U.S. Department of Transportation
Federal Highway Administration

Oklahoma Division

5801 N Broadway Ext., Ste. 300
Oklahoma City, OK 73118
Phone: 405-254-3300
Fax: 405-254-3302
www.fhwa.dot.gov/okdiv

March 07, 2013

In Reply Refer To:
HDA-OK

Gary Ridley
Director
Oklahoma Department of Transportation
200 NE 21st Street
Oklahoma City, OK 73105

Attention: Mr. Casey Shell

Dear Mr. Ridley:

The ODOT Quality Assurance (QA) program dated January 30, 2013 with modification in its Independent Assurance (IA) program has been reviewed and approved. This modified QA program supersedes its previous version dated September 22, 2011.

23 CFR 637.207 "Quality Assurance program" requires that if state transportation agency uses system based approach for its IA program, then the agency shall provide an annual IA report to FHWA summarizing the results of IA program. The ODOT shall provide an annual IA report to our Office by February 15th of each year. Any future modification in this document should be coordinated with this Office.

If you have any questions and comments please contact Waseem Fazal, Pavement and Materials Engineer, at 405-254-3332.

Sincerely yours,

Thomas D Goldstein

Thomas Goldstein P.E,
Team Leader, Engineering & Operations

cc:
Ivan Marrero, Assistant Administrator, FHWA
Waseem Fazal, Pavement & Materials Engineer, FHWA

OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 Northeast 21st Street
Oklahoma City, OK 73105-3204

January 30, 2013

Mr. Gary Corino, Division Administrator
Federal Highway Administration
5801 N. Broadway Ext., Suite 300
Oklahoma City, OK 73118

Dear Mr. Corino:

Changes to the Independent Assurance Program have created the need to update the Department's Quality Assurance (QA) Program previously dated September 29, 2011. Revisions to the Department's Quality Assurance Program are attached for your review and approval.

The following items are attached to this cover letter:

ODOT Quality Assurance Program
Appendix A, "SiteManager™ Sampling Frequency Report"
Appendix B, "Guide to Independent Assurance Program"
Appendix C, "Split Sample Result Tolerance Guide"

Please contact me if you require any additional information on this matter.

Sincerely,

Casey Shell, P. E.
Director of Operations

cc: George Raymond, Construction Engineer
Reynolds Toney, Materials Engineer

OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

DATE: January 30, 2013

TO: Casey Shell, Director of Operations

FROM: Reynolds Toney, Materials Engineer

SUBJECT: ODOT Quality Assurance Program

Review and updates to the Independent Assurance Program have created the need to update the Department's Quality Assurance (QA) Program previously dated September 29, 2011. Revisions to the Department's Quality Assurance Program are attached for your review and consideration.

The following items are attached to this cover letter:

1. ODOT Quality Assurance Program
2. Appendix A, "SiteManager™ Sampling Frequency Report"
3. Appendix B, "Guide to Independent Assurance Sampling and Testing"
4. Appendix C, "Split Sample Result Tolerance Guide

Major revisions from the previously approved QA Plan are described below:

- In the Quality Assurance Program, changes were made to the definition of who qualifies evaluators.
- In Appendix A, sampling and testing frequencies have been updated to maintain consistency. A report of default sampling and testing frequencies for the 2009 Spec Year queried from SiteManager™ are attached as Appendix A.
- In Appendix B, changes were made to describe how the IA inspectors are qualified.
- In Appendix B, changes were made to describe the Qualified Lab program.

OKLAHOMA DEPARTMENT OF TRANSPORTATION
200 N. E. 21st Street
Oklahoma City, OK 73105-3204

Please contact me to discuss any necessary changes or forward this to the FHWA for their approval.

Sincerely,

Reynolds H. Toney

Reynolds Toney, P.E.
Materials Engineer

Enclosures

c:

Materials File
George Raymond
Reynolds Toney
Scott Seiter
John Thomas
Michael Groom

OKLAHOMA Transportation

Oklahoma Department of Transportation

Materials Division

5201 N.E. 122nd Street, Building 4011

Edmond, OK 73013-8306

06/17/2020

QUALITY ASSURANCE PROGRAM

ACCEPTANCE PROGRAM

Sampling, testing and inspection of construction materials and workmanship will be performed on Federal Aid projects on the NHS in accordance with the Department's Sampling and Testing requirements as defined in SiteManager™. In the event the project contract documents specify additional or conflicting requirements for sampling and testing, the contract documents supersede Appendix A. The SiteManager™ Sampling Frequency Report is included in Appendix A. Acceptance of materials and workmanship will be based on the results of acceptance sampling and testing performed by the Department or its agent, or quality control samples, tests and documentation provided by the contractor or vendor. In the event that quality control data is used as a basis for acceptance of materials and workmanship, it will be validated by verification testing conducted by the Department or its agent. Verification sampling and testing for validation purposes will be conducted at a frequency of at least 10% of the normal acceptance sampling and testing frequency as stated in Appendix "A". All sampling, testing, and inspection utilized in making acceptance decisions will be performed by qualified personnel utilizing qualified laboratory equipment and qualified laboratories. All sampling and testing utilized in making acceptance decisions will be evaluated utilizing the Department's Independent Assurance Program. Random sampling and testing methods will be utilized for acceptance, quality control, verification and conflict resolution.

In the event of conflict between quality control and acceptance test results, the contractor may request referee sampling and testing by the Department's Central Laboratory or an independent laboratory which is accredited by the AASHTO Materials Reference Laboratory within 15 days of completion of the lot unless otherwise specified in the plans or specifications. The laboratory must be acceptable to both the Department and the Contractor. If the additional sampling and testing results in acceptance of a larger portion of material and workmanship or acceptance at a higher pay factor for the lots in question, the additional cost for sampling and testing will be borne by the Department. In the event that the results are unchanged or worse, the additional cost for sampling and testing will be borne by the Contractor.

INDEPENDENT ASSURANCE PROGRAM

The Central Laboratory of the Department will conduct evaluations of quality control, quality acceptance, and verification sampling and testing on NHS projects in accordance with the Departments Guide to Independent Assurance Sampling and Testing on a project basis (Appendix B). Testing equipment calibration documentation will be evaluated annually during Residency Lab Inspection. Documentation will be performed in accordance with AASHTO R-18.

Qualified testing personnel will be evaluated by observation and split sample testing on a project basis. Prompt comparisons of split sample testing will be made and documented in SiteManager™. Sampling and testing observations will be documented in Sitemanager™. If the difference between split sample results is greater than tolerances set by the IA Program, the difference will be investigated and reconciled, if possible. A summary of IA sampling, testing, and observations will be in Sitemanager™. The Resident Engineer will be notified when IA activities are completed on the project.

MATERIALS CERTIFICATION

A material certification will be prepared for each project by the Resident Engineer and will be submitted to the Construction Division, the Materials Division, and to the FHWA Division Office for projects that are subject to their oversight.

LABORATORY AND SAMPLING AND TESTING PERSONNEL QUALIFICATIONS

The Department will maintain an adequate qualified staff to administer the quality assurance program. The Department will maintain a central laboratory that is accredited by the AASHTO Materials Reference Laboratory for applicable test procedures. It is the Department's intent to provide independent assurance and dispute resolution utilizing central laboratory personnel or a commercial laboratory. In the event the Department retains another laboratory to provide either of these services, the laboratory will be accredited by the AASHTO Materials Reference Laboratory. Sampling and testing personnel, who are responsible for quality control, quality acceptance, and verification testing on projects, will be qualified for a period of 5 years. Qualification is defined by Certification from the Oklahoma Highway Construction Materials Technician Certification Board (OHCMTCB), which includes observed successful demonstration of sampling/testing procedures and successful completion of a written test covering each applicable method. Observation and documentation will be provided by individuals who are qualified by the Departments' Central Laboratory or by the Certification Board's evaluation committee. Sampling and testing personnel may be decertified for cause as determined by the Certification Board. Online information on the certification process can be found at http://www.oktechcert.org/.

Testing used for acceptance purposes shall be performed by Qualified Laboratories. The Qualification of laboratories shall be conducted by the Materials Division through the submission of a Qualified Lab Manual, and a signed qualified lab agreement. They may be physically inspected before final qualification to ensure laboratories possess adequate qualified equipment and personnel to perform specific applicable sampling and testing methods. Information on this qualification process can be found online at http://www.odot.org/materials/pdfs/TESTLAB01.pdf.

Test equipment will be qualified by calibration/verification checks in accordance with frequencies and procedures established by the applicable testing standards and as defined by the Department. Calibration/verification checks shall be conducted and documented by lab personnel or by a commercial calibration service. Calibration documentation will include identification of equipment, identification and traceability of calibration reference standards used, date of calibration, results, reference specification, and name of the calibration technician. Residency Lab documentation will be reviewed by the Central Lab during the annual lab inspections. Any deficiencies in equipment and personnel will be forwarded to the Materials Engineer for review. In order to avoid an appearance of a conflict of interest, any qualified non-Department laboratory shall perform only one of the following types of testing on the same project: Acceptance testing, quality control testing, or dispute resolution testing.

Revision 6/20/2016: Changed old ODOT logo to new ODOT logo. Updated hyperlink for laboratory qualification process (policy), located in second paragraph under section "LABORATORY AND SAMPLING AND TESTING PERSONNEL QUALIFICATIONS", to new URL.

Revision 3/16/2020: Changed old ODOT logo, located in header, to new ODOT logo.

Revision 4/20/2020: Changed address, located in header, to address of new Materials Division building.

Revision 6/17/2020: Changed city of address, located in header, from "Oklahoma City" to "Edmond".

Appendix ‘A’

SiteManager™

Sampling Frequency Report

Oklahoma Department of Transportation

SiteManager Sampling Frequency Report

Specification Year: 2009

Material Code	Material Nam	Spec. Ref.
acem001	**Asphaltic Cement Type PG 76-28 OK**	**708.03**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91018	PG Asphalt Binder_Project Sample	1 per 100,000	GAL

Material Code	Material Nam	Spec. Ref.
acem002	**Asphaltic Cement Type PG 70-28 OK**	**708.03**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91018	PG Asphalt Binder_Project Sample	1 per 100,000	GAL

Material Code	Material Nam	Spec. Ref.
acem003	**Asphaltic Cement Type PG 64-22 OK**	**708.03**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91018	PG Asphalt Binder_Project Sample	1 per 100,000	GAL

Material Code	Material Nam	Spec. Ref.
acem008	**Asphaltic Cement Type PG 76-28 E**	**SP708-2409**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91018	PG Asphalt Binder_Project Sample	1 per 100,000	GAL

Material Code	Material Nam	Spec. Ref.
aggr001	**Aggregate Base Aggregate Type A**	**703.01**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr002	**Aggregate Base Aggregate Type B**	**703.01**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr003	**Aggregate Base Aggregate Type C**	**703.01**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr011	**Eco Base/CTB Alt2 Aggregate, Combined**	**703.02**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 50,000	TON
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr012	**Eco Base/CTB Alt1 Aggregate, Fine**	**703.02**

Sample Type	Acceptance Method	Test Method	Frequency

MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr013	**Eco Base/CTB Alt1 Aggregate, Coarse**	**703.02**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr017	**Open Gr PC Conc Base Aggregate**	**703.03**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr026	**TBSC Aggregate Type A**	**703.05**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr028	**TBSC Aggregate Type C**	**703.05**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr029	**TBSC Aggregate Type D**	**703.05**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr030	**TBSC Aggregate Type E**	**703.05**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr031	**TBSC Aggregate Type F**	**703.05**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,500	TON

Material Code	Material Nam	Spec. Ref.
aggr033	**Micro Surf Aggregate Type I, Mineral**	**707.02**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 2,500	TON

Material Code	Material Nam	Spec. Ref.
aggr034	**Micro Surf Aggregate Type II, Mineral**	**707.02**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 2,500	TON

Material Code	Material Nam	Spec. Ref.
aggr035	**Micro Surf Aggregate Type III, Mineral**	**707.02**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 2,500	TON

Material Code	Material Nam		Spec. Ref.		
aggr042	**Granular Backfill Aggregate**		**703.07**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	CY

Material Code	Material Nam		Spec. Ref.		
aggr048	**Pipe Underdrain, Filter Sand**		**703.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 250	CY

Material Code	Material Nam		Spec. Ref.		
aggr049	**Standard Bedding Matl Class C**		**703.08**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 50	CY
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	CY

Material Code	Material Nam		Spec. Ref.		
aggr051	**Pipe Underdrain Aggregate, Coarse**		**703.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 250	CY

Material Code	Material Nam		Spec. Ref.		
aggr054	**HC Conc Aggregate, Fine**		**701.05**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	TON

Material Code	Material Nam		Spec. Ref.		
aggr056	**HC Conc Aggregate No 67, Coarse**		**701.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	TON

Material Code	Material Nam		Spec. Ref.		
aggr057	**HC Conc Aggregate No 57, Coarse**		**701.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	TON

Material Code	Material Nam		Spec. Ref.		
aggr063	**High Density Conc Aggregate, Combined**		**701.10**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	TON

Material Code	Material Nam		Spec. Ref.		
aggr064	**Latex Mod Conc Aggregate, Combined**		**701.11**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	TON

Material Code	Material Nam		Spec. Ref.		
aggr078	**Subballast Aggregrate Type B**		**plan notes**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 1,000	CY
MAT Material	CRES Construction Residency	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 1,000	CY

Material Code	Material Nam	Spec. Ref.
aggr085	**HFST Calcined Bauxite Aggregate**	**SP707-1a09**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C94011	Aggregate_LA Abrasion	1 per 500	TON
MAT Material	MAT Materials Division	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	TON

Material Code	Material Nam	Spec. Ref.
aggr086	**HFST Mine Chat Aggregate**	**SP707-1a09**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C94011	Aggregate_LA Abrasion	1 per 500	TON
MAT Material	MAT Materials Division	T27	Sieve Analysis of Fine and Coarse Aggregates	1 per 500	TON

Material Code	Material Nam	Spec. Ref.
asco004	**Asphalt Concrete, Type S2 (PG 76-28 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco005	**Asphalt Concrete, Type S2 (PG 70-28 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco006	**Asphalt Concrete, Type S2 (PG 64-22 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco007	**Asphalt Concrete, Type S3 (PG 76-28 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco008	**Asphalt Concrete, Type S3 (PG 70-28 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco009	**Asphalt Concrete, Type S3 (PG 64-22 OK)**		**708**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco010	**Asphalt Concrete, Type S4 (PG 76-28 OK)**		**708**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco011	**Asphalt Concrete, Type S4 (PG 70-28 OK)**		**708**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco012	**Asphalt Concrete, Type S4 (PG 64-22 OK)**		**708**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco013	**Asphalt Concrete, Type S5 (PG 76-28 OK)**		**708**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco014	**Asphalt Concrete, Type S5 (PG 70-28 OK)**		**708**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco015	**Asphalt Concrete, Type S5 (PG 64-22 OK)**		**708**		
Sample Type	Acceptance Method	Test Method		Frequency	

MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco016	**Asphalt Concrete, Type S6 (PG 76-28 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco017	**Asphalt Concrete, Type S6 (PG 70-28 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco018	**Asphalt Concrete, Type S6 (PG 64-22 OK)**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco023	**Asphalt Concrete, Type OGBB**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T30	Mechanical Analysis of Extracted Aggregate	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco024	**Asphalt Concrete, Type OGFSC**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	T30	Mechanical Analysis of Extracted Aggregate	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco027	**Asphalt Concrete, Type 1/2" SMA**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco029	**Asphalt Concrete, Type 1/2" PFC**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco030	**Asphalt Concrete, Micro Surf, Type I**	**707**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93013	Asphalt Binder Content by Ignition	1 per 500	TON
MAT Material	CRES Construction Residency	T30	Mechanical Analysis of Extracted Aggregate	1 per 500	TON

Material Code	Material Nam	Spec. Ref.
asco031	**Asphalt Concrete, Micro Surf, Type II**	**707**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93013	Asphalt Binder Content by Ignition	1 per 500	TON
MAT Material	CRES Construction Residency	T30	Mechanical Analysis of Extracted Aggregate	1 per 500	TON

Material Code	Material Nam	Spec. Ref.
asco032	**Asphalt Concrete, Micro Surf, Type III**	**707**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93013	Asphalt Binder Content by Ignition	1 per 500	TON
MAT Material	CRES Construction Residency	T30	Mechanical Analysis of Extracted Aggregate	1 per 500	TON

Material Code	Material Nam	Spec. Ref.
asco038	**Asphalt Concrete, UTBWC, Type C**	**707**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 2,500	TON
MAT Material	CRES Construction Residency	C93013	Asphalt Binder Content by Ignition	1 per 500	TON
MAT Material	CRES Construction Residency	T30	Mechanical Analysis of Extracted Aggregate	1 per 500	TON

Material Code	Material Nam	Spec. Ref.
asco040	**Asphalt Concrete, Rich Bottom Layer**	**708**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco041	**Asphalt Concrete, Type S3 (PG 76-28 E)**	**SP708-2409**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam	Spec. Ref.
asco042	**Asphalt Concrete, Type S5 (PG 76-28 E)**	**SP708-2409**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco043	**Asphalt Concrete, RIL (PG 76-28 E)**		**SP411-1509**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asco044	**Asphalt Concrete, Type S4 (PG 76-28 E)**		**SP708-2409**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93004	Aggregate_Sand Equivalent T 176	1 per 20,000	TON
MAT Material	MAT Materials Division	C93005	HMA TSR T 283	1 per 10,000	TON
MAT Material	CRES Construction Residency	C93015	HMA Sample	1 per 1,000	TON
MAT Material	CRES Construction Residency	C93016	HMA Density Test for Pavement Cores	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
asph009	**Asphalt, Emulsified, Type MS-2**		**708.03**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91006	Emulsified Asphalt_Project Sample	1 per 100,000	GAL

Material Code	Material Nam		Spec. Ref.		
asph021	**Asphalt, Emulsified, Type PMCSS-1H**		**708.03**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91006	Emulsified Asphalt_Project Sample	1 per 10,000	GAL

Material Code	Material Nam		Spec. Ref.		
asph024	**Asphalt, Emulsified, Type PMCRS-1S**		**708.03**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91006	Emulsified Asphalt_Project Sample	1 per 100,000	GAL

Material Code	Material Nam		Spec. Ref.		
asph029	**Asphalt, Emulsified, Type ARA-1P**		**SP**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C91005	Emulsified Asphalt_QM Sample	1 per 20,000	GAL

Material Code	Material Nam		Spec. Ref.		
base001	**Aggregate Base (98% Compaction)**		**303**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 800	CY

Material Code	Material Nam		Spec. Ref.		
base002	**Aggregate Base (95% Compaction)**		**303**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 800	CY

Material Code	Material Nam		Spec. Ref.		
base008	**Subgrade Method B**		**310.04(B)**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 2,500	SY

Material Code	Material Nam		Spec. Ref.		
base009	**Existing Base and Surface**		**311**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 1,000	LF

Material Code	Material Nam		Spec. Ref.		
base010	**Stabilized Subgrade**		**307**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 2,500	SY

Material Code	Material Nam		Spec. Ref.		
base011	**Econo Base**		**318**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 5,000	SY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 5,000	SY

Material Code	Material Nam		Spec. Ref.		
base013	**Open Gr PC Conc Base**		**319**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95003	In Place Density of OGPCCB by Nuclear Method	1 per 2,500	SY

Material Code	Material Nam		Spec. Ref.		
base017	**Cement Treated Base (CTB)**		**317**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95004	CTB Tests on Field Molded Specimens	1 per 10,000	SY
MAT Material	CRES Construction Residency	C95005	In Place Density of Cement Treated Base by Nuclear Methods	1 per 2,500	SY

Material Code	Material Nam		Spec. Ref.		
ckds001	**Cement Kiln Dust (CKD)**		**702.03**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
cure001	**Liquid Membrane Curing Compound**		**701.07(C)**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 2,500	GAL

Material Code	Material Nam		Spec. Ref.		
drai017	**Corrugated Metal Pipe (CMP)**		**726.02**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 250	EACH
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 250	LF

Material Code	Material Nam		Spec. Ref.		
drai028	**Corrug. Polyethylene/Polypropylene Pipe**		**726.02**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 1,000	LF

Material Code	Material Nam		Spec. Ref.		
elec005	**Elect Wire/Cable, Building/Highway Light**		**738.02**		
Sample Type	Acceptance Method	Test Method		Frequency	

DOC Document	CRES Construction Residency	AM5011	Acceptance Form for Bldg or Hwy Lighting Electric Wire	1 per 5,000	LF

Material Code	Material Nam	Spec. Ref.
elec007	**Elect Cable, Communication**	**738.03**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5012	Acceptance of Communication Electric Cable	1 per 5,000	LF

Material Code	Material Nam	Spec. Ref.
elec008	**Elect Cable, Traffic Signal**	**738.01**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5008	Acceptance of Traffic Signal Electric Cable	1 per 5,000	LF

Material Code	Material Nam	Spec. Ref.
elec009	**Elect Wire, Traffic Signal Wire**	**738.01**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5010	Acceptance of Dectector Loop Wire	1 per 5,000	LF

Material Code	Material Nam	Spec. Ref.
elec014	**Elect Cable, Loop Detector Lead-in**	**738.01**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5009	Acceptance of Shielded Loop Detector Lead In Cable	1 per 5,000	LF

Material Code	Material Nam	Spec. Ref.
ewrk001	**Earthwork, Select Borrow**	**202**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 2,000	CY

Material Code	Material Nam	Spec. Ref.
ewrk002	**Earthwork, Excavation/Embankment**	**202**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 2,000	CY

Material Code	Material Nam	Spec. Ref.
ewrk003	**Earthwork, Trench Backfill**	**613.04**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 250	LF

Material Code	Material Nam	Spec. Ref.
ewrk004	**Earthwork, Machine Grading**	**209**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 2,500	LF

Material Code	Material Nam	Spec. Ref.
ewrk009	**Earthwork, Structure Excav & Backfill**	**501**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C95001	Density and Moisture Content of Soil Agg by Nuke Meth	1 per 2,000	CY

Material Code	Material Nam	Spec. Ref.
fabr001	**Fabric Reinf for Asphalt Concrete Pvmt**	**712.01**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 50,000	SY

Material Code	Material Nam		Spec. Ref.		
fabr002	**Fabric, Permanent Erosion Control**		**712.02**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 5,000	SY

Material Code	Material Nam		Spec. Ref.		
fabr004	**Fabric, Geotextile Subgrade Reinforce**		**712.04**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 5,000	SY

Material Code	Material Nam		Spec. Ref.		
fabr005	**Fabric, Separator for Bases**		**712.05**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 50,000	SY

Material Code	Material Nam		Spec. Ref.		
fabr006	**Fabric, Silt Fence Filter**		**712.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 5,000	LF

Material Code	Material Nam		Spec. Ref.		
fabr010	**Geogrid**		**712.07**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 5,000	SY

Material Code	Material Nam		Spec. Ref.		
fabr013	**Fabric, Separator for Bond Breaker**		**317.02**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 50,000	SY

Material Code	Material Nam		Spec. Ref.		
fenc002	**Fence Wire, Woven, Zinc Coated**		**732.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92013	Fence_Woven Wire	1 per 16,500	LF

Material Code	Material Nam		Spec. Ref.		
fenc004	**Fence Wire, Barbed**		**732.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92010	Fence_Barbed Wire	1 per 66,000	LF

Material Code	Material Nam		Spec. Ref.		
fenc007	**Fence Wire, Barbless, Zinc Coated**		**732.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92011	Fence_Barbless Wire	1 per 66,000	LF

Material Code	Material Nam		Spec. Ref.		
fenc009	**Fence Posts, Steel**		**732.06**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92012	Fence_T Post	1 per 1,000	EACH

Material Code	Material Nam	Spec. Ref.
fenc011	**Fence Wire, Tie**	**732.06**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92040	Post Ties for SWF and WWF	1 per 1,000,000	EACH

Material Code	Material Nam	Spec. Ref.
fenc016	**Fence Wire, Chain Link Fabric**	**732.07**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92015	Fence_CLF Fabric	1 per 5,000	LF

Material Code	Material Nam	Spec. Ref.
fenc017	**Fence Wire, Chain Link Tension**	**732.07**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92014	Fence_Tension Wire	1 per 1,000,000	LF

Material Code	Material Nam	Spec. Ref.
fenc018	**Fence Wire, Chain Link Tie**	**732.07**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92048	Post Ties for Chain Link Fence (CLF)	1 per 1,000,000	EACH

Material Code	Material Nam	Spec. Ref.
fenc019	**Fence Posts, Chain Link Support**	**732.07**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92016	Fence_CLF Support Posts	1 per 1,000	EACH

Material Code	Material Nam	Spec. Ref.
fenc020	**Fence Posts, Chain Link Line**	**732.07**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92017	Fence_CLF Line Post	1 per 1,000	EACH

Material Code	Material Nam	Spec. Ref.
fenc021	**Fence Rail, Chain Link, Top or Brace**	**732.07**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92018	Fence_CLF Brace and Top Rails	1 per 1,000,000	LF

Material Code	Material Nam	Spec. Ref.
fenc033	**Fence Wire, Tension**	**732.06**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92014	Fence_Tension Wire	1 per 1,000,000	IUC

Material Code	Material Nam	Spec. Ref.
lime002	**Lime, Quick**	**706.02**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	MAT Materials Division	C92001	Quick Lime_Lab Analysis	1 per 250	TON

Material Code	Material Nam	Spec. Ref.
ljoi001	**Asphalt Longitudinal Joint Density**	**SP411-12**

Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C93019	Asphalt Longitudinal Joint Density	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
pcco001	**HC Conc Class AA(AE)**		**701.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 70	CY
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 150	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 75	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 35	CY

Material Code	Material Nam		Spec. Ref.		
pcco002	**HC Conc Class A (AE)**		**701.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 625	CY
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 70	CY
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 2,500	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 625	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 2,500	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 35	CY

Material Code	Material Nam		Spec. Ref.		
pcco004	**HC Conc Class C(AE)**		**701.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 70	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 35	CY

Material Code	Material Nam		Spec. Ref.		
pcco006	**HC Conc, High Density - HDC**		**701.10**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 70	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 35	CY

Material Code	Material Nam		Spec. Ref.		
pcco007	**HC Conc, Latex Modified - LMC**		**701.11**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	1 per 70	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	1 per 35	CY

Material Code	Material Nam		Spec. Ref.		
pcco008	**HC Conc, Cont Low Strngth Matl - CLSM**		**701.19**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94004	CLSM_Compressive Strength	1 per 100	CY

Material Code	Material Nam		Spec. Ref.		
pcco017	**Open Gr PC Conc Base - Mix**		**319.04(C)**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94045	Density Unit Weight of Concrete	1 per 20,000	SY

Material Code	Material Nam		Spec. Ref.		
pcco018	**HC Conc Very Early Str Type I (VESI)**		**701.20**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	0 per 70	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	0 per 35	CY

Material Code	Material Nam		Spec. Ref.		
pcco019	**HC Conc Very Early Str Type III (VESIII)**		**701.20**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	0 per 70	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	0 per 35	CY

Material Code	Material Nam		Spec. Ref.		
pcco020	**HC Conc Rapid Setting Latex Mod (RSLMC)**		**701.20**		
Sample Type	Acceptance Method	Test Method		Frequency	
MAT Material	CRES Construction Residency	C94014	Compressive Strength of Concrete Cylinders	0 per 70	CY
MAT Material	CRES Construction Residency	C94025	Fresh Concrete Tests	0 per 35	CY

Material Code	Material Nam		Spec. Ref.		
qual001	**HC Conc Admixture, Liquid**		**701.03**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 10,000	IUC

Material Code	Material Nam		Spec. Ref.		
qual002	**Hydraulic Cement**		**701.02**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
qual003	**Fly Ash**		**702.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 1,000	TON

Material Code	Material Nam		Spec. Ref.		
qual004	**Prestressed Concrete Bridge Item**		**503**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 10,000	EACH
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 10,000	LF

Material Code	Material Nam		Spec. Ref.		
qual005	**Fabricated Structural Steel Item**		**724**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 1,000,000	LB

Material Code	Material Nam		Spec. Ref.		
qual007	**Gray Iron Castings**		**725.03**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5004	Acceptance of Iron Castings	1 per 50	EACH

Material Code	Material Nam		Spec. Ref.		
qual008	**Reinforced Concrete Pipe**		**726.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 250	IUC

Material Code	Material Nam		Spec. Ref.		
qual010	**Cut-Back Asphalt**		**708.03**		
Sample Type	Acceptance Method	Test Method		Frequency	

DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 100,000	GAL

Material Code	Material Nam	Spec. Ref.
qual011	**Emulsified Asphalt**	**708.03**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 100,000	GAL

Material Code	Material Nam	Spec. Ref.
qual012	**Bar Steel Reinforcement, Billet-Mill**	**723.01**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5005	Acceptance of Reinforcing Steel	1 per 1,000,000	LB

Material Code	Material Nam	Spec. Ref.
qual021	**Fabricated Reinforcing Steel Item**	**723**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5005	Acceptance of Reinforcing Steel	1 per 50,000	LB

Material Code	Material Nam	Spec. Ref.
qual022	**Epoxy Coated Reinforcing Steel**	**723**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5005	Acceptance of Reinforcing Steel	1 per 50,000	LB
DOC Document	CRES Construction Residency	AM5005	Acceptance of Reinforcing Steel	1 per 1,000,000	LB

Material Code	Material Nam	Spec. Ref.
qual023	**Precast Concrete Drainage Structure**	**611**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 50	EACH

Material Code	Material Nam	Spec. Ref.
qual024	**Precast Concrete Box**	**508**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 250	LF

Material Code	Material Nam	Spec. Ref.
qual025	**Precast Concrete Arch Structure**	**508**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 10,000	LF

Material Code	Material Nam	Spec. Ref.
qual027	**Precast Concrete Wall**	**510**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 2,500	SY

Material Code	Material Nam	Spec. Ref.
qual030	**NT Tack Coat**	**SP70825A09**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 100,000	GAL

Material Code	Material Nam	Spec. Ref.
qual034	**Prestressed Concrete Deck Panels**	**503**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5002	Acceptance of Pre Delivery Inspected	1 per 100,000	SF

Material Code	Material Nam		Spec. Ref.		
rail001	**Guard Rail, Galv Steel Beams and Posts**		**732.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5006	Acceptance of Material by Type A Certification	1 per 100	EACH
DOC Document	CRES Construction Residency	AM5006	Acceptance of Material by Type A Certification	1 per 100,000	LF

Material Code	Material Nam		Spec. Ref.		
rail013	**Guard Rail End Treatment, GET**		**732.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5006	Acceptance of Material by Type A Certification	1 per 100	EACH

Material Code	Material Nam		Spec. Ref.		
rail014	**Guard Rail, Spacer Block (Blockout)**		**732.01**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 100	EACH

Material Code	Material Nam		Spec. Ref.		
resn001	**HFST Binder Resin System**		**707-1a09**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5013	Acceptance of Material by Type B Certification	1 per 100,000	GAL

Material Code	Material Nam		Spec. Ref.		
seal009	**Jt. Sealant, Silicone, Low Mod (Slf Lvl)**		**701.08(F)**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 100	GAL

Material Code	Material Nam		Spec. Ref.		
seal010	**Jt. Sealant, Rapid Cure**		**701.08(G)**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 10,000	IUC

Material Code	Material Nam		Spec. Ref.		
seal011	**Elastomeric Mortar**		**701.08(G)**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 1,000	CF

Material Code	Material Nam		Spec. Ref.		
seal014	**HC Conc Penetrating Water Repellent**		**701.12**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 2,000	SY
MAT Material	MAT Materials Division	C94005	Penetrating Water Repellent Treatment_Penetration Analysis	1 per 2,000	SY
MAT Material	MAT Materials Division	C94006	Penetrating Water Repellent Treatment_Absorption	1 per 2,000	SY

Material Code	Material Nam		Spec. Ref.		
seal022	**Epoxy Bridge Deck Sealer, Types K,L**		**70113B1011**		
Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 110	GAL

Material Code	Material Nam		Spec. Ref.		
seal024	**Epoxy for Injection, Type D**		**701.13B4**		
Sample Type	Acceptance Method	Test Method		Frequency	

DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 100	GAL

Material Code	Material Nam	Spec. Ref.
seal025	**Mastic Crack Sealant**	**422-1ae09**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5006	Acceptance of Material by Type A Certification	1 per 100,000	LB

Material Code	Material Nam	Spec. Ref.
seal026	**Multi-Coat Deck Sealer**	**SP523-109**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 2,000	SY
MAT Material	MAT Materials Division	C94046	Multi Coat Deck Sealer Penetration Analysis	1 per 2,000	SY

Material Code	Material Nam	Spec. Ref.
side010	**Seeding Materials**	**735.03**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5007	Acceptance of Material by Visual Inspection	1 per 1	TON

Material Code	Material Nam	Spec. Ref.
side019	**Fertilizer**	**735.06**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5007	Acceptance of Material by Visual Inspection	1 per 10,000	TON

Material Code	Material Nam	Spec. Ref.
side020	**Silt Dike - Triangular**	**735.07**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 5,000	LF

Material Code	Material Nam	Spec. Ref.
sstl002	**Steel Welding, Field**	**724.03**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	C94043	Documenting Field Welding	1 per 100,000	IUC

Material Code	Material Nam	Spec. Ref.
sstl012	**Steel, H-Pile Splicers**	**724.01**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 100,000	EACH

Material Code	Material Nam	Spec. Ref.
ston001	**Riprap Stone**	**713.01**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 10,000	TON

Material Code	Material Nam	Spec. Ref.
ston004	**Gabion Fill Stone**	**713.03**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5001	Acceptance of Pre Approved Products	1 per 10,000	TON

Material Code	Material Nam	Spec. Ref.
ston007	**Filter Blanket Stone, 2 Course Backing**	**713.02**

Sample Type	Acceptance Method	Test Method		Frequency	
DOC Document	CRES Construction Residency	AM5006	Acceptance of Material by Type A Certification	1 per 10,000	TON

Material Code	Material Nam	Spec. Ref.
ston008	**Filter Blanket Stone, 1 Course Backing**	**713.02**

Sample Type	Acceptance Method	Test Method		Frequency		
DOC Document	CRES Construction Residency	AM5006	Acceptance of Material by Type A Certification	1 per	10,000	TON

Appendix ‘B’

Guide To

Independence Assurance Program

APPENDIX B

STATE OF OKLAHOMA

DEPARTMENT OF TRANSPORTATION

GUIDE TO

INDEPENDENT ASSURANCE PROGRAM

This appendix to the Department's written Quality Assurance Program outlines key elements of the Independent Assurance (IA) Program for sampling, testing, and workmanship as defined by AASHTO R44. It provides for compliance with 23 CFR, part 637. This guide provides for administering the IA program utilizing a system basis.

"Independent Assurance" describes activities that are an unbiased and independent evaluation of sampling and testing (or inspection) procedures used in the Quality Assurance Program. IA samples are to be used for the purpose of making independent checks on the reliability of the results obtained in acceptance sampling and testing. Independent Assurance tests should not be used for acceptance purposes. AASHTO R44 provides additional details on the purpose, scope, and implementation of an IA program.

The department uses a systems approach for Independent Assurance activities on Federal-aid highway projects on the National Highway System. This includes random evaluations of active technicians as well as split samples with field technicians.

Samples and tests will be documented in Site Manager. Comparison of acceptance test results with independent assurance sample test results are to be made by the Independent Assurance Branch. The results may be reviewed at any time in Site Manager.

GENERAL INFORMATION

Laboratories and technicians that perform acceptance sampling and testing for the Department must be qualified. A list of qualified labs is maintained on the Materials Division website at http://crystalweb.odot.ok.gov/report/viewer.aspx?reportpath=public/Materials_Division/11069.rpt&password=APEX. Technician qualification status data is maintained in SiteManager. Unofficial qualification status listings are available on the Oklahoma Highway Construction Materials Technician Certification Board (OHCMTCB) web site. Test methods not covered by OHCMTCB for qualification are not included in the IA Program.

Periodic IA reviews and evaluations are intended to verify the reliability of the sampling and testing program used in acceptance of the materials. Good communication between technicians and IA inspectors will be essential.

The number of lab reviews conducted will be based on a percentage of qualified labs. Qualified labs are defined as those listed as unexpired on the Materials Division web site excluding ODOT central labs covered under AMRL/CCRL certification.

The number of the technician evaluations conducted will be based on a percentage of the active qualified technicians. Active technicians are defined as those who were documented in SiteManager as performing sampling and/or testing.

FREQUENCY & GOALS OF REVIEWS & EVALUATIONS

Qualified Labs

Labs will be selected for review based on a statistically representative sampling of qualified labs. The frequency will be a minimum of 10 percent of qualified labs. Reviews may also be conducted on qualified labs not part of the statistically chosen percentage for any reason including; lab relocation, new approved procedures, or when requested.

Qualified labs will be reviewed for equipment condition and calibration as well as a review of all documentation including the quality manual.

Technicians

Technicians will be selected for evaluation based on a statistically representative sampling of active technicians. The target frequency will be established in the annual report to FHWA. Evaluations may also be conducted on technicians not part of the statistically chosen percentage for any reason including; apprentice technicians, temporary certified technicians, recently certified technicians, or when requested.

Qualified Technicians will be evaluated using a standard checklist of sampling and testing performance criteria in the following controlled material categories:

(A) Aggregate
(B) Asphalt
(C) Concrete
(D) Soils

Checklists for evaluations are available on the Materials Division website:
https://www.ok.gov/odot/Doing_Business/Materials/qa_program.html

EVALUATION SCHEDULING

IA inspectors will schedule lab reviews and evaluations throughout a calendar year to meet the sampling goals as specified. Technicians or their supervisors may request reviews and evaluations. Requests will be considered and conducted whenever practical based on available resources, scheduling issues, and travel requirements.

The IA inspector will make initial contact (via email, phone, or face to face meeting) at the beginning of each quarter to inform the technician, that he or she was randomly selected to be evaluated and what discipline or disciplines the technician will be evaluated in, along with the IA inspector's contact information. The technician will have 30 days from initial contact to schedule an evaluation within that quarter. Failure to schedule within the time allotted may be considered a refusal.

EVALUATING EQUIPMENT

Equipment used to perform testing for Department projects will be evaluated using one or more of the following; verification of critical dimensions, calibration checks, observation, split samples, or proficiency samples.

Equipment used during qualified lab and technician evaluations will be inspected. Obvious equipment deficiencies, including out of calibration equipment, will be reported on the evaluation form. An unsatisfactory evaluation due to deficient equipment will result in a failing evaluation for the technician. See flow chart of process in figure 2.

If the evaluation was unsatisfactory due to deficient testing equipment, the laboratory's qualification status may be suspended for non-compliance on the affected test method. The department may remove the laboratory from the qualified labs list.

EVALUATING PERSONNEL

Technicians will be evaluated by observation of sample and test procedures for conformance with published standards. Results of proficiency samples or split samples may also be used. The results of the evaluation will be documented on a standard technician evaluation form. The technician will receive a summary upon completion of the evaluation. Whenever a deficiency is observed, a report of the evaluation will be sent to the technician and the technician's supervisor. See flow chart of process in figure 1.

Schedule any sampling and testing technician who fails an initial or follow-up evaluation for re-evaluation within thirty (30) days. Each re-evaluation must be performed by a different IA evaluator. Re-evaluations will be performed in the same manner as the initial evaluation.

The combination of an observation and split sample applies only to test methods with split sample comparison criteria. The split sample comparison criteria are defined in Appendix C.

For technicians in laboratories, one observation or split sample / observation should be conducted for each test method the technician in the laboratory is actively performing.

IA personnel will promptly compare and document test results in Site Manager for review.

IA personnel must be qualified in the areas they evaluate.

Refusal to participate or a lack of cooperation in the IA evaluation will be a sufficient reason to consider an evaluation unsatisfactory. Participation in the program is mandatory.

IA PERSONNEL QUALIFICATION

Initial certifications by the Oklahoma Highway Construction Materials Technician Certification Board (OHCMTCB), and at least one additional recertification by the OHCMTCB. In addition to the board certification the IA inspector will also perform the following:

Training by the ODOT Central Lab whenever necessary, but at least every 3 years for continuing education regarding changes to procedures, and to review items that are usually a problem in the test procedures.

Take a written exam in each discipline, administered by the QA/IA manager, and score a minimum of 85% every 3 years. Failure to pass the written exam will result in re-training and re-testing in that discipline within 30 days of the failure. Successful completion of this program will result in additional 36 months of the technician's certification. The Materials Division will notify the OHCMTCB director and update SiteManager data.

The IA Supervisor or Branch Manager will observe the IA inspectors evaluating certified field technicians a minimum of once per year. This is to ensure that all IA inspectors are evaluating technicians in a consistent manner according to the approved IA checklists developed from AASHTO and OHD-L methods.

All IA qualification data will be recorded in SiteManager. This will include training conducted by the ODOT central laboratory, written exams, and supervisor observations.

If an IA inspector leaves the IA program, their current certification will remain in effect until the expiration date. Subsequent certifications will be subject to the current OHCMTCB board rules.

Figure 1. IA Evaluation Of Technicians

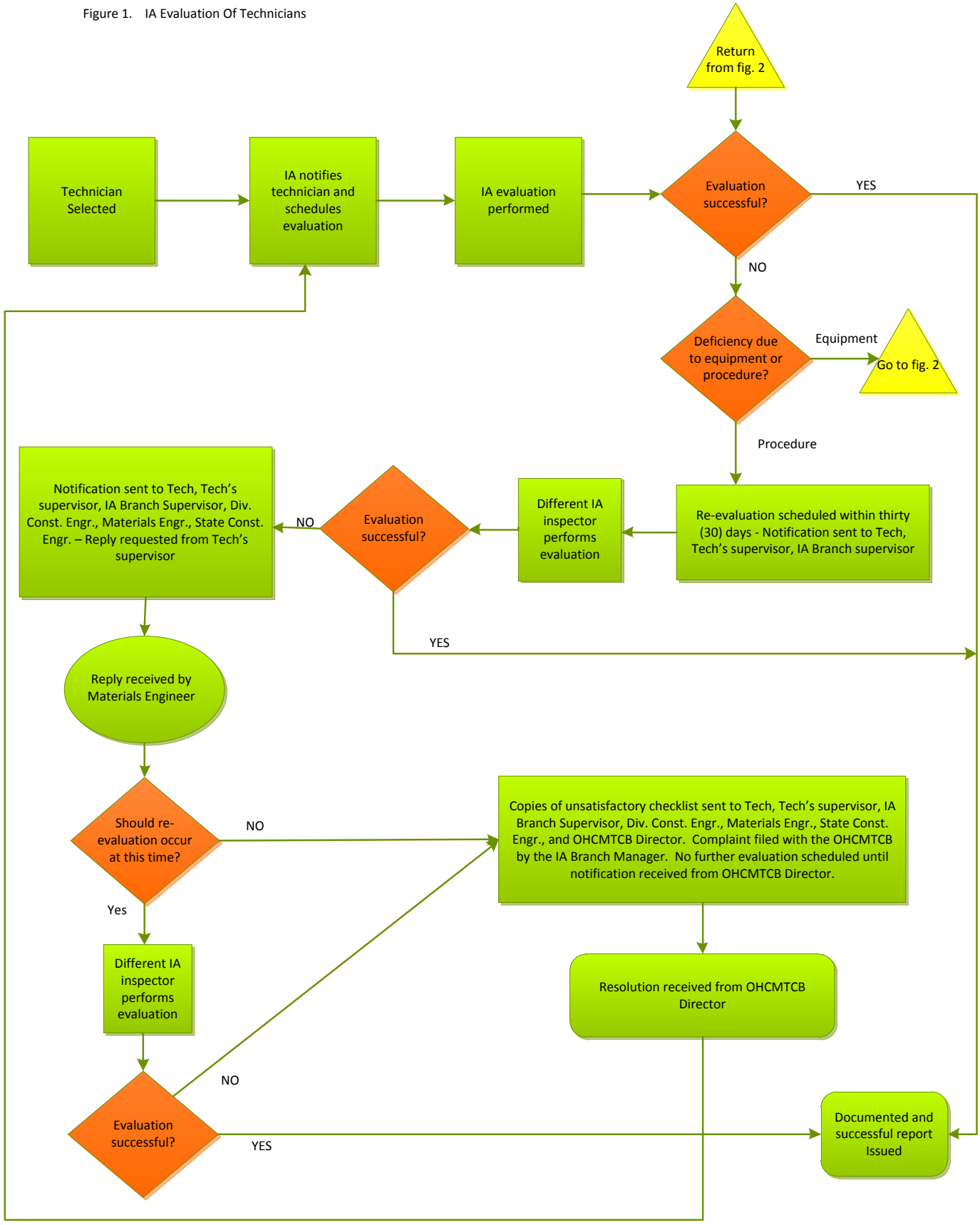
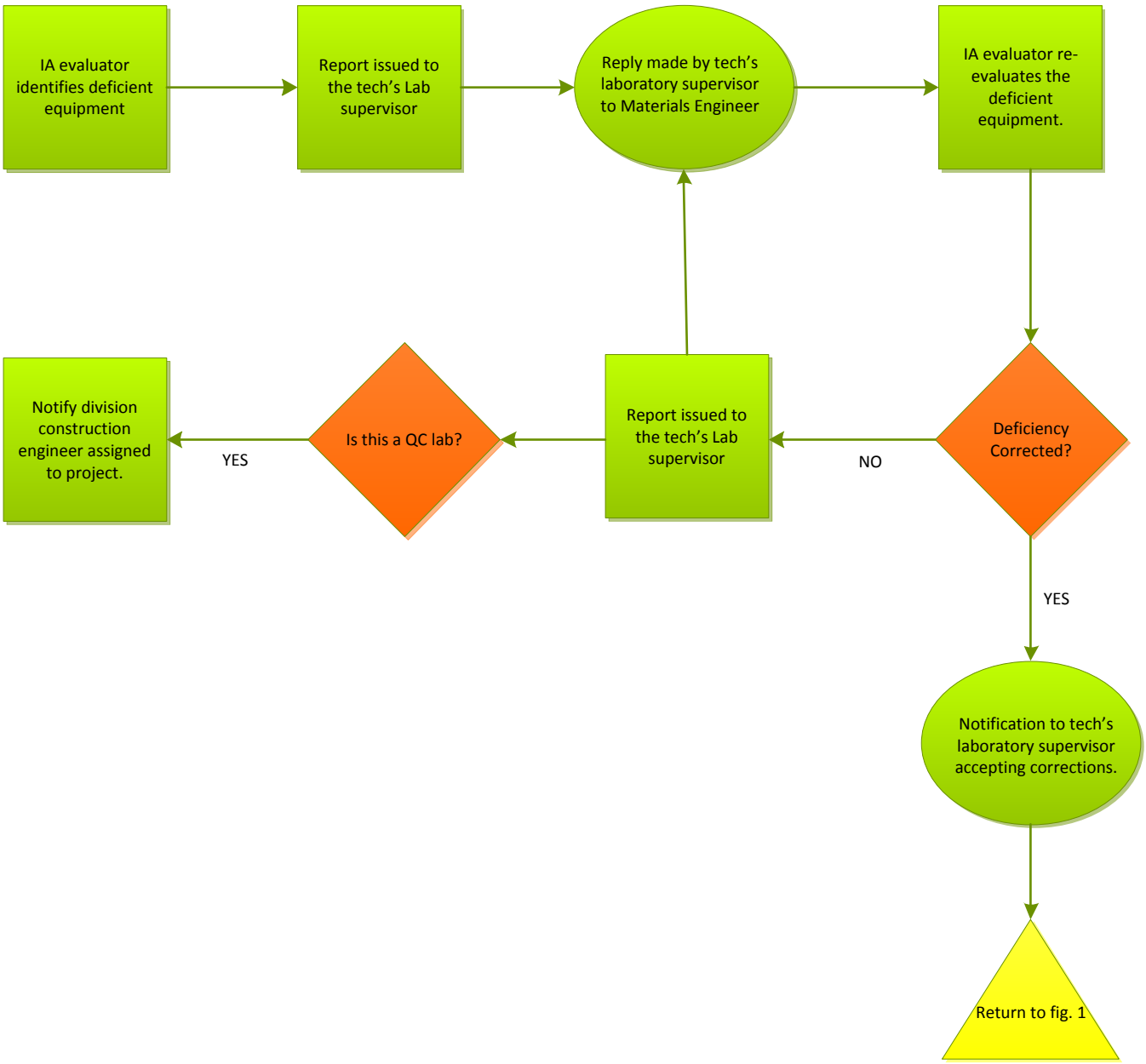


Figure 2. IA Evaluation Of Equipment



COMPARISON TOLERANCE

Comparison Testing (Appendix C)

Proficiency Samples (OMRL) – (One technician preforms all involved testing)

Testing Equipment (Lab Check Verification)

DOCUMENTATION

Systems Report

On an annual basis, the Materials Engineer will submit a report to the FHWA documenting activities of the Independent Assurance Program.

The report will 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 reported deviations, goals for the upcoming year, and a summary of how the deviations were addressed along with any potential systematic solutions to reoccurring deficiencies.

Revision 6/20/2016: Updated hyperlink for Materials Division list of qualified labs, located in first paragraph under section “General Information”, to new URL. Also updated hyperlink for evaluation checklists, located at the bottom of the section “Technician” of section “FREQUENCY & GOALS OF REVIEWS & EVALUATIONS”, to new URL.

Revision 7/6/2016: Updated hyperlink for evaluation checklists, located at the bottom of the section “Technician” of section “FREQUENCY & GOALS OF REVIEWS & EVALUATIONS”, to new URL.

Revision 5/2/2018: Updated hyperlink for Materials Division list of qualified labs, located in first paragraph under section “General Information”, to new URL.

Appendix ‘C’

Split Sample Result Tolerance Guide

IA Comparison Tolerances

T-176	Sand Equivalent	+/- 13	
T-310	Nuclear Densities	+/- 1.5 %	
T-152	Concrete Pressure Meter Air Test	+/- 1%	
T-119	Concrete Slump	+/- 1"	
OHDL-26	Ignition Oven Asphalt Content	+/- .5%	
T-309	Concrete Temperature	+/- 2 F	
T-209	Rice's Gravity	+/- .019	
T-166	Roadway Asphalt Cores	+/- 1.5%	
T-23	Concrete Cylinder Breaks	+/- 14%	(Difference between the averages ÷ average of the averages)100
T-89	Liquid Limit	+/- 13	
T-90	Plasticity Index	+/- 18	
T-30	Extracted Aggregate Gradation	1.5"	+/-5
		1"	+/-5
		3/4"	+/-5
		1/2"	+/-5
		3/8"	+/-5
		#4	+/-5
		#8	+/-4
		#16	+/-2
		#30	+/-2
		#50	+/-2
		#100	+/-2
		#200	+/-2.0
T-27	Concrete Sand	3/8"	
		#4	+/-4
		#8	+/-4
		#16	+/-4
		#30	+/-4
		#50	+/-3
		#100	+/-2
		#200	+/-2.0
T-27	#57 Aggregate for Concrete	1 1/2"	
		1"	+/-6
		1/2"	+/-6
		#4	+/-3
		#8	+/-2
		#200	+/-1.0
T-27	#67 Aggregate for Concrete	1"	
		3/4"	+/-6
		3/8"	+/-6
		#4	+/-3
		#8	+/-2
		#200	+/-1.0
T-27	Econocrete Aggregate	1 1/2"	
		1"	+/-7
		1/2"	+/-7
		#4	+/-6
		#40	+/-5
		#200	+/-3.0

T-27	O.G.C.B. Aggregate	1 1/2"	
		1"	+/-6
		1/2"	+/-6
		#4	+/-3
		#8	+/-2
		#200	+/-1.0

		Type "A"		Type "B"		Type "C"	
T-27	Aggregate Base	1 1/2"		1 1/2"	+/-7	1 1/2"	+/-7
		3/4"	+/-7	3/4"	+/-7	1"	+/-7
		3/8"	+/-7	3/8"	+/-6	1/2"	+/-8
		#4	+/-6	#4	+/-6	#4	+/-6
		#10	+/-6	#10	+/-6	#10	+/-6
		#40	+/-5	#40	+/-5	#40	+/-5
		#200	+/-3.0	#200	+/-3.0	#200	+/-3.0

		Type "A"		Type "E"		Type "F"	
T-27	T.B.S.C.	1"		1"		1 1/2"	
		3/4"	+/-5	3/4"	+/-7	#4	+/-7
		#4	+/-5	3/8"	+/-7	#200	+/-2.0
		#20	+/-5	#4	+/-6		
		#200	+/-2.0	#10	+/-6		
				#40	+/-5		
				#200	+/-3.0		

T-27	Cover Aggregate 3C	5/8"	
		1/2"	+/-7
		3/8"	+/-6
		#4	+/-3
		#8	+/-2
		#200	+/-1.0
		Dust Coat	+/-1

Miscellaneous Materials (Any materials not covered above)

				D2S	Rounded
T-27	Coarse Aggregate Gradation	100	≥95	1	1
		<95	≥85	3.9	4
		<85	≥80	5.4	6
		<80	≥60	8	8
		<60	≥20	5.6	6
		<20	≥15	4.5	5
		<15	≥10	4.2	4
		<10	≥5	3.4	3
		<5	≥2	3	3
		<2	≥0	1.3	1

				D2S	Rounded
T-27	Fine Aggregate Gradation	100	≥95	0.6	1
		<95	≥60	2.2	2
		<60	≥20	4	4
		<20	≥15	3.1	3
		<15	≥10	2.1	2
		<10	≥2	1.8	2
		<2	0	0.9	1

Revised 4/2008