



COLORADO
Department of Transportation

Construction Services Scope of Work

US Highway 50 Fowler to Manzanola – CDOT Region 2

Scope Date: December 2, 2019

It is intended that services will be performed primarily for the US 50 Highway Fowler to Manzanola project (Project Number: STA 050A-029, SA 20756)

Project Number: STA 050A-029
Project Code: SA 20756
CMS ID Number: TBD
Project Location: US 50 Highway Fowler to Manzanola M.P. 352 to M.P. 359
Contract Type: Project Specific, Specific Rate of Pay
Contract Subject: Construction Management, Inspection and Materials Testing Services

The Contract Administrator for this Contract will be:

Dan Dahlke, Resident Engineer
Region 2 – South Program
5615 Wills Boulevard
Pueblo, CO 81008
(719) 251-7981
daniel.dahlke@state.co.us

Active Day-to-Day administration and monitoring of this contract will be delegated to the assigned Project Manager as follows:

Brendan Biddle, Civil Engineer Project Manager
Region 2 – South Program
5615 Wills Boulevard
Pueblo, CO 81008
(719) 251-2740
brendan.biddle@state.co.us

1.0 General Scope of Work

The scope of work and associated cost estimate is for providing construction administration support services for the referenced project. The scope of work will be for:

- 1 full-time Consultant Assistant Project Engineer (APE)
- 1 full-time Consultant Construction Inspector
- 2 full-time Consultant Materials Testing Technician
- 1 part-time Consultant Materials Testing Technician

1.1 Project Description and Location

The primary objective of this project is to remove two (2) inches of asphalt by way of milling from the existing main line of US Highway 50, replace with six (6) inches of concrete white topping. The project will add two additional passing lanes in the east bound direction that will encompass the following: 24 inches of Embankment Material (R 40), six (6) inches of Aggregate Base Course Class 6 and eight (8) inches of Full Depth Concrete. The project will also include minor structure repair. The project is located on US Highway 50 between the towns of Fowler, CO and Manzanola, CO; mile post 352 and mile post 359 respectively.

1.2 Work Duration

The time period for the work described in this scope of work will last approximately twelve months (12) months including the duration of the construction plus post construction activities as required. It is anticipated that the duration of work covered by this scope of work is approximately **December 2019** (or when Notice-to-Proceed is issued) through **January 2021**.

The Consultant APE, Construction Inspector and two Materials Technicians will be required during the active construction and for two months after active construction. One Materials Technician will be required for peaks of active construction as an on call support to the two full time Materials Technicians.

1.3 Definitions

CDOT 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 Contracts for all Consultants and Contractors.

CDOT Region Materials Engineer – The CDOT Region Materials Engineer (RME) assists the Resident Engineer on this project with materials related issues including concrete, asphalt, soils and steel.

Consultant – The individual, firm or corporation contracting with CDOT to perform services as described in this Contract.

Consultant Professional Engineer – The Consultant’s Professional Engineer is in responsible charge of services performed as described in this contract. The Consultant’s Professional Engineer must be licensed in the State of Colorado.

Consultant Assistant Project Engineer – The Consultant employee who performs construction inspection and other project-related services under the responsible charge of the Consultant Professional Engineer, and at the direction of the CDOT Project Engineer and CDOT Resident Engineer.

Contractor – The individual, firm or corporation contracting with CDOT to construct a transportation project.

2.0 General Requirements

2.1 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.

2.2 Routine Billing & Reporting

The Consultant shall provide the following on a regular basis:

- Monthly billing formats, suitable to the Project Engineer, for all contract activities performed by the Consultant.
- Monthly billings should include the contract status.
- Weekly time cards for consultant personnel. The Project Engineer prior to billing must sign these time cards.
- Supporting documentation for all direct costs.
- Weekly approval of mileage for vehicle.

2.3 Status of Contract

The Consultant shall monitor the fiscal status of the contract, and advise the Resident Engineer of any potential need for supplementing their contract or negotiating an additional task order. Failure to monitor status and provide timely notification may result in the discontinuation of the Consultant’s services on the project until a supplemental agreement can be implemented and executed.



2.4 Labor, Materials, Vehicles and 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 (printers, calculators, manuals, office supplies, safety equipment, DMI, etc.) required to perform the work.

Field Office will be provided by Construction Contract pay items. Personnel qualifications, staffing level, and number and types of vehicles shall be subject to the approval of the Resident Engineer. Each consultant staff shall be supplied with a state of the art computer w/modem, a writable CD drive, and loaded with the most current version of MS Office, SiteManager, and/or QA/QC program if applicable. The Consultant shall have a digital camera available to staff at all times and document the project accordingly submitting CD's or flash drives with relevant photos to the Resident Engineer on a regular basis. At least one Consultant vehicle shall be equipped with a DMI (distance measuring instrument) to facilitate inspection and measurement of materials placed on the project.

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

2.5 Engineer's Certification

The CDOT Resident Engineer shall be the final authority regarding acceptance of work not conforming to the plans and specifications.

2.6 Project Meetings

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 Project Manager.

The Consultant personnel shall be present at all project meetings as required and as directed by the Project Manager.

2.7 Post-Construction Activities

The Consultant shall assist in preparing and submitting redline drawings that have been revised to reflect actual as-constructed details as recorded throughout the construction of the project,

wage and payroll certification and other closeout activities. Work may consist of finals preparation plus helping the Resident Engineer with preparation of upcoming project(s). Such work may be plan review, attend project meetings, Form 859 development, and project showings.

2.8 Project Standards

Inspection and documentation shall be in accordance with the latest versions of the CDOT Construction Manual, Field Materials Manual, CDOT Laboratory Manual of Test Procedures, CDOT Inspector's Checklist, Standard Specifications for Road and Bridge Construction, the Supplemental Specifications, M & S Standards, and the plans and specifications currently in use when the construction project is advertised or revised under advertisement.

References to "the specifications" shall include all applicable CDOT Standard Specifications for Road and Bridge Construction including Supplemental Specifications, Project Standard Revisions and Project Plans and Specifications.

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

2.9 Documentation

The Consultant shall provide all correspondence and applicable CDOT forms to the CDOT Project Engineer for review and signature.

The Consultant personnel shall be capable of preparing CMO's, justifications for CMO's and MCR's; price justification (force account analysis); review of MHT's, construction quantity calculations required for this type of project; inspection reports; daily diaries; Site Manager; review of 205's; and other construction administration documentation required per CDOT construction manual.

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 103a – Project Diary unless otherwise approved by the Resident 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.

The date shall be thoroughly familiar with CDOT forms and documentation requirements.

3.0 Personnel Requirements

Personnel qualifications and staffing levels for the project shall be subject to the approval of the Project Engineer. CDOT will reserve the right to review the resume and interview any new proposed staff to the project. CDOT may not approve personnel to be added to the project as determined from either the resume or interview.

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 Resident Engineer.

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

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

3.1 Consultant Assistant Project Engineer

The Consultant APE shall work under the direction of a Colorado Licensed Professional Engineer (PE) and be experienced with road and bridge construction and have documented experience with CDOT procedures including construction schedule review, contract modifications preparation, force account analysis, and shall be proficient with SiteManger. The Consultant APE shall be familiar with road and bridge construction and it is preferred they have documented experience with CDOT procedures including roadway paving and documentation.

The CDOT Project Engineer will be responsible for the day to day activities and duties associated with CDOT contract administration in coordination with the CDOT Resident Engineer and as supported by the Consultant APE. These responsibilities and duties include supervision of project staff, verbal and written correspondence with the Prime and Sub-Contractors, inspection of materials and methods of construction to verify compliance with CDOT and contract specifications, preparing monthly pay estimates, reviewing and approving Methods of Handling Traffic (MHT's), prepare project change orders and minor contract revisions, monitoring the project schedule and financial status, reviewing certified payrolls, resolving material and traffic control issues, and coordination/contract with local entities and business with respect to construction activities.

The Consultant APE shall be familiar with road and bridge construction and have documented experience with CDOT procedures including roadway, utility, and structure inspection and associated documentation, be proficient with SiteManager and shall have all required CDOT Inspector Certifications.

The Consultant APE will be responsible for day to day activities as assigned by the CDOT Project Engineer. These responsibilities may include documentation and inspection of construction activities, preparing payments for items of work, preparing pay estimates in SiteManager, supervision and documentation of time and material of work, and preparation of daily diaries documenting contractor activities and relevant observations, and Davis-Bacon wage review and certification.

The individual shall be able to inspect and document all work performed and produced by the CDOT construction contractor on the project. The service shall include inspection and documentation of requirements set forth in the Standard Specifications for Road and Bridge Construction, the M & S Standards and references there from. This work is to be accomplished in accordance with CDOT Construction Manual. The individual shall meet all the requirements as outlined in CDOT Policy Memo 25, Construction Inspector Qualification Program including Traffic Control Supervisor training. The Consultant APE shall be familiar with SiteManager Construction Management System to enter CMO's, Time Counts, Daily Work Reports, and other areas as needed.

Inspection work shall conform to the CDOT Construction Manual and the Inspector Checklist. 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 or automated 103a – Project Diary, or other form approved by the Resident 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 any written correspondence applicable to the project. A copy of the daily shall become a part of the permanent project record.

Responsibilities may include but are not limited to the following:

1. Preparing and transmitting updates of construction activities to the CDOT's Public Information Officer.
2. Monitoring and documenting contractor payroll compliance.
3. Participation in weekly progress meetings with contractor, subs, utilities and other interested parties.
4. Securing project documentation from the contractor.



5. Anticipating project problems and directing solutions to the CDOT Project Engineer.
6. Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the specifications. Inform and obtain concurrence as needed from the Project Engineer and keep relevant documentation for project records.
7. Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
8. Communicating with adjacent landowners as required towards resolving issues that arise during construction.
9. Review and approve the Contractor's Method of Handling Traffic if delegated by the CDOT Project Engineer.
10. 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).
11. Initial follow up, and final inspections of work in progress including interim and final measurements.
12. Promptly notifying contractors and CDOT Project Engineer of non-compliance with the contract plans and specifications.
13. Performances of special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT inspection program.
14. Preparation of inspection documentation for development of progress payments for the contractor in accordance with prescribed procedures.
15. Submittal of standard documentation reports no later than the following working day.
16. Preparation of routine correspondence to the contractor, CDOT Staff, local agencies, etc.
17. Providing liaison and communication to contractor field crews.
18. Assist the CDOT Project Engineer with preparation of final "As Constructed" plans.
19. Assist in preparing punch lists of uncompleted work, non-conformance reports, and deficiency notices.
20. Assist in preparing responses to contractors' and suppliers' requests for information, submittals, change notices, claims, and correspondence.
21. Prepare the project's Finals Package and submit to CDOT's Final Engineer within 45 days of the project's acceptance letter (including materials finals). Continue to work with the Finals Engineer to adjust or revise finals documentation until it is determined to be acceptable.
22. Ensure all materials testing documentation is entered into LIMS software system.

3.2 Consultant Construction Inspector

The Consultant Construction Inspector shall be able to inspect and document all work performed and produced by the CDOT construction contractor on the project. The service shall include inspection and documentation of requirements set forth in the Standard Specifications for Road and Bridge Construction, the M & S Standards and references there from. This work is to be accomplished in accordance with the CDOT Construction Manual. The individual shall meet all the requirements as



outlined in CDOT Policy Memo 25, Construction Inspector Qualification Program including Traffic Control Supervisor training. The Consultant shall be familiar with SiteManager Construction Management System to enter CMO's, Time Counts, Daily Work Reports, and other areas if needed.

Inspection work shall conform to the CDOT Construction Manual and the Inspector Checklist. 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 or automated 103a – Project Diary, or other form approved by the Resident 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 diary shall become a part of the permanent project record.

3.3 Consultant Materials Testing Technician

The Consultant Materials Testing Technician shall sample, test, inspect and document all materials generated on the project unless otherwise notified by the CDOT Project Manager. This includes but is not limited to: 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 orders; and altered material quantities whether increased or decreased. The testing technician and CDOT's Project Manager shall review project quantities on a weekly basis to ensure that sufficient tests have been performed for the material placed to date. The consultant shall also provide any other related testing services requested by the CDOT Project Manager.

Testing of materials that are specifically designated to be pre-inspected or pre-tested shall remain the responsibility of CDOT. The consultant shall document and obtain samples of any and all materials to be transported to 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 Materials Manual under Schedule (Owner Acceptance), Central Laboratory.

The materials testing technician shall be under the direction of, and shall be reviewed by the Project Manager, and CDOT testing personnel. A consultant supervisor shall be available to review work, resolve problems, and make decisions in a timely manner as requested by the CDOT Project Manager, and must be experienced and competent in road and bridge construction, materials testing, and inspections.

The materials testing technician assigned to the project on a full-time basis and have a minimum of two years of experience in each specialty field (soils, aggregates, asphalt paving, and concrete) that is being tested, and shall have the following qualifications: WAQTC certification, nuclear safety certified as issued by the Colorado Department of Health, ACI certified as a concrete Field Testing Technician Grade 1, ACI certified as concrete Strength Testing Technician Grade 1, CAPA certification LabCAT Levels A & B and Traffic Control Supervisor training. The individuals shall meet all the requirements as outlined in

CDOT Policy Memo 25, Construction Inspector Qualification Program. Nuclear Gauges must be calibrated using the Department's standard blocks. The materials testing technicians shall be thoroughly familiar with CDOT forms and documentation requirements and have had LIMS training in site-manager with the ability to enter all materials documentation into site-manager LIMS program.

The equipment shall be furnished by the consultant tester for each segment of the project in sufficient quantity and in good working order to ensure accurate performance of all work required in a timely manner. Equipment for this project may include, but not limited to following;

1. Nuclear Moisture/Density Gauge.
2. Sieves for aggregates and soils gradation.
3. Electronic scales, if not furnished by the contractor.
4. AC gauge, Rice equipment and hand tools for HMA Testing.
5. Sample containers including, but not limited to: quart sized asphalt cement cans with lids, 3-gallon metal containers and lids for HMA samples, sample bags, 5-gallon buckets with rubber seal lids for moisture samples, and buckets for sampling concrete.
6. Proctor equipment for soil curves and 1-point tests.
7. Atterberg equipment.
8. Sample drying equipment.
9. Miscellaneous pans, tools, and equipment for performing the required soils, concrete, and asphalt field tests.
10. Concrete cylinder molds which conform to AASHTO requirements.
11. Tape measure and various hand tools.
12. High/low and recording thermometers.
13. Various office supplies and calculators.
14. Computer and CDOT approved programs.
15. CDOT M & S Standards, Construction Manual, and Inspector's Checklist.
16. Concrete testing equipment: air meter, slump cone, unit weight scale, hand tools and beam molds.

4.0 Cost Proposal Assumptions

The attached compensation proposal is **SPECIFIC RATE OF PAY**.

A supplement to this task order may be necessary in the event the level of effort required increases beyond that described, including but not limited to extended construction duration and/or additional construction shifts.

Direct costs will be expended as required for the proper performance of the work, and in accordance with CDOT requirements and approvals. Work may be required night and/or day, weekends, holidays, and/or on a split shift basis when requested by the Resident Engineer. Workweeks may be in excess of or less than the standard 40-hour week.



Man-hour estimates will be based on **50 hours'** maximum per week.

The Scope of Work is based on the assumption that no nights will be worked and will not need to be covered by Consultant staff (night work defined as over 50 hours/week or between 6:00 p.m. and 6:00 a.m. – each work night will be assumed as 10 hours). The attached cost proposal for construction services is based upon several assumptions and a specific organization throughout construction. Since construction management tasks extend over a long duration of time and tasks will overlap greatly throughout any construction day, the general approach to the fee is based on number of full time employees on the project as opposed to duration of each task. As a result, the budget defined will be considered the scope of work. The CDOT Resident Engineer will be notified of any work outside the budget and considered out-of-scope, and will not proceed without formal approval by the CDOT Resident Engineer.

4.1 Per Diem

Staff considered being “Traveling Away from Home” as defined per Fiscal Rule 5-1, Section 2.24 will be reimbursed at the applicable per diem rate per the Fiscal Rule 5-1, Section 6.11 to cover costs of meals and incidental expenses while traveling.

Should the consultant personnel choose to procure a short term home rental for the duration of the project, CDOT shall be notified of this intent prior to securing a lease. Additionally, per Fiscal Rule 5-1, Section 11.11, the Department may negotiate a special per diem rate when a traveler is furnishing their own lodging and meals. Please notify CDOT immediately if this will be the case, so that a special per diem rate can be negotiated.

4.2 Travel

All travel and per diem expenses shall be in accordance with CDOT procedures and policies and state fiscal rules.

Staff assigned full or part time to the project and considered “Traveling Away from Home” per Fiscal Rule 5-1; Section 2.24 will be reimbursed for actual lodging costs per Fiscal Rule 5-1, Section 6.11. Reimbursement of lodging costs will follow Fiscal Rule 5-1, Section 9.

CDOT will reimburse Consultant for time and mileage of personnel “Traveling Away from Home” who are full or part time on-site personnel for one roundtrip per week at a maximum of 4 hours per roundtrip and maximum of 200 miles.

Mileage and time for staff not assigned to the project or “Traveling Away from Home” will be reimbursed for actual time and miles from when the employee leaves home base until return to home base minus 1 (one) hour.



A summary of these situations is provided below in accordance with the CDOT Travel Reimbursement Guidance for Consultant Contracts and Task Orders.

CDOT is Paying for Housing		CDOT is not Paying for Housing	
Type of Travel Expense	Reimbursement	Type of Travel Expense	Reimbursement
Lodging	Actual	Lodging	NA
Meals	Per Diem Rate (State Rate) for actual days worked at project site	Meals	Per Diem Rate (State Rate) for actual days worked at project site
Incidental Expenses	Per Diem Rate	Incidental Expenses	Per Diem Rate
Rental Vehicles	Actual	Rental Vehicles	Actual
Mileage for Company Vehicles	Current Mileage Rate for 2WD vehicles only. 4WD vehicle is allowed when specified in scope of work.	Mileage for Company Vehicles	Current Mileage Rate for 2WD vehicles only. 4WD vehicle is allowed when specified in scope of work.
1) Travel from Main Office to Project Site	Not paid	1) Travel from Main Office to Project Site	Actual Mileage over 35 mile radius
2) Travel from Temporary Residence to Project Site	Not paid	2) Travel from Permanent Residence to Project Site	Actual mileage over 35 mile radius
3) Project related travel (Design or Construction) from or within Project site	Design Projects: Actual project related mileage. Construction Projects: Estimated average daily mileage as stated in project task order.	3) Project related travel from or within Project site	Design Projects: Actual project related mileage. Construction Projects: Estimated average daily mileage as stated in project task order.
4) Personal travel – including travel from temporary housing to project site	Not paid	4) Personal travel	Not paid
5) Personal travel to place of permanent residence	Not paid	5) Personal travel to place of permanent residence	NA
6) Travel time from place of permanent residence or Office to Temporary Residence or Project site	One round trip per week at a maximum of 4 hours per round trip and a maximum of 200 miles mileage	6) Travel Time to Project Site	Actual time from when employee leaves home base until return to home base minus one (1) hour
7) Airfare	Actual	7) Airfare	Actual



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8) Tips	Included in Per Diem Rate	8) Tips	Included in Per Diem Rate
9) Other Allowable Travel Expenses	Actual	9) Other Allowable Travel Expenses	Actual