



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**NH Division**

October 30, 2009

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In Reply Refer To:  
HDA-NH

Mr. William Cass, P.E.  
Director of project Development  
NH Department of Transportation  
7 Hazen Drive  
Concord, NH 03301

Attn: Alan D. Rawson, P.E.,  
Administrator, Bureau of Materials and Research

Dear Mr. Cass:

Attached is a signed copy of NHDOT's Quality Assurance Program which we understand will be used to assure the quality of materials used on Federal-aid construction projects in New Hampshire other than locally administered projects. Locally administered projects are covered by a separate Quality Assurance program approved April 15, 2009.

Sincerely yours,

David R. Hall  
Division Bridge Engineer





**THE STATE OF NEW HAMPSHIRE**  
**DEPARTMENT OF TRANSPORTATION**



**GEORGE N. CAMPBELL, JR.**  
**COMMISSIONER**

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**ASSISTANT COMMISSIONER**

Bureau of Materials & Research  
PO Box 483, 5 Hazen Road  
Concord, NH 03302-0483  
Tel. (603) 271-3151  
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October 22, 2009

Ms. Kathleen O. Laffey  
Division Administrator  
Federal Highway Administration  
19 Chenell Drive, Suite ONE  
Concord, NH 03301

RE: Materials Quality Assurance Program

Ms. Laffey:

Enclosed for your review and approval, is the Department's Materials Quality Assurance Program. We hope to receive your favorable consideration.

Sincerely,

Alan D. Rawson, P.E.  
Administrator

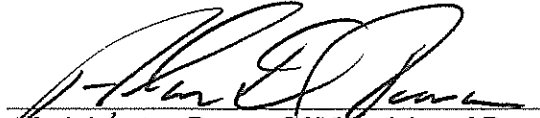
ADR/dmb

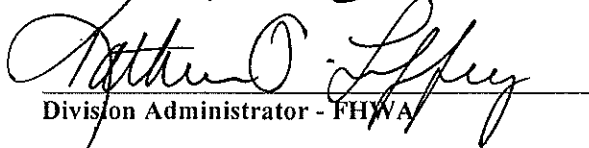
[\\Hzndotfile1\sb42\Materials Technology\Construction\Quality Assurance\Cover ltr to KLaffey.doc](file:///H:/zndotfile1/sb42/Materials%20Technology/Construction/Quality%20Assurance/Cover%20ltr%20to%20KLaffey.doc)

# Quality Assurance Program

For

## New Hampshire Department of Transportation

Submitted by:  10-22-09  
Administrator, Bureau Of Materials and Research Date

Approved by:  10-29-09  
Division Administrator - FHWA Date

## SECTION 700

### QUALITY ASSURANCE PROGRAM

It is the policy of the Department of Transportation to provide assurance that materials and workmanship, which are incorporated into its highway projects, conform or substantially conform, to the requirements of the plans and specifications including approved changes. This quality assurance program provides for an acceptance program, an independent assurance program, and a laboratory qualification program as follows:

#### 1. DEFINITIONS

- a) Acceptance Samples and Tests - all of the samples and tests performed by qualified testing personnel employed by the State or its designated agent used for determining the quality and acceptability of materials and workmanship which have been or are being incorporated into the project. Acceptance tests determine the conformance of the material to the correct specifications. The results are used to determine acceptance or rejection and may be used to adjust the level of pay for the material.
- b) Independent Assurance Program - Independent samples and tests, or observation of test procedures, performed by M&R personnel or its designated agent, who do not normally have direct responsibility for quality control or acceptance sampling and testing. They are used for the purpose of making independent checks on the reliability of the results obtained in acceptance sampling and testing and not for determining the quality or acceptability of the materials and workmanship directly.
- c) Proficiency Samples - Homogenous samples that are distributed to be tested by two or more laboratories. The test results are compared to assure that the laboratories are obtaining the same results.
- d) Quality Control - The contractor's material sampling and testing necessary to control his operations.
- e) Qualified Laboratories - A laboratory that provides calibrated equipment for the required test methods and has been approved by the NHDOT Bureau of Materials & Research.
- f) Qualified Sampling and Testing Personnel - For soil and asphalt materials, qualified personnel are those who have been certified in the sampling and testing to be performed by the NorthEast Transportation Training & Certification Program (NETTCP) or, a person working under the direct supervision of a NETTCP technician certified in the appropriate test. For concrete materials, qualified personnel are those who have been certified in the concrete sampling and testing to be performed by either the American Concrete Institute (ACI), the NETTCP or the Precast Concrete Institute (PCI), or a person working under the direct supervision of an ACI, NETTCP or PCI certified technician.
- g) Source Approval - The review and inspection of bituminous, concrete and precast plants to insure they are capable of producing materials, which will meet specifications. Concrete plant inspection includes the inspection of transit mixers.

#### 2. SAMPLING AND TESTING PROGRAM

- a) Acceptance Sampling and Testing shall be the responsibility of the State Contract Administrator, unless otherwise noted, in which case he will insure that it is done. Reports shall include location to allow further testing, if necessary. The recommended frequency of testing is as shown in the NHDOT GUIDE TO FREQUENCY OF SAMPLING AND TESTING for acceptance tests.
- b) Independent Assurance Sampling and Testing is to be performed by personnel from M&R or its designated agent. Independent testing insures that proper sampling and testing methods are being followed and that the testing equipment meets specifications requirements. The recommended frequency of independent assurance testing is as shown in the NHDOT GUIDE TO FREQUENCY OF SAMPLING AND TESTING.
- c) The sampling location of the acceptance and independent assurance testing shall be as required in the NHDOT GUIDE TO FREQUENCY OF SAMPLING AND TESTING. When split sampling is used, sampling must be performed in the presence of independent assurance personnel.
- d) Independent Assurance can be by observation, but at least 80 percent will be tests performed by independent assurance personnel using calibrated equipment. The sampling and testing of split samples and in-place densities shall be documented. When Independent Assurance Tests are performed by observation, the personnel responsible for performing the Independent Assurance and the Acceptance Testing shall sign the test report.
- e) The Independent Assurance personnel shall make a prompt comparison of test results and thereafter investigate, resolve, and document any discrepancies between the results of the assurance and acceptance tests, which are outside the acceptable deviations. See the attached Guide to Acceptable Deviations, also found in section 703.5 of the NHDOT Construction Manual.
- f) Contractors are responsible for their own quality control. This includes maintaining production equipment in good working order and all sampling and testing necessary to confirm that all material being produced meets specifications.
- g) On small projects, defined as having 4,000 cy or less of each select material and/or embankment, the acceptance testing for soils and granular material will be done by independent assurance personnel with no independent assurance testing required. A project may still be classified as being a small project if no more than one item exceeds 4,000 cy upon approval of the Bureau Administrators from Construction and Materials and Research.
- h) The Central Laboratory shall maintain its AASHTO Accreditation.
- i) Qualified State personnel or its designated agents shall use qualified laboratories for acceptance testing. Split samples with Independent Assurance personnel will be used to further verify the equipment used in qualified laboratories.
- j) Non-NHDOT laboratories, if used in Independent Assurance or dispute resolution sampling and testing, shall be accredited in the testing to be performed by the AASHTO Accreditation Program.
- k) A materials certificate will be prepared and submitted to the Federal Highway Administration for each federal-aid construction project on the National Highway System.

NHDOT, METHODS FOR MATERIALS ACCEPTANCE

- A) Acceptance by Sampling & Testing
  - 1) Final Acceptance - Job Site
  - 2) Preliminary Acceptance - Source Testing and Inspection
    - a) Wear Test
    - b) Gradation
    - c) Precast Concrete
    - d) Structural Steel
    - e) Concrete Plants.
    - f) Asphalt Plants
- B) Acceptance by Certifications
  - 1) Certificate of Compliance Only.
  - 2) Approved Products List & Certificate of Compliance, as required by Specifications.
  - 3) Acceptance Test and Certificate of Compliance as defined by NHDOT GUIDE TO FREQUENCY OF SAMPLING AND TESTING.
- C) Acceptance by Field Inspection

Granite, fieldstone, mulch and other natural materials not requiring testing or certification, as designated by the District Construction Engineer.

## EVALUATION OF INDEPENDENT ASSURANCE TEST DEVIATION RANGES

### Sieve Analysis

=>#4 (4.75 mm)	5%
<#4 (in sand portion)	4%

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Compaction Testing	2.5%
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### Bituminous Mix Extraction

=>#4 to 3/4"	3%
<#4	2%
AC Content	0.4%

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### Portland Cement Concrete

Air Content	0.8%
W/C Ratio	0.03

RECEIVED  
OCT 27 00  
FHWA  
NH DIVISION