



COLORADO
Department of Transportation

CDOT Region 3

SCOPE OF WORK

Project: SH 13 Piceance Creek North
Project # STA 0131-065 (20102)
Construction Management, Inspection & Materials Testing

October 22, 2015

Contract Administrator for this Task Order is:

Clint Moyer, Resident Engineer

Office: 970-826-5189

Mobile: 970-846-2421

Email: clint.moyer@state.co.us

Active day to day administration and monitoring of the construction contract is delegated to:

Cole Rising, Project Engineer

Office: 970-826-3444

Mobile: 970-629-2660

Email: cole.rising@state.co.us

General Scope of Work

Region 3 is advertising Consultant Construction Management, Construction Inspection & Materials Testing Services to provide 3 (three) Consultant CM staff for Construction Management activities; 1 (one) full-time Assistant Project Engineer, 1 (one) full-time Project Inspector, and 1 (one) full-time Project Materials Tester.

CDOT Region 3 will staff the Project Engineer position.

The Assistant Project Engineer shall be responsible for day to day project management and documentation activities as assigned by the CDOT Project Engineer. Other work consists of construction schedule reviews of initial schedule and progress schedules.

The Project Inspector shall be responsible for day to day inspecting and documentation activities as assigned by the CDOT Project Engineer.

The Project Tester shall be responsible for day to day testing and documentation activities as assigned by the CDOT Project Engineer.

Description and Overview

Services are requested on CDOT Project STA 0131-065, Piceance Creek North, in Rio Blanco County. Piceance Creek North, Project Code 20102, consists of 2.1 miles of a minor roadway widening from 26' to 40', with minor horizontal and vertical alignment adjustments. Other construction activities include grading, paving, drainage improvements, signing and striping, seeding, and replacing all fencing.

Work Duration

Construction is scheduled to begin May 1st, 2016 and end October 30th, 2016. Consultant staff should be available from April 2016 through November 2016.

It is estimated that the assistant project engineer will work 193 days which includes a work week of pre-construction activities along with a month of post construction activities. A total of 1,880 hours of work is estimated for the assistant project engineer to perform all required obligations on this project.

It is estimated that the inspector and tester will work 177 work days which includes a work week of pre-construction activities along with a month of post construction activities. A total of 1,720 hours of work is estimated for each the project inspector and tester to perform all required obligations on this project.

Work may be required for night and/or day, on weekends, on holidays, and/or on a split shift basis. Work weeks may be in excess of or less than the standard 40-hour week. Work hours are calculated based on a 10 hour day, (8 hours a day for pre and post construction work) but the expectation is that the staff will generally only work 1 hour more per day than the Contractor.

Authorization to Proceed

Work shall not commence until 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:

1. Monthly billing formats, suitable to the CDOT Project Engineer, for all contract activities performed by the Consultant's Assistant Project Engineer, Inspector, and Field Materials Testing Technician.
2. Monthly billings that include the contract status.
3. Periodic reports and billings required by CDOT Procedural Directive 400.2.
4. Supporting documentation for all direct costs.

Labor, Materials, Vehicles & Equipment

The Consultant shall furnish all 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 (Inspecting and testing tools/equipment, printers, calculators, manuals, office supplies, safety equipment, etc.) required to perform the work. Personal protective equipment shall be in accordance with CDOT PD 80.1. The project contractor will furnish office space and a field laboratory. Consultant shall be responsible for procuring a local wireless Internet Service Provider (ISP) or similar compatible service if conventional high speed internet service is not available.

Personnel qualifications, staffing level, and number and types of vehicles shall be subject to the approval of the CDOT Project Engineer. The Consultant shall assign the same personnel for the duration of the Construction Contract unless otherwise approved by the CDOT Project Engineer.

The Assistant Project Engineer, Project Inspector, and Project Tester shall be thoroughly familiar with CDOT forms and documentation requirements. This project will use the new SiteManager Materials and Laboratory Information Management System (SMM/LIMS) software. Materials personnel will be required to document the materials testing and procedures using the new software. 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.

Diaries and Documentation

All Consultant personnel shall maintain a daily diary for each day work is performed on the project. They shall use CDOT's Form 103 or automated 103a - Project Diary, or other form approved by the CDOT Project Engineer. The contents of the diary shall be brief and accurate statements of progress and conditions encountered during the prosecution of the work along with any conversations concerning 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 become a part of the permanent project record and shall be given to the CDOT Project Engineer within one working day of its date if requested.

Computer Equipment & Software

Consultant provided computers shall include all necessary communications hardware and software to perform the work. The Consultant computer must be capable of running the most current version of following software:

- SiteManager/Lims
- CDOT QA/QC software
- Microsoft Word
- Microsoft Excel
- Software capable of creating, merging and editing Adobe pdf documents.

Engineer's Certification

The CDOT RE shall be the final authority regarding acceptance of work performed by the Consultant, and work not conforming to the plans and specifications. The CDOT RE shall be the engineer in "Responsible Charge" unless CDOT provides a project engineer with a PE license.

The Consultant shall review and sign the Form 250 as it relates to the testing and acceptance of materials.

Requirements for Assistant Project Engineer

The Consultant will provide support to the CDOT Project Engineer through assignment of personnel to construction management. Personnel will be required to work at the Assistant Project Engineer level. He or she shall be either a Colorado Registered Professional Engineer or a non-licensed individual with demonstrable construction administrative experience. However, if the Consultant employee is not a registered Professional Engineer, he/she shall work under the oversight of a competent Professional Engineer in responsible charge who is registered in the State of Colorado.

The Assistant Project Engineer shall have CDOT construction experience with an emphasis on highway reconstruction work along with traffic control and erosion control management experience.

The Assistant Project Engineer shall be available to review work, resolve problems, and help make decisions in a timely manner as requested by CDOT. He or she has secondary charge of the engineering details of the construction project and is co-responsible for the administration and satisfactory completion of the project. Specific responsibilities include: construction of the project in accordance with the plans, enforcement of governing specifications and special provisions, control of inspection and testing, and proper documentation. By law, consultant or entity Assistant Project Engineers cannot obligate funds or authorize payment on behalf of CDOT.

The Assistant Project Engineer has frequent personal contacts with the Contractor, property owners, municipal officials, utilities and the traveling public; thus, personal conduct should be a credit to both the individual and CDOT.

The Assistant Project Engineer is the second level of authority concerned with unusual circumstances (e.g., non-specification work, work outside the scope of the Contract, disputes, change orders, etc.). As practical, problems concerning contract interpretation should be referred to higher levels of authority until the problem is acceptably resolved. Immediate decisions can be made and orders written, as necessary, to expedite construction.

The Assistant Project Engineer responsibilities may include but are not limited to the following:

Assisting the CDOT Project Engineer in coordination of all construction contract activities.

1. Review, give comments, and acknowledge completeness of required submittal resulting from but not limited to:
 - CDOT 205 Permit to Sublet
 - Method of Handling Traffic (MHT)
 - Progress schedule
 - Method Statements
 - All EEO requirements
2. Provide the following documentation, reports and billings on a routine basis:
 - Periodic reports and billing required by CDOT Procedural Directive 400.2
 - Preparation of monthly progress estimates for monthly and final billings for consultant fees and construction contractor payments.
 - Assist in maintaining of project files, project diaries and time counts.
 - Assist in monitoring contractor payroll compliance.
 - Assist in conducting weekly progress meeting with contractor, subcontractors, utilities and other interested parties.
 - Assist in monitoring of project contractor for fulfillment of project plans and specifications.
 - Assist in securing all project documentation from the contractor.
3. Assist the CDOT Project Engineer in preparation of all Contract Modification Orders (CMO) and Minor Contract Revisions (MCR) for the CDOT Resident Engineer's approval.
4. Assist the CDOT Project Engineer in preparing and transmitting updates of construction activities to the CDOT Public Information Office.
5. Assist in on-site cursory reviews of drawings and data submitted by the construction contractor and suppliers for general 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.
6. Assist in communicating with adjacent landowners as required resolving issues that arise due to construction.
7. Monitoring traffic control and safety for compliance with the approved Method of Handling Traffic (MHT).
8. Project compliance with CDPHE and all other environmental permits issued for the project.
9. Assisting the CDOT PE in preparing a punch list of uncompleted work, non-conformance reports, and deficiency notices.
10. Preparing responses to contractors' and suppliers' request for information, submittals, change notices, claims, and correspondence.
11. The Assistant Project Engineer shall be well versed in Site Manager Software. This project will use the new SiteManager Materials and Laboratory Information Management System (SMM/LIMS) software. The Assistant Project Engineer will be required to have a basic knowledge of the new procedures for the software.
12. The Assistant Project Engineer shall have successfully completed an ECS training program authorized by CDOT.

Requirements for Project Inspector

Inspection work shall conform to the CDOT Construction Manual, Inspector Checklist, and SiteManager. The Consultant will provide support to the project staff through assignment of personnel to inspection activities. The Project Inspector shall be trained and qualified in accordance with CDOT's Construction Inspection Qualification Plan. Inspectors shall have relevant construction inspection experience on at least one recent CDOT project.

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

1. Completion of reports and billings as required by CDOT PD 400.2.
2. Participation in weekly progress meetings with contractor, subcontractors, utilities and other interested parties.
3. Securing project documentation from the contractor.
4. Maintaining accurate notes reflecting actual construction details to be used in preparation of as constructed plans.
5. Initial, follow up, and final inspections of work in progress including interim and final measurements.
6. Notifying contractors and Project Engineer of non-compliance and constructability issues with the contract plans and specifications.
7. Performance of daily inspections, special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT inspection program.
8. Preparation of inspection documentation for development of progress payments for the contractor in accordance with prescribed procedures.
9. Submittal of standard documentation reports (such as Daily Work Report) no later than the following working day.
10. Aiding in the preparation of routine correspondence to the contractor, CDOT Staff, Local agencies, etc.
11. Providing liaison and communication to contractor field crews.
12. Maintain accurate notes for preparation of final "As Constructed" plans upon project completion.
13. 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).

Requirements for Project Tester

All inspection, sampling, testing and documentation shall be in accordance with the CDOT Materials and Construction Manuals. Sampling and testing will be done in accordance with the Department's Minimum Sampling, Testing, and Inspection Schedule; the Special Notice to Contractors; and the Procedures; all contained in the Department's Field Materials Manual. When the method is not cited, the order of precedence for all sampling and testing is Colorado Procedures, AASHTO Procedures, and then ASTM Procedures. Unless otherwise designated, when the Department's Construction Manual, Materials Manual, AASHTO, ASTM, or other specifications, standards, or policies are cited, the reference shall be to the latest edition as revised or updated by approved supplements or interim editions published and issued prior to the date of advertising a specific construction project for bids.

The consultant shall furnish all personnel, materials and equipment required to perform the work. CDOT's contractor will provide a field laboratory. The tester shall be certified to perform the project sampling and testing in accordance with CDOT requirements.

These requirements typically include the following certifications: CAPA levels A&B, ACI, and WAQTC, and nuclear gauge operation. The tester shall be certified as defined by the requirements set forth in the current Colorado Procedure CP-10. Minimum requirements for certification are dependent on the item to be sampled and tested. The tester responsible for sampling and testing on this project shall have all required certifications based on this project's specific materials testing schedule. The tester shall be thoroughly familiar with CDOT forms and documentation requirements

The consultant tester shall be experienced and competent in all aspects of highway construction testing within the scope of this project. The consultant shall sample, test, inspect and document all materials incorporated into the project. This includes: materials delivered to the project that are listed in the Summary of Approximate Quantities in accordance with the SCHEDULE in the Field Materials Manual; materials that may be added to the project through contract modification; and altered material quantities whether increased or decreased. The consultant's field tester(s) shall review project quantities on a regular basis to ensure that sufficient tests have been performed for the material placed to date. The consultant shall also provide any other services as requested by the CDOT Project Engineer.

The consultant's work shall be under the direction of, and shall be reviewed, stamped and signed by a Professional Engineer registered in the state of Colorado. The work to be stamped will be the summary sheet including, but not limited to, Forms 6, 9, 58, 69, 212, 250, and 554. The CDOT Resident Engineer may request that additional forms be stamped. The Professional Engineer shall be available to review work, resolve problems, and make decisions in a timely manner as requested by the Project Engineer, and must be experienced and competent in road and bridge construction and construction materials testing and inspections.

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 consultant shall document and transport samples of any and all materials to the CDOT Central Laboratory that are required to be tested by CDOT regardless of pre-inspection or pre-testing responsibilities. The items and test frequencies of Department tested materials shall be in accordance with the column titled "Central Laboratory" in the SCHEDULE. Test results, sample submittals, and inspection documentation transmitted to CDOT's Region or Central Laboratory shall be recorded on appropriate CDOT Forms. The Consultant may use CDOT worksheets or worksheets approved by the CDOT RE. CDOT Forms and worksheets are available through the Residency Head Tester or Region Materials Engineering/Physical Technician at no cost to the Consultant.

The tester shall furnish the Project Engineer with the original copies of all worksheets on a daily basis. The tester shall also keep the CDOT Form 626 up to date at all times and provide copies of this form to the Project Engineer by the end of the shift for any material found to be non-specification. At the discretion of the Project Engineer, the tester may be required to provide the Form 626 to the contractor prior to the end of the shift for any material found to be non-compliant with the specification.

The Consultant shall coordinate the schedule for Independent Assurance Tests (IAT) for the project in accordance with CDOT Form 379 with the Region Materials Engineering/Physical Science Technician. The Consultant shall notify the CDOT Project Engineer, RE, and Region Materials Engineering/Physical Science Technician when project quantities are expected to over-run the quantities represented on CDOT Forms 250 or 379.

All proposed work procedures shall be coordinated with the CDOT Project Engineer prior to the start of work. Other services may be requested in writing by the CDOT RE. Test results shall be documented by the consultant and approved by the Project Engineer. The materials tester shall be responsible for materials sampling, testing, and documentation.

The tester shall:

1. Have a minimum of one year experience in each specialty field (soils, aggregates, asphalt paving, concrete, etc.) that requires testing.
2. Be certified by the American Concrete Institute (ACI) if testing concrete.
3. Be certified Level A/B by the Colorado Asphalt Technician Certification Program (LabCAT) if testing HMA.
4. Be certified through the WAQTC Qualification Program if testing soils and aggregates.

Copies of Certifications shall be provided to the Project Engineer prior to the start of work on the project. References of testing experience shall be available for all Consultant staff provided, and may be requested at any time during the contract.

Additional Work Description for Project Schedule Review

The Consultant shall conduct an objective analysis of Contractor schedules and method statements based on the documents furnished to the Project Engineer. Each analysis shall assess the feasibility of the Contractor's project construction schedule and updates relative to the current stage of completion and the timely final completion according to the terms of the contract. Scheduling duties shall include:

1. Assemble and review updated as-built data to verify the accuracy of the Contractor's actual construction progress and schedule feasibility. Provide ongoing schedule review and evaluation support through project completion.
2. Perform a schedule delay analysis and determine the amount of Contractor and/or CDOT excusable delays. Assess the liability associated with any changes, extra work and/or delays in order to determine responsibility for impacts to the project schedule.
3. Prepare written schedule reports and exhibits to assist in the evaluation of schedule delays and remaining as-planned work.
4. Provide ongoing schedule review and evaluation support through project completion.
5. Review the Contractor's planned schedule and method statements for compliance with contract requirements. Review all updated schedules and contract modifications.

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 or negotiating an additional task order. Failure to monitor contract status and provide timely notification may result in discontinuation of the Consultant's services on the project until a supplemental agreement can be effected

Submittal of Final Documentation

Final documentation shall be submitted to the CDOT Project Engineer within 20 working days after project acceptance. COCs and CTRs shall be included as a part of the final documentation for any inspected work. A completed Form 250 shall be submitted to the Project Engineer 10 working days after the consultant has been notified of final quantities. Failure to submit final documentation as required may result in withholding any and all consultant payments due, until this material is received.