

State of Vermont
Office of the Secretary
219 North Main Street, Suite 101
Barre, VT 05641
vtrans.vermont.gov

[phone] 802-476-2690
[fax] 802-479-2210
[ttd] 802-253-0191

Agency of Transportation

MEMORANDUM

TO: Adam Greshin, Commissioner of Finance & Management

FROM: Joe Flynn, Secretary of Transportation

DATE: October 3, 2019

RE: AOT Construction Inspection



The Construction Section of the Agency of Transportation (AOT) exists for the purpose of meeting the State of Vermont's obligation to provide direct supervision of the construction work and labor of any Federal-aid highway project and to ensure Federal funding secures the product specified in the Contract.

Federal regulations (23 CFR § 635.105) require that projects receive adequate supervision and inspection to ensure our transportation projects are completed in conformance with approved plans and specifications. The Agency appoints a staff person to be in "responsible charge;" this individual is referred to as the "Resident Engineer." The Resident Engineer assigned with responsible charge must be a "full-time employed state engineer." The guidance stipulates that this person maintain familiarity of day-to-day project operations, makes or participates in decisions about changed conditions or scope changes, and visits and reviews the project on a frequency that is commensurate with the magnitude and complexity of the project, among other administrative duties.

23 CFR § 637 requires that AOT develop, for Federal Highway Administration (FHWA) approval, a Quality Assurance Program (QAP). AOT's Quality Assurance Program is a risk-based approach to materials acceptance. It identifies the acceptance criteria for all materials used on projects. AOT evaluates where the material is used and the consequence of its failure to determine how that material is accepted. For instance, much more emphasis is placed on structural steel than silt fence. The QAP can be found here:

<https://outside.vermont.gov/agency/vtrans/external/docs/construction/04MatTestCert/VTrans%20Quality%20Assurance%20Program.pdf>

AOT utilizes an itemized bid process. The process consists of breaking each Contract down into small discreet types of work. Each portion has a specification associated with it. The specification dictates the manner in which the work shall be completed, the type of materials used, and the manner in which the work is paid.

The Resident Engineer and on-project construction inspection teams have attended specific trainings conducted by the Northeast Transportation Technician Certification Program and the American Concrete Institute. This training provides staff the fundamental technical skills to be a certified inspector. Inspectors also participate in internal trainings conducted by the Agency. The Construction Section maintains a Construction Manual that provides guidance and strives to create uniformity for all those working in the Section. The Construction Manual can be found here:

<https://outside.vermont.gov/agency/VTRANS/external/docs/construction/2018%20Construction%20Manual%20Addendum.pdf>

Section IV of the Construction Manual provides specific guidance related to each item of work. Each item has 6 sections: General, Required Submittals, Engineering, Sampling and Testing, Construction and Inspection, and Measurement and Documentation. It is this guidance that describes inspection techniques, points of emphasis, and engineering concerns related to the items of work.

AOT contracts are staffed based on the following roles: Resident Engineer, Chief Inspector, Inspector, and Office Engineer. Who is assigned each of these roles and how many people are assigned to each role is based on a risk assessment of the contract itself. It is possible that only one or two people are assigned to a contract to fill all 4 roles. On a bigger more complicated contract we may assign as many as 10 people or more. A line striping contract will have very few staff compared to a large complicated bridge contract. Part of the risk assessment and contract assignments will dictate our on-project presence. One of the factors considered is to make sure that staff are available to inspect critical work that cannot be verified later. Our specifications help in this manner because in some instances we have “hold points” that require the contractor to stop work until the inspection is complete. In most instances though we try to have staff available to inspect the work as it progresses. Our contracts require that Contractors give us advanced notification anytime they want to work on a contract. This allows us to ensure that we have staff available to inspect the work.

To date, nothing in our investigation of J.A. McDonald, Inc. projects has identified a deficiency in our Quality Assurance Program or Construction Inspection process. However, AOT has identified higher-risked items and made changes in both specifications and employee training. As soon as AOT became aware of the allegations, and conducted investigations, Engineering Guidance was issued preventing the Drilling and Grouting of Anchor Bolts on future contracts. AOT also commenced staff training on the risks associated with anchor bolt drilling and grouting and consequently the new acceptance method for anchor bolt installation. AOT’s heightened awareness of the issues surrounding anchor bolt/reinforcing steel conflicts has led to a lesser chance of this situation happening again.

cc: Senator Richard Sears