



COLORADO

Department of Transportation

Region 1
South Engineering Program
18500 E Colfax Ave
Aurora, CO 80011

CDOT Region 1 Consultant Scope of Work August 27, 2024

The Contract Administrator for this Task Order:

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Project Background and Work Duration

Services are requested to provide Project Construction Management, Construction Inspection and Materials Testing to support the referenced CDOT Project. This project has a floating start date subject to the Prime Contractors discretion. The earliest start date for full-time services is approximately December 16, 2024. Working times on the project will vary with work expected at night and/or day and on weekends. Work may be required on holidays. Work weeks may be more than or less than the standard 40-hour week.

This project will be advertised to contractors requiring overtime hours and multiple crews to complete on time. The project schedule is reasonable but steady with multiple operations happening most days. The completion date for the project is based on 6 days a week construction schedule.

General Scope of Work

The Project is located on I-25 in Douglas County near Mile Posts 165.2 and 165.6, and the project advertisement for construction is anticipated in September 2024. The project will involve construction of a bridge for the purpose of a wildlife crossing. It will further involve construction of walls, lighting, grading, ITS and a one year long maintenance of vegetation.

This task order is requesting the Consultant to provide the following Key Staff:

Bridge Inspector - Full time

Inspector - Full time

Lead Tester - Full time

Lab/Back Up Tester - Part time as needed

Testing Documentation Specialist - Part time as needed

Schedule Reviewer - Part time as needed

Project and Team Coordination

This project is expected to have a blended staff of CDOT and Consultant personnel throughout the duration of the project.

Consultant Staffing and Working Time

It is estimated that the Consultant will need to provide the following staffing levels. Staffing levels may be increased or decreased based on need due to fluctuations in



CDOT staffing levels, project delays, contractor schedule and/or unforeseen reasons. Some positions may require overtime more than 8 hours a day, 40 hours a week and some positions will be part time, less than 40 hours per week. Night work and weekend work is expected. Holidays may be required pending the Contractor's schedule.

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.

Diaries and Documentation

All Consultant personnel shall maintain a daily diary for each day work is performed on the project. They shall use CDOT Form 103 or automated 103a - Project Diary, or other form approved by the CDOT Resident 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 shall not 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 Project Engineer within one working day of its date.

Computer Equipment & Software

Consultant computers shall include all necessary communications hardware and software to perform the work. The Consultant computers shall 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
- Adobe Sign for CMOs
- Microsoft Project 2016
- Primavera Schedule software (P6)
- Project Wise (aka - ProjectWise Explorer)
- Bluebeam
- Survey123



Bridge Inspector/Inspector

The project inspectors will be responsible for day-to-day activities on the project. These responsibilities may include documentation and inspection of construction activities, supervision and documentation of time and materials work, preparation of daily diaries, documenting contractor activities and relevant observations enforcing contract requirements. Inspector's requirements are outlined in **Section 2**.

Testers

The material tester will be responsible for all materials sampling, testing, documentation, and project inspection as required by the Project Engineer. The Consultant shall furnish personnel, materials, and equipment required to perform the work. CDOT's Contractor will provide a field laboratory. Tester's requirements are outlined in **Section 2**.

Schedule Reviewer

The Consultant Schedule Reviewer shall be responsible for analyzing the Contractor's schedule in accordance with the requirements of the construction contract on CDOT's behalf. The schedule reviewer will be responsible for review, comment and approval of the Contractor's baseline schedule and monthly updates for compliance. In addition, the Consultant Schedule Reviewer shall provide scheduling support to the project and the PE as needed. Schedule Reviewer's requirements are outlined in **Section 2**.

Engineer in Responsible Charge (EIRC)

The Consultant shall provide an engineer to serve as the EIRC . No specific position has been identified for this position as these responsibilities may be added to another existing position on the project. If not added to an existing position, the proposal shall identify another position. The EIRC's requirements are outlined in **Section 2**.



Section 1 - General Requirements

A. Project Standards

Construction management, inspection and testing 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 CDOT's 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, Construction management, inspection and testing shall be known as "the work." Proposed work procedures shall be coordinated with CDOT Resident Engineer prior to the start of 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 overhead lighting), 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. Vehicle mileage will be based on the nearest consultant home office to the project or from the location of the Consultants starts the day, whichever is shorter. The Consultant shall provide the Testers with all forms necessary for testing, recording results and submitting samples. Field Office and Field Laboratory will be provided by contractor.

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 CDOT's Resident Engineer. The Consultant is to be aware that number of personnel required on the project may vary due to seasonal workloads, project status, phasing and the availability of CDOT staff as other projects begin or are completed.

The Consultant managers, inspectors and testers 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 consultant team must consist of one person experienced with B2G and LCP Tracker. The level of qualification provided shall be 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.

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 guidelines of the Contract. The Project Engineer reports directly to the CDOT Resident Engineer. The Project Engineer will approve and set work hours for project construction personnel. The Consultant staff reports directly to the Project Engineer. 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 2 months after project acceptance. A completed and signed CDOT Form 250 shall be submitted to the CDOT Resident Engineer 1 month after the Consultant has been notified of final quantities. Failure to submit final documentation as required may result in withholding Consultant payments received after project acceptance until this material is received.

E. Routine Billing & Reporting

The Consultant shall provide the following on a regular basis:

1. A baseline expected contract usage schedule will be created before work starts. Once work has commenced the usage schedule will be updated each month providing actual cost vs expected cost, and current amount charged vs remaining contract balance. The expected cost may change from month to month as changes are requested by CDOT. This shall be provided with the monthly billing.
2. Monthly billing formats, suitable to the CDOT Resident Engineer, for all contract activities performed by the Consultant staff.
3. Monthly billings that include the contract status.
4. Periodic reports and billings required by CDOT Procedural Directive 400.2.
5. Form 10 shall include signed certification from the Consultant regarding hours and mileage submitted.
6. Supporting documentation for all direct costs.

Task 1.0 - Construction Inspection and Materials Testing Support

Provide CDOT Resident Engineer/ Project Engineer with the following construction inspection support:



- 1.1 Traffic Control: Monitor and inspect the Contractor's implementation of traffic signing, barriers, and other traffic control measures and enforce contract requirements.
- 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 of Work. Inspection items will include, but are not limited to, mill and overlay, concrete, curb ramps, guardrail, traffic control installations, rumble strips, signal systems, earthwork, storm sewer and other utility work, culvert rehabilitation, steep slope correction, and erosion 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 Management, Inspectors and Testers shall assist in resolving disputes in quantities, price adjustments and test results with the Contractor prior to the preparation of the pay estimate.

- 1.3 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. 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 submitted to the Project Engineer the next working day of its date and will become a part of the permanent project record.

Task 2.0 - Post Construction Support

- 2.1 As-Constructed Drawings: Assist in completion of 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.



Task 3.0 - Project Support

- 3.1 Progress Reports: Prepare weekly progress reports documenting project progress in accordance with the 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 construction in accordance with CDOT requirements.

Section 2 - Construction Management, Inspection and Testing

General Work Description

The consultant Bridge Inspector/Inspector shall be responsible for day-to-day activities and documentation. Inspection responsibilities may include, but are not limited to the following:

- The project inspectors shall have sufficient education, training, and experience to meet the minimum qualification comparable to CDOT's Engineer/Physical Science Tech III level employee and be experienced and competent in all aspects of highway construction within the scope of this project.
- The inspector needs to have the ability to inspect multiple operations at the same time along with being able to monitor and inspect the traffic control with the associated operations.
- Bridge inspector shall lead the field inspectors and mentor CDOT inspectors.
- Performing duties described in the CDOT *Inspector's Checklist*.
- Preparing and transmitting updates of construction activities to the Project Engineer.
- Preparing and transmitting periodic reports required by CDOT.
- 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 directing recommended solutions to the Project Manager.
- 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.
- Preparing routine correspondence to the Contractor, Project Engineer, local agencies, etc.
- 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.
- Assisting in preparing responses to contractors’ and suppliers’ requests for information, submittals, change notices, claims, and correspondences.



The Bridge Inspector shall have the following capabilities and they will become day to day activities if assigned by the Project Engineer:

- Construction schedule reviews of initial schedule and progress schedules
Periodic reports and billing required by CDOT Procedural Directive 400.2.
- Conducting weekly progress meeting with contractor, subcontractors, utilities, and other interested parties.
- Email weekly meeting minutes to the Resident Engineer and other interested parties following the weekly meeting.
- Prepare Contract Modification Orders (CMO) and Minor Contract Revisions (MCR) for the CDOT Resident Engineer's approval.
- Monitor traffic control and safety for compliance with the approved MHT.
- Prepare responses to Contractors' and suppliers' request for information, submittals, change notices, claims, and correspondence
- Shall be well versed in the use of AASHTOWare SiteManager Software.
- CDOT 205 Permit to Sublet
- Methods of Handling Traffic (MHTs)
- Progress schedule
- Method Statements
- EEO requirements
- Maintaining project files, project diaries, and time counts.
- Monitoring contractor payroll compliance.
- Monitoring project contractor for fulfillment of project plans and specifications.
- Securing project documentation from the Contractor.
- Prepare and transmit updates of construction activities to the CDOT Public Information Office, including weekly Lane Closure Reports.
- Review 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 Resident Engineer and keep relative documentation for project records.
- Communicate with adjacent landowners, as required, to resolve issues that arise due to construction.
- Monitor and inspect traffic control and safety for compliance with the approved MHT.
- Verify project compliance with CDPHE and other environmental permits issued for the project.



- Prepare a punch list of uncompleted work, non-conformance reports, and deficiency notices.
- Prepare responses to Contractors' and suppliers' request for information, submittals, change notices, claims, and correspondence.
- Shall be well versed in the use of AASHTOWare SiteManager Software. This project will use the SiteManager Materials and Laboratory Information Management System (SMM/LIMS) software. The Consultant Assistant Project Engineer will be required to have a basic knowledge of the procedures for the SMM/LIMS software.
- Shall have successfully completed a TECS training program authorized by CDOT and be currently certified as a TECS for the duration of this Contract.

The Consultant Tester shall be responsible for day-to-day testing and documentation activities as required to meet contract. Testing responsibilities may include, but are not limited to the following:

- The materials tester shall be proficient in CDOT/ AASHTO testing methods, LIMS and understand CDOT procedures, forms and computer programs when applicable.
- References of testing experience shall be available for testers and may be requested during the contract.
- The tester shall sample, test, inspect, and document materials incorporated into the project. The tester shall perform inspection duties when not performing testing duties. Contractor activities to be inspected will be assigned by the Consultant Project Engineer as necessary.
- Test results and sample submittals transmitted to CDOT's Region 1 or Central Laboratory shall be recorded on appropriate CDOT Forms. It is the responsibility of the consultant to get and use CDOT forms.
- The Materials Testing Technician shall furnish the Project Engineer with original copies of all worksheets and test results.
- The tester shall review project quantities on a regular basis to verify that sufficient tests have been performed for the material placed to date.
- The Project Engineer and Contractor shall be informed immediately of any non-specification materials.
- Transport materials for testing to the CDOT materials lab.



The Consultant EIRC shall be responsible to protect the general safety of the public. Responsibilities include but are not limited to the following:

- Act as the EIRC as detailed in the latest version of the CDOT Construction Manual
- Fulfill the requirements of CDOT's Construction Engineer In Responsible Charge Information Document (October 2015)
- Coordinate with project managers and inspectors to ensure traffic control compliance in the field.
- Review and sign all MHT's unless that task is delegated to a qualified person of their choice and that person is approved by the CDOT Resident Engineer.

The Consultant Schedule Reviewer shall be responsible for review and approval of the Contractor's submitted baseline schedule and monthly updates. Schedule Reviewer responsibilities may include, but are not limited to the following:

- All scheduling and schedule review will be done in accordance with the Construction Contract, the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction, the Colorado Department of Transportation (CDOT) Construction Manual and Field Materials Manual and industry norms and standards.
- The applicable CDOT Manual shall be the one currently in use when the construction project is advertised. Proposed work procedures shall be coordinated with the Project Engineer prior to the start of work.
- Review the Contractor's baseline schedule and schedule updates for approval.
- Attend work session with contractor to develop a Baseline Project schedule if needed
- Initial schedule review including durations, logic, sequencing, and methods statements. Provide written comments and recommendation to Project Engineer.
- Review complete project schedule submitted by contractor and provide written comments and recommendation to Project Engineer.
- Re-review complete project baseline schedule. Provide written comments and recommendation to Project Engineer and approval.
- Review proposed activities, durations, and logic resulting from changes for the purposes of establishing a new baseline schedule.
- Review monthly project schedule updates. Provide written comments and recommendation to Project Engineer and approval.
- Provide ongoing schedule review and evaluation support through project completion.



EIRC Qualifications

EIRC shall be experienced with responsibilities as detailed in the CDOT's Construction Engineer In Responsible Charge Information Document (October 2015) with specific strength in reviewing MHTs and guiding a team to ensuring traffic control compliance in the field. The EIRC shall be a Professional Engineer licensed in the State of Colorado. The EIRC shall have a minimum of five (5) years recent experience as EIRC on similar size and scope of projects. Before work begins in the field, a letter to the project file shall be provided to the CDOT project manager detailing their designation as the EIRC along with proof of their Professional Engineer license.

Inspector Qualifications

The Inspector shall be permanently assigned to the project and shall perform all materials inspection and construction documentation as directed by the Project Engineer. The Inspector shall have a minimum of four (4) years inspection experience in related road and bridge construction. The 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. References of inspection experience shall be available for all staff and may be requested at any time during the Contract. This person/people should have history of performing preconstruction input and analysis. MHT and traffic control experience, erosion control inspection, CDOT reporting requirements Capable of independent construction observation, Understands order of precedence, methods of measurement and payment. Has completed CDOT basics, basic math, plan reading and surveying.

Bridge Inspector Qualifications

The Bridge Inspector shall be permanently assigned to the project and shall perform all materials inspection and construction documentation as directed by the Project Engineer. The Bridge Inspector shall have a minimum of ten (10) years inspection experience in related road and bridge construction. The Bridge 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. References of inspection experience shall be available for all staff and may be requested at any time during the Contract. This person/people should have history of performing preconstruction input and analysis. MHT and traffic control experience, erosion control inspection, CDOT reporting requirements capable



of independent construction observation, understands order of precedence, methods of measurement and payment. Has completed CDOT basics, basic math, plan reading and surveying.

Lead Tester and Lab/Back Up Tester Qualifications

Lead Tester shall be experienced with LIMs, the Field Materials Manual and the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction and have minimum three (3) years of experience on CDOT projects in each specialty field (soils, aggregates, asphalt paving, concrete, etc.) that requires testing. The Lab/Back Up tester shall be experienced with the Field Materials Manual and the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction and have a minimum of two (2) years of experience on CDOT projects in each specialty field (soils, aggregates, asphalt paving, concrete, etc.) that requires testing. All testers must be certified by the American Concrete Institute (ACI) if testing concrete, be certified Level A/B by the Colorado Asphalt Technician Certification Program (LabCAT) if testing HMA, be certified through the WAQTC Qualification Program if testing soils and/or aggregates Testers shall also have necessary certification for handling and operating Nuclear Moisture/Density Gauge. Copies of Certifications shall be provided to CDOT's Resident Engineer and Project Engineer prior to the start of work on the project. The tester shall have relevant construction experience to run the project's material lab.

Testing Documentation Specialist Qualifications

The Testing Documentation Specialist shall have a minimum of five (5) years' experience in related road and bridge construction testing. They shall have thorough knowledge of the use and completion of all CDOT testing forms and documentation, including the CDOT Construction Manual and the CDOT Materials Manual. They shall have a history of reviewing testing documentation for proper results and correctness and entering that information into LIMS. They shall have experience reviewing Buy America and BABA documentation for compliance and entering that information into CDOT's system.



Schedule Reviewer Qualifications

The Schedule Reviewer shall be knowledgeable and experienced with CDOT schedule requirements and have a general understanding of CDOT project requirements enabling them to perform the schedule review duties. They shall be proficient in Primavera (P6) schedule software along with Microsoft Project and able to efficiently and effectively manage the schedule review. along with the ability to run Claim Digger for higher level schedule review. They shall have a minimum of five (5) years of recent experience in reviewing schedules for CDOT projects including one project with a bridge.

