MoDOT Quality Oversight Plan

Contract ID: I-70-1(200)

Job: J4I1916

Federal: ACIM 70-1(200)

Table of Contents

Sampling and Testing

Minimum frequencies for materials testing are defined in Appendix A – Schedule of Testing. These tests will be random in that MoDOT will not focus the testing on this schedule on suspected compliance or non-compliance. These frequencies are a bare minimum and the sampling and testing will be more frequent, when necessary. In addition to random sampling and testing, MoDOT may sample and test any material that appears suspect. Independent Assurance Sampling and Testing (IAS) frequencies are defined in Appendix B – Independent Assurance Sampling and Testing. Testing of materials that don't have specific frequencies based upon quantity will be included within scheduled audits.

MoDOT has a team of highly experienced engineers whose backgrounds include construction inspection, materials inspection, highway design, drainage design, and bridge inspection. All MoDOT personnel (verification and IAS) performing sampling and testing will be certified by the MoDOT Technician Certification Program for the tests they are performing.

Audits

MoDOT will use an audit approach for assessing the Contractor's performance. This will entail checking on a sampling basis whether the Work is complying with the requirements of the Contract Documents.

Auditing will entail the collection and documentation of objective evidence to confirm whether specified requirements have been met. The results of auditing will be documented and provided to the Contractor via email through Microsoft Sharepoint. This auditing program will notify the Contractor's Quality Manager, or appropriate designees, and require corrective action be taken for nonconforming work. A copy of the MoDOT Audit Report Form is included in Appendix C. The audit results will be stored in Sharepoint in chronological order. All NC's will be clearly documented and referenced by the work breakdown structure. Nonconforming work will also be tracked by MoDOT to ensure a timely and satisfactory resolution is achieved. Nonconforming work will also be discussed weekly at an internal quality meeting.

MoDOT will hold an internal weekly team meeting every Monday to discuss the timing, frequency, and depth of auditing based upon the Contractor's Two Week Look-Ahead Schedule. The MoDOT Staff will hold informal meetings daily to finalize the auditing schedule based upon the Contractor's daily schedule. The focus of audits will be on items with greater perceived risk based on engineering judgment. Items and activities that often fail to meet specifications or that have greater consequences of failure will be

audited more intensely. Items that often meet specifications or have minimal consequences of failure will be audited less intensely. Audit priorities will be adjusted as the job progresses in order to focus resources where they are most needed.

Also included in the audits will be the Design Process. MoDOT's staff will audit the Designer on a periodical basis to ensure that the Design Quality Management Plan is being implemented. These audits will be posted to the Mircosoft Sharepoint site, and will be submitted in the monthly report.

Quantities necessary for sampling and testing frequencies will be tracked by the Contractor and reported monthly. MoDOT will hold weekly internal and external Risk Assessment Meetings, at the start of each week, to ensure at a minimum all frequencies are met. The Risk Assessment Meetings will also help to determine if there are work items that will need additional testing and oversight. Materials incorporated into the project will be tracked on an Excel spreadsheet according to the definable feature of work and method of acceptance. Additionally there will be quarterly meetings between all parties to review the quality program, and ensure that the minimum sample and testing frequencies are being met, and all material is being properly accepted as described in the Contractor's Quality Management Plan (QMP).

Materials Certification to FHWA

At the completion of the project, MoDOT is required by 23 CFR Part 637 to provide a materials certification for the project. The certification will conform in substance to Appendix A of 23 CFR Part 637 Subpart B. The certification will be prepared and submitted at the project level by persons intimately familiar with the project.

The basis for the materials certification will be upon implementation of a quality assurance program meeting the criteria of 23 CFR Part 637 as follows:

637.205 Policy

(a) Quality assurance program. Each STD shall develop a quality assurance program which will assure that the materials and workmanship incorporated into each Federal-aid highway construction project on the NHS are in conformity with the requirements of the approved plans and specifications, including approved changes. The program must meet the criteria in Sec. 637.207 and be approved by the FHWA.

> Quality assurance as defined in 637.203 Definitions is "All those planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality." MoDOT has developed a Quality Assurance Program unique to this project. Quality Assurance includes the

Contractor’s activities, both “Quality Control” and “Quality Assurance”, as defined in the Contractor’s approved Quality Manual and MoDOT’s Quality Oversight activities as defined above and in Appendix A - Schedule of Testing.

(b) STD capabilities. STD shall maintain an adequate, qualified staff to administer its quality assurance program. The State shall also maintain a central laboratory. The State's central laboratory shall meet the requirements in Sec. 637.209(a)(2).

MoDOT has assembled a highly qualified staff to administer this project. This project will utilize MoDOT’s Central Laboratory for more specialized testing not performed in the field laboratory.

(c) Independent assurance program. Independent assurance samples and tests or other procedures shall be performed by qualified sampling and testing personnel employed by the STD or its designated agent.

MoDOT’s Kansas City District Materials Office will perform Independent Assurance Sampling and Testing in Accordance with Appendix B – Independent Assurance Sampling and Testing.

(d) Verification sampling and testing. The verification sampling and testing are to be performed by qualified testing personnel employed by the STD or its designated agent, excluding the contractor and vendor.

MoDOT’s sampling and testing frequencies are listed in Appendix A -Schedule of Testing. All MoDOT personnel will be certified by MoDOT’s Technician Certification Program for the tests they perform.

(e) Random samples. All samples used for quality control and verification sampling and testing shall be random samples.

As stated above under Sampling and Testing, tests will be random in that MoDOT will not focus the testing on this schedule on suspected compliance or non-compliance.” The Contractor’s Quality Manual indicates that their Quality Control testing be random as well.

637.207 Quality assurance program

(a) Each STD's quality assurance program shall provide for an acceptance program and an independent assurance (IA) program consisting of the following:

(1) Acceptance program.

(i) Each STD's acceptance program shall consist of the following:

(A) Frequency guide schedules for verification sampling and testing which will give general guidance to personnel responsible for the program and allow adaptation to specific project conditions and needs.

MoDOT's verification sampling and testing frequencies are defined in Appendix A - Schedule of Testing. The Contractor's QC and QA sampling and testing frequencies are defined in their approved Quality Manual.

(B) Identification of the specific location in the construction or production operation at which verification sampling and testing is to be accomplished.

MoDOT's verification sampling and testing will be random at the locations. Both the contractor and MoDOT will utilize the ASTM, AASHTO, and MoDOT Spec Book and EPG as guidance for testing procedures include the location in the construction or production where the S&T will be performed and accomplished defined in Appendix A - Schedule of Testing. MoDOT will also follow the guidance provided in the Engineering Policy Guide (EPG).

(C) Identification of the specific attributes to be inspected which reflect the quality of the finished product.

MoDOT will audit based upon risk assessment. This system is described under the Audits section above. The Contractor's QC and QA inspections are defined in their approved Quality Manual.

(ii) Quality control sampling and testing results may be used as part of the acceptance decision provided that:

(A) The sampling and testing has been performed by qualified laboratories and qualified sampling and testing personnel.

The Contract Documents (Book 2, Section 3.1) requires the Contractor to use qualified laboratories with properly calibrated equipment, and qualified personnel. Qualified laboratories and personnel are defined as meeting CRF 637.203.

(B) The quality of the material has been validated by the verification sampling and testing. The verification testing shall be performed on samples that are taken independently of the quality control samples.

MoDOT will take independent samples based upon the frequencies listed in Appendix A - Schedule of Testing

(C) The quality control sampling and testing is evaluated by an IA program.

The Contractor QC, Contractor QA, and MoDOT verification sampling and testing will be evaluated by the formal MoDOT IA Program. A copy of the MoDOT IA Program is included as Appendix B of this document.

(iii) If the results from the quality control sampling and testing are used in the acceptance program, the STD shall establish a dispute resolution system. The dispute resolution system shall address the resolution of discrepancies occurring between the verification sampling and testing and the quality control sampling and testing. The dispute resolution system may be administered entirely within the STD.

MoDOT has accepted the Test Dispute Resolution process proposed in the Contractor's Quality Management Plan.

(2) The IA program shall evaluate the qualified sampling and testing personnel and the testing equipment. The program shall cover sampling procedures, testing procedures, and testing equipment. Each IA program shall include a schedule of frequency for IA evaluation. The schedule may be established based on either a project basis or a system basis. The frequency can be based on either a unit of production or on a unit of time.

MoDOT has in place a formal IA Program. This is described in MoDOT's EPG and included in Appendix B – Independent Assurance Sampling and Testing

(i) The testing equipment shall be evaluated by using one or more of the following: Calibration checks, split samples, or proficiency samples.

This is described in MoDOT's Engineering Policy Guide Section 123 with Table 123.3.1.3.2 modified for Design Build. The modified table is found in Appendix B – Independent Assurance Sampling and Testing.

(ii) Testing personnel shall be evaluated by observations and split samples or proficiency samples.

MoDOT's Independent Assurance Sampling and Testing witnesses the sampling and testing or uses split samples. This is described in MoDOT's Engineering Policy Guide Section 123 with Table

123.3.1.3.2 modified for Design Build. The modified table is found in Appendix B – Independent Assurance Sampling and Testing.

(iii) A prompt comparison and documentation shall be made of test results obtained by the tester being evaluated and the IA tester. The SHA shall develop guidelines including tolerance limits for the comparison of test results.

This is described in MoDOT's Engineering Policy Guide Section 1 23.

(iv) If the SHA uses the system approach to the IA program, the SHA shall provide an annual report to the FHWA summarizing the results of the IA program.

N/A

(3) The preparation of a materials certification, conforming in substance to Appendix A of this subpart, shall be submitted to the FHWA Division Administrator for each construction project which is subject to FHWA construction oversight activities. APPENDIX A TO SUBPART B OF PART 637—GUIDE LETTER OF CERTIFICATION BY STATE ENGINEER, Date , Project No.; This is to certify that: The results of the tests used in the acceptance program indicate that the materials incorporated in the construction work, and the construction operations controlled by sampling and testing, were in conformity with the approved plans and specifications. (The following sentence should be added if the IA testing frequencies are based on project quantities. All independent assurance samples and tests are within tolerance limits of the samples and tests that are used in the acceptance program.) Exceptions to the plans and specifications are explained on the back hereof (or on attached sheet). Director of STD Laboratory or other appropriate STD Official.

Requirement will be met as stated above.

b) In the case of a design-build project funded under title 23, U.S. Code, the STD's quality assurance program should consider the specific contractual needs of the design-build project. All provisions of paragraph (a) of this section are applicable to design –build projects. In addition, the quality assurance program may include the following:

(1) *Reliance on a combination of contractual provisions and acceptance methods*;

Acceptance will be made through verification of independent samples based upon the frequencies listed in Appendix A - Schedule of Testing. Furthermore acceptance will be made on QC documentation regarding contractor checklist, and DWR's.

(2) *Reliance on quality control sampling and testing as part of the acceptance decision, provided that adequate verification of the design-builder's quality control sampling and testing is performed to ensure that the design-builder is providing the quality of materials and construction required by the contract documents.*

Acceptance will be made through verification of independent samples based upon the frequencies listed in Appendix A - Schedule of Testing.

(3) *Contractual provisions which require the operation of the completed facility for a specific time period.*

The contract for this project (as included in Book 1, Section 21.1.3 of the contract document) states that “Warranties regarding all elements of the Project shall remain in effect until one year after… Acceptance.” If MoDOT determines that any of the Work has not met the standards set by Book 1, Section 21.1 at any time during the Warranty period, then the Contractor shall correct such Work within the one year warranty term.

637.209 Laboratory and sampling and testing personnel qualifications.

a) *Laboratories.*

(1) *After June 29, 2000, all contractor, vendor, and STD testing used in the acceptance decision shall be performed by qualified laboratories.*

MoDOT’s Central Laboratory is AASHTO accredited. The Contract Documents (Book 2, Section 3.1) require the Contractor to use qualified laboratories. MoDOT will verify the accreditation status of all laboratories used in the acceptance decision on an annual basis.

(2) *After June 30, 1997, each STD shall have its central laboratory accredited by the AASHTO Accreditation Program or a comparable laboratory accreditation program approved by the FHWA.*

MoDOT’s Central Laboratory is AASHTO accredited.

(3) *After June 29, 2000, any non-STD designated laboratory which performs IA sampling and testing shall be accredited in the testing to be performed by the AASHTO Accreditation Program or a comparable laboratory accreditation program approved by the FHWA.*

MoDOT’s Central Laboratory performs IA testing.

(4) *After June 29, 2000, any non-STD laboratory that is used in dispute resolution sampling and testing shall be accredited in the testing to be performed by the AASHTO Accreditation Program or a comparable laboratory accreditation program approved by the FHWA.*

MoDOT has accepted the Test Dispute Resolution process proposed in the Contractor's Quality Manual (CQMP Sec 10.0). Should the need arise for dispute resolution, an AASHTO accredited third party laboratory will be used.

b) *Sampling and testing personnel. After June 29, 2000, all sampling and testing data to be used in the acceptance decision or the IA program shall be executed by qualified sampling and testing personnel.*

All MoDOT personnel (verification and IAS) and Contractor personnel (QC/QA) performing sampling and testing will be certified by the MoDOT Technician Certification Program for the tests they are performing. The Contract Documents (Book 2, Section 3.1) require the Contractor's technicians to be certified.

c) *Conflict of interest. In order to avoid an appearance of a conflict of interest, any qualified non-STD laboratory shall perform only one of the following types of testing on the same project: Verification testing, quality control testing, IA testing, or dispute resolution testing.*

MoDOT will perform the verification testing and IA testing using MoDOT's Central Lab (1617 Missouri Blvd. Jefferson City, MO 65109), MoDOT's Kansas District Lab (600 NE Colbern Rd., Lee's Summit, MO 64086), and MoDOT's Truman Road Project Office (908 E. Truman Rd., Kansas City, MO 64106). MoDOT will not allow dispute resolution to be performed by the same lab as the quality control testing.

Appendices

Appendix A – Schedule of Testing

Appendix B – Independent Assurance Sampling and Testing

Appendix C – MoDOT Audit Report Form

Appendix A – Schedule of Testing

DIVISION 200: Grading and Removals

Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Minimum Frequency: Contractor QC	Minimum Frequency: Agency Acceptance	QC Documents: Checklist	QC Documents: Test Record	QC Documents: Misc.	QC Documents: Electronic Process
Section 201: Clearing and Grubbing											
201	.2..	Clearing and Grubbing	Clearances, disposal, and finish	See Checklist		1 per Day		✧			
Section 202: Removal of Roadways and Buildings											
202		Removal of Roadways and Buildings	Construction and Conformance Requirements	See Checklist		1 per Day		✧			
Section 203: Roadway and Drainage Excavation, Embankment and Compaction											
203	.3 and .5	Borrow Material	Soil Characteristics	Proctor and Plasticity Index	Certification and Testing	1 per Soil Type	1 per Project		✧		
203		Placement and compaction of Embankment	Density, Moisture, Thickness, Frozen	See Checklist — Density Test Required	Testing	1 per Lift, per 500', per activity	1 per Day	✧	✧		
203		Compaction of Cut	Density, Moisture, Thickness, Frozen	See Checklist — Density Test Required	Testing	1 per Lift, per 500', per activity	1 per Day	✧	✧		
203	.5..	Comp of Emb and Treatment of Cut Areas with Moisture & Density	Standard Compaction	AASHTO T99 or TM40	Testing	1 per Soil Type	1 per Project		✧		
203	.5..	Comp of Emb and Treatment of Cut Areas with Moisture & Density	Moisture Correction Factor	TM 35 — Use with nuclear density	Testing	1 per Soil Type	1 per Week		✧		
203	.5.2	Moisture Control	Plasticity Index	Class A , LL>40 within 5' of top of finished subgrade shall be compacted at no less than optimum — T89	Testing	1 per Soil Type	1 per Week		✧		
Section 204: Embankment Monitoring											
204	.10.3	Embankment Monitoring	Settlement Gauge	Per Contract JSP	Visual	1 per Day, or as per Contract	1 per Month		✧		
204	.20.3	Embankment Monitoring	Pore Pressure	Per Contract JSP	Visual	1 per Day, or as per Contract	1 per Month		✧		
Section 205: Subgrade Stabilization											
205	.2..	Stabilization Material	Gradation	AASHTO T87 and T88 — EPG 205.2.2	Testing	1 per Project/ Gradation /Source	1 per Project		✧		

DIVISION 200: Grading and Removals						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
205	.2..	Stabilization Material	Liquid Limit	T89	Testing	1 per Project/ Gradation /Source	1 per Project		✧		
205	.2..	Stabilization Material	Plasticity Index	T90	Testing	1 per Project/ Gradation /Source	1 per Project		✧		
205	.2..	Stabilization Material	Moisture Density Relation	T99 Method C	Testing	1 per Project/ Soil Classification.	1 per Project		✧		
205	.3..	Construction	Application Uniformity	Extends 18" each side of roadway. Proof rolling only if required by Engineer	Visual	1 per Activity	1 per Week	✧			
Section 206: Structure Excavation											
206	.2..	Excavation for Footings and Culvert Floors	Depth and Keyways	See Checklist	Visual	1 per Foundation		✧			
206	.3.2	Excavation	Stabilization and Testing	Test Hole and Stabilization	Measurement	1 per Foundation	As Needed	✧			
206	.4.6	Excavation	Footing Drainage	See Checklist	Visual	1 per Day		✧			
206	.4.7	Excavation	Cofferdams	See Checklist	Measurement	1 per Day		✧			
206	.4.8	Excavation	Temporary Shoring	See Checklist	Measurement	1 per Day		✧			
206	.4.9	Excavation	Seal Courses	See Checklist	Measurement	1 per Day		✧			
206	.4.10,	Backfill	Structure Fill; Footing Backfill	See Checklist	Visual / Testing	I per Lift		✧			
206	.4.11.	Porous Backfill	Construction	See Checklist	Visual	I per Lift		✧			
206	.4.11.1	Porous Backfill	Material	Gradation and deleterious — Materials and gradation per Sec 1009	Testing	I per 2000 Ton, 1 per Project min	1 per Project		✧		
206	.4.12	Flowable Fill	Mix Design	Approved Mix design. — Sec 621	Document						
Section 207: Linear Grading											
207	.2.1	Class 1 and 2 for Mainline	Construction	See Checklist	Measurement	1 per 10 Stations, 1 per Area Worked min		✧			

DIVISION 200: Grading and Removals						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
207	.2.1	Class 1 and 2 for Shoulder	Construction	See Checklist	Measurement	1 per 10 Stations, per shoulder, 1 per Area Worked min		✧			
Section 208: Interception Ditch											
208	.2.	Interception Ditch	Construction	See Checklist	Visual	1 per Area Worked		✧			
Section 209: Subgrade Preparation											
209		Construction	Grade	See Checklist	Measurement	1 per 100'		✧			
209		Construction	Uniformity, Moisture	See Checklist	Visual / Measurement	1 per Day		✧			
Section 210: Subgrade Compaction											
210	.2.1	Subgrade Compaction	Construction	See Checklist Density Test Required	Testing	1 per 1000 Feet of Alternating Lanes.	1 per Week	✧	✧		
Section 211: Subgrade Scarifying											
211	.2..	Subgrade Scarifying	Construction	See Checklist Performed in areas determined by Engineer	Visual	1 per 1000 Feet of Alternating Lanes.		✧			
Section 212: Subgrading & Shouldering											
212	.2.1.	Subgrading / Shouldering	Construction	See Checklist	Testing	1 per Lift, per 500', per activity		✧			
Section 214: Rock Fill											
214	.2..	Rock Fill	Construction and Materials	See Checklist Uniformly graded suitable rock	Visual	1 per Lift / Activity	1 per Week	✧	✧		

DIVISION 300: Bases and Aggregate Surfaces

Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Minimum Frequency: Contractor QC	Minimum Frequency: Agency Acceptance	QC Documents: Checklist	QC Documents: Test Record	QC Documents: Misc.	QC Documents: Electronic Process
Section 302: Stabilized Permeable Base												
302	.2.1	Asphalt or Cement Stabilized Base	Material: Gradation Test & Deleterious		Sec 1009, T11, T27	testing	1 per 2000 Ton	1 per Project		✧		
302	.2.2	Asphalt or Cement Stabilized Base	Construction	See Checklist		Visual	1 per Day / Activity		✧			
Section 303: Rock Base												
303	.2.2 and .2.3	Rock Base	Material Quality and size. Section Thickness, and Compaction	See Checklist	Material report	Visual / Measurement	1 per lift, per 500', per active grading spread/4 per day min EPG 203.5	1 per 5 QA	✧	✧		
303	.3.5	Surface Material	Top 2" Gradation	See Sec. 1007		testing	1 per 2000 ton	1 per 16,000 ton		✧		
303	.3.5	Surface Material	Top 2" PI	See Sec. 1007		testing	1 per 10,000 ton	1 per Source per Project		✧		
303	.3.6	Final Grade	Construction	See Checklist		measurement	1 per 100'.	1 per 4000'	✧			
Section 304: Aggregate Base Course												
304	.2.3	Placing	Subgrade and Measuring lift thickness	See Checklist	See Sec 209	measurement	1 per 1000 Ton, 1 per Day min	1 per Project	✧			
304	.3.4 and .4.1	Shaping and Compacting	>4" thickness Density	See Checklist	T191 or T310, TM 35, ASTM D6951 (DCP for Type 7 base)	visual / testing	1 per 1000 Ton, 1 per Day min	1 per Project	✧	✧		
304	.3.4	Shaping and Compacting on shoulders	<4" thickness Density	See Checklist		visual	1 per Day / Activity		✧			
304	.4.1 and .4.1.3	Aggregate Base QC/QA	Section Thickness	measurement meets plans		measurement	1 per 1000 Ton, 1 per Day min.	1 per Project				
304	.4.1	Aggregate Base >1000 Tons a Week	Gradation Test & Deleterious Material	T11, T27, & TM71	See Sec 1007. testing is per source. QC retains samples	testing	1 per 2000 Ton, 1 per Day min.	1 per Project		✧		
304	.4.1	Aggregate Base <1000 Tons a Week	Gradation Test & Deleterious Material	T11, T27, & TM71	See Sec 1007. testing is per source. QC retains samples	testing	1 per 250 Ton, 1 per Week min.	1 per Project		✧		
304	.4.1	Aggregate Base <1000 Tons a Week	Retained Samples for Gradation Test & Deleterious Material	T11, T27, & TM71	See Sec 1007. testing is per source.	testing	NA	1 per Project				
304	.4.1	Aggregate Base QC/QA	Plasticity Index	T89 & T90	See Sec 1007. testing is per source. QC retains samples	testing	1 per 10000 Ton, 1 per Project min.	1 per Project		✧		

DIVISION 300: Bases and Aggregate Surfaces								Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference				Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
304	.4.1	Aggregate Base QC/QA	Retained Samples for Plasticity Index	T89 & T90	See Sec 1007. testing is per source. QC retains samples			testing	NA	1 per Project				
304	.4.2	Aggregate Base QC/QA	Standard Compaction	T 99, Method C		ASTM D6951 (DCP for Type 7 base)		testing	1 per source or material change	1 per source or material change		✧		
Section 310: Aggregate Surface														
310	.2..	Aggregate Surface < 500 Tons	Gradation & Deleterious	AASHTO T27, T11, TM71			Spec Reference 1006	Certification	1 per activity			✧		
310	.2..	Aggregate Surface > 500 Tons	Gradation & Deleterious				Spec Reference 1006	Testing	1 per 2000 ton, 1 per Project min			✧		

DIVISION 400: Flexible Pavements							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
Section 401: Bituminous Base and Pavement												
401	.5. and .9.	Aggregate Gradation & Deleterious Content Control and %AC	QA Independent Samples	T11, T27, TM 71	Only applies for greater than 500 tons per day	testing	na	1 per Day				
401	.5. and .8. and .9.	Aggregate Gradation Control	QC/QA Split Samples	T11, T27, TM 71	Split samples within 5% of QC	testing	1 per 1000 Ton, 1 per Day min	1 per Week, 1 per Project min		✧		
401	.5..	Deleterious Content Control	QC/QA Split Samples	T11, T27, TM 71	Split samples within 5% of QC	testing	1 per 1000 Ton, 1 per Day min	1 per Week, 1 per Project min		✧		
401	.5..	Binder Content	QC/QA Split Samples	T164, TM54, T287, T308	Asphalt Content	testing	1 per 1000 Ton, 1 per Day min	1 per Week, 1 per Project min		✧		
401	.5..	Recycled Asphalt Material (RAP)	Gradation and AC Content	T27, T164, T308	extraction, binder ignition. QC retains split samples	testing	1 per Day	1 per Project		✧		
401	.2.1	Aggregate properties	Plasticity Index and Moisture Susceptibility	T89 and T90, and T283	Additional testing if above design on fractions >10% passing #30 sieve	testing	1 per mix			✧		
401	.5.4	Moisture Control	Moisture Content	T329	Testing. Same Time as AC Content. Test any time moisture content changes.	testing	1 at project start up and 1 per Week	1 per Week, 1 per Project min		✧		
401	.7.1	Subgrade preparations	Roadway	See Checklist	TM20, Sec 209, Sec 407, Sec 408	Visual / measurement	1 at start of day, 4 per day min	1 per Activity,1 per Day	✧			
401	.4.2	Temperature limitations	Mixture Testing	TM20	Binder and Mix temperatures	measurement	4 per Day	1 per Project	✧			
401	.7.8 and .8.4.	Pavement Density and thickness	Coring of lifts	Core locations by random #s.	TM41 / T166	Testing	4 per Day	1 per Week, 1 per Project min	✧	✧		
401	.7.6 and .8.4	Pavement Joints	Density	TM41 / T166		testing	1 per Activity		✧	✧		
401	.10.	Surface Tolerance	Smoothness	TM 59, Sec 610	Test prior to opening.	Testing		1 per Activity	✧			
401	.12.	Pavement Marking	Visibility	TM80, Sec 620	Test prior to opening.	Testing		1 per Activity	✧			
Section 402: Bituminous Surface Leveling												
402	.2.3	Recycled Asphalt Material (RAP)	RAP Gradation, AC content & Delt	T27, T164, T308,	Sec 1004 extraction, binder ignition	testing	1 per Day			✧		

DIVISION 400: Flexible Pavements						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
402	.5..	Aggregate gradation and deleterious	QC/QA Split Sample	T11, T27 & TM 71, 1004.2 Sec	testing	1 per Day			✧		
402	.5..	Aggregate gradation and deleterious	QA Independent Samples	T11, T27 & TM 71, 1004.2 Sec	testing				✧		
402	.5.	Aggregate properties	Plasticity Index and Moisture	T89 and T90, and T283 Additional testing if above design on fractions >10% passing #30 sieve	testing	1 per mix			✧		
402	.5..	% Asphalt Content (Binder) > 5000 tons	Mixture AC content	Determine using oil and plant tickets	measurement	1 per activity			✧		
402	.5..	% Asphalt Content (Binder) > 5000 tons	Asphalt QA Verification	T164, TM54, T287, T308 calculation or testing	testing						
402	.7..	Moisture Control > 100 Tons	Moisture Content	T329	testing	1 per Day			✧		
402		Plant Temperature	Mixture Testing	TM20 Binder and Mix temperatures	measurement	4 per Day		✧			
402	.10.3	Construction	Preparations, Hauling, Spreading, Compaction.	See Checklist	Visual / Measurement	1 per Activity/Day		✧			
Section 403: Asphaltic Concrete Pavement											
403	.5.1, .19.3.	Gradation and Deleterious Content Control	QC/QA Split Sample	T 27 & T 11 QC retained samples 1 per week by QA	testing	2 per Lot	1 per Lot		✧		
403	.5.2, .15.4 .19.3	Mat Density	Pavement Testing	T 166 By Random #	testing	1 per Sublot	1 per Lot		✧		
403	.5.3, .19.3	Mixture Testing	Asphalt content	AASHTO T 164, TM 54, T 287, T 308	testing	1 per Sublot	1 per Lot		✧		
403	.5.4, .19.3	Mixture Testing	Voids in Min Aggr	VMA T 312 and R 35	testing	1 per Sublot	1 per Lot		✧		
403	.5.5, .19.3	Mixture Testing	Air Voids	Va T 312 and R 35	testing	1 per Sublot	1 per Lot		✧		
403	.5.6., .19.3	Mixture Testing	Tensile Strength Ratio	TSR of the mixture T 283	testing	1 per 10,000 Ton	1 per 50,000 Tons, 1 per Project min		✧		
403	.5.7., .19.3	Mixture Testing	Aggregate properties	FAA, CAA, clay content, and thin and elongated particles AASHTO T304, ASTM D5821, AASHTO T176 & ASTM D 4791	testing	1 per 10,000 Ton	1 per Project		✧		

DIVISION 400: Flexible Pavements						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
403	.5.9.	Mixture Testing	Moisture Control	Moisture Content — T329 Testing. Same time as AC content	testing	start up and 1 per Week or if moisture changes	1 per Week, 1 per Project min		✧		
403	0.12.	Surface Prep	Tack application and Weather Limitations	See Checklist — Prior to Placement	Visual / measurement	1 per Day		✧			
403	.15.	Pavement Density	Coring of lifts	Core locations by random #s. — TM41 / T166	Measurement	1 per Sublot	1 per Lot	✧			
403	.19.3	Plant Temperature	Mixture Testing	TM20 — Binder and Mix temperatures	Measurement	1 per Sublot	1 per Day	✧			
403	.16.1., .19.3	Pavement Testing	Unconfined Joints	T 166 — By Random #	Testing	1 per Sublot	1 per Lot		✧		
403	.19.3	Mixture Testing	AC content of RAP	AASHTO T 164	Testing	1 per Lot	1 per Project		✧		
403	.19.3	Mixture Testing	Voids Filled with Asphalt	VFA — T 312 and R 35	Testing	1 per sublot	1 per Lot		✧		
403	.19.3	Mixture Testing	Rice Test - Gmm	T 209 — Absorption > than 2.0 % run a Dry-back test	Testing	1 per sublot	1 per Lot		✧		
403	.20.1	Pavement Testing	Straightedging	1/8" within 10'	Visual	prior to opening	verify QC	✧			
403	.22.4.1	Lift Thickness	Average thickness of Density Cores	See Checklist — T148	measurement	1 per Lot	1 per Lot	✧			
403	.22.4.1	Full Depth Pavement Thickness	Roadway	See Checklist — T148	measurement	1 core per 1000'	verify QC 1 per Lot	✧			
Section 407: Tack Coat											
407	.2.	Material		Emulsified Asphalt — Sect 1015	certification	1 per Delivery	1 per Project		✧		
407	.4.1.	Construction	Surface Prep, Application	See Checklist	Visual	1 per activity		✧			
Section 408: Prime Coat											
408	.2.	Material		Type RC and MC Liquid Asphalt — Sec 1015	certification	1 per Delivery	1 per Project		✧		
408	.4.1.	Construction	Surface Prep, Application	See Checklist	Visual	1 per activity		✧			
Section 409: Seal Coat											

DIVISION 400: Flexible Pavements

Spec.		Item Description	Parameter or Procedure	Additional Reference				Acceptance Criteria	Minimum Frequency: Contractor QC	Minimum Frequency: Agency Acceptance	QC Documents: Checklist	QC Documents: Test Record	QC Documents: Misc.	QC Documents: Electronic Process
409	.2..	Material	Aggregate gradation and deleterious control	T11, T27 & TM 71			Sec 1003	Documentation	1 per activity	1 per job		✧		
409	.2.2	Material	Asphalt Binder	ASTM D5, AASHTO T301				Certification	1 per shipment	1 per job		✧		
409	.2.3, .5.3.2	Material	Pre-coating	T164, TM54, T287, T308	Sec 1015		min. 0.5 %,	testing	1 per activity	1 per job		✧		
409	.3.2.	Construction	Mix, Equipment, and Weather	See Checklist	Per Mix Design			visual	1 per Day		✧			
Section 413: Surface Treatment														
413	.10.2.1 , .20.2	Microsurfacing and Scrub Seals	Aggregate Gradation Content Control	T 27 & T 11		Provide Documentation prior to construction including job mix formula		Documentation	1 per Day	1 per project	✧	✧		
413	0..10, .20	Microsurfacing and Scrub Seals	Equipment and Test Review	See Checklist	See checklist for microsurfacing and scrub seal			visual	1 per mix		✧			
413	.10.5, .20.4	Microsurfacing and Scrub Seals	Surface conditions ,weather limits and roadway prep.	See Checklist	See checklist for microsurfacing and scrub seal			Visual	1 per day		✧			
413		Microsurfacing and Scrub Seals	Material - Emulsified Asphalt					certification	1 per shipment	1 per project		✧		
413	.30.4.2, .30.6.1.2	UBAWS	Aggregate Gradation and Deleterious QC/QA Split Samples	T 27, T11, and TM 71	Sec 413.30.6, 413.30.7			testing	1 per 600 Ton	1 per project		✧		
413	.30.2.	UBAWS	Aggregate Gradation Content Control QA Independent	T 27, T11	Sec 413.30.6, 413.30.7			testing	NA	1 per project		✧		
413	.30.5.1	UBAWS	Weather limitations and Surface Condition and mix temperature	See Checklist				visual / measurement	1 per Day		✧			
413	.30.5.4	UBAWS	Membrane Application Rate	See Checklist		Polymer Modified Sec 1015		measurement	1 per Day	1 per project	✧	✧		

DIVISION 400: Flexible Pavements						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
413	.30.6.1.2	UBAWS	Asphalt content QC/QA Split Samples	AASHTO T 287, T 308	testing	1 per 600 Ton	1 per project		✧		
413	.30.6.1.2	UBAWS	Asphalt content QA Independent Samples	AASHTO T 287, T 308	testing	na	1 per project		✧		
413	.40.2	Fog Sealing	Emulsified Asphalt	Sec 1015 SS-1, SS-1H, CSS-1, CSS-1H	Documentation	1 per day	1 per project		✧		
413	.40.3	Fog Sealing	Surface Preparation and tack application,	See Checklist	visual / documentation	1 per activity		✧			
413	.50, .60, .70, .80	Crack Sealing and Crack Filling	Material	M 324, Sec 1057, Sec 1015	PAL / Certification	1 per shipment	1 per project		✧		
413	.50, .60, .70, .80	Crack Sealing and Crack Filling	Surface Preparation and weather limitations	See Checklist	visual	1 per Day		✧			

DIVISION 500: Rigid Pavements							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference			Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
Section 501: Concrete													
501	.2.1	Aggregate	QC and QC/QA Split samples Gradations, Deleterious, and Absorptions	T27 and T11, TM 71, T85		1005	testing	1 per 500 CY	1 per 10,000 CY		✧		
501	.2.1	Aggregate >500 cy	QA Independent samples Gradations, Deleterious, and Absorptions	T27 and T11, TM 71, T85		1005	testing	na	1 per Project		✧		
501	.2.1	Aggregate	Thin or Elongated Pieces	ASTM D4791			testing	1 per source/year	1 per Project		✧		
501	.3.8	Consistency	Compressive Strength Requirement, Slump and Air	T22 T119 T152,			testing	1 per 100 CY per day per mix	1 per 750 CY (1 per Week min)		✧		
501	.5..	Consistency	Concrete Small Quantities				visual / certification	1 per activity	1 per project		✧		
501	.3.8	Mix Design Verification	28 day cured Cylinders	T22 T23			Field Testing	1 per 500 CY, 1 per Mix Design min	1 per Mix Design Used		✧		
501	.6.3	Concrete Plant	Calibrations	Calibrated and Certified Annually			Document	1 per Year	1 per Plant	✧			
501	.6.3	Concrete Plant	Verifications	Verify			Document	1 per 30 Working Days	1 per Plant	✧			
501	.6.3	Concrete Plant	Mixing and Delivery	See checklist			Measurement / Check	1 per pour		✧			
501	.8.2	Concrete	Uniformity Testing	See Checklist						✧		✧	
501	.11.	Concrete Components	Admixtures	Approval required prior to use		Sec 1054	PAL	1 per shipment	1 per Project		✧		
501	.14.	Concrete Components	Cementitious Material	Approval required prior to use	Ternary mixes allowed for all classes		Document	1 per shipment	1 per Project		✧		
501	.14.	Concrete Components	Tinting Material	Approval required prior to use	Sec 1056		Document	1 per shipment	1 per Project		✧		
501	.14.6	Concrete Components	Mixing water from non-potable source	Approval required prior to use			testing	1 per source	1 per Project		✧		
Section 502: Concrete Base and Pavement													
502	.4.	Construction	Surface Preparation, placing and finishing	See Checklist			visual / measurement	1 per Day		✧			

DIVISION 500: Rigid Pavements						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
502	.5.	Construction	Joints	See Checklist	visual	1 per activity		✧			
502	.6.	Construction	Curing	See Checklist Sec 1055 PAL	PAL / Visual	1 per Activity		✧	✧		
502	.7.	Construction	Formwork	See Checklist	Visual	1 per Activity		✧			
502	.8.	Construction	Surface Smoothness	See Checklist Sec 610	Documentation	1 per Project	1 per Project	✧			
502	.9.	Construction	Opening to Traffic	See Checklist	documentation	1 per activity		✧			
502	0.10.	Placement	Cores for Thickness and Strength	T24, T22, T231 T148	Testing	1 per Sublot	1 per Lot	✧	✧		
502	.11.2.1.1	Material	Aggregate Gradations	T27, T11	Testing	1 per Week	1 per Project		✧		
502	.11.2.1.2	Materials	Aggregate Deleterious	TM71	Testing	1 per 7500 SY, 1 per Day min	1 per Project		✧		
502	.11.2.1.3	Materials	Coarse Aggregate Absorptions	Absorption of Coarse Aggregate T85	Testing	1 per 2000 CY	1 per Project		✧		
502	.11.2.1.4	Materials	Coarse Aggregate Thin and Elongated	ASTM D4791 + 3/4"	Testing	1 per 10,000 CY	1 per Project		✧		
502	.11.2.2, .11.3.3	Concrete Consistency	Slump	T119	Testing	1 per 500 Cy, 1 per Day min	1 per Day	✧	✧		
502	.11.2.3, .11.3.3	Concrete Consistency	Air Content	T152 By random #	Testing	1 per 500 Cy, 1 per Day min	1 per Day	✧	✧		
502	.11.5	Placement < 8"	Pavement Thickness	stick readings random location	Measurement	1 per 7500 SY	1 per 30000 SY		✧		
Section 503: Approach Slab											
503	.2.	Material	Concrete	Paving or B1 concrete	testing	Sec 501	Sec 501		✧		
503	.3.	Material	Aggregate Base	density and material 1007	testing/ visual	Sec 304	Sec 304		✧		
503	.3.	Construction	Placement	See Checklist Sec 703, Sec 706, Sec 502, Sec 1055	visual	1 per activity		✧			
Section 504: Concrete Approach Pavement											
504	.2.	Material	Concrete	Paving or B1 concrete	testing	Sec 501	Sec 501		✧		
504	.3.	Material	Aggregate Base	density and material 1007	testing/ visual	Sec 304	Sec 304		✧		

DIVISION 500: Rigid Pavements						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
504	.3.	Construction	Placement	See Checklist Sec 304, Sec 503, Sec 609	visual	1 per activity		✧			
Section 505: Bridge Deck Concrete Wearing Surface											
505	.10, .20, .30., .40.	Material	Concrete Mixture and Components	See 501	1005	Sec 501	Sec 501		✧		
505	.10, .20, .30., .40.	Consistency	Slump, Air Content, Unit Weight	ASSHTO T119 T152 and T121	Testing	1 per 2 Hours	1 per day	✧	✧		
505	.10, .20, .30., .40.	Design Verification	28 day cured Cylinders	T22,T23 28 Day Cure	Testing	1 per 500 YD / Mix	1 per project		✧		
505	.10, .20, .30., .40.	Construction	Compressive Strength Requirement	T22,T23 Field Cure	Testing	1 per pour	1 per project		✧		
505	.10, .20, .30., .40.	In Place Density	Density	Modot TM 36	Testing	1 per 100 SY, 3 per Continuous Pour Min	1 per activity		✧		
505	.10, .20, .30., .40.	Construction	Placement	See Inspection Checklist	visual / measurement	1 per pour		✧			
Section 506: Concrete Overlays for Pavements											
506	.20. , .30.	Materials	Concrete Mixture and Components	See 502	Testing	Sec 502	Sec 502		✧		
506	.20. , .30.	Construction	Placement, Joints, Curing, Formwork, Smoothness, and Opening to Traffic	See Inspection Checklist	visual / measurement	Sec 502		✧			
506	0.10.	Placement	Cores for Thickness and	See Inspection Checklist	Testing	Sec 502	Sec 502	✧	✧		
506	.11.2.2, .11.3.3	Concrete Consistency	Air and Slump	See Inspection Checklist	Testing	Sec 502	Sec 502	✧	✧		
506	.20.	Materials	Interlayer		Documentation	1 per activity	1 per project		✧		
506	.20.	Placement	Interlayer	See Inspection Checklist	Visual	1 per activity		✧			
506	.20.	Construction	Profile	Establish field profile	Document	1 per project				✧	
Section 507: Strength of Concrete using Maturity Method											
507	.1.	Construction	Profile	Provide necessary information if used	Document	1 per project				✧	

DIVISION 600: Incidental Construction						Minimum Frequency		QC Documents			
Spec.	Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
Section 602: Markers											
602 .2.1	Materials	Coating, Weight, Dimensions, Mill Tests		Per 1044	Certification/ Testing	1 per Shipment	1 per project		✧		
602 .3...	Construction		See Checklist	Posts driven as per Section 903	Visual	1 per Day /Installation		✧			
Section 603: Water Line Installation											
603 .2...	Materials		Pipe and appurtenances as per the appropriate AWWA specification	QA is usually by utility	Certification	1 per Installation	1 per Installation		✧		
603 .2...	Construction Requirements		See Checklist if MoDOT inspected	Backfill per Sec 726, Concrete per Sec 501	Document	1 per Activity		✧			
Section 604: Miscellaneous Drainage											
604 .10.2	Materials	Precast Misc. Drainage Items		Sec 1033	Document	1 per Shipment	1 per project		✧		
604 .10.2	Materials	Reinforcing Steel, Curing Compounds, joint materials	Sec 1036 and 1055 and 1057		PAL	1 per Shipment	1 per project		✧		
604 .10.2 .40.2	Materials	Concrete for CIP	Class B, See Sec 501 and Sec 703.		Visual/ Testing	1 per Day /Activity	1 per 750 CY (1 per Week min)		✧		
604 .10.3.1	Construction	Misc Drainage items and methods	See Checklist	Sec 706, 206, 1030, 726, 501	Visual	1 per Day /Activity	1 per project	✧			
604 .30.2	Materials	Mortar and vitrified clay sewer pipe	Sec 1030, 1066		Document/ QPL	1 per shipment	1 per project		✧		
604 .60.2	Materials	Slotted Drains	See Sec 1051	Per standard drawing 604.70	Visual / Testing	1 per Day /Activity	1 per project		✧		
604 .60.3.2	Construction Slotted Drains	Orientation and Bedding	See Checklist	726, 609.10, 1051	Visual / Testing	1 per Day /Activity		✧			
Section 605: Underdrainage											
605 .2...	Materials	Aggregates	1009,	Porous Backfill T27	Testing	1 per Activity	1 per project		✧		
605 .2...	Materials	Geotextile and Geocomposite Drainage	1011, 1012,	Types per plan	Documents	1 per Activity	1 per project		✧		
605 .2...	Materials	Pipe and Rodent Guards	1013, 1022, 1025	Types per plan	Documents	1 per shipment	1 per project		✧		

DIVISION 600: Incidental Construction							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
605		Construction	Misc Underdrainage	See Checklist	See Sec 203, 501, 605.6, 1013 and Standard Drawings 605.x	Visual	1 per Activity		✧			
605		materials	Concrete for CIP	See 501		Testing	1 per Activity	1 per project		✧		
Section 606: Guardrail, Crashworthy End Terminals, One-Strand Access Restraint Cable and Three-Strand Guard Cable												
606	.2...	Materials	Guardrail, Crashworthy End Sections and	Sec 1040, 1065		QPL / Testing	1 per Shipment	1 per project		✧		
606	.2. , .2.1 , .2.2	Materials	Concrete	Sec 501	Concrete place per 703 and Cold Weather Plan	Testing	1 per Installation	1 per Project		✧		
606	.3.1	Construction	Guardrail, End Treatments, Cables	See Checklist	Sec 502, 703, 1080, 1065, and Standard Drawings 606.x	Visual	1 per Day /Installation		✧			
606	.3.1.2	Construction	Slope Requirements	See Checklist		Measurement	1 per Day /Installation		✧			
Section 607: Fencing												
607	.10.2	Materials	Chain Link and woven wire and posts	Per 1043 and 1050		Documentation	1 per shipment	1 per Shipment		✧		
607	.10.2	Materials	Concrete	Concrete class B or Commercial per 501		Testing/ Certification	1 per Activity	1 per project		✧		
607		Construction	Chain Link and woven wire fencing	See Checklist	See Sec 501, 903.3.1.2 and Standard Drawing 607.x	Visual	1 per Day /Installation		✧			
Section 608: Concrete Median, Median Strip, Sidewalk, Curb Ramps, Steps and Paved Approaches												
608	.2...	Materials	Epoxy, Truncated Domes,	1039, 1067		QPL	1 per Delivery	1 per project		✧		
608		Materials	Concrete	Sec 501	Concrete place per 703 and Cold Weather Plan	Testing	1 per Day/Activity	1 per 750 CY (1 per Week min)		✧		
608		Materials	Reinforcing Steel, Curing Compounds, joint materials	1036, 1057, 1055		PAL	1 per shipment	1 per project		✧		

DIVISION 600: Incidental Construction							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
608		Materials	Concrete Tint	1056		Certification	1 per Installation	1 per project		✧		
608	.3.1	Construction	Misc	See Checklist	Sec 209, 502, 703, 706, and Standard Drawings 608.x	Visual	1 per Day /Installation		✧			
Section 609: Paved Drainage												
609	.10.2	Materials	Concrete	Sec 501	Class B or Pavement Concrete per 501	testing	1 per Day	1 per 750 CY (1 per Week min)		✧		
609	.10.2	Materials	Reinforcing Steel, Curing Compounds, joint materials	1036, 1057, 1055		PAL	1 per Delivery	1 per project		✧		
609	.30.2, .30.3	Materials	Asphalt Curbs	1002, 1015	401, 403	Testing	1 per Day /Installation	1 per project		✧		
609	.10.3.1, .10.3.4	Construction	Curbs, Gutters, and Drain Basins	See Checklist	See Sec 401, 403, 502, 604, 703, 725, Standard Drawing 609.x	Visual	1 per Day /Installation		✧			
609	.10.3.1	Construction	Rock Ditch Liner	See Checklist	Standard Drawing 609.x	Visual	1 per Day /Installation		✧			
609	.40.2	Materials	Drain Basin	609.60, 614, 1020, 1033	Certifications and approved products	Approved Materials	1 per Day /Installation	1 per Activity		✧		
609		Materials	Geotextile	Sec 1011		PQL / Certification	1 per Activity	1 per project		✧		
609	.70.2, .70.3	Materials	Bedding and Rock Liner	Sec 611		Visual	1 per Activity	1 per project		✧		
Section 610: Pavement Smoothness												
610	.10.1	Description	Pavement Smoothness	See Checklist	See Sec 401, 403, 502, 506,	Testing	1 per Day /Installation		✧			
610	.2...	Materials	Pavement Smoothness	AASHTO M 328	MoDOT TM-59	Testing	1 per Day /Installation	50% of QA			✧	
610	.4...	Construction	Pavement Smoothness	See Checklist	Sec 610	Testing	1 per Day /Installation		✧			
Section 611: Embankment Protection												
611	.30.2	Materials	Rock			Visual	1 per day	1 per project		✧		
611	.30.2	Materials	Concrete for Slope Projection	Class B per 501	See Sec 703	testing / certification	1 per Activity	1 per project		✧		
611	.30.2	Materials	Curing Compounds	Sec 1055		PAL	1 per shipment	1 per project		✧		

DIVISION 600: Incidental Construction							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
611	.30.3	Construction	Rock Blanket, Revetment, Concrete Slope Protection	See Checklist	See Sec 501, 703, Standard Drawing 611.x	Visual	1 per Day /Activity		✧			
611	.30.3	Construction	Gabion Wall	See Checklist	per plan	Visual	1 per Day /Activity		✧			
611	.30.2	Materials	Gabion Baskets and rock		per plan	Certification / visual	1 per Day /Activity	1 per project		✧		
Section 612: Impact Attenuators												
612	.2.2, .2.3	Materials	Sand Barrels, TMAs	FS-612 Table 1 of Prequalified List, 1005, 1042, 1063	Per MUTCD with manufacturer's certification NCHRP 350	Certification	1 per Shipment	1 per project		✧		
612	.4.1	Construction	Sand Barrels	See Checklist	Standard Drawing 612.x	Visual	1 per Day		✧			
Section 613: Pavement Repairs												
613	.2...	Materials	Concrete	502,		testing / certification	1 per Day /Installation	1 per project		✧		
613	.2...	Materials	Epoxy	1039		PQL	1 per Installation	1 per project		✧		
613	.2...	Materials	Curing Compounds, Dowel Bars, and Joint Materials	1055, 1057		PAL	1 per shipment	1 per project		✧		
613	.3, .10	Construction	Full Depth and Partial Repairs	See Checklist	Sec 202, 210, 304, 502, 622, 623, Standard Drawing 613.x	visual	1 per day		✧			
613		Construction	Dowel Bar Retrofit and Cross-stitching	See Checklist	See plan and Standard Drawing 613.x	visual	1 per day		✧			
613		Materials for Dowel Bar Retrofit and Cross-stitching	Rapid Setting Concrete	Approval per Engineer	Epoxy see Sec 1039	certification	1 per installation	1 per project		✧		
Section 614: Drainage Fittings												
614	.20.2	Material	Misc.	See Standard Drawing 614.x	Automatic floodgates either per plan or per levee district.	certification	1 per Delivery	1 per project		✧		
614	.30.3	Construction	Misc.	See Checklist	See Standard Drawing 614.x	Visual	1 per Day /Installation		✧			
Section 616: Temporary Traffic Control												
616		Material	misc	See Sec 1063 and MUTCD	NCHRP350 compliance	certification	1 per Delivery	1 per project		✧		
616		Construction	Misc.	See Checklist	Sec 107.5, 902, Plans and TCP	Visual	1 per Day /Installation		✧			
Section 617: Concrete Traffic Barrier												

DIVISION 600: Incidental Construction						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
617	.10.2	Materials	Rebar, Curing Compounds, Dowel Bars, and Joint Materials	Sec 1036, 1055, 1057.	PAL	1 per Shipment	1 per project		✧		
617	.10.2	Materials	Delineators, Prestressing Strands	Sec 1065, AASHTO M 203	Certification	1 per Shipment	1 per project		✧		
617	.10.3.1	Materials	Concrete	B / air or B1 / air 4,000 psi Section 501	Testing	1 per day	1 per 750 CY (1 per Week min)		✧		
		Materials	Precast Temporary Barrier	Sec 1064	Certification	1 per shipment	1 per project		✧		
617	.10.3.1	Construction	Temporary and Permanent Concrete Barrier	See Checklist Section 501, 502, 703, Standard drawing 617.x	Visual	1 per installation		✧			
Section 619: Pavement Edge Treatment											
619	.2...	Material	Misc. Granular	Approved material	Visual	1 per Installation	1 per project		✧		
619	.3...	Construction	Edge Treatment	See Checklist Standard Drawing 619.x	Visual	1 per Day /Installation		✧			
Section 620: Pavement Marking											
620		Material	Marking Materials	All marking per MUTCD Sec 1048	Certification/ QPL	1 per shipment	1 per project		✧		
620		Construction	Permanent Marking	See Checklist See Standard Drawing 620.x	Visual / Measurement	1 per Installation		✧			
620		Construction	Temporary Marking	See Checklist Sec 409, 413, Standard Drawing 620.x	Visual / measurement	1 per Installation		✧			
Section 621: Flowable Backfill											
621	.2.1, .2.2	Materials	misc. components	Per 1005, 1018, 1019, 1054, 1070	Qualified List - testing	1 per Day /Activity	1 per project		✧		
621	.3.1	Materials	Mixture	Strength and consistency	Testing	1 per Day /Activity	1 per project		✧		
621	.4.1	Construction	Flowable Fill	See Checklist	Visual	1 per Day /Activity		✧			
Section 622: Pavement and Bridge Surface Removal and Texturing											

DIVISION 600: Incidental Construction						Minimum Frequency		QC Documents			
Spec.	Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
622 .2...	Construction	Cold milling	See Checklist / See Sec 620	Visual/ measurement	1 per Day /Activity		✧			
622 .2...	Construction	Diamond Grinding	See Checklist / See Sec 502	Visual/ measurement	1 per Day /Activity		✧			
Section 623: Concrete Bonding Compound, Epoxy Mortar and Epoxy Polymer Concrete Overlay										
623 .10.3.1	Construction	Bonded Concrete, polymer concrete and Epoxy Mortar	See Checklist	Visual / Measurement	1 per Day /Activity		✧			
623 .30.2	Material	Epoxy	Sec 1039	Certification/ QPL	1 per Installation	1 per project		✧		
623 .20.2	Materials For epoxy mortar	Sand and aggregates	Section 1039	Certification/ QPL	1 per Installation	1 per project		✧		
623 .20.3.1	Construction	Epoxy Polymer Overlay	See Checklist	Visual / Measurement	1 per Day /Activity		✧			
Section 624: Geotextile Construction										
624 .2...	Material	Geotextile	spec 1011 / AASHTO M288	Certification	1 per Product	1 per Product		✧		
624 .3...	Construction Requirements	Geotextile	See checklist / plans	visual	1 per Installation		✧			
Section 625: Slab Stabilization										
625	Construction	Slab Undersealing and Jacking	See Checklist / TM64, Sec 501	Visual/ measurement	1 per Installation		✧			
625	Material	Polyurethane, asphalt, cement, flyash, grout	1015, 1018, 1019, 1066, 1070	certification	1 per Installation	1 per project		✧		
Section 626: Rumble Stripes										
626 .2...	Construction	Rumble Stripes	see Checklist / disposal Sec 622	Visual/ measurement	1 per 1000'		✧			
Section 627: Contractor Surveying and Staking										
627 .2...	Contractor Surveying and Staking	Construction	See Checklist	visual	1 per Installation		✧			

DIVISION 700: Structures

Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Minimum Frequency: Contractor QC	Minimum Frequency: Agency Acceptance	QC Documents: Checklist	QC Documents: Test Record	QC Documents: Misc.	QC Documents: Electronic Process
Section 701: Drilled Shafts												
701	2	Preconstruction Submittals		See Checklist	Submitted 30 days in advance	Documentation	1 per Structure		✧			
701	.3..	Material	Mix Components - Aggregates and Cementitous	Per Sec 1036, 1054, 1055. Concrete Aggregates, Cementitious Materials		test	See 501	See 501		✧		
701	.2.1	Material	Rebar and Mix Components - PAL	see Sec 501		PAL	1 per Shipment	3 per Bridge		✧		
701	.3..	Material	Mortars, Grouts, and Water	Per Sec 1066 and 1070		Certification	1 per Shipment	1 per project		✧		
701	.3.1	Concrete mixture	Air, Slump, Cylinders	Use B2, see Sec 501		testing	1 per 100 CY/pour/day	1 per 500 CY (1 per Week min)		✧		
701	.3.2	Material	Casing			Manufacturers Certification and Mill Reports	1 per Shipment	1 per project		✧		
701	.3.2..	Casing	Condition and Properly Sized	See Checklist		Visual / Measurement	1 per shaft		✧			
701	.3.2.6	Casing	Welding Procedures	Sec 1080		documentation	1 per each	1 per project	✧			
701	.3.3.3	Slurry	Approval, Preparation, control tests, and sampling	See Checklist	Preapproval for slurry.	Visual / Documentation	1 per structure		✧			
701	.4..	Construction	Sequence, Methods, Time Limitations	See Checklist		Visual/ Measurement	1 per Each Shaft		✧			
701	.4.10.3	Excavation Inspection	Television Camera	See Checklist		Visual / Documentation	1 per Each Shaft		✧			
701	.4.1.1.	Excavation Inspection	Rock Socket Foundation Inspection	See Checklist		Visual / Documentation	1 per Each Shaft		✧			
701	.4.11.1	Log and Cores of Excavated Material	For shale, sand, or siltstone	See Checklist		Documentation	1 per Each Shaft		✧			
701	.4.12	Reinforcing Cage and Spacers	Fabrication and Placement	See Checklist		Visual	1 per Each Shaft		✧			

DIVISION 700: Structures							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
701	.4.13.1	Concrete Placement	General Conditions	See Checklist		Visual / Measurement	1 per Each Shaft		✧			
701	.4.1.7	Integrity Inspection	Crosshole Sonic Log testing	See Checklist		document	1 per Each Shaft		✧			
701	.4.17.1	Integrity Inspection	Coring	See Checklist	Only when needed	Visual	1 per each occurrence		✧			
701	.5..	Drilled Shaft Load Tests		If required by contract.		Visual / Measurement	1 per each occurrence		✧			
Section 702: Load Bearing Piles												
702	.2.1	Material	Rebar	see Sec 1036		PAL	1 per Shipment	3 per Bridge		✧		
702	.2.1	Material	Mix Components - Aggregates and Cementitious	see Sec 501	Aggregates, Cementitious Materials, Admixtures	Testing	See 501	See 501		✧		
702	.2.2	Material	Piles and Tips			Documentation	1 per shipment	1 per project		✧		
702	.2.2	Concrete mixture	Air, Slump, Cylinders	see Sec 501		testing	1 per 100 CY/pour/day	1 per 500 CY (1 per Week min)		✧		
702	.3.1	Construction	Installation	See Checklist		Visual/ Measurement	1 per Each Shaft		✧			
702	.4.2	Construction	Equipment	See Checklist		Visual / Measurement	1 per Pile		✧			
Section 703: Concrete Masonry Construction												
703	.2.0, .2.1	Material	Bearing Pads	Per Sec 1038		Testing / Certification	1 per Shipment	1 per project		✧		
703	.2.0, .2.1	Material	Rebar, Curing, and Sealing Compounds	see Sec 501, 1057, 1055, 1053, 1036		PAL	1 per Shipment	3 per Bridge		✧		
703	.2.0, .2.1	Material	Mix Components - Aggregates and Cementitous	see Sec 501	Aggregates, Cementitious Materials, Admixtures	Testing	See 501	See 501		✧		

DIVISION 700: Structures						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
703	.3.1	Concrete mixture	Air, Slump, Cylinders	see Sec 501	testing	1 per 100 CY/pour/day	1 per 500 CY (1 per Week min)		✧		
703	.3.1	Construction	Forms, Placement,	See Checklist	Visual	1 per pour		✧			
703	.3.1	Construction	Curing or Sealing	See Checklist	Visual / measurement	1 per pour		✧			
703	.3.4, .3.4.1	Construction	Joint Placement	See Checklist	Visual	1 per pour		✧			
703	.3.6.1.5	Opening to Traffic	Construction or Public	See Checklist	Documentation	1 per activity		✧			
703	.3.9	Construction	Temperature Control and Limitations	See Checklist	Measurement	1 per pour		✧			
703	.3.1.1	Extending/ Widening Structures	surface condition	See Checklist	Visual	1 per pour		✧			
703	.3.1.1	Stenciling ID Numbers		See checklist	Visual	1 per structure		✧			
Section 704: Concrete Masonry Repair											
704	.2.	Material	Rebar, Curing, and Sealing Compounds	see Sec 501, 1057, 1055, 1053, 1036	PAL	1 per Shipment	1 per project		✧		
704	.2.	Material	Mix Components - Aggregates and Cementitous	see Sec 501	Aggregates, Cementitious Materials, Admixtures	Testing	See 501	See 501	✧		
704	.2.	Material	Bearing Pads, Epoxies, Water	Sec 623, Sec 1039, Sec 1070	documentation	1 per shipment	1 per project		✧		
704	.2.	Material	Curing	Liquid Membrane per Sec 1055 or water	PAL / Visual	1 per shipment	1 per project		✧		
	.2.	Material	Special Motar		QPL	1 per shipment	1 per project		✧		

DIVISION 700: Structures							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
704	.2.	Concrete mixture	Air, Slump, Cylinders	see Sec 501		testing	1 per pour/day	1 per 500 CY (1 per Week min)		✧		
704		Construction	Superstructure Repairs	See Checklist	If Concrete See 501	Testing	1 per Activity, 1 per Day min		✧			
704		Construction	Substructure Repair	See Checklist	If Concrete See 501	Testing	1 per Activity, 1 per Day min		✧			
704		Construction	Epoxy Sealing	See Checklist		Visual	1 per Activity, 1 per Day min		✧			
Section 705: Prestress Members												
705	.2.	Material	Prestressed Concrete Members	Per Sec 1029	Girders should be stamped and reported by MoDOT inspector at plant or otherwise released	Documents	1 per Activity or Shipment	1 per Structure		✧		
705	.4.	Construction	Handling and Erection	See Checklist		Visual	1 per Activity, 1 per Day min		✧			
Section 706: Reinforcing Steel for Concrete Structures												
706	.2.1, .2.2	Material	Reinforcing Steel and splices	Per Sec 1036		PAL	1 per Shipment	1 per project		✧		
706	.2.1, .2.2	Material	Foreign Reinforcing Steel	Per Sec 1036	To accept foreign steel, additional accounting is required	Documentation	1 per Shipment	1 per project		✧		
706	.3.1	Construction Requirements	Verification, Handling and Storage of Reinforcing Steel	See Checklist	Incoming PAL material should be inspected for disposition remarks	Visual	1 per shipment		✧			
Section 707: Conduit System on Structures												
707	.2..	Conduit System on Structure	Material	Per Sec 1060 & 1062		Certification	1 per Shipment	1 per project		✧		
707	.3.1	Construction	Conduit Systems	See Checklist		Visual	1 per Structure		✧			
Section 710: Epoxy Coated Reinforcing Steel												
710	.2.1	Material	Epoxy Reinforcing Steel and splices	Per Sec 1036		PAL	1 per Shipment	1 per project		✧		
710	.2.2	Material	Foreign Reinforcing Steel	Per Sec 1036	To accept foreign steel, additional accounting is required	Documentation	1 per Shipment	1 per project		✧		

DIVISION 700: Structures							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
710		Material	Field Epoxy Repair Material	Repair Material should be as recommended by the epoxy coater		Documentation	1 per Activity	1 per project		✧		
710	.3.1	Construction Requirements	Verification, Handling and Storage of Epoxy Rebar	See Checklist	Incoming PAL material should be inspected for disposition remarks	Visual	1 per shipment		✧			
Section 711: Protective Coatings for Exposed Concrete Surfaces												
711	.2.	Material		Per Sec 1059		QPL / Certification	1 per Shipment	1 per project		✧		
711	.3.1	Construction	Protective Coatings	See Checklist	Random dry film thickness	Visual / Measurement	1 per structure		✧			
Section 712: Structural Steel Construction												
712	.2.	Material	Misc Structural Steel	Per Sec 1037, 1038, 1045, 1066, 1081		Documentation	1 per Shipment	1 per project		✧		
712	.2.	Material	Nuts, Bolts, and Washers	Per Sec 1080		PAL	1 per Shipment	1 per project		✧		
712	.5.1	Structural Steel Construction	Erection, Bolt Tightening, Finishing	See Checklists		Visual / Testing	1 per Activity, 1 per Day min		✧			
712	.5.1	Construction	Field Welding	See Sec 1080	Welder qualifications on file. Contractor developed Checklist based off contract documents.	Documentation	1 per Structure		✧			
Section 713: Thrie Beam for Bridge Guardrail												
713	.2.	Material	Thrie Beam; Bridge Guardrail	Per Sec 1040		documentation	1 per Shipment	1 per project		✧		
713	.3.	Construction Requirements	Thrie Beam; Bridge Guardrail	See Checklist		Visual	1 per Activity, 1 per Day min		✧			
Section 715: Vertical Drain at End Bents												
715	.2.	Material	Vertical Drain	See Sec 1000, Sec 1011, 1012, 1013, & 1022		Certification	1 per Shipment	1 per project		✧		
715	.3.1	Construction Requirements	Vertical Drain	See Checklist		Visual	1 per Activity		✧			
Section 716: Neoprene Bearings												
716	.10.2	Neoprene Bearings	Material	Per Sec 1038	Check dimensions per plan	documentation	1 per Shipment	1 per project		✧		
Section 717: Neoprene and Silicone Joint Systems												
717	.10.2	Material	Neoprene Glands	Per Sec 1073	Check dimensions per plan	PAL	1 per Shipment	1 per project		✧		
717	.20.2	Material	Steel nosing		Check dimensions per plan	measurement	1 per Activity, 1 per Day min	1 per project		✧		
717	.30.2	Neoprene and Silicone	Silicone Expansion Joint	Per Sec 1057		PAL	1 per Activity, 1 per Day min	1 per project		✧		
717	.30.3	Construction Requirements	Joint Systems	See Checklist	Barrier wall joint checklist rate: 1 per structure	Visual	1 per Joint		✧			
Section 720: MSE Wall Systems												

DIVISION 700: Structures							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
720	.2., .2.5.	Material	Concrete Mixtures	see Sec 501	Class B or B1. Air entrainment for coping	testing	1 per 100 CY/pour/day	1 per 500 CY (1 per Week min)		✧		
720	.2..	Material	Select Granular Backfill	Per 1010, Resistivity (if metal straps).		Testing / Certification	1 per product	1 per project		✧		
720	.2..	Material	Geotextile, Drainage Materials, Anchors, Components	Per 1010, 1011, 1013, 1039		Certification	1 per Shipment	1 per project		✧		
720	.2.1, .2.2	Material	Reinforcement Steel	Epoxy coated if panel within 10' of roadway, Per Plan	Sec 1036	PAL	1 per Shipment	1 per project		✧		
720	.2.4	Material	Unit Fill Small Block Walls	Gradation D or E from Sec 1005, T27		Testing	1 per product	1 per project		✧		
720	.4.1.1	Construction	Wall Systems	See Checklist		Measurement	1 per day		✧			
720	.4.2.2	Material	Precast Panels and Coping	Sec 1052	May be stamped by District Materials	Visual / Measurement	1 per shipment	1 per project		✧		
Section 724: Pipe Culverts												
724	.2.2 - .2.3	Construction	Installation of all types	See Checklist		visual / testing	1 per location	1 per project	✧			
724	.2.3	Construction	Post Installation Performance Inspection	See Checklist		testing	1 per location	1 per project	✧			
Section 725: Metal Pipe and Pipe Arch Culverts												
725	.1., .2.	Materials	Metal Pipe and Pipe Arches	Division 1000, Materials details 1020, 1021, 1024, 1027		Pipe Program	1 per Shipment	1 per project		✧		
725	.3.1	Construction	Repairs		See Checklist	Visual	1 per location		✧			
725	.3.1	Construction	Installation	See Sec 724	See Checklist	Visual, Level, Measurement	1 per Installation		✧			
725	.3.2.1	Material	Soil Conditions	Testing of soil to allow choice of metal		testing	1 per project	1 per project		✧		

DIVISION 700: Structures						Minimum Frequency		QC Documents			
Spec.	Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria		Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
Section 726: Rigid Pipe Culverts											
726 .1.1, .2.	Materials	Concrete and Clay Pipes and Pipe Arches and Joint Materials	Division 1000, Material details 1026, 1030, 1034, 1035, 1057, 1066		Pipe Program	1 per Shipment	1 per project		✧		
726 .3.1	Construction	Installation	See Sec 724	See Checklist	Visual, Level, Measurement	1 per Installation		✧			
Section 727: Structural Plate Pipe and Plate Pipe-Arch Culverts											
727 .1., .2.	Materials	Structural Plate Pipe and Structural; Plate Pipe-Arch Culverts		Division 1000, Materials Details, Sec. 1023 and 1024	Certification	1 per Shipment	1 per project		✧		
727 .3.1	Construction	Installation		Contractor developed Checklist based off contract documents.	Visual / Measurement	1 per Pipe		✧			
Section 730: Thermoplastic Pipe Culverts											
730 .2.	Material	Thermoplastics	Sec 1020, 1032, 1047, 1041, 1028		Pipe Program	1 per Shipment	1 per project		✧		
730 .3.1	Construction	Installation	See Sec 724	See Checklist	Visual, Level, Measurement	1 per Installation		✧			
Section 731: Precast Reinforced Concrete Manholes and Drop Inlets											
731 .2.1	Materials	Precast Manholes and Drop Inlets	Per plans, May be stamped by district.	Sec 1033, 1055, 1057,1066	Visual / Measurement	1 per shipment	1 per project		✧		
731 .2.2	Materials	Footing Concrete	Sec 501	Air entrainment not required	Visual / Measurement	1 per shipment	1 per project		✧		
731 .3.1	Construction	Installation and backfilling	See Checklist		visual / testing	1 per day		✧			
Section 732: Flared End Section											
732 .2.	Material	precast concrete or metal flared end sections	Sec 1020, 1032, 1057, 1066		Visual / Measurement	1 per Shipment	1 per project		✧		
732 .2.2	Materials	Cast in place Concrete	Cast-in-place toe walls constructed of Class B, B-1 per section 501	Air entrainment not required. Cured per Sec	Testing	1 per 100 CY/pour/day	1 per project		✧		
732 .3.1	Construction	Installation	See Checklist		Visual	1 per day		✧			
Section 733: Precast Concrete Box Culverts											
733 .2.	Material	Misc	Per plans, May be stamped by district.	sec 1049, 1057, 1066	Visual / Measurement	1 per Shipment	1 per project		✧		
733 .3.1	Construction	Installation and backfilling	See Checklist		visual / testing	1 per day		✧			
Section 734: Installation of Pipe by Horizontal Boring Methods											

DIVISION 700: Structures						Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference	Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
734	.2.	Material	Misc.	Division 1000 Materials details 1026, 1075	documentation	1 per Shipment	1 per project		✧		
734	.3.2.	Construction requirements	Misc.	Contractor developed Checklist based off contract documents.	Visual	1 per structure		✧			
Section 735: Culvert Lining											
735	.2., .2.1	Material	Metal Pipe Liners	Division 1000 Materials details. 1046	Documentation	1 per Shipment	1 per project		✧		
735	.2., .2.1	Material	Plastic Pipe Liners	Division 1000 Materials details. 1046	QPL	1 per Shipment	1 per project		✧		
735	.2., .2.1	Material	Grout	, 1066	Documentation	1 per Shipment	1 per project		✧		
735	.3.	Construction	Installation	See Checklist	visual / measurement	1 per Pipe Liner		✧			

DIVISION 800: Roadside Development

Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Minimum Frequency		QC Documents			
							Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
Section 801: Lime and Fertilizer												
801	.2	Materials	Lime & Fertilize	Rates in JSP. Effective Neutralizing Materials (ENM) used for lime quantities		Certification or Label Analysis	1 per Shipment	1 per Project		✧		
801	.4	Construction Requirements	Line and Fertilizer	See Checklist		Measurement	1 per Activity		✧			
Section 802: Mulching												
802	.2	Materials	Vegetative Mulch and Mulch Overspray			Certification / Visual	1 per Shipment	1 per Project		✧		
802	.3	Construction Requirements	Mulch Application	See Checklist	Apply within 24 hours of seeding	Measurement	1 per Activity		✧			
802	.3	Construction Requirements	Overspray Application	See Checklist		Measurement	1 per Activity		✧			
Section 803: Sodding												
803	.2	Materials	Sodding	As stated on plans		Certification	1 per Shipment	1 per Project		✧		
803	.3	Sodding	Construction	See Checklist		visual	1 per Activity		✧			
Section 804: Topsoil												
804	.2	Construction Requirements	Topsoil	Source Approved by Engineer	Free of Objectionable Material	Visual / Measurement	1 per Activity		✧			
Section 805: Seeding												
805	.2	Material	Seed	Table of purity and germination requirements	Mixture per contract requirements	Certification	1 per Shipment	1 per Project		✧		
805	.3.1	Construction	Seed Application	See Sec 801	See Checklist	Visual / Measurement	1 per Activity		✧			
805	.4	Construction	Growth Acceptance	See Checklist	Activity is an "representative area"	visual	2 per Activity		✧			
Section 806: Pollution, Erosion and Sediment Control												
806	.90	Materials	Temporary Erosion Control Blanket	Installation per Manufacturers recommendations	Material certification per sec 1011	Certification / Visual	1 per Installation	1 per Project		✧		
806	.4	Construction Installation	Poll, Erosion, Sediment Control	Current SWPP, EPG, and applicable permits	See Checklist	Visual	1 per activity		✧			
806	.4	Construction Maintenance	Poll, Erosion, Sediment Control	Current SWPP, EPG, and applicable permits	Erosion Control Inspection Form	Visual	1 per Week/ Rainfall Event	1 per 2 Months			✧	

DIVISION 800: Roadside Development							Minimum Frequency		QC Documents			
Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
806	.90	Temporary Materials	Erosion Control Blanket, Pipe, Seeding, Mulching	Per plans	Material certification per sec 1011	Certification / Visual	1 per Installation	1 per Project		✧		
Section 808: Trees, Shrubs, and Other Plants												
808	.2	Materials	Plant Material	Certified free of insects and disease	Mo Dept. of Agriculture	Certificate / Measurement	1 per Shipment	1 per Project		✧		
808	.3	Construction requirements	Planting and Maintenance	See Checklist		Visual	1 per Activity		✧			

DIVISION 900: Traffic Control Facilities

Spec.		Item Description	Parameter or Procedure	Additional Reference		Acceptance Criteria	Minimum Frequency: Contractor QC	Minimum Frequency: Agency Acceptance	QC Documents: Checklist	QC Documents: Test Record	QC Documents: Misc.	QC Documents: Electronic Process
Section 901: Highway Lighting												
901	.3.	Materials	Misc Lighting material	Table of all components and their Sec 1000 spec reference, Sec 1091, Sec 1080, Sec 1066	Meet appropriate AASHTO or ASTM	certification	1 per Shipment	1 per project		✧		
901	.3.	Materials	Galvanizing	Check coating weight	Sec 1081	Testing	1 per Shipment	1 per project		✧		
901	.3.1	Materials	Approval of components and DEC	before construction, a listing of all materials should be submitted to the Engineer for approval.	District Engineers Certification D-15	certification	1 per project	1 per project			✧	
901	.3.2	Materials	Concrete	Per Plan and Sec 501	Test first load	visual / test	1 per day	1 per 750 CY		✧		
901	.3.2	Materials	Reinforcing Steel and hardware	See Sec 1036, 1080		PAL	1 per shipment	1 per project		✧		
901	.4.	Construction	Misc Lighting	See Checklist	Test Period for performance	visual	1 per circuit		✧			
Section 902: Traffic Signals												
902		Materials	Misc Signal material	Table of all components and their Sec 1000 spec reference, Sec 1092, Sec 1080, Sec 1066	Meet appropriate AASHTO or ASTM	certification	1 per Shipment	1 per project		✧		
902		Materials	Galvanizing	Check coating weight	Sec 1081	Testing	1 per Shipment	1 per project		✧		
902		Materials	Approval of components and DEC	before construction, a listing of all materials should be submitted to the Engineer for approval.	District Engineers Certification D-15	certification	1 per project	1 per project			✧	
902		Materials	Concrete	Per Plan and Sec 501	Test first load	visual / test	1 per day	1 per 750 CY		✧		
902		Materials	Reinforcing Steel and hardware	See Sec 1036, 1080		PAL	1 per shipment	1 per project		✧		
902	.4.5	Construction	Misc Signal material	See Checklist	Test Period for performance	visual	1 per circuit		✧			
Section 903: Highway Signing												
903	.2., .2.1	Material	Misc Signing Materials	Table of all components and their Sec 1000 spec reference, Sec 1042, Sec 1080, Sec 1066	Table for ASTM, AASHTO requirements	documentation	1 per Shipment	1 per project		✧		
		Material	Tubular Supports			Testing	1 per support	1 per project				
903	.2., .2.1	Material	Overhead Sign Trusses	Fabrication inspection by Bridge		testing	1 per truss	1 per shipment		✧		
903	.2., .2.1	Materials	Galvanizing	Check coating weight	Sec 1081	Testing	1 per Shipment	1 per project		✧		
903	.2.3	Materials	Reinforcing Steel and hardware	See Sec 1036, 1080		PAL	1 per Shipment	Verify documentation		✧		

DIVISION 900: Traffic Control Facilities							Minimum Frequency		QC Documents			
Spec.	Item Description	Parameter or Procedure	Additional Reference			Acceptance Criteria	Contractor QC	Agency Acceptance	Checklist	Test Record	Misc.	Electronic Process
903 .2.4	Materials	Concrete	Per Plan and Sec 501		Test first load	visual / test	1 per day	1 per 750 CY		✧		
903 .2.5	Construction	Roadside Signs	See Checklist	PSST, Pipe, and Structural Posts		visual / Measurement	1 per day		✧			
903 .2.5	Construction	Overhead Signs	See Checklist	Tubular supports and truss supports		visual / Measurement	1 per structure		✧			

Appendix B – Independent Assurance Sampling and Testing

MoDOT Quality Oversight Plan

Appendix B – Independent Assurance Samples and Tests & Laboratory Requirements

123.3.1.1 SCOPE. To establish procedures for sampling, testing and reporting Independent Assurance Samples (IAS) on job number J4I1916.

123.3.1.2 GENERAL. These procedures do not change normal job control procedures for the project.

The intent of the IAS process is to confirm that inspectors know how to run the tests correctly and do so, and have equipment that is in good condition and is properly calibrated, where applicable. This IAS process is considered system based and the audit of a given inspector does not have to take place on the project.

The individual performing the IAS audit is herein referred to as the IAS Auditor. Any person can be assigned the duties of the IAS Auditor however the district must designate an individual or individuals who aggregately have Technician Certification in all areas covered by the IAS program. The individuals(s) must have been reviewed and compared favorably to another HQ Auditor within the last calendar year, and should have significant experience in materials inspection.

123.3.1.3 GENERAL PROCEDURES.

123.3.1.31. IAS Auditors. The District Construction and Materials Engineer designates district Auditors. The State Construction and Materials Engineer designates Central Office Auditors. An Auditor may only audit inspectors in the Technician Certification areas where his/her credentials are current. It is preferred that each Auditor be certified and competent in all areas.

123.3.1.3.2 AUDIT PROCEDURE. A MoDOT project representative will provide the IAS Auditor(s) with a list of personnel (QC, QA, and MoDOT) who have performed any testing on the project using the tests listed below. An IAS Audit should be performed on each inspector on this list. This representative will notify the IAS Auditor(s) and update the list with any additional or removed personnel or test methods for personnel.

General Description Test	Test Method
Deleterious	MoDOT TM 71
Gradation	AASHTO T2, T48, T11, T27
PI	MoDOT TM 79, AASHTO T89, T90
Density – Nuclear	AASHTO T310
Binder Content – Nuclear/Ignition	AASHTO T168, T329, T308, T287
Asphalt Core Density	AASHTO T166, T269
HMA Maximum Specific Gravity	AASHTO T168, T329, T209
Superpave Gyratory Compactor	AASHTO T166, T168, T329, T312
Thickness/Compressive Strength	AASHTO T148, T231, T22
Entrained Air Content/Slump	AASHTO T141, T119, T152, T23

123.3.1.3.2.1 If the inspector ran one or more of these tests on the project but did NOT have the appropriate Technician Certifications to run the test(s), or some of the Technician Certifications were expired, notify the MoDOT project representative(s) that the inspector is not to perform

testing without the required credentials. Create a record of the audit and indicate the inspector as not comparing favorably.

123.3.1.3.2.2 If the inspector did have the appropriate Technician Certifications to run the test(s) and the Technician Certification was current at the time of the testing or is registered with MoDOT to run the test(s) under supervision until certification is obtained:

1. Schedule a meeting with the inspector.
2. Audit the equipment in accordance with 123.3.1.4.9. If the equipment is not suitable for testing, alternate equipment should be used. Unsuitable equipment should not be used for any testing until repaired, calibrated or otherwise made worthy.
3. Audit the various tests the inspector is certified to run (Audit means the inspector runs the test while the IAS Auditor observes, and for some tests the IAS Auditor runs companion tests for comparison.).
4. Discuss the test results. This may be done by phone if they compare favorably and the companion results were not yet determined at the time of the audit.
5. Create a record of the audit and indicate the inspector as comparing or not comparing favorably.
    - The record will include a list of each test run or observed, and the results for test.
    - The MoDOT project representative will be notified of the inspector's audit results, and of any restrictions that exist following the audit, or recommendations that the inspector not be allowed to run certain tests.
    - The inspector may not be allowed to perform material testing in any deficient area(s) until a follow-up audit finds that the deficiency has been resolved. It will be the inspector's responsibility to contact Central Office and schedule the follow-up audit. Central Office personnel will perform any follow-up audits.
    - If a follow-up audit is required, and performed, and the inspector is still deficient on one or more of the designated tests, the applicable MoDOT Technician Certification will be suspended pending retraining.

123.3.1.3.3 The frequency at which IAS audits are to be performed is a minimum of once per calendar year per inspector on the list noted in 123.3.1.3.2.

123.3.1.3.4 It is not the intent that an IAS audit be performed at predetermined uniform intervals. A reasonable effort should be made to have the audits occur on a random basis while still meeting the requirements of 123.3.1.3.3.

123.3.1.3.5 An audit may involve material from a source that is unrelated to project work. The goal is to determine whether the inspector is capable of running the test or performing appropriate inspection. When practical, the audit will take place on the project, but this is not a requirement of a valid IAS audit. The Auditor may obtain "audit sample" material in advance of an audit for use in the audit process, see 123.3.1.5.7.

123.3.1.3.6 EQUIPMENT. Each inspector assigned to be an IAS Auditor is to be fully equipped or have ready access to the equipment necessary to perform all field tests listed in 123.3.1.3.2, except nuclear density tests, asphalt binder content with a nuclear gauge, asphalt binder

content with binder ignition oven, gyratory compactor and maximum specific gravity testing equipment. This equipment is to be used on a portion of the tests performed. As a guide, it is recommended that approximately 80 percent of each type of field test specified be performed by the IAS Auditor using equipment other than that assigned to project personnel, except when nuclear density testing, asphalt binder content by nuclear method, asphalt binder content by binder ignition method, gyratory compactor operation and maximum specific gravity testing are used. On the remaining tests to be made, the IAS Auditor may perform the test, or participate in the sampling and testing, or witness the sampling and testing.

123.3.1.4 Auditing Specified Tests. The instructions for each of the specified tests are as follows.

123.3.1.4.1 When nuclear density testing methods are used for project job control, the IAS Auditor is not required to perform any of those tests. However, designation of the location for the test, witnessing the test, checking calculations, and reporting is required. As indicated above, it is acceptable for the test to be run at any location where a valid test could be completed. In addition, the IAS Auditor is to review the daily standardization check for the machine being used, if the checks are required by policy. The audit report needs to state whether the standardization check was examined. If the standardization check has not been performed as required, please note in the remarks.

123.3.1.4.1 When asphalt binder content, for normal job control, is determined by nuclear gauge or binder ignition oven , the IAS inspector is not required to perform any of those tests. However, observing the sample preparation, testing, checking calculations, and reporting are required. When the nuclear gauge is used, the IAS inspector is to review the statistical stability test records and the daily background check for the nuclear gauge being used. The report is to state that the statistical stability test and the background check were reviewed and found current and satisfactory, or not. The asphalt content by nuclear gauge or binder ignition oven is to be reported on the appropriate test template in SiteManager.

123.3.1.4.3 When a gyratory compactor is used for normal job control, the IAS Auditor is not required to perform any of those tests. However, if a gyratory compactor other than the one being used by the inspector is available, a split sample should be obtained and compacted on the alternate machine. In lieu of compacting a sample on an alternate machine the auditor may observe the required sample preparation, testing, and reporting. When a gyratory compactor is used, the IAS Auditor is to review the calibration records for the gyratory compactor being used. The report is to state that the calibration records were reviewed and found current and satisfactory, or not.

123.3.1.4.4 Independent Assurance tests may be performed at any suitable location in the field, district laboratory, or Central Laboratory in Jefferson City as condition and need dictates, unless otherwise directed.

123.3.1.4.5 Test results are to be rounded off for reporting in conformance with the procedures set out in Section 106.20 of the EPG.

123.3.1.4.6 All IAS aggregate gradation tests are to be “washed” and are to include each sieve specified. The size of sample and method of sieve analysis of fine and coarse aggregate is to be in accordance with EPG 1001.4.1.2, except: (1) the size of hot bin gradation samples for

bituminous mixtures shall be as shown in Division 400 of the specifications, and (2) for coarse aggregate, the nominal maximum size of particle is to be considered as the largest sieve size on which material is retained.

123.3.1.4.7 IAS requirements for gradation, PI, or liquid limit tests on aggregates and base materials are to be fulfilled by obtaining the sample by one of the following methods.

a) By the inspector taking a sample in the presence of the IAS Auditor and then furnishing one-half of the sample to the IAS Auditor. The inspector is to perform the required tests in the presence of the IAS Auditor and report the results to the IAS Auditor. The IAS Auditor will perform the required IAS tests on the other one-half sample, recording the results obtained by both the inspector and the IAS Auditor in SiteManager.
b) By the IAS Auditor taking or bringing a sample and furnishing one-half of the sample to the inspector, who will then perform the required tests and report the results to the IAS Auditor. The IAS Auditor will perform or will have previously performed the required IAS tests on the other one-half sample.

123.3.1.4.8 The IAS Auditor may designate samples to be sent to the Central Laboratory. These samples are to be designated “IAS” in the Sample Type field of Sitemanager. The sample record is to contain the prescribed information regarding the location and shall indicate the person designating the location and performing or witnessing the sampling. The IAS Auditor will record the Sample ID(s) of such samples sent to the Central Lab, review the results, and will make a final sample record regarding the results of the inspector audit.

123.3.1.4.9 The test equipment used by the inspector must be reviewed for status of calibration, general condition, and appropriateness for the test performed. The inspector being audited is to make the initial determination of condition/calibration of the equipment and the auditor is to confirm this information. If the inspector is in error, the nature of the error should be recorded as part of the audit of the inspector. The inspector is to confirm that the calibrated equipment records are kept current, including notation of equipment taken out of service.

123.3.1.5 TEST PROCEDURES

The following tests are described as though the IAS Auditor and the individual are working on the project. It is not necessary that the material be taken from, or for, the project. The individual will describe appropriate site selection and sampling, on the basis of the material be tested. When possible, the sampling site will be typical of that to be selected for the project.

123.3.1.5.1 Grading

The location of tests, for both embankment and subgrade preparation are to be selected so as to be typical of that which might occur on the project.

IAS Auditor performed density tests, other than nuclear, are to be located in the very near vicinity of the density test performed by the inspector and are to be performed by the same method used by the inspector.

123.3.1.5.2 Aggregate, Sand-Soil, Soil-Cement, or Soil-Lime Bases

IAS Auditor performed density tests, other than nuclear, are to be located in the very near vicinity of the density test performed by the inspector and are to be performed by the same method used by the inspector.

Care should be taken to show the location of IAS tests by roadway, station, distance right or left of centerline or of the edge of pavement, number and nominal thickness of the lift or lifts identified shall be shown. The purpose of this part of the process, with regard to system based IAS is to confirm that the inspector is capable of making such a determination.

Samples of material for gradation or PI are to be obtained at a point just prior to use, i.e., stockpile, pug mill, spreader, belt feeder or bin discharge. The place of sampling and the approximate roadway station number where the material is laid is to be shown on the report. The samples are to be taken by one of the methods described EPG 123.3.1.4.7.

123.3.1.5.3 Crushed Stone or Gravel Surfacing

Samples for gradation are to be taken at a point just prior to use. The samples are to be taken by one of the methods described in EPG 123.3.1.4.7.

The report is to show the roadway, approximate station number where the aggregate is placed and the place of sampling if this applies.

123.3.1.5.4 Bituminous Mixtures

The asphalt plant inspector may obtain the IAS samples for gradation provided the IAS Auditor observes the sampling. The sample is to be split and the IAS test performed on one-half the sample. The inspector would test the other one-half of the sample and the results may be for acceptance purposes. The IAS Auditor may perform the IAS test at the project using equipment other than project equipment, except, both inspectors may use the same scale if the scale has been calibrated within the immediate past 12 months, or the IAS test may be performed in the district laboratory.

Road mix gradation samples of aggregate should be taken at a point just prior to use, however, for IAS, this is not a requirement.

The inspector may obtain the IAS samples for maximum specific gravity provided the IAS Auditor observes the sampling. The sample is to be split and the IAS test performed on one-half the sample. The inspector would test the other one-half of the sample and the results may be used for acceptance purposes. The IAS Auditor may perform the IAS test at the project using project equipment. Both inspectors may use the same scale if the scale has been calibrated within the past 12 months. The IAS Auditor is to review calibration records for the maximum specific gravity testing equipment being used. The report is to state whether the calibration records were reviewed and found current and satisfactory, or not.

Volumetrics (specific gravity of gyratory compacted specimens) should be determined on a set of specimens (pills) compacted by the inspector using a gyratory compactor. The IAS Auditor should review the inspector’s use of the gyratory compactor. The IAS Auditor may use the specimens produced by the inspector.

IAS tests of compacted SuperPave asphaltic concrete pavement, plant mix bituminous pavement or plant mix bituminous base are to be performed on the same samples taken by the project inspector. The tests may be performed in the district laboratory or the Central Laboratory. When tests are performed in the district laboratory, the test report is to show the location by roadway, station, distance and direction from centerline, and the lift designation of the course. If submitted to the Central Laboratory for testing, the identification sheet is to also show this information.

When performing IAS on bituminous mixes using RAP, the combined gradation will be calculated using the RAP gradation being determined daily by the project personnel and the aggregate gradation determined from the cold feeds or the hot bins. At some batch plants, the RAP may be added prior to the hot bins. In that case, the combined gradation will be determined from the hot bins only. Project personnel should be consulted, prior to testing, to determine where the RAP is being added.

If the contractor elects to use the binder ignition method to determine the combined gradation for job control, the IAS Auditor shall witness the testing process to ensure proper testing procedures are being used.

123.3.1.5.5 Portland Cement Concrete Pavement and Base

Aggregates are to be obtained at the batching plant from the belt or the bin discharge as they are proportioned for use and are to be taken by one of the methods described in EPG 123.3.1.4.7. The place of sampling and the approximate roadway station number where the aggregate is used is to be shown on the report. For coarse aggregate produced in more than one fraction, the gradation of each fraction, percent of each used and the combined gradation shall be shown.

The concrete sample for IAS for air and slump is to be from the same concrete sample taken by the project inspector for an acceptance test.

When a compression testing machine is used for normal job control, the IAS Auditor is not required to perform any of those tests. However, observing the sample preparation, testing, and reporting are required. When a compression testing machine is used, the IAS Auditor is to review the calibration records for the compression testing machine being used. The report is to state that the calibration records were reviewed and found current and satisfactory, or not.

When a thickness measuring device is used for normal job control, the IAS Auditor is not required to perform any of those tests. However, observing the sample preparation, testing, and reporting are required.

123.3.1.5.6 Concrete Masonry

Aggregates are to be obtained at the batching plant from belt or bin discharge as they are proportioned for use and are to be taken by one of the methods described in EPG 123.3.1.4.7. The place of sampling, class of concrete, structure and structure elements are to be shown on the report.

The concrete sample for air, slump, and cylinders is to be from the same concrete sample taken by the inspector for the acceptance test.

A compressive strength test shall consist of the molding and testing of a cylinder. Molding and testing need not be performed on the same specimen. The testing of IAS comparison cylinders is to be performed on a machine independent of the machine used by the inspector, or sent to the Central Laboratory at 28 days. IAS comparison cylinders are to represent routine compressive strength tests, not tests made for a specific operational control such as form removal, heat removal, etc.

123.3.1.5.7 Prepared Audit Standard Samples

To accommodate the process of auditing inspectors when no project is active, or when the active project work does not include the type of work being audited, the auditor may provide previously prepared and tested samples. The inspector is prompted to run the appropriate tests on the sample as though the sample had been obtained on the project by the inspector. It is not necessary that audit sample material be specification compliant however it should be reasonably representative of the target material such that a valid test can be completed.

If possible, the inspector will actually obtain a sample of the target material as the auditor observes to confirm the use of correct sampling procedure. That sample may be discarded, or the inspector can use the sample for routine job control testing. The auditor may witness the inspector sample and test any sample taken for acceptance purposes. At a minimum, the inspector will explain to the auditor the correct procedure for obtaining the sample under normal inspection practice.

123.3.1.6 Comparison of Test Results

All test results obtained by the IAS Auditor, including those not meeting specifications and those from samples submitted to the Laboratory for testing, are to be compared with the companion results obtained by the inspector using established guidelines as soon as possible and the results reported. The IAS Auditor’s test result and the inspector’s test result should compare within the limits shown in established guidelines. If the two tests do not compare within those limits the inspector should be found as not comparing favorably and test procedures are to be reviewed, equipment checked, and if necessary, the test repeated to determine the reason(s). Results of the audit should be reported to the project's manager and owner.

123.3.1.7 Sample Record

Results of IAS are to be reported on the appropriate form in SiteManager with complete information shown. The reports should be submitted promptly after tests are completed, within ten working days of the determination of the final test results, when multiple tests were involved. The sample record described in Automation Section is also required.

IAS tests are not to be reported as “accepted” or “rejected”. The IAS test result is not to be used for purposes of acceptance or rejection of material. When IAS testing compares with acceptance testing or when IAS confirms equipment calibrations are current and proper testing procedures were utilized, the SM report will show the status as “Compared Favorably/Compliant (IAS only)”. When IAS testing does not compare with acceptance testing or when IAS finds equipment calibrations are not current or proper testing procedures were not utilized, the SM report will show the status as “Not Compared Favorably/Not Comply (IAS only)”.

The following information is also to be on the IAS report:

The report shall state that the calculations were checked and are on file in the district office. It will not be necessary for intermediate calculations to be shown on the report, since only the final result for the particular test is required, however all calculations shall be carefully checked for accuracy and maintained on file in the district office.

The report shall state that test results of the IAS were compared with the inspector's test results. The sample record number (when used), date performed and test results of the companion tests are to be shown on the report. In addition, the comparison difference between the tests is to be shown for each test result obtained. The report shall state whether the comparison was favorable or not favorable. If the comparison was not favorable, the probable reason(s) and any corrective action taken shall be shown on the report. If the acceptance test does not have a sample record number, other information shall be shown to identify the comparison test. When comparison testing is performed in whole or as part of an audit, the appropriate SiteManager template should be used.

If the IAS Auditor witnessed a test, state what parts of the tests were observed and include the statement "location designated, procedure and computations checked by the IAS Auditor." The name of the project inspector performing the test is to be shown.

The report shall state where the tests were performed (field, district laboratory, or Central Laboratory) and what equipment was used (district Material's or belonging to field personnel), e.g. "The test was performed in the district Laboratory using Materials equipment".

Each audit sample record is to be authorized by the IAS inspector or the District Construction and Materials Engineer.

The IAS Inspector must be the creator of the sample record.

Appendix C – MoDOT Audit Report Form

Audit » Quality Oversight Audit: New Item

MoDOT Quality Oversight Audit

Audit ID

Date 10/10/2013

Station/Location Mainline I-70, Sta. 170+00, 34' RT

Objective Evidence

Result Conformance

WBS
- Bridges and Other Structures
- US-40 over Blue River
- Bridge No. J0526

Manual
- Missouri Department of Transportation Specifications
- 200 Grading and Removals
- 202 Clearing and Grubbing
- 201.2 Construction Requirements
- 201.2.1 General

Requirement

The engineer will designate all trees, shrubs, plants, and other objects that are to remain. All trees

The engineer will designate all trees, shrubs, plants, and other objects that are to remain. All designated items shall be preserved. Any damage to natural terrain, vegetation or objects designated to remain shall be repair or replaced, as determined by the engineer, at the

QA/ QC Contact:

QA/QC Section Status: In Progress

Corrective Action Taken

Steps to Comply:

Attachments Click here to attach a file

Non-Conformance Corrected and Accepted by MoDOT

Date Accepted