

ALDOT-341 Independent Assurance Program

1.1 Scope

To describe the necessary activities for Alabama Department of Transportation (ALDOT) personnel as related to the Independent Assurance (IA) Program. The IA Program shall evaluate the performance of the qualified sampling and testing personnel and equipment.

1.2 Authority

Code of Federal Regulations (CFR), Federal-Aid Policy Guide (FAPG), Subchapter G – Engineering and Traffic Operations, Part 637 – Construction Inspection and Approval, Subpart B – Quality Assurance Procedures for Construction

1.3 Independent Assurance Personnel

IA personnel are employed by ALDOT or consulting firm hired by the Department to perform IA inspection and testing. Area personnel performing IA evaluations must participate in at least one evaluation per fiscal year.

1.3.1 General Information

All technicians who perform acceptance program testing must meet applicable ALDOT qualifications. These qualifications must be verified by review of the procedures performed and observed by IA personnel. Other qualifications may apply as defined in the contract.

IA is specifically designed to include testing performed on project produced materials and typically does not include manufactured products. Testing performed by ALDOT Materials & Tests (M&T) Central Laboratory is considered covered by the laboratory's accreditation and participation in proficiency testing. All certified technicians not located in the ALDOT M&T Central Laboratory must be evaluated yearly.

Periodic IA evaluations are intended to assure the integrity of the testing program used in acceptance of the materials.

The number of evaluations for each test method will be a percentage of the active qualified technicians in that test method for one fiscal year.

1.3.2 Goals of Evaluation

IA evaluations will be determined by a statistically representative sampling of active technicians.

Technicians will be considered active if they have performed tests that are used by the Department to accept material. They will be evaluated for each of the test methods for which they are active. The Department will document the percent of active technicians evaluated for each test method.

It is understood that the Department will not be able to evaluate every active technician utilized in all test methods.

The Department has set a goal of evaluating an overall combined average of 90% of the technicians utilized in all test methods.

Example:

AASHTO T-27	89% of active technicians evaluated
ASTM D-4125	98% of active technicians evaluated
AASHTO T-22	92% of active technicians evaluated

Average = 93%, Goal was achieved.

The schedule will be based on a systems approach.

The qualifications required for active technicians to perform specific test are listed below:

- (A) **AGGREGATE**
Aggregate Technician
Precast Products Technician
- (B) **ASPHALT**
Roadway HMA Pavement Technician
Asphalt Level I Laboratory Technician
Asphalt Level II Quality Manager Technician
Asphalt Level III Mix Design Technician
Performance Graded Asphalt Binder Technician Level I
Performance Graded Asphalt Binder Technician Level II
Category "B" Technician
Category "C" Technician
- (C) **CONCRETE**
ALDOT Concrete Technician
ACI Concrete Field Testing Technician Grade I
ACI Concrete Strength Testing Technician
PCI Quality Control Technician Level I & II
NPCA Precast Technician
- (D) **EARTHWORK**
Earthwork (Unbound Materials) Technician

1.3.3 Evaluation Scheduling

Prior to technicians sampling and testing materials for acceptance, project personnel will contact the Area Materials Office for an IA evaluation. Area personnel will also perform random IA evaluations throughout the year in order to meet sampling goals as specified in **Section 1.3.2** of this procedure. These IA evaluations may be scheduled with the technician in advance, or they may be unannounced, without notice.

1.3.4 Evaluating Equipment

Testing equipment used by any technician performing testing for Department projects must be evaluated using one or more of the following: calibration checks, split samples or proficiency samples. Equipment conformance will be reported to Area IA personnel in the Qualification Performance Report (QPR). See Appendix A. The first unsatisfactory evaluation due to deficient equipment will result in a strike against the equipment.

1.3.5 Evaluating Personnel

Per FHWA Regulation 23 CFR 637, "Testing personnel shall be evaluated by observations and split samples or proficiency samples."

The combination of an observation and split sample applies only to test methods with split sample comparison criteria. A split sample or a proficiency sample can be performed in addition to or in place of observation when evaluating a technician on test methods with comparison criteria if requested by Area IA Personnel.

IA evaluations at production facilities should be performed by IA personnel working in or for the corresponding Area Materials office and who are already visiting the production facility on a regular basis.

IA personnel will promptly compare and document test results to support the Qualification Performance Report (QPR) described in **Section 1.3.4**.

1.3.6 Resolution for Deficient Evaluation

The Department will issue a strike and perform re-evaluation(s) on technicians who fail an evaluation. The re-evaluation is required on the same test method that the technician failed during the previous evaluation. However, the Department has the option to perform the re-evaluation on additional test methods associated with the qualification.

Another strike will be issued to the technician if:

- The re-evaluation was unsatisfactory due to the technician's failure to properly demonstrate the test procedure during observation.
- Split samples did not compare.
- The proficiency sample test result is outside two standard deviations.

See Appendix B.

If the re-evaluation of a split sample is unsatisfactory due to deficient testing equipment and is beyond the technician's control, a second strike will not be issued to the technician. The laboratory's qualification status may be suspended on the affected test method for non-compliance and the Department may suspend the facility's QC plan, if applicable. See Appendix C.

The Department will perform re-evaluation(s) within 365 days from the first strike. The re-evaluation must be performed by different IA personnel or someone other than the person who issued the previous strike. If the re-evaluation results in three strikes in the same qualification area, the technician will be prohibited from performing related testing. Revocation of the technician's certification will be pending Certification Board review.

1.3.7 Comparison Tolerance

1.3.7.1 Comparison Testing

Acceptable comparison testing tolerances are shown in Appendix D.

1.3.7.2 Proficiency Samples

Acceptable tolerance for the test results of proficiency samples is two standard deviations of the grand average value for all proficiency samples in that evaluation.

1.4 Documentation

1.4.1 Annual Report

In accordance with FHWA Regulation 23 CFR 637, those States utilizing the IA system approach must prepare and submit an annual report to the FHWA Division Office.

The annual report should include the following information: the number of certified technicians, the number of active technicians, the number of technicians covered by the IA program, the number of IA reports that had deviations and a summary of how the deviations were addressed, along with the potential systematic solutions to reoccurring deficiencies.

1.4.2 Qualification Performance Report (QPR)

The Qualification Performance Report will be generated by Construction and Materials Management System (CAMMS). All IA evaluations are entered in CAMMS. The QPR shall be completed and made available in CAMMS within five (5) working days. Evaluation by observation will be considered satisfactory if the procedure is performed correctly and the equipment is found to meet the specified requirements. Evaluation by split sample will be considered satisfactory if the test results meet the comparison criteria as defined in Appendix D. The evaluation by proficiency sample shall be considered satisfactory if the test results are within two standard deviations of the grand average value for all proficiency samples in that evaluation. The technician and other personnel identified on the QPR should be notified of the results either by courier mail or electronic mail for satisfactory evaluations. The notification list is shown below in the table. For unsatisfactory evaluations, additional personnel will be notified as described below. Refusal to participate or a lack of cooperation in the IA evaluation will be sufficient reason to consider an evaluation unsatisfactory. Technicians who submit late proficiency sample test results will receive an unsatisfactory evaluation. Late test results are defined as those test results not submitted by the result submission date. Technicians who receive three strikes in the same qualification area will be prohibited from performing any related testing until the strikes are resolved.

Notification of Satisfactory Qualification Performance Report	
IA Evaluation of Contractor's QC Technician	IA Evaluation of ALDOT Verification Technician
Technician, Supervisor	Technician, Supervisor

Notification of Unsatisfactory Qualification Performance Report		
Strike	IA Evaluation of Contractor's QC Technician	IA Evaluation of ALDOT Verification Technician
1 ST Strike	QC Manager, Technician, Supervisor	Technician, Supervisor
2 ND Strike	QC Manager, Technician, Supervisor	Technician, Supervisor, Project Engineer
3 RD Strike	Technician, Supervisor, Area Materials Engineer (AME), Project Engineer, Area Construction Engineer (ACE)	Technician, Supervisor, AME, ACE, Project Engineer

1.4.3 IA Checklists

The IA Checklists are available on the Bureau of Materials and Tests website.

1.5 Responsibilities

Area Materials Offices are responsible for IA evaluation of the Area personnel participating in the Quality Control, Verification and Independent Verification testing of the acceptance program sampling and testing.

The Bureau of Materials and Tests monitors and reviews the IA Program statewide to ensure consistency in implementation and to evaluate the IA Program effectiveness. The IA fiscal year reports are reviewed and used to refine the system.

1.6 Forms

Qualification Performance Report is available on the Bureau of Materials and Tests website.

Appendix A Qualification Performance Report

ALABAMA DEPARTMENT OF TRANSPORTATION QUALIFICATION PERFORMANCE REPORT

Project Information:	Qualified Technician Information:
Project Ref #:	CAMMs User ID:
Date:	Active in Area(s):
Time:	Type of Technician:
Location:	Company Name:
Project Office:	Mailing Address:

Procedure(s) Reviewed:

-
- | | | | |
|---|--|--|--|
| <input type="checkbox"/> AASHTO T2(R90)
Aggregate Sampling | <input type="checkbox"/> AASHTO T84
Specific Gravity and Absorption of Fine | <input type="checkbox"/> AASHTO T152
Air Content by the Pressure Method | <input type="checkbox"/> AASHTO T329
Moisture Content by the Oven Method |
| <input type="checkbox"/> AASHTO T11
Aggregates Finer than # 200 Sieve | <input type="checkbox"/> AASHTO T88
Particle Size Analysis of Soils | <input type="checkbox"/> AASHTO T166
Bulk Specific Gravity of Compacted Hot Mix | <input type="checkbox"/> ASTM D4125
Asphalt Content by the Nuclear Method |
| <input type="checkbox"/> AASHTO T22
Compressive Strength of Cylinders | <input type="checkbox"/> AASHTO T89
Liquid Limits of Soils | <input type="checkbox"/> AASHTO T168
Sampling Bituminous Paving Mixtures | <input type="checkbox"/> ASTM T1064
Temperature of Freshly Mixed Concrete |
| <input type="checkbox"/> AASHTO T23
Standard of Making Concrete Cylinders | <input type="checkbox"/> AASHTO T90
Plastic Limit, Plasticity Index of Soils | <input type="checkbox"/> AASHTO T209
Max Specific Gravity, Density of Hot Mix | <input type="checkbox"/> ALDOT 105
Method of Sampling for Resilient Modulus Tests |
| <input type="checkbox"/> AASHTO T27
Sieve Analysis for Fine and Coarse Aggregates | <input type="checkbox"/> AASHTO T99
Moisture Density Relations of Soils | <input type="checkbox"/> AASHTO T248
Reducing Aggregate Samples with a Mechanical Splitter | <input type="checkbox"/> ALDOT 222
In Place Density & Moisture with Nuclear Gauges |
| <input type="checkbox"/> AASHTO T30
Mechanical Analysis of Extracted Aggregate | <input type="checkbox"/> AASHTO T119
Concrete Slump Test | <input type="checkbox"/> AASHTO T308
Asphalt Content by the Ignition Method | |

Type of Evaluation:

Observation

Split Sample Results

Technician Result: _____ IA Result: _____ Comparison Criteria: _____

Proficiency Sample

Sample # _____	Tech. Result	Average	Standard Dev.	Passing Range
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Evaluation Summary:

Was sampling, testing and/or reporting demonstrated according to qualification standards? _____

YES concludes evaluation(s) satisfactory, if NO, see below.

Was equipment used in conformance with appropriate test method(s)? _____

YES concludes evaluation(s) satisfactory, if NO, see below.

If results were unsatisfactory, indicate strikes given (1ST, 2ND, 3RD): _____

If 1ST and 2ND strike, document results. If 3RD strike, written summary of observations sent to Area Materials Engineer for disposition

Comments and others:

Signature of Independent Assurance Evaluator/Observer

Date Approved

Cc: Original (IA Files/AME): _____

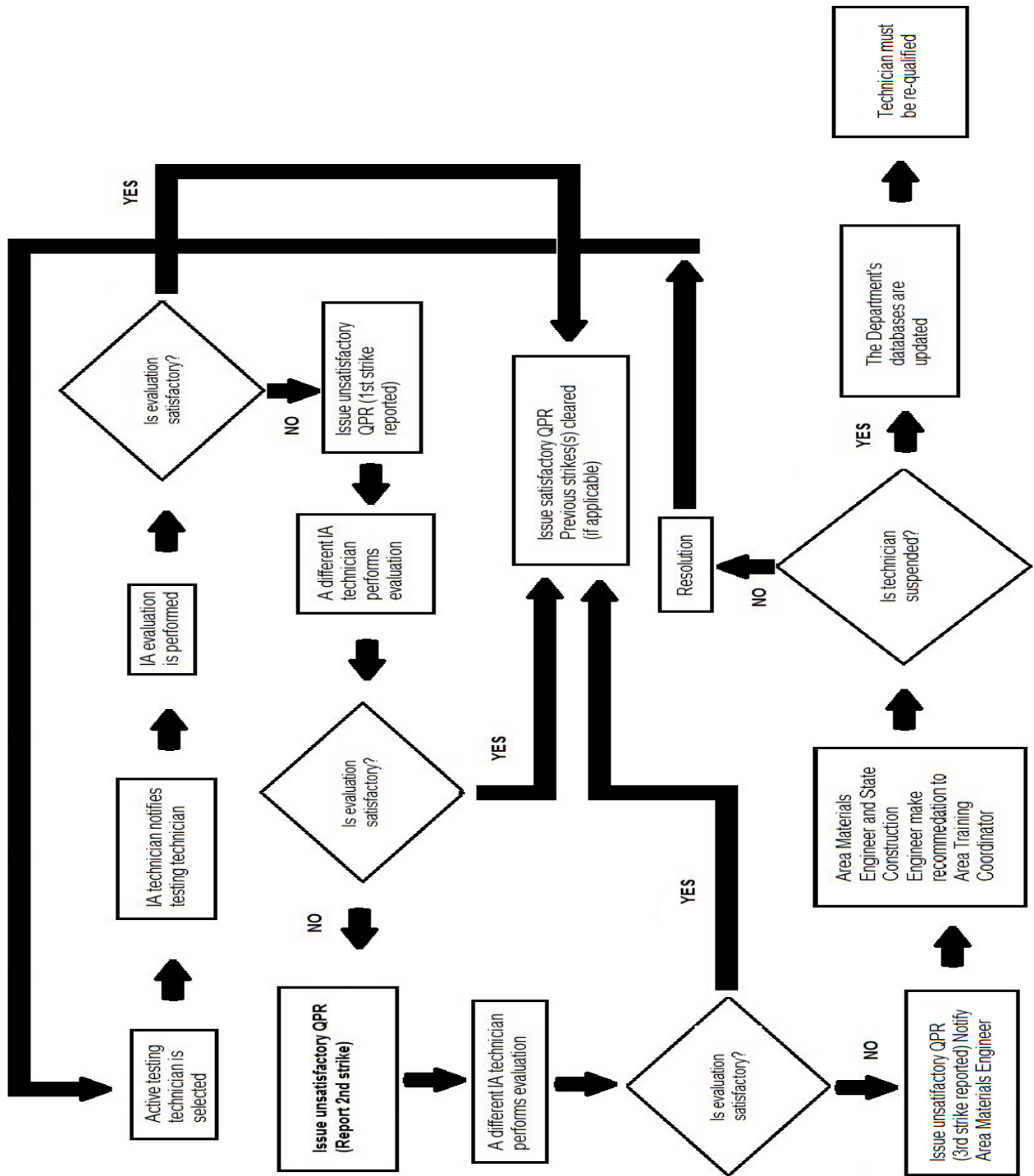
Project Engineer: _____

Technician's E-mail: _____

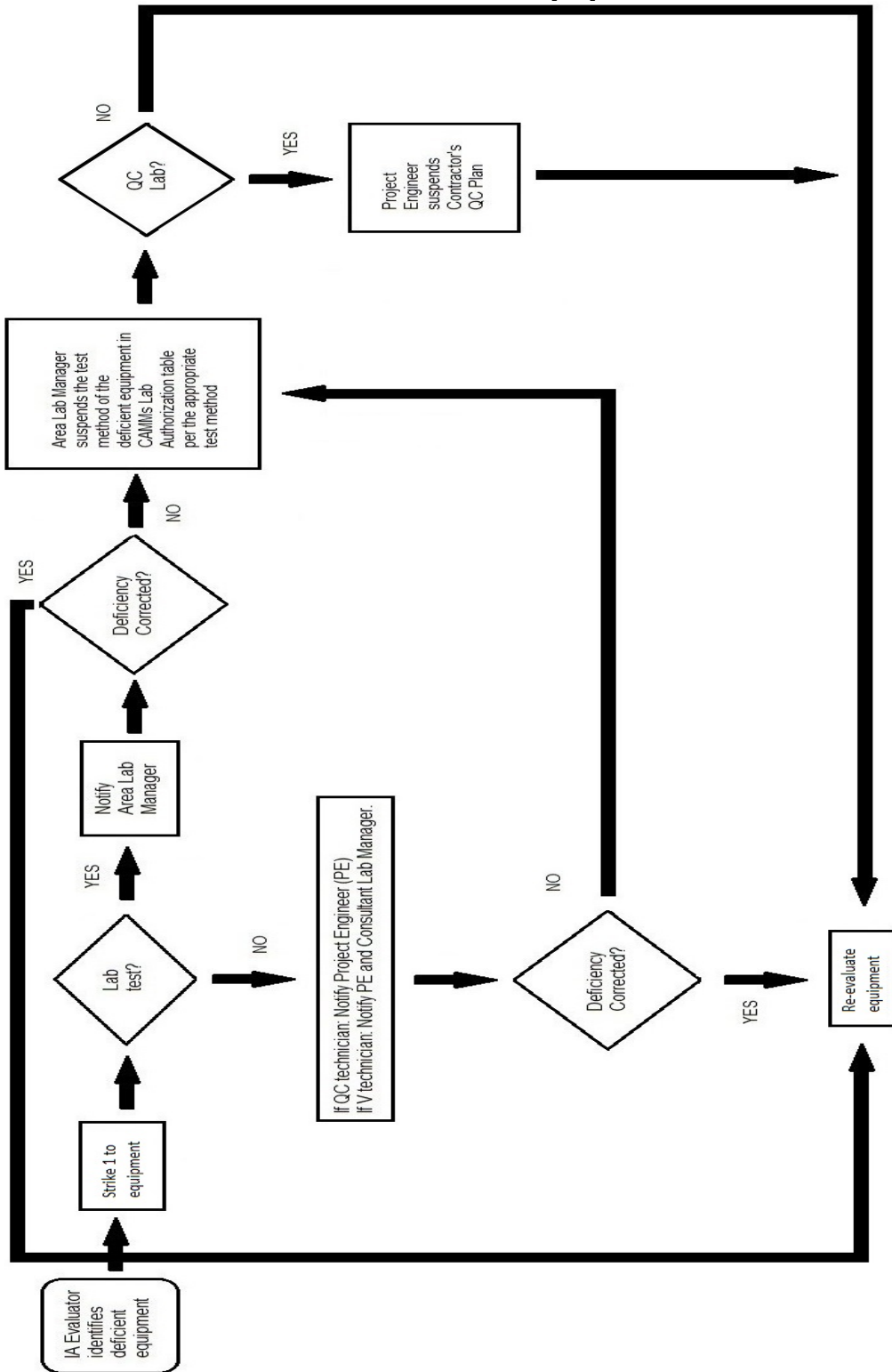
Other(s): _____

Supervisor's E-mail: _____

Appendix B Independent Assurance Flowchart



Appendix C IA Evaluation of Equipment



Appendix D Comparison Sample Test Results

Type Of Test	Material	Maximum Difference Between Test Result
Asphalt Content (AASHTO T308/ASTM D4125)	Asphalt Plant Mixes	0.3 percent by mass of total mixture.
Sieve Analysis and -#200 (-75 μm) Wash Test (AASHTO T27)	Concrete Aggregates; Selected Soil, Granular Soil, Soil Aggregate, Processed Reef Shell, and Crushed Aggregate in Subbase and Base Courses.	Sieves larger than #16 (1.18mm) - 4% Pts. #100 thru #16 - 3% Pts (1.50 μm thru 1.18 mm) #200 (75 μm Sieve) - 2% Pts. Note: 1% Pt. for #200 (-75 μm) test for concrete aggregates.
Density (AASHTO T99)	Embankments; Selected Soil, Granular Soil, Soil Aggregate, Processed Reef Shell, and Crushed Aggregate in Subbase and Base Courses.	4 Pcf (64 kg/m ³)
Air Voids (AASHTO T152)	Asphalt Plant Mixes	1%
Density (AASHTO T209)	Asphalt Plant Mix Layers	1.5% (+-) Bulk Density
Air Content (AASHTO T152)	Cement Concrete	1 1/2%
Slump (AASHTO T119)	Cement Concrete	1/2" (Avg. of 2<3") (13 mm (Avg. of 2<75 mm)) 3/4" (Avg. of 2, 3"-5") (19 mm (Avg. of 2, 75 mm to 125 mm)) 1" (Avg. of 2 > 5") (25 mm (Avg. of 2>125 mm))
Compressive Strength of Cylinders (AASHTO T22)	Structural Cement Concrete	The average of the IAS&T cylinders shall be not less than 85% nor more than 115% of the acceptance cylinder used for comparison.