



COLORADO
Department of Transportation
Region 3 Eagle Residency

**I-70 Vail East West Construction Administration
Scope of Work**

Dated September 12, 2019
Region 3

Project:
I-70 Vail E/W Resurfacing
Project: NHPP 0702-377 (21828)
Estimated Start Date: January 1, 2020

The Contract Administrator for this Task Order will be:

Karen Berdoulay, Resident Engineer
Region 3 - Eagle Residency

Office: (970) 328-9934



General Scope of Work and Staffing

The scope of work is for construction management, inspection and testing services of the I-Vail East West resurfacing project. The I-70 Vail East West project limits are between I-70 from MM 173-180 eastbound and westbound and I-70 MM 180-183 eastbound only.

The project will include resurfacing, guardrail replacement, bridge deck repair, bridge joint replacement and repair, culvert sliplining, and culvert replacement and signing and striping.

CDOT will need the following full-time employees: one Project Engineer, one Assistant Project Engineer, one senior inspector, one junior inspector and one material tester for the majority of the project.

The Project Engineer shall be a Professional Engineer, licensed in the State of Colorado. The assistant Project Engineer does not to be a Professional Engineer.

The Inspectors and Assistant Project Engineer will be responsible for day-to-day activities as assigned by the Project Engineer. These responsibilities may include support of the Project Engineer in their duties, documentation and inspection of construction activities, supervision and documentation of time and material work, and preparation of daily diaries documenting contractor activities and relevant observations.

The materials testers will be responsible for the project materials sampling, testing, and documentation as directed by the Project Engineer. The HMA for the project will be tested via voids acceptance.

The time period for the work described in this scope of work covers the period from January 1, 2020 to April 15, 2021. Contractor Notice to Proceed is expected in February 2020. Field work is expected to begin in April or May 2020 and substantial completion is expected by October 2020.

Work is anticipated to be mainly night work due to the Lane Closure policy restrictions. However, one section of work between MM 176-180 may allow for some day work. Work may periodically be required on weekends. Work weeks may be in excess of or less than the standard 40-hour week. Final documentation is expected to be submitted within 45 days of project acceptance. All support construction staff will be Consultant personnel and shall remain assigned to the project site during the duration of construction, unless otherwise directed by the Resident Engineer. CDOT reserves the right to replace consultant personnel with available CDOT personnel or others.

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.

Consultant - The firm or corporation providing personnel under this agreement to perform construction services as outlined herein.

Consultant Project Engineer (CPE) - The Consultant Project Engineer is responsible to the Resident Engineer for the quality and successful completion of a transportation project. The CPE shall be assigned full time on the project site. The Consultant Project Engineer works directly for the CDOT Resident Engineer. The CPE shall be licensed in the State of Colorado, unless otherwise approved by the CDOT Resident Engineer, and is in responsible charge of construction.

Consultant Assistant Project Engineer - The Consultant employee on the project who assists the Project Engineer in administering the project.

Consultant Principal - The Consultant employee in responsible charge of Consultant services performed as described in this Contract. The Consultant Principal administers the Consultant contract. The Consultant Principal shall be available during construction and will be utilized as needed to provide engineering guidance and oversight of the Consultant's employees. The number and types of personnel may be adjusted up or down to meet project workload and Contractor's schedule. The Consultant Principal shall meet with the CDOT Resident 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 address this issue.

Consultant Inspector or Materials Testing Technician (MTT) - Consultant employee who performs construction materials testing services, construction inspection, and other project-related services under the direction of the Project Engineer.

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

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

CDOT Assistant Materials Engineer - The CDOT Assistant Materials Engineer is responsible to the Region Materials Engineer.

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 Project Engineer, for all contract activities performed by the Inspection Consultant.
- 2) Monthly billings should include a Contract status update.
- 3) Periodic reports and billings required by CDOT Procedural Directive 400.2.
- 4) Weekly time cards for consultant personnel. The Project Engineer, prior to billing, must sign these time cards.
- 5) Supporting documentation for all direct costs.

Status of Contract

The Consultant shall monitor the fiscal status of the contract, and advise the CDOT Resident 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.

Project Standards

All documentation shall be in accordance with the latest versions of the Colorado Department of Transportation's Construction Manual, Field Materials Manual, CDOT Laboratory Manual of Test Procedures, Colorado Department of Transportation Inspector's Checklist, Standard Specifications for Road and Bridge Construction, the Supplemental Specifications, applicable 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 Special Provisions, and project plans and specifications.

The Consultant's proposed work procedures shall be coordinated with the CDOT Resident Engineer prior to the start of work.

Labor, Materials, Vehicles & Equipment

The Consultant shall furnish all personnel, equipment and transportation required to perform the work. Consultant personnel shall have appropriate vehicles (equipped with flashing amber beacon), cell phone, computers, scanner/color printers, digital cameras, calculators, manuals, office supplies, and personal protective equipment (PPE) required for performing the work. PPE shall be in accordance with CDOT Procedural Directive PD 80.1.

Each consultant staff shall be supplied with a state of the art computer with internet connectivity. Consultant computers shall be able to operate CDOT's web based Trns*Port application, ProjectWise, Google Drive, and have current Microsoft Word and Excel software.

The Consultant shall have a device capable of taking quality digital photos to submit to the Resident Engineer on a regular basis for use in correspondence and presentations.

The following equipment shall be furnished by the consultant inspector or 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
- Atterberg, 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

Engineer's Certification

The CDOT Resident Engineer shall be the final authority regarding acceptance of work performed by the Consultant. The Consultant Testing Firm will review, provide a PE stamp, and sign the CDOT Form 250 as it relates to the testing and acceptance of materials. The CDOT Resident Engineer shall be the final authority regarding acceptance of Contractor's work not conforming to the plans and specifications.

Work Description

The Consultant shall assign personnel to the construction administration, construction inspection and material testing responsibilities. These responsibilities may include but are not limited to:

- Periodic reports and billings required by CDOT Procedural Directive 400.2.
- Monitoring and documenting 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 implementing solutions.
- Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the intent of the specifications
- Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
- Communicating with adjacent landowners and/or businesses as required to-resolve issues that arise due to construction.
- Reviewing the contractor's Method of Handling Traffic.
- Monitoring compliance with and taking appropriate action to verify compliance with the Method of Handling Traffic (MHT) and the Manual of Uniform Traffic Control Devices (MUTCD).
- Initial, follow up, and final inspections of work in progress including interim and final measurements, and coordination with the Consultant Tester to ensure materials testing requirements are met.
- Promptly notifying contractors 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
- Ensure compliance with permits such as 404 and NPDES.
- Preparation of inspection documentation for development of progress payments for the contractor in accordance with prescribed procedures
- Preparation of progress pay estimates in CDOT's Trns*port system
- Preparation of daily project construction diaries.
- 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 Resident 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.

The Inspector or MTTs (Materials Testing Technicians) shall sample, test, and document specified materials incorporated into the project. This includes materials delivered to the project that are listed in the Summary of Approximate Quantities. The number of tests required shall be in accordance with the Schedule in the Field Materials Manual. Additional quantities may be added by Contract Modification Order, or plan approximate quantities may be increased or decreased.

The team shall review project quantities on a weekly basis to ensure that sufficient tests have been performed for all material placed to date.

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 Inspector or MTTs 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 "Project Verification" in the Schedule in the Field Materials Manual.

The Consultant shall also provide qualified staff to provide a monthly in-depth construction schedule analysis and report.

Initial Project Meeting

The Consultants and Resident Engineer shall meet to coordinate and schedule the required work. The Consultant shall complete all work in accordance with the approved schedule. The Consultant shall anticipate attending the Pre-Construction and Partnering Meetings prior to construction.

Documentation

The Consultant shall provide all correspondence and applicable CDOT forms to the Resident Engineer or their authorized representative for review and signature.

The Consultant personnel shall be capable of preparing in field force account analyses, 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 Form 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 Project Engineer within one working day of its date.

Personnel Qualifications

The Construction Administration of the project shall require CDOT construction experience and roadway construction experience with emphasis on hot mix asphalt, guardrail and traffic control management. The Consultant personnel shall be prepared to work in cold and wet weather conditions.

The Consultant team shall have the following experience or skills:

- Highway resurfacing
- Force account analysis
- Traffic control management
- Reviewing construction schedules and method statements

The Project Engineer will administer the project and oversee the Construction Administration staff. Other requirements of the Project Engineer include:

- Licensure as a Professional Engineer in the State of Colorado
- Experience in administration of CDOT construction projects
- Ability to complete progress pay estimates, change orders, and other Site Manager work as needed
- Experience in overseeing safety critical work as defined in the Project Special Provisions
- Reviewing and approving Method of Handling Traffic and have taken the Traffic Control Supervision class.
- Experience in resurfacing and traffic control management
- Experience in bridge deck repair and bridge joints.
- A minimum of 5 years of experience on CDOT construction projects with oversight of consultant inspectors and testers and over 10 years of total experience.

The Assistant Project Engineer will assist the Project Engineer in administering the project, overseeing the Construction Administrative Staff and supporting inspection services. Other requirements of the Project include:

- Construction inspection
- Experience in administration of CDOT construction projects
- Ability to complete progress pay estimates, change orders, and other Site Manager work as needed
- Reviewing and approving Method of Handling Traffic and have taken the Traffic Control Supervision class.
- Experience in resurfacing and traffic control management
- A minimum of 3 years of experience on CDOT construction projects.

The Senior and Junior Inspectors will perform inspection of the work. The Inspectors shall have the experience in the following:

- Hot mix asphalt
- Guardrail

- CDOT experience with the federal project requirements such as OJT, review of 205's, site interviews to complete CDOT Form 280, and have reviewed Davis-Bacon wages and certified payrolls.
- The consultant staff must be certified by the CDOT Construction Inspector Qualification Program in the areas of inspection to be performed.
- The Senior Inspector shall have a minimum of 5 years of experience on CDOT construction projects. The junior inspector shall have at least 2 years of experience on CDOT construction projects.

At least one team member in addition to the Project Engineer shall have bridge deck repair and bridge joint inspection experience. All the Consultant staff (except the testers) shall be familiar with and have experience using the Site Manager program to enter 266 inspection forms and other areas if needed. The Consultants shall be thoroughly familiar with CDOT forms and documentation requirements.

The consultant shall also provide any other services, on this project, in the Eagle CDOT office, or on any other project administration by the Eagle CDOT Office, as requested by the Resident Engineer.

One full-time Consultant Materials Testing Technician (MTT or Tester) will be required for the duration of the project. The HMA for the project will be tested via voids acceptance. The Consultant Tester shall have a minimum of 5 years of experience on CDOT construction projects. The Consultant Tester shall have experience in asphalt with certifications accordingly. The Tester shall review the project plans, specifications, and the current version of the CDOT Field Materials Manual and the project specific CDOT Form 250 to complete the project with the number and types of tests that will need to be performed on the project. Additional testing may be required if requested by the Resident Engineer. The Consultant Tester shall be thoroughly familiar with CDOT forms and documentation requirements. The Consultant Tester shall be available to the project and report to the project site when needed. The Consultant Tester shall be approved by the CDOT Resident Engineer and have the following certifications:

- 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. NICET Certification shall be provided to the CDOT Project Engineer or equivalent.
- The Tester performing hot bituminous pavement tests shall be Level II, A&B certified by The Colorado Asphalt Technician Certification Program (LabCAT).

The Consultant Tester shall be thoroughly familiar with CDOT's web-based materials applications for documentation and acceptance which includes Site Manager LIMS. Testers shall have successfully completed Site Manager LIMS training. It is anticipated the project will use Site Manager LIMS for the materials and testing documentation and acceptance.

Additional qualifications for Consultant project personnel include the following:

1. Personnel shall have a certificate of completion of one of the following: OSHA 10-Hour Construction (OSHA10), OSHA 10-Hour Road Construction (OSHA10), or OSHA 30-Hour Construction (OSHA30).
2. Personnel shall be thoroughly familiar with CDOT forms and documentation requirements.
3. The Consultant Tester shall have completed CDOT's Site Manager LIMS training.
4. The Consultant Inspectors shall have completed Trns*Port Site Manager training.

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 Resident Engineer.

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

**CONSTRUCTION MANAGEMENT REQUIREMENTS
 CHECKLIST**

The following checklist shall be used to establish the Construction Management responsibilities of the individual parties for this project.

The checklist shall be prepared by placing an "✓" under the responsible party opposite each of the tasks listed below.

When a task does not apply to the project, not-applicable "NA" shall be placed under both parties.

Tasks that will be performed by CDOT Headquarters staff will be so indicated.

The Region in accordance with established policies and procedures shall determine who will perform all other tasks that are the responsibility of CDOT.

DESCRIPTION OF TASK	CONSULTANT	CDOT
1. Conduct the Pre-Bid conference, answer all questions, and maintain a log of all decisions given and/or made.		✓
2. Show project work site to prospective bidders, answer all questions regarding plans and specifications, and maintain a log of all decisions given and/or made.		✓
3. Coordinate all construction contract activities with appropriate stakeholders.		✓
4. Distribute electronic award sets of plans and specifications to the CDOT Resident Engineer, Contractor, and Consultant staff.		✓
5. Issue Notice to Proceed to the Contractor.		✓
6. Schedule, attend, conduct, and prepare minutes of all project meetings as follows:		
a. Job Showing		✓
b. Pre-construction Conference	✓	✓
c. Partnering Workshop (if required)	✓	✓
d. Weekly Project Meetings	✓	
e. Pre-Survey Conference (if required):	✓	
(1) Construction Staking	✓	
(2) Survey Documentation	✓	
f. Bridge Construction Communications	✓	
g. Structural Concrete Pre-pour Conference	✓	
h. Concrete Pavement Pre-paving Conference	N/A	
i. HMA Pre-paving Conference	✓	

DESCRIPTION OF TASK	CONSULTANT	CDOT
8. Public Relations:		
a. Coordinate with Contractors PIM and CDOT to publish and distribute public notices of all planned construction activities and schedules to the media, property owners, local residents, tenants, and other appropriate stakeholders affected by the project.	✓	
b. Perform public relation tasks with Contractor's PIM as requested by CDOT.	✓	
c. Explain construction and work with adjacent property owners to resolve issues that arise during construction.	✓	✓
9. Review, comment, accept and/or approve as appropriate the following submittals: <i>Note: This list is not all-inclusive and other submittals may require action as directed by CDOT.</i>		
a. CDOT Form # 205 – Sublet Permit Application after Form #713 has been checked by the Region EEO Administrative Program Specialist.	✓	✓
b. Method of Handling Traffic	✓	
c. Progress Schedules	✓	✓
d. Method Statements	✓	✓
e. Shop drawings per 105.02	✓	
f. Working drawings per 105.02	✓	
g. Other submittals per 105.02	✓	
h. All EEO, Labor compliance requirements	✓	✓
i. Other submittals as directed	✓	
10. Construction inspection including calculations, measurements, and documentation of interim and final pay quantities as directed by the Project Engineer.	✓	
11. Perform required EEO/AA/DBE/OJT or labor compliance tasks as requested as follows:		
a. Conduct Contractor/Subcontractor reviews to ensure conformance with the Equal Employment Opportunity (EEO)/Affirmative Action (AA)/DBE/OJT requirements contained in the contract. (Standard Special Provisions, Project Special Provisions and FHWA Form 1273.)	✓	

DESCRIPTION OF TASK	CONSULTANT	CDOT
b. Complete and submit to the CDOT Resident Engineer, the required number of CDOT Form 280 – Equal Employment Opportunity and Labor Compliance Verification.	✓	
c. Monitor DBE participation to ensure compliance with the “commercially useful function” requirements.	✓	✓
d. Complete and submit to the CDOT Region EEO Administrative Program Specialist, the applicable number CDOT Form #200 – OJT Training Questionnaire, when project utilizes OJT’s.	✓	✓
e. Check certified payrolls to verify contractor/subcontractor compliance with contract requirements. Project personnel trained in payroll checking shall complete the checking. (Contact the Region EEO Administrative Program Specialist for training requirements.)	✓	
f. Coordinate submittals by Contractor and all subcontractors of FHWA Form 1391 (Highway Construction Contractor’s Annual EEO Report) to the CDOT Region EEO Administrative Program Specialist.		
12. Materials:		
a. CDOT Form # 250 – Materials Documentation Record:		✓
(1) Fill out and distribute CDOT Form # 250 before the Contractor commences work.		✓
(2) Complete Form # 250 after work is completed; distribute per instructions in CDOT Materials Manual.		✓
b. Approve changes to the Typical Section (requires a CMO).	✓	✓
c. Development, checking and design mix approvals:	✓	✓
(1) Concrete	✓	✓
(2) Hot Bituminous Pavement	✓	✓
d. Acceptance of manufactured products	✓	✓
e. Inspecting fabrication of structural steel and pre-cast concrete structural components.	✓	✓
f. Inspecting fabrication of bearing devices		✓

DESCRIPTION OF TASK	CONSULTANT	CDOT
g. Laboratory check testing.		✓
h. Acceptance testing.	✓	✓
i. Independent assurance testing - develop, complete and distribute CDOT Form # 379 – Project Independent Assurance Sampling Schedule.		✓
j. Approve sources of materials.	✓	
13. Maintain time counts	✓	
14. Maintain project files for documentation; provide duplicate documentation to CDOT Resident Engineer when requested.	✓	
15. Obtain, accept, and approve all required material certifications.	✓	
16. Approve shop drawings	N/A	
17. Perform Traffic Control Inspections	✓	
18. Approve temporary traffic signal equipment	N/A	
19. Construction surveying – quality control checking and quantity verification (as needed only)	✓	
20. ROW Monumentation – quality control checking	✓	
21. Prepare monthly estimates of the Contractor’s work performed, materials placed or stockpiled materials on hand in accordance with the Contract. Note: Only a CDOT Resident Engineer can approve and sign vouchers for interim and final Contractor pay estimates.	✓	✓
22. Review interim and final billings for Utility relocation work. Note: Only a CDOT Resident Engineer can approve and sign vouchers for interim and final Utility Company billings.	✓	✓
23. Prepare CDOT Form # 90 [Contract Modification Order (CMO)] and/or # 90 [Minor Contract Revision (MCR)] including letter of explanation for CMO/MCR Note: The Consultant may negotiate costs for extra work but only CDOT can approve costs. Only the CDOT Resident Engineer can approve and sign CMO/MCR’s for modifying CDOT’s Contract or paying the Contractor.	✓	✓

DESCRIPTION OF TASK	CONSULTANT	CDOT
24. Monitor project financial status and submit monthly in a format acceptable to the Region, such as CDOT Form # 65a – Project Financial Status Report.		✓
25. Prepare and submit monthly progress reports to the Region Program Engineer: CDOT Form # 110a – Status of Active Construction Projects and CDOT Form # 517a – Status of Construction Project Finals	✓	
26. Prepare appropriate responses to Contractor, subcontractor or supplier requests for information, submittals, disputes, claims, change notices, or other correspondence.	✓	
27. Prepare response for Project Engineer status of claim & Claim Status Report Form	✓	
28. Prepare complete claim record	✓	
29. Give oral or written presentation to Region Director for claims.	✓	
30. Give presentation for Claim Review Board or AAA Arbitration board.	✓	✓
31. Conduct routine, random, project reviews to ensure the project is being administered in accordance with the terms of the construction contract.	✓	✓
32. Conduct final project inspection of completed or unacceptable work and prepare punch list for final acceptance.	✓	✓
33. Prepare and submit CDOT Form # 1212a – Final Acceptance Report		✓
34. Prepare final project acceptance letter and distribute per procedures in the CDOT Construction Manual.	✓	✓
35. Advertise for final settlement.		✓
36. Maintain accurate as constructed notes and prepare and distribute final as-constructed plans per procedures in the CDOT Construction Manual.	✓	
37. Check final quantities, final plans, and prepare the final pay estimate. Note: Only CDOT can sign final pay estimate sheets and voucher.	✓	✓
38. Check material records.	✓	✓
39. Submit final materials certifications	✓	

DESCRIPTION OF TASK	CONSULTANT	CDOT
40. Obtain and review CDOT Form # 17 – Contractor DBE Payment Certification from the Contractor and submit to the Region.		✓
41. Obtain and review FHWA Form PR 47 (Statement of Materials and Labor Used) from the Contractor, check and submit to the Region.		✓
42. Complete and submit CDOT Form # 950 for project closure.		✓
43. Submit original of all project records to the CDOT Resident Engineer. (CDOT will retain project records for six years from the date of project closure.)	✓	✓