

**Hasty/ McClave CONSTRUCTION ADMINISTRATION  
SCOPE OF WORK**

Scope Date: Feb 3, 2012

Estimated Construction Start Date: April 2012  
Region 2

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PROJECT NUMBER: **NH 0505-046**

PROJECT CODE: **18242**

CMS ID NUMBER:

PROJECT LOCATION: **US 50 Hasty and McClave - C**

CONTRACT TYPE: **Project Specific, Specific rate of pay**

CONTRACT SUBJECT: **Construction Management Services**

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The Contract Administrator for this Task Order will be:

Paul Westhoff, Resident Engineer

Region 2

Office: 719- 336-3228

Mobile: 719- 688-2091

Fax: 719- 336-4101

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

Terry Woodward, Project Engineer

Region 2

Office: 719- 336-3228

Mobile: 719- 688-2094

Fax: 719- 336-4101

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**Services**

**General Scope of Work:**

The scope of work and associated cost estimate is for construction management (Project Engineer, inspection, testing) for the referenced project. The construction staff needed will be an Assistant Project Engineer familiar with CDOT specifications and documentation capable of acting as the Project Engineer if required, full-time inspector(s) responsible for day to day inspection of activities as assigned by the Project Engineer, at least one full-time Materials Tester

and additional testers (as needed) certified and experienced in testing Concrete, Hot Mix Asphalt (HMA), and Embankment. All staff should be familiar with CDOT and/or Federal construction process and documentation. Also on a monthly basis, a schedule analyzer will be required to analyze MS Project and Primavera schedules submitted by the Contractor.

**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
- Consultant - The individual, firm or corporation under contract by this agreement to perform construction services as outlined below.
- Contractor - The individual, firm or corporation under contract with CDOT to construct the facility.

**Project Description and Location**

This project will consist of two locations on US highway 50 in Bent County. Site one will be located from MP 412 to 417. The work at this site will consist of the addition of passing lanes and intersection improvements in the town of Hasty. Site two is located at MP 420 to 421. The work at this location will be to improve the intersection of US 50 and SH 196 (McClave Junction).

**Initial Project Meeting**

The Consultant and CDOT project personnel shall meet 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 Engineer.

**Work Duration**

The time period for the work described in this scope of work covers the period from Notice to Proceed to March 30th, 2013, whichever is later. CDOT currently anticipates utilizing approximately 3 consultants in a standard workweek situation from approximately May 2012 through December 2012 additional staff as requested. The preliminary schedule will be daylight hours, Monday through Friday. Work may be required night and/or day, on weekends, holidays, and/or on a split shift basis. Workweeks 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 Project Engineer 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.

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

Overtime hours will be paid by CDOT at the same rate as regular, non-overtime hours. Travel time will not be paid for travel to and from the project at the beginning and ending of the work week. Commuting mileage (limited to 75 miles per day or actual round-trip commuting distance, whichever is less), will be paid. Per diem as agreed on the contract.

**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 Engineer for all contract activities performed by the consultant's assistant project manager, field inspectors, and materials testers authorized to perform work on this project.
- Periodic reports and billings required by CDOT Procedural Directive 400.2

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 Project Engineer of any potential for supplementing 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.

### **Construction Management (Assistant Project Engineer/Inspector) Requirements:**

#### **Project Standards**

All construction inspection shall be in accordance with the Colorado Department of Transportation's Construction Manual, Field Materials Manual, the Standard Specifications for Road & Bridge Construction, applicable standards (such as current MUTCD), Project Standard Revisions, Project Special Provisions and the plans and specifications currently in use when the construction project is advertised. All Consultant construction inspection activities performed shall be as authorized by the Engineer.

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 including Project Standard Revisions and Project Special Provisions, and project plans and specifications.

#### **General Work Description**

The Consultant shall provide support to the CDOT project staff through assignment of personnel to assist project management/inspection responsibilities. Inspection responsibilities include:

Assist the CDOT Project Engineer in performance of the following Construction activities:

- Preparing and transmitting updates of construction activities to the CDOT's Public Information Office.
- Periodic reports and billings required by CDOT Procedural Directive 400.2.
- Monitoring contractor payroll compliance.
- Participation in weekly progress meetings with contractor, subcontractors, utilities and other interested parties.

- Securing project documentation from the contractor.
- Anticipating project problems and proposing solutions to CDOT Project Engineer.
- Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the intent of the specifications. Inform and obtain concurrence as needed from the CDOT Project Engineer and keep relative documentation for project records.
- Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
- Communicating with adjacent landowners as required to resolve issues that arise due to construction.
- 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).
- Initial, follow up, and final inspections of work in progress including interim and final measurements.
- Notifying contractors and CDOT Project Engineer of non-compliance with the contract plans and specifications.
- Performance of special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT inspection program.
- Preparation of inspection documentation for development of progress payments for the contractor in accordance with prescribed procedures.
- Submittal of standard documentation reports no later than the following working day.
- Aiding in the preparation of correspondence to the contractor, CDOT Staff, local agencies, etc.
- Providing liaison and communication to contractor field crews.
- Preparation of final “As Constructed” plans upon project completion.
- Miscellaneous related duties as requested by the CDOT Project Engineer.
- Assist in preparing punch lists of uncompleted work, non-conformance reports, and deficiency notices.
- Assist in preparing responses to contractors' and suppliers' requests for information, submittals, change notices, claims, and correspondence.
- Provide staff to analyze and/or assist the Engineer in analyzing schedules submitted by the Contractor in MS Project and Primavera. This person will be utilized on a monthly basis or as needed to resolve schedule questions and conflicts. This person does not have to be on the project site except if required by the Engineer to attend meetings and discussions (monthly or bi-weekly) regarding the schedules.

**Labor, Materials, Vehicles & Equipment**

The Consultant shall furnish all personnel with the equipment to perform the work needed which includes at a minimum the items below. Any items to be retained by the consultant shall not be paid for by CDOT:

- Each with a suitable vehicle equipped with flashing amber beacon. Each of these vehicles shall be equipped with an electronic distance-measuring device, calibrated accurate to within +/- 5 feet per mile.
- Cellular Phone
- Each with a state of the art computer w/modem (phone, ISDN or cable as required), a writeable CD/DVD drive, a scanner capable of scanning 11”x17”, a color printer and loaded with the most current version of MS Office software (& SiteManager if applicable), as

CDOT.

- Schedule Analyzer shall have the most current version of MS Project and Primavera to analyze schedules.
- Each with a digital camera.
- Each with the applicable version of CDOT Standard Specifications for Road and Bridge Construction, CDOT M&S Standards and MUTCD.
- Each with miscellaneous equipment (calculator, office supplies, safety equipment, etc.) required to perform the work: ASTM Certified Work Boots, ANSI Certified Hardhat (Z89.1 stamp and High Visibility), Safety Glasses (Z87 stamp on the glasses/goggles) and Approved Safety Vest meeting or exceeding ISEA for Class 3.
- 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 Engineer. The Consultant shall assign personnel for the duration of the Contract unless otherwise approved by the Engineer. Employees required to operate vehicles must possess and maintain a valid State of Colorado driver's license. The inspection technician(s) and/or Project Manager(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. Junior Level Inspector – two (2) to eight (8) years of experience, and experienced in construction inspection.
2. Senior Level Inspector – more than ten (10) years of experience, and experienced in construction inspection and management.

The Consultant's field inspector(s) assigned to the project shall have either a NICET Certification Level III in Highway Construction or have an Engineer-In-Training (EIT) certification from the State of Colorado, unless otherwise approved by CDOT. In addition, the Consultant's field inspector(s) must be certified in the appropriate classes of CDOT's Inspector Qualification Program, Erosion control certification, and Supervisory Traffic Control class (CCA or ATSSA) within the last 3 years.

A copy of work experience and/or proof of Licensing shall be provided to CDOT Project Engineer 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.

#### 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 approved by the Engineer. The contents of the diary shall be brief and 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 CDOT Project Engineer within one working day of its date.

## **Construction Materials Testing Requirements:**

### **Project Standards**

All sampling, testing, inspection and documentation shall be in accordance with the Colorado Department of Transportation (CDOT) Construction Manual and Field Materials Manual. 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:

- 1.) AASHTO Standard Specifications for Transportation Materials and Methods of Sampling and Testing (as revised and supplemented), or
- 2.) The ASTM Standards and Tentatives, in this order.

Proposed work procedures shall be coordinated with the CDOT Project Engineer prior to the start of work.

### **General Work Description**

The 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 Design/Build Plans and Specifications. The number of tests required shall be in accordance with the Schedule in the Field Materials Manual and those listed on the Form 250. Additional quantities may be added by Contract Modification Order, or plan approximate quantities may be increased or decreased. The MTT and CDOT's Project Engineer shall review project quantities on a weekly basis to ensure that sufficient tests have been performed for all material placed to date. The consultant shall also provide any other services as requested by the CDOT Project Engineer. Scanning final test reports and materials documentation may be requested.

Testing of materials that are specifically designated to be pre-inspected or pre-tested by this or any other Department of Transportation shall 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.

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

The Consultant shall furnish all personnel with a minimum the following items to perform their work. Additional items to perform the work may be required at no cost to CDOT:

- Each with a suitable vehicle equipped with flashing amber beacon.
- Cellular Phone
- Each with a state of the art computer w/modem (phone, ISDN or cable as required), a

writable CD/DVD drive, a scanner capable of 11"x17", a color printer and loaded with the same version of MS Office software (& SiteManager if applicable) as CDOT.

- Each with miscellaneous equipment (calculator, office supplies, safety equipment, etc.) required to perform the work: ASTM Certified Work Boots, ANSI Certified Hardhat (Z89.1 stamp and High Visibility), Safety Glasses (Z87 stamp on the glasses/goggles) and Approved Safety Vest meeting or exceeding ISEA for Class 3.
- Each with a digital camera.
- Each with the applicable version of CDOT Standard Specifications for Road and Bridge Construction and CDOT M&S Standards.
- CDOT will provide a field laboratory.

The following equipment at a minimum shall be furnished by the consultant tester 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:

- Nuclear Asphalt Content Gauge
- Nuclear Moisture-Density Gauge
- Concrete air meter, slump cone, and other concrete testing equipment.
- Sieves for aggregates and soil gradations
- Electronic scales
- Asphalt & A/C sample containers and small tools
- Proctor equipment for soil curves and one point tests
- Atterburg, Rice value, and Sand Equivalent equipment
- Sample drying equipment
- Concrete cylinder molds which meet AASHTO requirements except that paper molds shall not be used, and plastic molds shall not be reused
- 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 Engineer. The consultant supplied materials testing technician (MTT) shall be permanently assigned to a project and shall have the following current qualifications:

1. A graduate with a degree in Engineering 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. A copy of the Engineering Degree or NICET Certification shall be provided to the CDOT Project Engineer.
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's field inspector(s) must be certified in the appropriate classes of CDOT's Inspector Qualification Program.
6. Traffic control Supervisory class within the last 3 years.

The MTT shall be thoroughly familiar with CDOT specification, manuals, forms and documentation requirements. 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.

**Documentation**

Each MTT shall maintain a daily diary for each day the MTT performs work on the project. They shall use CDOT's automated Form 103a - Project Diary, or other form approved by the Engineer. The contents of the diary shall be brief and 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 CDOT Project Engineer within one working day of its date.

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 Project Engineer. CDOT Forms and worksheets are available through the CDOT Project Engineer.

The MTT shall furnish the CDOT Project Engineer 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 Project Engineer within 12 hours. The CDOT Project Engineer shall be informed immediately of any non-specification material. At the discretion of the CDOT Project Engineer, 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 Project Engineer 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 Project Engineer within 20 working days after completion of all work. A completed CDOT Form 250 shall be submitted to the CDOT Project Engineer 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 CDOT Qualifications for Field Personnel**

In addition to the qualification requirements set forth above, the following will be also be required

<b>Class/Certification</b>	<b>Senior Level Inspector/ Assistant Project Engineer</b>	<b>Junior Level Inspector</b>	<b>Consultant Tester</b>
Basic Highway Math*	X	X	X
Basic Highway Surveying*	X	X	X
Basic Highway Plan Reading*	X	X	X
Stormwater Management and Erosion Control	X	X	X
CCA Traffic Control Supervisor (last 3 years)	X	X	
<b>Specialty Certifications</b>			
LabCat A		X	X
LabCat B			X
CAPA Asphalt Inspector		X	X
ACI Field Testing Grade I			X
WAQTC			X
ACI Concrete Strength Testing Certification			X

\* Not required if licensed Professional Engineer