

DEPARTMENT OF TRANSPORTATION

Eagle Residency

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**BRIDGE AT EAGLE REPLACEMENT CONSTRUCTION
ADMINISTRATION
SCOPE OF WORK**

Estimated Start Date: April 15, 2011
Region 3

Project:
Bridge at Eagle
Project # FBR 0241-038 (18160)

The Contract Administrator for this Task Order will be:

Martha Miller, Resident Engineer
Region 3

Office: (970) 328-6385
Mobile: (970) 471-9385
Fax: (970) 328-2368

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

Peter Lombardi, Project Manager
Region 3

Office: (970) 328-6385
Mobile: (970) 471-3541
Fax: (970) 328-2368

Bridge at Eagle
Project # FBR 0063-053 (18160)

General Scope of Work

CDOT has need of a consultant to provide construction administration support (Project Engineer, and part time inspection/materials-testing services) required for construction of the US-6 Bridge Replacement East of the town of Eagle. The existing bridge (structure F-09-H) and the proposed new bridge is located between MP 150.1 to 150.4.

The scope includes the removal and replacement of a thru truss bridge (1933), the addition of turn lanes, phased construction, hazardous waste management, precast girders, reinforced concrete, embankment, HMA and traffic control management.

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 Project Manager – The CDOT Resident Manager is responsible to the Resident Engineer for the quality and successful completion of a transportation project.

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

Consultant Project Engineer - The Consultant employee on the project who will administer the project. The Consultant Project Engineer is in direct charge of the project work and is responsible for the administration and satisfactory completion of the project under contract.

Consultant Professional Engineer - The Consultant employee in responsible charge of Consultant services performed as described in this Contract. The Consultant Professional Engineer administers the Consultant contract.

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

Work Duration

The time period for the work described in this scope of work covers the period from approximately April 1, 2011 to July 30, 2012. Work may be required on weekends and holidays.

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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) Periodic reports and billings required by CDOT Procedural Directive 400.2.
- 3) Weekly time cards for consultant personnel. The Project Engineer, prior to billing, must sign these time cards.

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.

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

Labor, Materials, Vehicles & Equipment

It is anticipated that CDOT will require at least one full time lead Project Engineer (PE) and a part time inspector or MTT when needed. CDOT intends to add additional in-house staff to the Project Team including one CDOT Inspector and one CDOT Materials Testing Technician.

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, and miscellaneous equipment (calculator, office and lab supplies, safety equipment, etc.) required for performing the work.

Each consultant staff shall be supplied with a state of the art computer w/modem (phone, ISDN or cable as required), a writeable CD, a color printer (that can be networked for all staff or black/white for other staff) and loaded with the most current version of MS Office software (& Site Manager or QA/QC program if applicable).

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The Consultant shall have a digital camera available to staff at all times and document the project accordingly submitting CD's with relevant photos to the Resident Engineer on a regular basis.

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

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
- Atterburg, Rice value, and Sand Equivalent equipment
- Sample drying equipment
- Concrete cylinder molds which meet AASHTO requirements except that paper molds shall not be used, and plastic molds shall not be reused
- Miscellaneous equipment for performing the required soils, asphalt and concrete tests

Engineer's Certification

The Resident Engineer shall be the final authority regarding acceptance of work performed by the Consultant. The Resident Engineer will review 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 work not conforming to the plans and specifications.

Work Description

The Construction Administration of the project shall require CDOT construction experience and roadway construction experience with emphasis on bridge replacement, reinforced concrete, hazardous waste (Lead Paint) removal, piling, environmental constraints, embankment, HMA, culvert installation and traffic control management. The Consultant personnel shall be prepared to work in cold weather conditions.

CDOT will be providing Design Support for the project.

Correspondence with any Contractor shall be documented using CDOT standard construction methods and approved by the Resident Engineer.

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

- Preparing and transmitting updates of construction activities to the CDOT's Public Information Office.
- Periodic reports and billings required by CDOT Procedural Directive 400.2.
- Monitoring contractor payroll compliance.
- Participation in weekly progress meetings with contractor, subcontractors, utilities and other interested parties.
- Securing project documentation from the contractor.
- Anticipating project problems then formulating and implementing solutions.
- Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the intent of the specifications. Inform and obtain concurrence as needed from the CDOT Resident Engineer and keep relative documentation for project records.
- Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
- Communicating with adjacent landowners as required to resolve issues that arise due to construction.
- Monitoring compliance with and taking appropriate action to preserve safety on the project for all workers and traveling public in accordance with Method of Handling Traffic (MHT).
- Initial, follow up, and final inspections of work in progress including interim and final measurements.
- Notifying contractors and Resident Engineer of non-compliance with the contract plans and specifications
- Performance of special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT inspection program
- 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
- 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 Project Engineer and 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 MTT (Materials Testing Technician) shall sample, test, and document all materials incorporated into the project. This includes materials delivered to the project that are listed in the Summary of Approximate Quantities or referred to in the Design/Build Plans and Specifications. The number of tests required shall be in accordance with the Schedule in the Field Materials Manual. Additional quantities may be added by Contract Modification Order, or plan approximate quantities may be increased or decreased.

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The Inspector or MTT and Consultant Project Engineer shall review project quantities on a weekly basis to ensure that sufficient tests have been performed for all material placed to date. The consultant shall also provide any other services such as inspection as requested by the CDOT Resident Engineer.

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 Inspector or MTT shall document and transport samples of any and all materials to the CDOT Region or Central Laboratory that are required to be tested by CDOT, regardless of pre-inspection or pre-testing responsibilities.

The items and test frequencies of CDOT tested materials shall be in accordance with the column titled "Central Laboratory" in the Schedule in the Field Materials Manual.

Project Meetings

The Consultant personnel shall be present at all project meetings as required. The Head Tester shall be required to attend Project Preconstruction Meeting, Project Partnering Meeting, and other meetings prior to commencement of the project as directed by the CDOT Resident Engineer and the Project Engineer.

Documentation

The Consultant shall provide all correspondence and applicable CDOT forms to the Resident Engineer or her authorized representative 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 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

CDOT is seeking supplemental construction administration support required for the replacement of the bridge at Eagle. The team shall include the Project Engineer (PE), an Inspector, and a Material Testing Technician. The project will be advertised for construction on March 3, 2011. It is anticipated the project will have day work only (no night work). The exact personnel requirements will be determined upon receipt of the successful bidder's construction schedule.

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The selected Consultant will be expected to have strong experience in critical path scheduling, innovative contracting (such as A+B and milestones), public relations, bridge work, HMA reinforced concrete, culvert installation, embankment, hazardous waste removal, and traffic control management. The Project Engineer will be expected to handle the schedule and daily public relations issues. The Consultant will be expected to work in Site Manager.

Personnel qualifications and staffing levels for the project shall be subject to the approval of Resident Engineer. CDOT will reserve the right to review the resume and interview any new proposed staff to the project. The Consultant shall be certified as defined by the requirements set.

The Project Engineer (PE) will be in responsible charge of the project. They shall have at least 4 years experience as a project engineer either with CDOT or as a consultant.

The Project Engineer shall have the following experience or skills:

- Reviewing construction schedules and methods statements
- Constructing highway bridges
- Hazardous waste management
- Environmental constraints
- Preparing Contract Modification Orders
- Force account analysis
- Public relations (working with local communities and agencies)

One consultant Inspector or MTT will be required (Part Time) on the project. The Inspector will primarily perform daytime roadway- and bridge-inspection work as needed. Other inspection and paperwork duties may also be required.

The inspector or MTT shall have the experience in the following:

- Reviewing and approving Method of Handling Traffic and have taken the Traffic Control Supervision class.
- CDOT experience with the federal project requirements such as OJT, review of 205's, have done interviews to complete CDOT form 280, and have reviewed Davis-Bacon wages.

Other skills to be highly considered for all personnel:

- Utility coordination
- Wide load coordination
- Working with CDOT Public relations representative for periodic and timely press releases for construction activities
- Survey experience

All the Consultant staff (except the testers) shall be familiar with and experience using the Site Manager program to enter CMO's, 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 as requested by the Resident Engineer.

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The Materials Testing Technician (MTT or Tester) shall have experience in cast in place concrete, asphalt, earthwork, and certifications accordingly. The MTT shall review project plans, specifications, and the current version of the CDOT Field Materials Manual and the project specific CDOT Form 250 to determine the number of testers required to complete the project and the number and type of test that will need to be performed on the project. The MTT and the Project Engineer shall meet on a regular basis prior to start of project to address any questions or issues involving testing procedures, frequency, or documentation. Additional testing may be required if requested by the Project Engineer or Resident Engineer. The MTT shall be thoroughly familiar with CDOT forms and documentation requirements. The consultant-supplied Materials Testing Technician shall be permanently assigned to the project and shall have the following qualifications:

- 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 MTT performing concrete tests shall be certified by The American Concrete Institute (ACI).
- The MTT performing hot bituminous pavement tests shall be Level II, A&B certified by The Colorado Asphalt Technician Certification Program (LabCAT).
- WAQTC, Soils Certification

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.

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

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**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 <u>ten</u> award sets of plans and specifications to the CDOT Resident Engineer.		✓
5. Issue Notice to Proceed to the Contractor.		✓
6. Schedule, 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 Prepaving Conference	✓	
i. HBP Prepaving Conference	✓	
j. Contractor Weekly Safety “Tool Box” Meeting	✓	

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DESCRIPTION OF TASK	CONSULTANT	CDOT
8. Public Relations:		
a. Prepare and coordinate with CDOT and others 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 appropriate individuals 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.)	✓	✓

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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	✓	
g. Laboratory check testing.		✓

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DESCRIPTION OF TASK	CONSULTANT	CDOT
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	✓	
17. Perform Traffic Control Inspections	✓	
18. Approve traffic signal equipment		
19. Construction surveying – quality control checking and quantity verification as needed.	✓	
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. <i>Note: Only a CDOT Resident Engineer can approve and sign vouchers for interim and final Contractor pay estimates.</i>	✓	
22. Review interim and final billings for Utility relocation work. <i>Note: Only a CDOT Resident Engineer can approve and sign vouchers for interim and final Utility Company billings.</i>	✓	
23. Prepare CDOT Form # 90 [Contract Modification Order (CMO)] and/or # 90 [Minor Contract Revision (MCR)] including letter of explanation for CMO/MCR <i>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.</i>	✓	
24. Monitor project financial status and submit monthly in a format acceptable to the Region, such as CDOT Form # 65a – Project Financial Status Report.	✓	

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DESCRIPTION OF TASK	CONSULTANT	CDOT
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. <i>Note: Only CDOT can sign final pay estimate sheets and voucher.</i>	✓	
38. Check material records.	✓	✓
39. Submit final materials certifications	✓	✓

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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.)	✓	