USE OF PERSONAL PROTECTIVE EQUIPMENT

HEAD PROTECTION

CDOT hardhats shall comply with ANSI Z89.1-2003, "American National Standard for Personnel Protection-Protective Headwear for Industrial Workers-Requirements". Hardhats shall be issued to and worn by all

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employees when their job tasks require them to work outside, on construction sites, or while operating mechanized equipment, e.g. forklifts, loaders, pavers, etc., and in all situations where the potential for head injury from falling objects and overhead obstructions exist. The wearing of a hardhat is optional when operating mechanized equipment constructed with a completely enclosed cab system with factory-installed roll over protection (ROP). There is no requirement to wear the hard hat when traveling inside a vehicle or when inside a building, unless the indoor work situation presents a hazard from falling objects or overhead obstructions.

HIGH-VISIBILITY OUTER GARMENTS

All safety garments worn on CDOT projects shall comply with ANSI/ISEA 107-2004 Standard for High-Visibility Safety Apparel. For **daytime operations**, all CDOT employees and contractors shall wear, at a minimum, ANSI/ISEA Performance Class 2 high-visibility safety garments (Figure 1 in Appendix) while working within the right-of-way, on construction projects, and in any area where they might be exposed to vehicular traffic. For **nighttime operations**, all CDOT personnel and their contractors will wear appropriate ANSI/ISEA Performance Class 3 Ensemble (Figure 2 in Appendix), or a Performance Class 3 vest (Figure 3 in Appendix). Nighttime operations is defined as any work that occurs from "Dusk till Dawn".

EYE AND FACE PROTECTION

CDOT issued eye and face protective equipment shall comply with ANSI Z87.1-2003 (R1999), "Standard for Occupational and Educational Eye and Face Protection". All employees shall wear eye and/or face protection when performing tasks that present a potential eye or face injury hazard from physical activities, chemical, grinding and sanding tasks, spray painting, or radiation agents. Employees shall wear both safety/chemical goggles and face shield when working with chemicals, since safety goggles alone are not sufficient protection against chemical splashes.

HEARING PROTECTION

Hearing protection devices are provided as part of an overall hearing conservation program. CDOT issued hearing conservation devices shall be worn by all employees working in areas where machines or operations present potential hearing damage caused by noise exposure, which exceed 85 decibels on average in an 8 hour period. Traffic noise on city streets or construction projects exceeds the 85 db threshold. All employees engaged in blasting or avalanche control operations shall wear the appropriate hearing protection. Supervisors should contact the CDOT Occupational Safety Office when a belief that noise levels in your work area(s) are exposing employees to excessive noise levels.

RESPIRATORY PROTECTION

CDOT issued respiratory protective devices shall comply with ANSI Z88.2-1992 standard for respiratory protection, and must be approved by NIOSH. All employees shall wear the appropriate respiratory protection where an exposure to respiratory contaminants is likely to have adverse effects on the health of the employee. Welding, vehicle painting, sanding and grinding of painted materials, are examples of activities that may produce contaminants harmful to the employee's health. Beards and large mustache will decrease the effectiveness of certain respirators by preventing the formation of a tight seal around the face. When this situation occurs, an appropriate respirator will be provided to the employee. When an alternative respiratory protection device fails to protect the employee, the employee will either reduce the quantity of facial hair, or be

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reassigned to other duties. Employees shall *only* wear respiratory protection after medical approval, proper fitting of respirator, and the employee obtains training on the limitations, care and operation of the respirator.

FOOT PROTECTION

CDOT Protective Footwear must meet or exceed ASTM F2413-05 M/I/75/C/75 for safety footwear. Construction will be a work boot style, made of leather or other suitable material, have a minimum of a 6" upper above the ankle, be a lace-up type for ankle support, have a steel or composite toe protection, have a slip resistant sole, and can be insulated or non-insulated. Exceptions to these requirements will be made on a case-by-case basis. Such exceptions may include slip-on type boots for employees classified as welders and employees with a documented medical condition requiring special footwear. CDOT will provide safety footwear to those employees in occupational classes requiring such equipment. Permanent and permanent part-time employees will be provided protective footwear. Temporary employees will not be provided protective footwear. All CDOT employees working in field assignments or have supervisor approval shall wear appropriate ASTM compliant protective footwear. These assignments include working in storerooms, highway maintenance activities, construction activities, mechanics, or any situation where equipment operations or the movement or lifting of heavy materials could cause injury to the feet. Visitors to construction sites are exempt from wearing safety boots, unless the wearing of safety boots is required by the company safety policy or as a condition to entering the worksite. Employees shall not wear inappropriate footwear in any location where the potential exists for foot and toe injury, e.g. tennis shoes, sandals, sneakers, clogs, etc.

HAND PROTECTION

CDOT issued protective gloves shall meet ANSI/ISEA 105-2000 standard for industrial hand protection. All employees shall wear hand protection when performing any activity that may cause injury to the hands.

SAFETY BELTS, LIFELINES, AND LANYARDS

CDOT issued safety belts, lifelines, and lanyards shall comply with ANSI Z359.1-2007 (R1999). All employees shall wear fall protection when working at elevations 6 feet or greater from the floor or ground level, e.g. bucket vehicles, bridge activities, roof repairs, man-lifts, scaffolds, formwork, etc.

Exceptions:

Working on vehicles or equipment at heights exceeding 6-feet will not require the use of fall protection where such use would be impractical or would present a greater danger to the employee. Working on ladders is also excluded from the fall protection requirement.

LIFE JACKET OR BUOYANT WORK VESTS

United States Coast Guard (USCG) approved personal flotation devices shall be worn by CDOT employees working over or near water where the risk of drowning exists. USCG approval is pursuant to 46 CFR Part 160, Subpart Q, Coast Guard Lifesaving Equipment Specifications. Personal flotation devices (PFD) are classified by type. CDOT will provide Type I PFD, which provides the most buoyancy. It is effective for all waters.

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especially open, rough, or remote waters where rescue may be delayed. It is designed to turn most unconscious wearers in the water to a face-up position.

SPECIAL PROTECTIVE CLOTHING OR PROTECTIVE DEVICES

The Supervisor, Branches and Regions should order and provide other personal protective equipment required to provide a safe working environment for CDOT employees as the need arises.

TRAINING REQUIREMENTS

All CDOT employees will receive training in the proper usage, care and storage of all personal protective equipment.

IMPLEMENTATION

All divisions and offices of the CDOT shall implement this procedural directive immediately.

REVIEW DATE

This procedural directive shall be reviewed before October 2014 or every five years.

SIGNATURES



11/01/2009

Executive Director Signature

Date

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Employee's Receipt of Procedural Directive 80.1

Personal Protective Equipment

"I have read and I understand the CDOT Procedural Directive 80.1 on Personal Protective Equipment use. I have been given an opportunity to discuss this policy with my supervisor."

Employee Signature

Date

Supervisor Signature

Date

cc: Employee
Supervisor
Employee's Personal History Jacket

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APPENDIX



Figure 1
Performance Class 2 Vest



Figure 2
Performance Class 3
Ensemble



Figure 3
Performance Class 3 Vest

Sample B: Washington DOT Scope of Work for Statewide On Call Construction Management and Inspection Services, Change Order Management and Scheduling

Summary: The sample Washington DOT Scope of Work was developed to outline the required services related to on-call construction management and construction inspection, change order for any project in the State of Washington. The general outline of the scope of work includes the following:

1. General Scope of Work
 - a. Construction Management Services
 - b. Construction Inspection Services
 - c. Scheduling Services
 - d. Change Orders
 - e. Consultant Project Management
2. State Provided Services
3. Premium Overtime and Other Non-Standard Schedules
4. Meeting Notice Requirements
5. Long Term Field Personnel
6. Materials Tester Qualifications Process
7. Other Items

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Exhibit A: Scope of Work 2012 Statewide On Call Construction Management and Inspection Services, Change Order Management and Scheduling Agreement Y-XXXX

A. General Scope of Work

The work under this AGREEMENT shall consist of performing services related to On-Call Construction Management and Construction Inspection Services, Change Order Management and Scheduling as herein defined and necessary to accomplish individual tasks ("task orders") issued by the STATE. The scope of this AGREEMENT includes work which may support either Design Bid Build (DBB) or Design Build (DB) contracting methods.

Services under this AGREEMENT may be requested for any region, and take place anywhere in the State of Washington. Consistent with performance based contracting methodologies and the State Administrative and Accounting Manual (SAAM), a "second tier" competitive process may be employed prior to execution of a task order. See Exhibit A, Attachment 1 for "second tier" selection procedures (NOT ATTACHED TO THE ADVERTISEMENT VERSION OF SCOPE).

Note: For all descriptions of services below, the DB specific services are noted as they vary from DBB services. All other services apply to both DBB and DB.

The CONSULTANT shall furnish all services and labor necessary to accomplish these tasks, and shall provide all materials, supplies, equipment, and incidentals, except as designated elsewhere in the AGREEMENT, necessary to prepare and deliver to the STATE the construction management and/or construction inspection services and/or other related deliverable item(s) requested by the STATE. It is noted that STATE construction may occur during daylight hours, nighttime hours, or weekend hours, or any combination thereof, and schedules for personnel will be discussed on a task order by task order basis.

The STATE is not obligated to assign any specific number of tasks to the CONSULTANT, and the STATE'S and CONSULTANT'S obligations hereunder are limited to tasks assigned in writing. The STATE may require the CONSULTANT to perform all work on a project, or provide individuals to supplement existing STATE teams. Task orders may include, but are not limited to:

A.1 Construction Management Services

Construction management services are performed by licensed engineers who administer a project office covering one or more transportation construction projects. The following equivalent STATE service levels are provided for reference only: Transportation Engineer 4 (Assistant Project Engineer) and Transportation Engineer 5 (Project Engineer). Professional Engineer licenses are required for both of these levels and equivalents. For DB contracts, it is desirable for these levels of Construction Management Services to have DB experience.

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DBB and DB services may include but are not limited to:

- Supervise, offer supervisory support and manage engineers and engineering technicians responsible for administering multi-million dollar transportation construction projects.
- DBB: Per the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, Section 1-05.1, Authority of the Engineer, the CONSULTANT, as appropriate, shall assume the authority of the engineer as outlined and as referred to in any task order documents and in conformance with the Washington State Department of Transportation (WSDOT) Construction Manual M41-01, Section 1-2.2, Administration, Project Engineer's Relationship and Responsibilities.
- DB: Refer to Chapter 1, Section 1-05.1, of WSDOT's DB Request for Proposal for definitions of the Authority of the Engineer.
- DB: The duties at the Transportation Engineer 4 level may be supplemented to include Design Manager. This position reports directly to the Project Engineer, and is responsible for overseeing the DB's design effort and coordination of WSDOT design reviews.
- Manage and administer construction contract changes in accordance with the contract, and STATE policies and procedures.
- Apply policies, procedures, guidelines, standards and regulations, including environmental regulations.
- Provide innovative leadership and management for traffic control, personnel resource management and budget constraints.
- Develop work load projections, and organize staffing for multiple shifts and changing workloads.
- Manage the construction budgets and authorize monthly payments to the contractor(s).
- Communicate with internal and external customers, STATE management, property owners, and stakeholders, as defined in the specific task orders.
- Monitor the contractor's compliance with the plans and specifications, and organize and plan the work of CONSULTANT and/or STATE personnel as needed to anticipate and avoid problems, and fulfill contract obligations.
- Acquire all project documents from the contractor and other sources for all projects. Maintain organized project records of all documents such that documentation requirements as outlined in the WSDOT Construction Manual M41-01 are met for the project, including any federal documentation requirements for federally funded projects.
- Monitor contractor operations such that the CONSULTANT and STATE crews and the traveling public are protected.
- Review and comment on contractor schedules.
- Provide direction on issues that arise within established authority levels of the position.
- Other related services as requested by the STATE.

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A.2 Construction Inspection Services

Construction inspection services are performed by personnel who assist in various ways in administering one or more transportation construction projects. The following equivalent STATE service levels are provided for reference only: Transportation Engineer 3 (Chief Inspector, Office Engineer, Environmental Compliance Manager), Transportation Engineer 2 (Materials Engineer, Inspectors, Assistant Office Engineer, Survey Party Chief, Environmental Compliance Inspector), Transportation Engineer 1 / Transportation Technician 3 (Assistant Inspectors, Office Support, Materials), and Transportation Technician 2 and Transportation Technician 1 (materials testers, inspection aides, documentation, traffic control, other duties). Professional Engineer licenses are not required for these levels or their equivalents, though are considered desirable for the top two levels or equivalents. Please see Section E below for an understanding of what will be required for those staff who will be doing materials testing.

DBB and DB services may include but are not limited to:

Chief Inspectors

- DBB: Field assistance for the Project Engineer, supervising all phases of inspection on various types of highway construction projects.
- DB: Provide assistance to the Project Engineer, ensuring that the DB contractor fulfills the requirements outlined in WSDOT's DB Request for Proposal. This position provides oversight and verification of the DB contractor's work, for both design and construction.
- Assist with field design modifications and clarify contractor questions on construction projects.
- Review pay notes.
- DB: Ensure DB contractor is providing accurate and appropriate justification for contractor payments, as outlined in WSDOT's DB Request for Proposal.
- Full supervision of CONSULTANT and STATE field staff as appropriate.
- Provide assistance in coordinating construction impacts with Regional Traffic Section.
- Respond to questions from property owners and the public.
- Monitor contractor operations such that the CONSULTANT and STATE crews and the traveling public are protected.
- Train subordinates in all phases of project inspection.
- Provide Environmental Compliance services on complex projects, including ensuring permits and regulations are followed, BMPs are proper and in place, documentation is appropriate and environmental documents are updated during project progress.
- Supervise Environmental Compliance inspectors and review documentation including pay notes.

Office Engineer

- Prepares Change Orders and cost estimates.
- Supervises office staff.
- Supervises contract documentation requirements.
- Supervises contractor payment processing.

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- DB: Works with DB contractor and STATE staff to ensure the DB contractor provides required project documentation in a timely manner for both design and construction activities.
- Helps ensure timely project closeout.

Materials Engineer

- Ensure material used in construction projects meets construction requirements by processing contractor's requests for approval, analyzing field test data, and resolving materials documentation deficiencies at the end of construction.
- DB: See Chapter 2, Section 2.25 of DB Request for Proposal specific to the project for materials to be tested and documented by WSDOT. The DB contractor is responsible for quality control and quality assurance on all other aspects of materials testing work. For materials not reserved to WSDOT testing, provide quality verification functions and guidance to the DB contractor in interpreting WSDOT documentation requirements.
- Supervise staff performing materials testing and documentation.

Other Assisting Staff

- Perform tests on materials used for construction per the WSDOT Construction Manual, M41-01. Must be STATE qualified to perform these tests. Qualification testing will be provided to the staff personnel when task is under negotiation. See Section E below titled "Materials Tester Qualification Process." The STATE will not provide training. Materials testers must be available to meet required testing frequency of the project assigned. In addition, materials testers must be able to track quantities of materials to ensure testing is done at the required intervals. (Note: even though DB contractors are responsible for the majority of materials testing, for those items which are reserved to WSDOT, all requirements remain in effect.)
- Prepare calculations and notes for monthly payments, or assist in such work.
- DB: Assist in preparing the required justification for making DB contractor payments.
- Prepare cost estimates, or assists in such work.
- Prepare all documents necessary for contract change orders.
- Process Force Account payments.
- Certification as Traffic Control Supervisor. Traffic Control Supervisors must have current certification as Traffic Control Supervisors. Current documentation will be checked by the STATE prior to any authorization of the CONSULTANT services. The STATE will not provide training. (TCS is not typically a STATE position under DB contracts.)
- Perform traffic control duties as requested. Traffic control personnel must have a current Washington State flagging card. Current documentation will be checked by the STATE prior to any authorization of the CONSULTANT services. The STATE will not provided training.
- Act as assistant inspector under the direction of the Chief Inspector.
- Act as Environmental Compliance inspector, including ensuring permits and regulations are followed, BMPs are proper and in place, documentation is appropriate, pay notes are issued, and environmental documents are updated during project progress.

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- DB: Provide quality audits and verification under the direction of the Chief Inspector and in accordance with the Quality Management Plan in Chapter 2, WSDOT DB Request for Proposal for the specific project. Fill out audit and non-conformance reports as required and input audit information into WSDOT databases as required.
- Provide survey party members if necessary for construction projects.
- Provide basic assistance in ticket taking, survey crew work, materials testing, and vehicles weighing at scales.
- Assist in preparation of project documentation.
- Other related work, as needed by the STATE.

A.3 Scheduling Services

Construction scheduling services are performed by personnel knowledgeable in complex construction activities and experienced with project control software necessary to assist the STATE in review of the contractor's schedule. The following equivalent STATE service levels are provided for reference only: Transportation Engineer 3 (Construction Scheduler), Transportation Engineer 2 (Assistant Construction Scheduler), Transportation Engineer 1 / Transportation Technician 3 (Office Support), and Transportation Technician 2 and Transportation Technician 1 (documentation, other duties). Professional Engineer licenses are not required for these levels or their equivalents, though are considered desirable for the top two levels or equivalents. Some construction schedule development for design (PS&E) may be requested during final PS&E.

DBB and DB services may include but are not limited to:

- Provide scheduling services to develop the STATE's version of the contractor's schedule, providing impact delay and time impact analyses, reviewing the contractor's schedule and/or other scheduling (development and maintenance of schedules) as needed using computer based scheduling program(s).
- DBB: Provide scheduling services as part of final PS&E to develop the STATE's version of the potential contractor's schedule for purposes of determining the critical path and working days.
- Review and provide comments as needed on contractor's initial CPM schedule and any subsequent re-submittals to ensure completeness, a sufficient level of detail to effectively manage the work, technical accuracy and fulfillment of contract special provisions.
- Provide project controls (scheduling) training as requested by the Project Engineer.
- Other related work, as needed by the STATE.

A.4. Change Orders

The CONSULTANT may be requested to assist the STATE in Change Order management, including documentation, review and processing documents related to Change Orders. Change Orders are often written at the Transportation Engineer 2 and equivalent level, with review and processing at higher levels.

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A.5. CONSULTANT Project Management

Project management for the purposes of this AGREEMENT consist of work related to:

- Invoicing to the STATE
- Progress reports with the invoices
- Work scheduling of CONSULTANT personnel in STATE offices
- Subconsultant management
- Project paper management and documentation

Payment for this aspect of work will be limited to 10% of the total amount authorized in writing unless otherwise negotiated.

B. STATE Provided Services

The STATE will provide for the CONSULTANT, as appropriate:

- A review of the STATE documentation flow necessary to track a construction project.
- Access to STATE programs as needed to complete the work.
- DBB: As needed, the CONSULTANT may be requested to do their work in a STATE office where access to STATE programs and project information is readily available. This item will be subject to negotiation based on what equipment the CONSULTANT needs to use and what the CONSULTANT has available (examples: field computer, other items) as well as various other parameters for this assignment. See Field Personnel section below for long term full time assignments.
- DB: The CONSULTANT may be assigned to a co-location office located close to the project and which includes both DB personnel and STATE project management personnel. The co-location requirements are defined in the WSDOT DB Request for Proposal for the specific project, and will be part of the negotiations for the specific task order. See Field Personnel section below for long term full time assignments.

C. Premium Overtime and Other Non-Standard Schedules

Many projects are completed using overtime and/or non-standard schedules. If the STATE deems it in its interest for the CONSULTANT to perform work on premium overtime, shift premium, or other non-standard basis, it may authorize such action in the applicable Formal Task Order Documents, or in a subsequent authorization letter to the CONSULTANT. Premiums shall not be burdened with overhead and fee, and shall be shown separately on the invoices.

D. Meeting Notice Requirements

The CONSULTANT shall attend various project related meetings as discussed in Section III of the ORIGINAL AGREEMENT and as requested by the STATE. Task Orders will define proper meeting notice for each project. If the meeting is prior to development of a task order document, and the CONSULTANT is given Notice to Proceed, the STATE will follow up with a task order document within 24 hours.

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E. Long Term Field Personnel

Personnel provided under this AGREEMENT shall be provided at field rates unless specifically authorized by the STATE for work performed from the CONSULTANT's offices. Specifics will be defined by each Task Order.

F. Materials Tester Qualifications Process

The materials tester qualifications process includes the following:

- When requested by the STATE, provide training records and documentation indicating the CONSULTANT staff member's level of proficiency in the applicable materials test procedures requested by the STATE. The individual must also be in possession of a certificate of training and safe use of nuclear moisture/density gauges, and possess a valid thermo luminescent dosimeter.
- Document that the CONSULTANT staff member is capable of operating the following equipment:
 - a. Troxler 3430 and/or 3450 Nuclear Moisture/Density Gauge
 - b. Brovold Gyratory Compactor
 - c. Barnstead Thermoline Ignition Furnace
 - d. A manual or mechanical Sand Equivalency Shaker

Section 9 of the Construction Manual M41-01, available through the website at www.wsdot.wa.gov/fasc/engineeringpublications/manuals/construction.pdf, describes materials testing procedures and requirements for qualification. The CONSULTANT shall be responsible for training their staff in the various materials testing procedures. The STATE will qualify the CONSULTANT staff as follows:

- The STATE, when they request materials testing as part of the CONSULTANT services for a project, will review the documentation of training for the individual proposed by the CONSULTANT as a materials tester as noted above.
- If the STATE is satisfied that the individual is sufficiently trained in the performance of WSDOT test procedures, the STATE will contact the STATE's Regional Independent Assurance Inspection Office for an appointment for testing qualification. The STATE office will follow regional procedures to request the testing qualification for the CONSULTANT staff member.
- Qualification will consist of a closed book written examination, and observation by an Independent Assurance Inspector of the individual's ability to perform hands-on tests.
- If the CONSULTANT staff member fails a written and/or hands-on test, the staff member shall be refused work on the project. The CONSULTANT may or may not be offered the opportunity to offer a substitute staff member for qualification.
- If it is found that the CONSULTANT staff member is performing test procedures incorrectly or is misusing equipment, the CONSULTANT will be informed of the situation, and the staff member shall not continue to work on the task order.

G. Other Items

CONSULTANT staff will be required to provide their own vehicles in the field.

Sample C: Florida DOT Construction Engineering and Inspection Scope of Services

Summary: The sample Florida DOT Scope of Services was developed to describe and define the CEI services which are required for contract administration, inspection, and materials sampling and testing for construction projects. The general outline of the scope of services includes the following:

1. Purpose
2. Scope
3. Length of Services
4. Definitions
5. Items to be Furnished by the Department to the Consultant
6. Items Furnished by the Consultant
 - a. Department Documents
 - b. Office Automation
 - c. Field Office
 - d. Vehicles
 - e. Field Equipment
 - f. Licensing for Equipment Operations
7. Liaison Responsibility of the Consultant
8. Performance of the Consultant
9. Requirements of the Consultant
 - a. General
 - b. Survey Control
 - c. On-site Inspection
 - d. Sampling and Testing
 - e. Engineering Services
 - f. Geotechnical Engineering
10. Personnel
 - a. General Requirements
 - b. Personnel Qualifications
 - c. Staffing
11. Quality Assurance(QA) Program
 - a. Quality Assurance Plan
 - b. Quality Assurance Reviews
 - c. Quality Records
12. Certification of Final Estimates
 - a. Final Estimate and As-build Plans Submittal
 - b. Certification
 - c. Offer of Final Payment
13. Agreement Management
 - a. General
 - b. Invoicing Instructions
14. Other Services
15. Post Construction Claims Review

- 16. Contradictions
- 17. Third Party Beneficiary
- 18. Department Authority

SCOPE OF SERVICES
CONSTRUCTION ENGINEERING AND INSPECTION

1.0 PURPOSE:

This scope of services describes and defines the Construction Engineering and Inspection (CEI) services which are required for contract administration, inspection, and materials sampling and testing for the construction projects listed below.

2.0 SCOPE:

Provide services as defined in this Scope of Services, the referenced Department manuals, and procedures.

The projects for which the services are required are:

Financial Project IDs:
Descriptions:
County:

Exercise independent professional judgment in performing obligations and responsibilities under this Agreement. Pursuant to Section 4.1.4 of the Construction Project Administration Manual (CPAM), the authority of the Consultant's lead person, such as the Senior Project Engineer, and the Consultant's Project Administrator shall be identical to the Department's Resident Engineer and Project Administrator respectively and shall be interpreted as such.

Services provided by the Consultant shall comply with Department manuals, procedures, and memorandums in effect as of the date of execution of the Agreement unless otherwise directed in writing by the Department. Such Department manuals, procedures, and memorandums are found at the State Construction Office's website.

On a single Construction Contract, it is a conflict of interest for a professional firm to receive compensation from both the Department and the Contractor either directly or indirectly.

Other projects developing within the geographical area of _____ county (ies) may be added at the Department's discretion. The Consultant must perform to the satisfaction of the Department's representatives for consideration of additional CEI services.

3.0 LENGTH OF SERVICE:

The services for each Construction Contract shall begin upon written notification to proceed by the Department.

Track the execution of the Construction Contract such that the Consultant is given timely authorization to begin work. While no personnel shall be assigned until written notification by the Department has been issued, the Consultant shall be ready to assign personnel within two weeks of notification. For the duration of the project, coordinate closely with the Department and Contractor to minimize rescheduling of Consultant activities due to construction delays or changes in scheduling of Contractor activities.

For estimating purposes, the Consultant will be allowed an accumulation of thirty (30) calendar days to perform preliminary administrative services prior to the issuance of the Contractor's notice to proceed on the first project and thirty (30) calendar days to demobilize after final acceptance of the last Construction Contract.

The anticipated letting schedules and construction times for the projects are tabulated below:

Construction Contract Estimate			
Financial Project ID	Letting Date (Mo/Day/Yr)	Start Date (Mo/Day/Yr)	Duration (Days)

4.0 **DEFINITIONS:**

- A. Agreement: The Professional Services Agreement between the Department and the Consultant setting forth the obligations of the parties thereto, including but not limited to the performance of the work, furnishing of services, and the basis of payment.
- B. Contractor: The individual, firm, or company contracting with the Department for performance of work or furnishing of materials.
- C. Construction Contract: The written agreement between the Department and the Contractor setting forth the obligations of the parties thereto, including but not limited to the performance of the work, furnishing of labor and materials, and the basis of payment.
- D. Construction Project Manager: The Department employee assigned to manage the Construction Engineering and Inspection Contract and represent the Department during the performance of the services covered under this Agreement.
- E. Construction Training/Qualification Program (CTQP): The Department program for training and qualifying technicians in Aggregates, Asphalt, Concrete, Earthwork, and Final Estimates Administration. Program information is available at CTQP website.
- F. Consultant: The Consulting firm under contract to the Department for administration of Construction Engineering and Inspection services.
- G. Consultant Project Administrator: The employee assigned by the Consultant to be in charge of providing Construction Contract administration services for one or more Construction Projects.
- H. Consultant Senior Project Engineer: The Engineer assigned by the Consultant to be in charge of providing Construction Contract administration for one or more Construction Projects. This person may supervise other Consultant employees and act as the lead Engineer for the Consultant.
- I. District Construction Engineer: The administrative head of the District's Construction Offices.

- J. District Contract Compliance Manager: The administrative head of the District Contract Compliance Office.
- K. District Consultant CEI Manager: The Department employee assigned to administer the Consultant Construction Engineering and Inspection (CCEI) Program in the District.
- L. District Director of Transportation Operations: The Director of Construction, Maintenance, Traffic Operations, Materials, and Safety.
- M. District Final Estimates Manager: The administrative head of the District Final Estimates Office.
- N. District Professional Services Administrator: The Administrative Head of the Professional Services Office.
- O. District Secretary: The Chief Executive Officer in each of the Department's eight (8) Districts.
- P. Engineer of Record: The Engineer noted on the Construction plans as the responsible person for the design and preparation of the plans.
- Q. Operations Engineer: The Engineer assigned to a particular County or area to administer Construction and Maintenance Contracts for the Department.
- R. Public Information Office: The Department's office assigned to manage the Public Information Program.
- S. Resident Compliance Specialist: The employee assigned by the Consultant to oversee project specific compliance functions.
- T. Resident Engineer: The Engineer assigned to a particular County or area to administer Construction Contracts for the Department.

5.0 ITEMS TO BE FURNISHED BY THE DEPARTMENT TO THE CONSULTANT:

- A. The Department, on an as needed basis, will furnish the following Construction Contract documents for each project. These documents may be provided in either paper or electronic format.
 - 1. Construction Plans,
 - 2. Specification Package,
 - 3. Copy of the Executed Construction Contract, and
 - 4. Utility Agency's Approved Material List (if applicable).
- B. The Department will allow connection to the FDOT Network by the Consultant through either dialup communications, authorized Virtual Private Network (VPN) or approved leased lines. Appropriate approvals must be received from the Department prior to their use.

- C. The Department will furnish and support the software packages for SiteManager.

6.0 ITEMS FURNISHED BY THE CONSULTANT:

6.1 Department Documents:

All applicable Department documents referenced herein shall be a condition of this Agreement. All Department documents, directives, procedures, and standard forms are available through the Department's Internet website. Most items can be purchased through the following address. All others can be acquired through the District Office or on-line at the Department's website.

Florida Department of Transportation
Maps and Publication Sales
605 Suwannee Street, MS 12
Tallahassee, Florida 32399-0450
Telephone No. (850) 488-9220

<http://www.dot.state.fl.us/construction/>

6.2 Office Automation:

Provide all software and hardware necessary to efficiently and effectively carry out the responsibilities under this Agreement.

Provide each inspection staff with a laptop computer running SiteManager application through Citrix connection using a mobile broadband connection at the jobsite.

All computer coding shall be input by Consultant personnel using equipment furnished by them.

Ownership and possession of computer equipment and related software, which is provided by the Consultant, shall remain at all times with the Consultant. The Consultant shall retain responsibility for risk of loss or damage to said equipment during performance of this Agreement. Field office equipment should be maintained and operational at all times.

Current technical specifications for office automation can be viewed at:

<http://www.dot.state.fl.us/Construction/DesignBuild/ConsultantCEI/OfficeAutomation.shtm>

6.3 Field Office:

EDITOR'S COMMENT: Delete the following two paragraphs if the Contractor provides the Field Office.

Provide a field office with sufficient room and furnishings to effectively carry out their responsibilities under this Scope of Services. Field office shall be approved by the Department.

Field Office expenses will be compensated in accordance with Exhibit B, Method of Compensation.

EDITOR'S COMMENT: Delete the following two paragraphs if the Consultant provides the Field Office.

Engineer's Field Office will be included in the Construction Contract as a per day pay item. The Contractor shall obtain all necessary permits for setting up the field office and making connections to city, county or local facilities and the cost of such permits shall be included in the pay item for construction field office. The field office will be furnished and will meet the requirements of the Construction Contract.

Field Office expenses will be compensated in accordance with Exhibit B, Method of Compensation.

Optional

Provide a private office (minimum of 150 square feet) for the Construction Project Manager with office furniture, telephone and broadband internet access.

6.4 Vehicles:

Vehicles will be equipped with appropriate safety equipment and must be able to effectively carry out requirements of this Agreement. Vehicles shall have the name and phone number of the consulting firm visibly displayed on both sides of the vehicle.

6.5 Field Equipment:

Supply survey, inspection, and testing equipment essential to perform services under this Agreement; such equipment includes non-consumable and non-expendable items.

Hard hats shall have the name of the consulting firm visibly displayed.

Equipment described herein and expendable materials under this Agreement will remain the property of the Consultant and shall be removed at completion of the work.

Handling of nuclear density gauges shall be in compliance with their license.

Retain responsibility for risk of loss or damage to said equipment during performance of this Agreement. Field office equipment shall be maintained and in operational condition at all times.

6.6 Licensing for Equipment Operations:

Obtain proper licenses for equipment and personnel operating equipment when licenses are required. The license and supporting documents shall be available for verification by the Department, upon request.

Radioactive Materials License for use of Surface Moisture Density Gauges shall be obtained through the State of Florida Department of Health.

7.0 LIAISON RESPONSIBILITY OF THE CONSULTANT:

For the duration of the Agreement, keep the Department's Construction Project Manager in Responsible Charge informed of all significant activities, decisions, correspondence, reports, and other communications related to its responsibilities under this Agreement.

Facilitate communications between all parties (i.e. architectural, mechanical, materials, landscaping, local agencies, etc.) ensuring responses and resolutions are provided in a timely manner. Maintain accurate records to document the communication process.

Submit all administrative items relating to Invoice Approval, Personnel Approval, User IDs, Time Extensions, and Supplemental Amendments to the Construction Project Manager for review and approval.

8.0 PERFORMANCE OF THE CONSULTANT:

During the term of this Agreement and all Supplemental Amendments thereof, the Department will review various phases of Consultant operations, such as construction inspection, materials sampling and testing, and administrative activities, to determine compliance with this Agreement. Cooperate and assist Department representatives in conducting the reviews. If deficiencies are indicated, remedial action shall be implemented immediately. Department recommendations and Consultant responses/actions are to be properly documented by the Consultant. No additional compensation shall be allowed for remedial action taken by the Consultant to correct deficiencies. Remedial actions and required response times may include but are not necessarily limited to the following:

- A. Further subdivide assigned inspection responsibilities, reassign inspection personnel, or assign additional inspection personnel, within one week of notification.
- B. Immediately replace personnel whose performance has been determined by the Consultant and/or the Department to be inadequate.
- C. Immediately increase the frequency of monitoring and inspection activities in phases of work that are the Consultant's responsibility.
- D. Increase the scope and frequency of training of the Consultant personnel.

9.0 REQUIREMENTS OF THE CONSULTANT:

9.1 General:

It shall be the responsibility of the Consultant to administer, monitor, and inspect the Construction Contract such that the project is constructed in reasonable conformity with the plans, specifications, and special provisions for the Construction Contract.

Observe the Contractor's work to determine the progress and quality of work. Identify discrepancies, report significant discrepancies to the Department, and direct the Contractor to correct such observed discrepancies.

Pursuant to Section 337.11(8)(a), Florida Statutes, the Consultant is hereby designated by the Secretary of the Department to negotiate and approve Supplemental Agreements

within the thresholds established in the CPAM. Seek input from the Construction Project Manager relating to all Supplemental Agreement requests. Supplemental Agreements must be determined to be in accordance with Florida law by the Department prior to approval by the Consultant. For any Supplemental Agreement which exceeds the thresholds, prepare the Supplemental Agreement as a recommendation to the Department, which the Department may accept, modify or reject upon review. Consult with the Construction Project Manager as necessary and direct all issues, which exceed delegated authority to the Construction Project Manager for Department action or direction.

Inform the Construction Project Manager of any significant omissions, substitutions, defects, and deficiencies noted in the work of the Contractor and the corrective action that has been directed to be performed by the Contractor.

9.2 Survey Control:

Check or establish the survey control baseline(s) along with sufficient baseline control points and bench marks at appropriate intervals along the project in order to: (1) make and record measurements necessary to calculate and document quantities for pay items, (2) make and record pre-construction and final cross section surveys of the project site in those areas where earthwork (i.e., embankment, excavation, subsoil excavation, etc.) is part of the construction project, and (3) perform incidental engineering surveys.

Any questions or requests for “Waiver of Survey” should be directed to the District Final Estimates Manager.

9.3 On-site Inspection:

Monitor the Contractor's on-site construction activities and inspect materials entering into the work in accordance with the plans, specifications, and special provisions for the Construction Contract to determine that the projects are constructed in reasonable conformity with such documents. Maintain detailed accurate records of the Contractor's daily operations and of significant events that affect the work. The Department will monitor off-site activities and fabrication unless otherwise stipulated by this Agreement.

EDITOR'S COMMENT: Delete the following paragraph for construction contracts that do not require the construction of permanently submerged structural members.

Perform underwater bridge construction inspections of bridges with permanently submerged structural members in compliance with CPAM Section 10.6, Underwater Bridge Construction Inspection.

EDITOR'S COMMENT: Delete the following paragraph if construction contracts do not contain provisions for Witness and Hold Point Inspections.

Inspect the Construction Contract with Financial Project Numbers xxxxxxxx-x-52-xx in accordance with Article 5-9.1.1 of the Construction Contract Special Provisions as it pertains to the Witness Points and Hold Points specifications.

Monitor and inspect Contractor's Work Zone Traffic Control Plan and review modifications to the Work Zone Traffic Control Plan, including Alternate Work Zone Traffic Control Plan, in accordance with the Department's procedures. Consultant

employees performing such services shall be qualified in accordance with the Department's procedures.

9.4 Sampling and Testing:

Perform sampling and testing of component materials and completed work in accordance with the Construction Contract documents. The minimum sampling frequencies set out in the Department's Materials Sampling, Testing and Reporting Guide shall be met. In complying with the aforementioned guide, provide daily surveillance of the Contractor's Quality Control activities and perform the sampling and testing of materials and completed work items for verification and acceptance.

The Department will perform inspection and sampling of materials and components at locations remote from the project site and the Department will perform testing of materials normally done in a laboratory remote from the project site.

Determine the acceptability of all materials and completed work items on the basis of either test results or verification of a certification, certified mill analysis, DOT label, DOT stamp, etc.

The Department will monitor the effectiveness of the Consultant's testing procedures through observation and independent assurance testing.

Sampling, testing and laboratory methods shall be as required by the Department's Standard Specifications, Supplemental Specifications or as modified by the Special Provisions of the Construction Contract.

Documentation reports on sampling and testing performed by the Consultant shall be submitted during the same week that the construction work is done.

Transport samples to be tested in a Department laboratory to the appropriate laboratory or appropriate local FDOT facility.

Input verification testing information and data into the Department's database using written instructions provided by the Department.

9.5 Engineering Services:

Coordinate the Construction Contract administration activities of all parties other than the Contractor involved in completing the construction project. Notwithstanding the above, the Consultant is not liable to the Department for failure of such parties to follow written direction issued by the Consultant.

Services shall include maintaining the required level of surveillance of Contractor activities, interpreting plans, specifications, and special provisions for the Construction Contract. Maintain complete, accurate records of all activities and events relating to the project and properly document all project changes. The following services shall be performed:

- (1) Attend a pre-service meeting for the Agreement in accordance with CPAM. Provide appropriate staff to attend and participate in the pre-service meeting. At

the time of this meeting submit the FDOT Computer Security Access Request for use of FDOT Data Center Facilities and access to the Department's computer systems to the Construction Project Manager for approval.

- (2) Schedule and attend a Final Estimate informational meeting with the District Construction Final Estimates Office. Provide appropriate staff to attend and participate in this meeting.

EDITOR'S COMMENT: If EEO functions to be performed by IN-HOUSE FDOT, delete the following:

- (3) Schedule and attend a meeting with the District Compliance Manager prior to the Pre-construction Conference. The Resident Compliance Officer shall attend this meeting.

In most cases, the above will take two separate meetings based on experience and knowledge of the particular firm.

- (4) Schedule and attend SiteManager/EDMS informational meeting with the District Construction Office. Provide appropriate staff to attend and participate in this meeting.

Provide personnel proficient in the use of computers and scanner operation to input construction documents into an EDMS. This will require familiarity with the documents and guidelines posted on the Department's website for EDMS. Duties will include scanning, attributing and retrieving documents that are to be archived electronically.

- (5) Schedule and conduct a meeting with the District Construction Environmental Liaison prior to the Pre-construction conference and another meeting prior to project final acceptance. The purpose of these meetings is to discuss the required documentation, including as-builts, necessary for permit(s) compliance.
- (6) Verify that the Contractor is conducting inspections, preparing reports and monitoring all storm water pollution prevention measures associated with the project. For each project that requires the use of the NPDES General Permit, provide at least one inspector who has successfully completed the "Florida Stormwater, Erosion, and Sedimentation Control Training and Certification Program for Inspectors and Contractors". The Consultant's inspector will be familiar with the requirements set forth in the FEDERAL REGISTER, Vol. 57, No. 187, Friday, September 5, 1992, pages 4412 to 4435 "Final NPDES General Permits for Storm Water Discharges from Construction Sites" and the Department's guidelines.
- (7) Analyze the Contractor's schedule(s) (i.e. baseline(s), revised baseline(s), updates, as-built, etc.) for compliance with the contract documents. Elements including, but not limited to, completeness, logic, durations, activity, flow, milestone dates, concurrency, resource allotment, and delays will be reviewed. Verify the schedule conforms with the construction phasing and MOT sequences, including all contract modifications. Provide a written review of the schedule

identifying significant omissions, improbable or unreasonable activity durations, errors in logic, and any other concerns as detailed in CPAM.

- (8) Analyze problems that arise on a project and proposals submitted by the Contractor; work to resolve such issues, and process the necessary paperwork.
- (9) Monitor, inspect and document utility construction for conformance with Utility Agency's Standards and the Utility Agency's Approved Materials List. Facilitate coordination and communication between Utility Agency's representatives, Department's staff and Contractors executing the work. Identify potential utility conflicts and assist in the resolution of utility issues including Department and Local Government owned facilities.

Identify, review, and track progress of Joint Project Agreements, and/or other Department and utility agreements. Address work progress, track reimbursement activities, and address betterment and salvage determination. Prepare all necessary documentation to support reimbursement activities and betterment and salvage determination.

- (10) Produce reports, verify quantity calculations and field measure for payment purposes as needed to prevent delays in Contractor operations and to facilitate prompt processing of such information in order for the Department to make timely payment to the Contractor.
- (11) Prepare and make presentations for meetings and hearings before the Dispute Review Boards in connection with the project covered by this Agreement.

EDITOR'S COMMENT: If the Department is providing the RCCO, delete following two paragraphs:

- (12) Monitor each Contractor and Subcontractor's compliance with specifications and special provisions of the Construction Contract in regard to payment of predetermined wage rates in accordance with Department procedures.
- (13) Provide a Resident Compliance Specialist for surveillance of the Contractor's compliance with Construction Contract requirements. The Resident Compliance Specialist is responsible for reviewing, monitoring, evaluating and acting upon documentation required for Construction Contract compliance, and maintaining the appropriate files thereof. Typical areas of compliance responsibility include EEO Affirmative Actions for the prime contractor and subcontractor, DBE Affirmative Action, Contractor Formal Training, Payroll, and Subcontracts. The Resident Compliance Specialist must keep all related documents and correspondence accurate and up to date; attend all compliance reviews and furnish the complete project files for review; and assist the District Contract Compliance Manager as requested.

If the Department is not providing the RCCO, delete following paragraph:

- (14) The Department will provide the functions of the Resident Compliance Specialist. The Consultant shall perform the field interviews, provide work space and supplies for project compliance files.

If the Consultant is providing Public Information Services, delete the following paragraph:

- (15) The Department will provide Public Information Services.

EDITOR'S COMMENT: If the Department is providing Public Information Services, delete the following paragraph:

- (16) Provide Public Information Services and be proactive in keeping the community aware of the status and traffic impacts of the referenced project. With approval from the Department's designee, prepare and disseminate information to the public, elected officials and the media of any upcoming events, which will affect traffic flow. Produce and distribute all publications (letters, flyers, brochures and news releases) necessary for this contract. Prior to release, the Department's designee will approve all responses, letters, news releases and the like. Provide timely, professional responses to project inquiries including emails, telephone calls, etc. Coordinate general public information meetings, open houses, community meetings as directed by the Department's representatives. Notify Florida 511 of lane closures and detours and notify TeleAtlas of permanent roadway changes.

EDITOR'S COMMENT: Insert the following section only if a website is desired:

Maintain a website linked to the Department's website and provide current and accurate information. All web applications must meet the standards established in Section 508 of the Rehabilitation Act. The website must be capable of receiving e-mail inquiries regarding the project. The website may be continued for the duration of this contract.

- (17) Prepare and submit to the Construction Project Manager monthly, a Construction Status Reporting System (CSRS) report, in a format to be provided by the Department.
- (18) Video tape the pre-construction conditions throughout the project limits. Provide a digital photo log or video of project activities, with heavy emphasis on potential claim items/issues and on areas of real/potential public controversy.
- (19) Provide a digital camera for photographic documentation of pre-construction state and of noteworthy incidents or events during construction.

These photographs will be filed and maintained on the Consultant's computer using a Digital Photo Management system.

Photographs shall be taken the day prior to the start of construction and continue as needed throughout the project. Photographs shall be taken the days of Conditional, Partial and Final Acceptance.

EDITOR'S COMMENT: Select the following options that apply and/or delete the options that do not apply:

OPTION A:

Aerial photographs shall be taken prior to commencement and bi-monthly thereafter. Provide six aerial photographs per mile to reflect the construction operations and progress of the work. Photographs shall be clean, sharp, and clearly show details. Each frame shall allow for a 15% to 25% overlap. The shutter speed should be such that all motion is eliminated. Negatives shall be preserved by the aerial company for at least three years from final acceptance of the project. The name and date of the company that performed the work shall be on the back of all photographs. The photographs shall be reviewed by the Construction Project Manager.

OPTION B:

Provide visual documentation of the Project through the periodic collection of a set of panoramic digital photographs at predetermined stations throughout the project. Photographic locations should be located at intervals such that the digital photographs collectively portray the majority of the visible surfaces on the Project. The digital photographs should be taken with a frequency designed to reveal changes in the progress of the Project, which can be compared to other project data including daily reports of construction and scheduling updates. Photographic data files comprising each digital photograph are to be supplied together with an HTML (web page) based access and display system for viewing the photographs. Original photographic data files are to be supplied for archival purposes and comprise photographic data identical in form and content to that produced by the digital camera used to capture the image. Working photographic data files are to be supplied for everyday reference purposes and comprise copies of each original photographic data file, which have been processed to a reduced pixel and color resolution (size and clarity) for distribution via CD ROM and the Internet. The access and display system should be comprised of a series of HTML files (web pages) which allow a user to view each photographic data file at random, and in a sequence which simulates the visual experience of a viewer moving through the actual Project from one photographic station to the next. The original photographic data files, working photographic data files and access and display system are to be distributed on CD ROM and portable hard disk media. The working photographic data files and the access and display system should also be maintained on a server accessible via the Internet.

9.6 Geotechnical Engineering:

EDITOR'S COMMENT: Insert the following section only for Conventional Design-Bid-Build projects. Some Districts may perform part of these activities through the Materials office District wide contract or in-house personnel. Therefore some of these services may not need to be incorporated into the CEI contract.

(Conventional Design-Bid-Build Projects)

The prime Consultant may engage the services of a geotechnical subconsultant to perform some of the services indicated in this section. However, the prime Consultant will be responsible to the Department for the satisfactory performance and timeliness of these services.

The prime Consultant will be required to interact with the District Geotechnical Engineer (DGE) office and any geotechnical subconsultant assigned to the project by the DGE office under a District-wide contract. All references to the DGE in the following sections implicitly include the DGE and his/her delegated representative on the project, who may be the DGE office in-house personnel or a subconsultant working for the DGE office.

Become familiar with the existing site conditions and the contract documents. Observe and record the progress and quality of foundation work to determine that the foundations are constructed at the correct locations and elevations, identify discrepancies, and direct the Contractor to correct such observed discrepancies. Attend the Preconstruction Conference and/or special geotechnical meeting for the Construction Contract. All services under this section will be performed in accordance to FDOT Specification Section 455. Inspect and verify that the Contractor has performed the foundation work in accordance with applicable FDOT Specification Section 455 and other contract documents. Provide qualified Geotechnical Engineers and CTQP qualified inspectors in Drilled Shaft/Pile Driving/Auger Cast Pile inspection, relevant to the foundation type(s) required in the plans. Schedule meetings and facilitate communications between the Contractor and any Specialty Contractors, the CEI, and the DGE as needed. Observe and verify that all work is performed in accordance with the contract documents. Assure that any specialty work is completed as necessary to accomplish its intent.

The following geotechnical engineering services shall be performed:

1) Drilled Shafts:

- Process and review the Drilled Shaft Installation Plan in accordance with CPAM.
- Schedule a pre-drilled shaft installation meeting to review and discuss the drilled shaft installation procedures. Make sure that the Contractor's field superintendent, CEI's drilled shaft inspector(s), and the DGE are invited. Prepare and distribute meeting minutes to the attendees.
- Inspect installation of test holes (methods shafts), load test shafts, and production shafts and ensure they are constructed in accordance with the plans, specifications, and special provisions for the Construction Contract. Report to the DGE any problems observed during the installation of the test holes, deviations from the Drilled Shaft Installation Plan or contract documents, and construction quality issues associated with the Contractor's methods.
- If there are pilot holes in the project, advise the DGE on the pilot hole schedule. Verify the pilot hole locations. Inspect the performance of the pilot holes and complete the proper FDOT inspection form, describing accurately the soils/rocks encountered and corresponding depths, the results of field testing performed (Standard Penetration Test blow counts, Cone Penetration Tests, or other, if applicable) and the results of the rock coring performed (coring time, recovery and RQD).

- Analyze the load test data, pilot holes and any other available soils/rock data as required to establish final drilled shaft tip elevations and minimum rock socket lengths. Submit report(s) recommending production shaft tip elevations, minimum rock socket lengths and any other recommendations that may be required in the project (such as rock socket material definition and impact of permanent or temporary casing on the required minimum socket lengths) to the DGE for approval.
- Inspect the bottom of the shafts for cleanliness using manual soundings or shaft inspection device as required in the contract documents.
- Complete all necessary drilled shaft inspection forms and keep a log of all inspections made of the shafts. Observe the performance of any load tests and verify that the details are implemented as planned.
- Provide completed drilled shaft inspection forms for all production and test shaft installations to the DGE upon completion of the drilled shaft installation.
- When conditions occur which are different from those indicated on the plans, immediately report them to the Geotechnical Engineer of Record and the DGE. Recommend adjustments to the authorized depths as necessary to obtain the shaft capacity to the DGE for approval.
- Review the drilled shaft logs and the concrete placement logs to identify possible shaft integrity problems and potential causes. Communicate identified issues to the DGE.
- a) Hire a Specialty Engineer to perform non-destructive integrity testing of drilled shafts as required to estimate shaft uniformity and to detect possible shaft defects. Report results to the DGE.
- Evaluate problems encountered during construction, and coordinate with the DGE and the Contractor to resolve such problems, including possible withdrawing Drilled Shaft Installation Plan approval.

2) Piles:

- Process and review the Pile Installation Plan in accordance with CPAM.
- Perform preliminary Wave Equation Analyses to assess and provide comments regarding the suitability of hammer driving system(s) included in the Pile Installation Plan. Provide analyses results (estimated blow count ranges for the nominal bearing resistances, installation stresses etc.) to the DGE.
- Schedule a pre-pile installation meeting to review and discuss the pile installation procedures. Make sure the Contractor's field superintendent, CEI's pile inspectors, and the DGE are invited. Prepare and distribute meeting minutes to the attendees.
- Provide personnel proficient in operation of the PDA or EDC monitoring equipment required for the project, for data collection, interpretation and analysis. Utilize the most current version of equipment and software for dynamic testing and dynamic data analysis.
- Perform dynamic testing per the contract documents during initial driving and re-drives. Submit electronic Pile Driving Analyzer (PDA) and Embedded Data Collector (EDC) files upon completion of the test pile installation.
- Inspect and record the test pile driving process in accordance with CPAM.
- Perform signal matching analysis on test pile data for selected blows, using the latest software version. At a minimum, signal matching analysis shall be performed on initial drive data where required resistance is obtained below the

minimum tip elevation and on set-check data (if any). If requested in special circumstances, the end of drive signal matching analysis will be performed in the field upon completion of the drive; otherwise it shall be completed within 24 hours of driving the instrumented pile.

- Analyze the test data and available soils data as required to establish production pile lengths and driving criteria. The analysis must include signal matching analysis and wave equation calibration analysis to determine a pile driving-soil system model that will predict accurately driving resistance with stroke (or pressure) and blows per foot while matching transferred energy and dynamic stresses with the ones measured in the field. Submit preliminary report(s) recommending production pile lengths and driving criteria to the DGE for approval. The preliminary report shall include printed & plotted Signal Matching and Wave Equation Analysis outputs, and electronic files (Windows compatible) of all raw data obtained by the PDA and EDC equipment and the signal matching and wave equation analyses.
- Furnish final written letters, signed and sealed, for production pile lengths and the driving criteria in accordance with CPAM. When applicable, include recommendations to determine “firm bearing material”.
- Inspect the conditions of the piles prior to installation, including any pile splices.
- Observe and verify that concrete piles were properly supported during storage and handled with appropriate pick-up details per contract documents.
- Inspect the pile driving installation. Complete the FDOT pile driving logs.
- Observe the performance of any static or statnamic load tests and review the details are implemented as planned.
- Evaluate problems encountered during construction and coordinate with the DGE and the Contractor to resolve such problems, including possible additional testing and withdrawing the Pile Installation Plan.

3) Spread Footings:

- Observe construction of spread footing foundations and verify that they are founded at the required elevation and on the proper soil/rock material.
- Verify the Construction Plan requirements and the applicable specifications are followed throughout the spread footing construction.
- Evaluate problems encountered during construction and coordinate with the DGE and the Contractor to resolve such problems.

4) Auger Cast Piles for Sound Barrier Walls:

- Process and review the Auger Cast Pile Installation Plan in accordance with CPAM.
- Schedule a pre-pile installation meeting to go over the auger cast pile installation procedures. Make sure the Contractor’s field superintendent, CEI’s auger cast pile inspectors and the DGE are invited. Prepare and distribute minutes to the attendees.
- Observe installation of demonstration pile and production piles. Submit the demonstration pile records to the DGE. Work with the DGE to ensure that the letter of acceptance or recommendations of the production pile installation is issued in accordance with CPAM.

- Inspect and verify the requirements on the Construction Plans and applicable specifications are followed throughout the auger cast pile installation.
- Cast cylinders for grout strength testing in accordance with the specifications
- Complete the FDOT auger cast pile field installation logs and forward them to the DGE upon completion of the auger cast pile installation.
- Verify the quality control processes of the Auger Cast Pile Installation Plan are followed during construction.
- Examine the records and evaluate problems encountered during construction and coordinate with the DGE and the Contractor to resolve such problems, including possible withdrawing the Auger Cast Pile Installation Plan approval.

EDITOR'S COMMENT: Insert the following section only for Design-Build projects. Some Districts may perform part of these activities through the Materials office District wide contract or in-house personnel. Therefore some of these services may not need to be incorporated into the CEI contract.

(Design-Build Projects)

The prime Consultant may engage the services of a geotechnical subconsultant to perform some of the services indicated in this section. However, the prime Consultant will be responsible to the Department for the satisfactory performance and timeliness of these services.

The prime Consultant will be required to interact with the District Geotechnical Engineer (DGE) office and any geotechnical subconsultant assigned to the project by the DGE office under a District-wide contract. All references to the DGE in the following sections implicitly include the DGE and his/her delegated representative on the project, who may be the DGE office in-house personnel or a subconsultant working for the DGE office.

Become familiar with the existing site conditions and the contract documents. Observe and record the progress and quality of foundation work to determine that the foundations are constructed at the correct locations and elevations, identify discrepancies, and direct the Contractor to correct such observed discrepancies. Attend the Preconstruction Conference and/or special geotechnical meeting for the Construction Contract. All services under this section will be performed in accordance to FDOT Specification Section 455. Inspect and verify that the Contractor has performed the foundation work in accordance with applicable FDOT Specification Section 455 and other contract documents. Provide qualified Geotechnical Engineers and CTQP qualified inspectors in Drilled Shaft/Pile Driving/Auger Cast Pile inspection, relevant to the foundation type(s) required in the plans. Schedule meetings and facilitate communications between the Contractor and any Specialty Contractors, the CEI, and the DGE as needed. Observe and verify that all work is performed in accordance with the contract documents. Assure that any specialty work is completed as necessary to accomplish its intent.

The following geotechnical engineering services shall be performed:

1) Drilled Shafts:

- Forward the Drilled Shaft Installation Plan submitted by the Contractor to the DGE. Ensure the deadlines required by the contract documents to review this submittal are met.

- Review, reject or accept Contractor's Drilled Shaft Installation Plan for conformance with the contract documents of the project and the Release for Construction (RFC) plans. Incorporate the comments and recommendations provided by the DGE. Ensure that comments, rejection or acceptance letters are sent to the Contractor within the deadlines required by the contract documents.
- Schedule a pre-drilled shaft installation meeting to go over the drilled shaft installation procedures. Make sure the Contractor's field superintendent(s), CEI field representative(s), CTQP drilled shaft inspector(s) of the Geotechnical Foundation Designer of Record (GFDOR), and the DGE office, including DGE's subconsultants are invited. Prepare and distribute meeting minutes to the attendees within three (3) working days after the meeting.
- Observe construction of test holes, load test shafts, and production shafts. This includes review or verification testing of drilling slurry, core drilling and core logs, pilot hole drilling, and other procedures as required. Ensure that they are constructed in accordance with the RFC plans, applicable specifications, and other contract documents. Report to the DGE any problems and construction quality issues observed during the installation of drilled shafts within one (1) working day of completion of drilled shaft construction.
- Forward to the DGE the recommended production drilled shaft tip elevations and minimum rock socket lengths. Coordinate with the DGE to make sure the review is performed within the deadlines required by the Contract documents.
- Review the recommended production drilled shaft tip elevations and minimum rock socket lengths and provide comments to the DGE office for its concurrence.
- Observe and ensure that the shaft bottom is at the required elevation and is properly inspected for cleanliness using manual soundings or shaft inspection device as required in the contract documents.
- Review drilled shaft excavation logs and concrete placement records to identify possible shaft integrity problems and possible causes.
- Verify the requirements on the RFC plans, applicable specifications, and other contract documents are followed throughout drilled shaft construction.
- Forward all drilled shaft inspection forms to the DGE without delay to allow selection of CSL testing. Coordinate with the DGE in the selection of shafts for CSL or other integrity testing prior to certification submittal.
- Observe the performance of any load tests and verify that the details are implemented as planned.
- Verify the quality control processes of the Drilled Shaft Installation Plans are followed during construction.
- Evaluate problems encountered during construction and coordinate with the DGE and the Contractor to resolve such problems, including possible verification testing and withdrawing the Design-Build (DB) Firm's Drilled Shaft Installation Plan.
- Forward the Foundation Certification Packages to the DGE. Ensure these submittals are forwarded to the DGE timely so that their review can be performed within the deadlines required by the contract documents.
- Review certification packages submitted by the Contractor and coordinate with the DGE to submit rejection comments or verification testing requests on the certification packages to the DB Firm. Coordinate with the DGE to select appropriate shaft(s) for verification testing. Ensure the deadlines required by the contract documents for review are met

- Coordinate verification activities. Make sure the deadlines required by the contract documents are met.
- Perform verification testing (including integrity testing) following the process and time frame outlined in the Contract Documents.
- Ensure that deficiencies found by the verification program are resolved.

2) Piles:

- Forward the Pile Installation Plan submitted by the Contractor to the DGE.
- Review, reject or accept Contractor's Pile Installation Plan for conformance with the contract documents and the RFC plans. Incorporate the comments and recommendations provided by the DGE. Ensure that comments, rejection or acceptance letters are sent to the Contractor within the deadlines required by the contract documents.
- Schedule a pre-pile installation meeting to go over the pile installation procedures. Make sure the Contractor's field superintendent(s) and pile driving representative(s), CEI field representative(s), CTQP pile inspector(s) of the GFDOR, and the DGE office, including DGE's subconsultants, are invited. Prepare and distribute meeting minutes to the attendees within three (3) working days after the meeting.
- Observe installation of test piles and production piles and communicate any concerns to the DGE.
- Verify the requirements on the RFC plans, applicable specifications, and other contract documents are followed throughout pile installation.
- Forward the driving criteria and pile length letters to the DGE within the same working day of receiving them. Ensure these submittals are forwarded to the DGE timely so that the review can be performed within the deadlines required by the contract documents.
- Review driving criteria and pile length letters. Discuss with the DGE any concerns regarding the criteria. Submit concern comments to the DB Firm if any within one (1) working day of receiving the driving criteria letters.
- Verify that uninstrumented production piles have satisfied the authorized driving criteria during installation and that instrumented piles have achieved the required nominal bearing resistance.
- Forward all pile driving logs and certification packages submitted by the Contractor to the DGE. Ensure these submittals are forwarded to the DGE timely so that the review can be performed within the deadlines required by the contract documents.
- Evaluate problems encountered during construction and coordinate with DGE to resolve such problems, including possible verification testing/review and withdrawal of the Design Build Firm's Pile Installation Plan.
- Forward the Foundation Certification Packages to the DGE. Ensure these submittals are forwarded to the DGE timely so that their review can be performed within the deadlines required by the contract documents.
- Review certification packages submitted by the Contractor and coordinate with the DGE to submit rejection comments or verification testing requests on the certification packages within the deadlines required by the contract documents.
- Coordinate with the DGE to select appropriate pile(s) for verification testing within the deadlines required by the contract documents.

- Perform verification testing following the process and timeframe outlined in the contract documents. Ensure the deadlines required by the contract documents are met.
- Ensure that deficiencies found by the verification program are resolved.

3) Spread Footings:

- Observe construction of spread footing foundations and verify that they are founded at the required elevation and on the proper soil/rock material.
- Verify that the requirements of the RFC plans, applicable specifications, and other contract documents are followed throughout the spread footing construction.
- Forward certification packages submitted by the Contractor to DGE.
- Evaluate problems encountered during construction and coordinate with the DGE and the Contractor to resolve such problems.
- Review certification packages submitted by the Contractor and coordinate with DGE to determine the acceptability of the spread footing foundations within the deadlines required by the contract documents.

4) Auger Cast Piles for Sound Barrier Walls:

- Forward the Auger Cast Pile Installation Plan submitted by the Contractor to the DGE for concurrent review.
- Review, make comments, reject or approve Contractor's Auger Cast Pile Installation Plan for conformance with the RFC Plans and applicable contract documents. Incorporate the comments and recommendations provided by the DGE. Ensure the deadlines required in the contract documents are met
- Schedule a pre-pile installation meeting to go over the auger cast pile installation procedures. Make sure the Contractor's field superintendent and auger cast pile representative, CEI's auger cast pile inspectors, and the DGE office, including DGE's subconsultants are invited. Prepare and distribute minutes to attendees within three (3) working days after the meeting.
- Observe the installation of demonstration pile and production piles.
- Verify the requirements on the contract documents, RFC plans, applicable specifications, and other contract documents are followed throughout the auger cast pile installation.
- Verify the quality control processes of the Auger Cast Pile Installation Plan are followed during construction.
- Evaluate problems encountered during construction and coordinate with DGE to resolve such problems, including possible withdrawal of the DB Firm's Auger Cast Pile Installation Plan approval.
- Forward all field installation logs and certification packages submitted by the Contractor to the DGE. Ensure these submittals are forwarded to the DGE timely so that the review can be performed within the deadlines required by the contract documents.
- Review the certification packages submitted by the Contractor and coordinate with the DGE to determine the acceptability of the auger cast piles. Ensure the deadlines required by the contract documents to review certification packages are met.

10.0 PERSONNEL:

10.1 General Requirements:

Provide qualified personnel necessary to efficiently and effectively carry out its responsibilities under this Agreement. Method of compensation for personnel assigned to this project is outlined in Exhibit “B.”

Unless otherwise agreed to by the Department, the Department will not compensate straight overtime or premium overtime for the positions of Senior Project Engineer, Project Administrator/Project Engineer, Contract Support Specialist and Assistant or Associate to any of these positions.

10.2 Personnel Qualifications:

Provide competent personnel qualified by experience and education. Submit in writing to the Construction Project Manager the names of personnel proposed for assignment to the project, including a detailed resume for each containing at a minimum: salary, education, and experience. The Consultant Action Request form for personnel approval shall be submitted to the Construction Project Manager at least two weeks prior to the date an individual is to report to work.

Personnel identified in the Consultant technical proposal are to be assigned as proposed and are committed to performing services under this Agreement. Personnel changes will require written approval from the Department. Staff that has been removed shall be replaced by the Consultant within one week of Department notification.

Before the project begins, all project staff shall have a working knowledge of the current CPAM and must possess all the necessary qualifications/certifications for fulfilling the duties of the position they hold. Cross training of the Consultant’s project staff is highly recommended to achieve a knowledgeable and versatile project inspection team but shall not be at any additional cost to the Department and should occur as workload permits. Visit the training page on the State Construction Office website for training dates.

Minimum qualifications for the Consultant personnel are set forth as follows. Exceptions to these minimum qualifications will be considered on an individual basis. However, a Project Administrator working under the supervision and direction of a Senior Project Engineer or an Inspector working under the supervision and direction of a Senior Inspector shall have six months from the date of hire to obtain the necessary qualifications/certifications provided all other requirements for such positions are met and the Consultant submits a training plan detailing when such qualifications/certifications and other training relative to the Department’s procedures, Specifications and Design Standards will be obtained. The District Construction Engineer or designee will have the final approval authority on such exceptions.

Complex Category Two (CC2) Bridge Structures: Bridge structures that are complex and require advanced designs and construction engineering and inspection. The following structures are classified as CC2 bridge structures:

- Concrete Post-Tensioned Segmental Box Girder (CPTS)
- Concrete Post-Tensioned Continuous Beam (CPTCB)

- Movable Bridges (MB)
- Post-tensioned Substructures (PTS)

EDITOR'S COMMENT: Delete qualifications for positions that are not applicable to this Agreement.

CEI SENIOR PROJECT ENGINEER - A Civil Engineering degree and registered in the State of Florida as a Professional Engineer (or if registered in another state, the ability to obtain registration in the State of Florida within six months) and six (6) years of engineering experience [(two (2) years of which are in major road or bridge construction)] or [(five (5) of which are in major bridge construction) - for Complex Bridge Projects with the exception of PTS projects which require two (2) years of major bridge construction], or for non-degreed personnel the aforementioned registration and ten (10) years of engineering experience (two (2) years of which are in major road or bridge construction). Qualifications include the ability to communicate effectively in English (verbally and in writing); direct highly complex and specialized construction engineering administration and inspection program; plans and organizes the work of subordinate and staff members; develops and/or reviews policies, methods, practices, and procedures; and reviews programs for conformance with Department standards. Also must have the following:

QUALIFICATIONS:

FDOT Advanced MOT

Attend the CTQP Quality Control Manager course and pass the examination.

CERTIFICATIONS:

None

OTHER:

Complete the Critical Structures Construction Issues, Self Study Course, and submit the mandatory Certification of Course Completion form (for structures projects).

A Master's Degree in Engineering may be substituted for one (1) year engineering experience.

CEI PROJECT ADMINISTRATOR/PROJECT ENGINEER - A Civil Engineering degree plus two (2) years of engineering experience in construction of major road or bridge structures, or for non-degreed personnel eight (8) years of responsible and related engineering experience, two (2) years of which involved construction of major road or bridge structures with the exception of Complex Category 2 (CC2) bridge structures.

For CC2 bridge structures, a Civil Engineering degree and registered in the State of Florida as a professional engineer (or if registered in another state, have the ability to obtain registration in Florida within six (6) months) plus five (5) years general bridge construction experience, two (2) years of which must have been with the type of CC2 bridge construction project for which CEI services are being provided by this scope **or** for non-degreed and/or non-registered personnel eight (8) years of general bridge construction experience, (4) years of which must have been with the type of CC2 bridge construction project for which CEI services are being provided by this scope. Additionally, a minimum of one (1) year of experience as the Project Administrator in primary control of the type of CC2 construction project for which CEI services are being

provided by this scope. As an exception, only one (1) year of PTS bridge experience will be required for registered project administrators and two (2) years of PTS bridge experience for non-registered project administrators. Post-tensioning experience is not required for precast prestressed concrete flat slab superstructures but successful completion of an FDOT accredited grouting and post-tensioning course is required. To be in primary control, a Project Administrator must have supervised two or more inspectors as well as two or more support staff (Office Manager, Compliance Officer, and Secretary) and must have been directly responsible for all CEI services assigned.

CPTS years of experience must have included a minimum of twelve (12) months experience in each of the following areas: (1) casting yard operations and related surveying; (2) segment erection and related surveying, post-tensioning (PT) of tendons and grouting of prestressing steel.

CPTCB years of experience must include monitoring of the following: girder erection, safe use of girder erection cranes, stabilization of girders after erection, false work for temporary girder support, and PT and grouting operations.

PTS years of experience must include monitoring of the following: installation of PT ducts and related hardware and post-tensioning and grouting of strands or be the level of experience that meets the criteria for CPTS or CPTCB bridges.

MB years of experience must have been in MB mechanical and/or electrical construction.

Receives general instructions regarding assignments and is expected to exercise initiative and independent judgment in the solution of work problems. Directs and assigns specific tasks to inspectors and assists in all phases of the construction project. Will be responsible for the progress and final estimates throughout the construction project duration. Must have the following:

QUALIFICATIONS:

FDOT Advanced MOT

CTQP Final Estimates Level II

CERTIFICATIONS:

None

OTHER:

Attend CTQP Quality Control Manager Course and pass the examination.

Attend a FDOT accredited post-tensioning training course and pass the examination (for post-tensioned CC2 projects)

Attend a FDOT accredited grouting training course and pass the examination (for post-tensioned CC2 projects)

Complete the Critical Structures Construction Issues, Self Study Course, and submit the mandatory Certification of Course Completion form (for structures projects)

A Master's Degree in Engineering may be substituted for one (1) year of engineering experience

CEI ASSISTANT PROJECT ADMINISTRATOR/PROJECT ENGINEER –

A Civil Engineering degree plus one (1) year of engineering experience in construction of major road or bridge structures, or for non-degreed personnel six (6) years of responsible and related engineering experience, two (2) years of which involved construction of

major road or bridge structures with the exception of Complex Category 2 (CC2) bridge structures.

QUALIFICATIONS:

FDOT Intermediate MOT

CTQP Final Estimates Level II

CEI CONTRACT SUPPORT SPECIALIST - A High School diploma or equivalent and four (4) years of road & bridge construction engineering inspection (CEI) experience having performed/assisted in project related duties (i.e., LIMS, progress and final estimates, EEO compliance, processing Construction Contract changes, etc.) or a Civil Engineering Degree. Should exercise independent judgment in planning work details and making technical decisions related to the office aspects of the project. Should be familiar with the Department's Procedures covering the project related duties as stated above and be proficient in the computer programs necessary to perform these duties. Shall become proficient in Multi-Line and Engineering Menu.

QUALIFICATIONS:

CTQP Final Estimates Level II

CEI ASSOCIATE CONTRACT SUPPORT SPECIALIST - High school graduate or equivalent plus three (3) years of secretarial and/or clerical experience including two (2) years experience in construction office management having performed project related duties (i.e., LIMS, progress and final estimates, EEO compliance, processing Construction Contract changes, etc.). Experienced in the use of standard word processing software. Should exercise independent initiative to help relieve the supervisor of clerical detail. Assists the Project Administrator in office related duties (i.e., CQR, progress, and final estimates, EEO compliance, Processing Construction Contract changes, etc.) Project specific. Work under the general supervision of the Senior Project Engineer and staff.

CEI RESIDENT COMPLIANCE SPECIALIST - Graduation from an accredited high school or equivalent with one (1) year of experience as a resident compliance officer on a construction project or two (2) years of assisting the compliance officer in monitoring the project. Should have prior experience in both State funded and Federal Aid funded construction projects with FDOT and knowledge of EEO/AA laws and FDOT's DBE and OJT programs. Ability to analyze, collect, evaluate data, and take appropriate action when necessary. Must attend all training workshops or meetings for Resident Compliance Specialists as determined necessary.

CEI SENIOR INSPECTOR/SENIOR ENGINEER INTERN – High school graduate or equivalent plus four (4) years of experience in construction inspection, two (2) years of which shall have been in bridge and/or roadway construction inspection with the exception of Complex Category 2 (CC2) bridge structures or a Civil Engineering degree and one (1) year of road & bridge CEI experience with the ability to earn additional required qualifications within one year. (Note: Senior Engineer Intern classification requires one (1) year experience as an Engineer Intern.)

For CC2 bridge structures, be a high school graduate or equivalent and have five (5) years of general bridge construction experience of which two (2) years must have been with the type of CC2 bridge construction project for which CEI services are being

provided by this scope. As an exception, only one (1) year of PTS bridge experience will be required. Additionally, a minimum of twelve (12) months of experience as the Senior Inspector in primary control of the type CC2 construction project for which CEI services are being provided by this scope. To be in primary control, a Senior Inspector must have supervised two or more inspectors and must have been directly responsible for all inspection requirements related to the construction operations assigned.

CPTS years of experience must have included a minimum of twelve (12) months of inspection experience in one or both of the following depending on which area the inspector is being approved for: (1) casting yard inspection; (2) erection inspection. In addition, two (2) years of geometry-control surveying experience is required for inspectors that perform or monitor geometry control surveying in a casting yard.

CPTCB years of experience must include monitoring and inspection of the following: girder erection, safe use of girder erection cranes, girder stabilization after erection, false work for temporary girder support, and PT and grouting operations.

PTS years of experience must include monitoring of the following: installation of PT ducts and related hardware and post-tensioning and grouting of strands or be the level of experience that meets the criteria for CPTS or CPTCB bridges.

MB years of experience must have included the inspection of MB mechanical components for machinery inspectors and MB electrical components/systems for electrical inspectors.

Must have the following as required by the scope of work for the project:

QUALIFICATIONS:

CTQP Concrete Field Technician Level I

CTQP Concrete Field Inspector Level II (Bridges)

CTQP Asphalt Roadway Level I

CTQP Asphalt Roadway Level II CTQP Earthwork Construction Inspection Level I

CTQP Earthwork Construction Inspection Level II

CTQP Pile Driving Inspection

CTQP Drilled Shaft Inspection (required for inspection of all drilled shafts including miscellaneous structures such as sign structures, lighting structures, and traffic signal structures)

CTQP Grouting Technician Level I

CTQP Post-Tensioning Technician Level I

IMSA Traffic Signal Inspector Level I

FDOT Intermediate MOT

CTQP Final Estimates Level I

CERTIFICATIONS:

Nuclear Radiation Safety

IMSA Traffic Signal Inspector Level I

OTHER:

Complete the Critical Structures Construction Issues, Self Study Course, and submit the mandatory Certification of Course Completion form (for structures projects).

Responsible for performing highly complex technical assignments in field surveying and construction layout, making, and checking engineering computations, inspecting construction work, and conducting field tests and is responsible for coordinating and

managing the lower level inspectors. Work is performed under the general supervision of the Project Administrator.

CEI INSPECTOR/ENGINEER INTERN - High school graduate or equivalent plus two (2) years experience in construction inspection, one (1) year of which shall have been in bridge and/or roadway construction inspection, plus the following:

Must have the following as required by the scope of work of the project:

QUALIFICATIONS:

CTQP Concrete Field Inspector Level I

CTQP Asphalt Roadway Level I

CTQP Earthwork Construction Inspection Level I

CTQP Pile Driving Inspection

CTQP Drilled Shaft Inspection (required for inspection of all drilled shafts including miscellaneous structures such as sign structures, lighting structures, and traffic signal structures)

IMSA Traffic Signal Inspector Level I

CTQP Final Estimates Level I

FDOT Intermediate MOT

CERTIFICATIONS:

Nuclear Radiation Safety

IMSA Traffic Signal Inspector Level I

Florida Stormwater, Erosion, and Sedimentation Control Training and Certification Program for Inspectors and Contractors

OTHER:

Complete the Critical Structures Construction Issues, Self Study Course, and submit the mandatory Certification of Course Completion form (for structures projects).

Or a Civil Engineering degree with the ability to earn additional required qualifications within one year. (Note: Engineer Intern classification requires E.I.T. certificate.)

Responsible for performing assignments in assisting Senior Inspector in the performance of their duties. Receive general supervision from the Senior Inspector who reviews work while in progress. Civil Engineering graduates must obtain certifications within the first year of working as an inspector or Engineer Intern. Exceptions will be permitted on a case-by-case basis so long as qualifications and certifications are appropriate for specific inspection duties.

CEI INSPECTORS AIDE - High School graduate or equivalent and able to perform basic mathematical calculation and follow simple technical instructions. Duties are to assist higher-level inspectors. Must obtain FDOT Intermediate MOT within the first six months of the assignment.

CEI SURVEY PARTY CHIEF - High School graduate plus four years of experience in construction surveying (including two (2) years as Party Chief). Experienced in field engineering and construction layout, making and checking survey computations and supervising a survey party. Work is performed under general supervision of Project Administrator.

CEI INSTRUMENT PERSON - High school graduate plus three (3) years of experience in construction surveying one (1) year of which shall have been as instrument-man. Responsible for performing assignments in assisting Party Chief in the performance of their duties. Receives general supervision from Party Chief who reviews work while in progress.

CEI ROD-MAN/CHAIN PERSON - High school graduate with some survey experience or training preferred. Receives supervision from and assists Party Chief who reviews work while in progress.

CEI SECRETARY/CLERK TYPIST- High school graduate or equivalent plus two (2) years of secretarial and/or clerical experience. Ability to type at a rate of 35 correct words per minute. Experienced in the use of standard word processing software. Should exercise independent initiative to help relieve the supervisor of clerical detail. Work under general supervision of the Senior Project Engineer and staff.

10.3 Staffing:

Once authorized, the Consultant shall establish and maintain appropriate staffing throughout the duration of construction and completion of the final estimate. Responsible personnel, thoroughly familiar with all aspects of construction and final measurements of the various pay items, shall be available to resolve disputed final pay quantities until the Department has received a regular acceptance letter.

Construction engineering and inspection forces will be required of the Consultant while the Contractor is working. If Contractor operations are substantially reduced or suspended, the Consultant will reduce its staff appropriately.

In the event that the suspension of Contractor operations requires the removal of Consultant forces from the project, the Consultant will be allowed ten (10) days maximum to demobilize, relocate, or terminate such forces.

11.0 QUALITY ASSURANCE (QA) PROGRAM:

11.1 Quality Assurance Plan:

Within thirty (30) days after receiving award of an Agreement, furnish a QA Plan to the Construction Project Manager. The QA Plan shall detail the procedures, evaluation criteria, and instructions of the Consultant's organization for providing services pursuant to this Agreement. Unless specifically waived, no payment shall be made until the Department approves the Consultant QA Plan.

Significant changes to the work requirements may require the Consultant to revise the QA Plan. It shall be the responsibility of the Consultant to keep the plan current with the work requirements. The Plan shall include, but not be limited to, the following areas:

A. Organization:

A description is required of the Consultant QA Organization and its functional relationship to the part of the organization performing the work under the

Agreement. The authority, responsibilities and autonomy of the QA organization shall be detailed as well as the names and qualifications of personnel in the quality control organization.

B. Quality Assurance Reviews:

Detail the methods used to monitor and achieve organization compliance with Agreement requirements for services and products.

C. Quality Assurance Records:

Outline the types of records which will be generated and maintained during the execution of the QA program.

D. Control of Subconsultants and Vendors:

Detail the methods used to control subconsultant and vendor quality.

E. Quality Assurance Certification:

An officer of the Consultant firm shall certify that the inspection and documentation was done in accordance with FDOT specifications, plans, standard indexes, and Department procedures.

11.2 Quality Assurance Reviews:

Conduct semi-annual Quality Assurance Reviews to ensure compliance with the requirements of the Agreement. Quality Assurance Reviews shall be conducted to evaluate the adequacy of materials, processes, documentation, procedures, training, guidance, and staffing included in the execution of this Agreement. Quality Assurance Reviews shall also be developed and performed to achieve compliance with specific QA provisions contained in this Agreement. The semi-annual reviews shall be submitted to the Construction Project Manager in written form no later than one (1) month after the review.

On short duration CCEI projects (nine (9) months or less), the CCEI shall perform an initial QA review within the first two (2) months of the start of construction.

On asphalt projects, the CCEI shall perform an initial QA review on its asphalt inspection staff after the Contractor has completed ten (10) full work days of mainline asphalt paving operations, or 25% of the asphalt pay item amount (whichever is less) to validate that all sampling, testing, inspection, and documentation are occurring as required of the CCEI staff.

11.3 Quality Records:

Maintain adequate records of the quality assurance actions performed by the organization (including subcontractors and vendors) in providing services and products under this Agreement. All records shall indicate the nature and number of observations made, the number and type of deficiencies found, and the corrective actions taken. All records shall be available to the Department, upon request, during the Agreement term. All records shall be kept at the primary job site and shall be subject to audit review.

12.0 CERTIFICATION OF FINAL ESTIMATES:

12.1 Final Estimate and As-Built Plans Submittal:

Prepare documentation and records in compliance with the Agreement, Statewide Quality Control (QC) Plan, or Consultant's approved QC Plan and the Department's Procedures as required by Section 4.1.4 of Review and Administration Manual.

Submit the Final Estimate(s) and one (1) set of final "as-built plans" documenting the Contractor's work in accordance with the Review and Administration Manual.

Revisions to the Certified Final Estimate will be made at no additional cost to the Department.

12.2 Certification:

Consultant personnel preparing the Certified Final Estimate Package shall be CTQP Final Estimates Level II.

Duly authorized representative of the Consultant firm will provide a notarized certification on a form pursuant to Department's procedures.

12.3 Offer of Final Payment:

Prepare the Offer of Final Payment package as outlined in Chapter 14 of the Review and Administration Manual. The package shall accompany the Certified Final Estimates Package submitted to the District Final Estimates Office for review. The Consultant shall be responsible for forwarding the Offer of Final Payment Package to the Contractor.

13.0 AGREEMENT MANAGEMENT:

13.1 General:

- (1) With each monthly invoice submittal, the Consultant will provide a Status Report for the Agreement. This report will provide the an accounting of the additional Agreement calendar days allowed to date, an estimate of the additional calendar days anticipated to be added to the original schedule time, an estimate of the Agreement completion date, and an estimate of the Consultant funds expiration date per the Agreement schedule for the prime Consultant and for each subconsultant. The Consultant will provide a printout from the Equal Opportunity Reporting System showing the previous month's payments made to subconsultants. Invoices not including this required information may be rejected.

- (2) When the Consultant identifies a condition that will require an amendment to the Agreement, the Consultant will communicate this need to the Construction Project Manager for acceptance. Upon acceptance, prepare and submit an Amendment Request (AR), and all accompanying documentation to the Construction Project Manager for approval and further processing. The AR is to be submitted at such time to allow the Department 12 weeks to process, approve, and execute the AR. The content and format of the AR and accompanying documentation shall be in accordance with the instructions and format to be provided by the Department.
- (3) The Consultant is responsible for performing follow-up activities to determine the status of each Amendment Request submitted to the Department.

13.2 Invoicing Instructions:

Monthly invoices shall be submitted to the Department in a format and distribution schedule defined by the Department, no later than the 20th day of the following month.

If the monthly invoice cannot be submitted on time, notify the Department prior to the due date stating the reason for the delay and the planned submittal date. Once submitted, the Consultant Project Principal or Senior Project Engineer shall notify the Construction Project Manager via e-mail of the total delay in calendar days and the reason(s) for the delay(s).

All invoices shall be submitted to the Department in electronic and hard copy formats in accordance with District Construction and Consultant Invoice Transmittal System (CITS) procedures. The Construction Project Manager must receive hard copy documentation within three (3) workdays of electronic submittal or the electronic submittal will be rejected. (Saturday, Sunday, and Department holidays are not considered workdays).

All charges to the individual project will end no later than thirty (30) calendar days following final acceptance; or where all items of work are complete and conditional/partial acceptance is issued; unless authorized in writing by the Department.

A Final Invoice will be submitted to the Department no later than the 60th day following Final Acceptance of the individual project or as requested by the Department.

14.0 OTHER SERVICES:

Upon written authorization by the District Construction Engineer or designee, the Consultant will perform additional services in connection with the project not otherwise identified in this Agreement. The following items are not included as part of this Agreement, but may be required by the Department to supplement the Consultant services under this Agreement.

- A. Assist in preparing for arbitration hearings or litigation that occurs during the Agreement time in connection with the construction project covered by this Agreement.
- B. Provide qualified engineering witnesses and exhibits for arbitration hearings or litigation in connection with the Agreement.
- C. Provide inspection services in addition to those provided for in this Agreement.

- D. Provide services determined necessary for the successful completion and closure of the Construction Contract.

15.0 POST CONSTRUCTION CLAIMS REVIEW:

In the event the Contractor submits a claim for additional compensation and/or time after the Consultant has completed this Agreement, analyze the claim, engage in negotiations leading to settlement of the claim, and prepare and process the required documentation to close out the claim. Compensation for such services will be negotiated and effected through a Supplemental Amendment to this Agreement.

16.0 CONTRADICTIONS:

In the event of a contradiction between the provisions of this Scope of Services and the Consultant's proposal as made a part of their Agreement, the provisions of the Scope of Services shall apply.

17.0 THIRD PARTY BENEFICIARY

It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of any part of the Agreement to create in the public or any member thereof, a third party beneficiary hereunder, or to authorize anyone not a party to this Agreement to maintain a claim, cause of action, lien or any other damages or any relief of any kind pursuant to the terms or provisions of this Agreement.

18.0 DEPARTMENT AUTHORITY

The Department shall be the final authority in considering modifications to the Construction Contract for time, money or any other consideration except matters agreed to by the Contractor through contract changes negotiated by the Consultant, as authorized in Section 9.1 herein.

LIST OF PROJECT SPECIFIC POSITIONS

*Do not include these positions as an attachment to Scope of Services. These positions are to be pulled forth and added to Article 10.2 as needed.

ARCHITECT- Registered as an architect in accordance with Florida Statute 481 and four years of experience as a registered architect. Qualifications include the ability to communicate effectively, review architectural plans and specifications. Plans and organizes staff; develops and reviews policies and reviews programs for conformity with Department standards. A master's degree may be substituted for two years experience. (This position is not eligible for straight or premium overtime pay.)

CEI ASPHALT PLANT INSPECTOR- High School Graduate or equivalent plus one (1) year experience in the surveillance and inspection of hot mix asphalt plant operations and have the following:

QUALIFICATIONS:

CTQP Asphalt Plant Level I

CTQP Asphalt Plant Level II

CEI BRIDGE PROJECT ADMINISTRATOR (PAINTING/ LEAD ABATEMENT/ STRUCTURAL STEEL REPAIR):

CERTIFICATIONS:

NACE Level III Certified or BCI Level II Certified

SSPC C-3 Lead Paint Removal

AWS Certified Welding Inspector (CWI) familiar with ANSI/AASHTO/AWS Bridge Welding Code

CEI BRIDGE SENIOR INSPECTOR (PAINTING/ LEAD ABATEMENT/ STRUCTURAL STEEL REPAIR):

CERTIFICATIONS:

NACE Level III Certified or BCI Level II Certified

SSPC C-3 Lead Paint Removal

AWS Certified Welding Inspector (CWI) familiar with ANSI/AASHTO/AWS Bridge Welding Code

CEI BRIDGE INSPECTOR (PAINTING/ LEAD ABATEMENT/ STRUCTURAL STEEL REPAIR):

CERTIFICATIONS:

NACE Level I or BCI Level I

SSPC C-3 Lead Paint Removal

AWS Certified Welding Inspector (CWI) familiar with ANSI/AASHTO/AWS Bridge Welding Code

CASTING YARD ENGINEER/ MANAGER- (Concrete Post-Tensioned Segmental Box Girder Bridges (CPTS)) Must be a registered Professional Engineer in the State of Florida (or if registered in another state, have the ability to obtain registration in Florida with 6 months) with a minimum of one (1) year, or non-registered with a minimum of three (3) years of experience with the use of geometry control

computer programs and with the performance of surveying procedures required for the production of precast concrete box segments at a casting yard.

GEOTECHNICAL ENGINEER for Category I Bridge Pile Foundations- Registered in the State of Florida as a Professional Engineer (or if registered in another state, the ability to obtain registration in the State of Florida within six months) plus four (4) years of experience as a Geotechnical Engineer in responsible charge of geotechnical work, including at least two Category I bridges with pile foundations. Experience performing. Analyzing and interpreting the results of: non-destructive testing of pile foundations, dynamic and static load testing, the Pile Driving Analyzer (PDA), CAPWAP and WEAP as appropriate.

GEOTECHNICAL ENGINEER for Category I Bridge Drilled Shaft Foundations- Registered in the State of Florida as a Professional Engineer (or if registered in another state, the ability to obtain registration in the State of Florida within six months) plus four (4) years of experience as a Geotechnical Engineer in responsible charge of geotechnical work, including at least two Category I bridges with drilled shaft foundations. Experience performing analyzing and interpreting the results of: the Shaft Inspection Device, non-destructive tests of drilled shaft foundations and load tests as appropriate.

GEOTECHNICAL ENGINEER for Category II Bridge Pile Foundations- Registered in the State of Florida as a Professional Engineer (or if registered in another state, the ability to obtain registration in the State of Florida within six months) plus five (5) years of experience as a Geotechnical Engineer in responsible charge of geotechnical work, including at least one Category II bridge with pile foundations. Experience performing, analyzing and interpreting the results of: non-destructive testing of pile foundations, dynamic and static load testing, the Pile Driving Analyzer (PDA), CAPWAP and WEAP as appropriate.

GEOTECHNICAL ENGINEER for Category II Bridge Drilled Shaft Foundations: Registration in the State of Florida Board as a Professional Engineer (or if registered in another state, the ability to obtain registration in the State of Florida within six months) plus five (5) years of experience as a Geotechnical Engineer in responsible charge of geotechnical work, including at least one Category II bridge with drilled shaft foundations. Experience performing, analyzing and interpreting the results of: the Shaft Inspection Device, non-destructive tests of drilled shaft foundations and load tests as appropriate.

GEOTECHNICAL TECHNICIAN for Pile Foundations- Qualified CTQP Pile Driving Inspector, knowledgeable in pile installation in conjunction with dynamic load tests with a minimum of three (3) years of experience on at least two (2) Department bridge projects: for projects with Embedded Data Collectors (EDCs), certified EDC monitoring equipment operator.

GEOTECHNICAL TECHNICIAN for Drilled Shaft Foundations- Qualified CTQP Drilled Shaft Inspector, knowledgeable in drilled shaft installation with a minimum of three (3) years of experience on at least two (2) Department bridge projects.

CEI SENIOR ITS INSPECTOR- High School graduate or equivalent plus four (4) years of experience in construction inspection, two (2) years of which shall have been in ITS construction inspection plus the following:

QUALIFICATIONS:

Fiber Installation Inspection and OTDR Fiber Testing
DMS Operation and Testing
Controller Operation and Testing
CCTV Installation, Operation and Testing
MVDS Operations and Testing

FDOT SEMP Training
Familiarity with Existing Communication Equipment and Switches

CERTIFICATIONS:

IMSA Traffic Signal Inspector Level I
Or a Civil Engineering Degree and one (1) year of ITS CEI experience.

Responsible for performing highly complex technical assignments in fields surveying and construction layout, making and checking engineering computations, inspecting construction work and conducting field tests and is responsible for coordinating and managing the lower level inspectors. Work is performed under the general supervision of the Project Administrator.

CEI ITS INSPECTOR- High School Graduate or equivalent plus two (2) years of experience in construction inspection, one (1) year of which shall have been in ITS construction inspection, plus the following:

QUALIFICATIONS:

Fiber Installation Inspection and OTDR Fiber Testing
DMS Operation and Testing
Controller Operation and Testing
CCTV Installation, Operation and Testing
Familiarity with Existing Communication Equipment and Switches
MVDS Operations and Testing

CERTIFICATIONS:

IMSA Traffic Signal Inspector Level I

Or a Civil Engineering Degree

Responsible for performing assignments in assisting Senior Inspector in the performance of their duties. Receive general supervision from the Senior Inspector who reviews work while in progress. Civil Engineering graduates must obtain certifications within the first year of working as an inspector or Engineer Intern. Exceptions will be permitted on a case-by-case basis so long as qualifications and certifications are appropriate for specific inspection duties.

SOFTWARE ENGINEER- An Electrical Engineering Degree and five (5) years of experience in traffic signal design, analysis and implementation; software design analysis, programming and software/hardware and staging for traffic signal control system. (This position is not eligible for straight or premium overtime pay.)

COMMUNICATIONS ENGINEER- An Electrical Engineering Degree plus registration in the State of Florida as a Professional Engineer desirable and ten (10) years of experience involving computer controlled systems for computerized traffic signal systems. The experience should include design review, equipment specifications, installation supervision, equipment and reliability analysis. (This position is not eligible for straight or premium overtime pay.)

SYSTEMS TECHNICIAN- High School Graduate plus five (5) years of experience in Electronic Systems and/or Traffic Engineering technician level work, detailed experience and training in the use of Otter's and other equipment related to fiber optic communication testing. Requires certification of this training or equivalent training.

CEI LANDSCAPE INSPECTOR- High School Graduate or equivalent plus five (5) years of roadway landscape construction experience or Florida Nursery Growers and Landscape Association (FNGLA) Certified Landscape Contractor Certification plus two (2) years of roadway landscape construction experience or a degree in a related field plus three (3) years of roadway landscape construction experience. The individual must be skilled at plant identification, classification, and grades and standards for nursery plants as established by the manual “Grades and Standards for Nursery Plants” by the Florida Department of Agriculture and Consumer Services. The individual must be knowledgeable of current Florida Department of Transportation standards for landscape installation, including plans reading and irrigation system construction. The individual must have the ability to read and interpret contract documents. The individual will receive general supervision from the Senior Inspector who reviews work while in progress.

CEI SENIOR ENVIRONMENTAL SPECIALIST- A Master’s Degree in Physical or Natural Science and equivalent and seven (7) years of professional experience or a Bachelor’s Degree in Environmental Science and ten (10) years of professional experience and general background and knowledge in wetlands ecology, environmental permitting, wildlife surveys, wetland assessment, mitigation and management, management and erosion control practices, and/or hazardous waste and oil spill remediation, site restoration, environmental audits, contamination assessments, soil and groundwater remediation, and underground storage tank services as appropriate for the project. For project work involving management and erosion control practices, the individual shall be a qualified FDEP Stormwater Management Inspection.

QUALIFICATIONS:
NPDES FDEP Qualified

CERTIFICATIONS:
FDEP

CEI ENVIRONMENTAL SPECIALIST- A Bachelor’s Degree in Environmental Science and three (3) years of professional experience and general background and knowledge in wetlands ecology, environmental permitting, wildlife surveys, wetland assessment, mitigation and management, management and erosion control practices, and/or hazardous waste and oil spill remediation, site restoration, environmental audits, contamination assessments, soil and groundwater remediation, and underground storage tank services as appropriate for the project. For project work involving management and erosion control practices, the individual shall be a qualified FDEP Stormwater Management Inspection.

QUALIFICATIONS:
NPDES FDEP Qualified

CERTIFICATIONS:
FDEP

PUBLIC INFORMATION OFFICER- High School Graduate or equivalent and be knowledgeable in public information and/or advertising involving mass circulation or distribution of literature, mass advertising or other similar activities and performed such work for at least three (3) years.

CEI RESIDENT COMPLIANCE SPECIALIST- High School Graduate or equivalent with one (1) year of experience as a resident compliance specialist on a construction project or two (2) years of assisting the compliance specialist in monitoring the project. Should have prior experience in both State and Federal Aid funded construction projects with FDOT and knowledge of EEO/AA laws and FDOT’s DBE and OJT programs. Ability to analyze, collect, evaluate data, and take appropriate action when

necessary. Must attend all training workshops or meetings for Resident Compliance Specialists as well as spend time at the District Compliance office as determined necessary.

CEI SENIOR INSPECTOR BUILDING STRUCTURES- High School Graduate plus eight (8) years of experience in construction inspection with four (4) years of experience in performing highly complex technical assignments in field surveying and construction layout, making and checking engineering computations, inspecting construction work and conducting fields tests. Senior Building Structures Inspector must be fully knowledgeable of all aspects of the building construction to include masonry work and familiarization with the local and State building codes and ordinances. Work is performed under the general supervision of the Project Engineer.

CEI BUILDING INSPECTOR/ ELECTRICAL- High School Graduate plus five (5) years experience as a qualified building inspector or general contractor. Experience shall be actual field experience as a qualified building inspector or job superintendent. Inspector must be fully knowledgeable of all local and State building codes and ordinances.

CEI UTILITY COORDINATOR- High School Graduate or equivalent and be knowledgeable of Department's Standards, policies, procedures, and agreements and shall have a minimum of four (4) years of experience performing utility coordination in accordance with Department's Standards, policies, procedures and agreements.

Sample D: Florida DOT Hybrid Construction Engineering and Inspection Scope of Services

Summary: The sample Florida DOT Scope of Services was developed to describe and define the CEI services which are required on various construction projects in State of Florida. The general outline of the scope of services includes the following:

1. Purpose
2. Scope
3. Length of Services
4. Definitions
5. Items to be Furnished by the Department to the Consultant
6. Items Furnished by the Consultant
 - a. Department Documents
 - b. Office Automation
 - c. Field Office
 - d. Vehicles
 - e. Field Equipment
 - f. Licensing for Equipment Operations
7. Liaison Responsibility of the Consultant
8. Performance of the Consultant
9. Requirements of the Consultant
 - a. General
 - b. Survey Control
 - c. On-site Inspection
 - d. Sampling and Testing
 - e. Engineering Services
 - f. Geotechnical Engineering
10. Personnel
 - a. General Requirements
 - b. Personnel Qualifications
 - c. Staffing
11. Agreement Management
 - a. General
 - b. Invoicing Instructions
12. Other Services
13. Contradictions
14. Third Party Beneficiary

SCOPE OF SERVICES
CONSTRUCTION ENGINEERING AND INSPECTION

1.0 PURPOSE:

This scope of services describes and defines the Construction Engineering and Inspection (CEI) services which are required on various construction projects in District (Insert) listed below. The services to be provided under this agreement will be provided on an as needed basis using Task Work Order issued by the Department. The Task Work Order will define the project on which the services will be provided and the date the services are authorized to begin.

2.0 SCOPE:

Provide services as defined in this Scope of Services, the referenced Department manuals, and procedures.

The projects for which the services are required are:

Financial Project IDs:

Descriptions:

County:

Other projects that may be added to this contract.

Services provided by the Consultant shall comply with Department manuals, procedures, and memorandums in effect as of the date of execution of the Agreement unless otherwise directed in writing by the Department. Such Department manuals, procedures, and memorandums are found at the State Construction Office's website.

On a single Construction Contract, it is a conflict of interest for a professional firm to receive compensation from both the Department and the Contractor either directly or indirectly.

Consultant staff will be required to travel and shall have and maintain a valid State of Florida Driver's License. The license for each consultant staff member must be submitted to the Department prior to beginning any of the services under this agreement. The license will be reviewed by the Department on an annual basis.

Consultant staff will be required to travel to construction work sites, as well as other locations to perform the duties and responsibilities under this agreement. Other projects developing within the geographical area of _____ county(ies) may be added at the Department's discretion. Ensure performance of the staff assigned to the contract. Remove or discipline staff as requested by the Department to ensure a satisfactory and professionally run program.

3.0 **LENGTH OF SERVICE:**

The services for each Construction Contract shall begin upon issuance of a Task Work Order and written notification to proceed by the Department.

While no personnel shall be assigned until written notification by the Department has been issued, the Consultant shall be ready to assign personnel within two weeks of notification.

4.0 **DEFINITIONS:**

- A. Agreement: The Professional Services Agreement between the Department and the Consultant setting forth the obligations of the parties thereto, including but not limited to the performance of the work, furnishing of services, and the basis of payment.
- B. Contractor: The individual, firm, or company contracting with the Department for performance of work or furnishing of materials.
- C. Construction Contract: The written agreement between the Department and the Contractor setting forth the obligations of the parties thereto, including but not limited to the performance of the work, furnishing of labor and materials, and the basis of payment.
- D. Construction Project Manager: The Department employee assigned to manage the Construction Inspection Contract and represent the Department during the performance of the services covered under this Agreement.
- E. Construction Training/Qualification Program (CTQP): The Department program for training and qualifying technicians in Aggregates, Asphalt, Concrete, Earthwork, and Final Estimates Administration. Program information is available at CTQP website.
- F. Consultant: The Consulting firm (if applicable) under contract to the Department for administration of Contract Inspection services.
- G. Consultant Engineer: The employee assigned by the Consultant (if applicable) to be in charge of providing Contract administration services for the Consultant Inspection Contract.
- H. District Construction Engineer: The administrative head of the District's Construction Offices.
- I. District Contract Compliance Manager: The administrative head of the District Contract Compliance Office.

- J. District Consultant CEI Manager: The Department employee assigned to administer the Consultant Construction Engineering and Inspection (CCEI) Program in the District.
- K. District Director of Transportation Operations: The Director of Construction, Maintenance, Traffic Operations, Materials, and Safety.
- L. District Final Estimates Manager: The administrative head of the District Final Estimates Office.
- M. District Professional Services Administrator: The Administrative Head of the Professional Services Office.
- N. District Secretary: The Chief Executive Officer in each of the Department's eight (8) Districts.
- O. Engineer of Record: The Engineer noted on the Construction plans as the responsible person for the design and preparation of the plans.
- P. Operations Engineer: The Engineer assigned to a particular County or area to administer Construction and Maintenance Contracts for the Department.
- Q. Public Information Office: The Department's office assigned to manage the Public Information Program.
- R. Resident Compliance Specialist: The employee assigned by the Department to oversee project specific compliance functions.
- S. Resident Engineer: The Engineer assigned to a particular County or area to administer Construction Contracts for the Department.

5.0 ITEMS TO BE FURNISHED BY THE DEPARTMENT TO THE CONSULTANT:

- A. The Department, on an as needed basis, will furnish the following Construction Contract documents for each project. These documents may be provided in either paper or electronic format.
 - 1. Construction Plans,
 - 2. Specification Package,
 - 3. Copy of the Executed Construction Contract, and
 - 4. Utility Agency's Approved Material List (if applicable).
- B. The Department will allow connection to the FDOT Network by the Consultant through either dialup communications, authorized Virtual Private Network (VPN) or approved leased lines. Appropriate approvals must be received from the Department prior to their use.

C. The Department will furnish and support the software packages for SiteManager.

6.0 ITEMS FURNISHED BY THE CONSULTANT:

6.1 Department Documents:

All applicable Department documents referenced herein shall be a condition of this Agreement. All Department documents, directives, procedures, and standard forms are available through the Department's Internet website. Most items can be purchased through the following address. All others can be acquired through the District Office or on-line at the Department's website.

Florida Department of Transportation
Maps and Publication Sales
605 Suwannee Street, MS 12
Tallahassee, Florida 32399-0450
Telephone No. (850) 488-9220

<http://www.dot.state.fl.us/construction/>

6.2 Office Automation:

Provide all software and hardware necessary to efficiently and effectively carry out the responsibilities under this Agreement.

Provide each inspection staff with a laptop computer running SiteManager application through Citrix connection using a mobile broadband connection at the jobsite.

All computer coding shall be input by Consultant personnel using equipment furnished by them.

Ownership and possession of computer equipment and related software, which is provided by the Consultant, shall remain at all times with the Consultant. The Consultant shall retain responsibility for risk of loss or damage to said equipment during performance of this Agreement. Field office equipment should be maintained and operational at all times.

Current technical specifications for office automation can be viewed at:
<http://www.dot.state.fl.us/Construction/DesignBuild/ConsultantCEI/OfficeAutomation.shtm>

6.3 Vehicles:

Vehicles will be equipped with appropriate safety equipment and must be able to effectively carry out requirements of this Agreement. Vehicles shall have the name and phone number of the consulting firm visibly displayed on both sides of the vehicle.

6.4 Field Equipment:

Supply survey, inspection, and testing equipment essential to perform services under this Agreement; such equipment includes non-consumable and non-expendable items.

Hard hats shall have the name of the consulting firm visibly displayed.

Equipment described herein and expendable materials under this Agreement will remain the property of the Consultant and shall be removed at completion of the work.

Handling of nuclear density gauges shall be in compliance with their license.

Retain responsibility for risk of loss or damage to said equipment during performance of this Agreement. Field office equipment shall be maintained and in operational condition at all times.

6.5 Licensing for Equipment Operations:

Obtain proper licenses for equipment and personnel operating equipment when licenses are required. The license and supporting documents shall be available for verification by the Department, upon request.

Radioactive Materials License for use of Surface Moisture Density Gauges shall be obtained through the State of Florida Department of Health.

7.0 LIAISON RESPONSIBILITY OF THE CONSULTANT STAFF:

The Department's Construction Project Manager or Project Engineer/Project Administrator will be in Responsible Charge and will receive inspection reports and other correspondence from assigned consultant inspection staff related to its responsibilities under this Agreement.

Submit all administrative items relating to Invoice Approval, Personnel Approval, and User IDs to the Construction Project Manager for review and approval.

8.0 PERFORMANCE OF THE CONSULTANT:

During the term of this Agreement the Department will review the Consultant operations to determine compliance with this Agreement. Cooperate and assist Department representatives in conducting the reviews. If deficiencies are indicated, remedial action shall be implemented immediately. Department recommendations and Consultant responses/actions are to be properly documented by the Consultant. No additional compensation shall be allowed for remedial action taken by the Consultant to correct deficiencies. Remedial actions and required response times may include but are not necessarily limited to the following:

- A. Further subdivide assigned inspection responsibilities, reassign inspection personnel, or assign additional inspection personnel.
- B. Immediately replace personnel whose performance has been determined by the Consultant and/or the Department to be inadequate.
- C. Immediately increase the frequency of monitoring and inspection activities in phases of work that are the Consultant's responsibility.
- D. Increase the scope and frequency of training of the Consultant personnel.

9.0 REQUIREMENTS OF THE CONSULTANT:

9.1 General:

It shall be the responsibility of the Consultant staff to monitor and inspect the Construction Contract such that the project is constructed in reasonable conformity with the plans, specifications, and special provisions for the Construction Contract.

Observe the Contractor's work to determine the progress and quality of work. Identify discrepancies, report significant discrepancies to the Department, and direct the Contractor to correct such observed discrepancies.

Assigned inspectors are to inform the Project Engineer/Project Administrator assigned to the project of any significant omissions, substitutions, defects, and deficiencies noted in the work of the Contractor.

9.2 On-site Inspection:

Monitor the Contractor's on-site construction activities and inspect materials entering into the work in accordance with the plans, specifications, and special provisions for the Construction Contract to determine that the projects are constructed in reasonable conformity with such documents. Maintain detailed accurate records of the Contractor's daily operations and of significant events that affect the work. The Department will monitor off-site activities and fabrication unless otherwise stipulated by this Agreement.

Monitor and inspect Contractor's Work Zone Traffic Control Plan and review modifications to the Work Zone Traffic Control Plan, including Alternate Work Zone Traffic Control Plan, in accordance with the Department's procedures. Consultant employees performing such services shall be qualified in accordance with the Department's procedures.

EDITOR'S COMMENT: Delete the following paragraph for construction contracts that do not require the construction of permanently submerged structural members.

Perform underwater bridge construction inspections of bridges with permanently submerged structural members in compliance with CPAM Section 10.6, Underwater Bridge Construction Inspection.

EDITOR'S COMMENT: Delete the following paragraph if construction contracts do not contain provisions for Witness and Hold Point Inspections.

Inspect the Construction Contract with Financial Project Numbers xxxxxxxx-x-52-xx in accordance with Article 5-9.1.1 of the Construction Contract Special Provisions as it pertains to the Witness Points and Hold Points specifications.

9.3 Sampling and Testing:

Perform sampling and testing of component materials and completed work in accordance with the Construction Contract documents. The minimum sampling frequencies set out in the Department's Materials Sampling, Testing and Reporting Guide shall be met. In complying with the aforementioned guide, provide daily observation of the Contractor's Quality Control activities and perform the sampling and testing of materials and completed work items for verification and acceptance.

The Department will perform inspection and sampling of materials and components at locations remote from the project site and the Department will perform testing of materials normally done in a laboratory remote from the project site.

Determine the acceptability of all materials and completed work items on the basis of either test results or verification of a certification, certified mill analysis, DOT label, DOT stamp, etc.

The Department will monitor the effectiveness of the Consultant's testing procedures through observation and independent assurance testing.

Sampling, testing and laboratory methods shall be as required by the Department's Standard Specifications, Supplemental Specifications or as modified by the Special Provisions of the Construction Contract.

Documentation reports on sampling and testing performed by the Consultant shall be submitted during the same week that the construction work is done.

Transport samples to be tested in a Department laboratory to the appropriate laboratory or appropriate local FDOT facility.

Input verification testing information and data into the Department's database using written instructions provided by the Department.

9.4 Engineering Services:

Assist in coordinating the Construction Contract inspection activities of all parties other than the Contractor involved in completing the construction project.

Services shall include maintaining the required level of observation of Contractor activities. Maintain complete, accurate records of all activities and events relating to the project and properly document all project changes. The following services shall be performed:

- (1) Attend a pre-service meeting for the Agreement in accordance with CPAM. Provide appropriate staff to attend and participate in the pre-service meeting. At the time of this meeting submit the FDOT Computer Security Access Request for use of FDOT Data Center Facilities and access to the Department's computer systems to the Construction Project Manager for approval.
- (2) Schedule and attend a Final Estimate informational meeting with the District Construction Final Estimates Office. Provide appropriate staff to attend and participate in this meeting.
- (3) The Department will provide Public Information Services.

10.0 PERSONNEL:

10.1 General Requirements:

Provide qualified personnel necessary to efficiently and effectively carry out its responsibilities under this Agreement. Method of compensation for personnel assigned to this project is outlined in Exhibit "B."

Unless otherwise agreed to by the Department, the Department will not compensate straight overtime or premium overtime unless approved in advance of the work.

10.2 Personnel Qualifications:

Provide competent personnel qualified by experience and education. Submit in writing to the Construction Project Manager the names of personnel proposed for assignment to the project, including a detailed resume for each containing at a minimum: salary, education, and experience. The Consultant Action Request form for personnel approval shall be submitted to the Construction Project Manager at least two weeks prior to the date an individual is to report to work.

Personnel identified in the Consultant technical proposal are to be assigned as proposed and are committed to performing services under this Agreement. Personnel changes will require written approval from the Department. Staff that has been removed shall be replaced by the Consultant within one week of Department notification.

Before an assigned project begins, all project staff shall have a working knowledge of the current CPAM and must possess all the necessary qualifications/certifications for fulfilling the duties of the position they hold. Cross training of the Consultant's project staff is highly recommended to achieve a knowledgeable and versatile project inspection team but shall not be at any additional cost to the Department and should occur as workload permits. Visit the training page on the State Construction Office website for training dates.

Minimum qualifications for the Consultant personnel are set forth as follows. Exceptions to these minimum qualifications will be considered on an individual basis. The District Construction Engineer or designee will have the final approval authority on such exceptions.

CEI CONSULTANT ENGINEER - A Civil Engineering degree plus two (2) years of engineering experience in construction of major road or bridge structures, or for non-degreed personnel eight (8) years of responsible and related engineering experience, two (2) years of which involved construction of major road or bridge structures with the exception of Complex Category 2 (CC2) bridge structures.

For CC2 bridge structures, a Civil Engineering degree and registered in the State of Florida as a professional engineer (or if registered in another state, have the ability to obtain registration in Florida within six (6) months) plus five (5) years general bridge construction experience, two (2) years of which must have been with the type of CC2 bridge construction project for which CEI services are being provided by this scope. Additionally, a minimum of one (1) year of experience as the Project Administrator in primary control of the type of CC2 construction project for which CEI services are being provided by this scope. Post-tensioning experience is not required for precast prestressed concrete flat slab superstructures but successful completion of an FDOT accredited grouting and post-tensioning course is required. To be in primary control, a Project Administrator must have supervised two or more inspectors as well as two or more support staff (Office Manager, Compliance Officer, and Secretary) and must have been directly responsible for all CEI services assigned.

CPTS years of experience must have included a minimum of twelve (12) months experience in each of the following areas: (1) casting yard operations and related surveying; (2) segment erection and related surveying, post-tensioning (PT) of tendons and grouting of prestressing steel.

CPTCB years of experience must include monitoring of the following: girder erection, safe use of girder erection cranes, stabilization of girders after

erection, false work for temporary girder support, and PT and grouting operations.

PTS years of experience must include monitoring of the following: installation of PT ducts and related hardware and post-tensioning and grouting of strands or be the level of experience that meets the criteria for CPTS or CPTCB bridges.

MB years of experience must have been in MB mechanical and/or electrical construction.

The CEI Consultant Engineer will perform Quality Assurance reviews and monitor the performance of the assigned inspectors on a quarterly basis of all project records prepared by CEI inspection staff assigned to projects. Prepare a report of the Quality Assurance Review for approval of the Project Manager. Review should address inspector compliance with Department specifications, procedures, and accuracy of data being collected. Must have the following:

QUALIFICATIONS:

FDOT Advanced MOT

CTQP Final Estimates Level II

CERTIFICATIONS:

None

OTHER:

Attend CTQP Quality Control Manager Course and pass the examination.

Attend a FDOT accredited post-tensioning training course and pass the examination (for post-tensioned CC2 projects)

Attend a FDOT accredited grouting training course and pass the examination (for post-tensioned CC2 projects)

Complete the Critical Structures Construction Issues, Self Study Course, and submit the mandatory Certification of Course Completion form (for structures projects)

A Master's Degree in Engineering may be substituted for one (1) year of engineering experience

CEI SENIOR INSPECTOR/– High school graduate or equivalent plus four (4) years of experience in construction inspection, two (2) years of which shall have been in bridge and/or roadway construction inspection.

Must have the following as required by the scope of work for the project:

QUALIFICATIONS:

CTQP Concrete Field Technician Level I

CTQP Concrete Field Inspector Level II (Bridges)

CTQP Asphalt Roadway Level I
CTQP Asphalt Roadway Level II CTQP Earthwork Construction Inspection Level I
CTQP Earthwork Construction Inspection Level II
CTQP Pile Driving Inspection
CTQP Drilled Shaft Inspection (required for inspection of all drilled shafts including miscellaneous structures such as sign structures, lighting structures, and traffic signal structures)
CTQP Grouting Technician Level I
CTQP Post-Tensioning Technician Level I
IMSA Traffic Signal Inspector Level I
FDOT Intermediate MOT
CTQP Final Estimates Level I

CERTIFICATIONS:

Nuclear Radiation Safety

OTHER:

Complete the Critical Structures Construction Issues, Self Study Course, and submit the mandatory Certification of Course Completion form (for structures projects).

Responsible for performing highly complex technical assignments in field surveying and construction layout, making, and checking engineering computations, inspecting construction work, and conducting field tests and is responsible for coordinating and managing the lower level inspectors. Work is performed under the general supervision of the Construction Project Manager.

CEI INSPECTOR/ENGINEER INTERN - High school graduate or equivalent plus two (2) years experience in construction inspection, one (1) year of which shall have been in bridge and/or roadway construction inspection, plus the following:

Must have the following as required by the scope of work of the project:

QUALIFICATIONS:

CTQP Concrete Field Inspector Level I
CTQP Asphalt Roadway Level I
CTQP Earthwork Construction Inspection Level I
CTQP Pile Driving Inspection
CTQP Drilled Shaft Inspection (required for inspection of all drilled shafts including miscellaneous structures such as sign structures, lighting structures, and traffic signal structures)
IMSA Traffic Signal Inspector Level I
CTQP Final Estimates Level I
FDOT Intermediate MOT

CERTIFICATIONS:

Nuclear Radiation Safety

IMSA Traffic Signal Inspector Level I

Florida Stormwater, Erosion, and Sedimentation Control Training and Certification Program for Inspectors and Contractors

OTHER:

Complete the Critical Structures Construction Issues, Self Study Course, and submit the mandatory Certification of Course Completion form (for structures projects).

Or a Civil Engineering degree with the ability to earn additional required qualifications within one year. (Note: Engineer Intern classification requires E.I.T. certificate.)

Responsible for performing assignments assisting Senior Inspector in the performance of their duties. Receive general supervision from the Senior Inspector who reviews work while in progress. Civil Engineering graduates must obtain certifications within the first year of working as an inspector or Engineer Intern. Exceptions will be permitted on a case-by-case basis so long as qualifications and certifications are appropriate for specific inspection duties.

10.3 Staffing:

Once authorized, the Consultant shall provide appropriate inspection staffing as authorized throughout the duration of construction and completion of the final estimate. Responsible personnel, thoroughly familiar with all aspects of construction and final measurements of the various pay items, shall be available to resolve disputed final pay quantities until the Department has received a regular acceptance letter.

Construction inspection forces will be required of the Consultant while the Contractor is working, subject to the oversight of the Consultant Engineer assigned responsibility for Quality Assurance reviews as described above.

11.0 AGREEMENT MANAGEMENT:

11.1 General:

- (1) With each monthly invoice submittal, the CEI Consultant Engineer will provide a Status Report for the Agreement. This report will provide the CEI Consultant Engineer's accounting of the additional Agreement calendar days allowed to date, an estimate of the additional calendar days

anticipated to be added to the original schedule time, an estimate of the Agreement completion date, and an estimate of the Consultant funds expiration date per the Agreement schedule for the prime Consultant and for each subconsultant. The CEI Consultant Engineer will provide a printout from the Equal Opportunity Reporting System showing the previous month's payments made to subconsultants. Invoices not including this required information may be rejected.

- (2) When the CEI Consultant Engineer identifies a condition that will require an amendment to the Agreement, communicate this need to the Construction Project Manager for acceptance. Upon acceptance, prepare and submit an Amendment Request (AR), and all accompanying documentation to the Construction Project Manager for approval and further processing. The AR is to be submitted at such time to allow the Department 12 weeks to process, approve, and execute the AR. The content and format of the AR and accompanying documentation shall be in accordance with the instructions and format to be provided by the Department.
- (3) The CEI Consultant Engineer is responsible for performing follow-up activities to determine the status of each Amendment Request submitted to the Department.

11.2 Invoicing Instructions:

Monthly invoices shall be submitted to the Department in a format and distribution schedule defined by the Department, no later than the 20th day of the following month.

If the monthly invoice cannot be submitted on time, notify the Department prior to the due date stating the reason for the delay and the planned submittal date. Once submitted, the CEI Consultant Engineer shall notify the Construction Project Manager via e-mail of the total delay in calendar days and the reason(s) for the delay(s).

All invoices shall be submitted to the Department in electronic and hard copy formats in accordance with District Construction and Consultant Invoice Transmittal System (CITS) procedures. The Construction Project Manager must receive hard copy documentation within three (3) workdays of electronic submittal or the electronic submittal will be rejected. (Saturday, Sunday, and Department holidays are not considered workdays).

All charges to the individual project will end no later than thirty (30) calendar days following final acceptance; or where all items of work are complete and conditional/partial acceptance is issued; unless authorized in writing by the Department.

A Final Invoice will be submitted to the Department no later than the 60th day following Final Acceptance of the individual project or as requested by the Department.

12.0 OTHER SERVICES:

Upon written authorization by the District Construction Engineer or designee, the Consultant will perform additional services in connection with the project not otherwise identified in this Agreement. The following items are not included as part of this Agreement, but may be required by the Department to supplement the Consultant services under this Agreement.

- A. Provide inspection services in addition to those provided for in this Agreement.
- B. Provide services determined necessary for the successful completion and closure of the Construction Contract.

13.0 CONTRADICTIONS:

In the event of a contradiction between the provisions of this Scope of Services and the Consultant's proposal as made a part of their Agreement, the provisions of the Scope of Services shall apply.

14.0 THIRD PARTY BENEFICIARY

It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of any part of the Agreement to create in the public or any member thereof, a third party beneficiary hereunder, or to authorize anyone not a party to this Agreement to maintain a claim, cause of action, lien or any other damages or any relief of any kind pursuant to the terms or provisions of this Agreement.

LIST OF PROJECT SPECIFIC POSITIONS

*Do not include these positions as an attachment to Scope of Services. These positions are to be pulled forth and added to Article 10.2 as needed.

CEI ASPHALT PLANT INSPECTOR- High School Graduate or equivalent plus one (1) year experience in the surveillance and inspection of hot mix asphalt plant operations and have the following:

QUALIFICATIONS:

CTQP Asphalt Plant Level I

CTQP Asphalt Plant Level II

CEI BRIDGE PROJECT ADMINISTRATOR (PAINTING/ LEAD ABATEMENT/ STRUCTURAL STEEL REPAIR):

CERTIFICATIONS:

NACE Level III Certified or BCI Level II Certified

SSPC C-3 Lead Paint Removal

AWS Certified Welding Inspector (CWI) familiar with ANSI/AASHTO/AWS Bridge Welding Code

CEI BRIDGE SENIOR INSPECTOR (PAINTING/ LEAD ABATEMENT/ STRUCTURAL STEEL REPAIR):

CERTIFICATIONS:

NACE Level III Certified or BCI Level II Certified

SSPC C-3 Lead Paint Removal

AWS Certified Welding Inspector (CWI) familiar with ANSI/AASHTO/AWS Bridge Welding Code

CEI BRIDGE INSPECTOR (PAINTING/ LEAD ABATEMENT/ STRUCTURAL STEEL REPAIR):

CERTIFICATIONS:

NACE Level I or BCI Level I

SSPC C-3 Lead Paint Removal

AWS Certified Welding Inspector (CWI) familiar with ANSI/AASHTO/AWS Bridge Welding Code

GEOTECHNICAL TECHNICIAN for Pile Foundations- Qualified CTQP Pile Driving Inspector, knowledgeable in pile installation in conjunction with dynamic load tests with a minimum of three (3) years of experience on at least two (2) Department bridge projects: for projects with Embedded Data Collectors (EDCs), certified EDC monitoring equipment operator.

GEOTECHNICAL TECHNICIAN for Drilled Shaft Foundations- Qualified CTQP Drilled Shaft Inspector, knowledgeable in drilled shaft installation with a minimum of three (3) years of experience on at least two (2) Department bridge projects.

CEI SENIOR ITS INSPECTOR- High School graduate or equivalent plus four (4) years of experience in construction inspection, two (2) years of which shall have been in ITS construction inspection plus the following:

QUALIFICATIONS:

Fiber Installation Inspection and OTDR Fiber Testing
DMR Operation and Testing
Controller Operation and Testing
CCTC Installation, Operation and Testing
Familiarity with Existing Communication Equipment and Switches

CERTIFICATIONS:

IMSA Traffic Signal Inspector Level I
Or a Civil Engineering Degree and one (1) year of ITS CEI experience.

Responsible for performing highly complex technical assignments in fields surveying and construction layout, making and checking engineering computations, inspecting construction work and conducting field tests and is responsible for coordinating and managing the lower level inspectors. Work is performed under the general supervision of the Project Administrator.

CEI ITS INSPECTOR- High School Graduate or equivalent plus two (2) years of experience in construction inspection, one (1) year of which shall have been in ITS construction inspection, plus the following:

QUALIFICATIONS:

Fiber Installation Inspection and OTDR Fiber Testing
DMR Operation and Testing
Controller Operation and Testing
CCTC Installation, Operation and Testing
Familiarity with Existing Communication Equipment and Switches

CERTIFICATIONS:

None
Or a Civil Engineering Degree

Responsible for performing assignments in assisting Senior Inspector in the performance of their duties. Receive general supervision from the Senior Inspector who reviews work while in progress. Civil Engineering graduates must obtain certifications within the first year of working as an inspector or Engineer Intern. Exceptions will be permitted on a case-by-case basis so long as qualifications and certifications are appropriate for specific inspection duties.

SYSTEMS TECHNICIAN- High School Graduate plus five (5) years of experience in Electronic Systems and/or Traffic Engineering technician level work, detailed experience and training in the use of Otter's and other equipment related to fiber optic communication testing. Requires certification of this training or equivalent training.

CEI LANDSCAPE INSPECTOR- High School Graduate or equivalent plus five (5) years of commercial or roadway landscape construction experience or Florida Nursery Growers and Landscape

Association (FNGLA) Certified Landscape Contractor Certification plus two (2) years of commercial or roadway landscape construction experience or a degree in a related field plus three (3) years of commercial or roadway landscape construction experience. The individual must be skilled at plant identification, classification, and grades and standards for nursery plants as established by the manual “Grades and Standards for Nursery Plants” by the Florida Department of Agriculture and Consumer Services. The individual must be knowledgeable of current Florida Department of Transportation standards for landscape installation, including plans reading and irrigation system construction. The individual must have the ability to read and interpret contract documents. The individual will receive general supervision from the Senior Inspector who reviews work while in progress.

PUBLIC INFORMATION OFFICER- High School Graduate or equivalent and be knowledgeable in public information and/or advertising involving mass circulation or distribution of literature, mass advertising or other similar activities and performed such work for at least three (3) years.

CEI SENIOR INSPECTOR BUILDING STRUCTURES- High School Graduate plus eight (8) years of experience in construction inspection with four (4) years of experience in performing highly complex technical assignments in field surveying and construction layout, making and checking engineering computations, inspecting construction work and conducting fields tests. Senior Building Structures Inspector must be fully knowledgeable of all aspects of the building construction to include masonry work and familiarization with the local and State building codes and ordinances. Work is performed under the general supervision of the Project Engineer.

CEI BUILDING INSPECTOR/ ELECTRICAL- High School Graduate plus five (5) years experience as a qualified building inspector or general contractor. Experience shall be actual field experience as a qualified building inspector or job superintendent. Inspector must be fully knowledgeable of all local and State building codes and ordinances.

CEI UTILITY COORDINATOR- High School Graduate or equivalent and be knowledgeable of Department’s Standards, policies, procedures, and agreements and shall have a minimum of four (4) years of experience performing utility coordination in accordance with Department’s Standards, policies, procedures and agreements.

Sample E: Tennessee DOT Proposed Scope of Work for Construction Engineering and Inspection Services

Summary: The sample Tennessee DOT Scope of Work was developed to define the duties of consultant with regard to administration of the TDOT highway construction contract. The general outline of the scope of work includes the following:

1. The responsibilities of the Consultant:
 - a. Erosion Control and Preconstruction Conferences
 - b. Attend Weekly meeting
 - c. Project Administration
 - d. Provide Construction Inspection
 - e. Conduct Field Survey
 - f. Supplemental Agreements/Construction Change , Force, Account, VECP
 - g. Shop Drawings
 - h. Quality Assurance, Testing for Acceptance and Training
 - i. Progress Payments
 - j. Revisions to the Contract Plans
 - k. Distribution of Correspondence
 - l. Inspection of Work
 - m. Contractor's Payrolls, Employee Interviews and Contract Compliance
 - n. Reports
 - o. Final Records
 - p. Project Claims
 - q. Utility Relocations
2. Responsibilities of Tennessee Department of Transportation
 - a. TDOT Project Supervisor
 - b. Public Information/Relations
 - c. Materials Testing Laboratory
 - d. Offsite Fabrication Inspection
 - e. Geotechnical Services

TDOT PROPOSED SCOPE OF WORK – CEI

SCOPE OF SERVICES SUMMARY

This document is to define as clearly as possible the duties of the consultant with regard to administration of the TDOT construction contract. The intent of the document is to give the Consultant the same responsibility and authority as TDOT personnel when administering a state highway construction contract. The administration of the TDOT highway construction contract will be conducted by the consultant in full cooperation with the TDOT Project Supervisor and/or his representative(s) assigned to the project. The TDOT Project Supervisor will have the final word in regard to challenges of consultant authority by the contractor or decisions made by the consultant regarding the work. The ultimate goal of the Department and the Consultant should be to administer the contract in a highly professional manner, conducive of a cooperative relationship between the Consultant, contractors, and the Department, and to complete the work on budget and on time with a minimum inconvenience and maximum safety to the public.

The responsibilities of the Consultant on this project are:

- 1. Erosion Control and Preconstruction Conferences:** Prepare for and conduct the Erosion Control and Preconstruction Conferences. Address and resolve all issues that arise at the meeting with appropriate offices, agencies and divisions. Prepare and distribute detailed minutes of the meeting.
- 2. Attend Weekly meeting:** Prepare the agenda, attend, and conduct meeting every week with TDOT personnel, contractor, sub-contractors, utility personnel and other agencies affected by the project. Be prepared to discuss recent progress, upcoming events in the schedule, and problems associated with the project. Record significant information revealed and discussed at the meeting and distribute written minutes to the appropriate agencies.
- 3. Project Administration:** Provide project administration and coordinate with the assigned TDOT Project Supervisor. Prepare for and attend, when requested, any periodic or in-depth FHWA inspections that may be conducted on the project related to project work, progress or records. Prepare for, cooperate with, and assist auditors that may be assigned to review project records, payments, reports, etc. Provide ample inspectors and assistance to adequately oversee all work being done on the contract. Monitor Consultant hours worked on the project and justify need for overtime. Prior to starting work, submit to TDOT Project Supervisor a listing of personnel assigned to the project for review and approval. In addition, a list of persons with emergency phone numbers should always be supplied to the TDOT Project Supervisor and be available at any time in the case of an emergency on the project. The project Administrator should also obtain from the

contractor a list of contractor's personnel that will be responsible for any occurrence that may arise on the project for the life of the project.

4. **Provide Construction Inspection:** Provide effective and qualified supervision of all inspection services being conducted by Consultant and sub-consultants. All field technicians must be certified in the applicable TDOT certification workshops listed below:

Asphalt Roadway Paving Inspector
Class 1 Concrete Technician
Soils and Aggregate Technician
Nuclear Gauge Training

Certification from another State Highway Department, nationally recognized institution, or other approved agency may be acceptable in lieu of the TDOT certification. Prior approval is required.

5. **Conduct Field Surveys:** Conduct and supervise surveying services to obtain original, final, as well as progress estimate quantities for payment of all earthwork pay items to the contractor. Establish horizontal and vertical control on the project to be utilized by the contractor for construction layout. Be prepared to justify quantities in case of discrepancies by contractors or the Department. Upon request, check construction layout when deemed necessary by the TDOT Project Supervisor.
6. **Supplemental Agreements/Construction Change, Force Account, VECP:** Notify the TDOT Project Supervisor of the necessity of any Supplemental Agreements/Construction Changes. Negotiate prices for additional pay items with the contractor while adhering the "Average Unit Price" listing when possible. Coordinate acceptance of prices with the TDOT Project Supervisor. For Regions 1, 2, & 3, prepare the Supplemental Agreement/Construction Change on the supplied standard form and submit to the TDOT Project Supervisor for final review and submittal for processing. Any work that cannot be negotiated with the prime contractor will be pursued by Force Account as defined in the Standard Specifications and recorded on forms supplied by the Department. Submit Value Engineering Change Proposals to the TDOT Project Supervisor for analysis and distribution to the appropriate division(s).
7. **Shop Drawings:** See Special Provision 105A
8. **Quality Assurance, Testing for Acceptance, and Training:** *(The intent is for the Consultant to provide all field testing normally provided by the Department with employees certified to perform the tests. Copies of all certifications should be filed in the project records for review by the Department at any time. Any temporary waivers of certification or licensing will be reviewed by the Department for the final decision.)* Provide certification training to Consultant personnel for all necessary field testing and inspection. Monitor the testing

provided by the contractor in the field as defined in the Contract, Plans or Specifications. Document Consultant testing on standard forms provided by the Department and distribute as required. Monitor documentation of testing by the contractor. Field testing by the Consultant includes, but is not limited to, all ACI tests for concrete including concrete plant for acceptance by the Department, nuclear density testing of earthwork, base stone, asphalt, structural backfill, and pipe backfill as defined in the Standard Specifications and the Departments sampling and testing schedule. The Consultant will also provide aggregate analysis and moisture testing for roadway embankment and base stone materials as defined in the Standard Specifications and the Departments sampling and testing schedule. *(Note: All test normally to be performed by TDOT project personnel will be performed by the consultant, with the exception of the asphalt plant which TDOT personnel will continue to perform.)* Also included as the responsibility of the consultant is miscellaneous checking of application rates and dimensions and bearings to assure conformance to Plans and Specifications. In case of notification of defective concrete as defined in the Specifications, the Consultant will submit the initial information on forms supplied by the Department and receive the final disposition of the material after review. Certifications of material submitted by the contractor will be reviewed by the Consultant for conformity to the Specifications. The certification documents submitted to the Department will also be reviewed for completeness and conformance to the Department's standard form of submission. A Final Materials and Tests Certification will be submitted to the Materials and Tests Manager with the Final Records.

- 9. Progress Payments:** The Consultant will document and assemble accurate quantities for Monthly Progress Payments to the prime Contractor from actual project field records, as directed by Special Provisions in the contract, from Supplemental Agreements/Construction Changes or Force Accounts. The quantities for payment will be referenced to field records prior to submission for payment. Test reports will be on file prior to payment. The TDOT Project Supervisor must approve any waiver of testing documents prior to payment. Pay quantities will be submitted to the TDOT Project Supervisor for review and payment on a printout from the "Final Record Book" program provided by the Department. Payments for stockpiled material may be made as defined in the Standard Specifications and approved by the Project Supervisor. Estimate "cut-off" will be as follows:

Region 1 : the 20th of each month (15th day for June, November, and December).

Region 2 & 3: the last day of each month, except for the month of June with the submission of the quantities to the TDOT Project Supervisor for review and payment by the sixth of each month.

Region 4: the 15th of each month.

Copies of approved subcontracts as well as copies of actual DBE subcontractor's contracts should be on file prior to the first Progress Payment.

10. Revisions to the Contract Plans: Any revisions to the contract plans or cross sections will be submitted to the TDOT Project Supervisor for processing.

11. Distribution of Correspondence: Submit to the TDOT Project Supervisor a copy of all correspondence between the Consultant, contractor, subcontractors, or others concerning matters related to the project. Maintain an office file copy for submission with the project Final Records.

12. Inspection of Work: Provide inspection services for conformance to Plans and Specifications for all roadway, structures, and specialty items that are being incorporated into the project. Observe, measure and record all quantities for payment. Record field measurements in project records for review by the Department or auditors. The records will be recorded on a standard form (field book) supplied or defined by the Department and/or on field inspection forms to be submitted to the Department. Check traffic control daily, and additionally as required or requested. Notify the contractor of deficiencies or problems immediately. Document weekly (or as often as necessary) project traffic control on forms supplied by the Department and distribute as required. Inspect daily erosion control items for conformance to the plans as well as effectiveness in the field. Notify the contractor of deficiencies. Prepare to justify any and all pay quantities in the case of questions by the contractor or Department. Prepare an accurate daily diary, signed by the inspector, consisting of:

- A record of the contractors on the project
- Their personnel (number and classification)
- Equipment (number and type or size)
- Location and work performed by each contractor or subcontractor
- Orders given the contractor
- Events of note on the project
- Accidents on the project and any details surrounding the accident such as police report number, fatalities, causes, time, etc. Obtain a copy of the police report for the project records whenever possible.
- Weather, amount of precipitation, temperature at morning, noon, and evening, cloudy, clear, etc.
- Days charged, with explanation if not charged
- Equipment arriving or leaving the project, idle equipment
- Any other details that may be important later in the project life

13. Contractor's Payrolls, Employee Interviews and Contract Compliance: Receive and check the contractor's payrolls for conformance to state wage rates as defined in the contract. Late payrolls (two weeks late) are justification to withhold progress payment. Notify the prime contractor of late payrolls and

request immediate submission. Notify the TDOT Project Supervisor prior to withholding payments. Conduct employee interviews on the forms submitted by the Department and compare to the submitted payrolls for accuracy. Notify the prime contractor of inaccuracies and resolve discrepancies. Adhere to Special Provisions concerning reports to be submitted to the Contract Compliance office.

- 14. Reports:** There are numerous reports, documents, etc., that must be generated in the process of contract administration. A copy (electronic or paper) will be provided by the Department prior to construction, or as needed. Any questions regarding the requirements can be forwarded to the TDOT Project Supervisor for clarification at any time.
- 15. Final Records:** Submit a compilation of project records in the Department's standard format to the Final Records Department after project completion. Make corrections when/if notified and resubmit the records and a final estimate for the project at the appropriate time. Submit all final forms (FHWA-47, CC3, etc.) with the final records. Coordinate consultant hours after the project completion with the TDOT Project Supervisor for approval.
- 16. Project Claims:** Prepare documentation and assist in the defense of the Department, when requested, in preparation for Claims or possible Claims resulting in the execution of the contract.
- 17. Utility Relocations:** Utility relocations will be a part of this contract. Relocations that are reimbursable will be inspected for quantities that will be reviewed and verified comparing utility company records prior to payment by the Department.

The responsibilities of the Tennessee Department of Transportation on this project are:

- 1. TDOT Project Supervisor:** Provide a project supervisor to oversee and coordinate with CEI Supervisor.
- 2. Public Information/Relations:** Provide public information/relations for project development.
- 3. Materials Testing Laboratory:** Provide designated materials testing laboratory for all applicable testing requirements.
- 4. Offsite Fabrication Inspection:** Provide inspection services for all materials manufactured off site (i.e. bridge beams, concrete pipe, etc.)
- 5. Geotechnical Services:** Provide all Geotechnical services needed to complete project.

Sample F: Connecticut DOT Construction Engineering and Inspection Information Pamphlet

Summary: The sample Connecticut DOT Scope of Work was developed to establish the functions and responsibilities of Consulting Engineers as required by the Department of Transportation in carrying out the policies, procedures and practices as shown in the Connecticut Department of Transportation, Bureau of Engineering and Highway Operation's "Construction Manual" and other publications referred to in the Consultant Agreement and this pamphlet. The general outline of the scope of work includes the following:

1. General Information
 - a. Scope of Work
 - b. General Requirements
 - c. Publications
2. Personnel
 - a. Project Staffing
 - b. Personnel Procedures
 - c. Qualifications
 - d. Certifications
3. Consulting Engineer Responsibilities
 - a. Roles and Responsibilities
 - b. Quality Management
 - c. Health and Safety
 - d. Equipment Procurement
 - e. Mileage, Lodging and Subsistence
 - f. Billing Procedures
 - g. Performance Reviews

CHAPTER I
GENERAL INFORMATION

I.1 SCOPE OF WORK

The Consulting Engineer providing construction engineering and inspection services to the Department shall perform all work under the direct control of the State's Project Engineer. The Consulting Engineer shall provide sufficient qualified staff to continuously inspect each of the construction contractor's principal operations (i.e. grading, drainage, structure, pavement, facilities construction, rail work) in accordance with the Department's established policies, procedures and practices as shown in the Connecticut Department of Transportation, Bureau of Engineering and Highway Operation's "Construction Manual" and other publications referred to in the Consultant Agreement and this pamphlet. In addition, the Consulting Engineer's staff (including home office personnel) shall provide any construction engineering services required for the project, including, but not limited to, the review of working drawings, rigging plans, change orders, substitutions, constructability issues or other issues that may arise and provide suitable engineering recommendations. The Consulting Engineer shall organize his staff to provide the required administrative functions associated with the construction project including, but not limited to, preparation of correspondence, construction orders, periodic payment estimates, quantity computations, material sampling and testing, EEO and DBE monitoring, final documentation, State and Federal reports, construction surveys, reviews and recommendations of all construction issues, claims analysis support and other project-related functions as directed by the State's Project Engineer.

I.2 GENERAL REQUIREMENTS

The Department has many general requirements and policies to be met by the Consulting Engineer. The following items are not meant to be an all inclusive list, but rather to call attention to several key items.

SUBMITTALS

Prior to the start of construction engineering and inspection services, the Consulting Engineer is required to submit the following:

- Project Staffing Plan
- Personnel Policies and Procedures (including sick leave, vacation, overtime, holidays, etc.)
- Quality Management Plan
- Certificate of Insurance
- Documentation of any required certifications, degrees or licenses.

SUBCONTRACTING

The Consulting Engineer must perform the major part, at least seventy-five (75) percent of the assignment with their own forces unless specifically authorized by the Office of Construction. Sub-consultant assignments will be permitted up to twenty-five (25) percent of the value of the assignment. If specialized work is required which results in subcontract values in excess of twenty-five (25) percent of the agreement value, the Prime Consultant shall obtain written approval from the Construction Administrator for the additional sub-consultant assignments.

Should the project have a DBE or SBE goal associated with it, the prime shall document their good faith efforts to provide opportunities for DBE firms to participate in accordance with the respective specification.

The Department of Transportation is committed to an effective implementation of a DBE Program as defined in Title 49, Code of Federal Regulations, Part 26 and SBE Program as defined in the Connecticut General Statutes. Implementation of the DBE/SBE Program is accorded the same priority as compliance with all other legal obligations incurred by the Connecticut Department of Transportation in its financial assistance agreements with the U.S. Department of Transportation.

Note: Replacing DBE sub-consultants previously presented to the selection panel without providing sufficient cause to the Department will not be allowed without written approval of the administering unit.

I.3 PUBLICATIONS

The following is a listing of applicable publications which the Consulting Engineer should have available at all times at the project office. The Consulting Engineer's Resident Engineer shall ensure all personnel are familiar with the applicable sections of the publications involving the work being performed.

1. Personal Services Agreement for Project
2. Connecticut Department of Transportation Construction Manual
3. Contract Plans and Specifications
4. Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction
5. Pamphlet for Monitoring Performance and Payment Requests for Consultants
6. Schedule of Minimum Requirements for Sampling Materials for Test
7. Copies of all Safety Policy Statements and Memoranda
8. All Other Publications Provided to the Consulting Engineer by the Department.

CHAPTER 2
PERSONNEL

2.1 PROJECT STAFFING

The Consulting Engineer shall provide sufficient staff to properly inspect the contractor's operations. The Consulting Engineer is required to submit a detailed Project Staffing Plan that shows how the Consultant proposes to staff the project to meet the requirements of its agreement with the Department. The staff size and qualifications shall be approved by the District Engineer and the Consulting Engineer shall modify the size of the on-site staff as required by the construction contractor's operations and schedules with approval of the State's Project Engineer.

The Consulting Engineer's staff shall report to, accept and fulfill all orders, directives, and interpretations of the plans, specifications and special provisions as given by the State's Project Engineer. The State's Project Engineer will work under the supervision of the Transportation Supervising Engineer assigned to the project, who in turn will be supervised by the Assistant District Engineer. The District Engineer has overall responsibility for the work.

The Consulting Engineer shall provide a fully qualified Resident Engineer to supervise the Consulting Engineer's project organization in their administration and inspection of the work. Depending on project size and complexity, the Resident Engineer shall have under his or her supervision an inspection staff sufficient to continuously monitor the contractor's principal operations and to perform the administrative tasks associated with the construction project. On smaller projects, survey work will be performed by District personnel whenever possible. On projects which require a substantial effort, survey services may be provided by the Consulting Engineer or a Sub-consultant. Also, on smaller projects, various responsibilities may be combined under one classification (i.e., Office Engineer/Inspector) to economically provide the required service.

The Consulting Engineer shall also provide full or part-time clerical and administrative staff to promptly handle the preparation of all correspondence, construction orders, payment estimates, reports and project-related State and Federal forms. However, on small projects, clerical work (limited to typing only) may be performed by District Personnel whenever possible.

If at any time it is determined that the Consulting Engineer's project staff is inappropriate for the work being performed, the Project Engineer shall direct the Consulting Engineer to make appropriate adjustments to the staff.

During project shutdown periods, the Consulting Engineer is responsible for making certain that the project is appropriately staffed. On December 1st of each year of the agreement, the consultant shall provide a schedule of work and personnel assignments to the State's Project Engineer in order to verify that sufficient work exists to support the level of staffing proposed by the Consultant during the project shutdown period. Reduction of staff during the winter period may be required depending on the project status and work to be performed.

2.2 PERSONNEL PROCEDURES

▪ **INITIAL ASSIGNMENTS**

Prior to assignment of any personnel to the project, the Consulting Engineer shall submit the following information to the District Engineer for approval: Name, position, current and proposed rate of compensation, benefit and overtime-exempt status, evidence of any required degrees, licenses or certifications, or, evidence that the individual has applied for the next scheduled certification examination must be provided. In no case will any personnel be assigned to a project without prior written approval by the State. The State reserves the right to require the replacement of any employee found not qualified, competent or suitable for the duties required of his or her position.

▪ **OVERTIME**

The Consulting Engineer shall obtain authorization, in writing, for any overtime performed on the project from the State's Project Engineer. Unless an emergency situation exists, the authorization shall be obtained prior to the overtime work being performed. If the situation develops where advance authorization cannot be obtained, the Consulting Engineer shall inform the State's Project Engineer of the need for the overtime as soon as practical after the fact. A copy of the Company's overtime policy must be provided to the State.

There may be times when the contractor is working during periods that would be outside of an inspector's normal work shift (i.e.: Saturday, Sunday, Holiday, etc.). Under these situations, an inspector may be assigned to come in to cover the contractor's operations. Except in emergency circumstances, advance approval from the State's Project Engineer is required for all overtime.

Administrative and survey work do not require overtime coverage, except in emergency cases or situations where it is more economical to complete the work than to return the following day. Individuals must receive approval of the responsible Project Engineer or District Supervisory personnel

▪ **SHIFT DIFFERENTIAL**

The Consulting Engineer shall provide the initiating unit with a copy of their company's policies and procedures at the project assignment meeting. No negotiations may take place until these policies and procedures have been received. Shift differential cannot be reimbursed unless it is a part of the Consulting Engineer's policies and procedures at the time of negotiations. A shift differential no greater than the amount currently allowed in the State's P-4 Engineering Contract and subsequent P-4 Engineering Contracts will be reimbursed.

2.2 PERSONNEL PROCEDURES

▪ **SALARY ADJUSTMENTS/PROMOTIONS**

Any adjustment to salaries after initial approval of an individual's rate shall be submitted to the District Engineer for approval. The submittal shall contain the following information: Employee name, job classification, current and proposed rate of pay, rate of pay and job classification one (1) year prior to the proposed increase, and effective date of the proposed increase.

The maximum amount an employee can receive as an annual salary adjustment shall not exceed the terms specified in the Consultant Agreement. The promotion of an individual on the Consulting Engineer's staff will only be allowed for the purpose of filling a vacant position. The individual must meet the minimum requirements for the position to which they are being promoted. Promotions will only be recognized based on job classifications within the agreement.

In general, a salary increase based on a promotion shall not exceed the mean rate of pay range for the position class the employee is promoted to, as shown in the agreement. Consultants may request a higher increase in exceptional cases, but in no case will the salary exceed the maximum rate negotiated for the classification in the agreement.

Requests for approval of salary adjustments must be submitted at least 21 days prior to the effective date of the adjustment. Retroactive approval of salary rates will not be made and the effective date of any adjustment made without prior submission, shall be 21 days after submission of the request to the District Engineer.

The Department reserves the right to limit the amount of any increase based upon the Department's appraisal of an individual's performance. If the Department reduces the amount of the increase proposed by the Consulting Engineer, the reason for the reduction will be provided in writing to the Consulting Engineer.

2.3 QUALIFICATIONS

A. HIGHWAY, FACILITIES, OR RAIL CONSTRUCTION:

The Consulting Engineer shall provide sufficient staff experienced in highway, facilities or rail construction practices and procedures to perform construction engineering and inspection services as directed by the State's Project Engineer. The experience and qualifications listed throughout this section are guidelines only and approval of personnel shall be at the discretion of the District Office. Interviews and/or additional information may be required to determine the suitability of any potential candidates. Additionally, there may be the need for Specialty Inspectors whose qualifications will be determined on a case by case basis.

A Bachelor of Science Degree in a relevant field may be substituted for two (2) years of the employment experience requirement, while an Associate of Science Degree in a relevant field may be substituted for one (1) year of the employment experience requirement.

- **RESIDENT ENGINEER 3 (Highly complex Projects; typically exceeding \$20 million)**

Experience: Not less than twelve (12) years employment in civil, highway or relevant engineering field of which six (6) years must have been in a supervisory capacity of highway, bridge, facilities or rail construction activities as required by the project, and at least six (6) years of which shall have been in field inspection activities. Individual must have considerable knowledge of highway, bridge, facilities or rail construction practices and procedures as required; ability to prepare correspondence, reports and recommendations concerning construction issues; demonstrated ability to deal effectively with others; supervisory ability; ability to establish and maintain project records.

Licensing: Possession of a current Professional Engineer's License registered in the State of Connecticut is required.

2.3 QUALIFICATIONS

- **RESIDENT ENGINEER 2 (Moderately complex Projects; typically between \$5 and \$20 Million)**

Experience: Not less than ten (10) years employment in civil, highway or relevant engineering field of which five (5) years must have been in a supervisory capacity of highway, bridge, facilities or rail construction activities as required by the project, and at least five (5) years of which shall have been in field inspection activities. Individual must have considerable knowledge of highway, bridge, facilities or rail construction practices and procedures as required; ability to prepare correspondence, reports and recommendations concerning construction issues; demonstrated ability to deal effectively with others; supervisory ability; ability to establish and maintain project records.

Licensing: NICET Level IV Certification in Transportation/Highway Construction is required, except for those persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE).

- **RESIDENT ENGINEER I (Low Complexity Projects; typically under \$5 Million):**

Experience: Not less than eight (8) years employment in civil, highway or relevant engineering field of which three (3) years must have been in a supervisory capacity of highway, bridge, facilities or rail construction activities as required; at least four (4) years of which shall have been in field inspection activities. Individual must have considerable knowledge of highway, bridge, facilities or rail construction practices and procedures as required; ability to prepare correspondence, reports and recommendations concerning construction issues; demonstrated ability to deal effectively with others; supervisory ability; ability to establish and maintain project records.

Certifications: NICET Level IV Certification in Transportation/Highway Construction is required, except for those persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE).

2.3 QUALIFICATIONS

▪ **CHIEF INSPECTOR:**

Experience: Not less than six (6) years employment in civil, highway or relevant engineering field of which two (2) years must have been in a supervisory capacity of highway, bridge, facilities or rail construction activities as required; at least two (2) years of which shall have been in field inspection activities. Individual must have considerable knowledge of highway, bridge, facilities or rail construction practices and procedures as required; ability to prepare correspondence, reports, and recommendations concerning construction issues; demonstrated ability to deal effectively with others; supervisory ability; ability to establish and maintain project records.

Certifications: NICET Level III Certification in Transportation/Highway Construction is required, except for those persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE).

▪ **CHIEF INSPECTOR (MEP):**

Experience: Not less than six (6) years employment in mechanical, electrical, plumbing (MEP) or relevant engineering field of which two (2) years must have been in a supervisory capacity of mechanical, electrical or plumbing construction activities; at least two (2) years of which shall have been in field inspection activities. Individual must have considerable knowledge of MEP construction practices and procedures, as they relate to facilities or rail construction as required; ability to prepare correspondence, reports, and recommendations concerning construction issues; demonstrated ability to deal effectively with others; supervisory ability; ability to establish and maintain project records.

Degree: Bachelor of Science Degree in a relevant field.

▪ **OFFICE ENGINEER 2 (Projects in excess of \$20 million)**

Experience: Not less than eight (8) years employment in construction projects (Highway, Facilities or Rail), maintaining project records of which two (2) years must have been in a supervisory capacity; at least one (1) year of which shall have been in field inspection activities.. Ability to prepare change orders, material testing reports, filing and considerable knowledge in establishing and maintaining project records; ability to use applicable software and record keeping methods.

Certifications: NICET Level III Certification in Transportation/Highway Construction is required, except for those persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE) or a Bachelor of Science Degree (BS) in a relevant field.

2.3 QUALIFICATIONS

- **OFFICE ENGINEER I (Project under \$20 million or as an assistant to an Office Engineer 2 on a highly complex Project)**

Experience: Not less than four (4) years employment in construction projects (Highway, Facilities or Rail), maintaining project records. Ability to prepare change orders, material testing reports, filing and considerable knowledge in establishing and maintaining project records; ability to use applicable software and record keeping methods.

Certifications: NICET Level II Certification in Transportation/Highway Construction is required, except for those persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE) or a Bachelor of Science Degree (BS) in a relevant field.

- **SENIOR INSPECTOR**

Experience: Not less than four (4) years employment in civil, highway or appropriate engineering field of which at least two (2) years shall be in field inspection activities. Considerable knowledge of construction materials, methods; ability to maintain field and office records; ability to perform complex quantity and engineering computations; ability to read and interpret plans and specifications; ability to deal effectively with people.

Certifications: NICET Level II Certification in Transportation/Highway Construction is required, except for those persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE) or a Bachelor of Science Degree (BS) in a relevant field.

- **SENIOR INSPECTOR (MECHANICAL, ELECTRICAL, PLUMBING)**

Experience: Not less than four (4) years employment in mechanical, electrical, plumbing or appropriate engineering field of which at least two (2) years shall be in field inspection activities. Considerable knowledge of construction materials, methods; ability to maintain field and office records; ability to perform complex quantity and engineering computations; ability to read and interpret plans and specifications; ability to deal effectively with people.

Degree: Bachelor of Science Degree in a relevant field.

2.3 QUALIFICATIONS

▪ **INSPECTOR:**

Experience: Not less than three (3) years employment in civil, highway or appropriate engineering field of which at least one (1) year shall be in field inspection activities. Considerable knowledge of construction materials, methods and procedures; ability to maintain field and office records; ability to perform complex quantity and engineering computations; ability to read and interpret plans and specifications; ability to deal effectively with people.

Certifications: NICET Level II Certification in Transportation/Highway Construction is required, except for those persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE) or a Bachelor of Science Degree (BS) in a relevant field.

▪ **ENTRY LEVEL INSPECTOR*:**

Experience: None required.

Certifications: NICET Level I Certification in Transportation/Highway Construction is required, except for those possessing a Bachelor or Associate of Science Degree in a relevant field. Persons possessing a NICET Level I Certification must have a high school diploma and demonstrate a proficiency in math and science.

- This position may only be used on projects over \$10 million. Entry level inspectors must be directly supervised by more senior employees and may only be used with the written approval of the Department.

▪ **SCHEDULER**

Experience: Not less than six (6) years of relevant experience in preparation, interpretation and modification of Critical Path Method (CPM) construction schedules.

▪ **BUILDING INSPECTOR:**

Experience: Not less than six (6) years employment in facilities construction projects. Individual must have considerable knowledge of construction practices and procedures for facilities construction and extensive knowledge of all relevant building codes and regulations.

Licensing: Possession of a current Assistant Building Official License registered in the State of Connecticut is required.

2.3 QUALIFICATIONS

▪ **SURVEY PARTY CHIEF:**

Experience: Not less than four (4) years of construction survey experience of which at least three (3) years shall have been as an instrument person or survey party chief. Considerable knowledge of principles and methods of land surveying; knowledge of principles and practices of highway engineering; ability to keep and reduce field notes; ability to determine construction quantities and amounts on completed projects; ability to supervise the layout of limits of work and grades, ability to check contractor's survey layout for accuracy; ability to layout foundations, rail track layouts, abutments, culverts and pipe lines; ability to re-establish boundary lines and stake-taking lines; ability to prepare as-built plans and other related duties as required.

Licensing: The Survey Party Chief shall be currently licensed as a Land Surveyor in the State of Connecticut or shall be working under the direct supervision of a member of the Consulting Engineer's staff who is so licensed as a Land Surveyor in the State of Connecticut.

2.3 QUALIFICATIONS

B. BRIDGE PAINTING

▪ **RESIDENT ENGINEER/CHIEF INSPECTOR:**

Experience: Not less than eight (8) years experience in construction inspection of paint removal and application projects, of which four (4) years must have been in a supervisory and administrative capacity in field inspection activities related to coatings. Individual must have considerable knowledge of highway and bridge construction practices and procedures; ability to prepare correspondence, ability to deal effectively with others; supervisory ability; ability to establish and maintain project records.

Certifications: Either NACE Coating Inspector Certification (must have completed sessions I, II, III, and Peer Review) or SSPC – BCI Level 2 is required.

▪ **INSPECTION STAFF:**

Experience: Considerable knowledge of highway and bridge construction practices and procedures; materials and methods; coatings containment practices and procedures; lead monitoring; lead health and safety procedures; ability to prepare correspondence, reports, and recommendations concerning construction issues; demonstrated ability to deal effectively with others; supervisory ability; ability to establish and maintain project records.

Certifications: Either NACE Coating Inspector Certification (must have completed sessions I, II and III) or SSPC – BCI Level I is required.

2.4 CERTIFICATIONS

- **AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA)
TRAFFIC CONTROL SUPERVISOR (TCS)**

Consulting Engineers performing construction engineering and inspection services on limited access expressway projects are required to have one (1) person certified under the American Traffic Safety Services Association (ATSSA) or other program acceptable to the Department as a Traffic Control Supervisor (TCS).

- **AMERICAN CONCRETE INSTITUTE (ACI)**

Consulting Engineers performing any field sampling or testing of Portland Cement Concrete (PCC) must be currently certified as an ACI Field Testing Technician – Grade I. For each assignment, the consultant will be required to provide a minimum of one ACI Field Testing Technician – Grade I. Concrete field sampling and testing shall be performed by certified personnel only. Some projects may require additional certified personnel due to multi-shift operations or other testing needs.

For project assignments with no concrete items, the ACI requirement will be waived.

- **NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING
TECHNOLOGIES (NICET)**

Consulting Engineer personnel are required to be NICET certified at the appropriate level in accordance with requirements of Section 2.3 – Qualifications, of this pamphlet. NICET Certification requirements are waived for persons possessing a current Professional Engineer's License registered in the State of Connecticut (PE) or a Bachelor of Science Degree (BS) in a relevant field.

- **NATIONAL ASSOCIATION OF CORROSION ENGINEERS (NACE)**

- **SOCIETY FOR PROTECTIVE COATINGS (SSPC)**

Consulting Engineer personnel performing the inspection of bridge painting projects must be either NACE or SSPC - Bridge Coating Inspector (BCI) certified in accordance with the requirements of Section 2.3 – Qualifications, of this pamphlet.

2.4 CERTIFICATIONS

▪ **NEW ENGLAND TRANSPORTATION TECHNICIAN CERTIFICATION PROGRAM (NETTCP)**

The Department requires personnel utilized on construction engineering and inspection assignments to have been certified under the NETTCP program or under another acceptable program. Currently, the NETTCP certification program is the only program acceptable to the Department for meeting this requirement. The NETTCP certifications required on CONNDOT construction engineering and inspection assignments include Concrete Inspector (CI) and HMA Paving Inspector (HMAPI). For each assignment, the consultant will be required to provide a minimum of one CI and one HMAPI (the same individual may possess all certifications). Concrete field tests and HMA field tests shall be performed by certified personnel only. Some projects may require additional certified personnel due to multi-shift operations or other testing needs.

For project assignments with no concrete items, the CI requirements will be waived. Likewise, on projects with no HMA pavement installation, the HMAPI requirement will be waived. NETTCP requirements do not apply to non-NHS municipal projects.

▪ **NUCLEAR DENSITY**

Consulting Engineers performing nuclear density testing must possess any certifications required by the Nuclear Regulatory Commission (NRC) in accordance with the provisions of their NRC license, as applicable.

CHAPTER 3
CONSULTING ENGINEER RESPONSIBILITIES

3.1 ROLES AND RESPONSIBILITIES

The Consulting Engineer's Resident Engineer shall be responsible for the overall administration and construction inspection supervision of the project. The Resident Engineer shall ensure the inspection staff is thoroughly familiar with the plans and specifications for the work. The Consulting Engineer shall also ensure that staff properly documents the work performed in accordance with the Department's record keeping procedures.

The Consulting Engineer shall work under the general supervision and direct control of the State's assigned Project Engineer. The Consulting Engineer shall perform all tasks, functions and operations described in the Department's "Construction Manual" including, but not limited to:

INSPECTION OF CONTRACT WORK

The Consulting Engineer shall inspect all construction within project limits to ensure that the work conforms to the project plans and specifications. They shall monitor and document all work performed by public utility companies, railroads and governmental agencies within the project limits or for work being billed to the project. The Consulting Engineer's staff shall become thoroughly familiar with the plans. They shall perform measurements necessary for periodic payments to the contractor and shall document the contractor's daily operations in accordance with established Department procedures.

CONSTRUCTION SURVEY

The Consulting Engineer shall perform all construction survey work, if required, and negotiated as part of the agreement, with the exception of that included in the construction contract to be done by the Contractor. They shall check layout staking performed by the contractor; perform survey work and measurements required for determination of quantities (cross sections of earth, rock structure, excavation, etc.); survey required for as-built plans; surveying and construction staking for the accurate installation of fencing; verification of the highway line and the non-access taking line; and other project-related survey work as directed by the State's Project Engineer.

MATERIALS TESTING

The Consulting Engineer shall sample all materials to be incorporated into the work as required by the State's material testing requirements. Sampling shall be performed in a timely manner so that materials can be tested prior to use. The Consulting Engineer shall prepare the Requests for Material Test (MAT-100) and shall maintain the testing logs in the project records. All sampling and field testing shall be performed in accordance with established DOT procedures.

Any field testing equipment required including, but not limited to, slump cone, air meter, nuclear density gauge, etc, shall be provided by the Consulting Engineer.

3.1 ROLES AND RESPONSIBILITIES

PROJECT RECORDS

The Consulting Engineer shall perform all administrative functions associated with the project in accordance with “Construction Manual”, including but not limited to:

1. Establish and maintain project quantity records.
2. Establish and maintain daily project diaries and inspector's daily reports (CON-134).
3. Review and monitor contractor EEO, DBE and training compliance; prepare associated periodic reports; notify Project Engineer of deficiencies and problems.
4. Preparation of Construction Orders; Semi-monthly and monthly estimates.
5. Preparation of Cost Plus Records; Utility Work Records (CON 40 and 41)
6. Timely preparation of correspondence, memorandums and reports. Turn around time should be within five (5) working days of receipt unless substantial investigation and/or review is required.
7. Review, analysis and recommendations for contractor claims, proposals, extra work, time extensions, etc.
8. Establish and maintain shop drawing file.
9. Preparation of periodic reports and forms as required by the Department.
10. Record minutes and prepare reports of all project-related meetings, within three (3) days of the meeting, for approval by the Department's Project Engineer.
11. Prepare project final documents (final estimate, construction order, as-built plans, construction report and other related final documents).

TRAFFIC CONTROL

The Consulting Engineer shall monitor contractor compliance with the Maintenance and Protection, Limitation of Operations and Traffic Control sections of the plans and specifications and shall promptly report any corrective actions necessary to the Contractor. In the event that the contractor fails to rectify the situation, the Consulting Engineer shall notify the State's Project Engineer and/or District Office immediately.

COORDINATION AND LIAISON

The Consulting Engineer shall assist in the coordination and liaison between all parties affected by the project. They shall conduct coordination and progress meeting as required, establish and maintain liaison with the State Agencies, Municipalities, Utilities and Contractor affected by the work. The Consulting Engineer shall identify and clearly define any issues, concerns or problems as they arise and promptly report such to the State's Project Engineer. It is the responsibility of the Consulting Engineer to facilitate the resolution of such issues, or in the alternative, to recommend appropriate solutions to the Engineer.

3.1 ROLES AND RESPONSIBILITIES

PLAN REVIEW

The Consulting Engineer shall review the construction plans and notify the Project Engineer of potential problems as soon as they are noted. They shall review alternatives and recommend solutions to construction issues as requested by the State's Project Engineer.

ENVIRONMENTAL MONITORING

The Consulting Engineer shall be aware of the environmental concerns related to the project and shall monitor contractor compliance with the environmental controls and report to the Project Engineer if deemed necessary. It shall be the Consulting Engineer's responsibility to prepare all reports required by environmental permits or Department procedures (i.e., project site environmental inspection report).

In addition to the items detailed above, the Consulting Engineer shall perform all duties and tasks outlined for inspectors in the Department's "Construction Manual". The Consulting Engineer's staff shall also perform any other special tasks related to the construction contract as directed by the State's Project Engineer.

3.2 QUALITY MANAGEMENT

The Consulting Engineer is required to have a Quality Management Plan (QMP) to ensure that the work performed meets both the terms of the Consultant Agreement and the Department's standards and expectations for the quality of services provided. The Consulting Engineer must submit a QMP to the District Office for review prior to performing any work on the project. The QMP must conform to the Department's Construction Manual and at a minimum should include the following:

- An organizational chart showing how the proposed staff for the project will be organized. The chart must include both direct staff and any sub-consultants on the project. A description of the reporting relationships among the staff should accompany the chart.
- A description of field staff oversight procedures for ensuring the quality of inspection. Include samples of any forms or reports used to monitor compliance.
- A description of how the responsibility for making (and checking) payments under the construction contract will be delegated among the project staff.
- A description of the correspondence and documentation procedures that will be utilized on the project including a description of a hierarchical filing system for project records.
- A plan for verification and maintenance of any required staff licenses and certifications. The plan must include provisions for the Consulting Engineer to notify the District Engineer, in writing, within 5 days, of any staff whose certifications, registrations or licenses have been suspended, revoked, expired or otherwise no longer in effect and to immediately replace such person with someone who both holds the proper credentials and meets the minimum qualifications for the position as detailed in Section 2.3 of this pamphlet.
- A plan for the submission of annual/yearly documents for multi-year project. I.e. affirmative action plans, annual gift affidavit, etc.
- An issue resolution procedure, addressing how unresolved quality issues will be escalated and resolved.
- The primary person responsible for implementing and monitoring compliance with the QMP.
- A description of the training the project staff will receive relative to the QMP.
- A monthly status report, to be submitted to the State's Project Engineer, noting any exceptions encountered during the month and actions taken to address those exceptions shall be noted at that time.

The QMP may include elements from a company-wide quality plan, but the details shall be tailored to the individual project and address any special conditions or requirements relative to the project.

3.3 HEALTH AND SAFETY

The Consulting Engineer is required to have a Health and Safety Plan (HASP) covering the activities of their own staff and any sub-consultants. The Consulting Engineer, at his own expense, shall provide all necessary training, supervision, equipment and programs to ensure that staff assigned to the Project will be protected from health and safety risks according to the current requirements of OSHA, as well as all other applicable Federal, State and local laws, rules and regulations.

In addition, it is expected that the Consulting Engineer's staff comply with the most current version of the following Department policies and plans:

- Policy Statement E&H.O.-35A (Headgear Policy)
- Policy Statement E&H.O.-35B (Protective Footwear Policy)
- Policy Statement E&H.O.-35C (Safety Vests)
- Department's Fall Protection Plan.

3.4 EQUIPMENT PROCUREMENT

Prior to purchasing any equipment, which has been authorized by an agreement, supplement, or extra work claim, and charged as a direct cost to the State, the Consulting Engineer shall obtain written approval for the purchase from the Department's District Engineer. For equipment costing in excess of \$2500.00, the Consulting Engineer shall obtain cost proposals from at least three (3) suppliers and submit the proposals and equipment catalog cuts for approval. All purchased equipment shall be tagged by the State, maintained in good condition and shall be turned over to the State upon completion of the construction project.

3.5 MILEAGE, LODGING AND SUBSISTENCE

Employee travel expenses will be limited to on project related mileage. All other travel/lodging/subsistence expenses will only be reimbursed with prior approval from the Department and as negotiated. Subsistence and lodging rates, when negotiated and approved by the Department, shall not exceed the rates currently in effect for State Manager's under State Travel Regulations. In addition, if any employees that have company vehicles assigned for use on the project, reimbursement for mileage will be allowed only if the vehicle is not normally charged to the company's overhead. Reimbursement shall be made only for the percentage of on job and project-related use. The Consulting Engineer shall provide a monthly accounting of job related mileage, commutation mileage and other mileage usage and compute the proportional share of mileage to be charged as a direct cost in accordance with the OPM's General Letter 97-1 (maximum is established per the State Travel regulations Manager's Agreement). This accounting shall be submitted with the CLA-3.

Lodging and subsistence will not be allowed as a direct cost unless specifically negotiated and listed in the agreement or supplemental agreement, and only with prior approval from the State's Project Engineer. Subsistence and lodging rates when approved shall not exceed the rates currently in effect under the State Travel regulations Manager's Agreement.

3.6 BILLING PROCEDURES

In accordance with the Consulting Engineer's agreement, the Consulting Engineer shall submit on a monthly basis, two copies of a certified payroll, in effect at the time of the invoicing, and request for payment (CLA-3 form provided by the State), including copies of all supporting documentation.

The CLA-3 and supporting documents must be submitted monthly in accordance with the "Pamphlet for Monitoring Performance and Payment Requests for Consultants". Delays in submission and combining several months in one submission severely impacts the review and approval of the invoice and causes delay in payment.

When the CLA-3 is submitted, the Consulting Engineer should ensure legible copies of all substantiating data are included. Examples of required supporting data include:

- Copies of Invoices and Receipts for Direct Cost Material Purchased
- Substantiation of Mileage Claimed and Paid
- Certified Payroll in Effect at Time of Invoicing
- Record of Daily Hours Worked by Each Employee
- Copy of State Project Engineer's Overtime Approval
- Copy of Invoices for Subsistence, Lodging, etc. (when authorized by agreement)
- Appropriate Backup for long distance Telephone Calls

Any CLA-3 submitted with insufficient information, illegible copies of substantiating data or errors shall be returned to the Consulting Engineering for correction. Corrections should be made promptly so that the error does not carry over to future invoices.

The Consulting Engineer shall complete one sub-consultant Payment log for each sub-consultant assigned to the project per calendar year.

Consultant's semi-final invoice (CLA-3), before final audit, shall be for release of retainage. This invoice will be held pending final audit results.

Note: At the completion of the project, the Consulting Engineer will be required to provide documentation confirming that all of their subcontractors have been paid.

Documentation of "Good Faith" efforts and amounts completed of the DBE/SBE Program, if any, will be required to be submitted with the final invoice.

3.7 PERFORMANCE REVIEWS

The Department will perform bi-monthly evaluations of Consulting Engineer's performance for the following periods:

January 1 to February 28

March 1 to April 30

May 1 to June 30

July 1 to August 31

September 1 to October 31

November 1 to December 31.

A copy of the bi-monthly evaluation will be provided to the consultant's Resident Engineer. It is expected that the Resident Engineer will keep the consultant's Project Manager informed of all evaluations received.

Semi-annual consultant performance evaluation ratings shall be done for the following periods: January 1st through June 30th and July 1st through December 31st. These ratings will be based on the results of the bi-monthly evaluations prepared for each Consulting Engineer prior to the semi-annual evaluation. A copy of the semi-annual evaluation will be sent to the consultant's designated project manager.

Performance reviews may be conducted more frequently if determined necessary by the District.

When evaluations indicate improvement is needed or if the consultant wishes to discuss the evaluation, they should contact the Project Engineer and arrange a meeting. These evaluations are used by the Consultant Selection Panel when evaluating firms for future project selections. Failure to take corrective action when necessary could prevent the Consultant from being assigned future projects.

Sample G: Platte County Missouri Request for Proposal Construction Engineering and Inspection Services

Summary: This sample is to request the services of a consulting engineering firm to perform the described professional services in a specific project. The general outline of the request for proposal includes the following:

1. Goal of the project
2. Scope of Services for the Project
3. Selection Criteria for Construction Engineering Inspection Services Proposal



REQUEST FOR PROPOSAL

CONSTRUCTION ENGINEERING INSPECTION SERVICES

DYE STORE ROAD, North BRIDGE (No. 0290004) REPLACEMENT

Platte County, Missouri is requesting the services of a consulting engineering firm to perform the described professional services in 2012 for the Dye Store Road, North Bridge (No. 0290004) Replacement project as further defined in the attached list. If your firm would like to be considered for these consulting services, you may submit your proposal to Platte County Public Works. Proposals should be limited to no more than 5 pages. The proposal should include: brief background of construction engineering inspection services available, similar projects on which these services have been provided, project team and experience of those individuals (resumes do not count towards 5 page limit), and any other information which might help us in the selection process. The County plans to make their selection from the submitted proposals only and will not perform individual interviews.

Platte County's basic goals for this project are as follows:

- Total bridge replacement
- Construction completed in 2012

DBE firms must be listed in the MRCC DBE Directory located on MoDOT's website at www.modot.gov, in order to be counted as participation towards an established DBE Goal. We

encourage DBE firms to submit letters of interest as prime consultants for any project they feel can be managed by their firm.

It is required that your firm's Statement of Qualification (RSMo 8.285 through 8.291) and Affidavit of Compliance with the federal work authorization program along with a copy of your firm's E-Verify Memorandum of Understanding (15CSR 60-15.020) be submitted with your Letter of Interest.

Costs for these services shall not be submitted with this proposal as they will be discussed with the successful candidate during the negotiation process.

All proposals shall be received by 1:00pm CST on Friday, March 23, 2012, at the following location:

**Platte County Public Works
Attn: Director
15955 Hwy 273
Platte City, MO 64079**

Please contact Bob Heim at 816-858-2223 with questions regarding this request.

Sincerely,

Greg Sager
Director

Attachment

Platte County, Dye Store Road –North Bridge Replacement	
Federal Aid No.:	BRO B083(24)
Location:	Dye Store Road, NW of Platte City, MO Bridge No. 0290004
Proposed Improvement:	Construction Engineering Inspection Services ***NOTE : This request excludes design service***
Length:	N/A
Approximate Construction Cost:	\$250,000.00
DBE Goal Determination	0 %
Consultant Services Required:	Includes, but not limited to the following: Roadway & Bridge: Construction Engineering Inspection Services ***NOTE : This request excludes design service***
Other Comments:	Selection results will be announced after March 23, 2012
Contact:	Name: Bob Heim Address: 15955 Hwy 273, Platte City, MO 64079 Phone: 816-858-2223 E-mail: bheim@co.platte.mo.us
Deadline:	1:00pm, Friday, March 23, 2012
Submit <ul style="list-style-type: none"> Letter of interest should not exceed <u> 5 </u> pages total. A page is defined as 8-1/2 by 11 inches and printed on one side. <u> 3 </u> copies of the letter interest should be received at the address and by the time specified. 	

The Scope of Services for the project is expected to include, but is not limited to, the following:

Construction Phase – The Engineer will serve as the County’s representative for administering the terms of the construction contract between the County and their Contractor. The successful candidate shall have an inspector/engineer whose schedule coincides with that of the contractor for the duration of this project – a maximum of 60 working days. Engineer will endeavor to protect the County against defects and deficiencies in workmanship and materials in work by the Contractor. However, the furnishing of such project representation will not make the Engineer responsible for the construction methods and procedures used by the Contractor or for the Contractor’s failure to perform work in accordance with the contract documents.

The Engineer’s services will include more specifically:

1. Assist the County with a preconstruction conference to discuss the project details with the Contractor;
2. Make periodic site visits to observe the Contractor’s progress and quality of work, and to determine if the work conforms to the contract documents. It is contemplated that survey staking and layout will be accomplished by the Contractor’s forces. The Engineer will accompany MoDOT and FWHA representatives on visits of the project site as requested;
3. Check shop drawings and review schedules and drawings submitted by the Contractor;
4. Reject work not conforming to the project documents;
5. Prepare change orders for issuance by the County as necessary and assure that the proper approvals are made prior to work being performed;
6. Review wage rates, postings, equal employment opportunity and other related items called for in the contract documents;
7. Inspect materials, review material certifications furnished by the Contractor, sample concrete and other materials as required, and arrange for laboratory testing of samples by others on a subcontract basis. Independent assurance samples and tests will be performed by MoDOT personnel and such sampling and testing is excluded from the work performed by the Engineer under this contract;
8. Maintain pertinent project records, measure and document quantities, and assist with the preparation of monthly estimates for payments due the Contractor;

9. Be present during critical construction operations, including but not limited to the following:
 - a. Structure layout;
 - b. Excavation and backfilling;
 - c. Driving of piles;
 - d. Checking of reinforcing steel prior to concrete placement;
 - e. Concrete batching and pouring;
 - f. Placement of girders;
 - g. Placement of surfacing materials; and
10. Participate in final inspection, provide the County with project documentation (diaries, test results, certifications, etc.), and provide as-built plans for the County's records.

Each proposal received will be scored by the use of the attached rubric for the purpose of ranking/rating each firm. Scores will be viewed objectively on criteria and subjectively on experience to help the County determine who has submitted the most responsive proposal.

Pursuant to the Brooks Act for Consultant Selection – the attached rubric defines the criteria and scoring basis used for selection.

RUBRIC SELECTION CRITERIA FOR CONSTRUCTION ENGINEERING INSPECTION SERVICES PROPOSAL

Dye Store Road, North Bridge Replacement

Company: _____ Date: _____

Score	Assessment Scale	(15-11) Strong	(10-6) Average	(5-1) Weak
	Proposal Submission Requirements	Proposal does not exceed 5 pages plus resumes	--	--
	Organization of information for coherence, emphasis, & clarity	The structure of the RFP is clear, logical and effective	The structure of the RFP could be clearer, more logical, and more effective	The structure of the RFP lacks a sense of direction or coherence, and presents illogical sequencing of ideas
	Schedule	Coincides with the schedule of the contractor – maximum of 60 working days	--	--
	Experience	Resumes of staff and company experience develop maximum confidence of the firm's ability to provide superior service	Resumes of staff and company experience depict the firm's ability to provide quality service	Resumes of staff and/or company experience lacks ability to provide confidence in the service
	TOTAL SCORE	Notes:		

Scoring Team: Greg Sager, Nate Baldwin, & Bob Heim

Sample H: Georgia Department of Transportation Request for Qualifications to Provide Construction Engineering and Inspection Services

Summary: This sample RFQ is to identify potential providers for the scope of services in a specific project. The general outline of the RFQ includes the following:

1. General Project Information
2. Selection Method
 - a. Method of Communication
 - b. Phase I – Selection of Finalists
 - c. Finalist Notification for Phase II
 - d. Phase II - Finalists Response on Suitability and Past Performance
 - e. Final Selection
3. Schedule of Events
4. Selection Criteria for Phase I
 - a. Area Class Requirements and Certification
 - b. Experience and Qualifications
 - c. Resources and Workload Capacity
5. Selection Criteria for Phase II
 - a. Suitability
 - b. Past Performance
6. Instructions for Content and Preparation of Statements of Qualifications
 - a. Administrative Requirements
 - b. Experience and Qualifications
 - c. Resources/Workload Capacity
7. Instructions for Preparing Suitability and Past Performance Response
 - a. Suitability
 - b. Past Performance
8. Instructions for Submittal for Phase I
9. Instructions for Submittal for Phase II
10. GDOT Terms and Conditions
 - a. Statement of Agreement
 - b. Joint-Venture Proposals, Sub-Consultants, and Vendors
 - c. Non-Discrimination and DBE Requirements
 - d. Audit and Accounting System Requirements
 - e. Submittal Costs and Confidentiality
 - f. Award Conditions
 - g. Debriefings
 - h. Right to Cancel or Change RFQ
 - i. Substitutions, Alternates, Exceptions, and Extensions
 - j. GDOT Code of Conduct Pertaining to Conflict of Interest in the Award and Administration of Contracts

Exhibit 1- Project Contract

Exhibit 2- Certification Form

Exhibit 3- Georgia Security and Immigration Compliance Act Affidavit

Exhibit 4- Area Class Summary Example

REQUEST FOR QUALIFICATIONS 484-103013

Construction Engineering and Inspection (CEI) Services for District 7, Chamblee

I. General Project Information

A. Overview

The Georgia Department of Transportation (GDOT) is soliciting Statements of Qualifications (SOQ) from qualified firm(s) or organization(s) to provide Consultant Construction Engineering and Inspection (CEI) Services for District 7, Chamblee.

This Request for Qualifications (RFQ) seeks to identify potential providers for the Scope of Services listed in Exhibit I. Firms that respond to this RFQ, and are determined by GDOT to be sufficiently qualified, may be deemed eligible, and invited to offer proposals and/or possibly present and/or interview for these services. All respondents to this RFQ are subject to instructions communicated in this document, and are cautioned to completely review the entire RFQ and follow instructions carefully. GDOT reserves the right to reject any or all Statements of Qualifications or Consultant Plan Proposals, and to waive technicalities and informalities at the discretion of GDOT.

B. IMPORTANT- A RESTRICTION OF COMMUNICATION IS IN EFFECT FOR THIS PROJECT.

From the advertisement date of this solicitation until successful respondents are selected and the award is made official and announced, firms are not allowed to communicate about this solicitation or scope with any staff of GDOT including the Commissioner and GDOT Board Members, except for the submission of questions as instructed in the RFQ, or with the contact designated in **RFQ Section VIII.C.**, or as provided by any existing work agreement(s). For violation of this provision, GDOT reserves the right to reject the submittal of the offending respondent.

C. The Georgia Department of Transportation Board has adopted a 15% overall annual goal for DBE participation on all federally funded projects. This goal is not to be considered as a fixed quota, set aside or preference. The DBE goal can be met by prime contracting, sub-contracting, joint-venture or mentor/protégé relationship.

Georgia Department of Transportation will monitor and assess each consultant services submittals for their DBE participation and/or good faith effort in promoting equity and opportunity in accordance with the state of Georgia, Department of Transportation Disadvantage Business Program Plan.

For more information on the GDOT DBE Program please contact:

Georgia Department of Transportation
Equal Opportunity Division
One Georgia Center, 7th Floor
600 West Peachtree Street, NW
Atlanta, Georgia 30308
Phone: (404) 631-1972

D. Scope of Services

Under the terms of the resulting Agreement, the selected consultant will provide Construction Engineering and Inspection (CEI) Services for District 7, Chamblee for the GDOT District identified. The anticipated Scope of Work included in **Exhibit I**.

E. Contract Term and Type

GDOT anticipates one (1) On-Call Indefinite Delivery, Indefinite Quantity Contract to be awarded to one (1) firm, for the contract area identified. GDOT anticipates that the Contract Type will be paid via Firm Fixed Price and/or Cost Plus Fixed Fee methodology. As an On-Call Indefinite Delivery, Indefinite Quantity Contract, it is the Department's intention that the Agreement will remain in effect for up to a maximum of three (3) years. The Department will only consider an extension beyond three (3) years in the event that a specific task order will not be completed within the original term of the Agreement, if determined to be in the Department's best interest. The Department will monitor task orders closely and will seek to only assign task orders which can be completed within the term of the Agreement.

F. Contract Amount

The On-Call, Indefinite Delivery Indefinite Quantity contract(s) will have a minimum allowable cost of \$25,000.00 and a maximum allowable cost of \$16,000,000.00. The Department will only consider increasing the maximum amount in the event that services are needed while the successor contract is being procured, however; the Department will seek to ensure that the successor contract is in place to prevent such need.

II. Selection Method

A. Method of Communication

All general communication of relevant information regarding this solicitation will be made via the Georgia Procurement Registry (GPR) under RFQ-484-103013. All firms are responsible for checking the GPR on a regular basis for updates, clarifications, and announcements. GDOT reserves the right to communicate via electronic-mail with the primary contact listed in the Statements of Qualifications. Other specific communications will be made as indicated in the remainder of this RFQ.

B. Phase I - Selection of Finalists

Based on the Statements of Qualifications submitted in response to this RFQ, the Selection Committee will review the **Experience and Qualifications** and **Resources and Workload Capacity** listed in **Section IV. Selection Criteria for Phase I** and identify and rank three (3) to five (5) firms identified as the most qualified for the contract. Each evaluator will review all submittals deemed responsive and assign points using the criteria identified in **Section IV**.

For each evaluator, the points assigned to each criteria will be totaled and a rank will be determined. The rankings of all evaluators will be totaled for each submittal in order to determine the sum of the individual rankings. Using the sum of individual rankings, the Selection Committee will discuss those submittals which are deemed the top submittals (which shall generally be considered the top ten submittals). Following the discussion of the top submittals, evaluators will assign a final score to each submittal and the final rankings of the top submittals will be determined. From the final rankings of the top submittals, the Selection Committee will identify three (3) to five (5) firms which will be shortlisted using the sum of individual rankings and identifying where the natural separation in the rankings occur to determine the most qualified firms. In the event of a tie in the rankings, the Selection Committee will defer to the actual total points assigned to break the tie.

All firms must meet the minimum requirements as listed in **Section IV.A.** below.

C. Finalist Notification for Phase II

Firms selected and shortlisted as finalists will receive notification and final instructions from GDOT regarding the **Phase II - Suitability** response.

D. Phase II - Finalists Response on Suitability and Past Performance

GDOT will request a written proposal of the three (3) to five (5) finalist firms for the contract. GDOT reserves the right to request a presentation/interview on any project/contract as determined in its best interests; however, this additional requirement shall typically be reserved for the most complex contracts. Each finalist firm shall be notified in writing and informed of the proposal due date. Any additional detailed proposal instructions and requirements, beyond that provided in **Section V. Selection Criteria for Phase II**, for the finalists will be provided in the Finalist Notification. All members of the Selection Committee will review the written proposal (and will attend the presentation/interview if so chosen). **Firms shall not address any questions, prior to the award announcement, to anyone other than the designated contact.**

E. Final Selection

Final selection will be determined by carrying the scores from **Phase I** forward for each Finalist and by evaluating the **Suitability** and **Past Performance** criteria for **Phase II**. For each evaluator, the points assigned to each criterion will be totaled and a rank will be determined. The rankings of all evaluators will be totaled for each finalist in order to determine the sum of the individual rankings. The finalists will be ranked in descending order of recommendation using the sum of individual rankings from the Selection Committee members. Should a tie exist for the highest ranking firm on the contract/project, and qualifications appear to be equal, the Selection Committee shall defer to the sum of the individual points and the award shall be made to the finalist with the highest sum.

Negotiations will then be initiated with the top-ranked firm to finalize the terms and conditions of the contract, including the fees to be paid. In the event a satisfactory agreement cannot be reached with the highest-ranking firm, GDOT will formally terminate the negotiations in writing and possibly enter into negotiations with the second highest-ranking firm, and so on in turn until a mutual agreement is established and GDOT awards a contract. The final form of the contract shall be developed by GDOT.

III. Schedule of Events

The following Schedule of Events represents GDOT's best estimate of the Schedule that will be followed. All times indicated are prevailing times in Atlanta, Georgia. GDOT reserves the right to adjust the Schedule as GDOT deems necessary.

PHASE I	DATE	TIME
a. GDOT issues public advertisement of RFQ-484-103013	09/30/2013	-----
b. Deadline for submission of written questions and requests for clarification	10/15/2013	2:00 PM
c. Deadline for submission of Statements of Qualifications	10/30/2013	2:00 PM
d. GDOT completes evaluation and issues notification and other information to finalist firms	TBD	
PHASE II		
e. Deadline for submission of written questions from finalists	TBD	2:00 PM
f. Phase II Response of Finalist firms due	TBD	TBA

IV. Selection Criteria for Phase I - Criteria for Evaluation of Statements of Qualifications

A. Area Class Requirements and Certification

Presented teams must be prequalified in the indicated Area Class in order to be evaluated. Required proof of prequalification shall be submitted as indicated in **Section VI.B.4.** below. All Submittals will be pre-screened to verify that the Prime consultant has the required Area Class and that the overall team has the required Area Class. Any submittal in which the Prime consultant or the overall team area class requirements are not met will be disqualified from further consideration.

Each submittal will require a certification to allow the Department to analyze risks in determining if any Firm should be ineligible for award. The certification shall cover a wide variety of information. Any firm which responds in any potentially concerning manner must provide additional information as directed herein for consideration by GDOT to determine if Firm is eligible for award.

B. Experience and Qualifications – 50%

The Selection Committee will evaluate all firms on their Experience and Qualifications, which shall account for a total of fifty (50%) percent of the total evaluation. **The following criteria for scoring Phase I of the evaluation will be utilized to determine which firms are shortlisted:**

- | | |
|------------|--|
| 25% Factor | Project Manager education, registration, relevant construction engineering experience or inspection experience, relevant project management experience, experience in utilizing GDOT specific processes, manuals, or guidance, and workload. |
| 20% Factor | Key Team Leaders' education, registration, relevant construction engineering experience or inspection experience in the applicable resource area, and relevant experience in utilizing GDOT specific processes, manuals, or guidance. |
| 5% Factor | Prime Consultant's experience for the previous five (5) years in delivering projects of similar complexity, size, scope, and function. |

C. Resources and Workload Capacity – 15%

The Selection Committee will evaluate all firms on their Resources availability and Workload Capacity which shall account for a total of fifteen (15%) percent of the total evaluation. **The following criteria for scoring the Resources and Workload Capacity will be utilized to determine which firms are shortlisted:**

Resources dedicated to delivering contract
Workload capacity of Key Team Leaders

V. Selection Criteria for Phase II - Criteria for Evaluation of Suitability and Past Performance

A. Suitability – 25%

The Selection Committee will evaluate the shortlisted firms (Finalists) on their Suitability, which shall account for a total of twenty-five (25%) percent. The Selection Committee shall utilize the following additional criteria for scoring Phase II of the evaluation to determine the highest ranked/most qualified (**NOTE: Scores from Phase I will be carried forward and combined with the scores from the Phase II to determine the final ranking of Finalists**):

1. Special or unique qualifications for delivering the Scope of Work.
2. Management of funds and appropriate staff types and levels.
3. Detailed plan for addressing a reduction in force if necessitated by a reduced construction work plan.
4. Firm's recruitment and retention plan.
5. Types of reviews the firm will conduct to ensure the firm is in compliance with Scope of Services.
6. Proposed quality control/quality assurance and training procedures.

7. Special or enhanced capabilities (such as the ability of the Firm to perform or gather a team to perform any special or enhanced capabilities required to carry out and manage the complete scope of the contract).
8. The ability to gather resources in the contract area and knowledge of the contract area.

B. Past Performance – 10%

The Selection Committee may consider information provided via references provided for relevant projects, knowledge any selection committee member has of performance on relevant projects, and performance evaluations on GDOT projects. The Selection Committee will consider all factors in their totality and score from 0 to 10 when arriving at a final score for the Past Performance.

VI. Instructions for Content and Preparation of Statements of Qualifications – Phase I Response

The Statements of Qualifications submittal must be submitted in accordance with the instructions provided in Section VIII, and must be **organized, categorized using the same headings (in red), and numbered and lettered** exactly as outlined below, and must be responsive to all requested information. For the sections in which page number limits are stated, each section with a stated limit must begin on a new page and end on the last page allowed for the section. **It is not allowed to begin new sections on a page allowed for a previous section, if applicable. This will enable the Department to ensure compliance with the page limitations.**

Cover page – Each submittal must have a separate cover page for each copy of each submittal and each must list the RFQ#, RFQ Title, proposing firm's full legal name and the specific project contract being submitted on to include the Project Numbers, PI Numbers, Count(ies), and Description.

A. Administrative Requirements

It is required to submit the information below for each copy of each submittal. This is general information and will not be scored but may be used to determine eligibility for selection.

1. **Basic company information:**
 - a. **Company name.**
 - b. **Company Headquarter Address.**
 - c. **Contact Information** - Name and all contact information (telephone number(s) and e-mail address) of primary proposing contact (this will be the individual with whom the Department will direct all communications).
 - d. **Company website** (if available).
 - e. **Georgia Addresses** - Identify and provide addresses for the offices located in the State of Georgia.
 - f. **Staff** - List the number and disciplines of staff members employed in each office in the State of Georgia.
 - g. **Ownership** - Provide form of ownership, including state of residency or incorporation, and number of years in business. Is the Offeror a sole proprietorship, partnership, corporation, limited liability Corporation, or other structure?
2. **Certification Form** - Complete the Certification Form (*Exhibit "II" enclosed with RFQ*), and provide a notarized original within the firm's Statement of Qualifications. This is to be submitted for the Prime **ONLY**.
3. **Georgia Security and Immigration Compliance Act Affidavit** – Complete the form (*Exhibit "III" enclosed with RFQ*), and provide a notarized original within the firm's Statement of Qualifications. This is to be submitted for the Prime **ONLY**.
4. **Addenda** - Signed cover page of any Addenda issued for the Prime **ONLY**.

B. Experience and Qualifications

1. **Project Manager** - Provide information pertaining to the project manager including but not limited to:
 - a. **Education.**
 - b. **Registration** (if necessary and applicable.)

- c. **Relevant construction engineering experience or inspection experience.**
- d. **Relevant project management experience** for projects of similar complexity, size, scope, and function (no more than five (5) projects).
- e. **Relevant experience utilizing GDOT specific processes, manuals, or guidance** (Standard Specifications, Construction Manual, Bridges Manual, Environmental Procedures Manual, etc.)
- f. **Project Commitment Table** - Provide a list of ALL projects on which the proposed project manager is currently committed, to enable the Department to ascertain the project manager's availability. Utilize a table similar to the following format with a minimum of all criteria indicated to provide the requested information:

Project Manager	PI/Project # for GDOT Projects/Name of Customer for Non-GDOT Projects	Role of PM on Project	Project Description	Current Phase of Project	Current Status of Project

This information is limited to two pages maximum (excluding the table).

2. **Key Team Leaders** - Provide experience of Key Team Leaders (defined as those individuals who oversee project areas determined as particularly important to the Project) (refer to the Project Description in Exhibit I, specifically Section 7 for the list of Key Team Leaders for each Project). For each Key Team Leader identified provide:
 - a. **Education.**
 - b. **Registration** (if necessary and applicable.)
 - c. **Relevant construction engineering experience or inspection experience** in the applicable resource area (on no more than three (3) of the most relevant projects).
 - d. **Relevant experience utilizing GDOT specific processes, manuals, or guidance** (Standard Specifications, Construction Manual, Bridges manual, Environmental Procedures Manual, etc.) which are specific to the key resource area.

This information is limited to one page maximum for each Key Team Leader identified in Section 7 of Exhibit I. Respondents submitting more than one page for each Key Team Leader identified will be subject to disqualification.

Respondents are also allowed one page to provide information regarding additional resource areas identified as important to the project, to discuss how the key areas will integrate and work together on the project, or to discuss any information which is pertinent to these areas. Respondents submitting more than the one additional page allowed, will be subject to disqualification.

3. **Prime Experience** - Provide information on the prime's experience and ability in delivering effective services for projects of similar complexity, size, scope, and function for the previous five (5) years. Describe no more than five (5) projects, in order of most relevant to least relevant, which demonstrate the firm's capabilities to provide services for GDOT. For each project, the following information should be provided:
 - a. **Client name, project location and dates** during which services were performed.
 - b. **Description of overall project and services performed** by your firm.
 - c. **Duration of project services provided** by your firm, and overall project budget.
 - d. **Experience utilizing GDOT specific processes, manuals, or guidance** (Standard Specifications, Construction Manual, Bridges Manual, Environmental Procedures Manual, etc.)
 - e. **Client(s) current contact information** including contact names and telephone numbers.
 - f. **Involvement of Key Team Leaders** on the projects.

This information is limited to two pages maximum.

4. **Area Class Summary Form and Notice of Professional Consultant Qualifications** - Prime Consultants are defined as the firm submitting the Statement of Qualifications and the firm with whom GDOT will contract. The Team is defined as the Prime Consultant and their subconsultants, who are considered team members. Prime Consultants and their subconsultant team members must meet the Area Class requirements listed in Exhibit I. In regards to the required Area Classes, respondents should submit a summary form (example provided in Exhibit IV) which details the required area classes for the Prime Consultant and all subconsultants or joint-venture of consultants on the team listed in the Statement of Qualifications. The area classes and firm's meeting the area classes listed on the summary form must meet all required area classes or the team will be disqualified. If a team member's prequalification will expire prior to the due date of the SOQs, documentation must be provided which shows that the firm has submitted its application for prequalification prior to the SOQ due date. The team must maintain its prequalification certification in order to be considered eligible for award if selected. **Additionally, respondents should submit the Notice of Professional Consultant Qualifications (for the Prime Consultant and all sub-consultants for each project) issued by GDOT and attach after the Area Class summary form.**

This information is limited to the one page for the Area Class table (unless the project needs require an extensive list of area classes) and the required Notice of Professional Consultant Qualifications.

C. Resources/Workload Capacity

1. **Overall Resources** - Provide information regarding the overall resources dedicated to delivering the specific project, including:
 - a. **Organizational chart** which identifies the project manager, prime, Key Team Leaders, support personnel, and reporting structure.
 - b. **Primary Office** - Identify and discuss the primary office which will be responsible for handling the specific contract and the number and types of staff within the office and how this office could benefit the contract and promote efficiency.
2. **Key Team Leader Project Commitment Table** - Provide a table similar to the below, with a minimum of all criteria indicated, which identifies ALL projects the Key Team Leaders (refer to the Project Description in **Exhibit I**, specifically **Section 7** for the list of Key Team Leaders for each Project) are committed on to enable the Department to ascertain the available capacity.

Key Team Leader	PI/Project # for GDOT Projects/Name of Customer for Non-GDOT Projects	Role of Key Team Leader on Project	Project Description	Current Phase of Project	Current Status of Project

This information is limited to the organization chart, one page of text, and the table.

VII. Instructions for Preparing Suitability and Past Performance Response – Phase II Response

The following information will only be requested of the shortlisted firms. The Selection Committee will evaluate the shortlisted firms using the information provided as requested below (NOTE: Scores from Phase I will be carried forward to Phase II).

The Phase II response must be submitted in accordance with the instructions provided in Section IX, and must be **organized, categorized using the same headings (in red), and numbered and lettered** exactly as outlined below, and must be responsive to all requested information. For the sections in which page number limits are stated, each section with a stated limit must begin on a new page and end on the last page allowed for the section. **It is not allowed to begin new sections on a page allowed for a previous section, if applicable. This will enable the Department to ensure compliance with the page limitations.**

Phase II Cover page – Each submittal must have a separate cover page for each copy of the Phase II submittal and each must indicate the response is for Phase II, list the RFQ#, RFQ Title, proposing firm's full legal name and the specific project contract being submitted on to include the Project Numbers, PI Numbers, Count(ies), and Description.

A. Suitability

Furnish information that may serve to differentiate your firm from other firms and evidence of the firm's fit to the project and/or needs of GDOT, including:

1. Evidence of the firm's fit to the contract and/or needs of GDOT, and special or unique qualifications for the contract.
2. How your team will manage the funds in each task order specific to the appropriate staffing types and levels through the completion date.
3. Firm's detailed plan for addressing a reduction in force if necessitated by a reduced construction work program.
4. Type of reviews firm will conduct to make certain that firm is in compliance with scope of services (including documentation, training, processes, and frequency of reviews).
5. Firm's quality control, quality assurance, and training procedures.
6. Firm's recruitment and retention plan.
7. Any special or enhanced capabilities offered by the firm that may be particularly suitable for this contract (such as the ability of the firm to perform or gather a team to perform any special or enhanced capabilities necessary to carry out the complete scope of the contract.)
8. Firm's ability to gather resources in vicinity to the contract area.
9. Knowledge of the contract area which may uniquely benefit the firm and contract.

This information will be limited to a maximum of three (3) pages.

B. Past Performance

No additional information should be submitted to fulfill this requirement. Information from the relevant projects listed as well as information on file with the Department will be used to fulfill this requirement.

Past performance may be evaluated through the checking of project references for the proposed project manager as well as the firm. The Department will check these references at random. For this reason, attention should be paid to the references provided to ensure that the contact information provided is accurate and the individual references are reachable. Other past performance information which may be utilized includes GDOT consultant performance ratings as well as knowledge that any member of the Selection Committee has pertaining to the past performance of the firm on any project.

VIII. Instructions for Submittal for Phase I - Statements of Qualifications

- A. There are two (2) submittals required. Submittal #1 must follow the format and meet the content requirements identified in **Section VI**, entitled **Instructions for Content and Preparation of Statements of Qualifications – Phase I Response**. Respondents must submit one original and five identical copies. Submittal #2 is an electronic version of Submittal #1 which allows for GDOT to maintain the files electronically. The original and each copy of Submittal #1 should be stapled separately. The original and each copy of Submittal #1 should be bound together using a binder clip or other similar fashion which allows the individual copies to be separated and distributed easily to Selection Committee Members. See **Attachment 1** for a summary of how the submittals should be prepared.
- B. Submittals must be typed on standard (8½" x 11") paper. The pages should be numbered, however, submittal pages will be counted by section to determine compliance with page limits. Responses are limited to the page counts indicated in each section and should be double-sided using a minimum of size 11 font. Page counts will be determined by pages with print on them, not by the physical piece of paper. For example, a piece of paper which has print on both sides, shall be considered two pages while a piece of paper with print on only one side would be considered a single page. Each Statement of Qualifications shall be prepared simply and economically

as indicated above. Fancy bindings, colored displays, and promotional materials are not desired. Emphasis must be on completeness, relevance, and clarity of content.

NOTE: Additional pages other than what has been specified above in each section **should not be included and will be grounds for disqualification.**

Submittals must be sealed in an opaque envelope or box, and reference **RFQ 484-103013 and the words "STATEMENT OF QUALIFICATIONS"** must be clearly indicated on the outside of all of the envelopes or boxes. Statements of Qualifications **must be physically received by GDOT** prior to the deadline indicated in the Schedule of Events (*Section III of RFQ*) at the exact address below:

Georgia Department of Transportation (GDOT)
Attention: Karen Oaks
Transportation Services Procurement
One Georgia Center, 19th Floor
600 West Peachtree Street, NW
Atlanta, Georgia 30308

No submittals will be accepted after the time and date set for receipt.

Statements of Qualifications submitted via facsimile or e-mail will be rejected. All expenses for preparing and submitting responses are the sole cost of the party submitting the response. GDOT is not obligated to any party to reimburse such expenses. All submittals upon receipt become the property of GDOT. Labeling information provided in submittals "proprietary" or "confidential", or any other designation of restricted use will not protect the information from public view. Subject to the provisions of the Open Records Act, the details of the proposal documents will remain confidential until final award.

GDOT reserves the right, in its sole discretion, to waive any technicalities associated with this submittal if deemed in the best interest of the State.

C. Questions and Requests for Clarification

Questions about any aspect of the RFQ, or the project, shall be submitted in writing via e-mail to: **Karen Oaks, e-mail: koaks@dot.ga.gov**. The deadlines for submission of questions relating to the RFQ are the times and dates shown in the (**Schedule of Events- Section III**). From the issue date of this solicitation until a successful proposer is selected and the award is made official and announced, respondents are subject to the Restriction of Communication in **Section I.B.**

IX. Instructions for Submittal for Phase II - Suitability and Past Performance Response

THESE INSTRUCTIONS ARE INTENDED SOLELY FOR THOSE FIRMS IDENTIFIED AND NOTIFIED AS FINALISTS. Final Instructions will be provided to the Finalists in the notification.

- A.** There are two (2) submittals required. Submittal #1 must follow the format and meet the content requirements identified in **Section VII**, entitled **Instructions for Preparing Suitability and Past Performance Response – Phase II Response**. Respondents must submit one original and five identical copies. Submittal #2 is an electronic version of Submittal #1 which allows for GDOT to maintain the files electronically. The original and each copy of Submittal #1 should be stapled separately. The original and each copy of Submittal #1 should be bound together using a binder clip or other similar fashion which allows the individual copies to be separated and distributed easily to Selection Committee Members.
- B.** Submittals must be typed on standard (8½" x 11") paper. The pages should be numbered, however, submittal pages will be counted by section to determine compliance with page limits. Responses are limited to the page counts indicated in each section and should be double-sided using a minimum of size 11 font. Page counts will be determined by pages with print on them, not by the physical piece of paper. For example, a piece of paper which has print on both sides, shall be considered two pages while a piece of paper with print on only one side would be considered a single page. Each Statement of Qualifications shall be prepared simply and economically as indicated above. Fancy bindings, colored displays, and promotional materials are not desired. Emphasis must be on completeness, relevance, and clarity of content.

NOTE: Additional pages other than what has been specified above in each section **should not be included and will be grounds for disqualification.**

- C. Submittals must be sealed in an opaque envelope or box, and reference **RFQ 484-103013 and the words “PHASE II RESPONSE”** must be clearly indicated on the outside of all of the envelopes or boxes. Statements of Qualifications **must be physically received by GDOT** prior to the deadline indicated in the Notice to Finalists at the exact address below:

Georgia Department of Transportation (GDOT)
Attention: Karen Oaks
Transportation Services Procurement
One Georgia Center, 19th Floor
600 West Peachtree Street, NW
Atlanta, Georgia 30308

No submittals will be accepted after the time and date set for receipt.

Responses submitted via facsimile or e-mail will be rejected. All expenses for preparing and submitting responses are the sole cost of the party submitting the response. GDOT is not obligated to any party to reimburse such expenses. All submittals upon receipt become the property of GDOT. Labeling information provided in submittals “proprietary” or “confidential”, or any other designation of restricted use will not protect the information from public view. Subject to the provisions of the Open Records Act, the details of the proposal documents will remain confidential until final award.

GDOT reserves the right, in its sole discretion, to waive any technicalities associated with this submittal if deemed in the best interest of the State.

D. Questions and Requests for Clarification

Questions about any aspect of the Phase II Response for Finalists, shall be submitted in writing via e-mail to: **Karen Oaks, e-mail: koaks@dot.ga.gov, or as directed in the Notice to Finalists, if different.** The deadlines for submission of questions relating to the Phase II Response will be identified in the Notice to Finalists. From the issue date of this solicitation until a successful proposer is selected and the award is made official and announced, respondents are subject to the Restriction of Communication in **Section I.B.**

X. GDOT Terms and Conditions

A. Statement of Agreement

With the submission of a SOQ, the respondent agrees that he/she has carefully examined the Request for Qualifications, and agrees that it is the respondent's responsibility to request clarification on any issues in any section of the Request for Qualifications with which the respondent disagrees or needs clarified. The respondent also understands that failure to mention these items during the question period or in the SOQ will be interpreted to mean that the respondent is in full agreement with the terms, conditions, specifications and requirements in the therein. With submission of a SOQ, the respondent hereby certifies: (a) that this SOQ is genuine and is not made in the interest or on behalf of any undisclosed person, firm, or corporation; (b) that respondent has not directly or indirectly included or solicited any other respondent to put in a false or insincere SOQ; (c) that respondent has not solicited or induced any person, firm, or corporation to refrain from sending a SOQ.

B. Joint-Venture Proposals, Sub-Consultants, and Vendors

GDOT does not generally desire to enter into “joint-venture” agreements with multiple firms. In the event two or more firms desire to “joint-venture”, it is strongly recommended that one incorporated firm propose and maintain status as the Program Management firm with the remaining firms participating as major firms. Any joint-venture, proposed and established as a separate business entity, should have its own set of books and supporting documentation sufficient for an audit trail. Transactions should be recorded consistent with the joint-venture agreement, and care must be taken to ensure that the joint-venture bears its equitable share of the costs.

Therefore, “unpopulated joint-ventures” would not have an adequate accounting system suitable for cost reimbursement contracts.

However more traditional “populated joint-ventures” are welcomed. A populated joint-venture is where an alliance is brought to life by infusing it with working capital, employees, and control systems. The alliance implements all necessary business systems, including payroll processing, purchasing, property control, etc. The alliance will develop its own indirect rate structure and calculates its own indirect cost rates, based on the direct and indirect costs it incurs.

Sub-Consultants shall generally be considered any team member which is performing any service which typically requires prequalification, which is subject to the Audit and Accounting System Requirements, and whose services are billed as costs. Sub-Consultant Team Members must be written into the resulting Agreement and are subject to all terms and conditions in the Agreement. Vendors shall be considered any team member which is performing any service which typically does not require prequalification, which is not subject to the Audit and Accounting System Requirements, and whose services are billed as direct expenses. Vendors may not be written into the resulting Agreement and may not be subject to all terms and conditions in the Agreement.

C. Non-Discrimination and DBE Requirements

The Georgia Department of Transportation in accordance with Title VI of the Civil Rights Act of 1964 and 78 Stat. 252, 42 USC 2000d--42 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, part 21, Nondiscrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all proposers that it will affirmatively ensure that any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, or national origin in consideration for an award.

The Georgia Department of Transportation Board has adopted a 15% overall annual goal for DBE participation on all federally funded projects. This goal is not to be considered as a fixed quota, set aside or preference. The DBE goal can be met by prime contracting, sub-contracting, joint-venture or mentor/protégé relationship.

Georgia Department of Transportation will monitor and assess each consultant services submittals for their DBE participation and/or good faith effort in promoting equity and opportunity in accordance with the state of Georgia, Department of Transportation Disadvantage Business Program Plan.

For more information on the GDOT DBE Program please contact:

Georgia Department of Transportation
Equal Opportunity Division
One Georgia Center, 7th Floor
600 West Peachtree Street, NW
Atlanta, Georgia 30308
Phone: (404) 631-1972

D. Audit and Accounting System Requirements

GDOT reserves the right to reject any proposal with firms that do not meet the following requirements:

1. Firm(s) should have an accounting system in place to meet requirements of 48 CFR Part 31 and, in the case of non-profit organizations, OMB Circular A-122.
2. Any firm that currently has an aggregate contract amount exceeding \$250,000 should have submitted their yearly CPA overhead audit.
3. Firm(s) should have no significant outstanding deficient audit findings from previous contracts with GDOT that have not been resolved.
4. The prime is responsible for being reasonably assured that all sub-consultant(s) presented as a part of the proposed team are similarly in compliance with the above requirements.

E. Submittal Costs and Confidentiality

All expenses for preparing and submitting responses are the sole cost of the respondent submitting the response. The Department is not obligated to any respondent to reimburse such expenses. All submittals upon receipt become the property of the Department. Labeling information provided in submittals as “proprietary” or “confidential”, or any other designation of restricted use will not protect the information from public view. Subject to the provisions of the Open Records Act, the details of the proposal documents will remain confidential until a final award.

F. Award Conditions

This request is not an offer to contract or a solicitation of bids. This request and any proposal submitted in response, regardless of whether the proposal is determined to be the best proposal, is not binding upon the Department and does not obligate the Department to procure or contract for any services. Neither the Department nor any respondent submitting a response will be bound unless and until a written contract mutually accepted by both parties is negotiated as to its terms and conditions and is signed by the Department and a respondent containing such terms and conditions as are negotiated between those parties. The Department reserves the right to waive non-compliance with any requirements of this Request for Qualifications and to reject any or all proposals submitted in responses. Upon review of responses, the Department will determine the respondent(s) proposal that in the sole judgment of the Department is in the best interest of the Department (if any is so determined), with respect to the evaluation criteria stated herein. The Department then intends to conduct negotiations with such respondent(s) to determine if an acceptable contract may be reached.

G. Debriefings

In lieu of Pre-Award and Post-Award debriefings, it shall be the Department’s policy to provide the “Selection Package” at the time of the Selection Announcement (also referred to as the Announcement of Entering into Negotiations). The “Selection Package” will include the scores and comments of phases for all firms who responded and will typically be provided as a PDF file and e-mailed. Previously, pre-award debriefings only provided the scores and comments of the firm. It shall be the policy of the Department that all debriefings will typically be conducted in writing.

H. Right to Cancel or Change RFQ

GDOT reserves the right to cancel any and all Request for Qualifications where it is determined to be in the best interest of the Department to do so. GDOT reserves the right to increase, reduce, add or delete any item in this solicitation as deemed necessary.

It is the responsibility of all firms interested in submitting Statement of Qualifications (SOQs) for this advertisement to routinely check the posting on the Georgia Procurement Registry for any revisions to this RFQ.

I. Substitutions, Alternates, Exceptions, and Extensions

No substitutions or alternates will be accepted for this solicitation. Any respondent submitting substitutions or alternates will be considered non-responsive and will not be considered for award.

J. GDOT Code of Conduct Pertaining to Conflict of Interest in the Award and Administration of Contracts

Pursuant to GDOT Policy 3A-17, any GDOT employee who leaves the employment of the Department and subsequently becomes employed with a consultant firm and whose duties while employed with the Department included the direct involvement with the negotiation, administration, or management of a contract in which the firm is either the primary consultant or a subconsultant **SHALL NOT** be authorized to work on that contract as an employee of that firm for a period of one (1) year after their employment ends.

Additionally, on July 1st of each year, any consultant firm that is under contract with the Department as a prime or sub consultant shall provide to the Department's Chief Procurement Officer (CPO) a current list of all former Department employees employed by the firm and a document that certifies the responsibilities of those employees as it relates to the current contracts with the Department. This certification document shall attest to the fact that over the last year no former Department employee that is employed by their firm has worked on a

contract between the Department and their firm where that employee, when employed by the Department, had direct involvement with the selection, award and/or administration of the consultant contract. Any consultant firm entering into a contract with the Department for the first time as a prime or sub consultant shall provide the initial required list of former Department employees and certification prior to the contract effective date. If the Department's CPO determines at any point during a contract that an actual conflict exists as it relates to the above paragraph, then the CPO shall have the authority to issue a stop work order on that contract.

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EXHIBIT I

Project/Contract

1. Project Number(s): N/A
2. PI Number(s): N/A
3. Counties: Clayton, Cobb, DeKalb, Douglas, Fulton, Rockdale.
4. Description: Construction Engineering and Inspection (CEI) for District 7, Chamblee.
5. Required Area Class:

Prime Consultants are defined as the firm submitting the Statement of Qualifications and the firm with whom GDOT will contract. The Team is defined as the Prime Consultant and their subconsultants, who are considered team members. The Prime Consultant and Team members must be prequalified in the Area Class identified below in Section 5. Respondents should submit a summary form (example provided in **Exhibit IV**) which details the required area class for the Prime Consultant and all subconsultants or joint-venture of consultants on the team listed in the Statement of Qualifications. The area class listed on the summary form must meet the required area class or the team will be disqualified. The Prequalification Expiration Date must be current by the deadline stated for this RFQ.

The **Prime Consultant and Subconsultants MUST** be prequalified by GDOT in the area class listed below:

Number	Area Class
8.01	Construction Engineering and Supervision

6. Scope:

The Consultant shall provide Construction Engineering and Inspection (CEI) Services which are required for contract administration, inspection, and materials sampling and testing for the construction projects assigned to the Atlanta, College Park, Decatur and Marietta Area Offices. Some of the projects may require night and weekend inspection. The projects types may include widening and reconstruction, rehabilitation of asphalt and concrete pavement, bridge replacement, and resurfacing.

The selected firm may provide an estimated (forty) 40 total Project Engineers, Senior Inspectors, Office Engineers, Bridge Inspectors, Inspectors, and Inspector Aids who will be assigned to and work under the direct supervision of Department Project Engineers. Each Consultant shall provide the names and resumes of principals and key personnel as well as detailed resumes of the Project Engineer, 3 Senior Inspectors, and 3 Inspectors who will perform the work. Personnel information should include professional registrations (type, number, and state(s) where registered, construction engineering and inspection, traffic control, and erosion control experience on highway and bridge construction projects, and GDOT or other State Highway Agency experience. Failure to meet this requirement will be considered "nonresponsive" and the entire submittal will be rejected. Resumes in numbers greater than required will not be considered in the evaluation. The Minimum Experience and Training Requirements for each classification are provided in the Personnel Qualifications section of this advertisement.

A. GENERAL

1. The services under the resulting contract shall consist of performing to the satisfaction of the Department all those construction engineering services necessary or incidental to accomplish the contract consistent with applicable professional standards.
2. It shall be the responsibility of the Consultant to monitor and inspect the Construction Contract such that the project is constructed in reasonable conformity with the plans, specifications, and special provisions for the Construction Contract.
3. The Consultant shall furnish all services and labor necessary to conduct and complete the services to accomplish the resulting contract, and shall furnish all materials, equipment, laptops, supplies and incidentals other than those designated in writing as to be furnished by the Department necessary to perform the services, and check or test them prior to use under this contract. Concrete testing equipment will continue to be furnished by the Department as well as SiteManager software.

4. All services shall be performed in accordance with the established standard procedures and practices of the Department. Prior to furnishing any services, the Consultant shall be familiar with those Departmental standard procedures and practices as set forth in The Source and associated documents and with informal procedures and practices including the computer based record keeping system for construction contract administration used by the Department.
5. The Consultant's principal contact with the Department shall be through the District Construction Engineer.
6. Since the services under the contract are to be paid in whole or in part with federal or state funds, the services shall comply with all applicable federal and state laws and regulations.
7. The Federal Highway Authority (FHWA) may participate in all conferences and reviews.
8. At the request of the Department, the Consultant during the progress of the services shall furnish information or data relating to the services under the contract as may be required by the Department to enable it to carry out or to proceed with related phases of the project not covered by this contract, or which may be necessary to enable the Department to furnish information to the Consultant upon which to proceed with further services.
9. Compliance with all of the foregoing shall be within the purview of the contract and shall not constitute a basis for additional or extra compensation.

B. CONTROL AND AUTHORITY

1. The Consultant's representative shall be designated by the Consultant to serve as field supervisor of all Consultant personnel and services performed under the contract, to act as Liaison Project Manager between the Consultant and the District Construction Engineer. The Consultant's representative shall report to and be directly accountable to the District Construction Engineer. It is not anticipated that these responsibilities will require a full time employee availability.
2. The Consultant's representative shall coordinate with the Department as to the project staffing needs and inspector assignments such as visits to the Department Area Engineers regarding deployment of staff and other matters and review project records prepared by the Consultant to assure services conform to the Department criteria.
3. In the event of a controversy, the Consultant's representative shall first confer with the District Construction Engineer. In the event the Consultant representatives and District Construction Engineers cannot agree, the District Construction Engineer will promptly contact the Area Engineer of the Department or his or her delegate who will determine the necessary course of action.
4. Project engineering duties shall be performed by the Department unless the task order specifies that the Consultant is to serve as Project Engineer.
5. Titles above Senior Inspectors shall be requested in writing and approved by the State Construction Engineer.

C. SERVICES TO BE PERFORMED BY THE CONSULTANT

The Consultant agrees to:

1. Observe the Contractor's work to determine the progress and quality of work, identify discrepancies, report significant discrepancies to the Department, and direct the Contractor to correct such observed discrepancies.
2. Attend conference(s) required to carry out the contract.

3. Become familiar with the standard construction practices of the Department, the construction plans and contract(s) for the project, and the Contractor's proposed schedule of operations prior to beginning field services under the contract.
4. Assign a sufficient number of technically qualified and experienced personnel to the project to perform the services required under the contract, in a timely manner to avoid delay to the Contractor.
5. Notify the Area Engineer immediately of any unanticipated project conditions.
6. Withdraw any personnel or halt any services no longer required, at the request of the Department, or within a reasonable time after the lack of need becomes apparent to the Consultant.
7. Perform consultant field operations in accordance with the Department regulations and accepted safety practices.
8. Provide for Consultant personnel transportation equipped with appropriate safety equipment, communication devices, hard hat, high visibility vests, and incidentals as are needed to accomplish the services required under the contract.
9. Act as Inspector as provided in the Specifications, Special Provisions, and The Source of the State of Georgia Department of Transportation.
10. Sample materials, concrete and asphalt, to be incorporated in the work, and reject Contractor's work and materials not meeting the Specifications, Special Provisions, or the Source of the State of Georgia Department of Transportation.
11. Make certain that test report records or certificates of compliance have been received, prior to the incorporation of materials in the work, for materials tested off the project site.
12. Keep daily diaries, logs and records consistent with Department practice as are needed for a record of the Contractor's progress including Project Engineer's diary and Inspectors' diaries.
13. Measure and compute quantities of all materials incorporated in the work and items of work completed, and maintain an item record account.
14. Prepare and submit, such periodic, intermediate and final reports and records as may be required by the Department and as are applicable to the project, which may include:
 - a. Weekly progress reports.
 - b. Weekly statement of working days.
 - c. Notice of change in construction status.
 - d. Report of field inspection of material.
 - e. Test report record.
 - f. Contractor pay estimates.
 - g. Pile driving data.
 - h. Piling record.
 - i. Final certification of materials.
 - j. Explanation of quantity variation.
 - k. Statement of contract time.
 - l. Intermediate and final estimates.
 - m. Contractor evaluation form.
 - n. Other records and reports as required for the individual project by the Area Engineer.
15. Review Contractor submittals of records and reports required by the Department as applicable to the project which may include:
 - a. Weekly payroll.
 - b. Statement of wage compliance.
 - c. Requests for partial and final payment.
 - d. Other reports and records as required for the individual project by the Area Engineer.

16. Collect, properly label or identify, and deliver to the Department all original diaries, logs, notebooks, accounts, records, reports and other documents prepared by the Consultant in the performance of the contract, upon completion or termination of the contract.
17. Return, upon completion or termination of the contract, all specifications, manuals, guides, written instructions, construction contracts and plans, unused forms and record keeping books, and other documents and materials furnished by the Department. The Consultant may be responsible for replacing lost documents or materials at a fair and reasonable price.
18. Prepare and deliver one copy of the "as-built" or "record" plan to the Department as defined in the State of Georgia Department of Transportation Construction and Materials Manual.

D. JOB DESCRIPTIONS AND QUALIFICATIONS:

The following are job descriptions and qualifications for titles that may be used in the contract:

1. Project Engineer - This is advanced level technical work in functional areas of project administration and management. Employees, under limited supervision, independently manage construction activities on large complex projects (phases) such as complex bridge, urban, or interstate reconstruction projects.

Employees inspect and supervise lower level inspectors performing routine to moderately complex inspections of roadway and structure construction processes and materials to assure compliance with the construction contract and other applicable guidelines. Work includes monitoring traffic control and erosion control on the project. Work also includes monitoring construction costs; negotiating prices for contract modifications with contractors; writing or supervising the preparation of reports and correspondence; and working and communicating with contractors, supervisors, subordinates, local officials, media and the general public.

Knowledge, Skills and Abilities: Thorough knowledge of specifications and standards, acceptable construction practices, materials, methods and equipment used in highway construction and engineering. Thorough knowledge of mathematical functions, including algebraic, geometric, and trigonometric calculations related to highway/transportation engineering. Ability to read and comprehend construction plans and all other documents associated with the project. Must be licensed to operate motor vehicles in accordance with Georgia Law.

Minimum Training and Experience Requirements: Graduation from a university with a degree in Civil Engineering or from a four-year college with a degree in Civil Engineering Technology and five (5) years of progressive transportation technician experience; graduation from a two-year technical college with a degree in Civil Engineering Technology and seven (7) years of progressive transportation technician experience; or graduation from high school and ten (10) years of progressive transportation technician experience as an employee or consultant for a State Highway Agency; or an equivalent combination of training and directly related experience.

2. Bridge Inspector - This is advanced level technical work supporting engineers in functional areas of bridge and roadway construction inspection; materials sampling, inspection and testing. Employees support engineers in management of construction activities on large complex bridge projects. Work usually involves a significant amount of decision making and use of judgment, and may include providing work directions to others.

Employees may function as lead project inspectors conducting independent complex inspections themselves, and supervising lower level inspectors performing routine to moderately complex inspections of bridge and roadway construction processes and materials to assure compliance with the construction contract. Employees may perform contract administrative duties such as field measurements of pay items as well as other Department required documentation. Work may include other duties and responsibilities as assigned.

Knowledge, Skills and Abilities: Thorough knowledge of specifications and standards, acceptable construction practices, materials, methods and equipment used in bridge/highway construction and engineering. Thorough knowledge of mathematical functions, including algebraic, geometric, and trigonometric calculations related to bridge/highway/transportation engineering. Ability to read and comprehend bridge plans, Bridge Foundation Investigation reports, Contractor's layouts, and all other documents associated with the project. Ability to read, comprehend, and produce test pile and driving pile data. Shall be licensed to operate motor vehicles in accordance with Georgia Law.

Minimum Training and Experience Requirements: Graduation from a university with a degree in Civil Engineering or from a four-year college with a degree in Civil Engineering Technology and five years of progressive transportation technician experience and construction experience on at least 4 complex bridges; graduation from a two-year technical college with a degree in Civil Engineering Technology and seven years of progressive transportation technician experience and construction experience on at least 6 complex bridges; or graduation from high school and ten years of progressive transportation technician experience as an employee or consultant for a State Highway Agency and construction experience on at least 9 complex bridges; or an equivalent combination of training and directly related experience.

3. ATMS/Signal Inspector - This is advanced level technical work supporting engineers in functional areas of roadway construction inspection; materials sampling, inspection and testing. Employees support engineers in management of construction activities on ATMS, traffic signal, and ramp metering projects. Work usually involves a significant amount of decision making and use of judgment, and may include providing work directions to others.

Employees may function as lead project inspectors conducting independent complex inspections themselves, and supervising lower level inspectors performing routine to moderately complex inspections of roadway construction including ATMS, traffic signal, and ramp metering processes and materials to assure compliance with the construction contract. Employees may perform contract administrative duties such as field measurements of pay items as well as other Department required documentation. Work may include other duties and responsibilities as assigned.

Knowledge, Skills and Abilities: Thorough knowledge of specifications and standards, acceptable construction practices, materials, methods and equipment used in highway construction and engineering. Thorough knowledge of mathematical functions, including algebraic, geometric, and trigonometric calculations related to highway/transportation engineering. Ability to read and comprehend traffic signal plans and specifications, ATMS plans and specifications, and all other documents associated with the project.

Minimum Training and Experience Requirements: Graduation from a university with a degree in Civil Engineering or from a four-year college with a degree in Civil Engineering Technology and five years of progressive transportation technician experience and construction experience on at least 3 ATMS/traffic signal type projects; graduation from a two-year technical college with a degree in Civil Engineering Technology and seven years of progressive transportation technician experience and construction experience on at least 5 ATMS/traffic signal type projects; or graduation from high school and ten years of progressive transportation technician experience as an employee or consultant for a State Highway Agency and construction experience on at least 8 ATMS/traffic signal type projects; or an equivalent combination of training and directly related experience.

4. Office Engineer - A High School diploma or equivalent and four (4) years of road & bridge construction engineering inspection experience having performed/assisted in project related duties (i.e., reviewing and processing progress and final construction reports, EEO compliance, processing Construction Contract modifications, etc.) or have Civil Engineering Technology degree. Should exercise independent judgment in planning work details and making technical decisions related to the office aspects of the project. Should be familiar with the Department's Procedures including the Construction Manual covering the project related duties as stated above and be proficient in the computer programs necessary to perform these duties.

5. Senior Inspector - This is advanced level technical work supporting engineers in functional areas of structure and roadway construction inspection; materials sampling, inspection and testing. Work usually involves a fairly wide range of decision making and use of judgment, and would normally include providing work direction to others.

Employees may function as lead project inspectors conducting independent complex inspections themselves, and supervising lower level inspectors performing routine to moderately complex inspections of roadway and structure construction processes and materials to assure compliance with the construction contract. Employees may perform contract administrative duties such as field measurements of pay items as well as other Department required documentation. Work may include other duties and responsibilities as assigned.

Knowledge, Skills and Abilities: Thorough knowledge of materials, methods and equipment used in highway construction. Considerable knowledge of mathematical functions, including algebra, geometry, and trigonometry. Skill in the use of office equipment such as calculators and computers. Ability to read, interpret and explain such things as construction plans, contract provisions, specifications, and inspection procedures; ability to take notes and prepare or review reports; good communicative ability; and supervisory ability to coordinate the activities of lower level employees and instruct them in proper work methods. Shall be licensed to operate motor vehicles in accordance with Georgia Law.

Minimum Training and Experience Requirements: Graduation from a university with a degree in Civil Engineering or from a four-year college with a degree in Civil Engineering Technology and three years of progressive transportation technician experience; graduation from a two-year technical college with a degree in Civil Engineering Technology and six years of progressive transportation technician experience; or graduation from high school and eight years of progressive transportation technician experience as an employee or consultant for a State Highway Agency; or an equivalent combination of training and directly related experience.

6. CEI Resident Compliance Officer - Graduation from an accredited high school and two years of experience in monitoring federal and or state compliance on a construction project. Should have prior experience in both State funded and Federal Aid funded construction projects and knowledge of EEO laws and/or GDOT's DBE and OJT programs. Duties include, but are not limited to:
 - a. Review, monitor, evaluate and act upon documentation required for Construction Contract compliance, and maintain the appropriate files thereof. Typical areas of compliance responsibility include DBE compliance of the prime contractor and subcontractor, Payroll verification and discrepancy resolution, Commercial Useful Form (CUF) review and approval, and Monthly/Quarterly DBE Participation Reports review and approval.
 - b. Assist Construction Project Engineer with DBE related documentation and correspondence as requested including performing labor interviews; Ensure that all DBE related documents and correspondence are accurate and up to date; attend compliance reviews and furnish the complete project files for review; and assist the District Contracts Manager/Associate as requested.
7. Inspector - This is advanced journey level technical work supporting higher level technicians and engineers in functional areas such as construction inspection and surveying; scheduling and status; roadway design; traffic signal equipment; traffic signalization and geometrics; materials sampling; inspection and testing. Work usually involves a significant amount of decision making and use of judgment, and may include providing work directions to others.

Employees may perform independent complex inspections of roadways and structure construction processes and materials to assure compliance with the construction contract. Employees may perform moderately complex inspections; or supervise other inspectors conducting routine and standardized inspections. Work may include inspecting asphalt and concrete for acceptable materials and mix; pavement for proper spreading, rolling, depth, alignment and compaction; roadways and structures for conformance to plans, and specifications; structural materials and members; placement of culverts; structural operations such as foundation excavation; placement of piling, reinforcing and structural steel, concrete and backfill; and traffic control and erosion control devices. Employees may also perform the more complex variety of calculations and computations. Employees may perform contract documentation

duties, which may include field measurements of pay items as well as other Department required documentation. Work may include other duties and responsibilities as assigned.

Knowledge, Skills and Abilities: Considerable knowledge of materials, methods, and equipment used in highway construction; and considerable knowledge of mathematical functions including geometry and trigonometry. Drafting skill and skill in the use of office equipment such as calculators and computers. Ability to read, interpret, and explain such things as construction plans, contract provisions, specifications, and inspection procedures; ability to take notes and prepare or review reports; good communicative ability; and ability to instruct other employees in proper work methods. Shall be licensed to operate motor vehicles in accordance with Georgia Law.

Minimum Training and Experience Requirements: Graduation from a university with a degree in Civil Engineering or from a four-year college with a degree in Civil Engineering Technology; graduation from a two-year technical college with a degree in Civil Engineering Technology and three years of progressive transportation technical experience; or graduation from high school and six years of progressive transportation technician experience as an employee or consultant for a State Highway Agency; or an equivalent combination of training and directly related experience.

8. Inspector Aid - This is beginning level technical work supporting higher level technicians and engineers on assignments relating to highway and bridge construction inspection.

Employees perform a range of routine and standardized work which may include duties such as manual or electronic calculations and computations. Employees will perform independent routine and standardized inspections of construction processes and materials to assure compliance with the construction contract. Employees may inspect truck load tickets for roadway aggregate base course, borrow material and asphaltic concrete at project field sites. Employees may perform a variety of simple materials sampling, inspection and/or testing. Employees may perform contract administrative duties, which may include field measurements of pay item quantities as well as other Department required documentation. Work is generally performed under technical and administrative supervision, and may include other duties and responsibilities as assigned.

Knowledge, Skills and Abilities: Some knowledge of surveying, highway construction or design. General knowledge of mathematical functions. Skill in the use of office equipment such as calculators. Ability to read and interpret such things as construction plans, contract provisions, and inspection procedures; and good communications ability. Shall be licensed to operate motor vehicles in accordance with Georgia Law.

Minimum Training and Experience Requirements: Graduation from high school. One year transportation experience; or equivalent combination of training and directly related experience is desired.

9. Contract Support Specialist/Secretary - High school graduate or equivalent plus three years of secretarial and/or clerical experience including two years experience in office management. Ability to type at a rate of 35 correct, words per minute. Experienced in the use of standard word processing software. Should exercise independent initiative to help relieve the construction personnel of clerical detail. Work under the general supervision of the Area Engineer and staff.

7. Related Key Team Leaders:

- A. Project Engineer (Total of 1)
- B. Bridge Inspector (Total of 1)
- C. Senior Inspector (Total of 3)
- D. Inspector (Total of 3)

EXHIBIT II CERTIFICATION FORM

I, _____, being duly sworn, state that I am _____ (title) of _____ (firm) and hereby duly certify that I have read and understand the information presented in the attached proposal and any enclosure and exhibits thereto.

Initial each box below indicating certification. The person initialing must be the same person who signs the Certification Form. (If unable to initial any box for any reason, place an "X" in the applicable box and attach a statement explaining the non-certification. The Department will review and make a determination as to whether or not the firm shall be considered further or disqualified).

- ☐ I further certify that to the best of my knowledge the information given in response to the Request for Qualifications is full, complete and truthful.
- ☐ I further certify that the submitting firm and any principal employee of the submitting firm has not, in the immediately preceding five (5) years, been convicted of any crime of moral turpitude or any felony offense, nor has had their professional license suspended, revoked or been subjected to disciplinary proceedings, nor is any team members/principals currently under indictment for any reason related to actions on public infrastructure projects.
- ☐ I further certify that I understand that Firms included on the current Federal list of firms suspended or debarred are not eligible for selection and that the submitting firm has not, in the immediately preceding five (5) years, been suspended or debarred from contracting with any federal, state or local government agency, and further, that the submitting firm is not now under consideration for suspension or debarment from any such agency.
- ☐ I further certify that the submitting firm has not in the immediately preceding five (5) years been defaulted in any federal, state or local government agency contract and further, that the submitting firm is not now under any notice of intent to default on any such contract, nor has been removed from a contract or failed to complete a contract as assigned due to cause or default.
- ☐ I further certify that the firm or any affiliate(s) has not been involved in any arbitration, litigation, mediation, dispute review board or other dispute resolution proceeding with a client, business partner, or government agency in the last five years involving an amount in excess of \$500,000 related to performance on public infrastructure projects.
- ☐ I further certify that there are not any pending regulatory inquiries that could impact our ability to provide services if we are the selected consultant.
- ☐ I further certify that there are no possible conflicts of interest created by our consideration in the selection process or by our involvement in the project.
- ☐ I further certify that the submitting firm's annual average revenue for the past five (5) years is sufficient to allow the services to be delivered effectively by our firm and that there are no trends in the revenue which may be concerning other than normal market fluctuations.
- ☐ I further certify that in regards to Audit and Accounting System Requirements, that the submitting firm:
- I. Has an accounting system in place to meet requirements of 48 CFR Part 31 and, in the case of non-profit organizations, OMB Circular A-122.
 - II. Has submitted its yearly Certified Public Accountant overhead audit if it currently has an aggregate contract amount exceeding \$250,000.
 - III. Has no significant outstanding deficient audit findings from previous contracts with GDOT that have not been resolved.
 - IV. Is responsible for being reasonably assured that all sub-consultant(s) presented as a part of the proposed team are similarly in compliance with the above requirements.

I acknowledge, agree and authorize, and certify that the proposer acknowledges, agrees and authorizes, that GDOT may, by means that either deems appropriate, determine the accuracy and truth of the information provided by the proposer and that the GDOT may contact any individual or entity named in the Statement of Qualifications for the purpose of verifying the information supplied therein.

I acknowledge and agree that all of the information contained in the Statement of Qualifications is submitted for the express purpose of inducing the GDOT to award a contract.

A material false statement or omission made in conjunction with this proposal is sufficient cause for suspension or debarment from further contracts, or denial or rescission of any contract entered into based upon this proposal thereby precluding the firm from doing business with, or performing work for, the State of Georgia. In addition, such false statement or omission may subject the person and entity making the proposal to criminal prosecution under the laws of the State of Georgia of the United States, including but not limited to O.C.G.A. §16-10-20, 18 U.S.C. §§1001 or 1341.

Sworn and subscribed before me

This ____ day of _____, 20____.

Signature

NOTARY PUBLIC

My Commission Expires: _____

NOTARY SEAL

EXHIBIT III**GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT**Solicitation No. : **RFQ-484-103013**Solicitation Name: **Construction Engineering and Inspection (CEI), District 7, Chamblee.**

Respondent's Name: _____

**STATE OF GEORGIA
CONSULTANT AFFIDAVIT**

By executing this affidavit, the undersigned Consultant verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with the Georgia Department of Transportation has registered with, is authorized to participate in, and is participating in the federal work authorization program commonly known as E-Verify,* in accordance with the applicable provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned Consultant further agrees that it will continue to use the federal work authorization program throughout the contract period and, should it employ or contract with any subconsultant(s) in connection with the physical performance of services pursuant to this contract with the Georgia Department of Transportation, Consultant will secure from such subconsultant(s) similar verification of compliance with O.C.G.A. § 13-10-91 on the Subconsultant Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Consultant further agrees to maintain records of such compliance and provide a copy of each such verification to the Georgia Department of Transportation at the time the subconsultant(s) is retained to perform such service.

EEV / E-Verify™ User Identification Number_____
Date of Authorization_____
BY: Authorized Officer or Agent
(Contractor Name)_____
Date_____
Title of Authorized Officer or Agent of Consultant_____
Printed Name of Authorized Officer or AgentSUBSCRIBED AND SWORN
BEFORE ME ON THIS THE

____ DAY OF _____, 201__

[NOTARY SEAL]

Notary Public

My Commission Expires: _____

*or any subsequent replacement operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603.

EXHIBIT IV
Area Class Summary Example

Respondents should complete a table similar to the below and indicate by placing an “X” in the appropriate column indicating the firm which meets each required area class for each specific project with particular emphasis on the area classes which the Prime must hold as well as the subconsultants. The below table is a full listing of all area classes. Since no single advertisement would require every area class, Respondents should delete all the area classes which are not applicable to the project they are pursuing and only include the ones applicable. Particular attention should be paid to the date that consultants certificate expires.

Area Class #	Area Class Description	Prime Consultant Name	Sub-Consultant #1 Name	Sub-Consultant #2 Name	Sub-Consultant #3 Name	Sub-Consultant #4 Name	Sub-Consultant #5 Name	Sub-Consultant #6 Name
	DBE – Yes/No ->							
	Prequalification Expiration Date							
1.01	Statewide Systems Planning							
1.02	Urban Area and Regional Transportation Planning							
1.03	Aviation Systems Planning							
1.04	Mass and Rapid Transportation Planning							
1.05	Alternate Systems Planning							
1.06(a)	NEPA							
1.06(b)	History							
1.06(c)	Air Quality							
1.06(d)	Noise							
1.06(e)	Ecology							
1.06(f)	Archaeology							
1.06(g)	Freshwater Aquatic Surveys							
1.07	Attitude, Opinion, and Community Value Studies (Public Involvement)							
1.08	Airport Master Planning (AMP)							
1.09	Location Studies							
1.10	Traffic Analysis							
1.11	Traffic and Toll Revenue Studies							
1.12	Major Investment Studies							
1.13	Non-Motorized transportation Planning							
2.01	Mass Transit Program (Systems Management)							
2.02	Mass Transit Feasibility and Technical Studies							
2.03	Mass Transit Vehicle and Propulsion System							
2.04	Mass Transit Controls, Communication and Information Systems							
2.05	Mass Transit Architectural Engineering							
2.06	Mass Transit Unique Structures							
2.07	Mass Transit Electrical and Mechanical System							
2.08	Mass Transit Operations Management and Support Services							
2.09	Airport Design (AD)							
2.10	Mass Transit Program (Systems Marketing)							
3.01	Two-Lane or Multi-lane Rural Roadway Design							
3.02	Two-Lane or Multi-lane urban Roadway Design							
3.03	Multi-Lane Urban Roadway Widening and Reconstruction							
3.04	Multi-lane Rural Interstate Limited Access Design							
3.05	Multi-lane Urban Interstate Limited Access Design							
3.06	Traffic Operations Studies							
3.07	Traffic Operations Design							
3.08	Landscape Architecture Design							
3.09	Traffic Control Systems Analysis, Design and Implementation							
3.10	Utility Coordination							

3.11	Architecture							
3.12	Hydraulic and Hydrological Studies (Roadway)							
3.13	Facilities for Bicycles and Pedestrians							
3.14	Historic Rehabilitation							
3.15	Highway and Outdoor Lighting							
3.16	Value Engineering (VE)							
3.17	Toll Facilities Infrastructure Design							
4.01	Minor Bridge Design							
4.02	Major Bridge Design							
4.04	Hydraulic and Hydrological Studies (Bridges)							
4.05	Bridge Inspection							
5.01	Land Surveying							
5.02	Engineering Surveying							
5.03	Geodetic Surveying							
5.04	Aerial Photography							
5.05	Photogrammetry							
5.06	Topographic Remote Sensing							
5.07	Cartography							
5.08	Overhead/Subsurface Utility Engineering (SUE)							
6.01(a)	Soil Survey Studies							
6.01(b)	Geological and Geophysical Studies							
6.02	Bridge Foundation Studies							
6.03	Hydraulic and Hydrologic Studies (Soils & Foundation)							
6.04(a)	Laboratory Testing of Roadway Construction Materials							
6.04(b)	Field Testing of Roadway Construction Materials							
6.05	Hazardous Waste Site Assessment Studies							
8.01	Construction Engineering and Supervision							
9.01	Erosion, Sedimentation, and Pollution Control Plan							
9.02	Rainfall and Runoff Reporting							
9.03	Field Inspection for Erosion Control							

Submittal Formats for GDOT Engineering Projects

of Pages Allowed

Cover Page	->	1
A. Administrative Requirements		
1. Basic Company Information		
a. Company name		
b. Company Headquarter Address		
c. Contact Information		
d. Company Website		
e. Georgia Addresses		
f. Staff		
g. Ownership		
		Excluded
2. Notarized Certification Form (Exhibit II) for Prime	->	1
3. Notarized Georgia Security and Immigration Compliance Act Affidavit (Exhibit III)	->	1
4. Signed Cover Page of any Addenda Issued	->	1 (each addenda)
B. Experience and Qualifications		
1. Project Manager		
a. Education		
b. Registration		
c. Relevant construction engineering or inspection experience		
d. Relevant project management experience		
e. Relevant experience using GDOT specific processes, etc.		
f. Project Manager Commitment Table	->	Excluded
2. Key Team Leader Experience		
a. Education		
b. Registration		
c. Relevant construction engineering experience or inspection experience in applicable resource area		
d. Relevant experience using GDOT specific processes, etc.		
e. Additional Page for Discussion on key resources	->	1
3. Prime's Experience		
a. Client name, project location, and dates		
b. Description of overall project and services performed		
c. Duration of project services provided		
d. Experience using GDOT specific processes, etc.		
e. Clients current contact information		
f. Involvement of Key Team Leaders		
		2
4. Area Class Table and Notice of Professional Consultant Qualifications for Prime and Sub-Consultants	->	Excluded
C. Resources/Workload Capacity		
1. Overall Resources		
a. Organization chart	->	Excluded
b. Primary office to handle project and staff description of office and benefits of office	->	1
2. Key Team Leaders Project commitment table	->	Excluded

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