

Construction Guidance
Roles & Responsibilities for Consultant-administered Construction Engineering &
Inspection (CEI) Projects
11-8-19

Purpose

To establish Department guidance for ensuring compliance with Federal and State requirements related to project supervision on Consultant-administered construction engineering and inspection (*CEI*) projects.

Background

The Department has responsibility for the construction of all Federal aid projects and is not relieved of such responsibility by authorizing performance of CEI work by a Consultant. The Department will be responsible for ensuring that Consultant-administered CEI projects receive adequate supervision and inspection to ensure that projects are completed in conformance with approved plans and specifications. The Department may employ a consultant (*Consultant*) to provide CEI services, such as inspection, contract administration, survey work, etc. on a project. The Department will provide a full-time employed State engineer to be in responsible charge of the project.

Procedures

The Districts may rely on Consultant personnel to supplement their inspection work force. This reliance on Consultant personnel includes inspectors, as well as supervisors and managers. Consultant personnel are considered an extension of the Department. Consultant supervisors and managers will generally perform the same functions as an MDT District Construction Crew (*Project Crew*) including the Engineering Project Manager, Inspectors, CE Specialists, Technicians, Survey Aids, etc.; however, certain duties and functions must be performed by an engineer employed by the Department.

Department Responsibilities

MDT's Consultant Design Project Managers will assist with contracting questions, negotiations of the initial contract, amendments, invoicing and payments.

A full-time MDT employed engineer is to be in responsible charge of the District's Federal-aid projects at all times. The person in responsible charge (*PRC*) must be a PE and will be the *District Construction Engineer (DCE) or District Construction Operations Engineer (DCOE)*. The PRC is expected to perform the following duties and functions:

- Assure the project is properly administered to include those items dealing with cost, time, adherence to contract requirements, construction quality, and scope;
- Maintain familiarity with the day-to-day operations on the project, including project safety issues. This can be by reviewing diaries, phone calls, emails, etc.;
- Make or participate in decisions about changed conditions or scope changes that require change orders or supplemental agreements;
- Be aware of the qualifications, assignments, and on-the-job performance of the Consultant staff at all stages of the project;

- Review financial processes, transactions, and documentation to ensure that safeguards are in place to minimize fraud, waste, and abuse;
- Ensure the Consultant carries out project administration and contract oversight, including proper documentation

MDT will assign a full-time employee to act as the primary point of contact for the Consultant. This individual was referred to as the Resident Engineer in the Request for Proposal (RFP), but is hereafter referred to as the ***Project Monitor***. The Project Monitor’s duties and responsibilities are as follows:

- Be the primary point of contact between the Consultant and MDT;
- Assist the Consultant with navigating MDT’s procedures, processes and administrative computer programs;
- Provide support and/or assist the Consultant staff in finding support for use of MDT applications, such as Engineering Apps, TBC, QA Suite, AASHTOWare, P6, etc.;
- Ensure the project is appropriately staffed for that project;
- Monitor Consulting staffing and hours to assure they are accurately reflected in the invoices;
- Visit and review each project on a frequency that is commensurate with its magnitude and complexity (e.g. a weekly project site visit, weekly status report review)
- The Project Monitor does not need to be involved in the daily construction contract administration items; however, the Project Monitor must be notified of noteworthy problems, issues, disputes, potential claims, etc.

Consultant Responsibilities

The Consultant will generally perform the same functions as an MDT District Construction Crew (Project Crew). The assignment of responsibility of the CEI is defined in the project-specific scope of services.

Roles & Responsibilities by Tasks

1. Project administration, inspection and testing
 - a. The Consultant will conduct these project tasks as defined in the RFP and the Consultant Scope of Services.
2. Change Orders (CO)
 - a. The Consultant will submit all COs for review and processing as per the most current Change Order Process Update memo, acting as the role of the MDT EPM.
 - b. The Project Monitor will be included/added in COs for the review process but will not be included in the approval process. The Project Monitor will provide a documented response (email is acceptable) to the Consultant that they are in agreement with the CO being forwarded to the formal approval process.
 - c. The remainder of the CO approval process will remain unchanged.
3. Claims
 - a. The Consultant will assume the duties and responsibilities of an MDT EPM as described in MDT’s claims specification.
 - b. The Project Monitor will guide the Consultant through the claims process as needed.
 - c. The rest of the claims process will remain the same

4. Estimates
 - a. The Consultant will assume the duties and responsibilities of an MDT EPM as described in MDT's estimate and contractor payment processes/procedures.
 - b. The Project Monitor will guide the Consultant through the estimate process as needed.
 - c. The remainder of the estimate process will remain the same.
5. Finalization Process
 - a. The Consultant will assume the duties and responsibilities of an MDT EPM as described in MDT's finalization processes/procedures.
 - b. The Project Monitor will guide the Consultant through the finalization process.
 - c. The remainder of the finalization process will remain the same.
6. Disputes, Value Engineering (VE), and Errors & Omissions (E&O)
 - a. The Consultant will assume the duties and responsibilities of an MDT EPM as described in MDT's Disputes, VE, and E&O procedures.
 - b. The Consultant will inform the Project Monitor should these situations arise, and work with the District CES Reviewer and DCE or DOE as defined in these processes.
 - c. The Consultant will include the Project Monitor in all correspondence and meetings regarding Disputes, VEs, and E&Os.

Invoicing and Payment

The Consultant will submit monthly invoices to the Project Monitor, who will check them for accuracy, approve them, enter them into MDT's Consultant Information System (CIS), and then forward the invoice to the MDT Consultant Design Project Manager. The Consultant Design Project Manager will check, process and pay the invoice. The Consultant Design Project Manager will provide guidance to the Project Monitor as needed for invoice review and entry into CIS.

Frequently Asked Questions (FAQs)

Question 1

Can the Consultant utilize their own labs for testing?

This must be discussed and described in the project-specific Consultant scope of services. If the MDT and the Consultant agree to the Consultant using their own lab services, personnel and all testing equipment must be calibrated and certified in accordance with all applicable MDT standards and other applicable standards. These certifications and supporting documentation must be provided to MDT for review and acceptance prior to performing these services.

Question 2

How will the Consultant maintain project files? Will it be on MDT share drives or on the Consultant's share drive? MDT staff will need access to the project files. At a minimum the files should be transferred to MDT project share drive weekly, and ideally, they would be required to be stored on the MDT project share drive.

This must be discussed and described in the project-specific Consultant scope of services. Each Consultant and District have unique requirements, including timely accessibility to files. MDT and the Consultant must agree on the strategy to be used and it must be described in the project-specific Consultant scope of services.

Question 3

How will travel be considered?

Like any professional services contract, direct travel expenses in accordance with GSA rates and rules are compensable.

Question 4

Who are shop drawings transmitted to, and who reviews the shop drawings?

The Consultant will submit all shop drawings to the Project Monitor for MDT review.

Question 5

What qualifications/certifications are required for Consultant inspectors who are not performing material sampling and testing?

No specific certifications are required for individuals not performing sampling and testing. While there are no specific requirements for education or years of experience, all personnel must be sufficiently qualified to perform the tasks required. AASHTOWare and/or SiteManager user training is needed, and will be provided, before access is granted to these software suites.

Question 6

Please define “conditional final acceptance”.

Conditional Final Acceptance is defined in Section 105.17 of the MDT Standard and Supplemental Specifications. Additionally, please refer to the following supporting information on the finalization process:

Memo:

https://www.mdt.mt.gov/other/webdata/external/const/const_memo/2014/105_17_FINALIZATION_PROCESS.PDF

Process Outline:

https://www.mdt.mt.gov/other/webdata/external/const/manuals_guidelines/MDT-CON-105_17_OUTLINE.pdf

Flowchart:

https://www.mdt.mt.gov/other/webdata/external/const/manuals_guidelines/final_flowchart.pdf

Question 7

Will MDT continue to provide inspection at the precast yard like they traditionally do now? Or will the Consultant be responsible?

Standard Specification 551.03.8 Testing and Acceptance of Concrete states:

“Construct any products that are not cast-in-place, and not produced at a PCI, ACPA or NPCA certified precast plant, in accordance with Subsection 605.03. These products will be evaluated in accordance with Subsection 551.03.8(C) for the class of concrete specified.”

Project level inspection at precast yards has been mostly eliminated (pipes, inlets, boxes, and manholes are all required to come from certified plants) so this should be a non-issue; however if any precast beams are specified, the Department will inspect them as we would for any other project using District and HQ personnel as is current practice.

Question 8

Will MDT provide production testing of the asphalt? This is given that the Consultant will be witnessing the Contractor taking the samples.

Yes. District Laboratories will provide volumetric, density, and ride testing just like they would for any other MDT project. The MDT Headquarters and Billings labs will perform any Hamburg testing, and the Headquarters lab will perform liquid binder and emulsion testing as before.

Question 9

It is understood that the consultant will be taking the concrete cylinder samples, but need to verify if the Consultant or MDT will break the cylinders in the lab?

The Billings, Glendive, and Headquarters labs will break cylinders as is the current practice.

Question 10

When a project is complete, the current practice is that the District Land Surveyor sets the project monumentation for R/W. Will this continue to be the case or is the Consultant expected to perform this function?

This is a District-specific decision and should be addressed in the Consultant's scope of services for the project.

Question 11

Mix design: Transfer mix design, particularly on the bridge jobs, is likely. Does the Consultant work with MDT to verify that is acceptable? We assume that's the case but need to verify/confirm.

Yes. Mix design approvals or requests for transfer will be handled as is current practice with the contractor submitting said requests to the Consultant Project manager. The Consultant will then run them up the chain through the Project Monitor according to our current process.

Question 12

Source approval for borrow sources. Currently, MDT lab certifies borrow source. Will the Consultant need to wholly perform this function, or is this something the Consultant will work with MDT on to accept/approve?

MDT will continue to perform any soils class or R-value testing for Borrow Source approval as is the current practice, again, working in conjunction with the Consultant as if they were just another MDT crew.

Question 13

Does MDT expect projects to be Contractor Staking?

It is expected that the Consultant will perform the staking, if applicable, for all projects.

Question 14

We understand that MDT will obtain the asphalt mix samples in the field, bring to their field lab, and compact specimens, and perform all associated testing; bulk gravities, rice, asphalt content, gradation. Will MDT also perform the liquid asphalt sampling at the plant during production, and perform observation of the mix operations at the plant?

MDT has identified witnessing liquid asphalt binder sampling and all other liquid asphalt sampling as the responsibility of the "Field" in Section MT-601 of the Materials Manual. MT-601 defines three areas of responsibility: Field, District, and HQ. In the case

of a CEI contract, the consultant will be playing the role of “Field” for these purposes. As far as observing mix observations at the plant, that is usually the field’s responsibility as well, given there are no “samples” to witness, only observations of temperature, tonnage, yield, stations, etc. (the information captured on the ‘Daily Plant Mix Report’). Any sample containers for liquid asphalt should be supplied by the District Lab.

Question 15

If the consultant is responsible for liquid asphalt sampling at the plant, firms may not be able to perform the required asphalt binder performed and required by MDT (i.e. dynamic shear, bending beam rheometer). Will the consultant send liquid samples to MDT for testing?

Yes, the consultant, after witnessing any liquid asphalt samples, will turn said samples over to the District Lab who will transport them to Helena for testing. There shouldn’t be any need for shipping. The consultant should work with the District Materials Supervisor for sample containers and sample shipping boxes; however, the District Lab will take care of any shipping.

Question 16

We understand the contractor will be responsible for nuclear density testing of the asphalt mat during placement, who will be responsible for coring of the asphalt and associated bulk density testing following asphalt placement?

The Consultant will be responsible for identifying and marking out the location of core holes for density testing. The Contractor is responsible for doing the actual coring. The District Lab is responsible for bulk specific gravity testing and percent compaction calculations. This is discussed in Standard and Supplemental specification 401.03.21 COMPACTION, COMPACTION CONTROL TESTING, AND DENSITY ACCEPTANCE TESTING.

Question 17

In general, if MDT is performing the bulk or all of the asphalt testing on the overlay projects (primarily because consultants do not perform a good portion of the tests required by MDT), there does not appear to be a significant component of materials testing on these project for the consultant, please confirm.

Since standard overlay and mill/fill projects usually don’t require many other materials than the pavement and its component materials, this may be true. However, any aggregate testing for cover material or possible borrow for dig-outs or sub ex would be the responsibility of the consultant – or at the very least, an arrangement will need to be made in conjunction with the District Construction Engineer and the District Materials Supervisor.

Question 18

Will the District Labs provide proctors and gradation testing for the materials incorporated into

the project?

The District Labs should provide any proctors, as that is their function currently. As far as gradation testing, that is primarily the field's (CEI Consultant) responsibility but will have to be discussed locally. For example: If there is a situation with Special Borrow that requires a certain soil class, a gradation is required to determine soil class so that would be performed by the District Lab. The District Lab would also provide a proctor result for compaction testing. But since this is a "source" test, once the source is approved, no further gradation testing is required, only compaction testing. However, in the case of standard Crushed Aggregate Course where there are compaction, plasticity, liquidity, AND gradation/fracture requirements, the District provides the proctors used to determine compaction as well as the plastic and liquid limit testing on the stockpiles. BUT, the field (CEI) performs the acceptance gradation and fracture testing. If it's a large enough job, there should be an aggregate trailer on the project with the necessary equipment for the "field" to use. If it's a smaller job, the samples may be transported back to the District or Area lab for testing by field (CEI) personnel using equipment in the lab. And in still other cases, like a really small job, the District Lab may offer or agree to perform the testing themselves. Specifics per project will be discussed during scoping.