





Change Order Definition

When work is needed that is different or in addition to the work provided for in the construction contract documents

Written agreement between the contractor and the Project Sponsor modifying the existing contract

Needs prior approval from NHDOT

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7 Types of Change Orders

- Normal / Non Critical
- Critical path
- Emergency condition
- Time extension
- Non-participating
- Balance and excess
- > Final balancing



The process is generally the same for each above, the time for "Emergency Condition" and "Critical Path" CO's is less

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7 Change Orders steps

- 1) Identify need
- 2) Engineer's IGE
- 3) Contractor's cost estimate
- 4) Engineer's Justification
- 5) Negotiate & submit
- 6) Wait for NHDOT approval
- 7) Execute Change Order

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CO Step #1 - Identify Need

Contractor, Contract Administrator (CA), Engineer of Record and Sponsor identifies need **in writing**



Contractor needs more drainage pipe:

- ➤ Needs additional 15 feet of 15" pipe (existing contract item)
- ➤ Needs 24 feet of 24" pipe (Not in contract)

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CO Step #2 - Engineer's IGE

Justify draft change order in writing

- Description of work
- > Schedule impact
- ➤ Cost implication (IGE)
- ➤ All backup to justify need



If justified, then request price from contractor (recommended to seek NHDOT's opinion at this step)

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CO Step #3 - Contractor's Cost Estimate



Price items per unit price specifications

Example contractor change order price installed per foot

- ▶\$10 per foot for 15" pipe
- ▶\$20 per foot for the 24" pipe

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CO Step #4 - Engineer's Justification

Are unit prices reasonable?

- Existing Contract Item (15" pipe)
 Verify change order unit price (\$10/FT) is close to existing contract unit price.
 If CO quantity is significantly more than base bid quantity? Then change order unit price should come down.
- New Contract Item (24" pipe) Review and document weighted average unit prices and/or other similar projects for comparison to contractors change order price.

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CO Step #5 - Negotiate & Similar to scope & fee Submit

- Discuss any differences in scope or understanding of the proposed CO
- Negotiate among Contractor, Sponsor, Contract Administrator and Engineer of Record to determine cost







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CO Step #6 - Wait for Approval

NHDOT process

- Review draft CO
- Discuss with FHWA
- Request additional funds from NHDOT Program Manager and FHWA



NHDOT process can take time and no change order work can begin until NHDOT approval in writing

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CO Step #7 - Execute Change Order

All parties sign the Change Order per the contract documents



Copy the NHDOT on the signed executed document

➤ We prefer a PDF

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Emergency and Critical Path CO's

Same Process but Expedited

- Emergency: Imminent danger or unsafe condition
- <u>Critical Path</u>: Item will delay the project based on CPM project schedule
- Still need NHDOT prior approval

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Time Extension and Non-Participating CO's

- Contract Time Extensions: Need to be documented and approved by NHDOT Liquidated damages may come into play for additional CE time
- Non-Par Changes: Need to be tracked by NHDOT and included in the overall project costs

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Balance & Excess CO's

Change Orders Along the Way

- NHDOT requires comparing the contract item totals with the installed quantities at the 25%, 50%, 75% and 90% stages of a project
- This helps to identify the need for additional funds early and gives time to run a balance and excess change order if necessary

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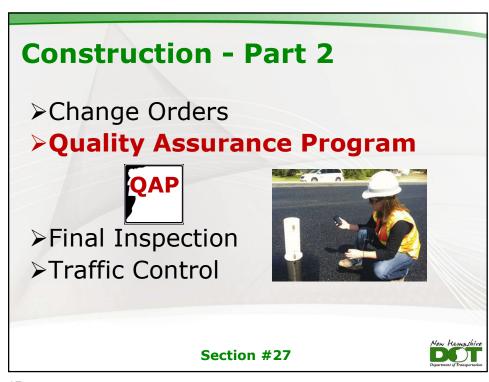
Final Balancing CO

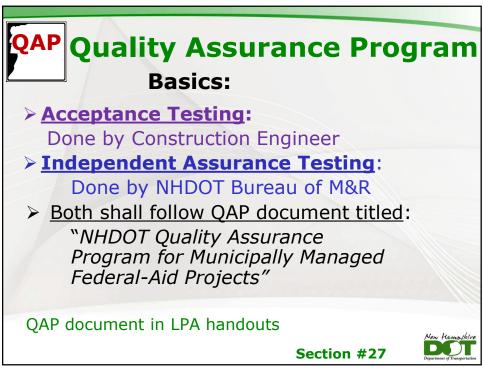
Final Change Order at project completion

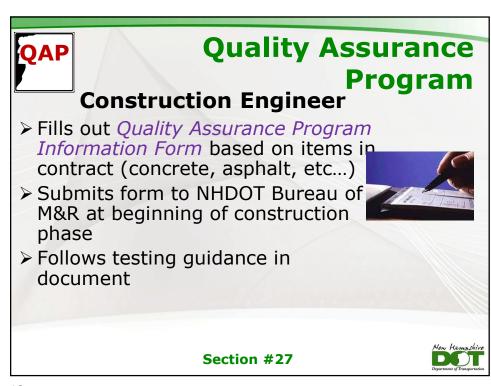
- Documents final pay quantities for every item constructed
- ➤ It is too late to ask for additional funds at this point in time
- ➤ Change Orders need to be approved prior to that work beginning

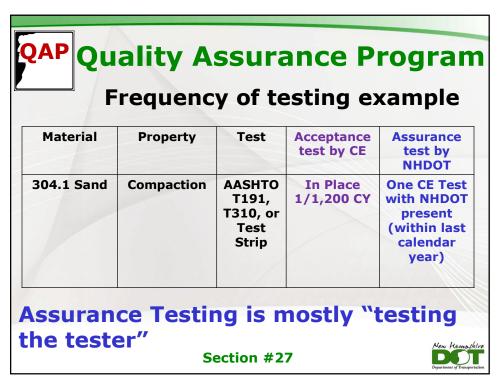
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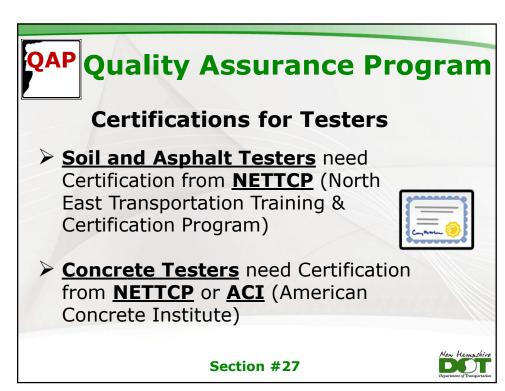


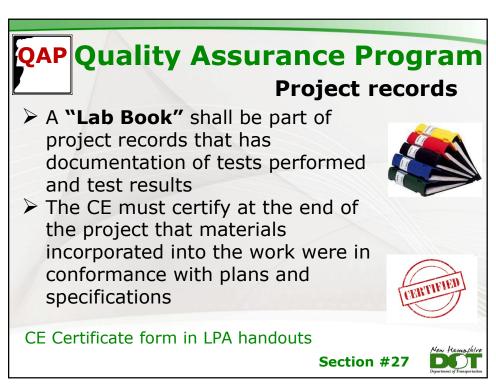














Some items are prequalified for quality:

Example:

Item #559.41 - Asphaltic Plug For Crack Control 559.2.1 - "The asphaltic expansion joint shall be one of the products listed on the Qualified Products List"

www.dot.nh.gov/about-nh-dot/divisions-bureaus-districts/materials-research/qualified-product-information

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Construction - Part 2

- >Change Orders
- ➤ Quality Assurance Program
- >Final Inspection

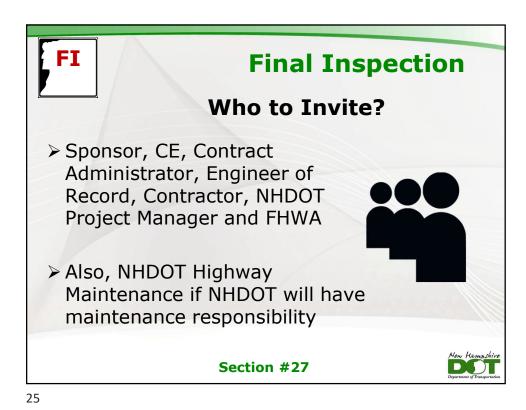


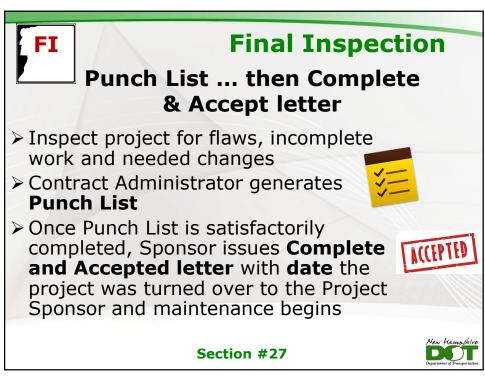


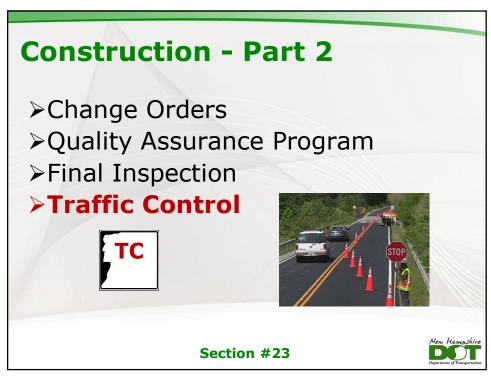
>Traffic Control

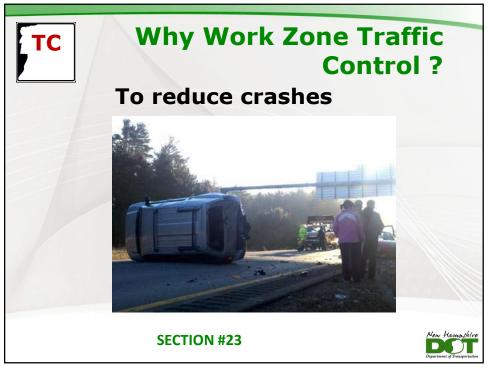
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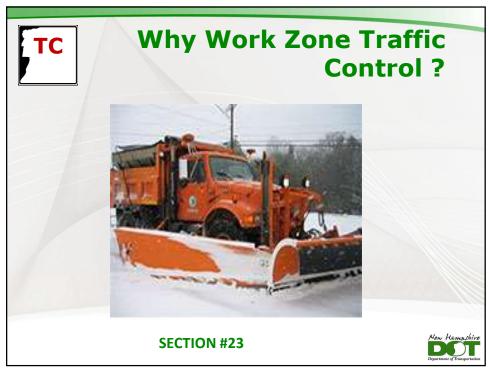


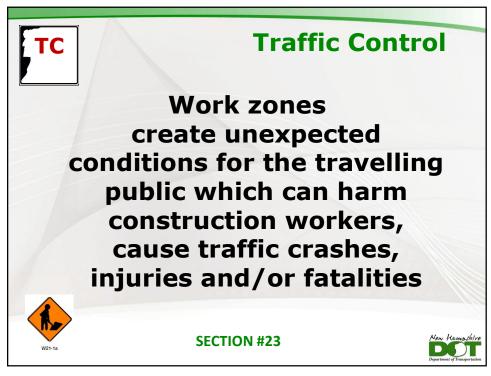














Goals for Work Zone Traffic Control

- > Protect construction workers
- > Protect the travelling public



- Provide acceptable levels of traffic capacity for the travelling public
- ➤ Maintain access to abutters
- Provide flexibility based on work zone operations
- ➤ Follow Manual of Uniform Traffic Control Devices (MUTCD)

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Work Zone Considerations 2 Questions to ask:

- ➤What are you doing?
 "the construction operation"
- Where are you doing it? "the transportation setting"



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Work Zone Considerations

Operation Considerations:

- ➤ Width and length of work zone
- > Duration of work
- ➤ Time of work (night vs. day)
- ➤ Rolling operation or stationary
- > Type of construction equipment
- ➤ Where will the drainage go?



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Work Zone Considerations Setting Considerations:

- ➤ Type or class of roadway
- >Traffic volumes
- ➤ Roadway geometry / sight lines
- ➤ Speed of traffic
- ➤ Other Traffic: Pedestrians / Bikes / Trains / Boats / Airports / Railroads?
- ➤ Business access
- ➤ Other nearby work zones

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