CURRENT DATE OF REVISION
MT 600 SECTION
INFORMATION AND FIELD SAMPLING PROCEDURES

Test Method No.	Title	Pages	Date of Publication or Revision
MT 601	Materials Sampling, Testing and Acceptance Guide Index	126 pp	Jan 2025
MT 602	Acceptance, Independent Assurance and Final Record Sampling	9 pp	Jun 2023
MT 603	Definitions	7 pp	Dec 2016
MT 604	Conversion Tables	1 pp	Jun 2004
MT 605	Eliminated		
MT 606	Random Sampling Techniques	8 pp	Jun 2004
MT 607	Procedure for Reducing Field Samples of Aggregates to Testing Size	3 pp	Jun 2004
MT 608	Voids Table	1 pp	Jun 2004
MT 609	Field Numbering of Concrete Cylinders	3 pp	Sep 2021
MT 610	Numbering Subgrade Material, Surfacing Material, Bituminous Treated Material and Liquid Asphalt	1 pp	Jun 2004
MT 611	Eliminated		

METHODS OF SAMPLING AND TESTING
MT 601-0125
MATERIALS SAMPLING, TESTING AND ACCEPTANCE GUIDE

1 Scope

This procedure is intended to assist in determining the basis of sampling, testing, inspecting, and accepting various materials and products commonly used on highway projects.

Within this procedure is a table informing the user of the tests that should be performed on a particular material; the sample size; rate and frequency of sampling; responsibility for sampling, testing, collecting certification, or visually inspecting the material; and special instructions or information.

2 General

Numerous materials are listed in the MT 601 Table. The basis of acceptance for these materials may vary depending on the specifications, procedures, or circumstances relating to these materials.

The MT 601 Table is divided into material categories such as Aggregate, Aggregate Surfacing, Concrete, etc. The user can click on a category in the bookmark panel to advance to the table containing materials that fall within that category. Also included on each page is a link to MDT Special Provisions, Standard Specifications, and Detailed Drawings. The MT 601 Table contains:

- Name of the material.
- Material code - corresponds to the material code in AASHTOWare. (Every attempt is made to correlate material codes to the relevant specification sections as well, but this is not an absolute.)
- Tests that are routinely performed on materials for project acceptance. When possible, tests are hyperlinked to their procedure.
- Sample size required to perform the testing.
- Rate and frequency samples are to be collected.
- Responsible party for witnessing/collecting samples, collecting certifications, visually inspecting material and/or testing material.
- Notes containing special instructions or information.

3 Material Acceptance Methods

There are several methods for determining if a material is acceptable (i.e., meets contract requirements). The basis for acceptance of a material is defined in the contract and could be a combination of more than one acceptance method.

- Sample/Test Results: Utilized when test results are required to verify material quality.
- Qualified Products (QPL): Utilized for materials that have been approved for inclusion on MDT's QPL.
- Certification (Cert): Utilized when a certification of compliance or datasheet is required.
- Visual Inspection (Visual): Utilized when a visual inspection of the material is required.
- Domestic Material – Steel and Iron Material Certification: Utilized when a material is made from steel or iron and must meet Domestic Material requirements as outlined in Standard Specification 106.09. The MT 601 Table identifies whether a material is Steel Category 1 (Heat Numbers) or Steel Category 2 (Steel Cert).
- Domestic Material - Construction Materials (BABA): Utilized when a Construction Material must meet Domestic Material requirements as dictated by the Infrastructure and Investment Jobs Act (IIJA) of 2021 and outlined in Special Provision 106. Construction materials are materials that are not steel or iron or otherwise exempted by the IIJA as agreed upon by MDT and FHWA. The MT 601 Table identifies Construction Materials.
- Final Record: Sample and tests taken from completed portions of a project to spot check the results obtained for contract compliance.
- Pre-Inspect: Utilized for materials tested and inspected prior to project delivery.

- Mix Design: Utilized for the approval or verification of material properties and mix proportions.

3.1 Sample/Test Results

Assure that the material to be incorporated into the work is sampled at the appropriate frequency. The contractor is responsible for collecting a representative sample when applicable.

All major items to be sampled and tested are listed by category in the MT 601 Table with instructions for sample size, rate/frequency of testing, sampling/witnessing and testing responsibility, and any special instructions. Whenever a conflict exists between a particular test method and MT 601, MT 601 will govern.

Acceptance – Department personnel or an authorized representative(s) will witness samples collected by the contractor.

Quality Assurance (QA) – Perform sampling for QA according to the Montana Materials Manual of Test Procedures and Montana Standard Specifications for Road and Bridge Construction Manual for the item to be sampled. Department personnel or an authorized representative(s) will witness samples collected by the contractor.

Independent Assurance (IA) – The Department requires all witnessing/sampling and testing for Independent Assurance purposes be accomplished by Department personnel or authorized representatives. IA samples must be collected under the direct supervision of the Materials Supervisor or their authorized representative and must not be scheduled on such an inflexible and regular routine that its frequency can be predicted. However, sufficient samples must be submitted to satisfy the frequency intended.. Independent Assurance is highlighted within the MT 601 Table in blue. Specifics on the IA procedure can be found in MT 602 Acceptance, Independent Assurance and Final Record Sampling.

3.1.1 Small Quantity Items

Standard acceptance sampling and testing of certain materials may not be possible or practical on projects where only a small quantity is required. In these instances, the EPM may designate those materials as a “Small Quantity”. Materials such as Commercial Plant Mix under 500 tons and minor quantities of concrete are examples.

When materials are designated as small quantities by the Project Manager, their acceptance must be based upon at least one of the following.

- Proper documentation such as material or component material certifications/datasheets and demonstrated compliance with an approved asphalt mix design, concrete mix design, or concrete batch proportion sheet (See Specifications 551.03.8(C)(4)).
- Partial test results such as air and slump, density, aggregate gradation, etc.
- Adjacent test results such as results from a similar product elsewhere on the project. For example, a small quantity of class general concrete could be accepted based on compliance with the mix design or batch proportion sheet, QPL datasheets, and testing from a different class of concrete on the same project from the same source with results consistent with the mix design results.
- Visual inspection (where appropriate) – In rare cases, a visual inspection is all that is needed, but visual inspection alone may not be adequate. For example, if a material normally requires a test to verify a certain physical property such as tensile or compressive strength or R-value, these properties cannot be “visually” verified. Some other basis of acceptance must also be provided such as certs or test results. For example, if a soil requires an R-value but there is only a small quantity, the soil could be accepted based on its soil class if that information is known.
- Any appropriate combination of the above.

The Project Manager must document the reason materials are designated as a Small Quantity ***and*** provide a basis of acceptance as described above. Simply designating a material as a Small Quantity is not a sufficient basis of acceptance; small quantity designation only eliminates the sampling and testing requirement.

Materials and component materials that are only accepted via a certificate of compliance or datasheet without a sample may not be designated as a small quantity. However, once a material is designated as a small quantity, IA Comparison tests are no longer required because there is no sample for comparison. Buy America requirements apply to any iron or steel items designated as a Small Quantity.

It is important to remember that small quantities of materials can be just as critical as larger quantities, so careful consideration should be given to the specific application for a material before designating it as a Small Quantity.

3.1.2 Optional Samples

All materials incorporated into the project, whether represented by actual samples or by certification, are subject to final field inspection and acceptance by the Project Manager. MDT's Project Manager has the option to obtain more than the required minimum number of samples and to submit as many additional samples as deemed necessary to ensure conformance to specifications.

3.1.3 Maintenance Samples

Material incorporated into maintenance work is included in the MT 601 Table. Sample at the appropriate interval and/or provide certification of materials to ensure the materials meet the maintenance contract requirements.

3.1.4 Preconstruction Samples

Preconstruction samples are taken prior to contract work beginning for the planning and developing of construction projects.

3.2 Qualified Products

The Materials Bureau maintains the Qualified Products List (QPL). MDT confirms the materials appearing on the QPL meet the specifications described in the product specific item. Some materials may be accepted through the QPL or by product specific testing. Materials that are required to be on the QPL are identified on the Materials Index table and highlighted in yellow within the MT 601 table. Specifics on the QPL program can be found at the following link: MDT's Qualified Products List.

3.3 Certification

Acceptance of an established product may be made by the field, based on Certificate of Compliance (Cert of Comp) or Product Data Sheet (Data Sheet). When a Cert of Comp or Data Sheet is required, the inspector must verify that the material received matches the Cert of Comp or Data Sheet and meets the contract requirements.

- **Certificates of Compliance** – state the material meets the contract requirements or indicates specific test results or values correspond with specific material items, batches, lots, etc. identified on the Certificate. A manufacturer's authorized representative must sign the certificate. Clearly identify each lot of certified materials or assemblies delivered to the work in the Certificate of Compliance. Materials or assemblies used on the basis of Certificates of Compliance may be sampled and tested at any time. Materials not meeting contract requirements will be rejected.

- **Product Data Sheets** – describes the mechanical, thermal, physical, chemical, and specific properties of the product. Product Data Sheets must contain relevant standards, test methods, and results for applicable materials and subcomponents showing products to be in compliance with contract requirements.

3.4 Visual Inspection

Visual inspection of the material's condition and/or previous satisfactory field performance may be made by the field.

3.5 Domestic Materials (Buy America and Build America, Buy America)

3.5.1 Steel and Iron Materials

Standard Specification 106.09, 23 USC Section 313, and 23 CFR 635.410 apply to all steel and iron products designated for permanent incorporation into all MDT projects. Items designated as Category 1 or 2 will be verified as described below. For all other items, documentation will be required upon request.

- Items designated as Category 1 (Heat Numbers) require supporting documentation showing all steps of manufacturing as being completed in the U.S. This includes the Mill Test Report from the original producing steel mill and certifications documenting the manufacturing processes for all subsequent fabrication, including coatings.

- Items designated as Category 2 (Steel Cert) must have all manufacturing processes completed in the U.S. However, to address concerns with excessive documentation, products may be certified as domestic by the fabricator. Certification by the fabricator must consist of a statement that all materials have been melted and manufactured in the U.S. and are required to be signed by a fabricator representative. Mill Certs (Heat Numbers) are not required to be submitted for Category 2 items, as long as the certification from the fabricator meets the above requirements.

- The Department reserves the right to request additional information and supporting documentation to verify the accuracy of the domestic statement.

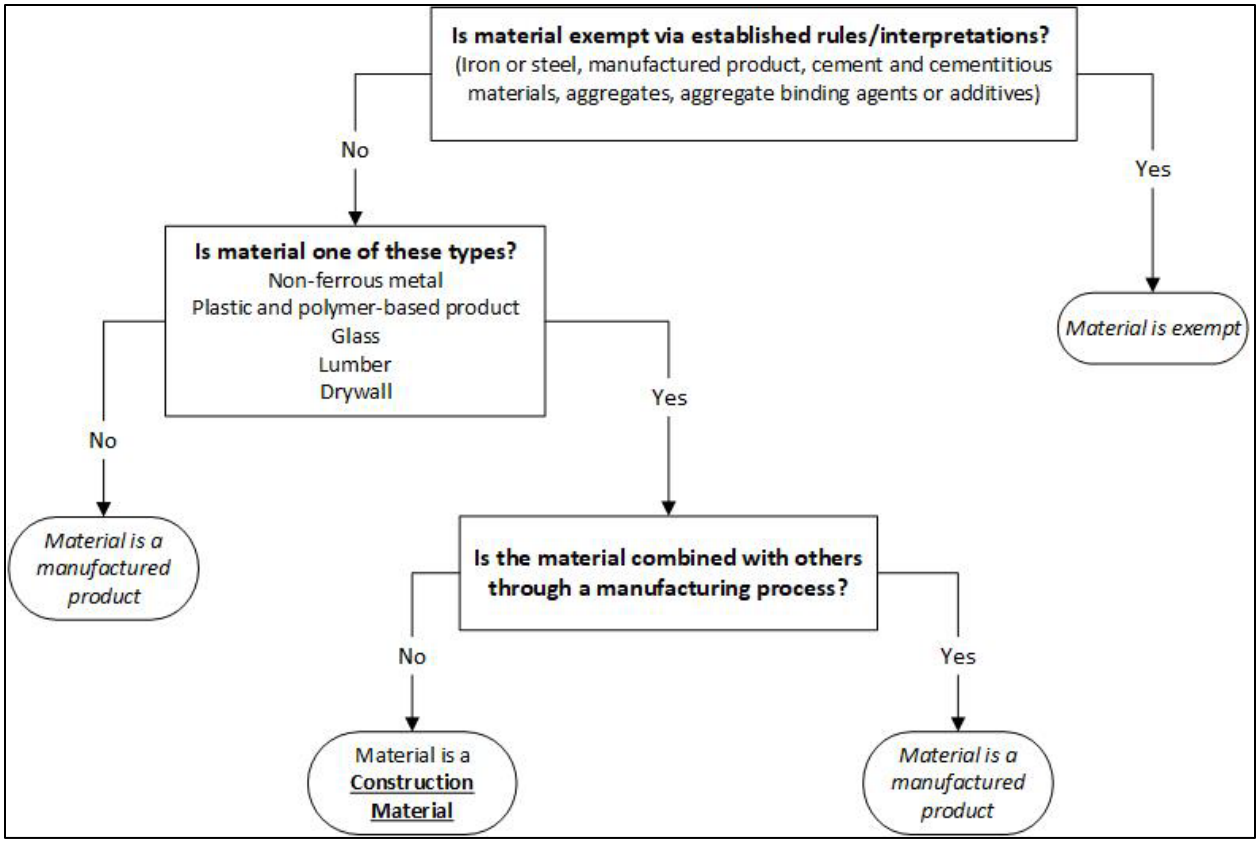
Acceptance requirements for steel and iron materials are identified on the Materials Index and are highlighted in gray within the MT 601 table. A link to MDT's Form 406 - Contractors Certificate of Compliance for Miscellaneous Steel and Iron Items is also included in the MT 601 table.

3.5.2 Construction Materials

Special Provision 106 applies to all construction materials incorporated into MDT projects. Construction materials are designated as BABA (Build America, Buy America) Construction Materials in the MT 601 table.

Acceptance requirements for Construction Materials are identified on the Materials Index and are highlighted in purple within the MT 601 table. A link to MDT's Form 407 – Manufacturer's Certificate of Compliance for Construction Materials is also included in the MT 601 table.

Some products may be manufactured from a variety of materials or combination of materials (i.e, plastic or metal bird spikes). These products are noted in the MT 601 table. A decision will need to be made to determine if the product used on the project is designated as a Construction Material and must comply with Special Provision 106. Use the following decision tree for assistance in the decision-making process.



3.6 Final Records

Final Record (FR) - Samples must be taken by or under the direct supervision of the Materials Supervisor or their authorized representative and must not be scheduled on such an inflexible and regular routine that its frequency can be predicted. However, sufficient samples must be submitted to satisfy the frequency intended. FR samples are to be taken in accordance with MT 602 Acceptance, Independent Assurance and Final Record Sampling.

3.7 Pre-Inspection

Pre-Inspected items consist of products that undergo detailed inspections at the point of manufacture or products that are fabricated by Department Certified Plants as listed on the QPL. The purpose of Pre-Inspection is to verify that processes and materials used during fabrication meet Department requirements. One process the Department uses to accomplish this is by having a Department representative present during production to witness, sample, and test materials used. Another process the Department uses is Department Certified Plants. Department Certified Plants are producers employing internal quality control measures with an acceptable track record relating to product quality. The Department assures quality products are being produced at Department Certified Plants by implementing a combination of plant inspections, quality control system reviews, and Department witnessed or Department performed sampling and testing.

The Department representative performing pre-inspection of precast concrete products and prefabricated steel products verifies the fabricator is maintaining the supporting documentation regarding steel materials. Pre-inspected precast and prefabricated products delivered to the project must be accompanied by certification from the manufacturer stating all steel used in the product has been melted and manufactured in the United States and the fabricator has maintained supporting documentation. The Contractor is required to submit a Form 406 when inspection of the product is made at the point of production and with certification by the plant that all steel incorporated has been melted and manufactured in the United States. All supporting documentation must be maintained by the fabricator.

Pre-inspection does not constitute project acceptance. The field is responsible for final inspection and acceptance. Pre-inspected products identified as not meeting contract requirements may be subject to rejection.

3.8 Mix Designs

Mix designs are submitted to MDT Helena Materials Bureau for verification and/or approval. Samples are submitted to determine if the quality of the materials and mix proportions conform to the plans and specifications. Mix Designs requirements are highlighted within the MT 601 Table in green.

4 Submittals, Documentation, and Reports

A Contract Materials Acceptance (Checklist) Report in AASHTOWare should be generated at the beginning of each contract. This report will show the materials associated to each bid item. It will also show who is responsible for witnessing/sampling and testing the material, the sample size per unit, how many samples need to be taken, how many samples have been taken, and if there are any sample deficiencies.

Once an individual takes or witnesses a sample, a sample record is created. Follow the applicable AASHTOWare cheat sheet for the material sampled to create a sample record and send the samples to the District/Area Lab or the Helena Materials Bureau.

Once a sample record is authorized, a report will be generated containing the test results. These reports are e-mailed to the appropriate personnel per a distribution list.

MATERIAL INDEX

C - Requires Certificate of Compliance
D - Requires Product Data Sheet
BAC1 - Requires Buy America Category 1 Certification
BAC2 - Requires Buy America Category 2 Certification
BABA-C - Requires Manufacturer's Certification for Construction Materials
QPL - Accepted only from the Qualified Products List

MATERIAL INDEX

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MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
AGGREGATE - SPECIAL PROVISION 301.00.00.00	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE/PER PROJECT	SAMPLE			USE FOR NON-STANDARD AGGREGATES
	MT 202 SIEVE ANALYSIS				TEST		PER SPECIAL PROVISION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONCRETE AGGREGATE - DURING PRODUCTION 701.01	MT 201 SAMPLING	30 LBS	PAVING: ONE TEST PER EVERY 1000 YD^3 OTHER: ONE SAMPLE FOR EACH 200 YD^3 OF CONCRETE WITH A MINIMUM OF ONE SAMPLE PER PROJECT	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			
	INDEPENDENT ASSURANCE (COMPARISON TESTING)			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	MT 202 SIEVE ANALYSIS	USE FIELD TESTED SAMPLE	PAVING: ONE SAMPLE FOR EACH TWO LANE MILE, MINIMUM OF ONE SAMPLE FOR PROJECTS LESS THAN ONE MILE OTHER: AT LEAST ONE SAMPLE FOR EVERY 4 SAMPLES, MINIMUM OF ONE PER PROJECT/CONTRACT		TEST	TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FINE CONCRETE AGGREGATE 701.01.01.01	MT 201 SAMPLING	50 LBS	PROPOSED SOURCE: THREE 50 LB COMPOSITE SAMPLES FROM EACH SOURCE		SAMPLE		
	MT 202 SIEVE ANALYSIS				TEST	TEST	
	AASHTO T 21 ORGANIC IMPURITIES IN FINE AGGREGATE						IF REQUESTED
	AASHTO T 104 SOUNDNESS SODIUM SULFATE (FINE AGG)						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONTROLLED LOW STRENGTH MATERIAL AGGREGATE 701.01.01.02	MT 201 SAMPLING	30 LBS	ONE EVERY 200 YD^3 OF CONTROLLED LOW STRENGTH MATERIAL	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
COARSE CONCRETE AGGREGATE No. 2 701.01.02.01 No. 4 701.01.02.02 COMBINED/ INTERMEDIATE CONCRETE AGGREGATE 701.01.03.01	MT 201 SAMPLING	50 LBS	PROPOSED SOURCE: THREE 50 LB COMPOSITE SAMPLES FROM EACH SOURCE		SAMPLE		
	MT 202 SIEVE ANALYSIS				TEST	TEST	
	AASHTO T 104 SOUNDNESS SODIUM SULFATE						
	AASHTO T 96 LOS ANGELES ABRASION						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BEDDING MATERIAL 701.04.01.01	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT	TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FOUNDATION MATERIAL 701.04.02.01	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT	TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GRANULAR BEDDING MATERIAL 701.04.03.01	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FILTER MATERIAL NUMBER 701.05.00.01	MT 201 SAMPLING	30 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FILTER MATERIAL NUMBER 2 701.05.00.02	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
RIPRAP CLASS 1 701.06.02.01 CLASS 2 701.06.02.02 CLASS 3 701.06.02.03	SPEC TABLE 701-22 RANDOM RIPRAP	N/A	ONE TEST PER PROJECT	TEST			OPTICAL GRANULOMETRY SOFTWARE
	SPEC SECTION 701.06	N/A	ONE TEST PER SOURCE	VISUAL			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ANCILLARY ARMOR CLASS 1 701.06.04.01	SPEC TABLE 701-23 ANCILLARY ARMOR	N/A	ONE TEST PER PROJECT	TEST			OPTICAL GRANULOMETRY SOFTWARE
CLASS 2 701.06.04.02	SPEC SECTION 701.06	N/A	ONE TEST PER SOURCE	VISUAL			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WALL BACKFILL 701.09.00.01	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE	TEST	TEST	TEST MAY BE REQUIRED PER SPECIAL PROVISION
	MT 202 SIEVE ANALYSIS						
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO T 335 FRACTURE						
	AASHTO M 145 SOIL CLASS						
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	AASHTO T 104 SOUNDNESS SODIUM SULFATE	30 LBS	ONE TEST PER SOURCE	SAMPLE			
	AASHTO T 267 ORGANIC CONTENT IN SOILS						
	AASHTO T 288 SOIL RESISTIVITY						
	AASHTO T 289 pH OF SOIL						
	AASHTO T 290 SULFATE CONTENT IN SOIL						
	AASHTO T 291 CHLORIDE IN SOIL						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT	TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DRAIN AGGREGATE 701.10.00.01	MT 201 SAMPLING	77 LBS	ONE TEST PER PROJECT	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GLASS CULLET 701.11.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	CERT OF COMP			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BRIDGE END BACKFILL TYPE 1 701.13.00.01	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 335 FRACTURE						
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT	TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BRIDGE END BACKFILL TYPE 2 701.13.00.02	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT	TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BRIDGE END BACKFILL TYPE 3 701.13.00.03	MT 201 SAMPLING	77 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO M 145 SOIL CLASS						
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT	TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PROPOSED SURFACING (GRAVEL PIT) PC 1	AASHTO R 58 PREPARATION	SAMPLE PER MT 201	ONE TEST PER SOURCE		VISUAL		
	MT 201 SAMPLING				SAMPLE		
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO M 145 SOIL CLASS						
	AASHTO T 96 LOS ANGELES ABRASION					TEST	
	AASHTO T 327 MICRO-DEVAL						
	AASHTO T 104 SOUNDNESS SODIUM SULFATE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SOILS FOR SOIL SURVEY PC 2	AASHTO R 58 PREPARATION	SAMPLE PER MT 207	ONE TEST PER LOCATION		VISUAL		THIS INFORMATION IS FOR DESIGN
	MT 207 CENTERLINE SOIL SURVEY				SAMPLE		
	MT 201 SAMPLING						
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	AASHTO M 145 SOIL CLASS						
	AASHTO T 100 SPECIFIC GRAVITY OF SOILS					TEST	
	MT 232 SOILS CORROSION						
	AASHTO T 190 R-VALUE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
RIPRAP SOURCE APPROVAL PC 9	MT 201 SAMPLING	100 LBS	ONE TEST PER SOURCE	SAMPLE	TEST		
	ASTM C535 LA ABRASION						
	AASHTO T 85 ABSORPTION						
	AASHTO T 85 SPECIFIC GRAVITY						
	AASHTO T 104 SOUNDNESS SODIUM SULFATE						

AGGREGATE SURFACING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SHOULDER GRAVEL 301.03.06.01	MT 201 SAMPLING	30 LBS	ONE TEST PER SOURCE/PER PROJECT RESAMPLE IF MATERIAL SOURCE CHANGES	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PULVERIZED/ MILLED BITUMINOUS PAVEMENT 302.03.01.01	CERT/ VISUAL INSPECTION	N/A	ONE PER PROJECT	VISUAL			VISUALLY INSPECT SO THAT 100% OF MATERIAL PASSES 2-INCH SIEVE
	MT 202 SIEVE ANALYSIS	77 LBS	ONE PER PROJECT	TEST			VISUALLY INSPECT UNLESS QUESTIONABLE
	MT 230 (10LB) PROCTOR		TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
	MT 219 CONTROL-STRIP TEST SECTION	N/A	WHEN RATIO OF BLENDED MATERIAL CHANGES BY MORE THAN 20% OR CHARACTERISTICS OR SITE CONDITIONS CHANGE	TEST			
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	10 TESTS PER 2000 FT	TEST			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
POLYMER OVERLAY AGGREGATE 563.02.02.00	MT 202 SIEVE ANALYSIS	30 LBS	ONE PER PROJECT	TEST			
	AASHTO T 84 ABSORPTION			SAMPLE		TEST	
	AASHTO T 255 MOISTURE			TEST			

AGGREGATE SURFACING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CRUSHED BASE COURSE GRADE 5A 701.02.04.01 GRADE 6A 701.02.04.02 GRADE 7A 701.02.04.03	MT 201 SAMPLING	77 LBS	1 SAMPLE FOR EACH 2,500 TONS (1,250 CU YDS), 1 LOT = 5 SAMPLES OR APPROX. 12,500 TONS (6,250 CU YDS)	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			
	AASHTO T 335 FRACTURE						
	AASHTO T 89 LIQUID LIMIT	77 LBS	TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	10 TESTS PER 2000 FT	TEST			
	INDEPENDENT ASSURANCE (COMPARISON TESTING)			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	MT 202 SIEVE ANALYSIS	USE FIELD TESTED SAMPLE	1 SAMPLE FOR EACH 5 LOTS, MINIMUM OF 1 SAMPLE PER SOURCE		TEST	TEST	
	AASHTO T 335 FRACTURE						
	AASHTO T 89 LIQUID LIMIT		1 SAMPLE PER PROJECT PER SOURCE				
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						

AGGREGATE SURFACING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CRUSHED TOP SURFACING GRADE 2A 701.02.06.01	MT 201 SAMPLING	30 LBS	1 SAMPLE FOR EACH 2,500 TONS (1,250 CU YDS), 1 LOT = 5 SAMPLES OR APPROX. 12,500 TONS (6,250 CU YDS)	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			
	AASHTO T 335 FRACTURE						
	AASHTO T 89 LIQUID LIMIT	30 LBS	TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	10 TESTS PER 2000 FT	TEST			
	INDEPENDENT ASSURANCE (COMPARISON TESTING)			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	MT 202 SIEVE ANALYSIS	USE FIELD TESTED SAMPLE	1 SAMPLE FOR EACH 5 LOTS, MINIMUM OF 1 SAMPLE PER SOURCE		TEST	TEST	
	AASHTO T 335 FRACTURE						
	AASHTO T 89 LIQUID LIMIT		1 SAMPLE PER PROJECT PER SOURCE				
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CRUSHED TOP SURFACING GRADE 3B 701.02.07.01	MT 201 SAMPLING	30 LBS	1 SAMPLE FOR EACH 2,500 TONS (1,250 CU YDS), 1 LOT = 5 SAMPLES OR APPROX. 12,500 TONS (6,250 CU YDS)	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			
	AASHTO T 335 FRACTURE						
	AASHTO T 89 LIQUID LIMIT	30 LBS	TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	10 TESTS PER 2000 FT	TEST			
	INDEPENDENT ASSURANCE (COMPARISON TESTING)			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	MT 202 SIEVE ANALYSIS	USE FIELD TESTED SAMPLE	1 SAMPLE FOR EACH 5 LOTS, MINIMUM OF 1 SAMPLE PER SOURCE		TEST	TEST	
	AASHTO T 335 FRACTURE						
	AASHTO T 89 LIQUID LIMIT		1 SAMPLE PER PROJECT PER SOURCE				
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						

AGGREGATE SURFACING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CRUSHED COVER AGGREGATE	MT 201 SAMPLING	30 LBS	1 SAMPLE FOR EACH 38,500 SQ YDS, 1 LOT = 5 SAMPLES OR APPROX. 192,500 SQ YDS	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			
	AASHTO T 335 FRACTURE						
	INDEPENDENT ASSURANCE (COMPARISON TESTING)			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
TYPE 1 701.02.08.01	MT 202 SIEVE ANALYSIS	USE FIELD TESTED SAMPLE	ONE TEST FOR EACH LOT		TEST	TEST	
TYPE 2 701.02.08.02	AASHTO T 335 FRACTURE						
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
TYPE 3 701.02.08.03	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER SOURCE	MIX DESIGN			CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. APPLICATION RATES AND COMPATIBILITY TEST RESULTS ARE SUBMITTED IN THE CONTRACTOR'S MIX DESIGN. ADHESION RESULTS (MT 322) ARE AN ACCEPTABLE METHOD FOR COMPATABILITY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CEMENT TREATED BASE 701.02.09.01	MT 201 SAMPLING	30 LBS	1 SAMPLE FOR EACH 1,500 TONS (750 CU YDS), 1 LOT = 5 SAMPLES	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			
	AASHTO T 89 LIQUID LIMIT		ONE TEST PER PROJECT RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO T 134 MOISTURE - DENSITY RELATIONS OF SOIL-CEMENT						
	MT 216 SAMPLE CTB	30 LBS	1 SET OF CYLINDERS PER 750 CU YDS 1 LOT = 5 SAMPLES	SAMPLE			
	ASTM D1633 COMPRESSIVE STRENGTH OF MOLDED SOIL-CEMENT CYLINDERS					TEST	
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	1 TEST PER 750 CU YDS 1 LOT = 5 SAMPLES	TEST			IF COMPACTION TEST FAILS, 2 ADDITIONAL TESTS ARE TO BE COMPLETED AND THE AVERAGE OF 3 TESTS IS THE RECORDED RESULTS
	INDEPENDENT ASSURANCE (COMPARISON TESTING)			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	MT 202 SIEVE ANALYSIS	USE FIELD TESTED SAMPLE	1 SAMPLE FOR EACH 5 LOTS, MINIMUM OF 1 SAMPLE PER SOURCE		TEST	TEST	
	AASHTO T 89 LIQUID LIMIT		1 SAMPLE PER PROJECT PER SOURCE				
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER SOURCE	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN

AGGREGATE SURFACING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MICROSURFACING AGGREGATE TYPE 2 701.03.00.01 TYPE 3 701.03.00.02	MT 201 SAMPLING	30 LBS	1 SAMPLE FOR EACH 300 TONS, 1 LOT = 5 SAMPLES OR APPROX. 1,500 TONS	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			
	AASHTO T 335 FRACTURE						
	INDEPENDENT ASSURANCE (COMPARISON TESTING)			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	MT 202 SIEVE ANALYSIS	USE FIELD TESTED SAMPLE	ONE TEST FOR EACH LOT		TEST	TEST	
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER SOURCE	MIX DESIGN			CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ELASTOMERIC BEARING DEVICES	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/ITEM	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
711.14.00.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
POLYTETRA-FLUOROETHYLENE (PTFE) 711.20.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET			VERIFY ITEM MEETS MDT REQUIREMENTS AND ATTACH APPLICABLE CERT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
PERFORMANCE GRADED ASPHALT BINDER 58-28 702.01.01.01 64-22 702.01.01.02 64-28 702.01.01.03 70-28 702.01.01.04 58H-34 (MSCR) 702.01.01.06 58V-34 (MSCR) 702.01.01.07	MT 302 SAMPLING	2 - 1 PINT SPECIMEN IN METAL CANS	1 SAMPLE PER 25 TONS OF ASPHALT BINDER (1 LOT = 150 TONS OF ASPHALT BINDER) **COMMERCIAL MIXES** 1 SAMPLE PER 450 TONS OF PLANT MIX SURFACING (1 LOT = 2700 TONS OF PLANT MIX SURFACING)	SAMPLE		TEST	
	AASHTO R 28 PRESSURIZED AGING VESSEL						
	AASHTO R 92 ELASTIC BEHAVIOR BY MSCR						
	AASHTO T 48 CLEVELAND OPEN CUP						
	AASHTO T 240 ROLLING THIN-FILM OVEN						
	AASHTO T 313 BENDING BEAM RHEOMETER						
	AASHTO T 315 DYNAMIC SHEAR RHEOMETER						
	AASHTO T 316 VISCOSITY BY ROTATIONAL VISCOMETER						
	AASHTO T 350 MSCR						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SS-1H ANIONIC SLOW SET EMULSION 702.01.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			QUALIFIED PRODUCTS LIST
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SS-1 ANIONIC SLOW SET EMULSION 702.01.02.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			QUALIFIED PRODUCTS LIST
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CSS-1H CATIONIC SLOW SET EMULSION 702.01.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			QUALIFIED PRODUCTS LIST
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CSS-1 CATIONIC SLOW SET EMULSION 702.01.03.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			QUALIFIED PRODUCTS LIST
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HIGH FLOAT EMULSION HF-100 702.01.05.01 HF-300 702.01.05.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CHFRS-2P POLYMER MODIFIED CATIONIC HIGH FLOAT RAPID SET EMULSION 702.01.05.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CRS-2 CATIONIC RAPID SETTING EMULSION 702.01.06.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CRS-2P POLYMER MODIFIED CATIONIC RAPID SET EMULSION 702.01.06.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CQS-1h CATIONIC QUICK SETTING EMULSION 702.01.07.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CQS-1P POLYMER MODIFIED CATIONIC QUICK SET EMULSION 702.01.07.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CQS-1HP POLYMER MODIFIED CATIONIC QUICK SET EMULSION 702.01.07.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED.
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
POLYMER MODIFIED REJUVENATING EMULSION 702.01.08.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			
	MT 302 SAMPLING	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER	SAMPLE			
	AASHTO T 72 SAYBOLT VISCOSITY					TEST	MINIMUM OF ONE TEST PER PROJECT
	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS						
	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						**PRIMARY TEST METHOD** EVAPORATIVE DISTILLATION **SECONDARY TEST METHOD** HIGH TEMPERATURE DISTILLATION

BITUMINOUS PRIME & TACK COAT

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BLOTTER MATERIAL 701.14.00.00	MT 201 SAMPLING	30 LBS	ONE TEST PER PROJECT	SAMPLE	TEST		
	MT 202 SIEVE ANALYSIS						
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONCRETE COLORANT 551.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PORTLAND CEMENT 551.02.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BLENDED CEMENT 551.02.01.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
RAPID HARDENING HYDRAULIC CEMENT 551.02.01.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FLY ASH 551.02.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GROUND GRANULATED BLAST FURNACE SLAG (GGBFS) 551.02.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MICROSILICA /SILICA FUME 551.02.04.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONCRETE ADMIXTURE 551.02.05.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER TYPE OF ADMIXTURE	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BLENDED SUPPLEMENTARY CEMENTITIOUS MATERIAL 551.02.07.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST VERIFY MATERIAL USED IS INCLUDED IN THE CONCRETE MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS GENERAL CONCRETE 551.03.02.02 CONCRETE UNCLASSIFIED 551.03.02.99	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPLRESSIVE STRENGTH						
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 119 SLUMP						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS PAVE CONCRETE 551.03.02.03	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE STRENGTH	1 CU FT	MINIMUM OF 2 SETS PER LOT (1000 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 119 SLUMP						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	THICKNESS OF CONCRETE (SURVEY METHOD)	N/A	MIN OF ONE TEST PER 1000 FEET OF TRAFFIC LANE OF PAVEMENT PLACED	SAMPLE TEST			PRIMARY TEST SEE STANDARD SPECS SECTION 501.03.17
	AASHTO T 148 MEASURING LENGTH OF CORES						SECONDARY TEST USE FOR VERIFICATION OR RESOLVE DESCREPANCIES AS IDENTIFIED IN MDT STANDARD SPECS SECTION 501.03.17
	AASHTO T 24 OBTAIN AND TEST CONCRETE CORES						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS SCC CONCRETE 551.03.02.05	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 117 COMPRESSIVE STRENGTH CYLINDERS OF SCC	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 152 AIR CONTENT SCC	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 347 SLUMP FLOW SCC						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 345 PASSING ABILITY OF SCC BY J-RING						
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 351 VISUAL STABILITY INDEX (VSI)		DETERMINE VSI EVERY TIME A SLUMP FLOW TEST IS CONDUCTED	VISUAL			
	AASHTO T 121 UNIT WEIGHT			SAMPLE TEST			FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS DECK CONCRETE 551.03.02.06	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 358 RESISTIVITY		TEST 3 - 28 DAY COMPRESSIVE STRENGTH CYLINDERS				
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 119 SLUMP						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS OVERLAY-SF CONCRETE 551.03.02.07	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 358 RESISTIVITY		TEST 3 - 28 DAY COMPRESSIVE STRENGTH CYLINDERS				
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST FOR THE FIRST LOAD AND THEN ONE TEST EVERY 16 YD^3 THEREAFTER	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 119 SLUMP						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS OVERLAY-LM CONCRETE 551.03.02.08	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET			VERIFY LATEX MEETS MDT REQUIREMENTS AND ATTACH APPLICABLE CERT
	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 358 RESISTIVITY		TEST 3 - 28 DAY COMPRESSIVE STRENGTH CYLINDERS				
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST PER EACH MOBILE MIXER	SAMPLE TEST			
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS STRUCTURE CONCRETE 551.03.02.09	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 358 RESISTIVITY		TEST 3 - 28 DAY COMPRESSIVE STRENGTH CYLINDERS				ONLY REQUIRED WHEN CLASS STRUCTURE IS SPECIFIED BY CONTRACT IN LIEU OF CLASS DECK
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 119 SLUMP						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS DRILLED SHAFT CONCRETE 551.03.02.10	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 119 SLUMP	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONTROLLED LOW STRENGTH MATERIAL EXCAV 551.03.02.11 NON-EXCAV 551.03.02.12	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	CERT OF COMP			CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN
	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			SAMPLE REQUIRED ONLY WHEN CLSM PLACEMENT SUPPORTS A TRAFFIC LOAD
	ASTM D4832 PREPARATION AND TESTING OF CLSM	1 CU FT	ONE SET PER PROJECT	SAMPLE		TEST	
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PRE-PACKAGED CONCRETE 551.03.02.13	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT, PER TYPE	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
LEAN CONCRETE 551.03.02.14	CERT/ VISUAL INSPECTION	N/A	ONE PER LOAD	DATA SHEET			VERIFY ITEM MEETS MDT REQUIREMENTS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SHOTCRETE 551.03.02.15	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	ASTM C1140 SHOTCRETE PANELS	24"X24"X4" PANEL	TWO SETS OF THREE CORES PER LOT (1 LOT = 100 YD^3) (SMALL QUANTITES TESTED EVERY 25 YD^3) MINIMUM OF ONE TEST/PANEL PER INSTALLATION	SAMPLE		TEST	
	ASTM C1604 OBTAIN & TEST CONCRETE CORES						
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST FOR THE FIRST LOAD AND ONE TEST EVERY 16 YD^3	TEST			
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS JOINT CONCRETE 551.03.02.16	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 358 RESISTIVITY		TEST 3 - 28 DAY COMPRESSIVE STRENGTH CYLINDERS				
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 119 SLUMP						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS STRUCTURE - LOW SLUMP CONCRETE 551.03.02.17	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD^3 OR EACH DAY'S POUR WHICHEVER IS LESS)	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD^3 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH						
	AASHTO T 152 AIR CONTENT	1 CU FT	ONE TEST EVERY 30 YD^3 AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			INCLUDE IN QA
	AASHTO T 119 SLUMP						TEST EACH LOAD WHEN INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED
	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE						
	AASHTO T 121 UNIT WEIGHT						FOR INFORMATION ONLY
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS ULTRA HIGH PERFORMANCE CONCRETE 551.03.02.18	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS		SEE SPECIAL PROVISIONS	SAMPLE		TEST	
	AASHTO T 22 COMPRESSIVE STRENGTH						
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS LOW DENSITY CELLULAR CONCRETE 551.03.02.19	AASHTO R 60 SAMPLING FRESH CONCRETE	REFER TO TEST FOR SIZE		SAMPLE			
	MT 101 COMPRESSIVE STRENGTH CYLINDERS		SEE SPECIAL PROVISIONS	SAMPLE		TEST	
	AASHTO T 22 COMPRESSIVE STRENGTH						
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER BID ITEM	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN. SEPARATE MIX DESIGNS NEEDED ONLY WHEN CONCRETE REQUIREMENTS VARY.

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EPOXY GROUT 552.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PRESTRESSED BEAM 553.01.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER BEAM	CERT OF COMP VISUAL			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	MT 111 PRESTRESSED STRUCTURAL MEMBERS	PER MT 111	ONE PER BEAM		PRE-INSPECTION		

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PRECAST CONCRETE PRODUCTS 554.01.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	CERT OF COMP VISUAL			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	ASTM A416 SEVEN WIRE STRAND	8 FT	ONE PER LOT	SAMPLE		TEST	REQUIRED ONLY WHEN MEMBER IS POST-TENSIONED
	MT 110 RCP AND ASSOCIATED ITEMS	N/A			PRE-INSPECTION QPL FACILITIES ONLY		PRODUCTS PRODUCED AT NON-CERTIFIED PLANTS ACCEPTED PER SPECIFICATION 554.03
	MT 111 PRESTRESSED STRUCTURAL MEMBERS	PER MT 111	ONE PER DECK SECTION		PRE-INSPECTION		FOR PRESTRESSED ITEMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CATTLE GUARD BASES 554.01.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	VISUAL			PRE-INSPECTION IS NOT REQUIRED IF ITEM IS PRODUCED AT A CERTIFIED PLANT (QPL)
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	MT 110 RCP AND ASSOCIATED ITEMS	N/A			PRE-INSPECTION QPL FACILITIES ONLY		PRODUCTS PRODUCED AT NON-CERTIFIED PLANTS ACCEPTED PER SPECIFICATION 554.03

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CMU/SRW BLOCKS 554.01.00.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WATERPROOF MEMBRANE 563.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT, PER TYPE	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
POLYMER RESIN 563.02.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT, PER TYPE	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EPOXY ADHESIVES 713.14.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EPOXY TYPE	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
LIQUID MEMBRANE-FORMING CONCRETE CURING COMPOUND 717.01.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONCRETE CURE AND SEAL COMPOUNDS 717.01.04.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SILANE SEALER 717.02.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) 717.02.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH NUMBER	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	MT 535 BRIDGE DECK CRACK SEALANT IR TEST	2 - 4 OZ PLASTIC BOTTLES		SAMPLE		TEST	SAMPLE REQUIRED TO BE TAKEN FROM JOB SITE

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EPOXY BRIDGE DECK CRACK SEALANT 717.02.02.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH NUMBER	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DECK SEALANT SAND 717.02.02.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			CERTIFICATION IS THE GRADATION ON THE CONTAINER

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BACKER ROD 403.02.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MASTIC CRACK FILLER 403.02.00.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EMBANKMENT 203.01.00.01	MT 201 SAMPLING	77 LBS	TEST MATERIAL AS NEEDED FOR SOILS CLASSIFICATION AND/OR PROCTOR	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO M 145 SOIL CLASS						
	MT 229 ZERO AIR VOIDS						SECONDARY TEST INTERIM MEASURE UNTIL A PROCTOR CAN BE PERFORMED
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	AASHTO T 100 SPECIFIC GRAVITY						
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER 2000 YD^3 AND A MINIMUM OF ONE TEST PER LIFT	TEST			
	MT 218 RELATIVE COMPACTION AND % MOISTURE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SPECIAL BORROW 203.01.00.02	MT 201 SAMPLING	77 LBS	EACH SOURCE OF SPECIAL BORROW IS SUBJECT TO APPROVAL PRIOR TO PLACEMENT (ONE BORROW SOURCE PER 65,000 YD^3) MINIMUM EIGHT SAMPLES PER BORROW SOURCE 85% OF THE TESTS MUST MEET SOILS CLASSIFICATION OR R-VALUE REQUIREMENT	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO M 145 SOIL CLASS						
	MT 210 (5.5LB) PROCTOR						
	MT 230 (10LB) PROCTOR						
	AASHTO T 190 R-VALUE					TEST	TEST REQUIRED IF SPECIFIED IN THE SPECIAL PROVISIONS
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER 2000 YD^3 AND A MINIMUM OF ONE TEST PER LIFT	TEST			
	MT 218 RELATIVE COMPACTION AND % MOISTURE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEMMING AGGREGATE FOR BLASTING 204.02.00.01	MT 201 SAMPLING	30 LBS	ONE TEST PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO T 335 FRACTURE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SNOW FENCE MATERIAL 607.02.01.01	CERT/ VISUAL INSPECTION	N/A	ONE PER PRODUCT	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CHAIN LINK FABRIC 712.01.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CHAIN LINK STEEL POST 712.01.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CHAIN LINK GATE 712.01.08.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FENCE WIRE 712.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL FENCE POST 712.02.07.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WOOD FENCE POST/BRACE RAIL 712.02.08.01	CERT/ VISUAL INSPECTION	N/A	ONE PER LOT	VISUAL			VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS
	MT 404 INSPECTING WOOD PRODUCTS	PER MT 404	PER MT 404		PRE-INSPECTION		
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
METAL GATE	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET VISUAL			
712.02.09.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DEADMAN/ ANCHOR 712.02.12.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER FABRICATOR	VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ROLLED EC BLANKET SHORT TERM 713.12.00.01 LONG TERM 713.12.00.02 HIGH PERFORMANCE 713.12.00.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TURF REINFORCEMENT MAT SYNTHETIC FIBER 713.12.00.04 NATURAL FIBER 713.12.00.05	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GEOCOMPOSITE DRAIN 716.00.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			SUBMIT SAMPLE OF MATERIAL TO GEOTECHNICAL SECTION FOR REVIEW

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GEOSYNTHETIC CLAY LINER 716.00.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GEOMEMBRANE 716.00.00.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			SUBMIT SAMPLE OF MATERIAL TO GEOTECHNICAL SECTION FOR REVIEW
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SEPARATION GEOTEXTILE MOD SURV 716.02.00.01 HIGH SURV 716.02.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STABILIZATION GEOTEXTILE 716.03.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SUBSURFACE DRAIN FILTER - MOD SURV CLASS A 716.04.00.01 CLASS B 716.04.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
CLASS C 716.04.00.03	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SUBSURFACE DRAIN FILTER - HIGH SURV CLASS A 716.04.00.04 CLASS B 716.04.00.05	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
CLASS C 716.04.00.06	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PERMANENT EC - MOD SURV CLASS A 716.05.00.01 CLASS B 716.05.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
CLASS C 716.05.00.03	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PERMANENT EC - HIGH SURV CLASS A 716.05.00.04 CLASS B 716.05.00.05	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
CLASS C 716.05.00.06	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TEMPORARY SILT FENCE 716.06.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GEOGRID 716.07.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			
	DIRECTLY MEASURE OPENING SIZE WITH CALIPERS	3 FT X WIDTH	ONE PER 10,000 SQ YD	SAMPLE		TEST	PER GEOGRID SPECIAL PROVISION
	ASTM D6637 TENSILE PROPERTIES						
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
METAL BEAM GUARDRAIL	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET VISUAL			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
705.01.01.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BOX BEAM GUARDRAIL	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET VISUAL			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
705.01.01.02	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CABLE GUARDRAIL/ WIRE ROPE	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET VISUAL			
705.01.01.03	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MISCELLANEOUS GUARDRAIL	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET			
705.01.01.05	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WOOD GUARDRAIL POST/BLOCKOUT 705.01.02.01	CERT/ VISUAL INSPECTION	N/A	ONE PER LOT OR BATCH	VISUAL			VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS
	MT 404 INSPECTING WOOD PRODUCTS	PER MT 404	PER MT 404		PRE-INSPECTION		
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
NON-WOOD BLOCKOUT 705.01.02.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL GUARDRAIL POST 705.01.05.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
W-BEAM TERMINAL SECTION	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
606.02.00.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BOX BEAM TERMINAL SECTION	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			
606.02.00.02	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
IMPACT ATTENUATOR	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	DATA SHEET			
606.02.00.03	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EXPANSION JOINT FILLERS - CORK 707.01.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CRACK & JOINT SEALING MATERIAL 707.01.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EXPANSION JOINT SYSTEM 707.01.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET OR CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SILICONE JOINT SEAL 707.01.02.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FABRIC REINFORCED NEOPRENE JOINT SEAL 707.01.02.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EXPANSION JOINT ASPHALT PLUG 707.01.02.04	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PREFORMED EXPANSION JOINT FILLER 707.01.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
RUBBER GASKET 707.02.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FLEXIBLE JOINT SEALER 707.02.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			

LIGHTING, SIGNALS & COMMUNICATION

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ELECTRICAL SUBMITTAL - STEEL AND IRON 703.00.00.00	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER PROJECT	DATA SHEET			SEE EXAMPLE ELECTRICAL ITEM CHECKLIST
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			SEE INDIVIDUAL MATERIALS FOR STEEL REQUIREMENTS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL CONDUIT	ELECTRICAL ITEM CHECKLIST	N/A	ONE PER LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PULL BOXES - CONCRETE	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER LOT/BATCH	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SIGNAL STANDARDS TYPE 2/3	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM/LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 NO CERTIFICATION IS REQUIRED IF THIS ITEM IS SUPPLIED BY MDT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
LUMINAIRE STANDARD TYPE 10	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM/LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 NO CERTIFICATION IS REQUIRED IF THIS ITEM IS SUPPLIED BY MDT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SIGNAL STANDARDS TYPE 1	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM/LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 NO CERTIFICATION IS REQUIRED IF THIS ITEM IS SUPPLIED BY MDT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ELECTRICAL SUBMITTAL - BABA 703.00.00.01	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER PROJECT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PVC CONDUIT	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER SIZE	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HDPE CONDUIT	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER SIZE	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
OPTICAL CABLE/ FIBER OPTICS	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ELECTRICAL SUBMITTAL - MANUFACTURED PRODUCT 703.00.00.02	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PULL BOXES - COMPOSITE	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
VARIABLE MESSAGE SIGN	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ANTENNA	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONDUCTOR	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CABLE	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SERVICE & CONTROL ASSEMBLY	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TRAFFIC SIGNAL CABINET	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TRAFFIC SIGNAL INDICATION	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
LED TRAFFIC SIGNAL	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PEDESTRIAN SIGNAL INDICATION	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DETECTOR LOOP	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PEDESTRIAN PUSH BUTTONS	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

LIGHTING, SIGNALS & COMMUNICATION

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
LUMINAIRE ASSEMBLY	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EMERGENCY VEHICLE PREEMPTION	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ELECTRICAL SUBMITTAL - OTHER 703.00.00.04	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GUYS & ANCHORS	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CLASS 4 TREATED WOOD POLES 703.14.00.01	CERT/ VISUAL INSPECTION	N/A	ONE PER CHARGE	VISUAL			VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS
	MT 404 INSPECTING WOOD PRODUCTS	PER MT 404	PER MT 404		PRE-INSPECTION		
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SALT 8A-R (ROAD SALT) MT 1.1	CERT/ VISUAL INSPECTION	N/A	ONE PER TRUCK LOAD	DATA SHEET VISUAL			VISUALLY EVALUATE FOR CONTAMINATION
	*PNS METHOD 13 SALT GRADATION	AIR TIGHT CONTAINER (1 GAL SEALABLE BAG)	AS REQUESTED	SAMPLE	TEST		*GRADATION - MUST BE HAND SHAKEN
	MT 526 MOISTURE OF PNS SALT		ONE PER TRUCK LOAD - TEST EACH SAMPLE - EXCEPT MISSOULA AND KALISPELL TEST EACH 5TH SAMPLE - IN CASE OF A FAILURE, TEST EACH SAMPLE				TESTING OF MOISTURE CONTENT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SALT 8A-B (BRINE SALT) MT 1.2	CERT/ VISUAL INSPECTION	N/A	ONE PER TRUCK LOAD	DATA SHEET VISUAL			VISUALLY EVALUATE FOR CONTAMINATION
	*PNS METHOD 13 SALT GRADATION	AIR TIGHT CONTAINER (1 GAL SEALABLE BAG)	AS REQUESTED	SAMPLE	TEST		*GRADATION - MUST BE HAND SHAKEN
	MT 526 MOISTURE OF PNS SALT						TESTING OF MOISTURE CONTENT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SALT 8B (WET SALT) MT 1.3	CERT/ VISUAL INSPECTION	N/A	ONE PER TRUCK LOAD	DATA SHEET VISUAL			VISUALLY EVALUATE FOR CONTAMINATION
	*PNS METHOD 13 SALT GRADATION	AIR TIGHT CONTAINER (1 GAL SEALABLE BAG)	AS REQUESTED	SAMPLE	TEST		*GRADATION - MUST BE HAND SHAKEN
	MT 526 MOISTURE OF PNS SALT		ONE PER TRUCK LOAD - TEST EACH SAMPLE - EXCEPT MISSOULA AND KALISPELL TEST EACH 5TH SAMPLE IN CASE OF A FAILURE, TEST EACH SAMPLE				TESTING OF MOISTURE CONTENT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SALT BRINE - NaCl MT 2	MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE	1 GALLON (4 LITERS)	ONE SAMPLE FOR EVERY 100,000 GALLONS	SAMPLE		TEST	C.R. = CORROSION RATE
	MT 502 CHEMICAL ANALYSIS						
	MT 504 CYANIDE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DE-ICER $MgCl_2$ MT 3.1	CERT/ VISUAL INSPECTION	1 EACH	ONE PER TRUCK LOAD	DATA SHEET			
	MT 408 SAMPLING LIQUID DEICING MATERIAL	1 GALLON	ONE SAMPLE FOR EVERY 100,000 GALLONS	SAMPLE			
	MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE					TEST	C.R. = CORROSION RATE
	MT 502 CHEMICAL ANALYSIS						
	MT 504 CYANIDE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DE-ICER $CaCl_2$ MT 3.2	CERT/ VISUAL INSPECTION	1 EACH	ONE PER TRUCK LOAD	DATA SHEET			
	MT 408 SAMPLING LIQUID DEICING MATERIAL	1 GALLON	ONE SAMPLE FOR EVERY 100,000 GALLONS	SAMPLE			
	MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE					TEST	C.R. = CORROSION RATE
	MT 502 CHEMICAL ANALYSIS						
	MT 504 CYANIDE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DE-ICER KCH_3COO MT 3.3	CERT/ VISUAL INSPECTION	1 EACH	ONE PER TRUCK LOAD	DATA SHEET			
	MT 408 SAMPLING LIQUID DEICING MATERIAL	1 GALLON	ONE SAMPLE PER CONTRACT AND AS REQUESTED	SAMPLE			
	MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE					TEST	C.R. = CORROSION RATE
	MT 502 CHEMICAL ANALYSIS						
	MT 504 CYANIDE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
3/8" SANDING MATERIAL MT 4.1	CERT/ VISUAL INSPECTION	1 EACH		DATA SHEET			
	MT 201 SAMPLING	30 LBS	ONE PER 2,000 TONS	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 19 UNIT WEIGHT						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
5/16" SANDING MATERIAL MT 4.2	CERT/ VISUAL INSPECTION	1 EACH		DATA SHEET			
	MT 201 SAMPLING	30 LBS	ONE PER 2,000 TONS	SAMPLE			
	MT 202 SIEVE ANALYSIS				TEST		
	AASHTO T 19 UNIT WEIGHT						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ENGINE OIL ANALYSIS MT 5	CERT/ VISUAL INSPECTION	1 EACH		DATA SHEET			
	MT 520 ENGINE OIL ANALYSIS	50 mL	YEARLY/AS NEEDED	SAMPLE		TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CORROSION INHIBITOR MT 6	CERT/ VISUAL INSPECTION	1 EACH	ONE PER TRUCK LOAD	DATA SHEET			
	MT 408 SAMPLING LIQUID DEICING MATERIAL	1 GALLON	ONE SAMPLE FOR EVERY 100,000 GALLONS	SAMPLE			
	MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE					TEST	C.R. = CORROSION RATE
	MT 502 CHEMICAL ANALYSIS						
	MT 504 CYANIDE						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD MAINT	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
COLD MIX ASPHALT PATCHING MATERIAL MT 7	CERT/ VISUAL INSPECTION	1 EACH	ONE PER CONTRACT	DATA SHEET			
	AASHTO T 335 FRACTURE	30 LBS		SAMPLE	TEST		
	MT 322 PERCENT ADHESION					TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DETECTABLE WARNING DEVICES 608.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CATTLE GUARD GRATE 611.02.04.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MAIL BOX 623.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST MAILBOX PACKAGING/DATA SHEET MUST DISPLAY "MADE IN THE USA" MAILBOX CLUSTERS ARE NOT REQUIRED TO BE ON THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STRUCTURAL TIMBER AND LUMBER 706.01.00.01	CERT/ VISUAL INSPECTION	N/A	ONE PER PRODUCT	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BITUMINOUS COATINGS 709.04.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL STRUCTURE PAINT 710.01.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			SUBMIT CERT OF COMP WHEN REQUIRED PER SPECIFICATION 710.02 CATTLE GUARDS AND BOLLARDS REQUIRE VISUAL INSPECTION ONLY

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
POWDER COATING 710.03.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	CERT OF COMP			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ANTI-GRAFFITI COATING 710.04.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MISCELLANEOUS MATERIAL ACCEPTED ON CERT 713.00.00.00	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SOURCE	CERT OF COMP OR DATA SHEET			CERTIFICATION OF COMPLIANCE IF REQUIRED BY CONTRACT PROVISIONS CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WATER FOR CONCRETE 713.01.00.01	CERT/ VISUAL INSPECTION	N/A	ONE PER SOURCE	VISUAL			
	AASHTO M 157 READY MIX CONCRETE	1 QT	ONE PER SOURCE			TEST	SAMPLE REQUIRED ONLY IF NON-POTABLE SOURCE

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HYDRATED LIME 713.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER GRIND/BIN/SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	AASHTO M 303 LIME FOR ASPHALT MIXTURES	5 LBS AIRTIGHT	AS REQUESTED	SAMPLE			PLASTIC SAMPLE CONTAINER REQUIRED (i.e., 1 GAL PLASTIC BUCKET WITH FRICTION TOP LID)
	AASHTO T 218 SAMPLING HYDRATED LIME					TEST	
	AASHTO T 219 CHEMCIAL ANALYSIS OF HYDRATED LIME	50 GRAM (2 OZ) AIRTIGHT				SAMPLE TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MAGNESIUM CHLORIDE 713.03.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOAD	DATA SHEET			QUALIFIED PRODUCTS LIST
	MT 408 SAMPLING LIQUID DEICING MATERIAL	1 PINT	ONE PER PROJECT				SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
	MT 502 CHEMICAL ANALYSIS					SAMPLE TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CALCIUM CHLORIDE 713.03.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOAD	DATA SHEET			QUALIFIED PRODUCTS LIST
	MT 408 SAMPLING LIQUID DEICING MATERIAL	1 PINT	ONE PER PROJECT				SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
	MT 502 CHEMICAL ANALYSIS					SAMPLE TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STRUCTURAL CEMENT GROUT 713.04.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			CERTIFICATION IS THE MIXTURE AND GRADATION ON THE CONTAINER
	AASHTO R 64 CUBE SPECIMENS USING GROUT/MORTAR	1 CU FT	TWO SETS OF THREE CUBES PER EACH DAYS POUR	SAMPLE			
	AASHTO T 106 COMPRESSIVE STRENGTH OF MORTARS					TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CEMENT GROUT 713.04.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			CERTIFICATION IS THE MIXTURE AND GRADATION ON THE CONTAINER

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MORTAR 713.04.00.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EPOXY RESIN 713.14.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TEMPORARY PAINT 714.03.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WATERBORNE PAINT 714.04.00.01	CERT/ VISUAL INSPECTION	1 QT (1 LITER) IN PLASTIC BOTTLE	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HIGH DURABLE WATERBORNE PAINT 714.05.00.01	CERT/ VISUAL INSPECTION	1 QT (1 LITER) IN PLASTIC BOTTLE	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
EPOXY PAINT 714.06.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	SPEC TABLE 714-4 EPOXY PAINT COMPOSITION	1 QT (1 LITER) OF EACH PIGMENT IN PLASTIC BOTTLES	AS REQUESTED	SAMPLE		TEST	ONE QUART (LITER) SAMPLE OF BOTH PIGMENT (COLOR) AND RESIN (CATALYST) WILL BE TAKEN FROM THE THOROUGHLY MIXED CONTENTS OF A STRIPING MACHINE

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PREFORMED PLASTIC 714.07.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER TYPE	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REFLECTIVE GLASS BEADS MT TYPE 1 714.08.00.01 MT TYPE 2 714.08.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	AASHTO T 346 SAMPLING GLASS BEADS	1 QT (1 LITER)	**CONSTRUCTION** ONE PER PROJECT **MAINTENANCE** AS REQUESTED	SAMPLE		TEST	SAMPLE FROM BULK CONTAINER WITH THIEF/PROBE IN ACCORDANCE WITH AASHTO T 346. SAMPLE THIEF/PROBE MAY NOT FILL SAMPLE BOTTLES. WHEN SAMPLING FROM A BULK CONTAINER IS NOT POSSIBLE, SAMPLES MAY BE COLLECTED FROM THE BEAD GUN ON THE TRUCK.
	AASHTO R 98 SIZE AND SHAPE OF GLASS BEADS						
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PILE DRIVING POINT 559.02.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PILE CUTTING SHOE 559.02.03.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PRODUCT	CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STRUCTURAL STEEL PILES 711.10.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	CERT OF COMP VISUAL			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 1	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT #. IF RECYCLED MATERIAL, BUY AMERICA CATEGORY 2 REQUIREMENTS APPLY
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			RECYCLED MATERIAL MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL PIPE PILES 711.10.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	CERT OF COMP VISUAL			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 1	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT #

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REINFORCED CONCRETE PIPE 708.01.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	CERT OF COMP VISUAL			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	MT 110 RCP AND ASSOCIATED ITEMS	N/A	MONTHLY		PRE-INSPECTION		PLANTS NEED TO BE INSPECTED MONTHLY

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REINFORCED CONCRETE BOX 708.01.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	CERT OF COMP VISUAL			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	MT 110 RCP AND ASSOCIATED ITEMS	N/A	MONTHLY		PRE-INSPECTION		PLANTS NEED TO BE INSPECTED MONTHLY

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CONCRETE PRESSURE PIPE 708.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT	CERT OF COMP VISUAL			PRE-INSPECTION IS NOT REQUIRED IF ITEM IS PRODUCED AT A CERTIFIED PLANT (QPL)
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	MT 110 RCP AND ASSOCIATED ITEMS	N/A	MONTHLY		PRE-INSPECTION QPL FACILITIES ONLY		PRODUCTS PRODUCED AT NON-CERTIFIED PLANTS ACCEPTED PER SPECIFICATION 554.03

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PLASTIC PIPE 708.05 708.06 708.07 708.08	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DUCTILE IRON WATER PIPE 709.01.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL WATER PIPE 709.01.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET OR CERT OF COMP VISUAL			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CORRUGATED STEEL PIPE 709.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL STRUCTURAL PLATE PIPE 709.03.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PRECOATED CORRUGATED STEEL PIPE 709.05.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CORR ALUMINUM PIPE CULVERT 709.07.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SEAMLESS STEEL PIPE 709.09.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET OR CERT OF COMP VISUAL			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
COPPER PIPE 709.10.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SOILS/WATER FOR PIPE CORROSION PC 3	MT 207 WATER CORROSION	1 QT (WATER)	PROBABLE, PROPOSED OR EXISTING CENTERLINE OF PIPE, CHANNEL BOTTOM, BRIDGE LOCATIONS AND PROBABLE BORROW AREAS		SAMPLE	TEST	
	MT 232 SOILS CORROSION	5 LB (SOIL)			SAMPLE	TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WARM MIX ADDITIVE 401.02.04.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ANTI-STRIPPING ADDITIVE 401.02.05.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PLANT MIX SURFACING GRADE S (3/4") 401.03.00.01 GRADE S (1/2") 401.03.00.02 GRADE S (3/8") 401.03.00.03	MT 303 SAMPLING BITUMINOUS PAVING MIXTURES	SUFFICIENT QUANTITY IN 2-10 QUART GALVANIZED BUCKETS	ONE EVERY 1000 TONS OF PLANT MIX PAVEMENT **COMMERCIAL MIXES** ONE EVERY 2000 TONS OF PLANT MIX PAVEMENT WITH A MINIMUM OF ONE SAMPLE FOR PROJECTS OVER 500 TONS (NO TESTS ARE REQUIRED FOR PROJECTS UNDER 500 TONS)		SAMPLE TEST		
	AASHTO R 47 REDUCING SAMPLES						
	AASHTO T 329 MOISTURE CONTENT		MINIMUM ONE PER DAY				
	AASHTO T 166 BULK SPECIFIC GRAVITY		ONE EVERY 1000 TONS OF PLANT MIX PAVEMENT **COMMERCIAL MIXES** ONE EVERY 2000 TONS OF PLANT MIX PAVEMENT WITH A MINIMUM OF ONE SAMPLE FOR PROJECTS OVER 500 TONS (NO TESTS ARE REQUIRED FOR PROJECTS UNDER 500 TONS)				
	MT 319 BINDER CONTENT BY IGNITION METHOD						
	MT 320 IGNITION OVEN AGGREGATE ANALYSIS			TEST			
	MT 321 RICE SPECIFIC GRAVITY						
	MT 332 GYRATORY COMPACTION						
	MT 334 HAMBURG WHEEL- TRACK	45 LBS	ONCE INITIAL JOB MIX TARGETS ARE ESTABLISHED OR FOR START-UP MIX WITH TEST RESULTS OUTSIDE THE BROADBAND LIMITS		SAMPLE	TEST	ADDITIONAL SAMPLES MAY BE TAKEN AT EPM'S DISCRETION
	MT 335 LINEAR KNEADING COMPACTION						
	DENSITY BY CORE	2 - 4" CORES	ONE EVERY 600 TONS PMP	SAMPLE	TEST		SPECIAL PROVISION SECTION 401.03.21
	MT 602 FINAL RECORD	2 CORES	PER TWO LANE ROADWAY TAKEN AT 1/2 MILE INTERVALS IN ALTERNATING LANES		SAMPLE TEST		

MATERIAL/ MATERIAL CODE	Mix Design			FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PLANT MIX SURFACING GRADE S (3/4") 401.03.00.01 GRADE S (1/2") 401.03.00.02 GRADE S (3/8") 401.03.00.03	MT 201 SAMPLING	800 LBS	ONE PER PLANT MIX DESIGN VERIFICATION		SAMPLE		
	MT 202 SIEVE ANALYSIS					TEST	
	AASHTO T 96 L.A. ABRASION						
	AASHTO T 176 SAND EQUIVALENT						PRIMARY
	AASHTO T 335 FRACTURE						
	AASHTO T 304 FINE AGGREGATE ANGULARITY						
	ASTM D4791 FLAT & ELONGATED PARTICLES						
	AASHTO T 84 SPECIFIC GRAVITY FINE AGG						
	AASHTO T 85 SPECIFIC GRAVITY COARSE AGG						
	AASHTO R 47 REDUCING SAMPLES						
	AASHTO T 166 BULK SPECIFIC GRAVITY						
	MT 321 RICE SPECIFIC GRAVITY						
	MT 332 GYRATORY COMPACTION						
	MT 334 HAMBURG WHEEL-TRACK						
	MT 335 LINEAR KNEADING COMPACTION						
	MT 319 BINDER CONTENT BY IGNITION METHOD						USED FOR PLANT MIX DESIGNS CONTAINING RAP
	MT 320 IGNITION OVEN AGGREGATE ANALYSIS						

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PLANT MIX SEAL COURSE 401.03.00.04	AASHTO T 335 FRACTURE	20 LBS	ONE EVERY 600 TONS PMSC		SAMPLE TEST		
	MT 303 SAMPLING BITUMINOUS PAVING MIXTURES						
	AASHTO R 47 REDUCING SAMPLES						
	MT 319 BINDER CONTENT BY IGNITION METHOD						
	MT 320 IGNITION OVEN AGGREGATE ANALYSIS			TEST			

MATERIAL/ MATERIAL CODE	Mix Design			FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PLANT MIX SEAL COURSE 401.03.00.04	MT 201 SAMPLING	800 LBS	ONE PER PLANT MIX SEAL COURSE MIX DESIGN		SAMPLE		
	MT 202 SIEVE ANALYSIS					TEST	
	AASHTO T 84 SPECIFIC GRAVITY FINE AGG						
	AASHTO T 85 SPECIFIC GRAVITY COARSE AGG						
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX						
	AASHTO T 96 LOS ANGELES ABRASION						
	AASHTO T 176 SAND EQUIVALENT TEST						
	AASHTO T 335 FRACTURE						
	AASHTO T 304 FINE AGGREGATE ANGULARITY						
	ASTM D4791 FLAT & ELONGATED PARTICLES						
	ASTM D6390 DRAIN DOWN						
	MT 332 GYRATORY COMPACTION					VERIFY	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
COLD RECYCLING ASPHALT EMULSION 702.01.08.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	CERT OF COMP			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
COLD RECYCLED PLANT MIX 405.03.00.01	CERT/ VISUAL INSPECTION	N/A	ONE PER PROJECT	VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS
	AASHTO T 329 MOISTURE CONTENT	MINIMUM 2.2 LB MOISTURE PROOF CONTAINER	ONE EVERY 3000 FT PAVER PATH	SAMPLE	TEST		
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE PER COLD RECYCLED PLANT MIX DESIGN	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HOT IN-PLACE RECYLCED PLANT MIX 405.03.00.02	CERT/ VISUAL INSPECTION	N/A	ONE PER PROJECT	VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS
	MT 303 SAMPLING BITUMINOUS PAVING MIXTURES	SUFFICIENT QUANTITY IN 2-10 QUART GALVANIZED BUCKETS	PER SPECIAL PROVISION	SAMPLE	TEST		
	Mix Design			**FIELD**	**DISTRICT/ AREA LAB**	**MDT HQ LAB**	**NOTES**
	CERT/ VISUAL INSPECTION	1 EACH	ONE PER HOT IN-PLACE RECYCLED PLANT MIX DESIGN	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CORES FOR STRIPPING ANALYSIS PC 4	MT 331 SAMPLING & EVALUATING STRIPPING PAVEMENTS	1 EACH	SEE MT 331		SAMPLE	TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PRECONSTRUCTION SOIL CHEMISTRY PC 5	MT 232 SOILS CORROSION	5 LB	ONE PER LOCATION		SAMPLE	TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HOT IN PLACE RECYCLE CORES PC 6	MT 331 SAMPLING & EVALUATING STRIPPING PAVEMENTS	1 EACH	SEE MT 331		SAMPLE	TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PLANTS - TREES & SHRUBS 610.01.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TOPSOIL 713.05.00.01	MT 412 TOP SOIL	2 LBS	ONE TEST PER SOURCE	SAMPLE		TEST	TESTING REQUIRED ON IMPORTED TOPSOIL ONLY

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
LANDSCAPE GRADE TOPSOIL 713.05.00.02	MT 412 TOP SOIL	2 LBS	ONE TEST PER SOURCE	SAMPLE		TEST	TESTING REQUIRED ON IMPORTED TOPSOIL ONLY

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WEED CONTROL MAT 713.06.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
RECLAMATION SEED 713.08.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER BLEND	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
LANDSCAPING SEED 713.08.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER BLEND	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FERTILIZER 713.09.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER BLEND	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MULCH 713.10.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER BLEND	CERT OF COMP OR DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST CERTIFICATE OF COMPLIANCE IS REQUIRED FOR ALL MULCH THAT CONTAINS STRAW

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SOD 713.11.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SUPPLIER	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
COMPOST 713.13.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SUPPLIER	CERT OF COMP OR DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST CERTIFICATE OF COMPLIANCE IS REQUIRED FOR ALL COMPOST THAT CONTAINS STRAW

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ALUMINUM SIGN SHEETING 704.01.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET VISUAL			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL SIGN POSTS	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
704.01.04.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STRUCTURAL STEEL SIGN POSTS	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET VISUAL			
704.01.04.02	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BREAKAWAY DEVICES	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
704.01.04.03	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TREATED WOOD POSTS & POLES	CERT/ VISUAL INSPECTION	N/A	ONE PER LOT/BATCH	VISUAL			VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS
	MT 404 INSPECTING WOOD PRODUCTS	PER MT 404	PER MT 404		PRE-INSPECTION		
704.01.06.01	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
RETRO-REFLECTIVE SHEETING 704.01.10.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SURFACE MOUNT FLEXIBLE DELINEATORS 704.03.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET VISUAL			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DRIVABLE FLEXIBLE DELINEATORS 704.03.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET VISUAL			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
OVERHEAD STRUCTURES 704.08.01.01	CERT/ VISUAL INSPECTION	N/A	ONE PER EACH	VISUAL	PRE-INSPECTION		
	STEEL CERT CATEGORY 1	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT #

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STEEL RAILING	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	DATA SHEET			
711.00.00.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ROCK/SOIL ANCHOR	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/ITEM	DATA SHEET			
711.01.00.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 [DOES NOT APPLY TO BIT]

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REBAR GRADE 40 711.01.01.01 GRADE 60 711.01.01.02 GRADE 75 711.01.01.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SMOOTH DOWEL BAR GRADE 40	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
711.01.01.04	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REBAR EPOXY COATING 711.01.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	CERT OF COMP			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REINFORCING WIRE, WIRE MESH	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
711.01.03.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REBAR-CORROSION RESISTANT-CR-GR100	CERT/ VISUAL INSPECTION	N/A	ONE PER SHIPMENT	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
711.01.04.01	MT 414 REINFORCING STEEL	2 - 3 FT SECTIONS	ONE TEST PER BAR SIZE	SAMPLE		TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
REBAR-CORROSION RESISTANT-SS-GR60	CERT/ VISUAL INSPECTION	N/A	ONE PER SHIPMENT	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
711.01.04.02	MT 414 REINFORCING STEEL	2 - 3 FT SECTIONS	ONE TEST PER BAR SIZE	SAMPLE		TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STRUCTURAL STEEL 711.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	DATA SHEET OR CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 1	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT # REQUIRED ONLY IF MATERIAL HAS NOT BEEN PRE-INSPECTED IF PRE-INSPECTED, SEE MATERIAL CODE 711.02.00.02

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PREFABRICATED PRE-INSPECTED STRUCTURAL STEEL MEMBERS 711.02.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET OR CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	MT 415 STRUCTURAL STEEL	1 EACH	ONE PER ITEM		PRE-INSPECTION		

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STRUCTURAL STEEL TUBING 711.03.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET OR CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 1	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT #

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HIGH TENSILE STRENGTH HEX BOLTS 711.06.00.01	MT 407 HIGH STRENGTH BOLTS	3 BOLT ASSEMBLIES	ONE TEST PER GRADE, DIAMETER, LENGTH, AND LOT	SAMPLE		TEST	PROVIDE LOT NUMBERS FOR EACH COMPONENT (BOLT, WASHER, AND NUT) OF THE BOLTING ASSEMBLIES
	ASTM F959 DIRECT TENSION INDICATORS	3 DTI ASSEMBLIES	ONE TEST PER GRADE, DIAMETER, LENGTH, AND LOT				
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HIGH TENSILE STRENGTH TENSION CONTROL BOLTS 711.06.00.02	ASTM F3125	3 BOLT ASSEMBLIES	ONE TEST PER GRADE, DIAMETER, LENGTH, AND LOT	SAMPLE		TEST	PROVIDE LOT NUMBERS FOR EACH COMPONENT (BOLT, WASHER, AND NUT) OF THE BOLTING ASSEMBLIES
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GALVANIZED METAL 711.08.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE TEST PER LOT/BATCH	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WELDED STUD SHEAR CONNECTORS 711.09.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	DATA SHEET OR CERT OF COMP			IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	MT 409 WELDED STUD SHEAR CONNECTORS	1 EACH	ONE PER ITEM		PRE-INSPECTION		

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PRESTRESSING STEEL 711.11.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
	ASTM A416 SEVEN WIRE STRAND	8 FT	ONE TEST PER LOT	SAMPLE		TEST	

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MISCELLANEOUS IRON CASTINGS 711.12.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/ITEM	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
CAST IRON INLET FRAME & GRATES 711.12.03.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/ITEM	DATA SHEET			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STRUCTURAL ANCHOR BOLTS	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET			
711.13.00.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MECHANICAL REBAR CONNECTORS 711.18.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER SHIPMENT	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HIGH STRENGTH WIRE ROCKFALL MESH	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/ITEM	DATA SHEET			
711.21.00.01	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GABION BASKETS	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/ITEM	DATA SHEET			
711.21.00.02	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

STREAM PRESERVATION

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TEMPORARY ROLLED EROSION CONTROL 208.02.00.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET			PRODUCT THAT CONTAINS STRAW MUST INDICATE NOXIOUS WEED SEED FREE (SPECIFICATION 208.03.5)

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TEMPORARY SEED 208.02.00.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT/BATCH	DATA SHEET			VERIFY ITEM MEETS MDT REQUIREMENTS AND ATTACH APPLICABLE CERT

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STREAM PRESERVATION MATERIALS 208.02.00.03	CERT/ VISUAL INSPECTION	N/A	ONE PER ITEM	VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
STREAMBED AGGREGATE 208.02.03.01	CERT/ VISUAL INSPECTION	N/A	ONE PER MATERIAL TYPE	VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS
	MT 201 SAMPLING	SAMPLE PER MT 201	ONE PER SOURCE	SAMPLE			
	MT 202 SIEVE ANALYSIS			TEST			

BUILDING MATERIALS

STRUCTURE MATERIAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BIRD SPIKES BM.699.01.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH TYPE	VISUAL			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
GLUE LAMINATED BEAMS BM.699.01.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER BEAM	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
INSULATION BM.699.01.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
METAL ROOFING BM.699.01.04	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

BUILDING MATERIALS

STRUCTURE MATERIAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
METAL SIDING & SOFFIT BM.699.01.05	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PICNIC SHELTER (NON PRECAST) BM.699.01.06	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
QUARRY TILE BM.699.01.07	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ROOF JOIST BM.699.01.08	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

BUILDING MATERIALS

STRUCTURE MATERIAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
INTERIOR/ EXTERIOR BUILDING TAPE & PAINT BM.699.01.09	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MASONARY/ THROUGH WALL FLASHING BM.699.01.10	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	VISUAL			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PRE-PACKAGED MORTAR BM.699.01.11	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT, PER TYPE	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MASONRY SIDING BM.699.01.14	CERT/ VISUAL INSPECTION	1 EACH	ONE PER PROJECT, PER TYPE	DATA SHEET			

BUILDING MATERIALS

STRUCTURE MATERIAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
INTERIOR/ EXTERIOR GLASS AND GLAZING BM.699.01.15	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

ELECTRICAL/MECHANICAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ELECTRICAL BM.699.02.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HVAC SYSTEM BM.699.02.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH COMPONENT, PER TYPE, PER PROJECT	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
INTERIOR FIXTURES & FEATURES BM.699.02.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	VISUAL			

BUILDING MATERIALS

ELECTRICAL/MECHANICAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PROPANE TANK BM.699.02.04	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

PLUMBING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
IRRIGATION SYSTEM BM.699.03.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PLUMBING BM.699.03.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

BUILDING MATERIALS

PLUMBING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WASTE WATER TREATMENT SYSTEM BM.699.03.03	CERT/ VISUAL INSPECTION	1 EACH	`	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WASTE WATER UTILITY PIPE & APPURTENANCE BM.699.03.04	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WASTE WATER PUMPS, FITTINGS & VALVES BM.699.03.05	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	**FORM 407**			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

BUILDING MATERIALS

PLUMBING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
WELL PUMPS, FITTINGS & VALVES BM.699.03.07	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

ACCESSORIES

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
BENCHES (NON PRECAST) BM.699.04.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
PICNIC TABLES (NON PRECAST) BM.699.04.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TRASH RECEPTACLES (NON PRECAST) BM.699.04.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FIRE EXTINGUISHERS & CABINETS BM.699.04.04	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

BUILDING MATERIALS

ACCESSORIES

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
FLAG POLES (ALUMINUM) BM.699.04.05	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TOILET ROOM ACCESSORIES BM.699.04.06	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	VISUAL			

DOOR/DISPLAY

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
ALUMINUM STOREFRONT BM.699.05.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
DISPLAY CASES BM.699.05.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
HOLLOW METAL DOORS & FRAMES BM.699.05.03	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	VISUAL			

BUILDING MATERIALS

DOOR/DISPLAY

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
OVERHEAD GARAGE DOORS BM.699.05.04	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

SCALE SITE SPECIFIC

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SCALE PIT STRUCTURAL ITEMS BM.699.06.01	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			IF MATERIAL IS STEEL OR PRECAST, A STEEL CERT IS REQUIRED
	STEEL CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SCALE ELECTRONICS, TRANSDUCERS, AND DISPLAYS BM.699.06.02	CERT/ VISUAL INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			

METHODS OF SAMPLING AND TESTING
MT 602-23
ACCEPTANCE, INDEPENDENT ASSURANCE, AND FINAL RECORD SAMPLING

1 SCOPE

1.1 This test method describes the Acceptance and Independent Assurance program portions of MDT's Quality Assurance Program as required by 23 CFR § 637, laboratory proficiency testing and inspections, and final record sampling.

1.2 The Acceptance Program consists of the sampling frequency and testing requirements as provided in MT 601.

1.3 The Independent Assurance (IA) Program consists of comparison samples (IACs) as outlined in MT 601 and procedural samples (IAPs) as described in this test method.

2 REFERENCE DOCUMENTS

ASTM
D5821 Determining the Percentage of Fractured Particles in Coarse Aggregate

MT Materials Manual
MT 226 Maximum Acceptable Deviations in Sieve Analysis of IA Samples
MT 601 Materials Sampling, Testing and Acceptance Guide
MT 606 Random Sampling Techniques

3 ACCEPTANCE PROGRAM

Acceptance sampling and testing are the principal means to assure materials and workmanship are in accordance with the contract specifications. Random sampling and testing are performed in accordance with MT 601 to ensure the quality of materials being incorporated, or proposed for incorporation, into a construction project meet contract specifications. The number of samples and the distribution of the locations from which samples are taken should be representative of the materials incorporated to ensure the materials are acceptable and in accordance with the contract requirements.

Sampling and testing frequencies listed in MT 601 are a minimum. As job conditions vary, such as the uniformity of materials at the source, the methods and equipment used, or weather conditions, additional sampling and testing can be requested by MDT personnel.

Acceptance sampling and testing may be any of the following:

- Samples of materials witnessed, taken, and/or tested by MDT personnel or delegated inspection agency.
- Samples taken and/or tested by the manufacturer or supplier with test results or certificates submitted to the Department.

4 INDEPENDENT ASSURANCE (IA) PROGRAM

4.1 Per 23 CFR § 637, an Independent Assurance Program is defined as activities that are an unbiased and independent evaluation of all the sampling and testing procedures used in the acceptance program.

IA test results are not used directly for determining the quality and acceptability of the materials and workmanship on a project; instead, IA test results serve as checks on the reliability of the results obtained from project acceptance sampling and testing.

The elements of the Department's IA Program are as follows.

- Comparison sample sampling and testing frequencies as established in MT 601.
- Prompt comparison and documentation of test results obtained from comparison sample and proficiency sample evaluations.
- Department established tolerances for the comparison of test results of comparison samples and

proficiency samples.
- Evaluation of testing personnel and procedures through observation.
- Testing equipment evaluation using calibration checks, comparison samples, and proficiency samples.

4.2 Independent Assurance Comparison (IAC) Samples

4.2.1 Description

IAC samples are performed to verify conformance with testing procedures through comparison of test results on equivalent samples.

4.2.2 Purpose

IACs are used to assess accuracy among all personnel performing acceptance sampling and testing on behalf of MDT through evaluating testing procedures and equipment. IACs are conducted on a project basis.

IAC results are not used directly for determining the quality and acceptability of the materials on a project. Acceptance test results take precedence in the event of conflicting results unless extenuating circumstances are identified.

4.2.3 Frequency

MT 601 lists the minimum frequencies at which IAC samples are conducted and the test methods to be performed. IAC frequencies in MT 601 are reviewed and approved by the FHWA.

4.2.4 Responsibility

IACs are a joint effort between Field Construction technicians, District/Area Materials Lab technicians, and MDT Materials Headquarter technicians. IAC requirements apply to all persons conducting acceptance sampling and testing on behalf of MDT.

4.2.5 Sampling

IAC samples are taken at random following the procedures in MT 606 from materials or from construction work in progress and are not intended to check compliance with specifications. They are taken and tested to provide an independent spot check of the accuracy and effectiveness of the results obtained in acceptance sampling and testing.

Independent assurance samples must be the same sample, or taken at the same place, by the same method as routine acceptance samples.

If the sample is to be used for acceptance testing and an IAC sample is required, the technician performing acceptance testing will take a sample, perform the initial acceptance test, and document the results. This sample then becomes the IAC sample that will be tested by the District/Area Materials Lab or MDT Materials Headquarters lab, or both. To maintain the integrity of the sample, it is critical that all materials used for testing (with the exceptions of the wash sample and fracture sample) be recombined to their original configuration prior to transferring to the next testing facility.

IAC samples are to be continuously in the custody or under the observation of properly trained personnel not associated with acceptance sampling until they are shipped or delivered to the District/Area Laboratory or the Materials Bureau for testing.

4.2.6 Fracture Samples

Once a fracture sample is split from the original field sample to an appropriate size, prepared, and tested, that discreet sample will be bagged separately, to eliminate inherent variability in splitting the sample and sent to the next lab, either District or HQ, for continued IA testing.

4.2.7 Testing IAC Samples

The IAC sample must be transported/shipped to the laboratory and tested without delay following the method specified in MT 601. Ensure that the testing equipment is calibrated and in good condition before use.

All initial testing should be done between the field, District Lab, and Headquarters lab within 30 calendar days of sample date. If the results are out of tolerance (provided in Table 1 below), all reruns and investigations need to be complete within 30 calendar days of the initial results being reported.

4.2.8 Evaluating IAC Samples

IA sample comparisons will be conducted by the Materials QA Unit. The allowable tolerances for each test method used in the evaluation process are shown in Table 1 below.

Any unsatisfactory results will be reported to the appropriate Laboratory Supervisor to rerun the test, identify the cause, and determine if any corrective action is needed. If a root cause cannot be identified, and the comparison is still outside the allowable tolerance, the Materials QA Unit must be notified within five (5) working days so a follow-up IAC investigation can be initiated to ensure that all equipment was operated correctly and procedures were followed correctly.

Every effort should be made to correct equipment and/or procedural problems immediately. The IAC must be repeated until the problem is corrected, and a satisfactory IAC is obtained. Once a root cause is determined, document the corrective action(s) taken to the respective project file and send a copy to the Inspection Operations Supervisor.

4.2.9 Allowable Tolerances

Department IAC allowable tolerances are provided in the following table.

Table 1. Allowable Tolerances for IACs

Material Category	Test Method	Reference Document	Tolerance
Aggregate	MT 202 Sieve Analysis for Fine and Coarse Aggregate	MT 226	Refer to MT 226 for acceptable deviation
Aggregate Surfacing	MT 202 Sieve Analysis for Fine and Coarse Aggregate	MT 226	Refer to MT 226 for acceptable deviation
Aggregate Surfacing	AASHTO T 89 Determining the Liquid Limit of Soils	N/A	Multi-laboratory results differ by more than 13% of their mean
Aggregate Surfacing	AASHTO T 90 Determining the Plastic Limit and Plasticity Index of Soils	N/A	Multi-laboratory results differ by more than 18% of their mean
Aggregate Surfacing	AASHTO T 335 Determining the Percentage of Fracture in Coarse Aggregate	ASTM D5821	Multi-laboratory results differ by more than 14.7% of their mean

Results of IAC's, including corrective action(s), are recorded in AASHTOWare Project. Tolerances are calculated as follows.

Liquid Limit (AASHTO T 89) Pass/Fail Equation

$$D = \frac{(L1 + L2 + L3)}{N} * 0.13$$

Plastic Limit (AASHTO T 90) Pass/Fail Equation

$$D = \frac{(L1 + L2 + L3)}{N} * 0.18$$

Fracture Test Pass/Fail Equation (AASHTO T 335)

$$D = \frac{(L1 + L2 + L3)}{N} * 0.147$$

Where:
D = Allowable difference between results
L# = Participating labs test result
N = Number of participating labs (will be 2 or 3)

4.3 Independent Assurance Procedural (IAP) Evaluations

4.3.1 Description

IAP evaluations are performed to verify conformance with contract standards and testing criteria through review of test procedures. The IAP will be conducted while the tester is in the process of running normal acceptance testing. The specified procedure must be followed in all cases.

Note – See section 106.01.2(B) Materials Accepted by Department Testing in the Standard Specifications for the order of testing precedence if there is any disagreement as to which test method to use.

4.3.2 Purpose

IAPs are conducted to witness the sampling and testing and to verify that proper procedures are being followed. The calibration and condition of sampling and testing equipment used should be carefully checked. IAPs are conducted on an individual basis systematically.

4.3.3 Frequency

IAP checks should be performed at a minimum of once per calendar year on every individual who performed that specific testing during that calendar year. For example, if John says he did concrete testing on May 12th, he would need a concrete IAP before the end of the year if he hadn't already performed an IAP that calendar year.

4.3.4 Tests Methods

IAP checks are performed on the following materials and test methods.

Table 2. Materials and Test Methods for IAPs

Material Category	MT Test Method	AASHTO Test Method
Asphalt Mixtures and Binder	N/A	AASHTO R 47 Reducing Samples of Asphalt Mixtures to Testing Size
	N/A	AASHTO T 166 Bulk Specific Gravity (Gmb) of Compacted Asphalt Mixtures Using Saturated Surface Dry Specimens
	MT 319 Determining the Asphalt Binder Content of PMS by the Ignition Method	AASHTO T 308 Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method
	MT 320 Mechanical Analysis of Aggregate Recovered from Ignition Oven Burn	AASHTO T 30 Mechanical Analysis of Extracted Aggregate
	MT 321 Determining Theoretical Maximum Specific Gravity of Bituminous Paving Mixtures – “Rice Gravity”	AASHTO T 209 Theoretical Maximum Specific Gravity (Gmm) and Density of Hot Mix Asphalt (HMA) Paving Mixtures
	MT 332 Determining the Percent of Adhesion of Bituminous Materials to Aggregate	AASHTO T 312 Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor
	MT 302 Sampling and Testing Bituminous Materials	AASHTRO R 66 Sampling Asphalt Mixtures
Concrete	N/A	AASHTO R 60 Sampling of Fresh Concrete
	N/A	AASHTO T 152 Air Content of Freshly Mixed Concrete by the Pressure Method
	N/A	AASHTO T 121 Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete
	N/A	AASHTO T 119 Slump of Hydraulic Cement Concrete
	N/A	AASHTO T 309 Temperature of Freshly Mixed Portland Cement Concrete
	MT 101 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field MT 117 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field for Self-Consolidating Concrete (SCC)	AASHTO R 100 Making and Curing Concrete Test Specimens in the Field
Embankment	MT 212 Determination of Moisture and Density of In-Place Materials	AASHTO T 310 In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

4.3.5 Responsibility

IAP evaluations are a joint effort between the District/Area Materials Lab Supervisors, Area Lab Coordinators, District and Area Lab Technicians, and MDT Materials Headquarter personnel. IAP requirements apply to all persons conducting acceptance sampling and testing on behalf of MDT. IAP's must be performed by personnel not normally involved in the acceptance testing of the project.

4.3.6 Unsatisfactory IAP

IAP evaluations that are considered unsatisfactory must be reviewed and investigated as necessary by the appropriate District Materials Supervisor or MDT Materials Headquarter personnel to identify the cause and corrective action needed. Document any corrective action(s) and send a copy to the Inspection Operations Supervisor. Unsatisfactory IAP evaluations should be brought to the attention of the respective Project Manager.

Any of the following situations are typical causes of an unsatisfactory IAP.

- Tester not having proper certification (WAQTC and/or radiation safety) to perform testing
- Improper equipment to conduct sampling and testing
- Equipment improperly calibrated or not in good working condition
- Sampling and testing not conducted according to specified methods
- Reluctance to participate in an IAP (Indicate refusal in the remarks section of the IAP report)

Personnel evaluating the IAP will explain to the tester at the time of testing why the test was unsatisfactory and how it needs to be corrected. At the discretion of the evaluator, the IAP can be repeated one time to achieve a satisfactory IAP. If a satisfactory IAP cannot be achieved due to tester deficiencies, notification and documentation will be provided to the Materials QA Unit. Additional training may be provided and a follow-up IAP conducted. If the follow-up IAP is unsatisfactory, revocation of certification may be required.

4.3.7 Reporting

Results of IAP's, including corrective action(s), are recorded in AASHTOWare Project.

4.4 Laboratory Proficiency Sample Program

4.4.1 Description

The laboratory proficiency sample program is a tool used to monitor the quality of the District/Area laboratories and the Materials Headquarters laboratory.

4.4.2 Purpose

The purpose is to assess laboratories by comparing test results to a large body of results performed on the same material. Demonstrating quality test results through the proficiency sample program reduces the risk of disputes due to errors. The program also provides laboratories with the means to check both the testing apparatus and the operator under actual testing conditions.

4.4.3 Frequency

Proficiency samples are distributed to participants at least once per year; some proficiency samples are distributed more often. External proficiency samples will come as pairs and internal proficiency samples will come as individual samples, unless otherwise stated. When testing is complete, laboratories submit their testing results for analysis in accordance with Section 4.4.6 Reporting.

4.4.4 Tests Methods

Proficiency tests are performed on the following procedures.

External (All Labs)

AASTHO T 11	Materials Finer Than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
AASTHO T 27	Sieve Analysis of Fine and Coarse Aggregate
AASHTO T 84	Specific Gravity and Absorption of Fine Aggregate
AASHTO T 85	Specific Gravity and Absorption of Coarse Aggregate
AASHTO T 89	Determining the Liquid Limit of Soils
AASHTO T 90	Determining the Plastic Limit & Plasticity Index of Soils
AASHTO T 99	Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and 305-mm (12-in.) Drop
AASHTO T 176	Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
AASHTO T 180	Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and 457-mm (18-in.) Drop

External (Headquarters ONLY)

AASHTO T 30	Mechanical Analysis of Extracted Aggregate
AASHTO T 166	Bulk Specific Gravity (G_{mb}) of Compacted Asphalt Mixtures UsingSaturated Surface-Dry Specimens
AASHTO T 209	Theoretical Maximum Specific Gravity (G_{mm}) and Density of Asphalt Mixtures
AASHTO T 308	Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
AASHTO T 312	Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor

Internal (All Labs)

AASHTO T 166	Bulk Specific Gravity (G_{mb}) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens
AASHTO T 209	Theoretical Maximum Specific Gravity (G_{mm}) and Density of Asphalt Mixtures
AASHTO T 312	Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor
AASHTO T 308	Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method
AASHTO T 30	Mechanical Analysis of Extracted Aggregate
AASHTO T 335	Determining the Percentage of Fracture in Coarse Aggregate
AASHTO T 89	Determining the Liquid Limit of Soils
AASHTO T 90	Determining the Plastic Limit & Plasticity Index of Soils

4.4.5 Responsibility

The Materials QA Unit is responsible for composition, distribution, analysis, and reporting of internal proficiency samples. AASHTO re:source provides and is responsible for external proficiency samples.

4.4.6 Reporting

For internal proficiency samples, when an individual laboratory completes the proficiency sample testing, the technician reports results to the Materials QA Unit. Results from all laboratories are then compiled and reports are distributed to each individual laboratory. If corrective actions are required due to a deficient result, a notification will be sent out by the Materials QA Unit with an additional sample to be analyzed for proficiency. If results are still deficient, a member of the Materials QA Unit will travel to the laboratory to inspect the personnel performing the procedure to help identify any corrective actions.

Results for external proficiency samples are reported to AASHTO re:source. AASHTO re:source then evaluates and issues a final report.

4.4.7 Tolerance

For each laboratory and sample, a Z score is determined. The Z score, or standard score, indicates how many standard deviations a test result is from the average. Any Z Score below a 3 will require corrective action. If any laboratory fails an analysis twice in a row, the QA Unit will travel to that laboratory to investigate the equipment and procedures to determine any root cause for the failures. Random procedural checks may be performed throughout the year within all laboratories to verify procedures and corrective actions are continuing to be followed.

4.5 Laboratory and Equipment Calibrations

4.5.1 Description

As part of MDT's 23 CFR § 209 mandated Central Laboratory accreditation, AASHTO re:source,conducts on-site assessments of MDT Materials Headquarters Laboratories and the Materials QA Unit conducts annual inspections on District, Area, and MDT Materials Headquarters Laboratories and equipment used for acceptance testing.

4.5.2 Purpose

Laboratory and equipment inspections are performed to demonstrate competency in the performance of specific test procedures and the testing equipment is within the relevant procedural requirements.

4.5.3 Frequency

Equipment and procedural inspections are performed annually.

4.5.4 Responsibility

Equipment calibrations and verifications are a joint effort between the Materials QA Unit and MDT Materials Laboratory Supervisors (Headquarters, District, and Area).

4.5.5 Reporting

Procedures observed by the Materials QA Unit personnel are entered into AASHTOWare Project or the Materials Bureau's Quality Management System software (R18LabQMS). An electronic file is saved to the network for the Material Laboratory Supervisors to access.

Equipment calibrations and verifications are entered into AASHTOWare or R18LabQMS by the applicable Materials Laboratory Supervisor or a designated representative. Each laboratory is responsible for maintaining up to date calibration/verification of testing equipment. An equipment status report may be generated by AASHTOWare or R18LabQMS.

5 FINAL RECORD (FR)

5.1 Description

FR samples are physical comparisons between design plan dimensions and those actually achieved during construction.

5.2 Purpose

FR core samples are taken and analyzed for the following purposes.

- To determine the adequacy of pavement thickness and other construction requirements. These samples are taken to verify conformity with plans and specification requirements applicable to the completed construction.
- To furnish information relative to the amounts of change in properties of the material used in the work. FR samples and tests are for physical research purposes to ascertain the need and basis for possible improvements in future designs and specifications.
- To determine if corrective measures may be necessary. FR samples and tests serve to indicate whether

previously unknown or unsuspected conditions may exist on the project that may have a detrimental effect on the completed construction.

5.3 Frequency of Sampling

The frequency of FR samples is provided in MT 601.

5.4 Responsibility

Samples must be witnessed by or under the direct supervision of the District/Area Lab Supervisor or their designated representative and must not be scheduled on such an inflexible and regular routine that its frequency can be predicted. Sufficient samples must be submitted to satisfy the frequency intended.

5.5 Sampling and Testing

FR samples are taken at random per MT 606 from completed construction work or completed portions thereof.

FR samples should be taken at each individual stage of the construction work as it is completed and before it is covered or disturbed by a subsequent construction stage. This minimizes damage to finished work and facilitates the satisfactory procurement of samples. FR core sample locations will be referenced to centerline.

Whenever test results indicate that significant changes have occurred (because of processing, contamination, or other reasons, after the materials were incorporated into the construction), these changes should be reported with an explanation.

5.6 Reporting

Results of FR samples including corrective action(s) are recorded in AASHTOWare Project.

METHODS OF SAMPLING AND TESTING
MT 603-16
DEFINITIONS

1. SOIL ENGINEERING TERMS

Dust Ratio – The ratio of the portion passing the 200 mesh sieve to the portion passing the 40-mesh sieve and shall be no greater than two-thirds.

Degradation Value – A specification set for each project using aggregate and is defined as a value from 100 to 0 indicating the quality of fines produced by self-abrasion of aggregate in the presence of water. (100 is superior and below 35 is poor).

Gradation – A term used to describe the range and the relative distribution of particle sizes in a material.

Well-graded soils – Those soils, which have a good representation of all particle sizes from the largest to the smallest but with a very small percentage of fines.

Poorly-graded soils – Those soils in which the range of particle sizes is very small or soils having a deficiency in some of the intermediate sizes or soils containing excessive fines.

Liquid Limit – The moisture content, which is the boundary between the liquid and plastic states for the minus No. 40 fraction of a soil. For laboratory purposes it may be defined as the moisture content at which that soil fraction will close a standard groove for a length of 1/2 inch when subjected to 25 blows in a liquid limit device.

Moisture Content – The weight of water in a given soil mass divided by the oven dry weight of the soil and is expressed in percent.

Optimum Moisture – The moisture content, which will permit maximum-dry-unit weight to be obtained for a given comp active effort.

Plastic Limit – The moisture content, which is the boundary between the plastic and semi-solid states for the minus No. 40 fraction of the soil. For laboratory purposes, it may be defined as the minimum moisture content at which the soil fraction can be rolled into a thread 1/8 inch in diameter without crumbling.

Plastic Index – The numerical difference between the moisture content of the Liquid Limit and the moisture content of the Plastic Limit.

R-Value – The resistance value (R-value) test is a material stiffness test. The test procedure expresses a materials resistance to deformation as a function of the ratio of transmitted lateral pressure to applied vertical pressure. R-value is expressed as a numerical value from 0 to 100 with 0 being easily deformed by light loads. R-value, along with traffic volumes, are used in the pavement design process to determine the proper surfacing structure for a given project.

Wear Value – A specification set for each project using aggregate and is defined as the percentage of dry weight lost during the abrasion of coarse aggregate in a Los Angeles Machine with an abrasive charge.

2. DENSITY

Absolute (of solids and liquids) – The mass of a unit volume of a material at a specified temperature (grams per milliliter, grams per cubic centimeter, pounds per cubic foot, etc. at x temperature).

Absolute (of gases) – The mass of a unit volume of a gas at a stated temperature and pressure (grams per milliliter, grams per cubic centimeter, pounds per cubic foot, etc. at x temperature, y pressure).

Apparent (of solids and liquids) – The weight in air of a unit volume of a material at a specified temperature.

Bulk (of solids) – The weight in air of a unit volume of a permeable material (including both permeable and impermeable voids normal to the material) at a stated temperature.

3. SPECIFIC GRAVITY TERMS

Absolute – The ratio of the weight of a given volume of solids to the weight of an equal volume of water at a stated temperature.

Apparent – The ratio of the weight of a given volume of impermeable material (the solid matter including impermeable pores) to the weight of an equal volume of water.

Bulk – The ratio of the weight of a given volume of permeable material (including both permeable and impermeable voids) to the weight of an equal volume of water.

Permeability – A measure of the facility of a soil to transmit liquids, largely dependent upon grain size distribution.

"Rice" Gravity – Defined as the maximum specific gravity (absolute) of the uncompacted bituminous mixture.

4. HIGHWAY TERMS

Base – Foundation for pavement.

Base Course – A term used to include the layers of relatively high quality materials placed above the sub-grade as a stress distribution medium to insure that the stress induced in the sub-grade will not exceed its strength.

Binder Course – The course, in sheet asphalt and bituminous concrete pavements, placed between base and surface courses.

Bleeding – The upward migration of bituminous material resulting in a film of bitumen on the surface.

Blow-Up – Localized buckling or shattering of rigid pavement caused by excessive longitudinal pressure.

Cement Treated Base (CTB) – A mixture of a well graded aggregate and measured amounts of Portland cement and water, compacted to a high density to provide a durable base for paving.

Construction Joint – The vertical or notched plane of separation in pavement.

Contraction Joint – A full depth or weakened plane type joint designed to establish the position of any crack caused by contraction while providing no space for expansion of the pavement beyond its original length.

Corrugations – The regular transverse undulations in a pavement surface consisting of alternate valleys and crests.

Cracks – The approximately vertical cleavage due to natural causes or traffic action.

Crazing – A pattern of cracking extending only through the surface layer, a result of more drying shrinkage in the surface than the interior of plastic concrete.

"D" Lines – Disintegration characterized by successive formation of a series of fine cracks at rather close intervals paralleling edges, joints and cracks and usually curving across slab corners, initial cracks forming very close to slab edges and additional cracks progressively developing, ordinarily filled with calcareous deposits.

Disintegration – Deterioration into small fragments from any cause.

Distortion – Any deviation of pavement surface from the original shape.

Expansion Joints – A joint permitting the pavement to expand in length.

Faulting – The differential vertical displacement of slabs adjacent to joints or cracks.

Flecking – The dislodgement of a thin film of mortar from the outermost portion of occasional coarse aggregate particles on concrete surfaces, generally attributable to lack of bond between mortar and aggregate.

Flexible Base and Pavements – A bituminous pavement consisting of a well-graded aggregate combined with asphalt cement and with sufficiently low bending resistance to maintain intimate contact with the underlying structure and to distribute loads to the foundation by aggregate interlock, particle friction, or surface tension. Principle elements of flexible pavements are wearing surface, base, sub-base and sub-grades.

Frost Heave – The lifting and distortion of a surface due to internal action of frost resulting from subsurface ice formation; affects soil, rock, pavement, and other structures.

Joints – Constructed junctions between adjacent sections of pavement or between pavement and structures.

Leveling Course – A course of variable thickness constructed immediately on top of base material or existing pavement to remove large irregularities prior to super-imposed treatment or construction. (Binder course may function as leveling course and be called Binder course, Leveling course or Binder-Leveling course).

Longitudinal Joint – Either a full depth or weakened-plane type joint constructed parallel to or along the centerline to control longitudinal cracking.

Map Cracking – Disintegration in which cracking of the slab surface develops in a random pattern; may develop over the entire surface or localized areas.

Pitting – The displacement of aggregate particles from the pavement surface due to the action of traffic or disintegration, without major displacement of cementing material.

Plane of Failure – The depth at which the voids in the wheel path and/or between the wheel path are comparable to the voids in the passing lane.

Progressive Scale – Concrete disintegration that at first appears as surface scaling but gradually progresses deeper.

Pumping – Displacement and ejection of water and suspended fine particles at joints, cracks and edges.

Raveling – The progressive disintegration of aggregate particles, by dislodgement, from the surface downward or edges inward.

Resurfacing – Supplemental surface placed on existing pavement to improve surface conformation or increase strength.

Rigid base and Pavements – A term applied to that type of pavement that is constructed with Portland Cement Concrete. Those, which due to high bending resistance, distribute loads to foundations over comparatively large areas.

Rutting – The formation of longitudinal depressions by wheel tracking.

Scaling – The peeling away of the surface of Portland Cement Concrete.

Scratch or Wedge Course – A course, separate from the binder course, placed on the base to overcome deficiencies as lack of or too much crown, or to adjust grade or super-elevation.

Settlement – The reduction in elevation of short sections of pavement or structures.

Shoving – The displacement of bituminous pavement due to the action of traffic, generally resulting in bulging of the surface.

Shoulder – A portion of the roadbed between the traffic lane and the top of the ditch in cuts and the top of the slope in embankments.

Spalling – The breaking or chipping of rigid pavement at joints, cracks or edges, usually resulting in fragments with feather edges.

Stripping – The separation of asphalt from aggregate particles due to the presence of moisture in asphalt pavements.

Sub-base – Specified or select material, of a planned thickness, placed as a foundation for pavement.

Subgrade – The material in cuts, fills and fill foundations immediately below the first layer of sub-base, base ore pavement.

Subsealing or Undersealing – The placing of waterproof material under existing pavement to prevent the vertical flow of water or suspended solids that fill the voids under pavement.

Surface Course – The top course of a pavement providing a surface resistant to traffic abrasion or imparting structural value to pavement.

Surface Scale – A peeling away of the surface mortar of Portland Cement Concrete exposing sound concrete, even though the scale extends into the mortar surrounding coarse aggregate.

Surface Texture – The surface character of pavement that depends on size, shape, arrangement and distribution of aggregates and cement or binder.

Thrust – The pressure exerted by a rigid pavement against other pavements or structures.

Warping – The deviation of pavement surface from its original shape caused by temperature and moisture differentials within the slab.

Warping Joints – A joint permitting then warping of pavement slabs when moisture and temperature differentials occur in pavement, i.e., longitudinal or transverse joints with bonded steel or tie bars passing through them.

5. CONCRETE TERMS

Admixtures – Materials other than cement, aggregate and water in concrete used or entrain air, retard setting or accelerate setting.

Anchorage – That portion of a reinforcing bar, and any attachment thereto, designed to resist pulling out or slipping of the bar when subjected to stress.

Bleeding – The natural separation of a liquid from a liquid-solid or semisolid mixture; for example, water from freshly poured concrete.

Consistency – The degree of solidity or fluidity of freshly mixed concrete and commonly described as slump.

Curing Period – A period provided to prevent the formation of surface cracks due to the rapid loss of water while the concrete is plastic and to ensure attainment of the specified strength.

Fineness Modulus – The fineness modulus (FM) is an index of the fineness of an aggregate – the higher the FM, the coarser the aggregate. FM is the summation of the cumulative percentages of the material retained on the standard sieves divided by 100.

Honeycomb – A surface or interior defect in a concrete mass characterized by the lack of mortar between the coarse aggregate particles.

Laitance – Weak material, consisting principally of lime, which is formed on the surface of concrete, especially when excess water is mixed with the cement.

Saturated Surface Dry – A term used to describe the condition of an aggregate in which the pores of all the particles are completely filled with water, but their surfaces are free from moisture.

Slump – A measure of concrete consistency.

Yield – The cubic feet of concrete produced per sack of cement.

6. ASPHALT TERMS

Asphalt Cement – Fluxed or un-fluxed asphalt especially prepared for use in making bituminous pavements.

Batch – The quantity of mix discharged from the mixer in one complete operation of the plant before additional materials are introduced.

Bleeding – The presence of an excessive amount of asphalt on the surface due to either to an excessive amount of prime or tack coats or excessive asphalt in the mix.

C-Factor – Determined by the change in viscosity of asphalt cement during the mixing process relative to that during the Thin-Film Oven test and is used to determine whether incomplete combustion of or contamination by burner fuel is causing or could cause asphalt concrete pavement tenderness.

Cutback Asphalt – Asphalt cement that has been rendered liquid by fluxing with a petroleum distillate. (includes: RCs – Rapid Curing; MCs – Medium Curing; SCs – Slow Curing.)

Emulsion – An emulsion of asphalt cement and water with a small quantity of an emulsifying agent.

Prime Coat – The initial application of low viscosity liquid asphalt to an absorbent base prior to placing asphalt concrete.

Tack Coat – A thin layer of bitumen, road tar, or emulsion laid on a road to enhance adhesion of the course above it.

7. ASPHALT MIX DESIGN TERMS

Volume Swell – The increase in volume of compacted aggregate, soil, sand, or a combination of aggregates passing the 10 mesh sieve (2.0 mm) and stabilized with bituminous material, when soaked in water for a standard length of time.

Acceptance Samples and Tests – These are samples taken and tests made to ascertain on a day-to-day basis whether the quality of the materials being incorporated or proposed for incorporation into the construction conform to the plans and specifications.

Air Voids – The total volume of the small pockets of air between the coated aggregate particles throughout a compacted paving mixture, expressed as a percent of the bulk volume of the compacted paving mixture.

Anti-Rutting Specification – Defined as a series of specifications to reduce rutting. It requires a minimum of 70% mechanical fracture on at least one face of the 4 mesh fraction of material, revised aggregate gradation specification to conform to maximum density gradation curve. It allows a 1.05 pay factor as an incentive to stay closer to maximum density line and maintain greater uniformity. The temperature of the mix upon discharge from all mixers including drum dryers id specified in the mix design memorandum. Also, a Quality Assurance Plan is required.

Coarse Aggregate Angularity – The percentage (by mass) of aggregates larger than 4 mesh (4.75 mm) with one or more fractured faces.

Final Record Samples and Tests – These samples and tests are taken at random from completed construction work or completed portions thereof. They are to provide an independent spot-check of the adequacy and the effectiveness of the results obtained in Acceptance sampling and testing and to supplement theses test results.

Fine Aggregate Angularity – The percent air voids present in loosely compacted aggregates smaller than No. 8 mesh (2.36 mm).

Flat and Elongated Particles – The percentage (by mass) of coarse aggregates that have a maximum to minimum dimension ratio greater than 5.

Immersion Compression – A method for measuring the loss of cohesion resulting from the action of water on compacted bituminous mixtures containing penetration graded asphalts.

Independent Assurance Samples and Tests – These are samples taken and tests made to provide an independent spot check of the adequacy and effectiveness of the results obtained in Acceptance sampling and testing and to supplement these test results. The samples are split in the field either into two or three portions that are tested by the field, district, or area, and the Materials Bureau in the case of a three-way split. These test results are used to compare testing procedures between the three laboratories.

Marshall Method of Asphalt Mix Design – A method that uses the measurement of resistance to plastic flow of cylindrical specimens of bituminous paving mixtures loaded on the lateral surface by means of the Marshall apparatus to achieve the following characteristics; sufficient asphalt, sufficient mix stability, sufficient voids and sufficient workability.

Marshall Stability – The stability measured during loading in the Marshall apparatus and is used to determine whether the compacted bituminous mixture will satisfy the demands of traffic without distortion or displacement.

Marshall Flow – The lateral deformation of the specimen at the point of maximum stability during loading in the Marshall apparatus, measured in hundredths of an inch and recorded as a whole number (0.15 inches becomes 15).

Quality Assurance – Defined as a contractual method used to monitor the quality of material incorporated into Plant Mix Surfacing and Portland Cement Concrete Pavement, and in the case of Plant Mix Surfacing, the density of the finished pavement. This is achieved by random sampling and or testing of contractor produced materials that will be used to establish price adjustments on a statistical basis.

Sand Equivalent (Clay Content) – Clay content is the percentage of clay material contained in the aggregate fraction that is finer than a 4 mesh (4.75 mm) sieve.

Superpave™ – Superior Performing Asphalt Pavements incorporates performance-based, asphalt materials characterization with the design environmental conditions to improve performance by controlling rutting, low temperature cracking and fatigue cracking.

Voids in the Mineral Aggregate (VMA) – The volume of intergranular void space between the aggregate particles of a compacted paving mixture that includes the air voids and the effective asphalt content, expressed as a percent of the total volume of the sample.

Voids Filled with Asphalt (VFA) – The percentage portion of the volume of intergranular void space between the aggregate particles that is occupied by the effective asphalt.

8. ACRONYMS

The following are some of the more common symbols used in highway construction:

AASHTO	American Association of State Highway and Transportation Officials
AC	Asphalt Cement
ASTM	American Society for Testing Materials
BST	Bituminous Surface Treatment
BTB	Bituminous Treated Base
CAPAC	Corrugated Aluminum Pipe Arch Culvert
CAPC	Corrugated Aluminum Pipe Culvert
CSPAC	Corrugated Steel Pipe Arch Culvert
CSPC	Corrugated Steel Pipe Culvert
CTB	Cement Treated Base
FHPM	Federal-aid Highway Program Manual
FM	Fineness Modulus
FR	Final Record
HMA	Hot Mix Asphalt
IA	Independent Assurance
LTB	Lime Treated Base
MT	Montana Test
PC	Portland Cement
PCCP	Portland Cement Concrete Pavement
PG	Performance Grade
PMB	Plant Mix Base
PMS	Plant Mix Surfacing
PSI	Pounds Per Square Inch
QA	Quality Assurance
RCPAC	Reinforced Concrete Pipe Arch Culvert
RCPC	Reinforced Concrete Pipe Culvert
RMS	Road Mix Surfacing
SC	Seal Coat
SG	Specific Gravity
SPPAC	Structural (Sectional) Plate Pipe Arch Culvert
SPPC	Structural (Sectional) Plate Pipe Culvert

METHODS OF SAMPLING AND TESTING
MT 604-04
CONVERSION TABLES

Water		
7.5 gal. water	=	1 cu. ft.
1 cu. ft. water	=	62.4 lbs.
3785 cc water	=	1 gal.
8.32 lbs. Water @ 25°c	=	1 gal.
231 cu. in. water	=	1 gal.
1728 cu. in. water	=	1 cu. ft.

Volume Measurements		
1 cu. in.	=	0.000579 cu. ft.
1 cu. ft.	=	1728 cu. in.
1 cu. yd.	=	27 cu. ft.
1 cu. meter	=	35.31445 cu. ft.
1 cu. centimeter	=	0.0000353 cu. ft.

Weight Measurements				
1 oz.	=	28.35 grams		
1 lb.	=	453.59 grams	=	0.454 kilograms
1 oz.	=	0.0625 lbs.		
1 lb.	=	16 oz.		
1 kilogram	=	2.2 lb.	=	1000 grams

Length Measurements					Area		
1 in.	=	0.0833 ft.	=	2.54 cm.	Circle	=	3.1416 * R^2
1 yd.	=	3 ft.	=	36 in.	1 sq. mile	=	640 acres
1 rod	=	16.5 ft.	=	198 in.	1 acre	=	43560 sq. ft.
1 chain	=	66 ft.	=	792 in.	1 sq. yd.	=	9 sq. ft.
1 mile	=	5280 ft.	=	1760 yd.	1 sq. yd.	=	1296 sq. in.
1 cm	=	0.032808 ft.	=	0.3937 in.	1 sq. ft.	=	144 sq. in.

Estimated Equivalents		
1 cu. ft. concrete	=	150 lbs.
1 cu. ft. clay, undisturbed	=	110 lbs. dry; 135 lbs. wet
1 cu. ft. sand	=	100 lbs. loose; 115 lbs. consolidated
1 cu. yd. compacted clay	=	3500 lbs. (wet weight)
1 cu.yd. compacted stabilized gravel	=	3800 lbs.

cu. yds. * 1.9 = tons compacted stabilized gravel
1 mile * 1 ft. * 1 in. compacted stabilized gravel = 30.8 tons

Miscellaneous

Multiply	by	To obtain
ft. per second	0.68182	miles per hour
miles per hour	88	feet per min.
pounds of water per min.	0.016021	cu. ft. per min.
cu. ft. per min.	0.12468	gal. per second

METHODS OF SAMPLING AND TESTING
MT 606-04
PROCEDURE FOR SELECTING SAMPLING LOCATIONS BY RANDOM SAMPLING TECHNIQUE

1 Scope

1.1 The following is a method of selecting sampling locations of various materials from roadways and trucks hauling asphalt mixture.

2 Definitions

2.1 *Lot* – a quantity of material that one desires to control. It may represent a day's production, a specified tonnage, a specified number of truckloads, a specified time period during production.

2.2 *Sample* – a segment of a lot chosen to represent the total lot. It may represent any number of sub-samples.

2.3 *Sub-sample* – a segment of a sample, taken from a unit of the lot, i.e., specified ton, a specified time, a specified truckload.

2.4 *Sample Unit* – a portion of sub-sample taken from a unit of a lot and combined with one or more other sample units to make up a sub-sample.

3 Selecting Sampling Locations from Roadways

3.1 Table X-1 provided below contains random numbers for the general sampling procedures. To use this table for selecting locations for collecting samples, the following steps are necessary.

3.1.1 Determine the number of sampling locations within a section by selecting the maximum average longitudinal distance desired between samples and dividing the length of the section by the maximum average longitudinal distance.

3.1.2 Select a column of random numbers in Table X-1 by placing 28 one inch square pieces of cardboard, numbered 1 thru 28, into a container, shaking them to get them thoroughly mixed, and drawing out one.

3.1.3 Go to the column of Random Numbers identified with the number drawn from the container. In sub-column A, locate all numbers equal to and less than the number of sampling locations desired.

3.1.4 Multiply the total length of the section by the decimal values in sub-column B, found opposite the numbers located in sub-column A. Add the results to the station number at the beginning of the section to obtain the station of the sampling location.

3.1.5 Multiply the total width of the pavement in the section by the decimal values found in sub-column C, opposite the numbers in sub-column A, to obtain the offset distance from the left edge of the pavement to the sampling location.

4 Example

4.1 Given: A completed plant mix surfacing project, 24 feet wide, 16,500 feet long, running from Station 100+00 to 265+00.

4.1.1 For sampling purposes it is desired to take one pavement core for each 2-lane mile. The number of sampling locations for this section, then are:

$$\frac{16{,}500}{5{,}280} = 3.1 = 3\ locations$$

4.1.2 The number 16 drawn from a container identifies this column of random numbers in Table X-1 to use.

4.1.3 The numbers selected from column 16 are:

Col. A	Col. B	Col. C
3	0.548	0.688
2	0.739	0.298
1	0.331	0.925

4.1.4 Station number of sampling location:

Length of Section, Feet	X	Col. B	=	Distance from Beginning of Section, Feet	+	Station at Beginning of section	=	Station Number of Sampling Location
16,500		0.548		9042		100+00		190+42
16,500		0.739		12190		100+00		221+90
26,500		0.331		546		100+00		105+46

4.1.5 Offset distance from left edge of pavement to sampling location, feet.

Width of Pavement, Feet	X	Col. C	=	Offset Distance From Left Edge of Pavement to Sampling Location, Feet
24		0.688		16.5
24		0.298		7.2
24		0.925		22.2

4.1.6 Sampling locations are:

Station Number	Distance From Left Edge, Feet
190+42	16.5
221+90	7.2
105+46	22.2

5 Selecting Sampling Locations in Trucks Hauling Asphalt Mixture

5.1 In this procedure, the following steps are necessary to select the sampling locations.

5.1.1 Select lot size--it can be time (hours), an average day's production (tons), a selected tonnage [example: 2,000 tons (1815 mg)] or a selected number of truckloads. (A lot size of a day's production is recommended for this procedure as being convenient and easy to randomize.)

5.1.2 Select the number of samples desired per lot. One sample per lot, made up of four sub-samples, is the minimum recommended.

5.1.3 Select the number of locations in each truckload from which sampling units of asphalt mixtures will be taken to combine into one sub-sample. Two sampling units per sub-sample are recommended.

5.1.4 Assign each truckload of mixture in the lot a number, beginning with 1 for the first truckload and number them successively to the highest number in the lot. Find the truckload numbers for sampling by the following procedure:

5.1.4.1 Place consecutively numbered [1 through _____ one-inch (25 mm)] square pieces of cardboard, equal to the number of truckloads in the lot, into a container (such as a bowl). Mix them thoroughly before each drawing.

5.1.4.2 Draw a number of cardboard squares from the container equal to the number of sub-samples desired for the lot. The numerals on the cardboard squares will be the truckloads to be sampled.

5.1.5 Choose for each sub-sample desired the location in the truckload for each of the sampling units. Use the following steps.

5.1.5.1 Divide the truck beds into equal quadrants and number them 1 through 4 in any order desired.

5.1.5.2 Place four consecutively numbered [1 through 4, one-inch (25 mm)] square pieces of cardboard into a container (such as a bowl). Mix them thoroughly before each drawing.

5.1.5.3 Draw out an amount of cardboard squares equal to the number of sample units desired. The numerals on each square drawn represent the quadrants from which the sample will be taken. Replace the cardboard squares and repeat this step for each sample unit of each sub-sample to be taken.

Note – The principle involved may be applied to any other type of sampling of various materials which use the measurements of time, quantity, depth or other distinctive measurements of a construction phase. There are other random methods such as using a watch or deck of cards that are readily adaptable to obtaining roadway samples and they may be used provided the full benefit of obtaining random samples is accomplished.

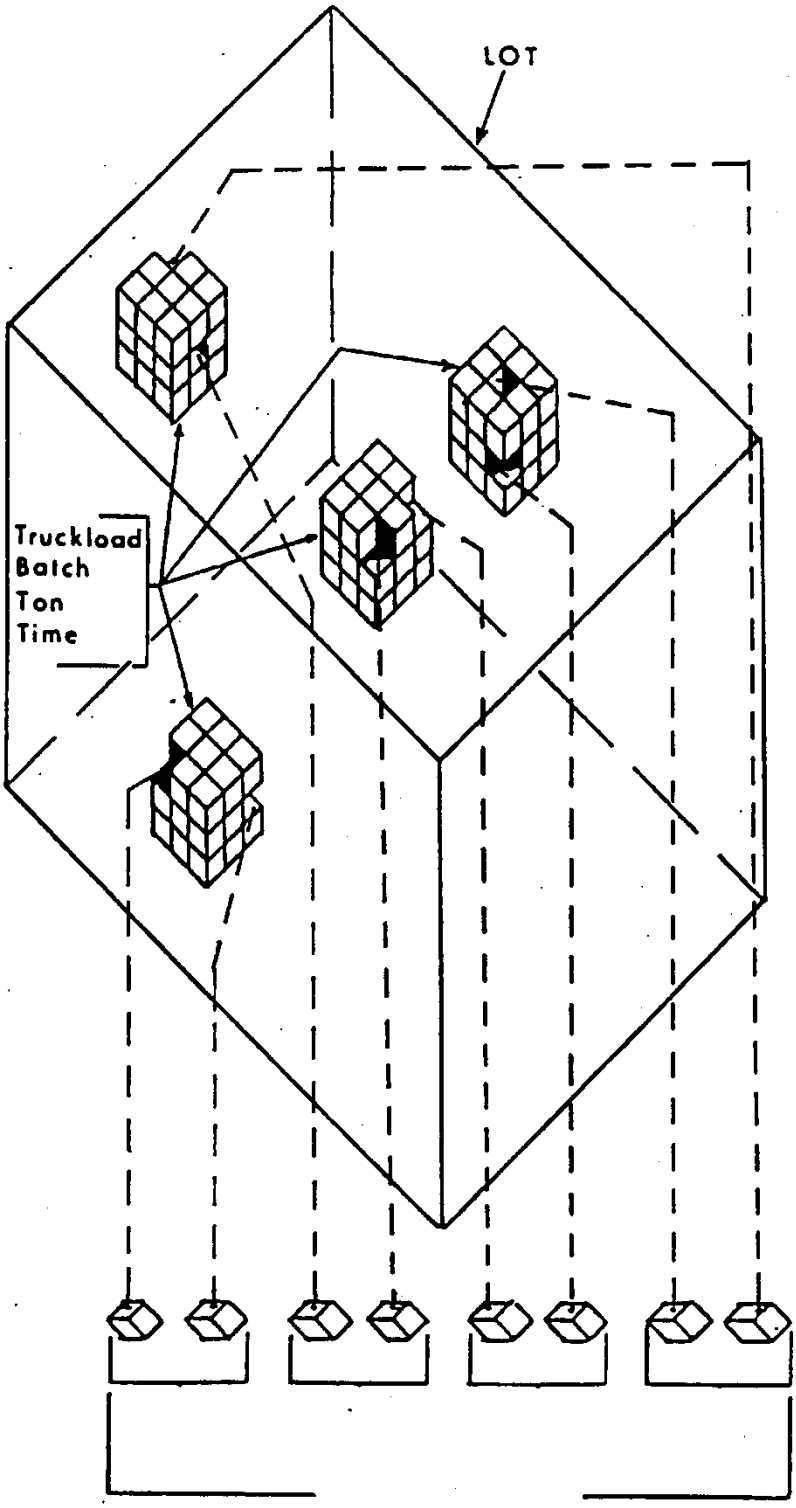

FIGURE 1—Schematic diagram illustrating *Lot, Sample, Subsample, and Sample Unit.*

TABLE X–1–RANDOM NUMBERS FOR GENERAL SAMPLING PROCEDURE

Col. No. 1			Col. No. 2			Col. No. 3			Col. No. 4			Col. No. 5			Col. No. 6			Col. No. 7		
A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
15	.033	.576	05	.048	.879	21	.013	.220	18	.089	.716	17	.024	.863	30	.030	.901	12	.029	.386
21	.101	.300	17	.074	.156	30	.036	.853	10	.102	.330	24	.060	.032	21	.096	.198	18	.112	.284
23	.129	.916	18	.102	.191	10	.052	.746	14	.111	.925	26	.074	.639	10	.100	.161	20	.114	.848
30	.158	.434	06	.105	.257	25	.061	.954	28	.127	.840	07	.167	.512	29	.133	.388	03	.121	.656
24	.177	.397	28	.179	.447	29	.062	.507	24	.132	.271	28	.194	.776	24	.138	.062	13	.178	.640
11	.202	.271	26	.187	.844	18	.087	.887	19	.285	.899	03	.219	.166	20	.168	.564	22	.209	.421
16	.204	.012	04	.188	.482	24	.105	.849	01	.326	.037	29	.264	.284	22	.232	.953	16	.221	.311
08	.208	.418	02	.208	.577	07	.139	.159	30	.334	.938	11	.282	.262	14	.259	.217	29	.235	.356
19	.211	.798	03	.214	.402	01	.175	.641	22	.405	.295	14	.379	.994	01	.275	.195	28	.264	.941
29	.233	.070	07	.245	.080	23	.196	.873	05	.421	.282	13	.394	.405	06	.277	.475	11	.287	.199
07	.260	.073	15	.248	.831	26	.240	.981	13	.451	.212	06	.410	.157	02	.296	.497	02	.336	.992
17	.262	.308	29	.261	.087	14	.255	.374	02	.461	.023	15	.438	.700	26	.311	.144	15	.393	.488
25	.271	.180	30	.302	.883	06	.310	.043	06	.487	.539	22	.453	.635	05	.351	.141	19	.437	.655
06	.302	.672	21	.318	.088	11	.316	.653	08	.497	.396	21	.472	.824	17	.370	.811	24	.466	.773
01	.409	.406	11	.376	.936	13	.324	.585	25	.503	.893	05	.488	.118	09	.388	.484	14	.531	.014
13	.507	.693	14	.430	.814	12	.351	.275	15	.594	.603	01	.525	.222	04	.410	.073	09	.562	.678
02	.575	.654	27	.438	.676	20	.371	.535	27	.620	.894	12	.561	.980	25	.471	.530	06	.601	.675
18	.591	.318	08	.467	.205	08	.409	.495	21	.629	.841	08	.652	.508	13	.486	.779	10	.612	.859
20	.610	.821	09	.474	.138	16	.445	.740	17	.691	.583	18	.668	.271	15	.515	.867	26	.673	.112
12	.631	.597	10	.492	.474	03	.494	.929	09	.708	.689	30	.736	.634	23	.567	.798	23	.738	.770
27	.651	.281	13	.499	.892	27	.543	.387	07	.709	.012	02	.763	.253	11	.618	.502	21	.753	.614
04	.661	.953	19	.511	.520	17	.625	.171	11	.714	.049	23	.804	.140	28	.636	.148	30	.758	.851
22	.692	.089	23	.591	.770	02	.699	.073	23	.720	.695	25	.828	.425	27	.650	.741	27	.765	.563
05	.779	.346	20	.604	.730	19	.702	.934	03	.748	.413	10	.843	.627	16	.711	.508	07	.780	.534
09	.787	.173	24	.654	.330	22	.816	.802	20	.781	.603	16	.858	.849	19	.778	.812	04	.818	.187
10	.818	.837	12	.728	.523	04	.838	.166	26	.830	.384	04	.903	.327	07	.804	.675	17	.837	.353
14	.895	.631	16	.753	.344	15	.904	.116	04	.843	.002	09	.912	.382	08	.806	.952	05	.854	.818
26	.912	.376	01	.806	.134	28	.969	.742	12	.884	.582	27	.935	.162	18	.841	.414	01	.867	.133
28	.920	.163	22	.878	.884	09	.974	.046	29	.926	.700	20	.970	.582	12	.918	.114	08	.915	.538
03	.945	.140	25	.939	.162	05	.977	.494	16	.951	.601	19	.973	.327	03	.992	.399	25	.975	.584

(Continued) TABLE X—1—RANDOM NUMBERS FOR GENERAL SAMPLING PROCEDURE

Col. No. 8			Col. No. 9			Col. No. 10			Col. No. 11			Col. No. 12			Col. No. 13			Col. No. 14		
A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
09	.042	.071	14	.061	.935	26	.038	.023	27	.074	.779	16	.073	.987	03	.033	.091	26	.035	.175
17	.141	.411	02	.065	.097	30	.066	.371	06	.084	.396	23	.078	.056	07	.047	.391	17	.089	.363
02	.143	.221	03	.094	.228	27	.073	.876	24	.098	.524	17	.096	.076	28	.064	.113	10	.149	.681
05	.162	.899	16	.122	.945	09	.095	.568	10	.133	.919	04	.153	.163	12	.066	.360	28	.238	.075
03	.285	.016	18	.158	.430	05	.180	.741	15	.187	.079	10	.254	.834	26	.076	.552	13	.244	.767
28	.291	.034	25	.193	.469	12	.200	.831	17	.227	.767	06	.284	.628	30	.087	.101	24	.262	.366
08	.369	.557	24	.224	.572	13	.259	.327	20	.236	.571	12	.305	.616	02	.127	.187	08	.264	.651
01	.436	.386	10	.225	.223	21	.264	.681	01	.245	.988	25	.319	.901	06	.144	.068	18	.285	.311
20	.450	.289	09	.233	.838	17	.283	.645	04	.317	.291	01	.320	.212	25	.202	.674	02	.340	.131
18	.455	.789	20	.290	.120	23	.363	.063	29	.350	.911	08	.416	.372	01	.247	.025	29	.353	.478
23	.488	.715	01	.297	.242	20	.364	.366	26	.380	.104	13	.432	.556	23	.253	.323	06	.359	.270
14	.496	.276	11	.337	.760	16	.395	.363	28	.425	.864	02	.489	.827	24	.320	.651	20	.387	.248
15	.503	.342	19	.389	.064	02	.423	.540	22	.487	.526	29	.503	.787	10	.328	.365	14	.392	.694
04	.515	.693	13	.411	.474	08	.432	.736	05	.552	.311	15	.518	.717	27	.338	.412	03	.408	.077
16	.532	.112	20	.447	.893	10	.476	.468	14	.564	.357	28	.524	.998	13	.356	.991	27	.440	.280
22	.537	.357	22	.478	.321	03	.508	.774	11	.572	.306	03	.542	.352	16	.401	.792	22	.461	.830
11	.559	.620	29	.481	.993	01	.601	.417	21	.594	.197	19	.585	.462	17	.423	.117	16	.527	.003
12	.650	.216	27	.562	.403	22	.687	.917	09	.607	.524	05	.695	.111	21	.481	.838	30	.531	.486
21	.672	.320	04	.566	.179	29	.697	.862	19	.650	.572	07	.733	.838	08	.560	.401	25	.678	.360
13	.709	.273	08	.603	.758	11	.701	.605	18	.664	.101	11	.744	.948	19	.564	.190	21	.725	.014
07	.745	.687	15	.632	.927	07	.728	.498	25	.674	.428	18	.793	.748	05	.571	.054	05	.797	.595
30	.780	.285	06	.707	.107	14	.745	.679	02	.697	.674	27	.802	.967	18	.587	.584	15	.801	.927
19	.845	.097	28	.737	.161	24	.819	.444	03	.767	.928	21	.826	.487	15	.604	.145	12	.836	.294
26	.846	.366	17	.846	.130	15	.840	.823	16	.809	.529	24	.835	.832	11	.641	.298	04	.854	.982
29	.861	.307	07	.874	.491	25	.863	.568	30	.838	.294	26	.855	.142	22	.672	.156	11	.884	.928
25	.906	.874	05	.880	.828	06	.878	.215	13	.845	.470	14	.861	.462	20	.674	.887	19	.886	.832
24	.919	.809	23	.931	.659	18	.930	.601	08	.855	.524	20	.874	.625	14	.752	.881	07	.929	.932
10	.932	.555	26	.960	.365	04	.954	.827	07	.867	.718	30	.929	.056	09	.774	.560	09	.932	.206
06	.961	.504	21	.978	.194	28	.963	.004	12	.881	.722	09	.935	.582	29	.921	.752	01	.970	.692
27	.969	.811	12	.982	.183	19	.988	.020	23	.937	.872	22	.947	.797	04	.959	.099	23	.973	.082

(Continued) TABLE X—1—RANDOM NUMBERS FOR GENERAL SAMPLING PROCEDURE

Col. No. 15			Col. No. 16			Col. No. 17			Col. No. 18			Col. No. 19			Col. No. 20			Col. No. 21		
A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
15	.023	.979	19	.062	.588	13	.045	.004	25	.027	.290	12	.052	.075	20	.030	.881	01	.010	.946
11	.118	.465	25	.080	.218	18	.086	.878	06	.057	.571	30	.075	.493	12	.034	.291	10	.014	.939
07	.134	.172	09	.131	.295	26	.126	.990	26	.059	.026	28	.120	.341	22	.043	.893	09	.032	.346
01	.139	.230	18	.136	.381	12	.128	.661	07	.105	.176	27	.145	.689	28	.143	.073	06	.093	.180
16	.145	.122	05	.147	.864	30	.146	.337	18	.107	.358	02	.209	.957	03	.150	.937	15	.151	.012
20	.165	.520	12	.158	.365	05	.169	.470	22	.128	.827	26	.272	.818	04	.154	.867	16	.185	.455
06	.185	.481	28	.214	.184	21	.244	.433	23	.156	.440	22	.299	.317	19	.158	.359	07	.227	.277
09	.211	.316	14	.215	.757	23	.270	.849	15	.171	.157	18	.306	.475	29	.304	.615	02	.304	.400
14	.248	.348	13	.224	.846	25	.274	.407	08	.220	.097	20	.311	.653	06	.369	.633	30	.316	.074
25	.249	.890	15	.227	.809	10	.290	.925	20	.252	.066	15	.348	.156	18	.390	.536	18	.328	.799
13	.252	.577	11	.280	.898	01	.323	.490	04	.268	.576	16	.381	.710	17	.403	.392	20	.352	.288
30	.273	.088	01	.331	.925	24	.352	.291	14	.275	.302	01	.411	.607	23	.404	.182	26	.371	.216
18	.277	.689	10	.399	.992	15	.361	.155	11	.297	.589	13	.417	.715	01	.415	.457	19	.448	.754
22	.372	.938	30	.417	.787	29	.374	.882	01	.358	.305	21	.472	.484	07	.437	.696	13	.487	.598
10	.461	.075	08	.439	.921	08	.432	.139	09	.412	.089	04	.478	.885	24	.446	.546	12	.546	.640
28	.519	.536	20	.472	.484	04	.467	.266	16	.429	.834	25	.479	.080	26	.485	.768	24	.550	.038
17	.520	.090	24	.498	.712	22	.508	.880	10	.491	.203	11	.566	.104	15	.511	.313	03	.604	.780
03	.523	.519	04	.516	.396	27	.632	.191	28	.542	.306	10	.576	.659	10	.517	.290	22	.621	.930
26	.573	.502	03	.548	.688	16	.661	.836	12	.563	.091	29	.665	.397	30	.556	.853	21	.629	.154
19	.634	.206	23	.597	.508	19	.675	.629	02	.593	.321	19	.739	.298	25	.561	.837	11	.634	.908
24	.635	.810	21	.681	.114	14	.680	.890	30	.692	.198	14	.749	.759	09	.574	.599	05	.696	.459
21	.679	.841	02	.739	.298	28	.714	.508	19	.705	.445	08	.756	.919	13	.613	.762	23	.710	.078
27	.712	.366	29	.792	.038	06	.719	.441	24	.709	.717	07	.798	.183	11	.698	.783	29	.726	.585
05	.780	.497	22	.829	.324	09	.735	.040	13	.820	.739	23	.834	.647	14	.715	.179	17	.749	.916
23	.861	.106	17	.834	.647	17	.741	.906	05	.848	.866	06	.837	.978	16	.770	.128	04	.802	.186
12	.865	.377	16	.909	.608	11	.747	.205	27	.867	.633	03	.849	.964	08	.815	.385	14	.835	.319
29	.882	.635	06	.914	.420	20	.850	.047	03	.883	.333	24	.851	.109	05	.872	.490	08	.870	.546
08	.902	.020	27	.958	.856	02	.859	.356	17	.900	.443	05	.859	.935	21	.885	.999	28	.871	.539
04	.951	.482	26	.981	.976	07	.870	.612	21	.914	.483	17	.863	.220	02	.958	.177	25	.971	.369
02	.977	.172	07	.983	.624	03	.916	.463	29	.950	.753	09	.863	.147	27	.961	.980	27	.984	.252

(Continued) TABLE X--1--RANDOM NUMBERS FOR GENERAL SAMPLING PROCEDURE

Col. No. 22			Col. No. 23			Col. No. 24			Col. No. 25			Col. No. 26			Col. No. 27			Col. No. 28		
A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
12	.051	.032	26	.051	.187	08	.015	.521	02	.039	.005	16	.026	.102	21	.050	.952	29	.042	.039
11	.068	.980	03	.053	.256	16	.068	.994	16	.061	.599	01	.033	.886	17	.085	.403	07	.103	.293
17	.089	.309	29	.100	.159	11	.118	.400	26	.068	.054	04	.088	.686	10	.141	.624	25	.115	.420
01	.091	.371	13	.102	.465	21	.124	.565	11	.073	.812	22	.090	.602	05	.154	.157	09	.126	.612
10	.100	.709	24	.110	.316	18	.153	.158	07	.123	.649	13	.114	.614	06	.164	.841	10	.205	.144
30	.121	.744	18	.114	.300	17	.190	.159	05	.126	.658	20	.136	.576	07	.197	.013	03	.210	.054
02	.166	.036	11	.123	.208	26	.192	.676	14	.161	.189	05	.138	.228	16	.215	.363	23	.234	.533
23	.179	.529	09	.138	.182	01	.237	.030	18	.166	.040	10	.216	.565	08	.222	.520	13	.266	.799
21	.187	.051	06	.194	.115	12	.283	.077	28	.248	.171	02	.233	.610	13	.269	.477	20	.305	.603
22	.205	.543	22	.234	.480	03	.286	.318	06	.255	.117	07	.278	.357	02	.288	.012	05	.372	.223
28	.230	.688	20	.274	.107	10	.317	.734	15	.261	.928	30	.405	.273	25	.333	.633	26	.385	.111
19	.243	.001	21	.331	.292	05	.337	.844	10	.301	.811	06	.421	.807	28	.348	.710	30	.422	.315
27	.267	.990	08	.346	.085	25	.441	.336	24	.363	.025	12	.426	.583	20	.362	.961	17	.453	.783
15	.283	.440	27	.382	.979	27	.469	.786	22	.378	.792	08	.471	.708	14	.511	.989	02	.460	.916
16	.352	.089	07	.387	.865	24	.473	.237	27	.379	.959	18	.473	.738	26	.540	.903	27	.461	.841
03	.377	.648	28	.411	.776	20	.475	.761	19	.420	.557	19	.510	.207	27	.587	.643	14	.483	.095
06	.397	.769	16	.444	.999	06	.537	.001	21	.467	.943	03	.512	.329	12	.603	.745	12	.507	.375
09	.409	.428	04	.515	.993	07	.610	.238	17	.494	.225	15	.640	.329	29	.619	.895	28	.509	.748
14	.465	.406	17	.518	.827	09	.617	.041	09	.620	.081	09	.665	.354	23	.623	.333	21	.583	.804
13	.499	.631	05	.539	.620	13	.641	.648	30	.623	.106	14	.680	.884	22	.624	.076	22	.587	.993
04	.539	.972	02	.623	.271	22	.664	.291	03	.625	.777	26	.703	.622	18	.670	.904	16	.689	.339
18	.560	.747	30	.637	.374	04	.668	.856	08	.651	.790	29	.739	.394	11	.711	.253	06	.727	.298
26	.575	.892	14	.714	.364	19	.717	.232	12	.715	.599	25	.759	.386	01	.790	.392	04	.731	.814
29	.756	.712	15	.730	.107	02	.776	.504	23	.782	.093	24	.803	.602	04	.813	.611	08	.807	.983
20	.760	.920	19	.771	.552	29	.777	.548	20	.810	.371	27	.842	.491	19	.843	.732	15	.833	.757
05	.847	.925	23	.780	.662	14	.823	.223	01	.841	.726	21	.870	.435	03	.844	.511	19	.896	.464
25	.872	.891	10	.924	.888	23	.848	.264	29	.862	.009	28	.906	.367	30	.858	.299	18	.916	.384
24	.874	.135	12	.929	.204	30	.892	.817	25	.891	.873	23	.948	.367	09	.929	.199	01	.948	.610
08	.911	.215	01	.937	.714	28	.943	.190	04	.917	.264	11	.956	.142	24	.931	.263	11	.976	.799
07	.946	.065	25	.974	.398	15	.975	.962	13	.958	.990	17	.993	.989	15	.939	.947	24	.978	.633

METHODS OF SAMPLING AND TESTING
MT 607-04
PROCEDURE FOR REDUCING FIELD SAMPLES OF AGGREGATE TO TESTING SIZE
(*Modified AASHTO R 76*)

1 Scope

1.1 These methods cover the reduction of field samples of aggregate to the appropriate size for testing. The methods apply to fine aggregate (FA), coarse aggregate (CA), and mixes of the two, and employ techniques that are intended to minimize variations in measured characteristics between the test samples and the field sample.

Note 1 – Under certain circumstances, reduction in size of the field sample prior to testing is not recommended. Substantial differences between the selected test samples sometimes cannot be avoided, as for example, in the case of an aggregate having relatively few large size particles in the field sample. The laws of chance dictate that these few particles may be unequally distributed among the reduced size test samples. Similarly, if the test sample is being examined for certain contaminants occurring as a few discrete fragments in only small percentages, caution should be used in interpreting results from the reduced size test sample. Chance inclusion or exclusion of only one or two particles in the selected sample may importantly influence interpretation of the characteristics of the field sample. In these cases, the entire field sample should be tested.

2 Referenced Documents

AASHTO
R 76 Reducing Samples of Aggregate to Testing Size
T 84 Specific Gravity and Absorption of Fine Aggregate

MT Materials Manual
MT 201 Sampling Roadway Materials

3 Selection of Method

3.1 Fine Aggregates

3.1.1 Field samples of fine aggregate (FA) that are drier than the saturated-surface-dry (SSD) condition (Note 2) shall be reduced to test size by a mechanical splitter according to Method A. Field samples of FA that are wetter than SSD may be reduced to test size by quartering according to Method B, or the entire field sample may be dried to drier than SSD, using temperatures that do not exceed those specified for any of the tests contemplated, and then reduced to test sample size using Method A.

3.1.2 Field samples of fine aggregate wetter than SSD may be reduced to testing size by treatment as a miniature stockpile as described in Method C.

3.1.3 If a moist field sample is very large, a preliminary split may be made by quartering according to Method B to reduce the sample to not less than 5000 g. The portion obtained is then dried and reduced to test sample size using Method A.

3.1.4 Mixtures of FA and CA that are wetter than SSD shall be reduced to test sample size according to Method B.

Note 2 – The method of determining the saturated-surface-dry condition is described in AASHTO T 84 Section 7.2f. As a quick approximation, if the fine aggregate will retain its shape when molded in the hand, it may be considered to be wetter than saturated-surface-dry.

3.2 Coarse Aggregates

3.2.1 Use of a mechanical splitter in accordance with Method A is preferred, however, the field sample may be reduced by quartering in accordance with Method B.

4 Field Sample Size

4.1 The size of the field sample shall conform to MT 201.

METHOD A – MECHANICAL SPLITTER

5 Apparatus

5.1 *Sample Splitter* – Sample splitters shall have an even number of equal width chutes, but not less than a total of eight for coarse aggregate or twelve for fine aggregate which discharge alternately to each side of the splitter. The minimum width of the individual chutes shall be approximately 50 percent larger than the largest particles in the sample to be split (Table 1). The splitter shall be equipped with two receptacles to hold the two halves of the sample following splitting. It shall also be equipped with a hopper or straight-edged pan, which has a width equal to or slightly less than the overall width of the assembly of chutes by which the sample may be fed at a controlled rate to the chutes. The splitter and accessory equipment shall be so designed that the sample will flow smoothly without restriction or loss of material.

Table 1

Size Passing - 100%	Splitter Opening
2 in.	3 in. or 6 bars
1½ in.	2¼ in. or 6 bars
1 in.	1½ in. or 3 bars
¾ in.	1½ in. or 3 bars
½ in.	¾ in. or 2 bars
⅜ in.	9/16 in. or 2 bars
4M	½ in. or 1 bar

Each bar = ½ inch

Example – When splitting 1½ inch Crushed Base Course, the total sample would require 2¼ inches or 6 bars and the minus 4M would require ½ inch or 1 bar.

6 Procedure

6.1 Place the field sample in the hopper or pan and uniformly distribute it from edge to edge, so that when it is introduced into the chutes, approximately equal amounts will flow through each chute (Note 3). The rate at which the sample is introduced shall be such as to allow free flowing through the chutes into the receptacles below. Reintroduce the portion of the sample in one of the receptacles into the splitter as many times as necessary to reduce the sample to the size specified for the intended test. The portion of the material collected in the other receptacle may be reserved for reduction in size for other tests.

Note 3 – A sample splitter that has a hopper equipped with a dumping device may be filled and leveled with a straightedge prior to dumping into the chutes. A sample splitter that has a free-flowing hopper shall be filled by a container, which has a width equal to or slightly less than the overall width of the assembly of chutes. The side of the container shall be placed against the edge of the hopper and dumped in a single motion into the hopper. In no case shall the material be poured into the hopper from the end of the container, scoop, or shovel.

METHOD B – QUARTERING

7 Apparatus

7.1 The apparatus shall consist of a straightedge, scoop, shovel, or trowel; a broom or brush; and a canvas blanket approximately 6 x 8 ft (2 x 2.5 m).

8 Procedure

8.1 Place the field sample on a hard, clean, level surface where there will be neither loss of material nor the accidental addition of foreign material. Mix the material thoroughly by turning the entire sample over three times. With the last turning, shovel the entire sample into a conical pile by depositing each shovelful on top of the preceding one. Carefully flatten the conical pile to a uniform thickness and diameter by pressing down the apex with a shovel so that each quarter sector of the resulting pile will contain the material originally in it. The diameter should be approximately four to eight times the thickness. Divide the flattened mass into four equal quarters with a shovel or trowel and remove two diagonally opposite quarters, including all fine material, and brush the cleared spaces clean. Successively mix and quarter the remaining material until the sample is reduced to the desired size.

8.2 As an alternate method when the floor surface is uneven, the field sample may be placed on a canvas blanket and mixed with a shovel as described above or by alternately lifting each corner of the canvas and pulling it over the sample toward the diagonally opposite corner causing the material to be rolled. Flatten the pile as described in paragraph 8.1. Divide the sample as also described in paragraph 8.1 or if the surface beneath the blanket is uneven, insert a stick or pipe beneath the blanket and under the center of the pile, then lift both ends of the stick dividing the sample into two equal parts. Remove the stick leaving a fold of the blanket between the divided portions. Insert the stick under the center of the pile at right angles to the first division and again lift both ends of the stick, dividing the sample into four equal parts. Remove two diagonally opposite quarters, being careful to clean the fines from the blanket. The remaining two quarters shall be successively remixed and quartered until the sample is reduced to the desired size.

METHOD C – MINIATURE STOCKPILE SAMPLING

9 Apparatus

9.1 The apparatus shall consist of a small sampling thief, small scoop, or spoon.

10 Procedure

10.1 Place the field sample on a hard, clean, level, non-absorbent surface. Thoroughly mix the sample and form a miniature stockpile. Obtain a sample for each test by selecting at least five increments of material at random locations from the miniature stockpile, using any of the devices described in paragraph 9.

METHODS OF SAMPLING AND TESTING
MT 608-04
VOIDS TABLE

Percent Voids $\frac{SG \times 6.7.355 - wt.}{SG \times 62.3555} \times 100$

Voids shown to the nearest one-tenth (1/10)

S.G.	2.55	2.26	2.57	2.58	2.59	2.60	2.61	2.62	2.63	2.64	2.65	2.66	2.67	2.68	2.69	2.70
Wt/Ft^3																
90	43.4	43.6	43.9	44.1	44.3	44.5	44.7	44.9	45.1	45.3	45.5	45.7	45.9	46.1	46.3	46.5
91	42.8	43.0	43.2	43.4	43.6	43.9	44.1	44.3	44.5	44.7	44.9	45.1	45.3	45.5	45.7	45.9
92	42.1	42.4	42.6	42.8	43.0	43.2	43.5	43.7	43.9	44.1	44.3	44.5	44.7	44.9	45.1	45.4
93	41.6	41.7	42.0	42.2	42.4	42.6	42.9	43.1	43.3	43.6	43.7	43.9	44.1	44.3	44.5	44.8
94	40.9	41.1	41.3	41.6	41.8	42.0	42.2	42.5	42.7	42.9	43.1	43.3	43.5	43.7	44.0	44.2
95	40.2	40.5	40.7	40.9	41.2	41.4	41.6	41.8	42.1	42.3	42.5	42.7	42.9	43.1	43.4	43.6
96	39.6	39.9	40.1	40.3	40.6	40.8	41.0	41.2	41.5	41.7	41.9	42.1	42.3	42.5	42.8	43.0
97	39.0	39.2	39.5	39.7	39.9	40.2	40.4	40.6	40.8	41.1	41.3	41.5	41.7	42.0	42.2	42.4
98	38.4	38.6	38.8	39.1	39.3	39.5	39.8	40.0	40.2	40.5	40.7	40.9	41.1	41.4	41.6	41.8
99	37.7	38.0	38.2	38.5	38.7	38.9	39.2	39.4	39.6	39.9	40.1	40.3	40.5	40.8	41.0	41.2
100	37.1	37.4	37.6	37.8	38.1	38.3	38.6	38.8	39.0	39.2	39.5	39.7	39.9	40.2	40.4	40.6
101	36.5	36.7	37.0	37.2	37.5	37.7	37.9	38.2	38.4	38.6	38.9	39.1	39.3	39.6	39.8	40.0
102	35.8	36.1	36.3	36.6	36.8	37.1	37.3	37.6	37.8	38.0	38.3	38.5	38.7	39.0	39.2	39.4
103	35.2	35.5	35.7	36.0	36.2	36.5	36.7	36.9	37.2	37.4	37.7	37.9	38.1	38.4	38.6	38.8
104	34.6	34.8	35.1	35.3	35.6	35.8	36.1	36.3	36.6	36.8	37.1	37.3	37.5	37.8	38.0	38.2
105	34.0	34.2	34.5	34.7	35.0	35.2	35.5	35.7	36.0	36.2	36.5	36.7	36.9	37.2	37.4	37.6
106	33.3	33.6	33.8	34.1	34.4	34.6	34.9	35.1	35.4	35.6	35.8	36.1	36.3	36.6	36.8	37.0
107	32.7	33.0	33.2	33.5	33.7	34.0	34.2	34.5	34.8	35.0	35.2	35.5	35.7	36.0	36.2	36.4
108	32.1	32.3	32.6	32.9	33.1	33.4	33.6	33.9	34.1	34.4	34.6	34.9	35.1	35.4	35.6	35.8
109	31.4	31.7	32.0	32.2	32.6	32.8	33.0	33.3	33.5	33.8	34.0	34.3	34.5	34.8	35.0	35.3
110	30.8	31.1	31.4	31.6	31.9	32.1	32.4	32.7	32.9	33.2	33.4	33.7	33.9	34.2	34.4	34.7
111	30.2	30.5	30.7	31.0	31.3	31.5	31.8	32.1	32.3	32.6	32.8	33.1	33.3	33.6	33.8	34.1
112	29.6	29.8	30.1	30.4	30.6	30.9	31.2	31.4	31.7	32.0	32.2	32.5	32.7	33.0	33.2	33.5

$$Percent\ Solids = \frac{Wt/Ft3}{SGx62.4} x100$$

METHODS OF SAMPLING AND TESTING
MT 609-21
FIELD NUMBERING OF CONCRETE CYLINDERS
(Montana Method)

1 Scope

1.1 The procedure outlined in this method has been adopted in order to establish a uniform, statewide numbering system for concrete test specimens and entry of specimens in MDT's SiteManager and AASHTOWare systems.

2 Terminology

2.1 Definitions

2.1.1 *Lot* – A single day's pour or every 200 yd^3 (150 m^3) of concrete poured, whichever is less, excluding Class Pave. A lot of Class Pave is a single day's pour or every 1,000 yd^3 (750 m^3) of concrete poured, whichever is less.

2.2.2 *Test* – A set of four (4) cylinders for Compressive Strength testing.

3 Specimen Number Procedure

3.1 Each concrete cylinder for an entire project will have its own unique specimen number.

3.2 Specimen numbers are to contain the Lot# (L), the Test# (T), and the Cylinder# in this format: L#T#_Cylinder# (e.g., L4T1_1, L4T1_2, etc). Cylinder numbers are to be in continuous consecutive order for each class of concrete for the entire project.

3.3 Example

3.3.1 Project A has a 24 yd^3 pour on day 1. Cylinders from this pour would be Lot 1 and Specimen Numbers for day 1 would be L1T1_1-4.

3.3.2 Project A has a much larger pour on day 2. The first 200 yd^3 poured would be Lot 2. Assuming 4 Tests in Lot 2, Lot 2 will have 16 cylinders. Specimen Numbers for Lot 2 would be L2T1_5-8, L2T2_9-12, L2T3_13-16, and L2T4_17-20.

Note 1 – A Cylinder# for Compressive Strength testing for a specific class of concrete should never be repeated. If 300 cylinders are cast for a specific class of concrete for a project, the cylinders should be numbered 1 through 300.

4 Creating Sample Records

4.1 Generate one (1) Sample Record for each Lot of cylinders cast. The Sample Record can contain as many as four Tests (four (4) sets of four (4) cylinders) for Compressive Strength testing. A unique Sample Record is not required for each Test that is in the same Lot.

4.2 SiteManager Sample Records

Enter the following data to generate a Sample Record:

a. Sample ID: Assigned by Site Manager
b. Sample Date: The date the concrete was sampled in the field (not the logged date)
c. Sample Type: Project Acceptance
d. Acceptance Method: Test Results
e. Material Code: Concrete Class Code (i.e., General, Pave, Pre, SCC, Deck, etc.)

f. Witnessed by: Self explanatory
g. Producer/Supplier: Supplier of the concrete (e.g., 99-FOSSUMR-SUPP for Fossum Ready Mix)
h. QPL/PIT/MILL: Source of aggregate (e.g., 42-031010 for Fossum Ready Mix (Belzer) pit)
i. Qualified Product Name: Leave blank
j. District/Area: Self explanatory
k. Contract Descr: Contract ID and Job Name
l. Specimen Number(s): As described in Section 3 (e.g., L1T1-4_1-16)
m. Intended Use: Describe use and location sample represents

Save Sample Record.

4.2.1 Navigate to the Addt'l Sample Data tab. Enter data into Specimen Number(s) field, if blank. The Specimen Number(s) should match the Specimen Number(s) on the Basic Sample Data tab. Enter Control Type "Lot Number" then enter the Lot# in the Number box and Save.

4.2.2 Navigate to the Contract tab and attach appropriate Contract Number. Enter the Represented Quantity for the item associated with that sample (e.g. yd^3 of concrete or yd^2 of sidewalk) and Save.

4.2.3 Navigate to the Tests tab. Attach a Concrete Properties test template for each sample tested for concrete properties in this Lot, whether or not cylinders were tested. The Sample Test Number (Sample Test Nbr) should match the Test# entered in the Specimen Number box on the Basic Sample Data tab when applicable. Enter the Received Date, Actual Start Date, and Actual Completion Date in the fields displayed in the bottom right hand corner. These dates need to be filled in by the inspector for each test template attached and should be the same date as the Sample Date shown on the Basic Sample Data tab.

Note 2 – For each test template, ensure that the User ID of the personnel actually performing the testing is listed as the Tester.

4.3 AASHTOWare Sample Records

Follow the procedures outlined in the "Creating Concrete Sample Records" cheat sheet located on the intranet:
https://www.mdt.mt.gov/other/webdata/external/css/aashtoware-cm/Cheat-Sheets/Creating-Concrete-Sample-Records.pdf

5 Split Loads

5.1 On multiple structure jobs where one load of concrete is split and placed on more than one structure on the project, one set of test specimens will suffice, providing the split load of concrete is not altered in any way such as delaying successive pours, introducing additional water into the mix, etc.

6 Marking Sides of Cylinder

6.1 All identifying markings on concrete cylinders shall be placed on the sides of the cylinder instead of, or in addition to, markings being placed on the ends. Markings on the cylinders are to include at a minimum:

- Sample ID assigned by SiteManager or AASHTOWare.
- Sample Date (the date the concrete was sampled in the field – not the logged date)
- Specimen Number as described in Section 3 (optional – for field/district use).

Note 3 – If necessary, concrete cylinders, upon arriving at the Materials Bureau, are immediately capped on both ends. If field personnel place the identifying numbers on the end of the cylinders only, it is necessary for the Materials Bureau to transfer the identifying numbers to the side of the cylinder before it is capped, as the original information will be covered by the caps. Transferring information increases the potential for errors.

METHODS OF SAMPLING AND TESTING
MT 610-04
METHOD OF NUMBERING SUBGRADE MATERIAL, SURFACING MATERIAL, BITUMINOUS TREATED MATERIAL AND LIQUID ASPHALT
(*Montana Method*)

1 Scope

1.1 This method is intended to standardize the procedure in assigning field numbers to subgrade, surfacing, bituminous treated material and liquid asphalt.

2 Field Numbering Procedure

2.1 Sample numbers shall run consecutively throughout the project for each type and size of material. This must be repeated for each new source of material used on the project. Only one set of consecutive numbers is needed for contracts which involve two or more projects. All projects shall be listed, however, and the project for which the material is designated shall be indicated with a check mark.

3 Sub-grade Material

3.1 In the case of sub-grade, each type of material would mean original ground, embankment, pipe bedding, ramp, etc. Numbering shall be as outlined in paragraph 2.

4 Surfacing Material (Crushed Top Surfacing, Crushed Base Course, etc.)

4.1 Samples shall be numbered in accordance with paragraph 2.

5 Plant Mix Surfacing, Plant Mix Base, Road Mix Surfacing, Bituminous Surface Treatment and Bituminous Treated Base

5.1 In addition to samples of surfacing aggregates, samples of bituminous mixtures, as prepared for use in paving, shall be numbered as outlined in paragraph 2.

6 Liquid Asphalt

6.1 Samples shall be numbered in accordance with paragraph 2. When switching to a liquid asphalt produced by a different company or to a different grade of liquid asphalt, the numerical sequence must return to number one. Refer to MT 601 for sample size and frequency of sampling.

6.2 When sampling liquid asphalt, sample numbers and lot numbers will run consecutively. If the manufacturer changes and the grade remains the same, the sample numbers will start over but the lot numbers will continue. If the grade of asphalt changes, the sample number and lot number will both start over.

Example 1

Manufacturer	**Grade**		
MRC	PG 64-22	Sample No. 1 – 24	Lot No. 1 – 4
EXXON	PG 64-22	Sample No. 1 – 12	Lot No. 5 – 6
MRC	PG 64-28	Sample No. 1 – 18	Lot No. 1 – 3
MRC	PG 64-22	Sample No. 25 – 37	Lot No. 7 - 8