

# MAB Construction Inspection Training



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## Agenda

- Welcome and Introductions
- Role of the CI
- MAB Sharepoint site tour
- General Expectations
- Contract Changes
- Labor Compliance
- Contractor Payment
- Project Completion
- Wrap Up/Adjourn

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## Introductions

- Name
- Title/Employer
- Your Burning construction inspection question



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## Why construction oversight?

- Meet Federal requirements
- Protect public interest
- Supervision
- Quality assurance

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# FHWA Hot Topics

- SAFETY
- Documentation
- Change order independent cost estimates
- Claims
- Communication & Partnership

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# MAB Sharepoint Site

<https://outside.vermont.gov/agency/VTRANS/external/MAB-LP/SitePages/MAB-LP.aspx>

The screenshot shows the MAB SharePoint site interface. At the top, there is a navigation bar with the Vermont logo and a search bar. Below this, the site title 'Municipal Assistance Bureau - Local Projects' is displayed. The main content area is divided into several sections:

- Project Definition and Design Phase:** This section includes links to documents such as 'Grading and Erosion Control', 'Municipal Project Manager Procurement', and 'Design and Scoping'.
- Federal Aid Projects:** This section is further divided into:
  - Right of Way Phase:** Includes links for 'ROW Process', 'ROW Plans', 'Abandonment', and 'Certification'.
  - Construction Phase:** Includes links for 'Construction Inspector Procurement', 'Contractor Procurement', 'Pre-Construction Meeting', and 'Materials, Testing and Certification'.

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# General Expectations

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## Complete Records

- The following slide provides a list of items which should be included in a complete set of records
- Upon project completion, municipality must retain all records for 3 years from final voucher



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Minutes of the Pre-construction meeting	Any contractor claims-related documents	As-built plans, traffic control plans
Sub-contracts & sub-contractor approval forms	Contractor submitted EPSC plan (if applicable)	Any conflicts and/or discrepancies
Digital Photos of Progress	Change Orders	Project Correspondence
Material Reports & Certifications	Waste Borrow & Staging approval	Labor Compliance forms
Davis-Bacon Certified Payrolls	Notification of Roadway Restrictions form	MAB Prompt Pay Monthly Report forms
Shop Drawings	Notes from Progress Meetings	Pay Requests
Quantity Slips	Written Orders	Daily Work Reports
Quantity Calculations	Certificate of Substantial Completion	Certification project was constructed as designed

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## Daily Work Reports (DWRs)

A **Daily Work Report** shall be completed for each day the of the project schedule. The DWR includes information from the Construction Inspector's project field book(s) as well as any other pertinent daily information.

The main purpose of these reports is to electronically keep track of the daily pay item quantities, and to serve as the project daily diary.



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## Daily Work Reports (DWRs) Include:

- Date
- Weather Conditions
- Daily Assignments
- Personnel
- Equipment
- Traffic Control
- Safety measures
- Accidents
- Media/Press
- Public Relations
- Subcontractors
- Visitors
- Any pertinent activity that impacts the project
- Specification Issues
- Paving Issues
- Structural Issues
- Erosion control
- Signature
- Pay item quantities for the day Including:
  - Field measurements and stationing
  - Sketches
  - Quantity Calculations
  - Comments and Notes

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## Inspector Presence On Site

- Continuous presence
- When contractor activities underway, inspector must be present
- Daily reports to verify quantities and progress



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## Contract Documents

The VT Standard Specifications for Construction is part of the contract and must be adhered to

- 105.01 – Authority of the Engineer
- 105.10 – Authority & Duties of the RE
- 105.11 – Authority & Duties of Inspectors
- 105.12 – Inspection of Work



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## Layout Responsibility

- **Contractor** responsible for layout
- RE may double-check project staking / layouts but cannot perform initial staking layouts.



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Are Inspectors reviewing for compliance with permits, including Section 1111 permits sign-off?

- Yes, It is expected that the RE is aware of all permitting issues and should ensure compliance of all requirements, including the final sign-off of the Section 1111 permit by the corresponding VTrans District.



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## Off – Site Activity

- Plan Ahead (15 working days to review)
- Applies to staging, borrow or waste anywhere outside the project limits as defined in the plans and contract
- Sites **may be** exempt (no further review)
- Staging of erodible material **must be** reviewed
- Review and approval **prior** to use

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## Schedules and Updates

Critical Path Method – Spec 633

Vs

Progress Schedule – Spec 108.03

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## Schedules

- All projects require that the contractor submit a schedule
- Without a specific pay item, Sect.108.03 calls for a Progress Schedule
- If a project has pay item 633.10 - CPM Schedule, contractor must provide a schedule that conforms with Sect. 633

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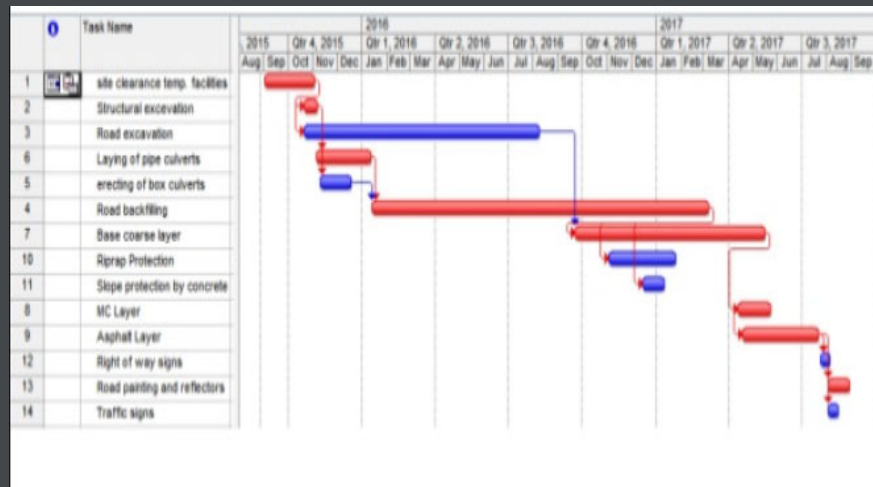


## CPM Baseline Schedule

- Defines the sequence of activities that will be carried out in order to meet project completion dates
- Must be submitted to CI a minimum of 7 days before pre-construction conference
- Schedule must be accepted before a Notice to Proceed can be issued
- Updates to be submitted every 2 weeks, or as directed by CI
- See specs 633.03 – 633.10 for more information

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## CPM Example



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# Contract Changes

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## Design Changes

- Any changes in design must be reviewed and approved by the design engineer, the town, and the MAB representative
- Document with a written order



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## Change Order

- A Change order is a written agreement made and entered into by and between the Contractor and the Municipality covering work not otherwise provided for in the Contract Documents.
- Change Orders constitute amendments to the original Contract once properly signed and executed.
- They are typically originated by the Contractor and are utilized when a necessary modification to the Contract Documents is recognized and an amendment is desired

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Clarify change order format and documentation required, including updated schedule

*Change Orders include the following primary elements:*

1. The contractors change request and corresponding proposed cost.
2. A cover sheet which includes
  - The change description
  - Signature lines for the Contractor, RE, Town, and VTrans P.M.
  - All cost and schedule changes
3. An independent analysis of the C.O. request by the RE (including an evaluation of the cost, schedule and technical aspects). A cost analysis is not required if no new pay items are being added to the project.

**Note: Any technical changes also require the review and acceptance of the project design engineer.**



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(Continued ...)

### Clarify the signing order and general process of a typical change-order

- The C.O. is reviewed and vetted by all parties upon its origination.
- When the C.O. is ready for signatures, the Contractor typically signs the C.O. first, followed by the Municipality, then the RE, and **lastly**, the VTrans Project Manager.



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## When should Written Orders be used?

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.



(Next...)

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(Continued...)

## Written Order

The RE shall establish a Written Order 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.



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(Continued...)

## Written Order

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



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(Continued...)

## Does an e-mail suffice as a written order?



- An email on its own does not suffice
- A standard Written Order form is used and is distributed by the RE via. hardcopy and electronic PDF format to the contractor

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## 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 via. e-mail (PDF format) to ensure receipt of the document by the contractor.



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## Documentation for Time Extension

- Issue a written order if contractor does not show up on site and project is behind schedule
- CI should show up and document site conditions in a DWR along with any weather days. Weather days may impact liquidated damages (LDs)
- Good daily work reports are crucial
- Specification 108.11 covers extensions of time

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## Should contract time ever be reduced?

- Technically, a Change Order (C.O.) is a *Contract Document* change, and if all parties agree to a justifiable change, then the change is binding.
- A reduced schedule rare, but if a C.O. results in a project scope change with less work effort, a reduced schedule is a possibility if all parties agree to the new timeline and all parties sign the C.O.



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# Labor Compliance

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## Labor Compliance Requirements

- Detailed in FHWA Form 1273 – part of contract and sub-contracts
- Equal employment opportunity, Non-discrimination, Wage Rates
- Goal: Achieve and maintain a diverse workforce and a working environment free of harassment, intimidation and coercion



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## Labor Compliance Forms

- Certified payroll
- Prompt Pay Monthly report
- Employee Interview Form
- Local Projects Civil Rights Verification Form



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## Contractor's Operating Policy

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

\*From Form 1273


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# Contractor Payment

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## Payments to Contractors

- Required:
  - Formal Subcontract Approval by Municipality Prior to Payment to Prime Contractor for Subcontractor
  - Construction Invoice Submittal Verified/Approved by Resident Engineer
- Vermont Statute Construction Contracts: 9 V.S.A. §4003



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# Project Completion

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## Substantial Completion

- Defined in VTrans spec – defined in section 101.02
- Stops the clock relative to liquidated damages
- Only “punch list” type items and demobilization remain - minor adjustments, repairs, or corrections
- Use form provided on Sharepoint, with punch list and written order

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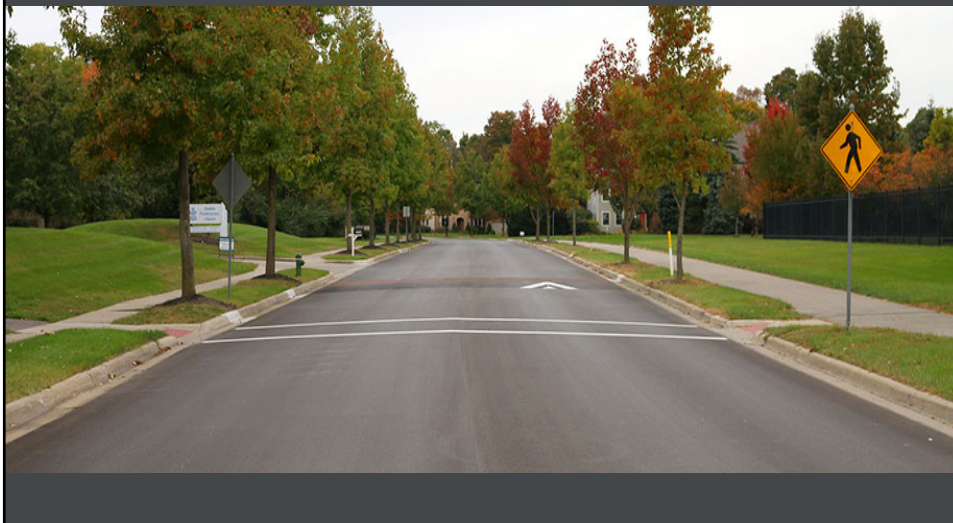
# Balancing Change Order

- Final Change Order to reflect all final quantities

Project Value Range	Justification Guidelines
a. \$0 - \$100,000	(1) All overruns or underruns of \$1,000 or more. (2) For Items having an individual Original Total Value of \$4,000 and under, overruns or underruns of 25% or more shall be explained with a minimum of \$250.
b. \$100,000 - \$500,000	(1) All overruns or underruns of \$2,500 or more. (2) For Items having an individual Original Total Value of \$10,000 and under, overruns or underruns of 25% or more shall be explained with a minimum of \$500.
c. \$500,000 - \$1,000,000	(1) All overruns or underruns of \$4,000 or more. (2) For Items having an individual Original Total Value of \$8,000 and under, overruns or underruns of 50% or more shall be explained with a minimum of \$750.
d. Over \$1,000,000	(1) All overruns or underruns of \$6,000 or more. (2) For Items having an individual Original Total Value of \$12,000 and under, overruns or underruns of 50% or more shall be explained with a minimum of \$1,000.

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# Establishing Vegetation and Plantings



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## VTrans Spec Section 656

- Covers the planting, establishment, maintenance and payment for new grass, trees, shrubs and other landscaping features
- Defines planting season as April 1 – October 31, no planting in frozen or snow-covered ground
- CI responsible for making an initial inspection of all plants at time of delivery. See 656.04 for a list of defects that warrant rejection

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## Establishment and Maintenance

- Contractor must actively maintain plantings in accordance with spec 656.09
- 4-6 months after installation, Contractor and CI 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 90% survival rate has been achieved
- Establishment and maintenance does not need to hold up substantial completion and can be a punch list item

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# Payment for Plantings

80% at installation, 20% once Establishment and Maintenance is achieved



Pay  
80%



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Pay remaining 20%



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## Liquidated Damages

- Process for Liquidated Damages (LDs) is described in Spec. 108.12
- 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
- No LDs will be charged after Substantial Completion is attained
- The expectation is that when LDs are warranted, the Municipalities will enforce them