



Quality Assurance Program for Design-Bid-Build Projects

January 2022

TxDOT Materials and Tests Division

Summary of Program Changes: January 2022 Update

Purpose

The Quality Assurance Program for Design-Bid-Build Projects has been revised to address updated business practices, provide clarification for new and existing practices, and update internal and external document references.

Contents

Chapter 1, “Introduction”

- Section 1.2, “Support”
 - Updated MTD Administration contact phone number.

Chapter 2, “Acceptance Program”

- Section 2.2, “Sampling and Testing Frequency and Location”
 - Added that material tested for acceptance must be representative of the material used on the project.
 - Added that laboratory testing used in the acceptance decision must be performed at a laboratory location qualified under Section 8.
 - Added that the location of sampling and testing must be documented in SiteManager.
- Section 2.3, “Documentation”
 - Added subsections 2.3.1, “Material Test Reports,” and 2.3.2, “Authorization of Material Tests,” to distinguish between test report requirements and material authorization requirements.
 - In Section 2.3.1, “Material Test Reports,” clarified that any acceptance testing will be documented on TxDOT-approved templates and identified key fields which are required to be completed within the test report.
 - In Section 2.3.2, “Authorization of Material Tests,” added:
 - requirements concerning the timing and documentation of material authorizations in SiteManager and changes to SiteManager sampling and testing requirements;
 - description of material exception and reference to material certification letter requirements; and
 - how samples or tests which are not used for project acceptance should be addressed in SiteManager.

Chapter 3, “Independent Assurance Program”

- Moved and reordered previous Sections 3.3-3.6, as follows:
 - Section 3.3 was consolidated into Sections 7 and 8.
 - Section 3.4 was consolidated into Section 6.

- Section 3.5 became Section 3.3, “Comparing Test Results.”
- Section 3.6 became Section 3.4, “Annual Report of IA Program Results.”
- Section 3.4, “Annual Report of IA Program Results”
 - Updated metrics which are required to be identified in the IA annual report.

Chapter 4, “Materials Certification”

- Section 4.1, “Overview”
 - Revised to clarify the intent of the material certification.
- Section 4.2, “Submission of Material Certification Letter”
 - Added section to establish requirements for completing and submitting material certification letters.
- Section 4.3, “Material Exceptions”
 - Added section to establish the definition of a material exception, and the requirements for documenting material exceptions on the material certification letter.
- Section 4.4, “Materials and Tests Division Oversight”
 - Added section to establish a quarterly review process for MTD to verify completeness and accuracy of material certification letters.

Chapter 6, “Technician Qualification Program”

- Section 6.3, “Who Must Be Qualified?”
 - Added that any individual who performs material sampling must be qualified in the relevant sampling test procedure.
- Section 6.4, “Who Can Qualify Sampling and Testing Personnel?”
 - Clarified which District laboratory personnel may qualify sampling and testing personnel.
 - Clarified that the laboratory personnel must have a current ACI certification.
- Section 6.5, “Required Certifications for Non-TxDOT Personnel”
 - Renamed to encompass all non-TxDOT personnel.
- Section 6.6, “Qualification Procedure”
 - Clarified the minimum passing requirements of written exams for concrete test methods.
 - Clarified that written exams and performance evaluations must be completed within a 30-day period.
- Section 6.8, “Responsibility and Documentation”
 - Added Form 2687 as a required supporting document for technician qualifications.
 - Clarified that supporting documentation must be retained for a minimum of 10 years.

Chapter 7, “Requirements and Frequencies for Laboratory Equipment”

- Moved and reordered previous Sections 7.1-7.7, as follows:
 - Sections 7.1-7.3 and 7.5-7.7 were consolidated into Chapter 8.
 - Section 7.4 became Section 7.2, “Calibration, Standardizations, Checks, and Verification.”
- Renamed chapter to emphasize the focus on equipment requirements.
- Section 7.1, “Overview”
 - Added section to summarize overall requirements of laboratory equipment for TxDOT and non-TxDOT laboratories.
- Section 7.2, “Calibration, Standardizations, Checks, and Verification”
 - Revised to incorporate reference to all types of laboratory equipment requirements.
- Section 7.3, “Contractor Shared Equipment”
 - Added section to establish requirements for sharing laboratory equipment between the Contractor and TxDOT or TxDOT’s representative.
- Section 7.4, “Documentation”
 - Added section to establish documentation requirements for laboratory equipment, including responsibility and records retention.

Chapter 8, “Laboratory Qualification Program”

- Moved and reordered previous Sections 7.1-7.3 and 7.5-7.7 to align with the tiered approach of the laboratory qualification process, as follows:
 - Section 7.1 became Section 8.1, “Purpose.”
 - Section 7.3 became Section 8.2, “Qualification.”
 - Section 7.2 became Section 8.3, “Laboratory Responsibility.”
 - Section 7.6 became Section 8.4, “Documentation.”
 - Sections 7.5 and 7.7 were consolidated into Section 8.5, “Non-Compliance.”
- Section 8.2, “Qualification”
 - Clarified that field and are included in the MTD central laboratory qualification; area office and project laboratories are included in the District laboratory qualification; and CEI firms performing material testing require qualification.
 - Added that laboratory qualifications issued through the Design-Build QAP will be valid under the Design-Bid-Build program.
 - Renamed and revised Section 8.2.1, “District Accreditation,” to emphasize the application of the qualification to the entire District and to further detail the District accreditation process, including:

- Added that the accreditation inspection process involves review of the District's quality management system, technician certifications, equipment records, and oversight of CEI projects;
 - Added that the report rating will be issued with the District Accreditation Report, and that report ratings of 3 will result in a re-inspection;
 - Added the process for reviewing and issuing the District Accreditation Report;
 - Clarified the corrective action response timeline, and added a communication plan for addressing corrective action responses;
 - Added the process for closing out the accreditation inspection;
 - Added the process for District accreditation re-inspections when a report rating of 3 is issued; and
 - Added requirements for submission of peer review documentation.
- Revised Section 8.2.2, "Commercial Laboratory and CEI Qualification Process," to address the following:
- Added that the firm's location, contact person, and project role must be identified on Form 2682;
 - Clarified that the Visual Inspection Equipment Checklist must be used to document laboratory equipment;
 - Added requirements for completing and submitting qualification documentation; and
 - Clarified annual audit requirements and the tools and resources which should be used to conduct and document the reviews.
- Section 8.3, "Laboratory Responsibility"
- Revised to establish requirements for the documentation and submission of District quality assurance standard operating procedures on an annual basis, and to further define the responsibilities of CEI firms, area office personnel, and the District material quality champion.
- Section 8.4, "Documentation"
- Clarified that laboratory qualification documentation must be retained by the qualifying authority and the qualified laboratory for 10 years.

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1. Introduction

1.1 Overview

The Texas Department of Transportation (TxDOT) established the Quality Assurance Program (QAP) for Design-Bid-Build (DBB) Projects to ensure that materials and workmanship incorporated into highway construction projects are in reasonable conformity with the requirements of the approved plans and specifications, including any approved changes. This program was developed in accordance with the criteria in 23 CFR 637 B, where the Materials and Tests Division (MTD) central laboratory will be accredited under the AASHTO Accreditation Program (AAP) which oversees the statewide qualification program.

The QAP consists of an "Acceptance Program" and "Independent Assurance (IA) Program" based on test results obtained by qualified persons and equipment.

The QAP allows for the use of validated Contractor-performed quality control (QC) test results as part of an acceptance decision. It also allows for the use of test results obtained by commercial laboratories in acceptance decisions. The acceptance of all materials and workmanship is the responsibility of the Engineer.

1.2 Support

For more information regarding the information and procedures in the program, contact MTD Administration at 512/975-9755.

2. Acceptance Program

2.1 Overview

The QAP assures materials incorporated into any highway construction project, are subject to verification sampling and testing, as well as QC sampling and testing when required by the specifications.

The District Engineer will delegate an individual at the District-level for the accountability of certification verification in SiteManager (SM) and at the laboratory for various project delivery options applicable to the DBB program, in accordance with [Section 8.3.3](#).

The delegation of authority should encompass a mechanism that provides oversight authority and an audit function to ensure compliance. Additional information can be found in [Section 8.3](#).

2.2 Sampling and Testing Frequency and Location

Verification sampling and testing will be performed at the location and frequency established in the TxDOT [Guide Schedule of Sampling and Testing for Design Bid Build \(DBB\) Projects](#) (DBB Guide Schedule) or specifications specific to each project. Material that is tested for acceptance must be representative of the material used on the project.

Laboratory testing used in the acceptance decision must be performed at a laboratory location qualified under [Section 8](#). The location of sampling and testing must be documented in SM in accordance with [Section 2.3](#).

2.3 Documentation

2.3.1 Material Test Reports

Any acceptance testing will be documented within SM on the TxDOT-approved Excel templates. All key fields within the test report must be completed, including but not limited to, sampler name, sample location, tester name, test date, and all relevant test results. When the tester does not enter test results directly into SM, the hardcopy will need to be scanned and attached to the SM sample documenting the tester's name.

The laboratory location where testing is performed must be documented in SM using the appropriate Lab ID. In instances where a non-TxDOT technician performs material testing in a TxDOT laboratory, the laboratory location where testing was performed must be documented as a comment in the test report.

2.3.2 Authorization of Material Tests

Material samples must be tested, reviewed, and authorized by a minimum of two separate individuals, and they must be authorized within 30 days of sample collection. When authorization within the 30 day period is not possible, a justification for the delay must be documented in SM, including an estimated timeframe for resolution.

An engineering justification must be documented in SM to explain the reason for acceptance of material when:

- the material has failing test results;
- the material was not sampled and tested in accordance with DBB Guide Schedule requirements; or
- adjustments were made to SM sampling and testing requirements (e.g., adjusting conversion factors or zeroing testing frequencies).

Adjustments to SM sampling and testing requirements should be made only when corrections are needed to accurately represent project needs. Changes must be made only by designated District personnel, and the individual who approved the change must be documented within the required justification.

Acceptance of material which deviates from the specifications or DBB Guide Schedule requirements constitutes a material exception, as defined in [Section 4](#), and must be documented on the material certification letter upon project close-out.

Samples which are created in SM but are not used for a project should be authorized as “Void” to invalidate the Sample ID. The omit indicator can be used to exclude specific tests within one Sample ID. The omit indicator will prevent the tests from meeting project sampling and testing requirements.

2.4 Quality Control Sampling and Testing

Contractor-performed QC sampling and testing may be used as part of an acceptance decision when required or allowed by specification.

QC sampling and testing personnel, laboratories, and equipment will be qualified in accordance with [Section 6](#) and [Section 8](#) and will be evaluated under [Section 3](#).

QC test results will be validated by verification test results obtained from independently taken samples. Qualified TxDOT personnel or their designated agents will perform verification sampling and testing.

2.5 Dispute Resolution

When QC test results are used in the acceptance decision, the MTD central laboratory or an accredited independent laboratory approved by MTD will perform the referee testing. The referee laboratory decision will be final.

3. Independent Assurance Program

3.1 Overview

The IA program evaluates all sampling and testing procedures, personnel, and equipment used as part of an acceptance decision.

The IA program evaluates the qualified sampling and testing personnel and testing equipment and is established using the system approach. The system approach bases frequency of IA activities on time – regardless of the number of tests, quantities of materials, or numbers of projects tested by the individual being evaluated.

3.2 Required Frequencies and Activities

Table 1 gives the frequencies and activities required for evaluating sampling and testing personnel and equipment under the system approach to IA.

Table 1: Frequencies and Activities Required Under IA System Approach

Time	Activity
Before performing acceptance sampling and testing.	Qualification required under Section 6 and Section 8 of this QAP.
Within 12 mo. after Observation and Qualification, not to exceed 15 mo.	Each qualified technician is required to participate in the first available proficiency or split sample for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.
Within 24 mo. after Observation and Qualification, not to exceed 27 mo.	Each qualified technician is required to participate in one proficiency or split sample test for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.
Within 36 mo. of Qualification. (Only required for certifications issued by TxDOT or HMAC with a 3 yr. cycle.)	Qualification is again required under Section 6 and Section 8 of this QAP.
Within 36 mo. after Observation and Qualification, not to exceed 39 mo. (Only required for ACI, which has a 5 yr. certification cycle.)	Each qualified technician is required to participate in one proficiency or split sample test for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.

Within 48 mo. after Observation and Qualification, not to exceed 51 mo. (Only required for ACI, which has a 5 yr. certification cycle.)

Each qualified technician is required to participate in one proficiency or split sample test for each test method requiring IA. Results must compare to the IA test results to within the established tolerance.

Within 60 mo. of qualification (Only required for certifications issued by ACI with a 5 yr. cycle).

Qualification is again required under [Section 6](#) and [Section 8](#) of this QAP.

Maintaining technician qualification under the IA system approach requires continuation of the above cycle of qualification and successful split or proficiency sample testing.

3.3 Comparing Test Results

Comparison of the split sample test results can be used if equipment or procedures issues are suspected. [Appendix B](#) gives the acceptable tolerance limits for comparing test results from split and proficiency samples.

If the comparisons of the test results do not comply with the tolerances, an engineering review of the test procedures and equipment will be performed immediately to determine the source of the discrepancy.

3.4 Annual Report of IA Program Results

MTD will compose and submit an annual report to the Federal Highway Administration (FHWA) summarizing the results of TxDOT's systems approach IA program. See [Appendix C](#) for the annual report form.

This report identifies:

- number of sampling and testing personnel evaluated by the systems approach IA testing,
- number of personnel removed for non-participation,
- number of IA evaluations completed,
- number of IA evaluations found to meet tolerances in [Appendix B](#),
- number of IA evaluations found to not meet tolerances in [Appendix B](#), and
- summary of any significant system-wide corrective actions taken.

4. Materials Certification

4.1 Overview

A material certification must be submitted for each construction project subject to TxDOT or FHWA oversight activities. The intent of the material certification is to ensure that the quality of all materials incorporated into the project is in conformance with the plans and specifications.

4.2 Submission of Material Certification Letters

Upon final acceptance of a construction project, a material certification letter must be submitted to MTD via email at MTD_Materials_Cert@txdot.gov. The letter will conform in substance to the examples shown in [Appendix D](#) or [Appendix E](#) for projects with federal or state oversight, respectively. MTD is responsible for making the material certification letters available to the FHWA, as applicable.

Material certification letters must be authorized by the TxDOT office designated to oversee the project. The letter may be signed by the Area Engineer or Director of Construction. Material certification letters authorized by Construction Engineering and Inspection (CEI) firms or other non-TxDOT personnel will not be accepted for submission.

4.3 Material Exceptions

A material exception is defined as any material represented by an acceptance test that does not meet the criteria contained on the plans and specifications. Exceptions should be investigated to determine if the material is in reasonably close conformity with the plans and specifications.

An exception exists when:

- any material is tested and does not meet minimum specifications if the material is left in place, either with or without pay; and
- any material is not sampled and tested in accordance with minimum testing requirements if the material is left in place, either with or without pay.

When material exceptions exist for a project, the exceptions must be indicated on the material exception letter. Documentation of the material exceptions and the corresponding justifications should be attached to the material certification letter when submitted.

4.4 Materials and Tests Division Oversight

MTD will perform a quarterly review of completed material certification letters on a sample basis to verify the completeness and accuracy of the material certification letters, including material exceptions identified and corresponding justifications. Inconsistencies identified during the review will be communicated to appropriate District personnel, and Districts will correct and re-submit material certification letters when necessary.

5. Conflict of Interest

5.1 Overview

To avoid an appearance of a conflict of interest, any qualified non-TxDOT laboratory will perform only one of the following functions on the same project:

- verification sampling and testing,
- QC sampling and testing,
- IA testing, or
- referee testing.

6. Technician Qualification Program

6.1 Purpose

This program provides uniform statewide procedures for technician qualification to ensure that sampling and testing required by the specifications are performed according to the prescribed sampling and testing methods.

6.2 Technician Qualification

Sampling and testing personnel will be qualified to perform sampling and testing for the acceptance of materials in the areas of soils, bituminous, aggregate, and concrete materials.

The test methods for which individuals can be qualified are included in the following series of the [TxDOT Test Procedures](#):

- [100-E Series \(Soils\)](#),
- [200-F Series \(Bituminous\)](#),
- [400-A Series \(Aggregates and Concrete\)](#), and
- [500-C Series \(Asphalt – Tex-500-C and Tex-530-C\)](#).

6.3 Who Must Be Qualified?

Any individual who performs sampling and testing on the materials listed in [Section 6.2](#), for acceptance, must be qualified in each test procedure they perform. Any individual who performs material sampling must be qualified in the relevant sampling test procedure (e.g., Tex-100-E, Tex-221-F, Tex-222-F, Tex-400-A, Tex-500-C, etc.).

Reciprocity may be granted to individuals who have been successfully qualified under another state’s program. These situations will be considered on a case-by-case basis and must meet the approval of the MTD Director.

6.4 Who Can Qualify Sampling and Testing Personnel?

The following personnel may qualify an individual to perform the required sampling and testing of materials:

- MTD personnel;
- District laboratory personnel who have been qualified directly by MTD;
- TxDOT-approved entities such as the Hot-Mix Asphalt Center (HMAC) and the American Concrete Institute (ACI);
- District laboratory personnel who have been qualified by the HMAC can issue provisional certifications or sampling certifications; and
- District laboratory personnel who have been qualified by ACI can issue concrete certifications.

Certifications received from HMAC and ACI may be used to satisfy the written exam and observation part of the Technician Qualification Program.

Each District laboratory will maintain a minimum of one individual qualified by MTD or its designated agent, for each test procedure performed within the District. To qualify District personnel for TxDOT concrete test methods, the District laboratory personnel must have a current corresponding ACI Field or Strength certification.

6.5 Required Certifications for Non-TxDOT Personnel

Non-TxDOT laboratory personnel performing sampling and testing for TxDOT, or as required by specification, must obtain and keep current the following certifications pertinent to their scope of testing:

- [ACI Concrete Field Testing Technician – Grade 1](#),
- [ACI Concrete Strength Testing Technician](#),
- [HMAC Level 1A – Plant Mix Specialist](#),
- [HMAC Level 1B – Roadway Specialist](#),
- [HMAC Level 2 – Mix Design Specialist](#),
- [HMAC SB 101 – Materials Properties Specialist](#),
- [HMAC SB 102 – Field Specialist](#),
- [HMAC SB 103 – Materials Analyst Specialist](#),
- [HMAC SB 201 – Strength Specialist](#),
- [HMAC SB 202 – Compressive Strength Specialist](#), and
- [HMAC AGG 101 – Aggregate Specialist](#).

For testing procedures not covered by the above certifications, the following personnel may qualify an individual to perform the required sampling and testing of materials:

- MTD personnel, and
- District laboratory personnel who have been certified by MTD to perform technician qualifications.

6.6 Qualification Procedure

To qualify, an authorized evaluator must witness an individual successfully perform the specific test and the necessary calculations required to determine specification compliance. Successful performance is defined as demonstrating the ability to properly perform the key elements for each test method. If the individual fails to demonstrate the ability to perform a test, the individual will be allowed one retest per test method at the evaluator's convenience. The maximum number of attempts cannot exceed three trials in a 90 day period.

In addition to successful performance of a test method, the individual must pass a written examination (minimum score of 80%¹) administered by an authorized evaluator or their designee. The maximum amount of time allocated per test will be 1 hr. If an individual cannot complete the written test in 1 hr., it will result in failure. An individual failing the written examination may request a retest. The retest must be scheduled and administered within 30 days of notification of failure; however, the maximum number of attempts cannot exceed three trials in a 90 day period.

¹ For TxDOT concrete test methods where written examinations are grouped together to be completed, the minimum score for any individual test method must be 70%, and the overall minimum score for all test methods combined must be 80%.

Under unique circumstances, the qualification authority may grant a verbal examination upon request. The reasons for requesting a verbal examination must be presented and documented before the individual is allowed to take the examination. Should the technician fail the retest examination, the technician will not be allowed to test again unless a written notification is received from the technician's employer or supervisor stating that the technician has received additional training. MTD or its representative will determine the adequacy of the additional training. Failure to pass the third written examination will be considered as failing the entire qualification.

Successful qualification is defined as passing both the written and performance examinations, which must be completed within a 30 day period.

In addition, the individual must participate in split or proficiency samples administered by the qualifying authority to validate the qualification as defined in [Appendix B](#). MTD determines the qualifying authority for the split or proficiency sample.

Unless otherwise stated, qualification of an individual is valid for not more than 3 yr., after which the individual must be re-qualified. Under the IA system approach, annual split or proficiency evaluations will be required as specified in [Section 3.2](#). Failure to satisfactorily complete annual split or proficiency testing will result in certification revocation.

6.7 Provisional Certifications

If the required certifications for TxDOT, CEI, commercial laboratories, and Contractor personnel cannot be readily obtained due to course availability, schedule conflicts, or other extenuating circumstances, provisional certifications administered by MTD or TxDOT District laboratory will be allowed, per the following stipulations:

- provisional certifications must be approved by MTD or TxDOT District laboratory;
- provisional certifications will be valid for one month after the HMAC or ACI examination dates; and
- the candidate must show evidence of being enrolled in the required HMAC or ACI course.

6.8 Responsibility and Documentation

MTD and the District materials Engineer, laboratory supervisor, or designee are responsible for maintaining documentation of all individuals qualified under their authority who perform required tests for acceptance of materials. The CEI firm must identify a coordinator with the responsibility to communicate with the area office (AO), who will then coordinate with the District-level responsible person to satisfy the requirements for qualified testers. SM will be used to send email notifications on certification status to the owner (i.e., technician) as well as the District-level responsible person. SM will be the official system of record for qualified or certified TxDOT and commercial laboratory personnel.

Issuance of qualification certificates by the TxDOT qualifying authority is not required. A qualification summary listing all tests for which an individual is qualified is available in SM and may be printed or signed at the District's discretion. Documentation must be maintained through the Object Linking and Embedding (OLE) attachment window. This function allows all qualified personnel supporting documentation to be viewed in SM which includes:

- copies of certificates issued by HMAC and ACI; or
- copies of certificates issued by MTD or TxDOT District laboratory, if issued;
- written examination report with clear identification of technician's name, score, and date taken;
- original performance examinations saved as a PDF file for test procedures administered to each technician by the TxDOT qualifying authority, with clear identification of technician's name, qualifier's name, qualification status, and date; and
- copies of [Form 2687, "Examinee's Certification Acknowledgment."](#)

Supporting documentation for technician qualification must be retained for a minimum of 10 yr. Results of annual proficiency testing administered by MTD or HMAC will be stored in their respective central repositories through SharePoint. Annual split sample evaluations will be stored in SM.

6.9 Disqualification

Accusations of misconduct by testing technicians are made to the responsible TxDOT District representative and reported to MTD. Table 2 defines the three levels of misconduct: neglect, abuse, and breach of trust.

Table 2: Levels of Misconduct

Term	Definition
Neglect	Unintentional deviations from testing procedures or specifications.
Abuse	Careless or deliberate deviation from testing procedures or specifications.
Breach of Trust	Violation of the trust placed in the certified technician including, but not limited to, acts such as: <ul style="list-style-type: none"> ▪ falsification of records; ▪ being aware of improprieties in sampling, testing, or production by others and not reporting them to appropriate supervisors involved in the project; ▪ re-sampling or retesting without awareness and consent of appropriate supervisors involved in the project; and ▪ manipulating compensation or production.

The applicable certification steering committee will investigate accusations of misconduct with the assistance of the responsible District. Depending on the severity of the misconduct, MTD may impose penalties ranging from a written reprimand, a temporary suspension, or a permanent revocation of the certification, contingent upon the findings of the investigation. A technician with a revoked certification will be removed from the project and will not be allowed to be employed on any TxDOT project statewide.

7. Requirements and Frequencies for Laboratory Equipment

7.1 Overview

All laboratory equipment used in acceptance testing must be calibrated, standardized, checked, or verified in accordance with applicable procedures, including both TxDOT laboratories and non-TxDOT commercial laboratories.

7.2 Calibration, Standardizations, Checks, and Verification

Calibration, standardization, checks, and verification of TxDOT equipment may be performed by MTD of the TxDOT District laboratory. TxDOT may also hire a qualified third-party entity to perform equipment requirements in accordance with corresponding test procedures.

The procedures for laboratory equipment requirements and intervals are shown in:

- [Tex-198-E](#), “Minimum Standards for Acceptance of a Laboratory for Soils and Flexible Base Testing,”
- [Tex-237-F](#), “Minimum Standards for Acceptance of a Laboratory for Hot Mix Testing,”
- [Tex-498-A](#), “Minimum Standards for Acceptance of a Laboratory for Concrete and Aggregate Testing,”
and
- [Tex-900-K series](#), procedures for calibrating, standardizing, checking, verifying, and certifying equipment.

When applicable, equipment that is moved may require calibration, standardization, checks, or verification.

7.3 Contractor Shared Equipment

Unless otherwise stated on the plans and specifications, testing equipment cannot be provided by the Contractor to use for acceptance testing performed by TxDOT or its representative. When allowed by specifications, Contractor-provided testing equipment must be in a location where TxDOT has oversight of the equipment.

Calibration records for shared equipment are required to be retained by TxDOT in accordance with [Section 7.4](#).

7.4 Documentation

TxDOT District laboratories are responsible for maintaining documentation of equipment calibration, standardization, checks, and verification for any testing equipment used for acceptance testing. Records must be retained in a PDF file in a central repository location, as defined by MTD, for a minimum of 10 yr.

8. Laboratory Qualification Program

8.1 Purpose

This program provides uniform statewide procedures to ensure that laboratory facilities, including equipment and personnel, are qualified for the performance of required sampling and testing methods.

8.2 Qualification

All laboratories performing sampling and testing for TxDOT require qualification. Laboratories which require qualification include, but are not limited to, the following:

- MTD central laboratory, which includes MTD’s field laboratories;
- District laboratories, which includes area office and project laboratories (e.g., field laboratories at hot-mix plants); and
- CEI and commercial laboratories.

TxDOT laboratory qualifications issued in accordance with the [Quality Assurance Program for CDA/Design-Build Projects – Section 4.4](#) will be recognized as valid under the DBB program.

8.2.1 District Accreditation

MTD is responsible for accrediting TxDOT Districts on a 3 yr. cycle. The accreditation inspection consists of an evaluation of laboratory procedures and equipment necessary for the performance of TxDOT test methods in the material areas of concrete, hot-mix asphalt, and soils and aggregates. The assessment also includes a review of the District’s quality management system, including records of technician certification, equipment calibration, and oversight of CEI projects. The District accreditation issued by MTD encompasses all TxDOT laboratories managed by the District, including the District laboratory, area offices, and TxDOT laboratories at plant locations.

8.2.1.1 Report Rating

MTD will document the accreditation review on a District Accreditation Report, which will be issued to the District upon completion of the review. The report will include an assigned rating level to assess the District’s overall performance based on the associated risks to TxDOT. Report rating levels are described in Table 3 below. Districts which receive a rating of 3 on the District Accreditation Report will be subject to the re-inspection process described in [Section 8.2.1.6](#).

Table 3: Rating Legend

Rating	Rating Description
1	Excellent review with minor or no deficiencies notated.
2	Several deficiencies or repetitive observations were notated.
3	A level of negligence was found programmatically violating compliance requirements.

8.2.1.2 Report Review and Distribution

Upon completion of the accreditation inspection, MTD will hold a report review meeting with the District to discuss the draft District Accreditation Report, including the report rating and details of the findings. The District Director of Construction and Laboratory Supervisor or Lead Worker (as applicable) are required to attend the meeting. The draft report will be modified as needed based on the discussion during this meeting and before the report is finalized by MTD.

The final District Accreditation Report will be distributed to the MTD Director and Deputy Director, as well as the District Director of Construction and Laboratory Supervisor (when applicable) for the TxDOT District laboratory. The MTD Director will then issue a memo to the District Engineer, conforming in substance to the example shown in [Appendix F](#), as well as a copy of the report. The memo will include the District's current and prior report rating level, and any additional feedback deemed necessary. When the District Accreditation Report rating is a 3, the memo will also be distributed to the TxDOT Director of District Operations and Director of Engineering & Safety Operations.

8.2.1.3 Resolution of Findings

The District Accreditation Report summarizes the accreditation inspection, where a finding is classified as either a deficiency or an observation, defined as follows.

- **Deficiency:** A finding that indicates policy or practice contrary to the requirements of the applicable test methods or documented quality procedures.
- **Observation:** Observations are intended as comments for improvements relating to specific technical information to offer recommendations for best practice. Specifically, observations are noted for any technically related deficiencies where judgment and experience indicate it is not likely to affect the laboratory's ability to produce valid and accurate test results.

A corrective action report (CAR) and supporting documentation are collectively submitted to MTD by the District to address the findings notated in the report. The CAR will document actions that have been taken to prevent recurrence and to show a formal resolution to the findings.

- **Deficiencies:** Deficiencies require a formal written response describing the corrective actions taken or planned and enough documentation, (i.e., copies of records, new or revised procedures, equipment invoices, photographs, etc.) to substantiate actions taken. Corrective actions should be permanently implemented to prevent recurrence of the problem.
- **Observations:** No written response is required for findings identified as observations. However, the laboratory should take necessary corrective action to address the observation to prevent possible recurrence. Repeat observations may result in deficiencies.

8.2.1.4 Corrective Action Response Timeline

The resolution of all findings should be completed within 21 days from the issuance of the final District Accreditation Report, including submission of the CAR and supporting documentation to MTD. If the District

cannot satisfy the findings in the report within the stated timeframe, an extension may be requested for additional time, typically 7 days, to resolve any outstanding or pending findings. Additional time extensions may be granted on a case-by-case basis; however, extensions may not exceed 90 days cumulatively. The MTD Director may notify the TxDOT Director of District Operations and Director of Engineering & Safety Operations of any outstanding issues that remain unresolved after 60 days to ensure that the findings are resolved within the 90 day period.

To maintain transparency and ensure that appropriate individuals stay informed throughout the corrective action process, all correspondence between MTD and the Districts will include the individuals listed in Table 4 below.

Table 4: Corrective Action Response Communication Plan

Days Since Final Report Issuance	District Contacts	MTD Contacts
0-45 days	<ul style="list-style-type: none"> ▪ Director of Construction ▪ District Laboratory Staff 	<ul style="list-style-type: none"> ▪ Deputy Division Director ▪ Quality Assurance Staff
45+ days	<ul style="list-style-type: none"> ▪ District Engineer ▪ Deputy District Engineer ▪ Director of Construction ▪ District Laboratory Staff 	<ul style="list-style-type: none"> ▪ Division Director ▪ Deputy Division Director ▪ Quality Assurance Staff
60+ days	MTD Director may escalate outstanding issues to TxDOT Director of District Operations and Director of Engineering and Safety Operations.	

8.2.1.5 Accreditation Close-Out

Upon satisfactory completion of the District accreditation process, MTD will provide the District with official notification that the accreditation process has been closed out. MTD will update the District’s accreditation scope on the MTD Directory of Active Accredited Labs.

8.2.1.6 District Accreditation Re-Inspection

TxDOT Districts which receive a rating of 3 on the District Accreditation Report will be subject to a re-inspection by MTD approximately 12-18 mo. following the accreditation close-out. MTD will continue to re-inspect the District annually until a minimum rating of 2 is achieved.

Each re-inspection will focus on the portions of the District Accreditation Report or prior re-inspection which resulted in the rating of 3. Upon completion of the re-inspection, MTD will issue a memo with the re-inspection results, conforming in substance to the example shown in [Appendix G](#).

Following each re-inspection, MTD will work with the District to resolve deficiencies identified during the re-inspection. The District will be given 90 days to resolve deficiencies in accordance with [Section 8.2.1.4](#). All

correspondence between MTD and Districts regarding re-inspections will include, at a minimum, the individuals identified under “45+ days” in Table 4 above. The MTD Director may notify the TxDOT Director of District Operations and Director of Engineering & Safety Operations of any outstanding issues that remain unresolved after 60 days to ensure that the findings are resolved within the 90-day period.

The re-inspection memo will include an updated rating as described in Section [8.2.1.1](#). Districts that receive a re-inspection rating of 2 will return to the standard cyclical accreditation schedule. Districts that receive a re-inspection rating of 3 will be referred to the TxDOT Director of District Operations and Director of Engineering & Safety Operations, and the District will continue to be re-inspected by MTD annually.

8.2.1.7 District Laboratory Peer Review Program

Districts are required to host a District Laboratory Peer Review within 12-24 mo. after the QAP District accreditation. Districts will also participate as “peers” by conducting a review of other Districts, as assigned by MTD. The peer review will include a minimum of one District-managed project and two projects managed by CEI firms to ensure program compliance. When complete, documentation of the peer review must be submitted to MTD via email at MTD_Peer_Review@txdot.gov.

8.2.2 Commercial Laboratory and CEI Qualification Process

8.2.2.1 Quality System Inspection

At the District level, the District laboratory will be the qualifying authority for CEI firms and commercial laboratories, only in the areas for which the District laboratory is accredited. The laboratory qualifying authority will use [Form 2682, “Quality System Inspection – Commercial Laboratory,”](#) to document the following:

- identify the firm’s location, contact person, and project role;
- identify the scope of testing to be performed;
- verify that test methods used to perform tests are available and current;
- document that the laboratory has the required equipment to perform the tests using the [Visual Inspection Equipment Checklist](#);
- check the calibration/verification records for each piece of equipment, to include:
 - description of equipment,
 - identification of any traceable standard used,
 - frequency of calibration,
 - date of calibration,
 - date of last calibration,
 - date of next calibration,
 - calibrating technician,
 - procedure used to calibrate/verify equipment, and

- detailed results of calibration; and
- verify that the laboratory has qualified/certified technicians to perform required testing.

In addition, all equipment may be subject to calibration, verification, or other inspection by the qualifying authority, in accordance with [Section 7](#).

8.2.2.2 Material Producer List

Laboratories performing acceptance sampling and testing should use results from [TxDOT's Material Producer List](#) (MPL) and perform materials sampling and testing in accordance with TxDOT's DBB Guide Schedule. Materials that are not monitored or not pre-approved by TxDOT are subject to sampling and testing as part of the acceptance program, except as noted in the DBB Guide Schedule remarks.

Project/field laboratories performing Tex-113-E, Tex-117-E, and Tex-242-F tests must be an approved laboratory from TxDOT's MPL.

8.2.2.3 Qualification Certificate

After qualifying a CEI or commercial laboratory, the District must notify MTD within 14 days by submitting a copy of the completed Form 2682, "Quality System Inspection – Commercial Laboratory," and laboratory qualification certificate to MTD_OAP@txdot.gov. MTD will post the certificate to the Directory of Active Accredited Laboratories available through the MTD Crossroads intranet site and will update the laboratory's qualification effective dates within SM.

Commercial laboratory qualifications are valid for 3 yr., and the effective period of the qualification must be listed on the certificate. Laboratories will be removed from the Directory of Active Accredited Laboratories as of the expiration date listed on the certificate unless the laboratory has been re-qualified before that date. SM will be used to notify MTD and laboratory contacts of upcoming laboratory qualification expiration dates.

8.2.2.4 Annual Audit

An annual audit will be conducted by the designated District staff for each CEI or commercial laboratory to ensure continual compliance with technician records and equipment intervals. The following tools and resources should be used to conduct and document the review for program compliance:

- Form 2682, "Quality System Inspection – Commercial Laboratory," to document the review;
- SM "Material Test History Report – Area Engineer Inspected Materials" query that shows material testing completed for a project;
- SM "Testers and Users by District" query that allows filtering to determine expiring certifications; and
- equipment calibration or verification records retain in the MTD-designated location.

8.3 Laboratory Responsibility

The responsibilities are spread among varying roles and are defined below to achieve a level of quality and to maintain program compliance. Communication between the District laboratory, area offices, and CEI firms is key to ensuring that all sampling and testing laboratories, equipment, and personnel employed on TxDOT projects are appropriately qualified.

District Engineers are responsible for ensuring this communication takes place and documenting the communication channels in a District quality assurance standard operating procedure (SOP) that conforms in substance to the outline shown in [Appendix H](#). The SOP must be reviewed, updated as needed, and approved by the District Engineer annually by April 1st, with a copy provided to MTD via email at MTD_QAP@txdot.gov.

8.3.1 CEI Firm

The CEI firm must:

- provide certified personnel that are knowledgeable of all material testing procedures;
- provide copies of current certifications for all personnel performing project acceptance testing;
- provide a completed Form 2682, “Design-Bid-Build Quality System Inspection – Commercial Laboratory,” documenting pre-accreditation of the testing laboratory, including equipment calibrations and verifications and technician certifications, to the area office (AO) within 10 days after execution of the Contract;
- submit commercial laboratory accreditation request to the AO, with enough notice to ensure that laboratories are accredited within 30 days of Contract execution;
- perform all material tests at the facility shown on the Contract, except tests performed at the plant or on the roadway;
- use only material testing laboratories that are accredited by the Laboratory Qualification Program outlined in [Section 8.2](#);
- perform an annual audit to validate ongoing laboratory accreditation, equipment calibrations and verifications, and technician certifications for the duration of the Contract;
- develop a Quality Control Plan (QCP) that:
 - is project-specific,
 - demonstrates how quality is to be achieved through acceptance testing per project,
 - addresses how the CEI firm will track and ensure that only certified technicians perform acceptance on equipment that is calibrated and in good working order, and
 - meets the requirements established in the CEI Contract scope of work, as outlined in Appendix I; and
- provide the QCP to the AO within 10 days after the execution of the Contract.

8.3.2 District Area Office Personnel

Each Area Engineer will designate an AO coordinator. The AO coordinator is required to:

- provide District laboratory personnel with monthly status of the CEI projects;
- provide the District laboratory contacts for CEI firms and their subcontracted commercial laboratories;
- invite District laboratory personnel to the kick-off and associated pre-construction meetings;
- review the CEI project-specific testing, certification, and equipment needs to validate that required documentation has been received;
- forward all CEI technician certifications, equipment calibrations and verifications, and laboratory requests to the District laboratory;
- submit the CEI's QCP to the District laboratory;
- approve or reject the QCP based on recommendations from the District laboratory; and
- ensure that an issue-based evaluation of the CEI firm is completed when there are issues of non-compliance with requirements of [Section 8.3.1](#), including missing deliverables or use of unqualified laboratories or technicians throughout the duration of the project.

8.3.3 District Material Quality Champion

The District Engineer will designate a District Material Quality Champion to serve as primary point of contact for the District regarding material quality. The Material Quality Champion is responsible for ensuring that the District meets the following requirements:

- Review and make recommendations to the AO coordinator for approval or rejection of the CEI's QCP;
- coordinate the inspection of the commercial laboratory facility and equipment once the QCP has been approved;
- communicate the status of the inspection with the CEI firm;
- use SM to auto-notify the owner (i.e., technician) and the District laboratory designee before certification expiration; and
- conduct and document, at a minimum annually, an internal audit of the District for continual quality program compliance using the following tools and resources:
 - SM “Testers and Users by District” query that allows filtering to determine expiring certifications;
 - SM “Equipment Calibrations” query to show equipment status and upcoming expiration dates;
 - Equipment calibration or verification records retained in the MTD-designated location; and
 - MTD’s Material Samples dashboards to show completeness, accuracy, and timely authorization of SM material samples.

8.4 Documentation

The qualifying authority is responsible for verifying that laboratories are qualified to perform sampling and testing. Upon satisfactory completion of the laboratory qualification process, the qualifying authority will issue a certificate covering the scope of testing in which the laboratory has been qualified. Laboratory qualification documentation must be retained by the qualifying authority and the qualified laboratory for a minimum of 10 yr.

Laboratory qualification documentation to be maintained by the qualifying authority includes:

- availability and calibration or verification records for each piece of equipment,
- personnel qualified or certified to perform required testing, and
- copy of laboratory qualification certificate issued.

8.5 Non-Compliance

A laboratory that does not meet all the above requirements is subject to disqualification or suspension.

Any equipment in a qualified laboratory failing to meet specified equipment requirements for a specific test method will not be used for that test method. MTD or the TxDOT District laboratory responsible for the certification or audit will immediately notify all applicable area offices of non-conformance for those test methods.

The next higher qualification authority will resolve disputes concerning calibration and verification of equipment. For disputes that cannot be resolved at the District level, MTD will be the final authority.

9. Appendices

Appendix A Acronyms and Definitions

The following terms and definitions are referenced in this document and have the meanings set forth below.

AAP	AASHTO Accreditation Program (AASHTO re:source and CCRL)
AASHTO	American Association of State Highway Transportation Officials
ACI	American Concrete Institute
AO	Area Office
AQMP	Aggregate Quality Monitoring Program
CAR	Corrective Action Report
CCRL	Concrete and Cement Reference Laboratory
CEI	Construction Engineering and Inspection
CFR	Code of Federal Regulations
DBB	Design-Bid-Build
MTD	Materials and Tests Division
CMEC	Construction Materials Engineering Council
FHWA	Federal Highway Administration
HMA	Hot-Mix Asphalt
HMAC	Hot-Mix Asphalt Center
IA	Independent Assurance
L-A-B	Laboratory Accreditation Bureau
MPL	Material Producer List
OLE	Object Linking and Embedding attachment window
QAP	Quality Assurance Program
QAT	Quality Assurance Test
QC	Quality Control
QCP	Quality Control Plan
SM	SiteManager
SOP	Standard Operating Procedure
TXAPA	Texas Asphalt Pavement Association
TxDOT	Texas Department of Transportation

Abuse—Careless or deliberate deviation from testing procedures or specifications.

Acceptance Program—All factors that comprise TxDOT’s program to determine the quality of the product as specified in the Contract requirements. These factors include verification sampling, testing, and inspection and may include results of QC sampling and testing.

Accredited Laboratories—Laboratories that are recognized by a formal accrediting body as meeting quality system requirements including demonstrated competence to perform standard test procedures.

Breach of Trust—Violation of the trust placed in the certified technician including, but not limited to, acts such as, falsification of records; being aware of improprieties in sampling, testing, or production by others and not reporting them to appropriate supervisors involved in the project; re-sampling or retesting without awareness and consent of appropriate supervisors involved in the project; and manipulating compensation or production.

Certified Technician—A technician certified by some agency as proficient in performing certain duties.

Independent Assurance (IA) Program—Activities that are an unbiased and independent evaluation of all the sampling and testing procedures, equipment, and personnel qualifications used in the acceptance program.

Material Producer List (MPL)—TxDOT-approved products and materials from various manufacturers and producers are located at: <https://www.txdot.gov/business/resources/producer-list.html>

Neglect—Unintentional deviations from testing procedures or specifications.

Proficiency Samples—Homogenous samples that are distributed and tested by two or more laboratories or personnel. The test results are compared to assure that the laboratories or personnel are obtaining the same results.

Qualified Laboratories—Laboratories that are capable as defined by appropriate programs established by TxDOT. As a minimum, the qualification program must include provisions for checking testing equipment, and the laboratory must keep records of calibration checks.

Qualified Sampling and Testing Personnel—Personnel who are capable as defined by appropriate programs established by TxDOT.

Quality Assurance (QA)—All planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality.

Quality Control (QC)—All Contractor operational techniques and activities performed or conducted to fulfill the Contract requirements.

TxDOT Standard Specifications—the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges adopted by the Texas Department of Transportation, including all revisions thereto applicable on the effective date of the Contract documents.

Verification Sampling and Testing—Sampling and testing performed to verify the quality of the product.

Appendix B Test Methods for Split/Proficiency Evaluation

After observation and qualification, each qualified technician is required to participate annually in one proficiency or split sample test for each test method requiring independent assurance. Split sample test results must compare to the independent assurance test results below. Proficiency sample test results must be within ± 2 standard deviations of the proficiency sample mean.

Laboratory Testing Procedures and Tolerance Limits

Test Procedure	Description	Tolerance
Tex-104-E	Liquid Limit of Soils	15% of mean ¹
Tex-105-E	Plastic Limit of Soils	15% of mean ¹
Tex-106-E	Plasticity Index of Soils	20% of mean ¹
Tex-107-E	Bar Linear Shrinkage of Soils	$\pm 2\%$
Tex-110-E	Particle Size Analysis of Soils, Part I	> No. 4 sieve: $\pm 5\%$ points
		\leq No. 4 sieve: $\pm 3\%$ points
Tex-113-E	Moisture-Density Relationship of Base Materials	Density ± 2.0 PCF
		Moisture Content $\pm 0.5\%$
Tex-117-E	Triaxial Compression for Disturbed Soils and Base Materials, Part II	Strength ± 15 psi
		Moisture Content $\pm 0.5\%$
Tex-200-F	Asphaltic Concrete Combined Aggregate	>5/8" sieve: $\pm 5.0\%$ points (individual % retained)
		$\leq 5/8$ " sieve-No. 200: $\pm 3.0\%$ (individual % retained)
		Passing No. 200: $\pm 1.6\%$ points
Tex-206-F	Compacting Test Specimens of Bituminous Mixtures	$\pm 1.0\%$ laboratory-molded density in accordance with Tex-207-F
Tex-207-F	Determining Density of Compacted Bituminous Mixtures	Laboratory-Molded Density: $\pm 1.0\%$
		Laboratory-Molded Bulk Specific Gravity: ± 0.020
		In-place air voids (cores): $\pm 1.0\%$
Tex-227-F	Theoretical Maximum Specific Gravity of Bituminous Mixtures	± 0.020
Tex-236-F	Asphalt Content of Asphalt Paving Mixtures by the Ignition Method	$\pm 0.3\%$

Test Procedure	Description	Tolerance
Tex-241-F	Compacting Bituminous Specimens Using the Superpave Gyrotory Compactor (SGC)	± 1.0% laboratory-molded density in accordance with Tex-207-F
Tex-418-A	Compressive Strength of Cylindrical Concrete Specimens	17% of mean ¹ (4 × 8" specimen)
		14% of mean ¹ (6 × 12" specimen)

¹ The difference between compared test results must not exceed the indicated percentage of the mean of the compared test results, where the mean is the average of the two test results.

EXAMPLE: Plasticity Index

Tolerance = 20% of the mean

Technician test value	18
IA technician test value	22
Mean	20
20% difference	4

Both values are within 20% of the mean.

Appendix C IA Annual Report

{Date}

Independent Assurance Program Manager
Materials and Tests Division (MTD)
Texas Department of Transportation
125 East 11th Street
Austin, TX 78701

RE: Annual Report of Independent Assurance (IA) Program Results – {Project Name}

Dear Sir:

In accordance with the requirements set forth in the TxDOT Quality Assurance Program for Design-Bid-Build Projects, the information below summarizes the results of system approach independent assurance (IA) testing conducted by our firm on the {Project Name} project for calendar year {XXXX}.

TxDOT Independent Assurance Program Results			
IA Activities	TxDOT	Non-TxDOT	Total
Number of personnel evaluated under system approach			
Number of personnel removed from the IA program			
Number of IA evaluations completed			
Number of IA evaluations meeting tolerance			
Number of IA evaluations not meeting tolerance			

CC: Materials and Tests Division Director
TxDOT - MTD

Appendix D Material Certification Letter Example – Federal Oversight

A form-fillable version of the Material Certification Letter can be found [here](#).



Texas Department of Transportation

ADDRESS, CITY, TEXAS, ZIP | TELEPHONE | WWW.TXDOT.GOV

Date

Division Administrator
Federal Highway Administration, Texas Division
300 East 8th Street
Austin, TX 78701

RE: Final Materials Certification Letter

Project:
Federal Aid Project No.: Federal Project No.
CSJ: CSJ Number
County: County

Dear FHWA Texas Division Administrator,

This letter is to certify:

The results of the tests used in the acceptance program indicate that the materials incorporated in the construction work, and in the construction operations controlled by sampling and testing, were in conformity with the approved plans and specifications. Any material represented by an acceptance test that does not meet the criteria contained in the plans and specifications is considered an exception.

Exceptions to the plans and specifications are explained on the back hereof (or on attached sheet).

There are no exceptions to the plans and specifications on this project.

Sincerely,

Name of TxDOT District Area Engineer or Director of Construction, P.E.
Title

cc: FHWA Texas Division
Director, Materials & Tests Division, TxDOT

OUR VALUES: People • Accountability • Trust • Honesty
OUR MISSION: Connecting You with Texas
An Equal Opportunity Employer

Appendix E Material Certification Letter Example – Non-Federal Oversight

A form-fillable version of the Material Certification Letter can be found [here](#).



ADDRESS, CITY, TEXAS, ZIP | TELEPHONE | WWW.TXDOT.GOV

Date

TxDOT District Engineer
Title

RE: Final Materials Certification Letter

Project: SH Contract No.: SH Contract No.
CSJ: CSJ Number
County: County

Dear District Engineer,

This letter is to certify:

The results of the tests used in the acceptance program indicate that the materials incorporated in the construction work, and in the construction operations controlled by sampling and testing, were in conformity with the approved plans and specifications. Any material represented by an acceptance test that does not meet the criteria contained in the plans and specifications is considered an exception.

Exceptions to the plans and specifications are explained on the back hereof (or on attached sheet).

There are no exceptions to the plans and specifications on this project.

Sincerely,

Name of TxDOT District Area Engineer or Director of Construction, P.E.
Title

cc: Director, Materials & Tests Division, TxDOT

OUR VALUES: People • Accountability • Trust • Honesty
OUR MISSION: Connecting You with Texas
An Equal Opportunity Employer

Appendix F District Accreditation Results Memo Example



MEMO

[Date]

To: [TxDOT District Engineer]

From: [MTD Director]

Subject: District QAP Accreditation

The Materials and Tests Division (MTD) has completed an accreditation inspection of the [District], in accordance with the TxDOT Quality Assurance Program for Construction.

The District Accreditation Report has been issued with an overall rating of [1/2/3], indicating [an excellent review with minor or no deficiencies were noted/several deficiencies or repetitive observations were noted/a level of negligence was found programmatically violating compliance requirements]. This represents [an improvement/no change/a decline] from the previous rating of [1/2/3] issued in the [Month, Year] District Accreditation Report.

MTD has requested that the District Director of Construction provide a formal written response describing the corrective actions taken to address the deficiencies, as well as sufficient documentation to substantiate the corrective actions by [Date]. MTD will work with the district staff to resolve all deficiencies within 90 days (i.e., by [Date]). To assist in meeting this deadline, any deficiencies which remain outstanding after 45 days will be communicated to the District Engineer. Deficiencies that are outstanding after 60 days may be communicated to the TxDOT Director of District Operations and Director of Engineering & Safety Operations.

Rating of 3

[In addition, the district will be subject to a re-inspection by MTD approximately 12-18 months following the accreditation close-out. The re-inspection will focus on the portions of the District Accreditation Report which resulted in the rating of 3. MTD will continue to re-inspect the district annually until a minimum rating of 2 is achieved.

Please contact [Quality Assurance Staff] at MTD with any questions.

CC: [Director of District Operations]
[Director of Engineering & Safety Operations] } **Rating of 3**
[Deputy District Engineer]
[MTD Deputy Director]

Appendix G District Accreditation Re-Inspection Results Memo Example



MEMO

[Date]

To: [TxDOT District Engineer]
From: [MTD Director]
Subject: District QAP Accreditation Re-Inspection

The Materials and Tests Division (MTD) has completed a re-inspection of the [District], in accordance with the TxDOT Quality Assurance Program for Construction. The purpose of the re-inspection was to evaluate the continuity of corrective actions implemented to address deficiencies noted in the [Month, Year] District Accreditation Report, which resulted in a rating level of 3.

Rating of 2

The re-inspection found that corrective actions implemented to address previous [technician/equipment/quality management system/CE&I project] deficiencies are operating effectively to ensure continued compliance with the TxDOT Quality Assurance Program for Construction. The records reviewed were substantially complete and accurate.

As a result, the district has been issued a **re-inspection rating of 2**, indicating significant improvement from the previous inspection. This concludes the laboratory re-inspection process, and the district will return to the standard cyclical accreditation schedule.

Rating of 3

The re-inspection found that corrective actions implemented to address previous [technician/equipment/quality management system/CE&I project] deficiencies were insufficient or were not sustained to ensure continued compliance with the TxDOT Quality Assurance Program for Construction. As a result, the district has been issued a **re-inspection rating of 3**, indicating a continued level of negligence was found programmatically violating compliance requirements. Deficiencies identified during the re-inspection are listed in the attached document.

The district must provide MTD with a formal written response describing the corrective actions taken to address the deficiencies, as well as sufficient documentation to substantiate the corrective actions by [Date].

The district will also be subject to a re-inspection annually until a minimum re-inspection rating of 2 is achieved.

Please contact [Quality Assurance Staff] at MTD with any questions.

CC: [Director of District Operations]
[Director of Engineering & Safety Operations]
[Deputy District Engineer]
[District Director of Construction]
[District Laboratory Supervisor]
[MTD Deputy Director]
[MTD Quality Assurance Staff]

Appendix H District Quality Assurance SOP Requirements

District Quality Assurance Standard Operating Procedure Requirements

1. **Quality Assurance Standard Operating Procedures (SOP).** Develop an SOP that is district-specific and developed in accordance with the Quality Assurance Program (QAP) for Design-Bid-Build (DBB) Projects. Update the written SOP annually by April 1st, and document approval by the District Engineer. Provide a copy of the SOP to Materials and Tests Division (MTD) via email at MTD_QAP@txdot.gov. Include the following procedures and items in the SOP:
 - 1.1 **Quality Assurance Roles-** Identify designated individuals responsible for the following quality assurance roles, as defined in the QAP. Designated individuals may further delegate tasks associated with their role; however, the individual will be responsible for the overall function of the role.
 - Area Office (AO) Coordinator for each AO within the district to serve as the primary point of contact between the AO, district laboratory, and Construction Engineering and Inspection (CEI) firms; and
 - Material Quality Champion to serve as the primary point of contact between the district and MTD regarding material quality.
 - 1.2 **Sampling and Testing Qualifications-** Define a process to ensure that all technicians performing sampling and/or testing for TxDOT projects are appropriately qualified for any test methods performed. Identify the following:
 - A designated person responsible for managing technician qualifications and corresponding records retention;
 - Procedures to ensure that required technician certification documentation is completed and retained within the Construction Contract Management System (CCMS), including Form 2687, when required;
 - Procedures to qualify technicians by authorized district personnel;
 - A designated person responsible for obtaining ACI qualification to certify district personnel for concrete test methods;
 - Procedures to ensure that technicians participate and perform proficiency samples independently; and
 - How the district will monitor for expiring technician qualifications.
 - 1.3 **Equipment Requirements-** Define a process to ensure that equipment used for acceptance testing is calibrated, standardized, checked, or verified as required by applicable procedures. Identify the following:
 - A designated person responsible for managing equipment requirements and corresponding records retention;
 - Procedures to calibrate, standardize, check, or verify district equipment within required frequency intervals, including equipment for all AOs and field laboratories;
 - Procedures to enter and update equipment inventory in the CCMS;
 - Procedures to complete and store equipment records within the required location;
 - How the district will ensure that equipment is shared with the contractor only when allowed by specifications.
 - 1.4 **CEI Firm and Commercial Laboratory Qualification-** Define a process to ensure that CEI firms and commercial laboratories are qualified for the performance of required sampling and testing procedures. Identify the following:
 - A designated person responsible for managing CEI firm and commercial laboratory qualification inspections and corresponding records retention;
 - Procedures to conduct qualification inspections, including:
 - How the district will ensure that required inspection documentation, including supporting technician and equipment records, is complete and stored within the required location,
 - How the district will ensure that required qualification documents are completed and submitted to MTD when required, and
 - How the district will ensure that CEI firm and commercial laboratory qualification inspections are completed before the expiration of the prior laboratory qualification certificate;
 - Procedures to notify the district laboratory of ongoing CEI firm and commercial lab technician qualification needs; and
 - Procedures to conduct the annual audit of CEI firms and commercial laboratories to ensure continual compliance with technician records and equipment intervals, including:

- Who is responsible for performing the reviews,
- How the district will conduct and document the reviews, and
- How the district will ensure that updated technician certification and equipment records are complete and stored within the required location.

1.5 District Oversight and Monitoring- Define a process to monitor for continual quality program compliance. Identify the following:

- Procedures to adjust sampling and testing requirements in the CCMS, including:
 - Who is responsible for making changes in the system,
 - Who has authority to approve the changes, and
 - How the district will ensure that the reason for the change is documented;
- Procedures to ensure the completeness and accuracy of sample information and material test results entered in the CCMS, including items completed by CEI firms or commercial laboratories;
- Procedures to ensure that material samples are authorized within 30 days or justification for delayed authorization is documented;
- Procedures to complete Material Certification Letters at project-close out, including:
 - Who is responsible for completing and signing the letter,
 - How the district will identify material exceptions to be included in the letter, and
 - How the district will document and compile justifications for material exceptions identified; and
- Procedures to conduct an internal audit of the district, including:
 - The frequency of the reviews (at a minimum annually),
 - Who is responsible for performing the reviews,
 - How the district will monitor for expiring technician certifications and equipment intervals,
 - How the district will ensure that required equipment records are complete, accurate, and stored within the required location,
 - How the district will monitor the material samples dashboards for completeness, accuracy, and timely authorization of material samples,
 - How the district will document the reviews, and
 - The process for addressing the items identified during the reviews.

Appendix I

CEI Quality Control Plan Requirements

Quality Control Plan

1.1 Quality Control Plan (QCP). Develop a QCP that is project specific and developed in accordance with the DBB QAP. Submit the written QCP within 10 days after execution of the CE&I contract and before the mandatory kick-off meeting. Receive written approval from the AO on the QCP before beginning inspection, sampling and testing and for any addendums. Include the following procedures and items in the QCP:

1.1.1 Project and Personnel- For the CE&I project and personnel include:

- CSJ#, District, County, AE, Highway;
- a dedicated person responsible for quality with their current contact information (cell phone and email address) that will ensure that all CE&I and Contractor technician certifications and equipment calibrations are current, including updates to test methods, and proficiencies performed in time and independently;
- a list of the subcontractor firms and a defined scope of responsibility maintained by the principal firm to comply with the DBB QAP; names of individuals and their sampling and testing responsibilities;
- current electronic copies of certification documents for individuals performing specified sampling and testing functions;
- procedure for ensuring technicians participate and perform proficiency samples independently and how technicians will not share results; and
- handling accusations of misconduct covering: neglect, abuse, or breach of trust.

1.1.2 Laboratory- For CE&I laboratory equipment and calibration, include:

- current electronic copies of most recent equipment calibration checks where applicable and in accordance with:
 - Tex-198-E, "Minimum Standards for Acceptance of a Laboratory for Soils and Flexible Base Testing,"
 - Tex-237-F, "Minimum Standards for Acceptance of a Laboratory for Hot Mix Testing,"
 - Tex-498-A, "Minimum Standards for Acceptance of a Laboratory for Concrete and Aggregate Testing,"and
 - Tex-900-K Series, procedures for calibrating, verifying, and certifying equipment and devices.
- include only equipment required for testing on this project and the support equipment such as calipers and weights;
- annual equipment calibration schedule with date(s) due;
- maintenance and repair plan for laboratory equipment;
- electronic copies of all standards used for calibrating or verifications; and
- procedures for ensuring quality is attained through laboratory testing equipment beyond the normal calibration cycle.

1.1.3 Quality- For the CE&I firm to achieve quality through inspection, sampling, and testing, include:

- a designated person responsible for the CE&I firm's adherence to the QCP;
- how QCP information will be communicated to all members of the CE&I team;
- how the firm will ensure that employees receive a copy and understand the construction Contractor's quality control plan/paving plan for each material;
- all reference document resources available to technicians;
- in-house equipment available to technicians for equipment calibration and repair;
- instructions for how laboratory equipment shall be cared for;
- procedures for establishing which equipment can be shared between the CE&I firm and the construction Contractor and the corresponding approval process;
- procedures and time limits for reporting test results to the Engineer and Contractor;
- timely review of QA test results for reasonableness and comparison of QC and QA data; and
- how the firm will protect the integrity of quality assurance data, to include:
 - do not provide the construction Contractor with the random numbers for material sampling in advance;
 - separation of review and authorization functions in SiteManager;
 - how test results will be documented in SiteManager when the tester does not directly enter the results; and
 - how the firm will ensure the correct QC and QA data is saved in SiteManager.