



Staff Report

January 10, 2023

TO: Honorable Mayor and Members of the Town Council
FROM: Merrill Buck, Town Engineer
RE: Adoption of a Quality Assurance Program (QAP)

Recommendation

Staff recommends that the Town Council adopt a resolution approving the adoption of a Quality Assurance Program (QAP) for use with federally aided transportation projects, and delegating authority to the Town Engineer to approve future QAP updates.

Issue Statement and Discussion

A Quality Assurance Program (QAP) describes the sampling and testing procedures that are to be incorporated into the specifications of federally aided transportation construction projects. This is to ensure that the materials and workmanship are in conformance with State of California Department of Transportation (Caltrans) specification.

The QAP should be updated as needed, as requested by Caltrans, or at least every five (5) years, as a condition of authorizing federally funded construction work. The previous Town of Loomis QAP was approved in January 2017 and needs to be resubmitted. It has been updated to meet current Caltrans standards and requirements.

Because the QAP needs to be prepared by a registered engineer and submitted to Caltrans no later than every five years, it is recommended that the Town Council delegate authority to the Town Engineer to approve future QAP updates.

CEQA Requirements

The proposed action is not subject to review under CEQA pursuant to Section 15060(c)(3), as it is not a project, and Section 15061(b)(3), which exempts administrative items since they will not result in any direct or indirect physical change in the environment.

Financial and/or Policy Implications

There are no immediate financial implications associated with approving the QAP. Costs associated with the sampling and testing procedures required in the QAP represent construction management best practices. They are necessary for quality assurance and are incidental to the delivery cost of a project.

Attachment

- A. Resolution
- B. Town of Loomis Quality Assurance Program

TOWN OF LOOMIS

RESOLUTION NO. 23 - _____

**A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF LOOMIS
APPROVING THE ADOPTION OF A QUALITY ASSURANCE PROGRAM (QAP) FOR
FEDERALLY AIDED TRANSPORTATION PROJECTS, AND DELEGATING AUTHORITY TO
THE TOWN ENGINEER TO APPROVE FUTURE UPDATES**

WHEREAS, the California Department of Transportation requires that every local agency receiving Federal aid funds for transportation projects must have a Quality Assurance Program (QAP) that describes sampling and testing procedures to ensure that the materials and workmanship incorporated into a construction project are in conformance with State of California Department of Transportation (Caltrans) specification; and

WHEREAS, Caltrans requires local agencies to update and approve their QAP every five (5) years, as a condition of authorizing federally funded construction work; and

WHEREAS, staff has prepared an updated QAP for the Town of Loomis, in accordance with California Department of Transportation requirements, and

WHEREAS, the Town Council wishes to approve and adopt the QAP.

NOW, THEREFORE, BE IT RESOLVED that the Town Council of the Town of Loomis hereby approves the adoption of a Quality Assurance Program, and be it

FURTHER RESOLVED that the Town Council of the Town of Loomis hereby delegates authority to the Town Engineer to approve future QAP updates.

PASSED AND ADOPTED this 10th day of January 2023 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAINED:

Mayor

ATTEST:

Deputy Town Clerk

Item 12 Attachment B



Town of Loomis

QUALITY ASSURANCE PROGRAM (QAP) January 2023

INTRODUCTION

A Quality Assurance Program (QAP) consists of an Acceptance Program and an Independent Assurance (IA) Program that will provide assurances that the materials and workmanship incorporated into the construction of a project are in conformance with the contract specifications. A QAP should be updated at least once every five years, or more frequently if there are changes to testing frequencies, or to the tests themselves.

When transportation projects are constructed on the National Highway System (NHS), it is required by federal regulations that each State Transportation Department (STD) has a QAP that meets federal requirements.

There are no federal QAP regulations for local agency administered Federal-aid projects off the NHS. However, to ensure that a local agency is a good steward of public funds, and to ensure that the materials and workmanship incorporated in the construction of a project are in conformance with the contract specifications, the use of a QAP is essential. Consequently, Caltrans has included the requirement in the Local Assistance Procedures Manual (LAPM) that every local agency receiving funds for a Federal-aid transportation project must have a QAP.

PURPOSE

The purpose of this Quality Assurance Program (QAP) is to provide assurance that the materials incorporated into the construction of projects are in conformance with the contract specifications.

DEFINITION OF TERMS

The following terms and definitions will be used:

- Acceptance Testing (AT) - Sampling and testing, or inspection, to determine the degree of compliance with contract requirements.
- Independent Assurance Program (IAP) - Verification that AT is being performed correctly by qualified testers and laboratories.
- Quality Assurance Program (QAP) - A sampling and testing program that will provide assurance that the materials and workmanship incorporated into the construction project are in conformance with the contract specifications. The main elements of a QAP are the AT, and IAP.
- Source Inspection - AT of manufactured and prefabricated materials at locations other than the job site, generally at the manufactured location.

APPLICABILITY

This Program shall be used by the Town of Loomis for all federal-aid transportation projects on the State Highway System (SHS). Its use is mandatory for federal-aid projects and recommended for other Town projects.

California Test methods will be used to meet the QAP requirements for projects on the State Highway System (SHS). The following QAP documents are to be used: The California Department of Transportation (Caltrans) Construction Manual and The Caltrans Independent Assurance (IA) Manual.

MATERIALS LABORATORY

The Town of Loomis will use a private consultant materials laboratory to perform AT on Federal-aid and other designated projects. The materials laboratory shall be under the responsible management of a California Registered Engineer with experience in sampling, inspection and testing of construction materials. The Engineer shall certify the results of all tests performed by laboratory personnel under the Engineer's supervision. The materials laboratory shall contain certified test equipment capable of performing the tests conforming to the provisions of this QAP.

The materials laboratory used shall provide documentation that the laboratory complies with the following procedures:

1. Correlation Testing Program – The materials laboratory shall be a participant in one or more of the following testing programs:
 - a. AASHTO Resource (formerly AMRL and CCRL)
 - b. Caltrans' Reference Samples Program (RSP) laboratory

2. Certification of Personnel – The materials laboratory shall employ personnel who are certified by one or more of the following:
 - a. Caltrans District Materials Engineer
 - b. Nationally recognized non-Caltrans organizations such as the American Concrete Institute, Asphalt Institute, National Institute of Certification of Engineering Technologies, etc.
 - c. Other recognized organizations approved by the State of California and/or recognized by local governments or private associations.

3. Laboratory and Testing Equipment – The materials laboratory shall only use laboratory and testing equipment that is in good working order. All such equipment shall be calibrated at least once each year. All testing equipment must be calibrated by impartial means using devices of accuracy traceable to the National Institute of Standards and Technology. A decal shall be firmly affixed to each piece of equipment showing the date of the last calibration. All testing equipment calibration decals shall be checked as part of the IAP.

ACCEPTANCE TESTING (AT)

AT will be performed by a materials laboratory certified to perform the required tests. The tests results will be used to ensure that all materials incorporated into the project are in compliance with the contract specifications.

Testing methods will be in accordance with the CT Methods or a nationally recognized standard (i.e., AASHTO, ASTM, etc.) as specified in the contract specifications.

Sample locations and frequencies may be in accordance with the contract specifications. If not so specified in the contract specifications, samples shall be taken at the locations and frequencies as shown in Attachment 1, "Appendix D, Acceptance Sampling and Testing Frequencies" of the QAP Manual.

INDEPENDENT ASSURANCE PROGRAM (IAP)

The purpose of the IAP procedures is to verify that AT is being performed correctly and reliably, and to ensure that testing equipment is properly calibrated and maintained. IAP procedures are required for federally funded projects on and off the NHS/SHS. For on-NHS/SHS projects, Caltrans LAPM 16.11 procedures apply. For off-NHS/SHS projects, the Town will verify that its consultant laboratory's QAP includes IAP procedures for "testing the testers". IAP procedures for non-federally funded projects are optional, and may be required at the discretion of the Town Engineer.

IAP shall be provided by personnel from Caltrans, an independent certified materials laboratory, or personnel from nationally-recognized accreditation programs such as AASHTO Resource. IAP personnel shall be certified in required testing procedures, as part of IAP, and shall not be involved in any aspect of AT.

IAP shall be performed on every type of materials test required for the project and may consist of proficiency and/or witness tests. Poor correlation between acceptance tester's results and other test results may indicate probable deficiencies with the acceptance sampling and testing procedures. In cases of unresolved discrepancies, a complete review of AT shall be performed by IAP personnel, or an independent materials laboratory chosen by the Town. IAP samples and tests are not to be used for determining compliance with contract requirements. Compliance with contract requirements is determined only by AT.

REPORTING ACCEPTANCE TESTING RESULTS

AT results should be submitted to the Resident Engineer within five (5) working days of sampling, or as soon as practical as allowed by the specific test procedure.

Materials Testing Summary Logs shall be prepared by the materials testing laboratory and maintained by the RE for each material requiring multiple sampling and testing. Single or limited testing may be reported on laboratory-generated standard test reports. Testing logs shall include date, time, station location, test sample depth/elevation, approximate quantity of sample material, test result, and tester.

TESTING OF MANUFACTURED MATERIALS

During the design phase of the project, the Project Engineer may submit a "Source Inspection Request" see Attachment #2 (Exhibit 16-V of the Local Assistance Procedures Manual) to the Town, consultant, or Caltrans, for inspection and testing of manufactured and prefabricated materials by their materials laboratory. A list of materials that can typically be accepted on the basis of certificates of compliance during construction is found in Attachment #3 (Exhibit 16-T1 of the Local Assistance Procedures Manual). Other materials may be accepted by Certificate of Compliance at the discretion of the RE or Town Engineer.

All certificates of compliance shall conform to the requirements of the contract specifications, for examples see Attachment #4 (Appendix J of the Caltrans QAP Manual).

Should the Agency request Caltrans to conduct the source inspection, and the request is accepted, all sampling, testing, and acceptance of manufactured and prefabricated materials will be performed by Caltrans' Office of Materials Engineering and Testing Services.

For Federal-aid projects on the NHS, Caltrans will assist in certifying the materials laboratory, and the acceptance samplers and testers. For Federal-aid projects off the NHS/SHS, Caltrans may be able to assist in certifying the materials laboratory, and the acceptance samplers and testers.

PROJECT CERTIFICATION

Upon completion of the project, a "Materials Certificate" shall be completed by the Resident Engineer. The Town shall include a "Materials Certificate" in the Report of Expenditures submitted to the Caltrans District Director, Attention: District Local Assistance Engineer. A copy of the "Materials Certificate" shall also be included in the Town's construction records. The Resident Engineer in charge of the construction function for the Agency shall sign the certificate. All materials incorporated into the work which did not conform to specifications must be explained and justified on the "Materials Certification", including changes by virtue of contract change orders. See Attachment #5 for an example (Appendix K of the Caltrans QAP Manual).

RECORDS

All material records of samples and tests, material releases and certificates of compliance for the construction project shall be incorporated into the Resident Engineer's project file. If a Federal-aid project:

- The files shall be organized as described in Section 16.8 "Project Files" of the Local Assistance Procedures Manual.
- It is recommended that the complete project file be available at a single location for inspection by Caltrans and Federal Highway Administration (FHWA) personnel.
- The project files shall be available for at least three years following the date of final project voucher.
- It is recommended that a Materials Testing Log be used (example shown in Attachment #6), to facilitate reviews of material sampling and testing by Caltrans and FHWA. It will also assist the Resident Engineer in tracking the frequency of testing.

When two or more projects are being furnished identical materials simultaneously from the same plant, it is not necessary to take separate samples or perform separate tests for each project; however, copies of the test reports are to be provided for each of the projects to complete the records.

ATTACHMENTS

- #1 – Acceptance Sampling and Testing Frequencies (Appendix D, Caltrans QAP Manual)
- #2 – Source Inspection Request (Exhibit 16-V, LAPM)
- #3 – Materials Accepted by Certificate of Compliance (Exhibit 16-T1, LAPM)
- #4 – Example Certificates of Compliance (Appendix J, Caltrans QAP Manual)
- #5 – Example Materials Certification (Appendix K, Caltrans QAP Manual)
- #6 – Example Materials Testing Log (Appendix H, Caltrans QAP Manual)

QAP APPROVAL

APPROVED BY: 
(Signature)

C 55365, Exp. 12/31/2024
(CE# and Expiration Date)

NAME: Merrill Buck

DATE: January 11, 2023

TITLE: Town Engineer



ATTACHMENT #1

Acceptance Sample and Testing Frequencies

Appendix D - Acceptance Sampling and Testing Frequencies

Note: It may be desirable to sample and store some materials. If warranted, testing can be performed at a later date.

Portland Cement (Hydraulic Cement)

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Cement/fly ash (Sampling only)	8-lb. sample	If possible, take a least one sample per job, even if the material is accepted based on a Certificate of Compliance.	ASTM D75, C494 CT 125 AASHTO T127, M85, M295	Standard for sampling hydraulic cement or fly ash.
Cement (Testing Only)	8-lb. sample	If the product is accepted based on a Certificate of Compliance, testing is not required. If the product is not accepted using a Certificate of Compliance, test at least once per job.	ASTM C109 CT 515 AASHTO T106	If testing appears warranted, fabricate six 2-in. mortar cubes using the Portland (or hydraulic cement). Test for compressive strength.

Portland Cement Concrete (Hydraulic Cement Concrete)

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Aggregate for Hydraulic Cement Concrete (Sampling & Testing)	50-lb. sample	Take one aggregate sample for each 1000 cu. yd. of PCC/HCC concrete. Test at least one sample per job.	ASTM D75 CT 125 AASHTO M6, T2, M80	Sample aggregate from belt or hopper (random basis).
Water (Sampling & Testing)	Take a two-quart sample using a clean plastic jug (with lining) and sealed lid. Sample at the point of use.	If the water is clean with no record of chlorides or sulfates greater than 1%, no testing is required. If the water is dirty do not use it. Test only when the chloride or sulfates are suspected to be greater than 1%.	CT 405, CT 422, CT 417 AASHTO R23	If testing appears warranted, test for chlorides and sulfates.

Appendix D (continued)

Portland Cement Concrete (Hydraulic Cement Concrete) – Continued

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description of Comments
Air Entraining Admixtures (Sampling & Testing)	Take a one-quart sample using a clean, lined can or plastic bottle, if liquid. If powder, take a 2.5 lb. sample.	If the product is accepted based on a Certificate of Compliance, testing is not required. Take one sample per job. Prior to sampling, check with Caltrans (METS) for acceptable brands and dosage rates.	ASTM C233 AASHTO M154, T157, C260	If testing appears warranted, test for sulfates and chlorides Admixtures with sulfates and chlorides greater than 1% should not be used.
Water Reducers or Set Retarders (Sampling & Testing)	If liquid, take a 1-qt. sample using a clean plastic can. If powder, take a 2.5 lb. sample.	If the product is accepted based on a Certificate of Compliance, no testing is required. If not, test once per job. Prior to using this product, please check with Caltrans (METS) for acceptable brands and dosage rates.	ASTM C494 AASHTO M194	If testing appears warranted, test for sulfates and chlorides. Admixtures with sulfates and chlorides greater than 1% should not be used.
Freshly-Mixed Concrete (Sampling)	Approx. 150lb. (or 1 cu. ft.) near mixer discharge.	When tests are required, take at least one sample for each 500 to 1000 cu. yd. of PCC/HCC.	ASTM C172, C685 CT 539 AASHTO T141, M157	This describes a method to sample freshly-mixed concrete.
Freshly-Mixed Concrete (Testing)	Approx. 150 lb/ (or 1 cu. ft.) near mixer discharge.	On projects with 500 cu. yd., or more, test at least one sample per job.	ASTM C143 AASHTO T119	This test determines the slump of the freshly-mixed concrete.
Freshly-Mixed Concrete (Testing)	Approx. 150 lb/ (or 1 cu. ft.) near mixer discharge	On projects with 500 cu. yd., or more, test at least one sample per job.	ASTM C360 CT 533	This test determines the ball penetration of the freshly-mixed concrete.
Freshly-Mixed Concrete (Testing)	Approx. 150 lb/ (or 1 cu. ft.) near mixer discharge	On projects with 500 cu. yd., or more, test at least one sample per job.	ASTM C231 CT 504 AASHTO T152	This test determines the air content of freshly-mixed concrete (pressure method).
Freshly-Mixed Concrete (Testing)	Approx. 150 lb/ (or 1 cu. ft.) near mixer discharge	On projects with 500 cu. yd., or more, test at least one sample per job.	ASTM C138 CT 518 AASHTO T121	This test determines the unit weight of freshly mixed concrete.

Appendix D (continued)

Portland Cement Concrete (Hydraulic Cement Concrete) – Continued

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Freshly-Mixed Concrete (Testing)	Approx. 150 lb/ (or 1 cu. ft.) near mixer discharge	Fabricate at least two concrete cylinders per project. Test for compressive strength at least once for each 500 to 1,000 cu. yd. of structural concrete.	ASTM C39 CT 521 AASHTO T22	This test is used to fabricate 6" x 12" concrete cylinders. Compressive strengths are determined, when needed.
Freshly-Mixed Concrete (Testing)	Approximately 210 lb. of concrete are needed to fabricate three concrete beams.	One sample set for every 500 to 1,000 cu. yd. of concrete.	ASTM C78 CT 31 AASHTO T97 & T23	This test is used to determine the flexural strength of simple concrete beams in third-point loading

Soils and Aggregates

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Aggregate (Sampling)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM D75 CT 125 AASHTO T2	This test describes the procedures to sample aggregate from the belt or hopper (random basis).
Fine Aggregates (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM C128 CT 208 AASHTO T84	This test determines the apparent specific gravity of fine aggregates for bituminous mixes, cement treated bases and aggregate bases.
Fine Aggregate (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM C128 CT 207 AASHTO T84	This test determines the bulk specific gravity (SSD) and the absorption of material passing the No. 4 sieve.
Coarse Aggregate (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	CT 206	This test determines the cleanness of coarse aggregate.

Appendix D (continued)

Soils and Aggregates - Continued

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Coarse Aggregate (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM C127 CT 227 AASHTO T85	This test determines the specific gravity and absorption of coarse aggregate (material retained on the No. 4 sieve).
Soils and Aggregates (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM C136 CT 202 AASHTO T27	This test determines the gradation of soils and aggregates by sieve analysis.
Soils and Aggregates (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM D2419 CT 217 AASHTO T176	This test determines the Sand Equivalent of soils and aggregates.
Soils and Aggregates (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM C117 AASHTO T11	This test determines the gradation for materials finer than the No. 200 sieve (by washing method).
Soils and Aggregates (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM D3744 CT 229 AASHTO T210	This test determines the Durability Index of soils and aggregates.
Soils and Aggregates (Testing)	One 50-lb. sample	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM D2844 CT 301 AASHTO T190	This test determines the Resistance Value (R-) and expansion pressure of compacted materials.
Soils and Aggregates (Testing)	One random location for every 2,500 sq. ft.	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM D2922 CT 231 AASHTO T238	This test determines field densities using the nuclear gage.
Soils and Aggregates (Testing)	One random location for every 2,500 sq. ft.	Take one sample for every 500 to 1,000 tons of materials. Test at least one sample per project.	ASTM D3017 CT 231 AASHTO T239	This test determines the water content using the nuclear gage.

Appendix D (continued)

Asphalt Binder

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Asphalt Binder (Sampling)	One 0.5-gal. sample placed in a clean, sealed can.	Sample once per job at the asphalt concrete plant.	CT 125 ASTM D 979 AASHTO T 168, T48	This procedure describes the proper method to sample the asphalt binder.
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Sample once per job at the asphalt concrete plant.	ASTM D92, D117 AASHTO T 48	This test determines the flash point of the asphalt binder (by Cleveland open cup).
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D2872 & D92 CT 346 AASHTO T240 &T48	This test determines the rolling thin-film oven test (RTFO).
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D2042 AASHTO T44	This test determines the solubility of asphalt material in trichloroethylene.
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D2171 AASHTO T202	This test determines the dynamic viscosity, (absolute viscosity of asphalt @ 140 degrees F by the Vacuum Capillary Viscometer Poises).
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D5 AASHTO T49	This test determines the penetration of bituminous material @ 77 degrees F and percentage of original penetration from the residue.
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D113 AASHTO T51	This test determines the ductility of asphalt @ 77 degrees F.
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D2170 AASHTO T201	This test determines the kinematic viscosity of asphalt @275 degrees F (Centistoke).

Appendix D (continued)

Asphalt Binder - Continued

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D2171 AASHTO T202	This test determines the dynamic viscosity. (absolute viscosity of asphalt @ 140 degrees F by the Vacuum Capillary Viscometer Poises).
Asphalt Binder (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D36 AASHTO T53	This test determines the softening point of asphalt.

Asphalt Emulsified

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Emulsified Asphalt (Sampling)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D140, D979 CT 125 AASHTO T 40, T168	This test describes the procedure to sample the emulsified asphalt.
Emulsified Asphalt (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D244 AASHTO T59	This test determines the sieve retention of emulsified asphalt.
Emulsified Asphalt (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D244 AASHTO T59	This test determines the weight per gallon of emulsified asphalt.
Emulsified Asphalt (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D244 AASHTO T59	This test determines the penetration of the emulsified asphalt.
Emulsified Asphalt (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D244 CT 330 AASHTO T59	This test determines the residue @ 325 degrees F evaporation of emulsified asphalt.

Appendix D (continued)

Asphalt Emulsified - Continued

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Emulsified Asphalt (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D4402 AASHTO T201	This test determines the Brookfield viscosity.
Emulsified Asphalt (Testing)	One 0.5-gal. sample placed in a clean, sealed can.	Obtain one sample at the asphalt concrete plant for each 1,000 tons of asphalt concrete placed.	ASTM D88 AASHTO T72	This test determines the Saybolt-Furol viscosity of emulsified asphalt @ 77 degrees F (seconds).

Hot Mix Asphalt (Asphalt Concrete) – Concrete

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Asphalt Concrete (Sampling)	Obtain one 30-lb. sample each day of production	Obtain one sample at the asphalt concrete plant for each 5,000 tons of asphalt concrete placed.	ASTM D75, D140, D979 CT 125 AASHTO T 40, T168	This test describes the procedure to sample the asphalt concrete.
Asphalt Concrete (Testing)	4" x 8" cores	Take one 4" x 8" core for every 500 ft of paved roadway.	ASTM D1188, D1560, D1561, D5361 CT 304 AASHTO T246, T247	This test determines the field density of street samples.
Asphalt Concrete (Testing)	Obtain one 30-lb. sample for each day of production	Obtain one sample for every five cores taken.	ASTM D1188, D1560, D1561, D5361 CT 304 AASHTO T246, T247	This test determines the laboratory density and relative compaction of asphalt concrete.
Asphalt Concrete (Testing)	4" x 8" cores	Obtain one sample for every five cores taken.	ASTM D2726, D1188, D5361	This test determines the specific gravity of compacted bituminous mixture dense-graded or non-absorptive.

Appendix D (continued)

Hot Mix Asphalt (Asphalt Concrete) –Continued

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Asphalt Concrete (Testing)	One 30-lb sample	Obtain one sample for every 1,000 tons of asphalt concrete.	ASTM D1559 AASHTO T245	This test determines the resistance to plastic flow of prepared mixes as determined by the Marshall Method.
Asphalt Concrete (Testing)	One 30-lb sample	Obtain one sample for every 1,000 tons of asphalt concrete.	ASTM C117, D2172 (use Method B) AASHTO T164	This test determines the screen analysis of aggregates recovered from asphalt materials.
Geotextile Fabric (Placed Under the Asphalt Con- crete) (Testing)	One 12 ft. x 3 ft. sample	Obtain one sample per job.	ASTM D4632 AASHTO M288	This test determines the weight per sq. yd. and grabs strength of geotextile fabrics.
Asphalt Concrete (Testing)	Sample any test location (random basis)	Obtain one sample for every 1,000 tons of asphalt concrete.	ASTM D2950 CT 375	This test determines the nuclear field density of in-place asphalt concrete.
Asphalt Concrete (Testing)	One 10-lb sample	Obtain one sample during every day of production.	ASTM D1560, D1561 CT 366 AASHTO T246, T247	This test determines the stability value of asphalt concrete.
Slurry Seals (Sample)	One 0.5 gal. sample in a clean, dry plastic container.	Obtain one sample per truck	ASTM D979 CT 125 AASHTO T 40, T168	This test describes the procedure for sampling the slurry seal.
Aggregate for Slurry Seals (Testing)	One 30-lb. sample.	Obtain at least one sample per project from the belt or hopper or stockpile and test for Sand Equivalent	ASTM D2419 CT 217 AASHTO T176	This test determines the Sand Equivalent of aggregates.

Appendix D (continued)

Slurry Seals

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Aggregate for Slurry Seals (Testing)	One 30-lb. sample.	Obtain at least one sample per project from the belt, hopper, or stockpile and test for sieve analysis of fine sand.	ASTM C117 AASHTO T11	This test determines the sieve analysis of fine sand (gradation of materials finer than No. 200 sieve by wash grading).
Slurry Seals (Testing)	One 0.5 gal. sample in a clean, dry plastic container.	Test one sample per project and test for Abrasion.	ASTM D3910	This test determines the Wet Track Abrasion Test (2) (WTAT).

Steel

Materials to be Sampled or Tested	Sample Size	Sampling/Testing Frequency	Typical Test Methods	Description or Comments
Steel Strand (Testing)	Sample strand at various sizes.	This item may be accepted using a Certificate of Compliance. Sample and test at least two steel strands per job when a Certificate of Compliance is not used.	ASTM A370, A416, E328 AASHTO T244	This test determines the tensile strength of uncoated seven-wire stress-relieved strand for pre-stressed concrete.
Steel Rebar (Testing)	Sample rebar at various sizes.	This item may be accepted using a Certificate of Compliance. Sample and test at least two steel rebar per job when a Certificate of Compliance is not used.	ASTM A615, A370 AASHTO T244	This test determines the steel reinforcement bar tensile strength and bend capability.

ATTACHMENT #2

Source Inspection Request

**SAMPLE COVER MEMO
SOURCE INSPECTION REQUEST
FROM LOCAL AGENCY to
CALTRANS' DISTRICT LOCAL ASSISTANCE ENGINEER
(Prepared By Applicant On Applicant Letterhead)**

To: (name)
Caltrans' District Local Assistance Engineer
Caltrans' Local Assistance Office
(district office address)

Date: _____

Federal-aid Project Number: (if one has been assigned) _____

Project Description: _____

Project Location: _____

Subject: *(Source Inspection for Project Name, County)*

We are requesting that Caltrans provide Source Inspection (reimbursed) services for the above mentioned project. We understand we are responsible for paying for this service provided for by the State. Listed below are the materials for which we are requesting Caltrans' Source Inspection (reimbursed) services.

Materials that will require source inspection:

Justification for request: (Based on the requirements in Section 16.14 under "Source Inspection") _____

Any question you might have about the above materials should be directed

to: _____, at (phone #) _____.

Approved:

(Applicant Representative Name)

District Local Assistance Engineer

(Title)

(Date)

(Local agency, name & address)

ATTACHMENT #3

Common Materials Accepted on Basis of Certificate of Compliance

Exhibit 16-T1 Materials [Requiring a Certificate of Compliance per Caltrans Standard Specifications](#)

Table 6-2.3 Materials Accepted by Certificate of Compliance (1 of 7)

Material/Product	Remarks (Including Requirements for Additional Back-Up Information Required with Certificate of Compliance)
Asphalt	
Asphaltic emulsion	Certificate of compliance must include the following: <ol style="list-style-type: none"> 1. Shipment number and shipment date. 2. Source refinery, consignee, and destination. 3. Type and description of material with specific gravity and quantity. 4. Contract or purchase order number. 5. Signature by the manufacturer of the material and a statement that the material complies with the contract.
Asbestos cement pipe	
Asbestos sheet packing	
Asphalt modifier	Test results required with each truck load.
Asphalt rubber joint sealant	A certified test report of the results for the required tests performed within 12 months before the proposed use.
Backer rods	Must include manufacturer's statement of compatibility with the joint sealant to be used.
Barbed Wire	
Blast cleaning material	
Bonding Material	
Brick	
Cable-type restrainers Lock nuts	Certificate of compliance must be submitted with a copy of each required test report.
Cast iron pipe	
Cast iron manhole rings and covers	
Chemical adhesive for bonding tie bars and dowel bars in concrete pavement	
Chemical adhesive for structures	Certificate of compliance must state compliance with ICBO AC 58 and Caltrans. Augmentation/Revisions to ICBO AC 58.
Concrete Admixture	Certificate of compliance from the manufacturer must certify that the admixture furnished is the same as that previously authorized or the authorized materials list.
Concrete Cementitious material	Certificate of compliance must include the source name and location. If the cementitious material is delivered directly to the job site, the certificate of compliance must be signed by the cementitious material supplier. If the cementitious material is used in ready-mixed concrete, the certificate of compliance must be signed by the concrete manufacturer. If blended cement is used, the certificate of compliance must include a statement signed by the blended cement supplier that shows the actual percentage of SCM, by weight, in the blend.
Concrete Curing compound	Certificate of compliance must include: <ol style="list-style-type: none"> 1. Test results for the tests specified in Section 90-1.01D(6) [90-7.01B] of the <i>Standard Specifications</i>. 2. Certification that the material was tested within 12 months before use.
Concrete Minor concrete	Before placing minor concrete from a source not previously used on the contract, a certificate of compliance stating that the minor concrete to be furnished complies with the contract requirements, including the specified minimum cementitious material content.
Ceramic tile	
Chain link fencing and railing	Certificate required for protective coating system.
Concrete anchorage devices	

Table 6-2.3 Materials Accepted by Certificate of Compliance (2 of 7)

Material/Product	Remarks (Including Requirements for Additional Back-Up Information Required with Certificate of Compliance)
Concrete pipe Circular reinforced direct design method	Certificate of compliance must: 1. Be signed by the manufacturer's quality control representative. 2. State that all materials and workmanship comply with the specifications and authorized shop drawings.
Copper pipe	
Corrugated metal pipe	
Crack sealant	Certificate of compliance must include: 1. Manufacturer's name 2. Production location 3. Product brand or trade name 4. Product designation 5. Batch or lot number 6. Crack treatment material type 7. Contractor or subcontractor name 8. Contract number 9. Lot size 10. Shipment date 11. Manufacturer's signature
Crash cushions	
Crumb rubber modifier	Test results required with each truck load.
Culvert markers	
Delineators	Certificate of compliance required for: 1. Metal target plates 2. Enamel coating 3. Retroreflective sheeting
Dowel bar baskets	
Drop inlet grates and frames	
Drain tile	
Drip irrigation line	
Elastomeric Bearing Pads Plain	Certified test results for the elastomer.
Elastomeric Bearing Pads Steel-reinforced	Certified test results.
Electrical Battery back-up system	Certificates of compliance is required for: • External cabinet • Batteries
Electrical Conductor	
Electrical Conduit (galvanized and plastic)	
Electrical Equipment	
Electrical Pull boxes (concrete and plastic)	
Electrical Service cabinets	

Table 6-2.3 Materials Accepted by Certificate of Compliance (3 of 7)

Material/Product	Remarks (Including Requirements for Additional Back-Up Information Required with Certificate of Compliance)
Erosion control	Certificate of compliance is required for: <ul style="list-style-type: none"> • Straw • Fiber • RECP • Fasteners Certificate of compliance with attachments are required for: <ul style="list-style-type: none"> • Tackifier • Bonded fiber matrix • Polymer-stabilized fiber matrix Certificates of compliance attachments include: <ol style="list-style-type: none"> 1. Material Safety Data Sheet. 2. Product label. 3. List of applicable nonvisible pollutant indicators for soil amendment and stabilization products as shown in the table titled "Pollutant Testing Guidance Table" in the Caltrans Construction Site Monitoring Program Guidance Manual. 4. Report of acute and chronic toxicity tests on aquatic organisms conforming to EPA methods. 5. List of ingredients, including chemical formulation. 6. Properties of polyacrylamide in tackifier including (1) percent purity by weight, (2) percent active content, (3) average molecular weight, and (4) charge density.
Epoxy	
Epoxy powder coating for dowel bars and tie bars	
Expansion joint filler	
Fiberglass pipe	Certificate of compliance must be submitted with laboratory test results.
Gabions	If PVC coating is shown, a suitable UV resistance additive must be blended with the PVC and the additive must be shown on the certificate of compliance.
Geocomposite drain	Certificate of compliance must certify that the drain produces the specified flow rate. The certificate must be accompanied by a flow capability graph for the geocomposite drain showing flow rates and the externally applied pressures and hydraulic gradients. Verification must be by an authorized laboratory for the flow capability graph.
Geosynthetics	Test sample representing each lot and minimum average roll value.
Glass beads	
Glue laminated timbers and decking	
Guide markers	
Irrigation hose	
Irrigation pipe	Certificate of compliance required for: <ul style="list-style-type: none"> • Polyethylene pipe. • Plastic pipe supply line for pipe with wall thickness of the bell less than the specified minimum wall thickness of the pipe.
Joint filler material	
Joint seals (Type A and AL)	Certified test report for each batch of sealant.

Table 6-2.3 Materials Accepted by Certificate of Compliance (4 of 7)

Material/Product	Remarks (Including Requirements for Additional Back-Up Information Required with Certificate of Compliance)
Joint seal (Type B)	Certificate of compliance required for: <ul style="list-style-type: none"> • Elastomeric joint seal • Lubricant-adhesive Certificate of compliance must be submitted with certified test report for each lot of elastomeric joint seal and lubricant-adhesive. Test reports must include the seal movement rating, the manufacturer's minimum uncompressed width, and test results.
Joint seal assemblies with a movement rating of 4 inches or less	For alternative joint seal assemblies, a certificate of compliance must be submitted for each shipment of joint seal materials. The certificate must state that the materials and fabrication involved comply with the specifications and the data submitted in obtaining the authorization for the alternative joint seal assembly.
Joint seal assemblies with a movement rating over 4 inches	
Lime	Certificate of compliance must include a statement certifying the lime furnished is the same as on the authorized material source list.
Machine spiral wound PVC pipeliners	Certificate of compliance for each reel of PVC strip must include: <ol style="list-style-type: none"> 1. Name of manufacturer 2. Plant location 3. Date of manufacture and shift 4. Cell classification 5. Unit mass 6. Average pipeliner stiffness and profile type
Markers	Certificate of compliance required for: <ol style="list-style-type: none"> 1. Metal target plates 2. Enamel coating 3. Retroreflective sheeting
Masonry block	Certificate of compliance required for: <ol style="list-style-type: none"> 1. Concrete masonry units 2. Aggregate for grout 3. Grout
Micro surfacing emulsion	
Mulch	
Open steel flooring and grating	
Overside drains	Certificate of compliance based on steel materials, aluminum materials or plastic materials.
Parking area seal material	
Pavement markers	
Pavement marking Paint or thermoplastic	
Plastic lumber	Laboratory test report.
Plastic traffic drums	
Plastic pipe for drainage	Certificate of compliance must include average pipe stiffness, resin material cell classification, and date of manufacture. For corrugated polyethylene pipe, manufacturer's copy of plant audits and test results from the National Transportation Products Evaluation Program for the current cycle of testing for each pipe diameter furnished.
Portable changeable message sign	
Precast concrete Cementitious material used in precast concrete products	Certificate of compliance must be signed by the precast concrete product manufacturer.

Table 6-2.3 Materials Accepted by Certificate of Compliance (5 of 7)

Material/Product	Remarks (Including Requirements for Additional Back-Up Information Required with Certificate of Compliance)
Precast concrete Box culverts	Certificate of compliance must be signed by the manufacturer's QC representative for each shipment.
Precast raised traffic bars	
Preformed compression seal for concrete pavement	
Preformed membrane sheet	Must include type of sheet and the conditioner or primer application rates.
Rapid strength concrete	Certificate of compliance is required for each delivery of aggregate, cementitious material, and admixtures used for calibration tests. The certificate of compliance must state that the source of the materials used for the calibration tests is the same source as to be used for the planned work.
Reinforcement	You may request that the contractor submits with certificate of compliance: 1. Copy of the certified mill test report for each heat and size of reinforcing steel showing physical and chemical analysis. 2. Two copies of a list of all reinforcement before starting reinforcement placement.
Reinforcement Epoxy-coated	Certificate of compliance for each shipment of epoxy-coated reinforcement must be submitted with: 1. Certification that the coated reinforcement complies with ASTM A 775/A 775M for bar reinforcement or ASTM A 884/A 884M, Class A, Type 1, for wire reinforcement 2. All certifications specified in ASTM A 775/A 775M for bar reinforcement or ASTM A 884/A 884M for wire reinforcement.
Reinforcement Epoxy-coated prefabricated reinforcement	Certificate of compliance for each shipment of epoxy-coated prefabricated reinforcement must be submitted with: 1. Certification that the coated reinforcement complies with ASTM A 934/A 934M for bar reinforcement or ASTM A 884/A 884M Class A, Type 2 for wire reinforcement. 2. All certifications specified in ASTM A 934/A 934M for bar reinforcement or ASTM A 884/A 884M for wire reinforcement.
Reinforcement Epoxy-coating patching materials	Certificate of compliance for the patching material must include certification that the patching material is compatible with the epoxy powder to be used.
Reinforcement Headed bar	Certificate of compliance for each shipment of headed bar reinforcement must be submitted with: 1. Mill test reports for the: 1.1. Bar reinforcement 1.2. Head material 2. Production test reports 3. Daily production logs
Reinforcement Splicing	Certificate of compliance for each shipment of splice material must be submitted with: 1. Type or series identification of the splice material, including tracking information for traceability. 2. Grade and size number of reinforcement to be spliced. 3. Statement that the splice material complies with the type of mechanical splice on the authorized material list. 4. For resistance-butt-welded material: 4.1. Heat number 4.2. Lot number 4.3. Mill certificates

Table 6-2.3 Materials Accepted by Certificate of Compliance (6 of 7)

Material/Product	Remarks (Including Requirements for Additional Back-Up Information Required with Certificate of Compliance)
Sheet metal	
Sign panels	Certificates of compliance required for: <ol style="list-style-type: none"> 1. Aluminum sheeting 2. Retroreflective sheeting 3. Screened-process colors 4. Nonreflective, opaque, black film 5. Protective-overlay film
Silicone joint sealant	A certified test report of the results for the required tests performed within 12 months before the proposed use.
Slotted edge drain	
Snow poles	
Snow plow deflectors polyethylene material	
Soil amendment	
Steel crib wall	
Sheet metal	
Sign panels	Certificates of compliance required for: <ol style="list-style-type: none"> 1. Aluminum sheeting 2. Retroreflective sheeting 3. Screened-process colors 4. Nonreflective, opaque, black film 5. Protective-overlay film
Silicone joint sealant	A certified test report of the results for the required tests performed within 12 months before the proposed use.
Slotted edge drain	
Snow poles	
Snow plow deflectors polyethylene material	
Soil amendment	
Steel crib wall	
Steel pipe piles	The certificate of compliance must be signed by the plant's QC representative. The QC representative must be on record with the Department's Office of Structural Materials. certificate of compliance must include: <ol style="list-style-type: none"> 1. Statement that all materials and workmanship incorporated in the work and all required tests and inspections of this work have been performed as described. 2. Certified mill test reports for each heat number of steel pipe piles being furnished. 3. Test reports for tensile, chemical, and any specified non-destructive test (NDT). 4. Test reports must be based on test samples taken from the base metal, steel, coil or from the manufactured or fabricated piles. 5. Calculated carbon equivalent. The carbon equivalent may be shown on the mill test report.
Steel sheet piling	
Structural plate culverts	Certificate of compliance required for: <ol style="list-style-type: none"> 1. Structural metal plate pipe 2. Arches 3. Pipe arches 4. Metal liner plate pipe

Table 6-2.3 Materials Accepted by Certificate of Compliance (7 of 7)

Material/Product	Remarks (Including Requirements for Additional Back-Up Information Required with Certificate of Compliance)
Structural shape steel piles	Certificate of compliance must include: 1. Test reports for tensile, chemical, and any specified NDT. Test samples must be taken from the base metal, steel, or from the manufactured or fabricated pile. 2. A statement that all materials and workmanship incorporated in the work and all required tests and inspections of this work have been performed as described.
Structural composite lumber used in falsework	
Structural steel thermal spray coat Wire feedstock	
Styrofoam filler	
Subsurface drain	
Temporary concrete washout	Certificate of compliance required for: <ul style="list-style-type: none"> • Gravel-filled bag • Plastic liner
Temporary fence (Type ESA)	Certificate of compliance required for: <ul style="list-style-type: none"> • High visibility fabric • Safety caps for metal posts
Temporary linear sediment barrier	Certificate of compliance required for: <ul style="list-style-type: none"> • Fiber roll • Safety cap for metal posts • Silt fence fabric • Sediment filter bag • Foam barrier • Gravel-filled bag fabric
Temporary railing (Type K)	
Thermoplastic	
Tie bars	
Tie bar baskets	
Timber products (treated and untreated)	Certificate of compliance for timber and lumber must state the species of the material to be shipped and include a certified grading report. If treated, certified treating report.
Threaded tie bar splice couplers	
Traffic stripe Paint or thermoplastic	
Turf sod	
Underdrains	Certificate of compliance required for: <ul style="list-style-type: none"> • Type of pipe • Tubing • Fitting
Waterproofing fabric	
Waterstop	Certificate of compliance for waterstop material must state compliance with paragraph 6 of Army Corps of Engineers CRD-C 572.
Welded wire fabric	
Wire mesh fencing	

ATTACHMENT #4

Example Certificates of Compliance



Appendix J.1 - Example of a Vendor's Certificate of Compliance

No. 583408

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
VENDOR'S CERTIFICATE OF COMPLIANCE
 MR-0543 (REV. 5/93) #CT-7541-6020-2

PRECAST CONCRETE PRODUCTS OR SOUNDWALL

TO: BILL SYNDER

STATE HIGHWAY ENGINEER
RESIDENT ENGINEER - CITY OF FLATLAND

We certify that the portland cement, chemical and mineral admixtures contained in the material described below are brands stated and comply with specifications for:

CONTRACT NUMBER:	
CEMENT BRAND <u>XYZ CEMENT CO.</u>	MILL LOCATION <u>MIDLAND, CALIFORNIA</u>
TYPE <u>II MODIFIED</u>	
CHEMICAL ADMIXTURE	
1. BRAND <u>ABC. ADMIXTURE</u>	MANUFACTURER <u>XYZ SUPPLIER</u>
TYPE <u>WATER REDUCER</u>	
2. BRAND	MANUFACTURER
TYPE	

CHECK BOX IF A CHEMICAL ADMIXTURE WAS NOT USED

MINERAL ADMIXTURE	
MANUFACTURER <u>POZZ. INC.</u>	CLASS <u>F</u>

CHECK BOX IF A MINERAL ADMIXTURE WAS NOT USED

DELIVERY DATE (Ready-Mix) <u>7/7/07</u>	DATES OF FABRICATION (Precast)
--	--------------------------------

LIST PRODUCTS TO WHICH CERTIFICATE APPLIES. (Show size and lin. ft. of pipe, etc., delivery slip numbers for ready-mix.)

Portland Cement
Flyash
Water Reducer

MANUFACTURER OF CONCRETE PRODUCTS <u>A. & B. READY MIX</u>

By: AUTHORIZED REPRESENTATIVE SIGNATURE
Joe Anderson



Appendix J.2 - Example of a Certificate of Compliance for Portland Cement (continued)

This is to certify that the

Portland Cement.

Supplied by ABC Cement Company complies with all requirements for Type II Portland Cement when tested in accordance with ASTM C - 494.

Local Agency Project No.

HP21L - 5055 - 111

Albert Howakowa

Quality Assurance Engineer
ABC Cement Company

Date: 07/07/07.

ATTACHMENT #5

Example Materials Certification



**Appendix K - Examples of Materials Certificates/Exceptions
 (Signed by the Resident Engineer at the Completion
 of the Project)**

Federal-aid Project No.: Project HP21L – 5055 – 111

Subject: Materials Certification

This is to certify that the results of the tests on acceptance samples indicate that the materials incorporated in the construction work and the construction operations controlled by sampling and testing were in conformity with the approved plans and specifications.

All materials exceptions to the plans and specifications on this project are noted below.

No exceptions were found to the plans and specifications on this project.

Bill Sanders
 Resident Engineer (Print Name)

Bill Sanders
 Resident Engineer (Signature)

7/7/07
 (Date)

Note: The signed original of this certificate is placed in the Resident Engineer’s project files and one copy is mailed to the DLAE and filed under “Report of Expenditures.”

See the attachment (next page)



Appendix K (continued)

Attachments: Materials Exceptions (Acceptance Testing)

Type of Test	Description of Work	Total Tests Performed On the Project	Number of Failed Tests	Action Taken
Slump Test	Concrete Sidewalk	8	1	When the measured slump exceeded the maximum limit, the entire concrete load was rejected.
Sand Equivalent	Aggregate for Structural Concrete	10	1	The tested S.E. was 70 and the contract compliance specification was 71 minimum. However, the concrete 28-day compressive strength was 4800 psi. The concrete was considered adequate and no materials deductions were taken.
Compaction	Sub grade Material	12	1	One failed test was noted. The failed area was watered and reworked. When this was completed, a retest was performed. The retest was acceptable.
Compaction	Hot Mix Asphalt	12	1	One failed area was noted. It was reworked and retested. The second test met specifications.

Bill Sanders
 Resident Engineer (Print Name)

Bill Sanders
 Resident Engineer (Signature)

July 4, 2007
 Date

ATTACHMENT #6

Example Materials Testing Log



Appendix H - Example of a Log Summary Sheet

Subgrade Materials

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
5/15/07	231	1+ 00 (30' L)	99.00	93	90 or greater	Passed	N/A
5/16/07	231	1+ 50 (20' R)	100.50	94	90 or greater	Passed	N/A
5/17/07	231	2+ 25 (25' R)	101.00	96	90 or greater	Passed	N/A
5/18/07	231	1+ 50 (30' L)	101.50	95	95 or greater	Passed	N/A
5/19/07	231	2+ 50 (20' L)	102.00	92 *	95 or greater	Failed	See Note 1
5/19/07	231	2+ 50 (20' L)	102.00	95	95 or greater	Passed	N/A

CT 231 = Compaction (Nuclear Gage)

* Note 1: The Contractor used a water tank to dampen the soil surface at the failed subgrade location. Using a sheep's foot compactor, he reworked the subgrade (making at least 10 passes) from Station 2+ 00 to Station 3+ 00. After approximately 30 minutes, another compaction test was taken. This time the relative compaction was 95.

Aggregates and Base Materials

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
6/20/07	202	1+ 00 (10' R)	102.50	See data sheet	See data sheet	Passed	N/A
6/20/07	202	2+ 00 (20' L)	102.50	See data sheet	See data sheet	Passed	N/A
6/22/07	217	1+ 00 (10' R)	102.50	75	25 or greater	Passed	N/A
6/22/07	217	2+ 00 (20' L)	102.50	83	25 or greater	Passed	N/A
6/20/07	227	1+ 00 (20' R)	102.50	86	71 or greater	Passed	N/A
6/20/07	227	1+ 50 (20' L)	102.50	85	71 or greater	Passed	N/A
6/24/07	231	2+ 00 (20' R)	102.50	98	95 or greater	Passed	N/A
6/24/07	231	2+ 50 (20' L)	102.50	97	95 or greater	Passed	N/A

CT 202 = Sieve Analysis, CT 217 = Sand Equivalent, CT 227 = Cleanness Value,
 CT 231 = Compaction (Nuclear Gage)



Appendix H (continued)

Hot Mix Asphalt

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
7/10/07	339	1+ 00 (10' R)	103.00	0.08 gal/ sq yd	0.05 -0.10 gal/sq yd	Passed	N/A
7/10/07	366	2+ 00 (20' L)	103.00	32	>23	Passed	N/A
7/10/07	366	1+ 00 (10' R)	103.00	41	>23	Passed	N/A
7/10/07	375	2+ 00 (20' L)	103.00	94	RC = 93 to 97	Passed	N/A
7/15/07	375	1+ 00 (20' R)	103.00	96	RC = 93 to 97	Passed	N/A
7/15/07	375	1+ 50 (20' L)	103.00	95	RC = 93 to 97	Passed	N/A

CT 339 = Distributor Spread Rate, CT 366 = Stabilometer Value
 CT 375 = In-Place Density & Relative Compaction

Portland Cement Concrete

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
9/25/07	504	10 + 50 (50' R)	102.50	6.5%	>6.0%	Passed	N/A
9/25/07	533	12 + 50 (50' R)	102.50	1.5"	<2"	Passed	N/A
9/25/07	518	11 + 50 (50' R)	102.50	151 lb/cu ft	> 145 lb/cu ft	Passed	N/A
9/25/07	521	10 + 50 (50' R)	102.50	28 day = 4200 psi	>3800 psi	Passed	N/A
9/28/07	521	11 + 50 (50' R)	102.50	28 day = 4290 psi	>3800 psi	Passed	N/A
9/30/07	521	12 + 50 (50' R)	102.50	28 day = 4160 psi	>3800 psi	Passed	N/A

CT 504 = Air Content, CT 518 = Unit Weight, CT 521 = Compressive Strength,
 CT 533 = Ball Penetration