

# I-25 NORTH CONSTRUCTION ADMINISTRATION SCOPE OF WORK

Scope Date: February 12, 2013  
Estimated Construction Start Date: March 2013  
Region 2

**PROJECT NUMBER:** I 025A-016  
**PROJECT CODE:** 18842  
**CMS ID NUMBER:** TBD  
**PROJECT LOCATION:** I-25 North – Woodman Road to Monument  
**CONTRACT TYPE:** Project Specific, Specific Rate of Pay  
**CONTRACT SUBJECT:** Construction Management, Inspection and Testing Services

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The Contract Administrator for this Contract will be:

Dan Hunt, PE II  
Resident Engineer – Region 2  
1480 Quail Lake Loop  
Colorado Springs, CO 80906  
Office: (719) 227-3231, Mobile: (719) 491-4303  
Email: [DANIEL.HUNT@STATE.CO.US](mailto:DANIEL.HUNT@STATE.CO.US)

Active Day to Day administration and monitoring of this contract will be delegated to the following CDOT employee:

Randy Johnson  
Quality Project Manager – Region 2  
1480 Quail Lake Loop  
Colorado Springs, CO 80906  
Office: (719) 499-4267  
Email: [RANDY.L.JOHNSON@STATE.CO.US](mailto:RANDY.L.JOHNSON@STATE.CO.US)

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## **General Requirements**

This Scope of Work (SOW) has been carefully reviewed by the Department and reflects a plan of approach based on the known goals. The Consultant's analysis of the project goals, its evaluation of the work elements, and its formulation of the work plan, coupled with its understanding of and sensitivity to the key issues may produce new approaches or modifications to the project's work elements. Therefore, the Final Scope of Work for the project may change in some details to incorporate the Consultant's input. This work is located in Region 2 of the Colorado Department of Transportation.

The positions described herein are anticipated needs. The Department reserves the right to not utilize any of the positions listed if at the time of construction the Department has available resources to staff the project from within.

## **Definitions**

*Resident Engineer* - The CDOT Resident Engineer is responsible to the Region Program Engineer for the quality and successful completion of a transportation project. The Resident Engineer authorizes interim and final payments and all changes to the contracts for all Consultants and Contractors.

*Engineer* - The CDOT Project Engineer.

*Quality Project Manager* – The assistant to the CDOT Project Engineer. Responsible for administering and monitoring the Contract for Consultant Inspectors and Testers.

*Consultant* - The individual, firm, or corporation under contract by this agreement to perform construction services as outlined below.

*Consultant Senior Inspector* – The Consultant’s Individual in responsible charge of Consultant services performed as described in this Contract. The Consultant Senior Inspector shall report directly to the CDOT Quality Manager and the CDOT Engineer.

*Contractor or D/B Contractor* - The individual, firm, or corporation under contract with CDOT to construct the facility.

## **Initial Project Meeting**

The Consultant shall meet with CDOT project personnel to coordinate and schedule the required work prior to active construction. The Consultant shall complete all work in accordance with the approved schedule or as approved by the CDOT Quality Manager.

## **Project Description and Project Location**

The Project involves I-25 in the Colorado Springs, CO area. Interstate 25 (I-25) is a major commercial corridor for interstate commerce among the states of New Mexico, Colorado, and Wyoming, as well as international commerce among the United States, Mexico, and Canada.

The purpose of the Project is to increase capacity by providing one additional through-lane in each direction, with auxiliary lanes between interchanges. The basic configuration limits are from the Woodmen Road Interchange (Exit 149) to Monument Interchange (Exit 161), with auxiliary lanes between interchanges from the Woodmen Road Interchange to south of the Interquest Parkway Interchange.

In addition to increasing capacity, key elements of the Project include replacement of the northbound and southbound Black Squirrel Creek bridges, construction phasing, safety improvements, drainage improvements, permanent water quality elements, and temporary erosion control.

## **Work Duration**

The time for the work described in this scope of work covers the period from Notice to Proceed to September 30, 2014. For portions of the project, night work will be required. Work will also be required during the 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 number and types of personnel may be adjusted up or down to meet project workload. The Consultant shall meet with the CDOT Quality Manager if it

is anticipated that Consultant services may not be required for a period exceeding one week. A procedure shall be agreed upon at the Initial Project meeting to resolve this issue.

Anticipated Construction: March 2013 to September 2014

During construction, CDOT anticipates utilizing approximately:

- 1 Senior Consultant Inspector
- 1 Consultant Inspector
- 4 Consultant Inspectors with Materials Testing capabilities (Certifications Required – Asphalt, Concrete, and Soils),
- 2 Consultant Materials Testing Technicians (Certifications Required – Asphalt, Concrete, and Soils)

Ideal team members will demonstrate the ability to work in teams, reference successful roadway projects (CDOT or similar).

**Conditions Applicable to all Consultant Personnel: Overtime / Travel Pay / Commute Miles**

Overtime hours are not allowable per State Fiscal Rules. Labor Hours will be billed to CDOT at the same rate as regular, non-overtime hours. Travel time will not be paid for travel to and from the project. Commuting mileage will not be paid for travel to and from the project. Mileage for travel while on the project will be paid for at the applicable State rate.

**Authorization to Proceed**

Work shall not commence until the written Notice to Proceed is received by the consultant, and shall be completed in the time specified.

**Routine Billing & Reporting**

The consultant shall provide the following on a regular basis:

- Monthly billing reports in formats suitable to the CDOT Quality Manager for all contract activities performed by Consultant personnel authorized to perform work on the project.
- Periodic reports and billings required by CDOT Procedural Directive 400.2.

The consultant shall bear all costs related to delay of construction when the Consultant fails to provide qualified personnel when required. The Consultant's monthly payments may be withheld for that portion of the work for which the consultant personnel fail to provide accurate and timely reporting.

**Status of Contract**

The consultant shall monitor the fiscal status of the contract, and advise the CDOT Quality Manager of any potential need to supplement their contract. Failure to monitor contract status and provide timely notification may result in discontinuation of the Consultant's services. The invoice shall include monthly status reports per the consultant guidelines and shall include budget information.

## **Consultant Inspector Requirements:**

### **Project Standards**

All construction inspection shall be in accordance with the Colorado Department of Transportation's Construction Manual, Field Materials Manual, Standard Specifications for Road & Bridge Construction, Project Standard Provisions, Project Special Provisions, and the plans and specifications in use when the project is advertised. All Consultant construction inspection activities shall be as authorized by the CDOT Quality Manager. For the purposes of this document, construction inspection shall be known as "the work" and references to "the specifications" shall include all applicable CDOT Standard Specifications for Road and Bridge Construction as amended by Project Standard Provisions, Project Special Provisions, and project plans and specifications.

### **General Work Description**

The Consultant Project Inspector shall provide support to the CDOT project staff through assignment of personnel to inspection activities if requested by the CDOT Resident Engineer. The Inspector shall be trained and qualified in accordance with CDOT's Construction Inspection Qualification Plan.

The Consultant Project Inspector must have experience and expertise with inspection activities related to Road and Bridge Construction. Experience with significant size projects which include major and minor structures, work in multiple locations is also highly desirable. Inspection responsibilities include but are not limited to:

Assist the CDOT Project Engineer and CDOT Quality Manager in the following Construction activities:

- Prepare inspection documentation for development of progress payments for the contractor in accordance with prescribed procedures;
- Submit daily diary at the end of the working day;
- Submit payment-documentation reports (Form 266's) at the end of the working day;
- Participate in weekly progress meetings with contractor, subcontractors, utilities and other interested parties;
- Secure project documentation from the contractor;
- Anticipate project problems and propose solutions to CDOT Project Engineer & CDOT Quality Manager;
- Maintain accurate notes reflecting actual construction details to be used in preparation of as-constructed plans;
- Perform initial, follow-up, and final inspections of work in progress including interim and final measurements;
- Notify contractors and CDOT Project Engineer and CDOT Quality Manager of non-compliance with the contract plans and specifications;
- Perform special tests, investigations, or monitoring to fulfill the intent of the CDOT inspection program;
- Aid in the preparation of correspondence to the contractor, CDOT Staff, local agencies, etc.;
- Provide liaison and communication to contractor field crews;
- Prepare final "As-Constructed" plans upon project completion;
- Deliver material samples to designated laboratories or locations;
- Perform miscellaneous project-related duties as requested by the CDOT Project Engineer & CDOT Quality Manager.

### **Labor, Materials, Vehicles & Equipment**

The Consultant shall provide the Consultant Inspector with the following:

- A suitable vehicle equipped with at least one (1) flashing, oscillating, or rotating amber beacon that shall be visible a minimum of five hundred (500) feet in normal sunlight.
- A cellular phone.
- A state-of-the-art computer with networking capability sufficient for accessing internet email through a project-supplied internet-service provider. Each computer shall be loaded with MS Office software (2007 version or later), including MS Word and MS Excel at a minimum. Computers shall be capable of running current CDOT software, including Asphalt '03, Voids '03, Site Manager, etc.
- Miscellaneous equipment (calculator, office supplies, safety equipment, etc.) required to perform the work (ASTM Certified Work Boots, ANSI Certified Hardhat (Z89.1 stamp and be High Visibility), Safety Glasses (Z87 stamp on the glasses/goggles) and Approved Safety Vest. (Meeting or exceeding ISEA for Class 3), including all applicable manuals.
- CDOT will provide a field-office space.

Personnel qualifications, staffing level, and number and types of vehicles shall be subject to the approval of the Quality Manager. The Consultant shall assign personnel for the duration of the Contract unless otherwise approved by the Engineer or the CDOT Quality Manager. Employees required to operate vehicles must possess and maintain a valid State of Colorado driver's license. The Consultant Inspector(s) permanently assigned to a project shall be competent in road and bridge construction and be thoroughly familiar with CDOT specifications, manuals, forms, and documentation requirements including SiteManager. The level of qualification provided shall be as requested and approved by the CDOT Resident Engineer. The qualifications for the level(s) shall be commensurate to experience, and are as follows:

1. Senior Consultant Inspector – a minimum of seven (7) years of experience in highway construction inspection.

The Consultant Inspectors shall either have a *National Institute for Certification in Engineering Technology (NICET)* Certification Level III in Highway Construction or have an Engineer-In-Training (EIT) certification from the State of Colorado and (7) years of experience on CDOT construction projects, unless otherwise approved by CDOT.

A copy of work experience and proof of Certification and/or License shall be provided with the proposal. 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 Quality Manager.

The Senior Level Inspector will be required to manage the Consultant Inspectors and Testers. Attend weekly meetings as determined by the CDOT Quality Manager.

2. Consultant Inspector – a minimum of two (2) years of experience in highway construction inspection.

The Consultant Inspectors shall either have a *National Institute for Certification in Engineering Technology (NICET)* Certification Level III in Highway Construction or have an Engineer-In-Training

(EIT) certification from the State of Colorado and (2) years of experience on CDOT construction projects, unless otherwise approved by CDOT.

A copy of work experience and proof of Certification and/or License shall be provided with the proposal. 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 Quality Manager.

### **Documentation**

Each of the Consultant's personnel shall maintain a daily diary for each day they perform work on the project. They shall use CDOT's automated Form 103a - Project Diary unless otherwise directed by the CDOT Quality Manager. The contents of the diary shall be brief and accurate statements of progress and conditions encountered during the prosecution of the work, and sketches as needed for clarification and documentation. 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 available to the CDOT Quality Manager at the end of each workday and a copy shall be filed in the project records within one working day of its date.

### **Consultant Inspector with Materials Testing Capabilities Requirements: Project Standards**

- 1.) Consultant Inspector with Materials Testing Capabilities shall meet the Inspector requirements of the "Consultant Inspector" as stated in previous section. Also, shall meet the testing requirements in the following section (Consultant Materials Testing Technician Requirements), however, the experience can be a minimum of one (1) year.

### **Consultant Materials Testing Technician Requirements: Project Standards**

All sampling, testing, inspection, and documentation shall be in accordance with the Colorado Department of Transportation (CDOT) Construction Manual, Field Materials Manual, CDOT M&S Standards, and applicable Project and Standard Special Provisions in the construction project contract and the applicable CDOT Standard Specifications for Road and Bridge Construction. The applicable CDOT Manual shall be the one currently in use when the construction project is advertised

If the required method is not described in the CDOT Field Materials Manual, the required work shall be completed in accordance with AASHTO Standard Specifications for Transportation Materials and Methods of Sampling and Testing (as revised and supplemented),

Proposed work procedures shall be coordinated with the CDOT Quality Manager prior to the start of work.

### **General Work Description**

The Consultant MTT (Materials Testing Technician) shall sample, test, and document all materials incorporated into the project. This includes materials delivered to the project that are listed in the Summary of Approximate Quantities or referred to in the Plans and Specifications. The number of tests required shall be in accordance with the Schedule in the Field Materials Manual. Additional quantities may be added by Contract Modification Order, or plan approximate quantities may be increased or decreased. The MTT, the Consultant Project Manager, and CDOT's Quality Manager will review project quantities on a weekly basis to ensure that sufficient tests have been performed for

all material placed to date. The MTT will set-up and maintain all materials books. The consultant shall also provide any other project-related services requested by the CDOT Project Engineer or CDOT Quality Manager.

Testing of materials that are specifically designated to be pre-inspected or pre-tested by this or any other Department of Transportation will remain the responsibility of CDOT. The MTT shall document and transport samples of any and all materials to the CDOT Region or Central Laboratory that are required to be tested by CDOT, regardless of pre-inspection or pre-testing responsibilities. The items and test frequencies of CDOT tested materials shall be in accordance with the column titled "Central Laboratory" in the Schedule in the Field Materials Manual.

The Consultant shall follow the requirements of CP-16 to meet, coordinate and schedule the required work with the Project Engineer, Resident Engineer, and Quality Manager. The consultant shall complete all work in accordance with their approved schedule. The consultant materials testing evaluation form shall be completed by the CDOT Quality Manager or Resident Engineer and head tester, and distributed as described in CP-16. The CDOT Quality Manager shall forward a copy of the completed Pre-Testing Meeting Agenda for Consultant Materials Testing to the Region Materials Engineer.

In addition to the tasks identified in **Consultant Materials Testing Technician Requirements**, the MTT shall assist the Quality Manager in performance of construction inspection activities and other project-related activities, as directed by the Project Engineer or Quality Manager, when they are not required to perform the MTT related activities. Inspection responsibilities may include but are not limited to those identified in the **Consultant Inspector Requirements** above.

### **Labor, Materials, Vehicles & Equipment**

The Consultant shall furnish the Consultant Materials Testing Technician with the following:

- A suitable vehicle equipped with at least one (1) flashing, oscillating, or rotating amber beacon that shall be visible a minimum of five hundred (500) feet in normal sunlight.
- A cellular phone.
- A state-of-the-art computer with networking capability sufficient for accessing internet email through a project-supplied internet-service provider. This computer shall be loaded with MS Office software (2003 version or later), including MS Word and MS Excel at a minimum. This computer shall be capable of running current CDOT software, including Asphalt '03, Voids '03, Site Manager, etc. This computer shall be connected or networked to the Consultant-supplied main project printer/scanner described above, or shall be provided with a separate stand-alone printer.
- Miscellaneous equipment (calculator, office supplies, safety equipment, etc.) required to perform the work (ASTM Certified Work Boots, ANSI Certified Hardhat (Z89.1 stamp and be High Visibility), Safety Glasses (Z87 stamp on the glasses/goggles) and Approved Safety Vest. (Meeting or exceeding ISEA for Class 3) including all applicable manuals.
- CDOT will provide a Class II field laboratory and any required traffic control.

The following equipment shall be furnished along with the MTT for each project in sufficient quantity and in good working order (with current calibration) to ensure accurate performance of all work required in a timely manner. Such equipment and supplies shall remain the property of the consultant.

- Nuclear Moisture/Density Gauge;
- Concrete air meter, slump cone, thermometers, and other concrete testing equipment;

- Sieves for aggregates and soil gradations;
- Electronic scales;
- Small tools;
- Proctor equipment for soil curves and one point tests;
- Atterburg and Sand Equivalent equipment;
- Sample hauling containers, and drying containers, and equipment;
- Miscellaneous equipment for performing the required soils, asphalt and concrete tests.

Personnel qualifications, staffing level, and number and types of vehicles shall be subject to the approval of the CDOT Quality Manager. The MTT shall be thoroughly familiar with CDOT specification, manuals, forms, and documentation requirements. The MTT shall be permanently assigned to a project for the duration of the project and shall have the following qualifications:

1. A degree in Engineering or related Science(s) from a four year curriculum school or a *National Institute for Certification in Engineering Technology (NICET)* Level II Certification in Construction Materials Testing and Inspection for the types of work being performed, e.g. aggregates, asphalt, concrete, and soils or five (5) years of field testing experience with CDOT construction projects.
2. The MTT performing concrete tests shall be certified by *The American Concrete Institute (ACI)*.
3. The MTT performing hot bituminous pavement tests shall be Level II, A&B certified by *The Colorado Asphalt Technician Certification Program (LabCAT)*.
4. WAQTC, Soils Certification
5. In addition, the Consultant MTT must be certified in the appropriate classes of CDOT's Inspector Qualification Program.

A copy of work experience and proof of Certification, Degree, and/or License shall be provided to the CDOT Quality Manager before work begins. 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 Quality Manager.

### **Documentation**

The MTT shall maintain a daily diary for each day the MTT performs work on the project. The MTT shall use CDOT's automated Form 103a - Project Diary, or other form directed by the CDOT Quality Manager. The contents of the diary shall be brief and accurate statements of progress and conditions encountered during the prosecution of the work, and sketches as needed for clarification and documentation. 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 available to the CDOT Quality Manager at the end of each workday.

Test results and sample submittals transmitted to CDOT's Region or Central Laboratory shall be recorded on appropriate CDOT Forms. The MTT may use CDOT worksheets or worksheets approved by the CDOT Quality Manager. CDOT Forms and worksheets are available through the CDOT Quality Manager.

The MTT shall furnish the CDOT Quality Manager with original copies of all worksheets and test results on a daily basis. The MTT shall also keep the CDOT Form 626 up to date at all times and provide copies of this form to the CDOT Quality Manager within 12 hours.

The CDOT Quality Manager shall be informed immediately of any non-specification material. At the discretion of the CDOT Quality Manager, the MTT may also be required to provide the CDOT Form 626 to the contractor within 12 hours for any non-specification material.

The MTT shall provide all correspondence and applicable CDOT forms to the CDOT Quality Manager or his authorized representative for review and signature.

**Assurance Sampling and Testing**

The MTT shall coordinate the schedule of the Independent Assurance Tests (IAT) for the project with the

Region Materials Section in accordance with the CDOT Form 379. Advance notice of 48 hours is required for proper coordination.

**Submittal of Final Documentation**

Final documentation shall be submitted to the CDOT Quality Manager within 30 working days after completion of all work. A completed CDOT Form 250 shall be submitted to the CDOT Quality Manager 10 days after the consultant has been notified of final quantities. Failure to submit final documentation as required will result in withholding of consultant payments.

**Additional Construction Inspection and Materials Testing Requirements:**

In addition to the qualifications, requirements set forth above, the following certifications will also be required:

<b>Class/Certification</b>	<b>Consultant Inspector</b>	<b>Inspector/Consultant Materials Testing Technician (MTT)</b>	<b>MTT</b>
<b>Basic Highway Math</b>	X*	X	X
<b>Basic Construction Surveying</b>	X*	X	X
<b>Basic Highway Plan Reading</b>	X*	X	X
<b>Storm water Management and Erosion Control</b>	X	X	
<b>CCA Traffic Control Supervisor</b>	X		
<b>LabCAT (Levels)</b>	Level A & I	A & B & I	A & B
<b>Excavation &amp; Embankment</b>	X	X	X
<b>WAQTC</b>		X	X
<b>ACI Field Testing Tech I</b>		X	X

\* Not required if the Consultant is a licensed Professional Engineer or EIT