SCOPE OF WORK

PROJECT NUMBER:	**STA 1192-019/ER 1192-021**
PROJECT CODE:	**19357/20188**
CMS ID NUMBER:	
PROJECT LOCATION:	**SH 119, Weld County**
CONTRACT TYPE:	**Project Specific**
CONTRACT SUBJECT:	**Construction Inspection and Testing Services**

Active day-to-day administration will be delegated to:

Richard M. Wenzel III. PE
Project Engineer – Boulder Residency
1050 Lee Hill Drive
Boulder, CO 80302
Office: 303-546-5662, Mobile: 720-237-8700

Description of Project:

This project consists of resurfacing the section of SH 119 from MP 59.72 to MP 62.06 and reconstructing the section from MP 62.06 to MP 63.57 in Weld County. In addition, minor rehabilitation will be performed on structures D-16-CG and D-16-DR located on SB SH 119 at MP 61.993 over St. Vrain Creek and NB SH 119 at MP 61.992 over St. Vrain Creek, respectively. The rehabilitation work on structure D-16-CG will consist of placing approach slabs and slab drains, removing and replacing guardrail, evaluating/replacing the deicing system, and resurfacing the bridge deck and approach slabs with asphalt. The rehabilitation work on structure D-16-DR will consist of evaluating/replacing the deicing system, place curbing and resurfacing the bridge deck and approach slabs with asphalt.

The resurfacing portion of the work falls under project STA 1192-019/SA 19357 while the reconstruction portion and bridge rehabilitation work falls under project ER 1192-021/SA 20188.

The anticipated project start date is October 5, 2015. The anticipated completion date is October 30, 2016.

General Requirements

This Scope of Work (SOW) has been carefully reviewed by the Department and reflects a plan of approach based on the known goals. The Consultant's analysis of the project goals, its evaluation of the work elements, and its formulation of the work plan, coupled with its understanding of and sensitivity to the key issues may produce new approaches or modifications to the project's work elements. Therefore, the Final Scope of Work for the project may change in some details to incorporate the Consultant's input. This work is located in Region 4 of the Colorado Department of Transportation.

Definitions

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 the contracts for all Consultants and Contractors.

Engineer - The CDOT Project Engineer.

Consultant - The individual, firm, or corporation under contract by this agreement to perform construction services as outlined below.

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

Consultant Project Manager - The Consultant's employee who administers the Consultant contract with CDOT. The Consultant Project Manager works under the responsible charge of the Consultant's Professional Engineer. The Consultant Project Manager, if a Professional Engineer licensed in the State of Colorado, may be the same person as the Consultant Professional Engineer.

Contractor - The individual, firm, or corporation under contract with CDOT to construct the facility.

Initial Project Meeting

The Consultant shall meet with CDOT project personnel 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 Engineer.

Work Duration

The time for the work described in this scope of work covers the period from Notice to Proceed to June 1, 2017 or 90 days after Final Acceptance of the construction project, whichever is later. For portions of the project, night work will be required. Work will also be required during the day, on weekends, holidays, and/or on a split-shift basis. Workweeks may be in excess of or less than the standard 40-hour week.

Anticipated Construction: December 1, 2015 through December 31, 2016.
During construction, CDOT anticipates utilizing approximately:
1 Project Manager/Assistant Project Engineer (Full Time through Project)
1 Senior Inspector (Full Time through Project)
1 Junior Inspector (Full Time through Project)
1.5 Materials Testers (1 Full Time through Project, 1 Part Time as needed through Project)

Conditions Applicable to all Consultant Personnel: Overtime / Travel Pay / Commute Miles

Overtime hours will be paid by CDOT at the same rate as regular, non-overtime hours. Travel time will not be paid. Commuting mileage (limited to 70 miles per day or actual round-trip commuting distance, whichever is less), will be paid.

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.

Routine Billing & Reporting

The consultant shall provide the following on a regular basis:

- Monthly billing reports in formats suitable to the Engineer for all contract activities performed by Consultant personnel authorized to perform work on the project. All personnel and their associated hours worked shall be shown on the billing month. Separate monthly billing reports will be required for work performed on each project.
- Periodic reports and billings required by CDOT Procedural Directive 400.2.

Consultant Professional Engineer Requirements:

The Consultant Professional Engineer 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 Professional Engineer shall meet with the CDOT Project Engineer if it is anticipated that Consultant services may not be required for a period exceeding one week. A procedure will be agreed upon at the Initial Project meeting to address this issue.

Consultant Inspector and Consultant Tester Requirements:

Project Standards

All construction inspection shall be in accordance with the Colorado Department of Transportation's Construction Manual, Field Materials Manual, Standard Specifications for Road & Bridge Construction, Project Standard Provisions, Project Special Provisions, and the plans and specifications in use when the project is advertised. All Consultant construction inspection activities shall be as authorized by the Engineer. For the purposes of this document, construction inspection and materials testing shall be known as "the work" and references to "the specifications" shall include all applicable CDOT Standard Specifications for Road and Bridge Construction as amended by Project Standard Provisions, Project Special Provisions, and project plans and specifications.

If the required method is not described in the CDOT Field Materials Manual, the required work shall be completed in accordance with

1) AASHTO Standard Specifications for Transportation Materials and Methods of Sampling and Testing (as revised and supplemented), or
2) ASTM Standards and Procedures, in this order.

General Work Description

The Consultant Project Inspectors and Consultant Testers shall provide support to the CDOT project staff through assignment of personnel to assist with project management and inspection responsibilities.

Inspection responsibilities include:

Assist the CDOT Project Engineer in the following Construction activities:

- Prepare inspection documentation for development of progress payments for the contractor in accordance with prescribed procedures;
- Submit daily diary at the end of the working day;
- Submit payment-documentation reports (Form 266's) at the end of the working day;
- Prepare periodic reports and billings required by CDOT Procedural Directive 400.2;
- Monitor contractor payroll compliance;
- Participate in weekly progress meetings with contractor, subcontractors, utilities and other interested parties;
- Secure project documentation from the contractor;
- Anticipate project problems and propose solutions to CDOT Project Engineer;
- Review drawings and data submitted by the construction contractor and suppliers for conformance with the intent of the specifications;
- Obtain concurrence as needed from the CDOT Project Engineer and keep relevant documentation for project records;
- Maintain accurate notes reflecting actual construction details to be used in preparation of as-constructed plans;
- Monitor compliance with and take appropriate action to preserve safety on the project for all workers and traveling public in accordance with Method of Handling Traffic (MHT);
- Perform initial, follow-up, and final inspections of work in progress including interim and final measurements;
- Notify contractors and CDOT Project Engineer of non-compliance with the contract plans and specifications;
- Perform special tests, investigations, or monitoring to fulfill the intent of the CDOT inspection program;
- Aid in the preparation of correspondence to the contractor, CDOT Staff, local agencies, etc.
- Provide liaison and communication to contractor field crews;
- Prepare final "As-Constructed" plans upon project completion.
- Prepare punch lists of uncompleted work, non-conformance reports, and deficiency notices;
- Prepare responses to contractors' and suppliers' requests for information, submittals, change notices, claims, and correspondence;

- Deliver material samples to designated laboratories or locations;
- Perform miscellaneous project-related duties as requested by the CDOT Project Engineer.

Testing responsibilities include:

- Perform miscellaneous project-related duties as requested by the CDOT Project Engineer;
- Perform all sampling, testing, and documentation in accordance with the CDOT 2015 Field Materials Manual;
- Collect, post, and maintain current records of all project materials documentation within CDOT's SiteManager-LIMS software.
- Meet with the Project Engineer weekly to review all installed contract work items to ensure that corresponding material field test data, certified test reports, or Certificate of Compliance are on file;
- Participate in weekly progress meetings with contractor, subcontractors, utilities and other interested parties;
- Secure project documentation from the contractor;
- Maintain accurate notes reflecting actual construction details to be used in preparation of as-constructed plans;
- Monitor compliance with and take appropriate action to preserve safety on the project for all workers and traveling public in accordance with Method of Handling Traffic (MHT);
- Notify contractors and CDOT Project Engineer of non-compliance with the contract plans and specifications;
- Preparation of final "As-Constructed" plans upon project completion.
- Update daily test data for Voids Acceptance for HMA production into Asphalt '03 and software.

Labor, Materials, Vehicles & Equipment

The Consultant shall provide the Consultant Inspectors and Consultant Tester with the following:

- Suitable vehicles equipped with at least one (1) flashing, oscillating, or rotating amber beacon that shall be visible a minimum of five hundred (500) feet in normal sunlight.
- Consultant Inspectors' vehicle shall each be equipped with an electronic distance-measuring device, accurate to within +/- 5 feet per mile.
- A cellular phone.
- Each with a state-of-the-art computer with networking capability sufficient for accessing internet email through a project-supplied internet-service provider. Each computer shall be loaded with MS Office software (2003 version or later), including MS Word and MS Excel at a minimum. Computers shall be capable of running current CDOT software, including Asphalt '03, Voids '03, Site Manager, etc. All computers shall be connected or networked to a Consultant-supplied project printer/scanner, as follows:
    - Consultant shall provide a main project printer/scanner capable of making 11x17 color prints and 11x17 black-and-white scans. This printer/scanner shall be configured and connected or networked to all consultant-supplied computers on the project (except Consultant Materials Testing Technician may have a separate, stand-alone printer). Consultant shall maintain this main printer/scanner with ink and paper in a serviceable condition for the duration of the project, at no additional cost to the

project. Scans made by this main printer/scanner shall be available in PDF-format at all consultant-supplied project computers (except not required at Consultant MTT's computer).

- Miscellaneous equipment (calculator, office supplies, safety equipment, etc.) required to perform the work (ASTM Certified Work Boots, ANSI Certified Hardhat (Z89.1 stamp and be High Visibility), Safety Glasses (Z87 stamp on the glasses/goggles) and Approved Safety Vest. (Meeting or exceeding ISEA for Class 3), including all applicable manuals.
- CDOT will provide a field-office space.

The Consultant shall provide the Consultant Tester with the following in sufficient quantity, in good working order, and certified as defined by Colorado Procedure 10 (CP 10) to ensure accurate performance of all work required in a timely manner:

- Nuclear Moisture-Density Gauge (Calibrated on CDOT's blocks)
- Scales, circulator, temperature controlled water bath, and associated equipment for testing bulk specific gravity of asphalt cores
- Standard10-lb. Rammer/18-in. drop and mold for production of Structural Backfill Class 1 (T-180).
- Atterburg equipment
- Sample drying equipment
- Sieves and rifle splitter for aggregates and Structure Backfill Class1
- Sample containers and small tools
- Approximately 15- 4" x 8" Plastic Concrete Molds (Item 601, 608, 609, and 610)
- Concrete Air Meter (2) Must have a backup meter
- Slump Cone and base
- Field scale for concrete Yield measurements
- Thermometer for concrete temperature
- Misc. hand tools, buckets, and lab supplies
- Broom and cleaning supplies for lab cleanliness

The Consultant supplied materials testing technician shall be thoroughly familiar with the CDOT testing procedures, forms, and documentation requirements (LIMS). If oversight is necessary, the consultant shall provide supervision and guidance needed for completion of the work.

Personnel qualifications, staffing level, and number and types of vehicles shall be subject to the approval of the Engineer. The Consultant shall assign personnel for the duration of the Contract unless otherwise approved by the Engineer. Employees required to operate vehicles must possess and maintain a valid State of Colorado driver's license. The Consultant Inspectors and Consultant Tester permanently assigned to a project shall be competent in road and bridge construction and be thoroughly familiar with CDOT specifications, manuals, forms, and documentation requirements including SiteManager. The level of qualification provided shall be as requested and approved by the CDOT Resident Engineer. The qualifications for the level(s) shall be commensurate to experience, and are as follows:

1. Junior Level Inspector – four (4) to six (6) years of experience in highway construction inspection.
2. Senior Level Inspector – more than six (6) years of experience in highway construction inspection.
3. Project Manager – ten (10) or more years of experience in highway construction project management and supervision of consultant inspectors and testers. It is desirable that the Project Manager has at least three years working on projects on the Interstate system.

The Consultant's Project Manager shall possess either a NICET Certification Level IV in Highway Construction, an EIT certification from the State of Colorado, or be licensed as a Professional Engineer in the State of Colorado, unless otherwise approved by CDOT. The Consultant Inspectors shall either have a *National Institute for Certification in Engineering Technology (NICET)* Certification Level III in Highway Construction or have an Engineer-In-Training (EIT) certification from the State of Colorado, unless otherwise approved by CDOT.

A copy of work experience and proof of Certification and/or License shall be provided to the CDOT Project Engineer before work begins. Personnel provided by the Consultant who do not meet all of the specified requirements, or who fail to perform their work in an acceptable manner, shall be removed from the project when determined and directed by the CDOT Project Engineer.

Documentation

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 directed by the Engineer. The contents of the diary shall be brief and accurate statements of progress and conditions encountered during the prosecution of the work, and sketches as needed for clarification and documentation. 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 available to the CDOT Project Engineer at the end of each workday.

Additional Construction Inspection and Materials Testing Requirements:

In addition to the qualifications, requirements set forth above, the following certifications will also be required:

Class/Certification	Consultant Project Manager	Consultant Inspectors	Consultant Materials Testing Technician
Basic Highway Math	X *	X	X
Basic Construction Surveying	X *	X	X
Basic Highway Plan Reading	X *	X	X
Storm water Management and Erosion Control	X	X	
CCA Traffic Control Supervisor	X	X	
Specialty Certifications			
LabCAT Level A&B		Level A	X
Asphalt Paving Inspection LabCAT Level I		X	X
WAQTC		X	X
ACI Field Testing Tech I		X	X
ACI Concrete Strength			X
Sitemanager Materials and LIMS-Tester Training		X	X
Certified Nuclear Gauge Operator Certification			X

* Not required if the Consultant Project Manager or Assistant Project Manager is a licensed Professional Engineer.