

# I-25 Segments 5 and 6 Express Lanes CONSTRUCTION ADMINISTRATION SCOPE OF WORK

Scope Date: September 6, 2018

Estimated Construction Start Date: November 2018  
Region 4

PROJECT NUMBER: IM 0253-234  
PROJECT CODE: 22831  
CMS ID NUMBER:  
PROJECT LOCATION: North I-25 Managed Lanes: SH 7 to SH 1  
CONTRACT TYPE: Project Specific, Specific Rate of Pay  
CONTRACT SUBJECT: Pre-Construction Support, Construction Management, Inspection  
and Testing Services

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The Contract Administrator for this Contract will be:

Abra Geissler, PE  
Resident Engineer - Region 4 South Program  
1050 Lee Hill Rd  
Boulder, CO 80302  
Office: 303-546-5649, Mobile: 303-995-3008  
Email: [abra.geissler@state.co.us](mailto:abra.geissler@state.co.us)

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

Ben Rowles, PE  
Construction Manager - Region 4 North Program  
10601 West 10th Street  
Greeley CO 80634  
Mobile: 970-405-3602  
Email: [benjamin.rowles@state.co.us](mailto:benjamin.rowles@state.co.us)

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## Project Background

The North I-25: SH 66 to SH 402 Project (the "Project") will be delivered through the Construction Manager/General Contractor (CMGC) process and the selected CMGC will support the preconstruction phase through analyzing the design and phasing options to optimize the scope within the budget and will have the opportunity to be the General Contractor during the construction phase. CDOT is soliciting Construction Management, Inspection, and Testing services (Consultant) to support CDOT staff during preconstruction and construction services.

The scope of this project has been prioritized due to current and potential funding sources. The project has been broken down into the following: SH 66 to SH 402 Project (the "Project").

The Project Approach limits extend south to SH 7 and north to SH 1. The Focus Area of the Project is anticipated to include improvements from SH 66 to SH 402. The Priority Section of the Project will concentrate on improvements from the Little Thompson Bridges to SH 402; as additional funds are obtained, the scope will be adjusted accordingly as well as the project schedule and Construction Management services.

As all funds have not yet been secured, the Project must be scalable and flexible to be able to be broken into discrete packages based on available funding at the time. An approximate \$225M-\$250M in Program funding is reasonably expected, with an overall potential Program cost of \$650M. Program costs include design, ROW, utilities, environmental, construction, and indirect costs.

The following corridor and Project Goals have been determined:

#### CORRIDOR GOALS

This Project is intended to produce the following improvements in conjunction with other projects along the I-25 Corridor:

1. Provide a safe facility for the public as well as a safe work zone for construction and the travelling public.
2. Provide full geometric standard with a rural median.
3. Maximize scope of work with the available fiscal resources.
4. Ensure the longevity of the project; compatibility with the ultimate configuration and emerging technologies.
5. Improve mobility and traffic operations; increase multimodal connections.

#### PROJECT GOALS

A successful Project will:

1. Commit to the CMGC process by engaging the right team members at the right time to proactively problem solve, reduce risk, streamline design development, and construct a successful Project while showing a return on CMGC investment.
2. Utilize innovation while optimizing design and construction to maximize scope, provide best value, and not exceeded the Fixed Limit of Construction cost.
3. Create a collaborative and transparent team culture that engages in open conversation regarding project delivery (i.e. risk, constructability, reviews, material procurement, cost model, ROW acquisition, schedule, and third-party issues) throughout preconstruction and construction.
4. Be adaptable to variable funding and scope adjustments with the ability to change direction and deliver quickly.
5. Strategically phase work by identifying work areas and construction packages to minimize disruption to the traveling public, while balancing cost and schedule.

The Project's major elements include, but are not limited to:

- Widen and/or reconstruct I-25 to add one express lane in each direction from SH 402 to SH 66 with a 4-foot painted buffer separating the express lane from the general-purpose travel lanes.
- Update to current standard the horizontal and vertical roadway geometry and widen the inside and outside shoulders to 12 feet.

- Install and integrate tolling and Intelligent Transportation Systems equipment.
- Fully reconstruct four interchanges (LCR 16, SH 60, SH 56, WCR 34).
- Improvements of southbound SH 56 onramp and southbound Little Thompson Bridge have been identified as a potential early construction package.
- Replace and widen 20 bridges.
- Build a new Park-n-Ride facility with adjacent parking lots with a minimum of 234 parking spaces. Bus area will include bus loops, center pedestrian loading area, and access to connect users from parking area to I-25 median loading area.
- Reconstruct two Great Western Railway crossings.
- Improve frontage and/or access roads.

Should the work described above for the Focus Area be completed work packages in the remainder of the Project Approach limits may be progressed.

The Project risks have been identified as:

- Funding uncertainty
- Construction cost fluctuation
- Project duration uncertainty
- Traffic phasing
- Environmental clearance
- Floodplain impacts
- ROW acquisition
- Utilities
- Coordination with other major projects and stakeholders
- Industry resource availability

## General Requirements

This Scope of Work (SOW) has been carefully reviewed by the Department and reflects a plan of approach based on the above-specified goals. A successful project will include the team's ability to implement project goals, evaluate work elements, understand key issues and risks, and formulate a work plan that may produce new methodologies and project approach. Therefore, the Final Scope of Work for the project may change and evolve based on project innovation and methodologies. The positions described herein are anticipated needs. The Department reserves the right to not utilize any of the positions listed if, at the time of construction, the Department has available resources to staff the project from within.

This work is located in Region 4 of the Colorado Department of Transportation. It is anticipated that there will be multiple construction packages as part of this project delivery.

Separate task orders will be issued for Pre-Construction Support Services and Construction Management Services.

## **Definitions**

**Project Director** - The CDOT Project Director (synonymous with 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.

**Construction Manager** - The CDOT Engineer responsible for managing all Construction activities for this project.

**Engineer** - The CDOT Project Engineer in charge of a construction package

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

**Consultant Professional Engineer** - The Consultant employee assigned by the Project Director to be the Chief Engineer's duly authorized representative. 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. The Consultant Project Engineer will report to the Construction Manager and will be a licensed Professional Engineer registered in the State of Colorado.

**Consultant Assistant Project Engineer** - A consultant employee who assists the Consultant Project Engineer or CDOT Project Engineer in the administration of the CDOT contract with the Contractor. The Consultant Assistant Project Engineer will report directly to the Project Engineer for the assigned construction project. The CAPE, if a Professional Engineer licensed in the State of Colorado, may be the same person as the Consultant Professional Engineer.

**Consultant Office Engineer** - A consultant employee who assists the Construction Manager during the Preconstruction phase to prepare for construction packages. Duties performed by the Consultant Office Engineer may include setting up and maintaining tablets, electronic documentation systems, Pay Estimate/Preconstruction invoice preparation in Site Manager, CPM schedule tracking and review with access to Primavera, Data Management through Project Wise or other program as determined by CDOT, plans and specification updates for As-Constructed plans, etc.

**Consultant Assistant Office Engineer** - A consultant employee who assists the Consultant or CDOT Project Engineer in the administration of the CDOT contract on a Construction package. Duties performed by the Consultant Office Engineer may include Pay Estimate preparation in Site Manager, CPM schedule tracking and review with access to Primavera, Data Management through Project Wise or other program as determined by CDOT, plans and specification updates for As-Constructed plans, etc. The Consultant Assistant Office Engineer shall report to the Consultant Office Engineer and may be assigned to various construction packages as needed. This person may be the same person as the Consultant Office Engineer when the workload does not warrant more than one person.

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, and at the direction of the Consultant or CDOT Project Director.

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

## Anticipated Staffing Needs

Figure 1 is the anticipated organizational chart showing CDOT’s management team assigned to the Project. The boxes shown in red are Tier I, Tier II, and Construction Management Team roles anticipated to be filled by the Consultant Project Team based on skills and experience described below.

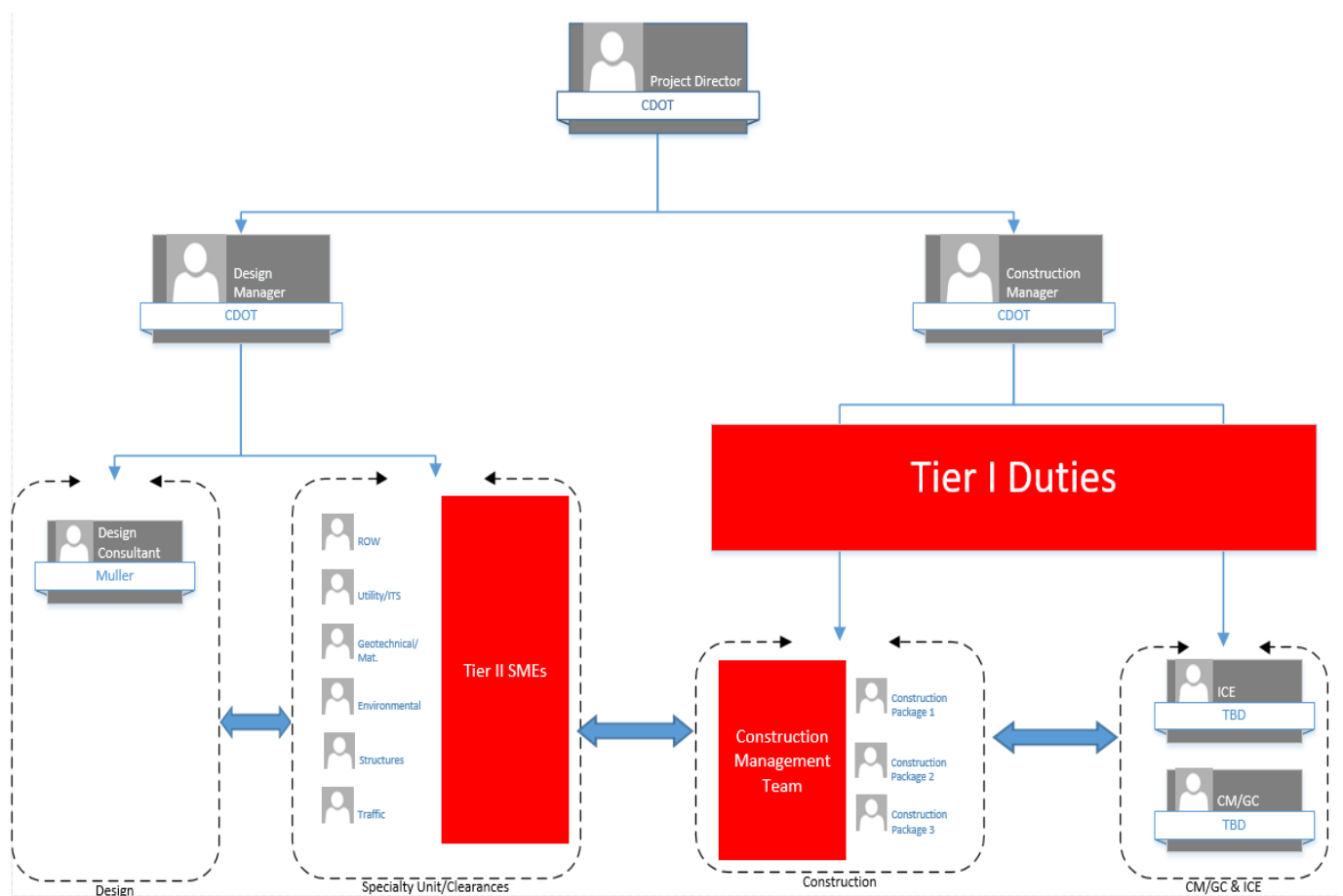


Figure 1. Organizational chart

Below is a list of key skills that are needed to support CDOT staff. These skills are detailed for both preconstruction and construction services. Key Personnel should be scalable and flexible based on various funding scenarios and maintain consistency between packages and through preconstruction and construction phases. Personnel possessing Tier 1 skills will be part of the core project team and needed 100% of the time for the duration of the Project. Multiple Tier II skills can be covered by one person or multiple people can be identified to cover Tier 1 and

Tier II skills as long as one person is identified as the person in charge for that skill. Personnel on the Construction Management Team shall not be included in any other Tier I and II responsibilities because they will be committed to building the package and no longer part of the core project-level team when the package goes to construction. The Construction Management Team should be involved in key pre-construction meetings related to their package to ensure consistency between pre-construction and construction phases.

Tier 1: CDOT anticipates that three (3) to five (5) staff members should comprise the following Tier I skills, experience, and knowledge:

a. Assistant Construction Manager Duties

- Serves as support to the Construction Manager.
- Well versed in Transportation Construction and understand Risk Management, CDOT Construction Specifications and Schedule.
- During preconstruction, add input when reviewing specifications and plans that will proactively address possible issues that may occur during construction. Skill set should be able to provide construction expertise, have input on production rates and methodology, and innovation.
- This person/people should have a minimum of 10 years of experience managing projects and a history of performing preconstruction input and analysis.
- Anticipated time commitment: 100% throughout the duration of the Project.

b. Construction Package Manager Duties

- Well organized and serve as the source for ensuring construction packages are severable, complete and in-line with the CMGC process.
- Ensure that there is a consistent approach to project management of all construction packages.
- This person/people should have a minimum of seven (7) years of construction experience and a history of performing preconstruction input and analysis.
- Anticipated time commitment: 100% throughout the duration of the Project.

c. Project Control Duties

- Responsible for all document control on the project.
- Have experience with:
  - Drafting and processing CDOT Change Orders
  - Monitoring and Tracking documents and submittals though an electronic database (see "Technology" Section below for more details).
  - Technology set-up, including mobile device

management and electronic application management.

- Management of Project documentation - includes preparing and managing construction documentation, construction pay estimates, force account billing, etc.
- It is anticipated that each construction package will include an Assistant Office Engineer who will report to this person/people. This person/people needs to have strong management, organization, and leadership skills.
- Have previous experience with document control.
- Anticipated time commitment: 100% throughout the duration of the Project.

Tier II: CDOT anticipates needing Subject Matter Experts (SME) for the following Tier II skills, experience, and knowledge:

- SME's will be needed for traffic (permanent features, traffic control plans, phasing, reviewing MHT's), environmental, EEO, materials (pavement, geotech etc.), ITS, structures (bridges, interchanges, accelerated bridge construction), utilities, construction scheduling, estimating, evaluating construction methodology, risk, and construction dispute/claim resolution.
- SME's may be needed, depending on CDOT internal workload, to assist or act as discipline leads during design and construction and will be responsible for coordinating project efforts with CDOT's regional specialty units.
- Individuals should have a minimum of five (5) years of experience in related fields above.
- Anticipated time commitment: Time commitment will vary in Pre-Construction and Construction phases, depending on the number, size, and complexity of construction packages.

### Construction Management Team

Each Construction Package will have a designated management team. The required skill set of the Project team will depend on the complexity, size and scope of the associated construction package. For the purpose of this proposal, provide specific details of how your proposed team members will contribute to the success of the following packages:

1. The first construction package will be a **structures package** at Little Thompson (\$10M Construction Cost) that involves constructing a new southbound bridge. CDOT will provide a Project Engineer and one Junior Inspector, with this information propose a project management team that would complete the construction staff for this package, making sure to identify at least the following:
  - a. Key Personnel

- i. Assistant Project Engineer - Should be capable of managing this package on their own
    - ii. Lead Inspector
  - b. Additional Personnel
    - i. Inspectors
    - ii. Testers
    - iii. Provide any other personnel you feel would benefit this team.
- 2. It is anticipated that there will be an **Interchange package (\$50M Construction Cost)** at SH 56. CDOT will provide a Project Engineer and one Junior Inspector, with this information propose a project management team that would complete the construction staff for this package, making sure to identify at least the following:
  - a. Key Personnel
    - i. Assistant Project Engineer - Should be capable of managing this package on their own
    - ii. Assistant Office Engineer
    - iii. Lead Inspector
  - b. Additional Personnel
    - i. Inspectors
    - ii. Testers
    - iii. Provide any other personnel you feel would benefit this team.
- 3. It is anticipated that there will be at least one **Roadway package (\$100M Construction Cost)**. CDOT will provide a Project Engineer and one Junior Inspector, with this information propose a project management team that would complete the construction staff for this package, making sure to identify at least the following:
  - a. Key Personnel
    - i. Assistant Project Engineer - Should be capable of managing this package on their own
    - ii. Assistant Office Engineer
    - iii. Lead Inspector
  - b. Additional Personnel
    - i. Inspectors
    - ii. Testers
    - iii. Provide any other personnel you feel would benefit this team.



## **Initial Project Scoping Workshop (Pre-Construction Phase)**

There will be a Project Scoping Workshop meeting with the selected CMGC, CM Services Consultant and the CDOT Project Management team in November 2018. The Workshop will provide an opportunity to discuss Project status, goals, objectives, funding, preliminary preconstruction schedule, partnering, roles and responsibilities, scope of work and schedule for the potential early construction package, and develop Communication Plan and Escalation ladder. 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 December 2025 or 90 days after Final Acceptance of the construction project, whichever is later. The anticipated time period for the Priority Section work described in this scope is approximately 2 years for design and 3 years for construction. Should additional funding be identified, these time periods will be extended. If additional funding is not secured by the completion of construction of the Priority Section and/or added design or construction packages, this contract will be terminated.

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. The number and types of personnel may be adjusted up or down to meet project workload. The Consultant shall meet with the CDOT Project Engineer if it is anticipated that Consultant services may not be required for a period exceeding two weeks. A procedure shall be agreed upon at the Initial Project meeting to resolve this issue.

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

Overtime hours are not allowable per State Fiscal Rules. Labor Hours will be billed to CDOT at the same rate as regular, non-overtime hours. Travel time will not be paid for travel to and from the project. Commuting mileage will not be paid for travel to and from the project. Mileage for travel while on the project will be paid for at the applicable State rate.

## **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.
- Periodic reports and billings required by CDOT Procedural Directive 400.2.

The consultant shall bear all costs related to delay of construction when the Consultant fails to provide qualified personnel when required. The Consultant's monthly payments may be

withheld for that portion of the work for which the consultant personnel fail to provide accurate and timely reporting.

## **Status of Contract**

The consultant shall monitor the fiscal status of the contract, and advise the CDOT Construction Manager of any potential need to supplement their contract. Failure to monitor contract status and provide timely notification may result in discontinuation of the Consultant's services. The invoice shall include monthly status reports per the consultant guidelines and shall include budget information. Pre-construction support services will be issued as a separate task order from the Construction services.

## **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 CDOT Construction Manager and Project Director 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 beacon), cell phone, cell phone booster/amplifier, computers, and miscellaneous equipment (calculator, office and lab supplies, safety equipment, etc.) required for performing the work including tablets able to perform work identified under "Technology" in this scope.

Each consultant staff shall be supplied with a state of the art computer w/modem (phone, ISDN or cable as required) and wireless aircard, a writeable CD drive, a color printer (that can be networked for all staff or black/white for other staff and print 11"x17"), a scanner (capable of scanning 11"x17" sheets), and loaded with the most current version of MS Office software (& Site Manager or QA/QC program if applicable).

The Consultant shall have digital GPS cameras available to staff at all times and document the project accordingly submitting CD's with relevant photos to the CDOT Project Director on a regular basis.

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

The following equipment shall be furnished by the consultant 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

## Technology

The Consultant shall provide tablets for each consulting staff member and CDOT staff member during the Project (pre-construction and construction), that meet or exceed the following Specifications: 16 GB of Memory, 8 MP photos, 3G/Wifi capable with service plan, 12.9 Inch (diagonal) screen, and Bluetooth keyboard and protective cover, internal GPS, and the ability to install programs and applications that will be used on the Project.

This project will utilize electronic based applications to perform construction oversight activities. The Consultant needs to provide recommendations for how they could provide and support these activities by addressing what applications they can provide for the following activities, specifically software and/or a Document Control Database during construction that includes logging, organizing, searching, tracking, and transmitting (if applicable):

- Daily Inspections
- Daily Diaries
- Form 266's
- Submittals
- RFI's
- Form 105's

## Engineer's Certification

The Construction Manager shall be the final authority regarding acceptance of work performed by the Consultant. The Construction Manager shall be the final authority regarding acceptance of work not conforming to the plans and specifications.

The Consultant Project Engineer shall certify in writing that all inspection and Construction Management conforms to the plans, specifications, and purpose of design.

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 Project Engineer shall meet with the Construction Manager 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.

## 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 CDOT Construction Manager. The contents of the diary shall be brief and include accurate statements of progress and conditions encountered during the prosecution of the work. Sketches shall also be included 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 Consultant or CDOT Construction Manager at the end of each workday and a copy shall be filed in the project records within one working day of its date.

## Work Description for Construction Phase

### Construction Administration Services

#### Task 1.0 Construction Management Support

Provide CDOT Project Engineer with the following construction management and inspection support.

- 1.1 Construction Coordination: Regularly scheduled weekly and as-needed meetings will be conducted with the Contractor and other involved parties to review, update, and coordinate construction activities. Weekly meetings will include a review of issues that are impacting progress, the cost to complete the work, and significant situations encountered related to the construction of the project. Meeting minutes will be prepared to document items discussed, decisions reached, direction given, and actions to be taken.
- 1.2 Review of Contractor's Method of Handling Traffic: Review and approve the Contractor's Method(s) of Handling Traffic (MHT) submittals. During construction, monitor the Contractor's MHT for implementation of traffic signing, barriers, and other traffic control measures in accordance with the approved plan.
- 1.3 Review of Construction for Conformance with Plans and Specifications: Monitor the Contractor's construction activities with respect to the contract documents and relevant schedule submittals governing the performance of the work. Resolve construction problems and/or recommend action for their resolution, as they relate to changed field conditions or conflicts in the contract documents. Coordinate with the designer during construction for implementation of revisions to the plans as may be required.

- 1.4 Review of Progress Schedules & Processing Shop/Working Drawings Submitted by the Contractor: Schedule submittals shall be thoroughly reviewed for completeness and accuracy. Appropriate action shall be taken when deficiencies are noted.

Submittals, design drawings, shop drawings, materials, and test procedures received from the Contractor will be forwarded to appropriate CDOT design personnel for review and approval. Approved drawings will be returned to the Contractor, as well as a copy retained for use during the remainder of the project.

- 1.5 Daily Quality Control Inspection & Quantity Control: Perform daily quality control inspections of construction activities to document activities performed and assessment of conformance with the contract documents. Inspection items may include but are not limited to excavation, backfill, and compaction operations; concrete placement; paving; drainage; utilities; structures; signing and striping; landscaping; and traffic control installations.

Quantities of work elements constructed will be measured and recorded to support the preparation and processing of progress pay estimates to the Contractor. Quantities will be documented in an interim quantity book for tracking of quantities constructed as compared to the original design quantities on the project. Quantities of work will be agreed upon with the Contractor and then reflected in monthly progress pay estimates prepared by the Consultant's staff. Assist CDOT in resolving disputes in quantities with the Contractor prior to the preparation of the pay estimate.

- 1.6 Materials Testing: Direct, coordinate, supervise, monitor, manage and administer all materials sampling and testing to ensure that the required sampling, materials testing and documentation is obtained in a timely manner and maintained in accordance with the Materials Manual and Contract requirements to verify the quality of the work performed by the construction contractor.

- 1.7 Project Documentation: Maintain project submittal register, track project correspondence, check daily diaries, prepare inspectors progress reports, and complete appropriate CDOT paperwork and forms.

- 1.8 Contaminated Material Notification: Monitor construction operations and notify the CDOT Project Engineer immediately when contaminated material is encountered or developed on the project. When such material is identified, procedures developed by the Contractor to mitigate the problem will be reviewed and a recommendation provided.

- 1.9 Check Surveying: Provide quality control surveying and quantity verification as needed. (If the Contract will include a Construction Surveying pay item, so the Contractor is responsible for performing all surveying required to properly layout and construct the work covered under the Contract.)

## Task 2.0 Post Construction Support

- 2.1 Completion, Inspection and Punch List: Conduct a final inspection with the Contractor, CDOT Project Director, CDOT Project Engineer, and CDOT Maintenance representative(s) upon substantial completion. The result of the inspection is the development of a punch list of remaining and/or outstanding work to be performed by the Contractor prior to final project acceptance.
- 2.2 As-Constructed Drawings: Complete as-constructed drawings of work completed by the Contractor including final pay quantities.
- 2.3 Completion Inspection and Close-Out: Following the completion of all punch list items by the Contractor, conduct a final inspection with representatives from the Contractor and CDOT, to confirm the completion of all work. The result of this inspection will constitute final project acceptance.
- 2.4 Preparation of Final Pay Estimate: Determine final quantities with appropriate supporting documentation (hard copy & digital as needed) and checks and prepare final pay estimate.

## Task 3.0 Project Management

- 3.1 Progress Reports: Prepare monthly progress reports for the CDOT Project Engineer documenting project progress, conformance with Contractor's schedule, status of change orders, and potential or ongoing problems.
- 3.2 Change Orders: Prepare project change orders and minor contract revisions. Obtain Project Director's pre-approval for all changes.
- 3.3 Project Coordination: Track, update and monitor project costs versus budget and notify CDOT Project Engineer of anticipated problems in a timely manner. Coordinate project personnel including inspectors and material testers.
- 3.4 Certified Payroll: Review certified payroll documentation provided by the Contractor and conduct random interviews of Contractor employees to determine if the Contractor is in conformance with CDOT EEO/Labor Compliance policies.

Deliverables generated during the project will include the following and will be submitted throughout the duration of the project, or at specific dates commensurate with the deliverable's intent:

- Monthly Progress Reports.
- Project correspondence generated and received during the project such as RFI logs, transmittal logs, submittal logs ect....
- Project Materials Testing Records including all required test reports and certifications.
- Monthly progress pay estimates.

- Construction management records generated including minutes of meetings, project diary, inspection reports, quantity records, contract modification orders, schedules, and other documentation as prepared during the course of construction in accordance with CDOT requirements.
- Complete “as-constructed” plans.

## Inspection Services

Inspection work shall conform to the CDOT Construction Manual, the Inspector Checklist and SiteManager requirements. Each of the Consultant's field inspectors shall maintain a daily diary for each day the Consultant performs work on the project. They shall use CDOT's Form 103 or automated 103a - Project Diary, or other form approved by the Project Director. SiteManager documentation procedures will apply. 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 become a part of the permanent project record.

Inspection 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. Periodic reports and billings required by CDOT Procedural Directive 400.2.
3. Monitoring and documenting contractor payroll compliance.
4. Participation in weekly progress meetings with contractor, subs, utilities and other interested parties.
5. Securing project documentation from the contractor.
6. Anticipating project problems and directing solutions to the Consultant Project Engineer.
7. Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the specifications. Inform and obtain concurrence as needed from the Consultant Project Engineer and keep relevant documentation for project records.
8. Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
9. Communicating with adjacent landowners as required toward resolving issues that arise due to construction.
10. Review and approve the Contractor's Method of Handling Traffic if delegated by the Consultant Project Engineer.
11. 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).
12. Initial, follow up, and final inspections of work in progress including interim and final measurements and coordination with Consultant Tester to ensure materials testing requirements are met.
13. Promptly notifying contractors and Consultant Project Engineer of non-compliance with the contract plans and specifications.

14. Performance of special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT inspection program.
15. Preparation of inspection documentation for development of progress payments for the contractor in accordance with prescribed procedures.
16. Submittal of standard documentation reports no later than the following working day.
17. Preparation of routine correspondence to the contractor, CDOT Staff, local agencies, etc.
18. Providing liaison and communication to contractor field crews.
19. Assist the Consultant Project Engineer with preparation of final "As Constructed" plans.
20. Assist in preparing punch lists of uncompleted work, non-conformance reports, and deficiency notices.
21. Assist in preparing responses to contractors' and suppliers' requests for information, submittals, change notices, claims, and correspondence.

## Materials Testing

The consultant shall sample, test, inspect and document all materials generated and produced on the project. This includes: materials delivered to the project that are listed in the Summary of Approximate Quantities in accordance with the SCHEDULE in the 2015 Field Materials Manual; materials that may be added to the project through contract modification; and altered material quantities whether increased or decreased.

The consultant's Project Engineer and field tester(s) shall review project quantities on a monthly basis to ensure that sufficient tests have been performed for the material placed to date. The consultant shall also provide any other services as requested by the CDOT Project Director or Consultant Project 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 consultant shall document and transport samples of any and all materials to the 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 column titled "Central Laboratory" in the SCHEDULE. The EXCEPTION shall be when the specific project task order is set-up to randomly sample and test highway striping paint. The consultant shall have the ability to sample and submit paint samples to a certified lab designated testing.

The consultant shall sample, test and inspect those specified materials utilized in construction. Other services may be requested in writing by the Construction Manager. Test results and inspection observations shall be documented by the consultant and approved by the Consultant Project Engineer in accordance with the references cited above in Project Standards. The materials tester will be responsible for materials sampling, testing, and documentation as directed by the Project Engineer to supplement the project testing staff during peak periods. The materials tester needs to be certified to perform the project sampling and testing in accordance with CDOT requirements. These requirements typically include the following certifications: CAPA levels A&B, ACI, and WAQTC, and nuclear gauge operation.



## 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 "N/A" 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 ten award sets of plans and specifications to the CDOT Project Director.		✓
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):		
i. Construction Staking	✓	✓
ii. Survey Monumentation	✓	✓
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	✓	✓

DESCRIPTION OF TASK	CONSULTANT	CDOT
7. 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.	✓	✓
8. 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	✓	✓
9. Construction inspection including calculations, measurements, and documentation of interim and final pay quantities as directed by the Project Engineer.	✓	✓
10. Contact Modification Order (CMO), Minor Contract Revisions (MCR), and Pay Estimates		
a. Prepare CMO's, MCR's and Pay estimates with proper documentation (including all Site Manager entry).	✓	✓
b. Review and Approve CMO's, MCR's, and Pay Estimates	✓	✓
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	✓	✓

DESCRIPTION OF TASK	CONSULTANT	CDOT
(EEO)/Affirmative Action (AA)/DBE/OJT requirements contained in the contract. (Standard Special Provisions, Project Special Provisions and FHWA Form 1273.)		
b. Complete and submit to the CDOT Project Director, 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:		
i. Fill out and distribute CDOT Form # 250 before the Contractor commences work.	✓	✓
ii. 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:		
i. Concrete	✓ submit to CDOT	✓

DESCRIPTION OF TASK	CONSULTANT	CDOT
ii. Hot Bituminous Pavement	✓ submit to CDOT	✓
d. Acceptance of manufactured products	✓	✓
e. Inspecting fabrication of structural steel and precast concrete structural components.	✓	✓