**Additional Clarifications on Construction Inspection Topics – April 2020**

1. ***What is the context for construction inspection from the perspective of FHWA?***

Construction oversight provides compliance with regulations, protection of the public interest and a reduction of risk to project owners and operators.

[23 USC 114](https://www.law.cornell.edu/uscode/text/23/114) and [23 USC 106](https://www.law.cornell.edu/uscode/text/23/106) broadly outline construction and project oversight for the Federal-aid Highway Program. Construction and Project Oversight. The Code of Federal Regulations provides further information on these requirements.

* [23 CFR 633](https://www.ecfr.gov/cgi-bin/text-idx?SID=f4a34a075d39b708aac5cf5b3d87531f&mc=true&node=pt23.1.633&rgn=div5)- Required Contract Provisions
* [23 CFR 635](https://www.ecfr.gov/cgi-bin/text-idx?SID=158061fa7fce37985d97dd860eaf79cd&mc=true&tpl=/ecfrbrowse/Title23/23cfr635_main_02.tpl)- Construction and Maintenance
* [23 CFR 637](https://www.ecfr.gov/cgi-bin/text-idx?SID=158061fa7fce37985d97dd860eaf79cd&mc=true&tpl=/ecfrbrowse/Title23/23cfr637_main_02.tpl)- Construction Inspection and Approval

When a Federal-aid project is to be constructed on a highway not under the state transportation agency’s (STA) jurisdiction, the agency may arrange for the local public agency (LPA) having jurisdiction to perform the work with its own forces, or by contract, provided that all of the following conditions are met:

* All Federal requirements including those in 23 CFR 635 Subpart A must be met on work performed under a contract awarded by an LPA;
* Force account work must be in full compliance with 23 CFR 635 Subpart B;
* The LPA must be adequately staffed and suitably equipped to undertake and satisfactorily complete the work; and
* The LPA must provide a full-time employee of the agency to be in responsible charge of the FA project.

23 CFR 1.11(b) allows an STA to “utilize, under its supervision, the services of well-qualified and suitably equipped engineering organizations of other governmental instrumentalities for making surveys, preparing plans, specifications and estimates, and for supervising the construction of any project.”

Project staffing levels should be based on the project’s complexity, work types, urgency as well as location. The documented level of project staffing is essential to the determination of adequate staffing by FHWA. Issues to be considered in making the decision include:

* Sampling and testing needs for the project;
* Documentation of field control (detailed diary; completeness of field, inspection and materials reports; correspondence related to field issues, work orders, etc.)
* The engineer’s candid opinions on staff, supervision, and job control; and
* The response time needed to resolve problems, plan changes or change orders.

Additional FHWA Resources:

* [Stewardship and Oversight of Federal-aid Projects Administered by LPAs](https://www.fhwa.dot.gov/legsregs/directives/orders/50202.cfm)
* [FHWA Contract Administration Core Curriculum Manual](https://www.fhwa.dot.gov/programadmin/contracts/cacc.pdf)
* [FHWA Local Public Agency Essentials](https://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?category=construc)
* [FHWA Buy America Guide](https://www.fhwa.dot.gov/construction/cqit/buyam.cfm)
1. ***What does it mean to maintain Complete Records?***

The construction inspection consultant is responsible for maintaining many records during construction for an eventual hand-off to the town upon completion of the project. Below is a list of the combined items which would be expected in a set of “Complete records”.

1. Minutes of the Pre-construction meeting
2. Daily Work reports
3. Digital photos of progress during construction
4. Material reports & Certifications
5. Project Correspondence
6. Notes from any progress meetings held during construction
7. Shop drawings submitted by the contractor
8. All quantity slips
9. Any contractor claims-related documents
10. Quantity Calculations
11. Contractor submitted EPSC plan (if applicable)
12. Any requests to modify anything in the contract plans or documents (to include Change Orders)
13. Written Orders
14. All Pay requests
15. Waste, Borrow and Staging approval
16. As-Built plans depicting any changes to contract documents
17. Contractors traffic control plans
18. Record of any conflicts/discrepancies during construction
19. Labor Compliance Employee Interview Forms and Local projects civil rights verification forms
20. MAB Prompt Pay Monthly reports
21. Davis-Bacon Certified Payrolls
22. Sub-contracts and sub-contractor approval forms
23. Notification of Roadway restrictions form (if required)
24. Certificate of substantial completion
25. Certification that the project was constructed as designed (subject to appropriate and necessary revisions during construction) and in conformance with project specifications and contract provisions.
26. ***Do MAB Project Supervisors Managers need to receive all daily work reports, tests, and certifications?***

MAB project supervisors must have access to the [daily work reports](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/DailyWorkReports.aspx) (DWRs) and this can take different formats. DWRs can be emailed or they can be made available through other means like FTP sites, other proprietary construction management software packages or other means. DWRs should be available at least weekly and should be kept up to date through the life of a project. All other project documentation must be maintained by the inspection firm and be available if MAB project supervisors have any questions, but do not need to be provided to supervisors.

Project Supervisors receive The [Construction Invoice Submittal Form](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/Invoices.aspx) with a certification signed by the RE and the MPM on pay requisitions containing materials in the project’s list of “Materials Acceptance Requirements”. No copies of individual certifications, testing or list of pre-approved products are required by MAB.

Material certifications and testing data should be verified during the Spot-Check. No copies are required by MAB.

1. ***What constitutes "continuous" presence by the inspector?***

Current Municipal Assistance Bureau RFP/RFQ documents specify “maintain a presence on the project during times when contractor and subcontractor activities are underway.” This means continuous when the construction is in-progress.

* 1. ***Can the Town negotiate a situation with less presence during certain phases of construction?***

No

1. ***What are key elements of the Contract Documents/requirements?***

The 2018 VT Standard Specifications for Construction is part of the contract and must be adhered to (unless a special provision incorporated into the bid documents overrides the 2018 VT Standard Specifications). This includes Section 100 – General Provisions, which contains many key items regarding oversight of the contractor’s work.

1. ***Are Inspectors reviewing for compliance with permits, including 1111 permits and is the 1111 permit being signed off by the District?***

Yes, the RE should ensure compliance of required permits, including the final sign-off of the Section 1111 permit by the District.

1. ***What are the requirements for off-site activity (waste, borrow and staging)?***

Any activity that takes place outside of the project limits as defined on the plans must have documentation in place that complies with section 105.25 of the VTrans Spec Book. Some sites are considered exempt, and if they do, there is a form to document this. The forms and process for off-site activity approval are [here](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/OffsiteActivity.aspx).

1. ***What are the expectations around schedules and providing updates?*** ***How does this relate to the pay item for CPM?***

The 2018 VT Standard Specifications for Construction – Section 108.03 includes the following requirement for the initial project schedule:

“Progress Schedule: The Progress Schedule shall be submitted a minimum of 7 Calendar Days prior to the preconstruction conference. The progress schedule shall show the proposed sequence of work and when the Contractor proposes to complete the various items of work within the time(s) established in the Contract. During the progress of the work, the Contractor shall confer with the Engineer concerning performance of the work in accordance with the Conforming schedule. The Conforming schedule shall be used as a basis for establishing major construction operations and for checking the progress of the work. A Notice to Proceed will not be issued until the Progress Schedule has been found to be in Conformance.”

Some projects include the pay item 633.10 – CPM Schedule. In that case, a CPM schedule as outlined in Section 633 shall be provided in lieu of the Progress Schedule described above.

1. ***Can the RE help perform layout for the contractor? Contractor responsible for layout, to what degree does the RE verify?***

As shown in the project special provisions included in MAB project bid documents, under section 105 – Control of Work, “The Contractor shall perform all staking requirements for the proposed work. The Contractor will be responsible for the accuracy and preservation of the staking.”

The RE is responsible to “*Provide certification to the Municipality and VTrans that this project was constructed as designed*.” The RE may double-check project steaking / layouts once completed by the contractor but cannot perform initial staking layouts.

1. ***Can the RE and Contractor make design changes without consulting the design engineer, town, or MAB representative?***

Absolutely not. Any changes in the design of the project must be reviewed and approved by the design engineer, the town, and the MAB representative. To quote the Construction Manual, “*For work that may result in a change to the contract, the resident Engineer must present the problem and recommendations, including all back-up data, to the regional Construction Engineer and Project Manager for concurrence prior to reaching a decision,*” “or directing the contractor.”

1. ***Clarify the signing order and general process of a typical change-order***.

A typical change order is initiated as follows:

The contractor proposes a construction change to the current bid package (including a potential schedule change) and a corresponding construction cost to the re.

Note: Added workdays can become complicated. There must be a clear work scope change or “act-of god” (see below - 2018 VT Standard Specifications for Construction, section 108.11- DETERMINATION OF EXTENSION OF CONTRACT TIME FOR COMPLETION).

“Determination of Contract Completion Date Extension: Whenever the work is delayed or suspended through no fault of the Contractor, a Contract Completion Date extension may be made by the Engineer in the following circumstances:

(1) Delay by the Agency in awarding the Contract and/or in issuance of the Authorization to Proceed with Submittals or the Notice to Proceed.

(2) Federal or State laws passed subsequent to the date of the Contract adversely affecting progress of the work.

(3) Acts of God, including but not limited to unusually severe storms of extended duration or impact which could not generally be anticipated by the Contractor, either during the bidding process or during construction, and catastrophic weather events such as floods, droughts, fires, hurricanes, tornadoes, earthquakes, or landslides.

(4) Suspension of work by order of the Engineer. In such cases, the time for completion will be extended an amount equal to the elapsed time between effective dates of order to suspend and order to resume.

(5) Differing Site Conditions pursuant to Subsection 104.08.

(6) Significant Changes in the Character of the Work pursuant to Subsection 109.04.

(7) Extra Work ordered by the Engineer pursuant to Subsection 104.03.

(8) Delays in the issuance of permits, approvals, or other government regulatory action that are not attributable to the Contractor.

(9) Court orders, including but not limited to temporary restraining orders, preliminary and permanent injunctions, or judgments that are not attributable to the Contractor.

(10) Industry-wide labor unrest.

(11) The days from April 15th to December 1st, inclusive, on which the weather or condition of the ground caused suspension of the work.

(12) Industry-wide material or supply shortages not reasonably anticipated by the Contractor at the time the Contract was entered. Delays caused by a shortage of materials, but only when the Contractor furnishes to the Engineer documentary proof that a diligent effort has been made to obtain the materials from all known sources and the inability to obtain the materials when originally planned did in fact cause a delay in final completion of the entire work, and the delay could not be avoided by revising the sequence of the Contractor's operations. The Contractor shall notify the Engineer in writing of the causes of delay caused by material shortages no later than 15 Calendar Days from the beginning of any such delay and not thereafter.

(13) Any other conditions which in the opinion of the Chief Engineer warrants consideration for an extension of time.”

The RE then develops an independent cost analysis and a technical justification of the proposed change to include in the completed C.O. submittal.

The RE utilizes a standard Change Order form cover sheet available on the MAB SharePoint site (or similar form) for issuing and signing the compiled Change Order documents. The cover sheet includes basic information as follows:

* Issue date
* Original Contract amount
* Proposed contract amount change
* Change Justification
* Potential schedule changes
* Signatures

The RE typically signs the C.O. first, followed by the Municipality, then the Contractor, and lastly, the VTrans Project Manager.

1. ***When processing Change orders, should time always be added for additional work?*** No, additional time is not always added to a project schedule due to change orders. With additional work, there is the possibility of added time if it is appropriately justified and agreed upon by all parties.
2. ***Should contract time ever be reduced?***

This is rare, but if a C.O. results in a project scope change with less work effort, less time is a possibility if all parties agree upon the new timeline.

1. ***When should written orders be used?***

The RE shall establish a [Written Order](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/ChangeOrdersAndWrittenOrders.aspx) (as defined in the 2018 VT Specifications for Construction - Section 101.02) when it is necessary to direct the Contractor to do work which is covered by the plans and specifications, but which the contractor either refuses to do, or has failed to do properly. Any deviation of the contract shall be documented by a Written Order. Instructions given to the contractor which may cause a later disagreement, or which may affect a quantity or payment, must be in writing, by use of a Written Order.

When the contractor is performing work outside of the required tolerance or specification, the RE shall document the incident with a Written Order, inform the contractor of the discrepancy, and ensure the work is corrected and performed correctly moving forward.

The RE shall craft a Written Order to document any order, quantity, or subject matter which should be made a matter of record for the future protection of the municipality or the contractor.

The RE shall craft a Written Order whenever payment is withheld, providing clear justification of the withholding.

1. ***Does an email suffice as a written order?***

No. A standard Written order form is typically used and is distributed by hardcopy and electronic PDF format.

1. ***Do the contractor and/or Town need to sign a written order to acknowledge receipt?*** Only the RE needs to sign the written order. The RE should distribute the Written Order via. hardcopy and electronic PDF to ensure receipt of the document by the contractor.
2. ***Providing proper documentation for extensions of time***

Contractor, through the CI, can request an extension of time during the course of the project. Specification 108.11 covers extensions of time. It should be noted that change orders can also capture an extension of time.

CI should issue a written order. If the contractor is scheduled to be working, then CI should show up and document site conditions in a DWR. If a contractor does not show up on a weather day, then this cannot be counted as a weather day and should be captured in the DWR as well. This will provide a record of what days were and weren’t worked and can tie into the documentation for liquidated damages (LDs).

Good daily work reports are crucial. If they are consistent and accurate it provides the basis of determining extensions of time, calculating LDs, etc.

1. ***Winter Shut-Downs***

When a project is closed down for the winter season. Spec. 104.04A covers maintenance of projects during winter shut down. Winter per the specs is Dec. 2nd to April 14th. Exceptions are rare as it is difficult to meet most material specifications after Dec. 2nd.

1. ***How do you deal with a situation where a contractor simply does not show up on the job site?***

If this is unexpected based on the latest project schedule, the RE shall document this on a DWR for each day that the contractor unexpectedly does not show up. Note the weather and any other project site conditions.

1. ***Review labor compliance requirements and expectations***

 Most of the labor compliance requirements are detailed in FHWA Form 1273 which is physically incorporated into the construction contract and any sub-contracts. These requirements have to do with equal employment opportunity, non-discrimination and wage rates.

1. ***Do Project Labor Compliance Verification form and Labor Compliance Employee Interview forms (civil rights) have to be filled out on all MAB projects?***

Yes. The [interview forms](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/CivilRights.aspx) are a means to document that the CI has conducted several “spot check” interviews of contractor and sub-contractor employees. Interviews are intended as a check on how well the contractor is disseminating information to employees on EEO and other non-discrimination requirements. Not required to interview every employee. Should do a sampling of different work classes including at least one equipment operator and try to include at least one minority or woman employee. Interview at least one sub-contractor employee. ADD link to appropriate web site for more detail. The Labor Compliance Verification Form is intended to summarize all of the labor compliance issues that the CI is responsible for verifying. In the absence of that form, what documentation could the CI provide to anyone wanting to verify that labor compliance requirements are being met?

1. ***Does the RE need to ensure the contractor is submitting the MAB Prompt Pay Monthly Report Form?***

Yes. The form requires that the contractor provide a copy of this form to the CI. This form ensures that the contractor is paying subs in compliance with the prompt pay requirement. More on the prompt pay law may be found [here](https://vtrans.vermont.gov/civil-rights/doing-business/contractors-center/prompt-pay).

1. ***Does the MAB representative need to receive this form?***

No, the form should be retained in the project files together with all construction documentation. All of this information should be made available/provided to the municipality at conclusion of construction. The municipality has a records retention requirement as outlined in their grant agreement.

1. ***What is the required pay estimate frequency? maximum 2 weeks, minimum monthly?***

There is no frequency of payment established for MAB projects. However, one pay requisition at the end of the project is not a good practice, and bi-weekly or monthly, depending on the job, are reasonable.

1. ***Does the MPM need to sign the MAB Construction Invoice Submittal Form?***

Project Supervisors don’t sign the [form](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/Invoices.aspx). The form is signed by the RE and this certifies that the work has been inspected, that the work was performed according to plans, and that materials acceptance requirements are satisfied.

1. ***Are there any circumstances under which town can withhold payment to contractors?***

Towns cannot withhold payment to contractors when work is completed and approved by Resident Engineer. Prompt Pay Statute requires payment from prime contractors to subcontractors within 7 days of prime contractor receiving payment.

1. ***Clarify the process and documentation for substantial completion***

When the contractor and RE feel that the project is substantially complete, a walk through of the entire project is conducted. If the project is on a state highway, a representative from the District should attend the walk-through.

When, in the opinion of the RE, all Contract Items, with the exception of punch list items, have been completed, a Written Order is provided with a [substantial completion certificate](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/FinalInspectionAndProjectAcceptance.aspx) and a punch list of remaining work.

The punch list is a list of items which are **minor** adjustments, repairs, or corrections to work that shall be completed prior to the acceptance of the Project.

1. ***Clarify requirements around establishing vegetation and plantings completion***

Guidelines regarding the planting, Establishment and Maintenance, and payment for new grass, trees, shrubs and other landscaping features of projects can be found in Section 656 of VTrans Specs. All planting must be done in the defined planting season of April 1 – October 31 and no planting should be done in frozen or snow- covered ground. Per spec 656.09, the Contractor must actively maintain the plants after installation, and four to six months after installation the CI and Contractor should jointly inspect plantings to ensure they are not dead, dying or damaged. If replacements are required they shall be installed, at the Contractor’s expense, within 30 days of the inspection, at which point the cycle of monitoring and inspection begins again until a 90% survival rate has been achieved. Payment for plantings shall be 80% at initial installation with the remaining 20% paid once the Establishment and Maintenance standards have been met. Attaining the necessary Establishment and Maintenance of the plantings should not hold up substantial completion and can be included as a punch list item.

1. ***Clarify the process for liquidated damages***

For each working day on which work remains incomplete after the Completion Date, a pre-set amount shall be deducted from the money owed the Contractor. The expectation from FHWA is that when Liquidated Damages (LDs) are included in the contract, and they are warranted by the circumstances of the project, the municipality will enforce them. More specific details about LDs and how they are calculated can be found in Spec 108.12. If the [MAB Payment Summary Form](https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/Invoices.aspx) has been used, it can provide important information about any liquidated damages payments that have been applied to the project.