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

| Test Method <u>No.</u> | <u>Title</u> | <u>Pages</u> | Date of Publication <u>or Revision</u> |
|------------------------------|--|--------------|--|
| 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 рр | 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 рр | Jun 2004 |
| MT 608 | Voids Table | 1 pp | Jun 2004 |
| MT 609 | Field Numbering of Concrete Cylinders | 3 рр | 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 <u>and</u> 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

3.5 <u>Domestic Materials (Buy America and Build America, Buy America)</u>

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.

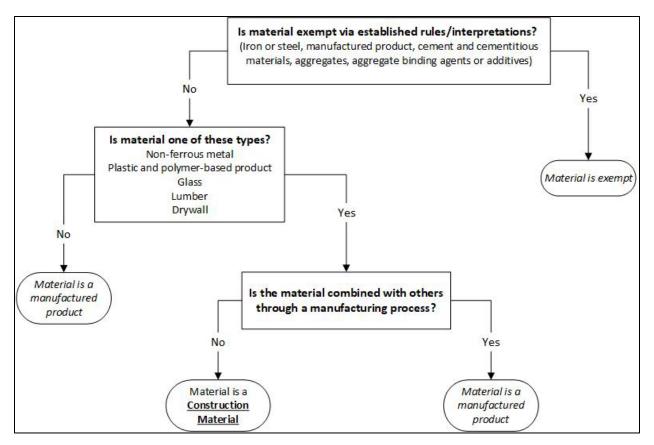
Acceptance requirements for steel and iron materials are identified on the Materials Index and are highlighted in gray within the MT 601 table. A link to MDT's Form 406 - Contractors Certificate of Compliance for Miscellaneous Steel and Iron Items is also included in the MT 601 table.

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 Code | Aggregate (AGGR) | Page |
|-----------------------|-------------------|--|--|---|
| | | 301.00.00.00 | Aggregate - Special Provision | 14 |
| | | 701.01 | Concrete Aggregate - During Production | 14 |
| | | 701.01.01.01 | Fine Concrete Aggregate | 14 |
| | | 701.01.01.02 | Controlled Low Strength Material Aggregate | 15 |
| | | 701.01.02.01 | Coarse Concrete Aggregate No. 2 | 15 |
| | | 701.01.02.02 | Coarse Concrete Aggregate No. 4 | 15 |
| | | 701.01.03.01 | Combined Concrete Aggregate | 15 |
| | | 701.04.01.01 | Bedding Material | 15 |
| | | 701.04.02.01 | Foundation Material | 16 |
| | | 701.04.03.01 | Granular Bedding Material | 16 |
| | | 701.05.00.01 | Filter Material Number 1 | 16 |
| | | 701.05.00.02 | Filter Material Number 2 | 16 |
| | | 701.06.02.01 | Riprap Class 1 | 17 |
| | | 701.06.02.02 | Riprap Class 2 | 17 |
| | | 701.06.02.03 | Riprap Class 3 | 17 |
| | | 701.06.04.01 | Ancillary Armor Class 1 | 17 |
| | | 701.06.04.02 | Ancillary Armor Class 2 | 17 |
| | | 701.09.00.01 | Wall Backfill | 18 |
| | | 701.10.00.01 | Drain Aggregate | 19 |
| С | | 701.11.00.01 | Glass Cullet | 19 |
| <u> </u> | | 701.13.00.01 | Bridge End Backfill Type 1 | 19 |
| | | 701.13.00.02 | Bridge End Backfill Type 2 | 20 |
| | | 701.13.00.03 | Bridge End Backfill Type 3 | 20 |
| | | PC 1 | Proposed Surfacing (Gravel Pit) | 20 |
| | | PC 2 | Soils for Soil Survey | 22 |
| | | PC 9 | Riprap Source Approval | 23 |
| | | 105 | | 25 |
| | | Material Code | Aggregate Surfacing (AGGS) | Page |
| | | Material Code | Aggregate Surfacing (AGGS) | Page |
| | | 301.03.06.01 | Shoulder Gravel | 24 |
| | | 301.03.06.01 302.03.01.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement | 24 24 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate | 24 24 24 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A | 24 24 24 25 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A | 24 24 24 25 25 25 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A | 24 24 24 25 25 25 25 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A | 24 24 24 25 25 25 25 25 26 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 701.02.07.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B | 24 24 24 25 25 25 25 25 26 27 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 701.02.07.01 701.02.08.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 | 24 24 24 25 25 25 25 26 27 28 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 701.02.07.01 701.02.08.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 | 24 24 24 25 25 25 25 25 26 27 28 28 28 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.03 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 | 24 24 24 25 25 25 25 25 26 27 26 27 28 28 28 28 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.02 701.02.08.03 701.02.09.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 Cement Treated Base | 24 24 24 25 25 25 25 25 26 27 28 28 28 28 28 28 29 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.03 701.02.09.01 701.02.09.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 Cement Treated Base Microsurfacing Aggregate Type 2 | 24 24 24 25 25 25 25 25 26 27 28 28 28 28 28 28 29 30 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.02 701.02.09.01 701.03.00.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 Cement Treated Base Microsurfacing Aggregate Type 3 | 24 24 24 25 25 25 25 26 27 26 27 28 28 28 28 28 28 28 28 29 30 30 |
| | | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.03 701.02.09.01 701.03.00.02 Material Code | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 Cement Treated Base Microsurfacing Aggregate Type 3 Microsurfacing Aggregate Type 3 Bearing Devices (BEAR) | 24 24 24 25 25 25 25 26 27 28 28 28 28 28 28 28 29 30 30 30 Page |
| | BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.08.01 701.02.08.03 701.02.09.01 701.03.00.02 Material Code 711.14.00.01 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 Cement Treated Base Microsurfacing Aggregate Type 3 Bearing Devices (BEAR) Elastomeric Bearing Devices | 24 24 24 25 25 25 25 26 27 28 28 28 28 28 28 28 29 30 30 30 Page 31 |
| | BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.02 701.02.09.01 701.03.00.02 Material Code 711.20.00.01 | Shoulder GravelPulverize/Milled Bituminous PavementPolymer Overlay AggregateCrushed Base Coarse Grade 5ACrushed Base Coarse Grade 6ACrushed Base Coarse Grade 7ACrushed Top Surfacing Grade 2ACrushed Top Surfacing Grade 3BCrushed Cover Aggregate Type 1Crushed Cover Aggregate Type 2Crushed Cover Aggregate Type 3Cement Treated BaseMicrosurfacing Aggregate Type 3Elastomeric Bearing DevicesPolytetrafluoroethylene (PTFE) | 24 24 24 25 25 25 25 26 27 26 27 28 28 28 28 28 28 28 29 30 30 30 30 30 30 30 |
| D | BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.08.01 701.02.08.02 701.02.09.01 701.03.00.02 Material Code 711.20.00.01 Material Code | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 Cement Treated Base Microsurfacing Aggregate Type 3 Bearing Devices (BEAR) Elastomeric Bearing Devices Polytetrafluoroethylene (PTFE) Bituminous (BITM) | 24 24 24 25 25 25 25 26 27 28 28 28 28 28 28 28 29 30 30 30 Page 31 31 31 |
| D C | BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.03 701.02.09.01 701.03.00.02 Material Code 711.20.00.01 702.01.01.01 | Shoulder GravelPulverize/Milled Bituminous PavementPolymer Overlay AggregateCrushed Base Coarse Grade 5ACrushed Base Coarse Grade 6ACrushed Base Coarse Grade 7ACrushed Top Surfacing Grade 2ACrushed Top Surfacing Grade 3BCrushed Cover Aggregate Type 1Crushed Cover Aggregate Type 2Crushed Cover Aggregate Type 3Cement Treated BaseMicrosurfacing Aggregate Type 3Elastomeric Bearing DevicesPolytetrafluoroethylene (PTFE)Bituminous (BITM)Performance Graded Asphalt Binder 58-28 | 24 24 24 25 25 25 25 26 27 28 28 28 28 28 28 28 29 30 30 30 Page 31 31 31 Page 32 |
| D C C | BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.03 701.02.09.01 701.03.00.02 Material Code 702.01.01.01 702.01.01.02 | Shoulder GravelPulverize/Milled Bituminous PavementPolymer Overlay AggregateCrushed Base Coarse Grade 5ACrushed Base Coarse Grade 6ACrushed Base Coarse Grade 7ACrushed Top Surfacing Grade 2ACrushed Top Surfacing Grade 3BCrushed Cover Aggregate Type 1Crushed Cover Aggregate Type 2Crushed Cover Aggregate Type 3Cement Treated BaseMicrosurfacing Aggregate Type 3Elastomeric Bearing DevicesPolytetrafluoroethylene (PTFE)Bituminous (BITM)Performance Graded Asphalt Binder 58-28Performance Graded Asphalt Binder 64-22 | 24 24 24 25 25 25 25 26 27 26 27 28 28 28 28 28 28 28 28 28 29 30 30 30 30 30 30 30 30 30 30 30 30 30 |
| D C C C | BAC2 QPL BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.08.01 701.02.08.03 701.02.09.01 701.03.00.02 Material Code 702.01.01.01 702.01.01.02 702.01.01.03 | Shoulder GravelPulverize/Milled Bituminous PavementPolymer Overlay AggregateCrushed Base Coarse Grade 5ACrushed Base Coarse Grade 6ACrushed Base Coarse Grade 7ACrushed Top Surfacing Grade 2ACrushed Top Surfacing Grade 3BCrushed Cover Aggregate Type 1Crushed Cover Aggregate Type 2Crushed Cover Aggregate Type 3Cement Treated BaseMicrosurfacing Aggregate Type 3Elastomeric Bearing DevicesPolytetrafluoroethylene (PTFE)Bituminous (BITM)Performance Graded Asphalt Binder 58-28Performance Graded Asphalt Binder 64-22Performance Graded Asphalt Binder 64-28 | 24 24 24 25 25 25 25 26 27 28 28 28 28 28 28 28 28 28 28 28 29 30 30 30 30 Page 31 31 31 Page 32 32 32 |
| D C C C C | BAC2 QPL BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.06.01 701.02.08.01 701.02.08.03 701.02.09.01 701.03.00.02 Material Code 711.14.00.01 702.01.01.02 702.01.01.03 702.01.01.04 | Shoulder Gravel Pulverize/Milled Bituminous Pavement Polymer Overlay Aggregate Crushed Base Coarse Grade 5A Crushed Base Coarse Grade 6A Crushed Base Coarse Grade 7A Crushed Top Surfacing Grade 2A Crushed Top Surfacing Grade 3B Crushed Cover Aggregate Type 1 Crushed Cover Aggregate Type 2 Crushed Cover Aggregate Type 3 Cement Treated Base Microsurfacing Aggregate Type 3 Bearing Devices (BEAR) Elastomeric Bearing Devices Polytetrafluoroethylene (PTFE) Bituminous (BITM) Performance Graded Asphalt Binder 58-28 Performance Graded Asphalt Binder 64-22 Performance Graded Asphalt Binder 64-28 Performance Graded Asphalt Binder 70-28 | 24 24 24 25 25 25 25 25 26 27 28 28 29 30 30 30 31 31 31 31 31 31 31 31 31 31 32 32 32 32 |
| D C C C | BAC2 QPL BAC2 QPL | 301.03.06.01 302.03.01.01 563.02.02.00 701.02.04.01 701.02.04.02 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.04.03 701.02.08.01 701.02.08.03 701.02.09.01 701.03.00.02 Material Code 702.01.01.01 702.01.01.02 702.01.01.03 | Shoulder GravelPulverize/Milled Bituminous PavementPolymer Overlay AggregateCrushed Base Coarse Grade 5ACrushed Base Coarse Grade 6ACrushed Base Coarse Grade 7ACrushed Top Surfacing Grade 2ACrushed Top Surfacing Grade 3BCrushed Cover Aggregate Type 1Crushed Cover Aggregate Type 2Crushed Cover Aggregate Type 3Cement Treated BaseMicrosurfacing Aggregate Type 3Elastomeric Bearing DevicesPolytetrafluoroethylene (PTFE)Bituminous (BITM)Performance Graded Asphalt Binder 58-28Performance Graded Asphalt Binder 64-22Performance Graded Asphalt Binder 64-28 | 24 24 24 25 25 25 25 26 27 28 28 28 28 28 28 28 28 28 28 28 28 29 30 30 30 Page 31 31 31 Page 32 32 32 |

| C 702.01.02.01 SS-1h, Anionic Slow Set Emulsion | 33 |
|---|-----------------|
| | 55 |
| C 702.01.02.02 SS-1, Anionic Slow Set Emulsion | 33 |
| C 702.01.03.01 CSS-1h, Cationic Slow Set Emulsion | 34 |
| C 702.01.03.02 CSS-1, Cationic Slow Set Emulsion | 34 |
| C 702.01.05.01 HF-100, High Float Emulsion | 35 |
| C 702.01.05.02 HF-300, High Float Emulsion | 35 |
| C 702.01.05.03 CHFRS-2p, Polymer Mod. Cat. High Float Rapid | Set Emulsion 35 |
| C 702.01.06.01 CRS-2, Cationic Rapid Setting Emulsion | 36 |
| C 702.01.06.02 CRS-2p, Polymer Mod. Cat. Rapid Set Emulsion | 36 |
| C 702.01.07.01 CQS-1h, Cationic Quick Setting Emulsion | 37 |
| C 702.01.07.02 CQS-1p, Polymer Mod. Cat. Quick Set Emulsion | 37 |
| C 702.01.07.03 CQS-1hp, Polymer Mod. Cat. Quick Set Emulsio | n 38 |
| C 702.01.08.01 Polymer Modified Rejuvenating Emulsion | 38 |
| Material Code Bituminous Prime and Tack Co | at (BPTC) Page |
| 701.14.00.00 Blotter Material | 39 |
| Material Code Concrete and Structures (C | ONC) Page |
| D 551.02.00.01 Concrete Colorant | 40 |
| D QPL 551.02.01.01 Portland Cement | 40 |
| D QPL 551.02.01.02 Blended Cement | 40 |
| D QPL 551.02.01.03 Rapid Hardening Hydraulic Cement | 40 |
| D QPL 551.02.02.01 Fly Ash | 40 |
| D QPL 551.02.03.01 Ground Granulated Blast Furnace Slag (GGBFS) | |
| D QPL 551.02.04.01 Microsilica/Silica Fume | 41 |
| D QPL 551.02.05.01 Concrete Admixture | 41 |
| D QPL 551.02.07.01 Blended Supplementary Cementitious Material | |
| 551.03.02.02 Class General Concrete | 42 |
| 551.03.02.99 Concrete - Unclassified | 42 |
| 551.03.02.03 Class Pave Concrete | 43 |
| 551.03.02.05 Class SCC Concrete | 44 |
| 551.03.02.06 Class Deck Concrete | 45 |
| 551.03.02.07 Class Overlay-SF Concrete | 46 |
| D 551.03.02.08 Class Overlay-LM Concrete | 47 |
| 551.03.02.09 Class Structure Concrete 551.03.02.10 Class Drilled Shaft Concrete | 48 |
| | 49 |
| | 50 50 |
| C551.03.02.12Controlled Low Strength Material-Non-ExcavD551.03.02.13Pre-Packaged Concrete | 50 |
| D 551.03.02.14 Lean Concrete | 50 |
| 551.03.02.15 Shotcrete | 51 |
| 551.03.02.16 Class Joint Concrete | 52 |
| 551.03.02.17 Class Structure - Low Slump Concrete | 53 |
| 551.03.02.18 Class Ultra High Performance Concrete | 54 |
| 551.03.02.19 Class Low Density Cellular Concrete | 54 |
| D 552.02.00.01 Epoxy Grout | 55 |
| C BAC2 553.01.00.01 Prestressed Beam | 55 |
| C BAC2 554.01.00.01 Precast Concrete Products | 55 |
| BAC2 554.01.00.02 Cattle Guard Bases | 56 |
| D 554.01.00.03 CMU/SRW Blocks | 56 |
| D BABA-C 563.02.00.01 Waterproof Membrane | 56 |
| D BABA-C 563.02.00.02 Polymer Resin | 56 |
| D 713.14.00.01 Epoxy Adhesive | 57 |
| Material Code Concrete Sealant (CON | S) Page |
| D QPL 717.01.03.01 Liquid Membrane-Forming Concrete Curing Co | |
| D QPL 717.01.04.01 Concrete Cure and Seal Compounds | 58 |
| D QPL 717.02.01.01 Silane Sealer | 58 |
| D QPL 717.02.02.01 High Molecular Weight Methacrylate (HMWM) | |
| D QPL 717.02.02.02 Epoxy Bridge Deck Crack Sealant | 59 |
| D 717.02.02.03 Deck Sealant Sand | 59 |

MATERIAL INDEX

| _ | | | Material Code | Crack Sealing (CRKS) | Page |
|-------|------------------|--------|---------------|--|------|
| D | BABA-C | QPL | 403.02.00.02 | Backer Rod | 60 |
| D | | | 403.02.00.03 | Mastic Crack Filler | 60 |
| | | | Material Code | Excavation (EXC) | Page |
| | | | 203.01.00.01 | Embankment | 61 |
| | | | 203.01.00.02 | Special Borrow | 62 |
| | | | 204.02.00.01 | Stemming Aggregate for Blasting | 62 |
| | 1 1 | | Material Code | Fencing (FNC) | Page |
| D | BABA-C | | 607.02.01.01 | Snow Fence Material | 63 |
| D | BAC2 | | 712.01.02.01 | Chain Link Fabric | 63 |
| D | BAC2 | | 712.01.03.01 | Chain Link Steel Post | 63 |
| D | BAC2 | | 712.01.08.01 | Chain Link Gate | 64 |
| D | BAC2 | | 712.02.00.01 | Fence Wire | 64 |
| D | BAC2 | | 712.02.07.01 | Steel Fence Post | 64 |
| | BABA-C | | 712.02.08.01 | Wood Fence Post/Brace Rail | 64 |
| D | BAC2 | | 712.02.09.01 | Metal Gate | 65 |
| | | | 712.02.12.01 | Deadman/Anchor | 65 |
| | | | Material Code | Geotextile (GEOT) | Page |
| D | | QPL | 713.12.00.01 | Short Term Rolled Erosion Control Blanket | 66 |
| D | | QPL | 713.12.00.02 | Long Term Rolled Erosion Control Blanket | 66 |
| D | | QPL | 713.12.00.03 | High Performance Rolled Erosion Control Blanket | 66 |
| D | | QPL | 713.12.00.04 | Turf Reinforcement Mat - Synthetic Fiber | 66 |
| D | | QPL | 713.12.00.05 | Turf Reinforcement Mat - Natural Fiber | 66 |
| D | | | 716.00.00.01 | Geocomposite Drain | 66 |
| D | | | 716.00.00.02 | Geosynthetic Clay Liner | 66 |
| D | BABA-C | | 716.00.00.03 | Geomembrane | 67 |
| D | BABA-C | QPL | 716.02.00.01 | Separation Geotextile - Moderate Survivability | 67 |
| D | BABA-C | QPL | 716.02.00.02 | Separation Geotextile - High Survivability | 67 |
| D | BABA-C | QPL | 716.03.00.01 | Stabilization Geotextile | 67 |
| D | BABA-C | QPL | 716.04.00.01 | Subsurface Drain Filter-Class A-Moderate Survivability | 68 |
| D | BABA-C | QPL | 716.04.00.02 | Subsurface Drain Filter-Class B-Moderate Survivability | 68 |
| D | BABA-C | QPL | 716.04.00.03 | Subsurface Drain Filter-Class C-Moderate Survivability | 68 |
| D | BABA-C | QPL | 716.04.00.04 | Subsurface Drain Filter-Class A-High Survivability | 68 |
| D | BABA-C | QPL | 716.04.00.05 | Subsurface Drain Filter-Class B-High Survivability | 68 |
| D | BABA-C | QPL | 716.04.00.06 | Subsurface Drain Filter-Class C-High Survivability | 68 |
| D | BABA-C | QPL | 716.05.00.01 | Permanent Erosion Control-Class-A Mod Survivability | 69 |
| D | BABA-C | QPL | 716.05.00.02 | Permanent Erosion Control-Class-B Mod Survivability | 69 |
| D | BABA-C | QPL | 716.05.00.03 | Permanent Erosion Control-Class-C Mod Survivability | 69 |
| D | BABA-C | QPL | 716.05.00.04 | Permanent Erosion Control-Class-A High Survivability | 69 |
| D | BABA-C | QPL | 716.05.00.05 | Permanent Erosion Control-Class-B High Survivability | 69 |
| D | BABA-C | QPL | 716.05.00.06 | Permanent Erosion Control-Class-C High Survivability | 69 |
| D | | | 716.06.00.01 | Temporary Silt Fence | 69 |
| D | BABA-C | | 716.07.00.01 | Geogrid | 70 |
| | | | Material Code | Guardrail (GRD) | Page |
| D | BAC2 | QPL | 705.01.01.01 | Metal Beam Guardrail | 71 |
| D | BAC2 | QPL | 705.01.01.02 | Box Beam Guardrail | 71 |
| D | BAC2 | | 705.01.01.03 | Cable Guardrail/Wire Rope | 71 |
| D | BAC2 | | 705.01.01.05 | Miscellaneous Guardrail | 71 |
| | BABA-C | | 705.01.02.01 | Wood Guardrail Post/Blockout | 72 |
| D | BABA-C | | 705.01.02.02 | Non-Wood Blockout | 72 |
| D | BAC2 | | 705.01.05.01 | Steel Guardrail Post | 72 |
| D | BAC2 | QPL | 606.02.00.01 | W-Beam Terminal Section | 73 |
| D | BAC2 | | 606.02.00.02 | Box Beam Terminal Section | 73 |
| D | BAC2 BAC2 | | 606.02.00.03 | Impact Attenuator | 73 |
| 0 | BACZ | | Material Code | Joint Material (JNT) | Page |
| D | BABA-C | QPL | 707.01.00.01 | Expansion Joint Fillers - Cork | 74 |
| D | BABA-C BABA-C | | 707.01.01.01 | Crack & Joint Sealing Material | 74 |
| C/D | BABA-C BAC2 | - ЦГ L | 707.01.02.01 | Expansion Joint System | 74 |
| 0 | DACZ | | 1,01.01.02.01 | | /4 |

| | і — т | | I | I | |
|-----|----------|-----|---------------|---|------|
| D | | | 707.01.02.02 | Silicone Joint Seal | 74 |
| D | | | 707.01.02.03 | Fabric Reinforced Neoprene Joint Seal | 75 |
| D | | | 707.01.02.04 | Expansion Joint Asphalt Plug | 75 |
| D | | | 707.01.03.01 | Preformed Expansion Joint Filler | 75 |
| D | BABA-C | | 707.02.01.01 | Rubber Gasket | 75 |
| D | | | 707.02.02.01 | Flexible Joint Sealer | 75 |
| | | | Material Code | Lighting, Signals & Communication (LSM) | Page |
| D | BAC2 | | 703.00.00.00 | Electrical Submittal - Steel and Iron | 76 |
| D | BAC2 | | | Steel Conduit | 76 |
| D | BAC2 | | | Pull Boxes - Concrete | 76 |
| D | BAC2 | | | Signal Standards Type 2/3 | 76 |
| D | BAC2 | | | Luminaire Standard Type 10 | 76 |
| D | BAC2 | | | Signal Standards Type 1 | 77 |
| D | BABA-C | | 703.00.00.01 | Electrical Submittal - BABA | 77 |
| D | BABA-C | | | PVC Conduit | 77 |
| D | BABA-C | | | HDPE Conduit | 77 |
| D | BABA-C | | | Optical Cable/Fiber Optics | 78 |
| D | | | 703.00.00.02 | Electrical Submittal - Manufactured Product | 78 |
| D | | | | Pull Boxes - Composite | 78 |
| D | | | | Variable Message Sign | 78 |
| D | | | | Antenna | 78 |
| D | | | | Conductor | 78 |
| D | | | 1 | Cable | 78 |
| D | | | | Service & Control Assembly | 79 |
| D | | | | Traffic Signal Cabinet | 79 |
| D | | | | Traffic Signal Indication | 79 |
| D | | | | LED Traffic Signal | 79 |
| D | | | | Pedestrian Signal Indication | 79 |
| D | | | | Detector Loop | 79 |
| D | | | | Pedestrian Push Buttons | 79 |
| D | | | | Luminaire Assembly | 80 |
| D | | | | Emergency Vehicle Preemption | 80 |
| D | | | 703.00.00.04 | Electrical Submittal - Other | 80 |
| D | | | | Guys & Anchors | 80 |
| | BABA-C | | 703.14.00.01 | Class 4 Treated Wood Poles | 80 |
| | | | Material Code | Maintenance (MAIN) | Page |
| D | | | MT 1.1 | Salt 8A-R (Road Salt) | 81 |
| D | | | MT 1.2 | Salt 8A-B (Brine Salt) | 81 |
| D | | | MT 1.3 | Salt 8B (Wet Salt) | 82 |
| | | | MT 2 | Salt Brine - NaCl | 82 |
| D | | | MT 3.1 | De-Icer - MgCl ₂ | 83 |
| D | | | MT 3.2 | De-Icer - CaCl ₂ | 84 |
| D | | | MT 3.3 | De-Icer - KCH ₃ COO | 85 |
| D | | | MT 4.1 | 3/8" Sanding Material | 85 |
| D | | | MT 4.2 | 5/16" Sanding Material | 86 |
| D | | | MT 5 | Engine Oil Analysis | 86 |
| D | | | MT 6 | Corrosion Inhibitor | 87 |
| D | | | MT 7 | Cold Mix Asphalt Patching Material | 87 |
| | <u> </u> | | Material Code | Miscellaneous (MISC) | Page |
| D | BAC2 | QPL | 608.02.00.01 | Detectable Warning Devices | 88 |
| c | BAC2 | | 611.02.04.01 | Cattle Guard Grate | 88 |
| D | 2/102 | QPL | 623.02.00.01 | Mail Box | 88 |
| D | BABA-C | | 706.01.00.01 | Structural Timber and Lumber | 88 |
| D | | | 709.04.00.01 | Bituminous Coatings | 89 |
| D | | | 710.01.00.01 | Steel Structure Paint | 89 |
| C | | | 710.03.00.01 | Powder Coating | 89 |
| D | | QPL | 710.04.00.01 | Anti-Graffiti Coating | 89 |
| C/D | BABA-C | | 713.00.00.00 | Miscellaneous Material Accepted on Cert | 89 |
| -,- | | | | | |

| | | | 713.01.00.01 | Water for Concrete | 90 |
|-----|--------|-----|---------------|------------------------------------|-------|
| D | | QPL | 713.02.00.01 | Hydrated Lime | 90 |
| D | | | 713.03.00.01 | Magnesium Chloride | 90 |
| D | | | 713.03.00.02 | Calcium Chloride | 91 |
| D | | | 713.04.00.01 | Structural Cement Grout | 91 |
| D | | | 713.04.00.02 | Cement Grout | 91 |
| D | | | 713.04.00.03 | Mortar | 91 |
| D | | | 713.14.00.02 | Epoxy Resin | 91 |
| | | | Material Code | Pavement Markings (PMM) | Page |
| D | | QPL | 714.03.00.01 | Temporary Waterborne Paint | 92 |
| D | | QPL | 714.04.00.01 | Waterborne Paint | 92 |
| D | | QPL | 714.05.00.01 | High Durability Waterborne Paint | 92 |
| D | | QPL | 714.06.00.01 | Epoxy Paint | 92 |
| D | | | 714.07.00.01 | Preformed Plastic Pavement Marking | 92 |
| D | BABA-C | QPL | 714.08.00.01 | Reflective Glass Beads - Type 1 | 93 |
| D | BABA-C | QPL | 714.08.00.02 | Reflective Glass Beads - Type 2 | 93 |
| | | | Material Code | Pile (PILE) | Page |
| С | BAC2 | | 559.02.03.01 | Pile Driving Point | 94 |
| С | BAC2 | | 559.02.03.02 | Pile Cutting Shoe | 94 |
| С | BAC1 | | 711.10.01.01 | Structural Steel Piles | 94 |
| С | BAC1 | | 711.10.02.01 | Steel Pipe Piles | 95 |
| | | | Material Code | Pipes (PIPE) | Page |
| С | BAC2 | QPL | 708.01.00.01 | Reinforced Concrete Pipe | 96 |
| С | BAC2 | QPL | 708.01.00.02 | Reinforced Concrete Box | 96 |
| С | BAC2 | | 708.02.00.01 | Concrete Pressure Pipe | 97 |
| D | BABA-C | | 708.05 | Plastic Pipe | 97 |
| D | BABA-C | | 708.06 | Plastic Pipe | 97 |
| D | BABA-C | | 708.07 | Plastic Pipe | 97 |
| D | BABA-C | | 708.08 | Plastic Pipe | 97 |
| D | BAC2 | | 709.01.01.01 | Ductile Iron Water Pipe | 97 |
| C/D | BAC2 | | 709.01.02.01 | Steel Water Pipe | 98 |
| D | BAC2 | | 709.02.00.01 | Corrugated Steel Pipe | 98 |
| D | BAC2 | | 709.03.00.01 | Steel Structural Plate Pipe | 98 |
| D | BAC2 | | 709.05.00.02 | Precoated Corrugated Steel Pipe | 98 |
| D | BABA-C | | 709.07.00.01 | Corr Aluminum Pipe | 99 |
| C/D | BAC2 | | 709.09.00.01 | Seamless Steel Pipe | 99 |
| D | BABA-C | | 709.10.00.01 | Copper Pipe | 99 |
| | | | PC 3 | Soil/Water for Pipe Corrosion | 99 |
| | | | Material Code | Plant Mix Pavement (PMP) | Page |
| D | | QPL | 401.02.04.01 | Warm Mix Additives | 100 |
| D | | | 401.02.05.01 | Anti-Stripping Additive | 100 |
| | | | 401.03.00.01 | Plant Mix Surfacing Grade S - 3/4" | 101 |
| | | | 401.03.00.02 | Plant Mix Surfacing Grade S - 1/2" | 101 |
| | | | 401.03.00.03 | Plant Mix Surfacing Grade S - 3/8" | 101 |
| | | | 401.03.00.04 | Plant Mix Seal Course | 103 |
| С | | | 702.01.08.02 | Cold Recycling Asphalt Emulsion | 105 |
| _ | | | 405.03.00.01 | Cold Recycled Plant Mix | 105 |
| | | | 405.03.00.02 | Hot In-Place Recycled Plant Mix | 105 |
| | | | PC 4 | Cores for Stripping Analysis | 106 |
| | | | PC 5 | Preconstruction Soil Chemistry | 106 |
| | | | PC 6 | Hot In Place Recycled Cores | 100 |
| | ı | | Material Code | Revegetation | Page |
| D | | | 610.01.00.01 | Plants - Trees & Shrubs | 107 |
| | | | 713.05.00.01 | Topsoil | 107 |
| | | | 713.05.00.01 | Landscape Grade Topsoil | 107 |
| D | | QPL | 713.06.00.01 | Weed Control Mat | 107 |
| D | | | 713.08.00.01 | Reclamation Seed | 107 |
| D | | ΥĽ | 713.08.00.01 | Landscaping Seed | 107 |
| ע | | | /13.00.00.02 | Iranuscaping seeu | L 101 |

| C/D QPL 713.10.00.1 Mulch 10 D 713.11.00.01 Sod 10 C/O QPL 713.30.00.1 Compost 10 Material Code Signing (SIGN) Page D 704.01.04.01 Stred Sign Posts 10 D BAC2 704.01.04.01 Structural Steel Sign Posts 10 D BAC2 QPL 704.01.04.02 Structural Steel Sign Posts 10 D BAC2 QPL 704.01.04.01 Rerakaway Devices 10 D BAC4 704.01.06.01 Rerakaway Devices 10 D QPL 704.03.0.02 Drivable Flexible Delineators 11 D BAC2 711.00.00.01 Steel Railing 11 D BAC2 711.01.0.01 Rebar Grade 40 11 D BAC2 QPL 711.01.0.01 Rebar Grade 40 11 D BAC2 QPL 711.01.0.0.01 Rebar Grade 40 11 D | | | | 712 00 00 01 | Foutilizer | 107 |
|--|-----|--------|------|---------------|--|------|
| D 713 11.00.01 Sod 10 C/D QPL 713.13.00.01 Compost 10 Material Code Signing (SIGN) Pag D 704.01.01.01 Aluminum Sign Sheeting 10 D BAC2 704.01.04.02 Structural Steel Sign Posts 10 D BAC2 704.01.04.03 Breakaway Devices 10 D BAC2 704.01.04.03 Breakaway Devices 10 D BAC2 QPL 704.01.00.01 Retro-Reflective Sheeting 11 D QPL 704.03.00.01 Surface Mount Flexible Delineators 11 D QPL 704.03.00.01 Overhead Structures 11 D BAC2 QPL 711.00.00.01 Steel (STL) Pag D BAC2 QPL 711.00.00.01 Steel (STL) Pag D BAC2 QPL 711.00.00.01 Reck/Sol Anchor 11 D BAC2 QPL 711.00.00.01 Reck/Sol Anchor 11 | D | | | 713.09.00.01 | Fertilizer | 107 |
| C/D QPL 713.13.00.01 compost Signing (SIGN) Pag D T704.01.01.01 Aluminum Sign Sheeting 10 D BAC2 704.01.04.01 Steel Sign Posts 10 D BAC2 704.01.04.01 Steel Sign Posts 10 D BAC2 QPL 704.01.04.03 Breakaway Devices 10 D BAC2 QPL 704.01.06.01 Treated Wood Posts & Poles 10 D QPL 704.03.00.01 Surface Mount Flexible Delineators 11 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 11 D BAC2 711.00.00.01 Retor-Reflective Sheeting 111 D BAC2 QPL 711.01.00.01 Reck/Soil Anchor 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 <td></td> <td></td> <td>QPL</td> <td></td> <td></td> <td></td> | | | QPL | | | |
| Material Code Signing (SIGN) Page D T04.01.01.01 Aluminum Sign Sheeting 10 D BAC2 T704.01.04.01 Steel Sign Posts 10 D BAC2 T704.01.04.02 Structural Steel Sign Posts 10 D BAC2 QPL T04.01.04.03 Breakaway Devices 10 D BAC4 T704.01.01.01 Retro-Reflective Sheeting 11 D QPL T04.03.00.01 Surface Mount Flexible Delineators 11 D BAC2 QPL T04.03.00.01 Surface Mount Flexible Delineators 11 D BAC2 QPL T04.03.00.01 Surface Mount Flexible Delineators 11 D BAC2 QPL T10.00.01 Steel Surface A0 11 D BAC2 QPL T10.01.02 Rebar Grade 40 11 D BAC2 QPL T11.01.01.03 Rebar Grade 40 11 D BAC2 QPL T11.01.01.04 Smooth Dowel Bar Grade 40 11 < | | | 0.01 | | | |
| D 704.01.01.01 Aluminum Sign Sheeting D D BAC2 704.01.04.01 Structural Steel Sign Posts 10 D BAC2 704.01.04.02 Structural Steel Sign Posts 10 D BAC2 704.01.04.03 Breakaway Devices 10 D BAC2 704.01.06.01 Treated Wood Posts & Poles 10 D POL 704.03.00.02 Drivable Flexible Delineators 11 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 11 D BAC2 QPL 704.03.00.01 Steel Kalling 11 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 11 D BAC2 QPL 710.00.00.01 Steel Kalling 11 D BAC2 QPL 711.01.00.01 Rebar Grade 40 11 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.02 Rebar Grade 40 | С/D | | QPL | | | |
| D BAC2 704.01.04.01 Steel Sign Posts 10 D BAC2 704.01.04.02 Structural Steel Sign Posts 10 D BAC2 QPL 704.01.04.03 Breakaway Devices 10 D BAC2 QPL 704.01.00.01 Retro-Reflective Sheeting 11 D QPL 704.03.00.01 Surface Mount Flexible Delineators 111 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 111 D BAC2 711.00.00.01 Steel Railing 111 D BAC2 711.01.00.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.02 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Reihorcing | | | | | | Page |
| D BAC2 704.01.04.02 Structural Steel Sign Posts 10 D BABA-C 704.01.04.03 Breakaway Devices 10 D BABA-C 704.01.06.01 Treated Wood Posts & Poles 10 D QPL 704.01.00.01 Streate Mount Flexible Delineators 11 D BAC2 QPL 704.03.0.02 Drivable Flexible Delineators 111 D BAC2 QPL 704.03.0.02 Drivable Flexible Delineators 111 D BAC2 711.00.00.01 Steel Railing 111 Page D BAC2 711.01.00.01 Rebar Grade 60 111 D BAC2 QPL 711.01.01.03 Rebar Grade 75 111 D BAC2 QPL 711.01.01.03 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar Grade 40 111 D BAC2 QPL 711.01.04.01 | | DACO | | | | |
| D BAC2 QPL 704.01.04.03 Breakaway Devices 10 BABA-C 704.01.06.01 Treated Wood Posts & Poles 10 D 704.01.00.01 Retro-Refictive Sheeting 11 D QPL 704.03.00.01 Surface Mount Flexible Delineators 11 D BAC2 QPL 704.03.00.02 Divable Flexible Delineators 11 D BAC2 QPL 704.03.00.01 Steel Railing 11 D BAC2 711.00.00.01 Steel Railing 11 D BAC2 QPL 711.01.00.01 Rebar Grade 40 11 D BAC2 QPL 711.01.01.01 Rebar Grade 55 11 D BAC2 QPL 711.01.01.02 Rebar Grade 75 11 D BAC2 QPL 711.01.01.02 Rebar Foxy Costing 11 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 111 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - Sr | | | | | | |
| BABA-C 704.01.06.01 Treated Wood Posts & Poles 10 D QPL 704.01.001 Retro-Reflective Sheeting 11 D QPL 704.03.00.02 Drivable Delineators 11 BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 11 BAC1 704.08.01.01 Overhead Structures 11 D BAC2 711.00.00.01 Steel Railing 11 D BAC2 711.00.00.01 Rebar Grade 40 11 D BAC2 QPL 711.00.10.02 Rebar Grade 75 11 D BAC2 QPL 711.01.01.01 Rebar Grade 75 11 D BAC2 QPL 711.01.01.02 Rebar Epoxy Coating 11 D BAC2 QPL 711.01.01.02 Rebar Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel Structural Steel Structural Steel | | | | | | |
| D 704.01.10.01 Retro-Reflective Sheeting 11 D BQC2 QPL 704.03.00.01 Surface Mount Flexible Delineators 11 D BAC2 QPL 704.03.00.02 Dirizable Flexible Delineators 11 BAC1 704.03.00.02 Dirizable Flexible Delineators 11 Material Code Steel (STL) Page D BAC2 711.00.00.1 Steel Railing 11 D BAC2 711.01.00.01 Reck Railing 11 D BAC2 QPL 711.01.01.02 Rebar Grade 40 11 D BAC2 QPL 711.01.01.03 Rebar Grade 75 11 D BAC2 QPL 711.01.02.01 Rebar Grade 75 11 D BAC2 QPL 711.01.03.01 Reibar Epoxy Coating 11 D BAC2 QPL 711.01.02.01 Rebar - Corrosion Resistant - 55 - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel Tubing 11 G/D | 0 | | QFL | | · · | 109 |
| D QPL 704.03.00.01 Surface Mount Flexible Delineators 11 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 11 Material Code Steel (STL) Page D BAC2 711.00.00.01 Steel Railing 11 D BAC2 711.00.00.01 Reel Railing 11 D BAC2 QPL 711.01.01.01 Rebar Grade 40 11 D BAC2 QPL 711.01.01.02 Rebar Grade 50 11 D BAC2 QPL 711.01.01.03 Rebar Grade 50 11 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 11 C QPL 711.01.02.01 Rebar Faxibar Cr Gr100 11 D BAC2 QPL 711.01.03.01 Rebar Corrosion Resistant - Cr Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - Sr - Gr100 11 D BAC2 711.02.00.01 Structural Steel 11 11 <td>D</td> <td>DADA-C</td> <td></td> <td></td> <td></td> <td>110</td> | D | DADA-C | | | | 110 |
| D BAC2 QPL 704.03.00.02 Divable Flexible Delineators 11 BAC1 704.03.0.01 Overhead Structures 11 Material Code Steel (STL) Page D BAC2 711.00.00.01 Steel Railing 11 D BAC2 711.01.00.01 Rock/Soil Anchor 11 D BAC2 QPL 711.01.01.01 Rebar Grade 40 11 D BAC2 QPL 711.01.01.03 Rebar Grade 57 11 D BAC2 QPL 711.01.01.03 Rebar Grade 40 11 C QPL 711.01.03.01 Rebar Grade 57 11 D BAC2 QPL 711.01.03.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Sr - Gr 60 11 C/D BAC1 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC2 711.02.00.01 Structural Steel Tubing 11 | | | OPL | | | 110 |
| BAC1 704.08.01.01 Overhead Structures 111 Material Code Steel (STL) Page D BAC2 711.00.00.01 Steel Railing 11 D BAC2 711.00.00.01 Rock/Soil Anchor 11 D BAC2 QPL 711.01.00.01 Robar Grade 40 11 D BAC2 QPL 711.01.01.03 Rebar Grade 40 11 D BAC2 QPL 711.01.01.03 Rebar Grade 75 11 D BAC2 QPL 711.01.02.01 Rebar Grade 75 11 D BAC2 QPL 711.01.02.01 Rebar Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - SS - Gr 60 111 C/D BAC1 711.02.00.01 Structural Steel 111 C/D BAC2 711.02.00.01 Structural Steel Tubing 111 C/D BAC2 711.02.00.01 Structural Steel Tubing 111 BAC2 711.02.00.01 | | BAC2 | | | | 110 |
| Material Code Steel (STL) Page D BAC2 711.00.00.01 Steel Railing 11 D BAC2 711.00.00.01 Rock/Soil Anchor 11 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.02 Rebar Grade 50 111 D BAC2 QPL 711.01.01.03 Rebar Grade 75 111 D BAC2 QPL 711.01.01.01 Rebar Epoxy Coating 111 D BAC2 QPL 711.01.03.01 Rebar Corrosion Resistant - Cr - Gr100 111 D BAC2 QPL 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 111 C/D BAC1 711.02.00.01 Structural Steel True True Steel Members 111 C/D BAC2 711.03.00.01 Structural Steel True Steel Strue Steel Steel Steel Steel 111 C/D BAC2 711.03.00.01 Structural Steel True Steel Steel Steel Steel Steel 111 D BAC2 711.06.00.02 <td></td> <td></td> <td></td> <td></td> <td></td> <td>110</td> | | | | | | 110 |
| D BAC2 711.00.00.01 Steel Railing 11 D BAC2 711.01.00.01 Rock/Soil Anchor 11 D BAC2 QPL 711.01.01.01 Rebar Grade 40 11 D BAC2 QPL 711.01.01.02 Rebar Grade 60 11 D BAC2 QPL 711.01.01.03 Rebar Grade 75 11 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 11 C QPL 711.01.01.04 Smooth Dowel Bar Grade 40 11 D BAC2 QPL 711.01.04.01 Rebar Fpoxy Coating 11 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC1 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.06.00.02 High Tensile | | | | | | Page |
| D BAC2 711.01.00.01 Rock/Soil Anchor 11 D BAC2 QPL 711.01.01.01 Rebar Grade 40 11 D BAC2 QPL 711.01.01.02 Rebar Grade 40 11 D BAC2 QPL 711.01.01.03 Rebar Grade 75 11 D BAC2 QPL 711.01.02.01 Rebar Grade 40 11 C QPL 711.01.02.01 Rebar Fpoxy Coating 11 D BAC2 QPL 711.01.03.01 Reinforcing Wire, Wire Mesh 11 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - Sr - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 111 11 C/D BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 11 BAC2 711.06.00.02 High Tensile Strength Hex Bolts 11 11 11 D B | D | BAC2 | | 711.00.00.01 | | 111 |
| D BAC2 QPL 711.01.01.02 Rebar Grade 60 11 D BAC2 QPL 711.01.01.03 Rebar Grade 75 11 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 11 C QPL 711.01.01.01 Rebar Epoxy Coating 11 D BAC2 QPL 711.01.03.01 Reihar Epoxy Coating 11 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 11 G/D BAC2 711.03.00.01 Structural Steel 11 G/D BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.06.00.01 High Tensile Strength Tension Control Bolts 11 D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.10.00.01 Prestressing Steel | D | BAC2 | | 711.01.00.01 | | 111 |
| D BAC2 QPL 711.01.01.03 Rebar Grade 75 11 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 11 C QPL 711.01.02.01 Rebar Epoxy Coating 11 D BAC2 QPL 711.01.03.01 Rebar Epoxy Coating 11 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 11 C/D BAC2 711.03.00.01 Structural Steel Tubing 11 C/D BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.03.00.01 Gavanized Metal 11 C/D BAC2 711.03.00.01 Gavanized Metal 11 D BAC2 711.03.00.01 Welded Stud Shear Connectors 111 D BAC2 711.13.00.01 Wrestersing Steel 111 D <td>D</td> <td></td> <td>QPL</td> <td></td> <td></td> <td>111</td> | D | | QPL | | | 111 |
| D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 11 C QPL 711.01.02.01 Rebar Epoxy Coating 11 D BAC2 QPL 711.01.03.01 Reinforcing Wire, Wire Mesh 11 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 11 C/D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel Tubing 11 C/D BAC2 711.02.00.01 Structural Steel Tubing 11 BAC2 711.03.00.01 Structural Steel Tubing 11 BAC2 711.06.00.02 High Tensile Strength Hex Bolts 11 D BAC2 711.10.00.01 Prestressing Steel 11 D BAC2 711.11.00.01 Prestressing Steel 11 <td>D</td> <td>BAC2</td> <td>QPL</td> <td>711.01.01.02</td> <td>Rebar Grade 60</td> <td>111</td> | D | BAC2 | QPL | 711.01.01.02 | Rebar Grade 60 | 111 |
| C QPL 711.01.02.01 Rebar Epoxy Coating 11 D BAC2 QPL 711.01.03.01 Reinforcing Wire, Wire Mesh 11 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 11 C/D BAC2 711.02.00.01 Structural Steel 11 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.06.00.02 High Tensile Strength Tension Control Bolts 11 D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.08.00.01 Galvanized Metal 11 D BAC2 711.10.00.01 Prestressing Steel 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 | D | BAC2 | QPL | 711.01.01.03 | Rebar Grade 75 | 111 |
| D BAC2 QPL 711.01.03.01 Reinforcing Wire, Wire Mesh 11 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 11 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC2 711.03.00.01 Structural Steel Tubing 11 C/D BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 11 D BAC2 711.10.010 Prestressing Steel 11 D BAC2 711.10.010 Prestressing Steel 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.13.00.01 Mechanical Rebar Connectors 11 | D | BAC2 | QPL | 711.01.01.04 | Smooth Dowel Bar Grade 40 | 111 |
| D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 11 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 11 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC2 711.03.00.01 Structural Steel Tubing 11 C/D BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.06.00.02 High Tensile Strength Tension Control Bolts 11 D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.00.00.01 Welded Stud Shear Connectors 11 D BAC2 711.11.00.01 Prestressing Steel 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.12.03.02 Gastiron Bastes 11 | С | | QPL | 711.01.02.01 | Rebar Epoxy Coating | 111 |
| D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 11 C/D BAC1 711.02.00.01 Structural Steel 11 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC2 711.03.00.01 Structural Steel Tubing 11 C/D BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.06.00.02 High Tensile Strength Hex Bolts 11 D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.108.00.01 Galvanized Metal 11 D BAC2 711.108.00.01 Galvanized Metal 11 C/D BAC2 711.108.00.01 Welded Stud Shear Connectors 11 D BAC2 711.12.03.01 Miscellaneous Iron Castings 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.12.03.01 Micrutural Rebar Connectors 11 D | D | BAC2 | QPL | 711.01.03.01 | Reinforcing Wire, Wire Mesh | 112 |
| C/D BAC1 711.02.00.01 Structural Steel 11 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC1 711.03.00.01 Structural Steel Tubing 11 BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.06.00.02 High Tensile Strength Tension Control Bolts 11 D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 11 D BAC2 711.1.09.00.01 Miscellaneous Iron Castings 11 D BAC2 711.1.00.01 Prestressing Steel 11 D BAC2 711.1.2.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.1.2.03.01 Miscellaneous Iron Connectors 11 D BAC2 711.1.2.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.1.2.03.01 Miscellaneous Iron Connectors 11 D | D | BAC2 | | | Rebar - Corrosion Resistant - Cr - Gr100 | 112 |
| C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 11 C/D BAC1 711.03.00.01 Structural Steel Tubing 11 BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 BAC2 711.08.00.02 High Tensile Strength Tension Control Bolts 11 D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.08.00.01 Galvanized Metal 11 C/D BAC2 711.12.08.00.01 Welded Stud Shear Connectors 11 D BAC2 711.12.03.01 Miscellaneous Iron Castings 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.12.03.02 Gasti Iron Inlet Frames and Grates 11 D BAC2 711.13.00.01 Micrutural Anchor Bolts 11 D | | BAC2 | | | | 112 |
| C/D BAC1 711.03.00.01 Structural Steel Tubing 11 BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11 D BAC2 711.06.00.02 High Tensile Strength Tension Control Bolts 11 D BAC2 711.06.00.01 Galvanized Metal 11 C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 11 D BAC2 711.10.00.01 Prestressing Steel 11 D BAC2 711.12.03.01 Miscellaneous Iron Castings 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.13.00.01 Mechanical Rebar Connectors 11 D BAC2 711.13.00.01 Mechanical Rebar Connectors 11 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 11 D BAC2 711.21.00.02 Gabion Baskets 11 D 208.02.00.03< | - | | | | | 113 |
| BAC2 711.06.00.01 High Tensile Strength Hex Bolts 11. BAC2 711.06.00.02 High Tensile Strength Tension Control Bolts 11. D BAC2 711.08.00.01 Galvanized Metal 11. C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 11. D BAC2 711.10.00.01 Prestressing Steel 11. D BAC2 711.12.03.01 Miscellaneous Iron Castings 11. D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 11. D BAC2 711.13.00.01 Structural Anchor Bolts 11. 11. D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11. 11. D BAC2 711.13.00.01 Structural Anchor Bolts 11. 11. D BAC2 711.21.00.01 Mechanical Rebar Connectors 11. 11. D BAC2 711.21.00.02 Gabion Baskets 11. 11. D 208.02.00.01 Temporary Rolled Ero | | | | | · | 113 |
| BAC2 711.06.00.02 High Tensile Strength Tension Control Bolts 11. D BAC2 711.08.00.01 Galvanized Metal 11. C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 11. D BAC2 711.10.00.01 Prestressing Steel 11. D BAC2 711.12.03.01 Miscellaneous Iron Castings 11. D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11. D BAC2 711.13.00.01 Structural Anchor Bolts 11. D BAC2 711.21.00.01 Mechanical Rebar Connectors 11. D BAC2 711.21.00.01 Mechanical Rebar Connectors 11. D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 11. D BAC2 711.21.00.02 Gabion Baskets 11. D 208.02.00.01 Temporary Rolled Erosion Control 11. D 208.02.00.02 Temporary Seed 11. D 208.02.03.01 Stream Preservation Mate | C/D | | | | - | 113 |
| D BAC2 711.08.00.01 Galvanized Metal 11. C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 11 D BAC2 711.109.00.01 Prestressing Steel 11 D BAC2 711.100.01 Prestressing Steel 11 D BAC2 711.12.03.01 Miscellaneous Iron Castings 11 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.18.00.01 Mechanical Rebar Connectors 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D 208.02.00.01 Temporary Rolled Erosion Control 11 D 208.02.00.02 Temporary Seed 11 D 208.02.00.03 Stream Preservation Materials 11 | | | | | | 114 |
| C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 11 D BAC2 711.11.00.01 Prestressing Steel 11 D BAC2 711.12.03.01 Miscellaneous Iron Castings 11 D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.18.00.01 Mechanical Rebar Connectors 11 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D 208.02.00.01 Temporary Rolled Erosion Control 11 D 208.02.00.03 Stream Preservation Materials 11 D 208.02.03.01 Stream Preservation Materials 11 D 208.02.03.01 Stream Preservation Materials <td></td> <td></td> <td></td> <td></td> <td></td> <td>114</td> | | | | | | 114 |
| D BAC2 711.11.00.01 Prestressing Steel 11 D BAC2 711.12.03.01 Miscellaneous Iron Castings 11 D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 QPL 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.18.00.01 Mechanical Rebar Connectors 11 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 11 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D 208.02.00.01 Temporary Rolled Erosion Control 11 D 208.02.00.02 Temporary Seed 11 D 208.02.03.01 Stream Preservation Materials 11 D 208.02.03.01 Stream Preservation Mater | | | | | | 114 |
| D BAC2 711.12.03.01 Miscellaneous Iron Castings 11 D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 QPL 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.18.00.01 Mechanical Rebar Connectors 11 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D BAC2 711.21.00.02 Gabion Baskets 11 D 208.02.00.01 Temporary Rolled Erosion Control 11 D 208.02.00.02 Temporary Seed 11 I 208.02.03.01 Stream Preservation Materials 11 I 208.02.03.01 Stream Preservation Materials 11 I 208.02.03.01 Stream Preservation Materials <t< td=""><td></td><td></td><td></td><td></td><td></td><td>115</td></t<> | | | | | | 115 |
| D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 11 D BAC2 711.13.00.01 Structural Anchor Bolts 11 D BAC2 711.18.00.01 Mechanical Rebar Connectors 11 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 11 D BAC2 711.21.00.02 Gabion Baskets 11 D 208.02.00.01 Temporary Rolled Erosion Control 111 D 208.02.00.02 Temporary Seed 111 D 208.02.03.01 Streambed Aggregate 111 Building Materials (BM) Building Materials (BM) 112 BABA-C | | | | | | 115 |
| DBAC2711.13.00.01Structural Anchor Bolts11DBAC2711.18.00.01Mechanical Rebar Connectors11DBAC2711.21.00.01High Strength Wire Rockfall Mesh11DBAC2711.21.00.02Gabion Baskets11DBAC2711.21.00.02Gabion Baskets11DBAC2711.21.00.02Gabion Baskets11DBAC2711.21.00.02Gabion Baskets11D208.02.00.01Temporary Rolled Erosion Control11D208.02.00.02Temporary Rolled Erosion Control11D208.02.00.03Stream Preservation Materials11I208.02.00.03Stream Preservation Materials11I208.02.03.01Streambed Aggregate11Building Materials (BM)I1BABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | | | | | | |
| DBAC2711.18.00.01Mechanical Rebar Connectors11DBAC2711.21.00.01High Strength Wire Rockfall Mesh11DBAC2711.21.00.02Gabion Baskets11DBAC2711.21.00.02Gabion Baskets11DBAC2711.21.00.02Gabion Baskets11D208.02.00.01Temporary Rolled Erosion Control11D208.02.00.02Temporary Seed11D208.02.00.03Stream Preservation Materials11D208.02.03.01Streambed Aggregate11Hilding Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | | | QPL | | | |
| DBAC2711.21.00.01High Strength Wire Rockfall Mesh11DBAC2711.21.00.02Gabion Baskets11Material CodeStream Preservation (STPR)PageD208.02.00.01Temporary Rolled Erosion Control11D208.02.00.02Temporary Seed11D208.02.00.03Stream Preservation Materials11D208.02.00.03Stream Preservation Materials11D208.02.03.01Streambed Aggregate11DMaterial CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | | | | | | |
| DBAC2711.21.00.02Gabion Baskets11Material CodeStream Preservation (STPR)PageD208.02.00.01Temporary Rolled Erosion Control11D208.02.00.02Temporary Seed11D208.02.00.03Stream Preservation Materials11I208.02.00.03Streambed Aggregate11I208.02.03.01Streambed Aggregate11Building Materials (BM)PageMaterial CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | | | | | | |
| Material CodeStream Preservation (STPR)PageD208.02.00.01Temporary Rolled Erosion Control11D208.02.00.02Temporary Seed11C208.02.00.03Stream Preservation Materials11C208.02.03.01Streambed Aggregate11Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | | | | | | |
| D208.02.00.01Temporary Rolled Erosion Control11D208.02.00.02Temporary Seed11D208.02.00.03Stream Preservation Materials11I208.02.03.01Streambed Aggregate11Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | U | DACZ | | | | |
| D208.02.00.02Temporary Seed11208.02.00.03Stream Preservation Materials11208.02.03.01Streambed Aggregate11Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | D | | | - | | 117 |
| Image: Constraint of the second sec | | | | | | 117 |
| Image: Material Code Streambed Aggregate 11 Material Code Structure Material (STR) Page BABA-C BM.699.01.01 Bird Spikes 11 D BABA-C BM.699.01.02 Glue Laminated Beams 11 | | | | | | 117 |
| Building Materials (BM) Material Code Structure Material (STR) Page BABA-C BM.699.01.01 Bird Spikes 11 D BABA-C BM.699.01.02 Glue Laminated Beams 11 | | | | | | 117 |
| Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes11DBABA-CBM.699.01.02Glue Laminated Beams11 | | | | | | |
| BABA-C BM.699.01.01 Bird Spikes 11 D BABA-C BM.699.01.02 Glue Laminated Beams 11 | | | | Material Code | | Page |
| D BABA-C BM.699.01.02 Glue Laminated Beams 11 | | BABA-C | | | | 118 |
| | D | | | BM.699.01.02 | | 118 |
| ש BM.699.01.03 Insulation 11 | D | | | BM.699.01.03 | Insulation | 118 |
| D BAC2 BM.699.01.04 Metal Roofing 11 | D | BAC2 | | BM.699.01.04 | Metal Roofing | 118 |
| | D | BAC2 | | BM.699.01.05 | | 119 |
| D BABA-C BM.699.01.06 Picnic Shelter (Non Precast) 11 | D | BABA-C | | BM.699.01.06 | Picnic Shelter (Non Precast) | 119 |
| D BM.699.01.07 Quarry Tile 11 | D | | | BM.699.01.07 | Quarry Tile | 119 |
| D BAC2 BM.699.01.08 Roof Joist 11 | D | BAC2 | | BM.699.01.08 | Roof Joist | 119 |
| D BM.699.01.09 Interior/Exterior Building Tape & Paint 12 | D | | | BM.699.01.09 | Interior/Exterior Building Tape & Paint | 120 |
| | | BABA-C | | | | 120 |
| D BM.699.01.11 Pre-Packaged Mortar 12 | D | | | BM.699.01.11 | Pre-Packaged Mortar | 120 |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

| D | | BM.699.01.14 | Masonry Siding | 120 |
|---|--------|---------------|--|------|
| D | BABA-C | BM.699.01.15 | Interior/Exterior Glass and Glazing | 121 |
| | | Material Code | Electrical/Mechanical (ELMC) | Page |
| D | | BM.699.02.01 | Electrical | 121 |
| D | BABA-C | BM.699.02.02 | HVAC System | 121 |
| | | BM.699.02.03 | Interior Fixtures & Features | 121 |
| D | BAC2 | BM.699.02.04 | Propane Tank | 122 |
| | | Material Code | Plumbing (PLMB) | Page |
| D | BABA-C | BM.699.03.01 | Irrigation System | 122 |
| D | BABA-C | BM.699.03.02 | Plumbing | 122 |
| D | BABA-C | BM.699.03.03 | Waste Water Treatment System | 123 |
| D | BABA-C | BM.699.03.04 | Waste Water Utility Pipe & Appurtenance | 123 |
| D | BABA-C | BM.699.03.05 | Waste Water Pumps, Fittings & Valves | 123 |
| D | BABA-C | BM.699.03.07 | Well Pumps, Fittings & Valves | 124 |
| | | Material Code | Accessories (ACC) | Page |
| D | | BM.699.04.01 | Benches (Non Precast) | 124 |
| D | | BM.699.04.02 | Picnic Tables (Non Precast) | 124 |
| D | | BM.699.04.03 | Trash Receptacles (Non Precast) | 124 |
| D | | BM.699.04.04 | Fire Extinguishers & Cabinets | 124 |
| D | BABA-C | BM.699.04.05 | Flag Poles (Aluminum) | 125 |
| | | BM.699.04.06 | Toilet Room Accessories | 125 |
| | | Material Code | Door/Display (DRDP) | Page |
| D | | BM.699.05.01 | Aluminum Storefront | 125 |
| D | | BM.699.05.02 | Display Cases | 125 |
| | | BM.699.05.03 | Hollow Metal Doors & Frames | 125 |
| D | | BM.699.05.04 | Overhead Garage Doors | 126 |
| | | Material Code | Scale Site Specific (SSS) | Page |
| D | BAC2 | BM.699.06.01 | Scale Pit Structural Items | 126 |
| D | | BM.699.06.02 | Scale Electronics, Transducers, and Displays | 126 |

MATERIAL INDEX

AGGREGATE

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ SAMPLE DISTRICT/ MDT TESTS FIELD SAMPLE/TEST FREQUENCY NOTES MATERIAL CODE SIZE AREA LAB HQ LAB MT 201 SAMPLE AGGREGATE -USE FOR NON-STANDARD AGGREGATES SAMPLING SPECIAL PROVISION 77 LBS **ONE TEST PER SOURCE/PER PROJECT** MT 202 301.00.00.00 PER SPECIAL PROVISION TEST SIEVE ANALYSIS MATERIAL/ SAMPLE DISTRICT/ MDT TESTS FIELD NOTES SAMPLE/TEST FREQUENCY SIZE MATERIAL CODE AREA LAB HQ LAB PAVING: ONE TEST PER EVERY MT 201 SAMPLE 1000 YD³ SAMPLING 30 LBS OTHER: ONE SAMPLE FOR EACH 200 YD³ OF MT 202 TEST SIEVE ANALYSIS CONCRETE WITH A MINIMUM OF ONE CONCRETE SAMPLE PER PROJECT AGGREGATE -DISTRICT/ MDT **INDEPENDENT ASSURANCE (COMPARISON TESTING)** FIELD NOTES DURING AREA LAB HQ LAB PRODUCTION PAVING: ONE SAMPLE FOR EACH TWO LANE MILE, MINIMUM OF ONE SAMPLE FOR USE 701.01 PROJECTS LESS THAN ONE MILE FIELD MT 202 TEST TEST SIEVE ANALYSIS TESTED OTHER: AT LEAST ONE SAMPLE FOR EVERY 4 SAMPLE SAMPLES, MINIMUM OF ONE PER PROJECT/CONTRACT

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

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

AGGREGATE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES | | | |
|--|--|--|---|--------|-----------------------|---------------|-------|--|-----|--|
| CONTROLLED LOW STRENGTH | MT 201 SAMPLING | | ONE EVERY 200 YD ³ OF | SAMPLE | | | | | | |
| MATERIAL AGGREGATE 701.01.01.02 | MT 202 SIEVE ANALYSIS | 30 LBS | CONTROLLED LOW STRENGTH MATERIAL | TEST | | | | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES | | | |
| COARSE CONCRETE AGGREGATE | MT 201 SAMPLING | | | | SAMPLE | | | | | |
| No. 2 701.01.02.01 No. 4 701.01.02.02 | MT 202 SIEVE ANALYSIS | 50 LBS | PROPOSED SOURCE: THREE 50 LB COMPOSITE SAMPLES FROM EACH SOURCE | | TEST | TEST | | | EST | |
| COMBINED/ INTERMEDIATE | AASHTO T 104 SOUNDNESS SODIUM SULFATE | | | | | | | | | |
| CONCRETE AGGREGATE 701.01.03.01 | AASHTO T 96 LOS ANGELES ABRASION | | | | | | | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES | | | |
| | MT 201 SAMPLING | | | SAMPLE | | | | | | |
| | MT 202 SIEVE ANALYSIS | 77 LBS | ONE TEST PER SOURCE | | | | | | | |
| BEDDING MATERIAL | MT 210 (5.5LB) PROCTOR | ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, | | | TEST | | | | | |
| 701.04.01.01 | MT 230 (10LB) PROCTOR | | | | | | | | | |
| | MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY) | N/A | MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT | TEST | | | | | | |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

AGGREGATE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|------------------------------|---|----------------|--|--------|-----------------------|---------------|-------|
| FOUNDATION MATERIAL | MT 201 SAMPLING MT 202 SIEVE ANALYSIS MT 210 (5.5LB) PROCTOR MT 230 | 77 LBS | ONE TEST PER SOURCE | SAMPLE | TEST | | |
| 701.04.02.01 | (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 | MT 201 SAMPLING | | | SAMPLE | | | |
| 701.04.03.01 | MT 202 SIEVE ANALYSIS | 77 LBS | ONE TEST PER SOURCE | | TEST | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| FILTER MATERIAL NUMBER | MT 201 SAMPLING | 30 LBS | ONE TEST PER SOURCE | SAMPLE | | | |
| 701.05.00.01 | MT 202 SIEVE ANALYSIS | 30 LB3 | ONE TEST PER SOURCE | TEST | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| FILTER MATERIAL NUMBER 2 | MT 201 SAMPLING | 77 LBS | | SAMPLE | | | |
| 701.05.00.02 | MT 202 SIEVE ANALYSIS | // [03 | ONE TEST PER SOURCE | TEST | | | |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

AGGREGATE

| 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 | SPEC TABLE 701-22 RANDOM RIPRAP | N/A | ONE TEST PER PROJECT | TEST | | | OPTICAL GRANULOMETRY SOFTWARE |
| 701.06.02.02 CLASS 3 701.06.02.03 | 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 | SPEC TABLE 701-23 | N/A | ONE TEST PER PROJECT | TEST | | | OPTICAL GRANULOMETRY SOFTWARE |

| 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 | | |

AGGREGATE

| TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ | MDT HO LAB | NOTES |
|------------------|--|---|--|--|--|---|
| MT 201 | 512L | | | | | |
| SAMPLING | | | SAMPLE | | | |
| MT 202 | | | | | | |
| SIEVE ANALYSIS | | | | 4 | | |
| | | | | | | |
| | | | | 1 | | |
| | | | | | | |
| | 77 I BS | ONE TEST PER SOURCE | | | | |
| | // 200 | | | TEST | | |
| | | | | _ | | |
| AASHTO M 145 | | | | 1 | | |
| SOIL CLASS | | | | | | |
| | | | | | | |
| | | | | - | | |
| | | | | | | |
| | | | | | | |
| | | | SAMPLE | | | |
| | | | JAIVII LL | | | |
| | | | | | | TEST MAY BE REQUIRED PER SPECIAL |
| | | | | | | |
| | | | | | | |
| AASHTO T 288 | | | | | | |
| SOIL RESISTIVITY | 30 LBS | ONE TEST PER SOURCE | | | TEST | PROVISION |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | ΜΙΝΙΜUM OF ONE TEST PER INSTALLATION | | | | |
| | N/A | | TEST | | | |
| | | | | | | |
| | MT 201 SAMPLING 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 AASHTO T 267 ORGANIC CONTENT IN SOILS AASHTO T 288 | TESTSSIZEMT 201SAMPLINGMT 202SIEVE ANALYSISAASHTO T 89LIQUID LIMITAASHTO T 90PLASTIC LIMIT &PLASTIC LIMIT &AASHTO T 335FRACTUREAASHTO M 145SOIL CLASSMT 210(5.5LB) PROCTORMT 230(10LB) PROCTORAASHTO T 104SOUNDNESSSODIUM SULFATEAASHTO T 267ORGANIC CONTENTIN SOILSAASHTO T 288SOL RESISTIVITYAASHTO T 280SULFATE CONTENTIN SOILAASHTO T 290SULFATE CONTENTIN SOILAASHTO T 291CHLORIDE IN SOILMT 212COMPACTION AND% MOISTURE | TESTSSIZESAMPLE/TEST FREQUENCYMT 201SAMPLINGSAMPLINGMT 202SIEVE ANALYSISAASHTO T 89LIQUID LIMITAASHTO T 90PLASTIC LIMIT & PLASTIC LIMIT & PLASTICITY INDEX77 LBSAASHTO T 335FRACTUREAASHTO M 145SOIL CLASSSOIL CLASSMT 210(5.5LB) PROCTORMT 230(10LB) PROCTORMT 230(10LB) PROCTORAASHTO T 104SOUNDNESSSODIUM SULFATE30 LBSAASHTO T 28730 LBSSOIL ESISTIVITY30 LBSSOIL RESISTIVITY30 LBSAASHTO T 290SULASHTO T 290SULASTO T 290MT 212COMPACTION ANDN/A% MOISTUREN/AMINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT | TESTSSIZESAMPLE/TEST FREQUENCYFIELDMT 201SAMPLINGSAMPLINGSAMPLEMT 202SIEVE ANALYSISAASHTO T 89 | TESTSSIZESAMPLE/TEST FREQUENCYFIELDAREA LABMT 201SAMPLINGSAMPLINGSAMPLE/SAMPLE/SAMPLE/MT 202SEVE ANALYSISSAMPLINGSAMPLE/SAMPLE/AASHTO 789LIQUID LIMITAASHTO 790PLASTICITVI INDEXTT LBSONE TEST PER SOURCETESTAASHTO T 335FRACTUREAASHTO T 335TESTTESTFRACTUREAASHTO T 335MT 210Image: Source fraction of the second of the secon | TESTSSIZESAMPLE/TEST FREQUENCYFIEDAREA LABHQ LABMT 201SAMPLINGSAMPLINGSAMPLINGSAMPLE/TEST FREQUENCYSAMPLE |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

AGGREGATE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|------------------------------|--|----------------|--|-----------------|-----------------------|---------------|-------|
| DRAIN AGGREGATE | MT 201 SAMPLING | 77 LBS | ONE TEST PER PROJECT | SAMPLE | | | |
| 701.10.00.01 | MT 202 SIEVE ANALYSIS | 77 203 | | | 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 |
| | MT 201 SAMPLING | | | SAMPLE | | | |
| | MT 202 SIEVE ANALYSIS | | | | | | |
| BRIDGE END BACKFILL | AASHTO T 335 FRACTURE | 77 LBS | ONE TEST PER SOURCE | | TEST | | |
| TYPE 1 | MT 210 (5.5LB) PROCTOR | | | | 1231 | | |
| 701.13.00.01 | MT 230 (10LB) PROCTOR | | | | | | |
| | MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY) | N/A | MINIMUM OF ONE TEST PER INSTALLATION AND PER LIFT | TEST | | | |

AGGREGATE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|------------------------------------|--|----------------|--|--------|-----------------------|---------------|-------|
| BRIDGE END | MT 201 SAMPLING MT 202 SIEVE ANALYSIS MT 210 | 77 LBS | ONE TEST PER SOURCE | SAMPLE | | | |
| BACKFILL TYPE 2 701.13.00.02 | (5.5LB) PROCTOR MT 230 (10LB) PROCTOR | | | | TEST | | |
| | 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 |
| | MT 201 SAMPLING | | | SAMPLE | | | |
| | MT 202 SIEVE ANALYSIS | | | | | | |
| | AASHTO T 89 LIQUID LIMIT | | | | | | |
| BRIDGE END BACKFILL | AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX | 77 LBS | ONE TEST PER SOURCE | | TEST | | |
| TYPE 3 701.13.00.03 | 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 | | | |

AGGREGATE

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

AGGREGATE

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

AGGREGATE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|----------------------------------|----------------|-----------------------|--------|-----------------------|---------------|-------|
| | MT 201 SAMPLING | | | SAMPLE | | | |
| | ASTM C535 LA ABRASION | | | | | | |
| RIPRAP SOURCE APPROVAL | AASHTO T 85 ABSORPTION | 100 LBS | ONE TEST PER SOURCE | | TEST | | |
| PC 9 | AASHTO T 85 | | | | 11231 | | |
| | SPECIFIC GRAVITY AASHTO T 104 | | | | 4 | | |
| | SOUNDNESS SODIUM SULFATE | | | | | | |

AGGREGATE SURFACING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

| INSPECTION N/A ONE PER PROJECT VISUAL MATERIAL PASSES 2-INCH SIEVE | MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---|----------------------------|------------------------------|----------------|---|--------|-----------------------|---------------|--|
| 301.03.06.01 MT 202 SIEVE ANALYSIS RESAMPLE IF MATERIAL SOURCE CHANGES TEST TEST MATERIAL/ MATERIAL CODE TESTS SAMPLE SIZE SAMPLE/TEST FREQUENCY FIELD DISTRICT/ AREA LAB MDT HQ LAB NOTES CERT/ VISUAL INSPECTION N/A ONE PER PROJECT VISUAL VISUALLY INSPECT SO THAT 100% OF MATERIAL PASSES 2-INCH SIEVE PULVERIZED/ MILLED MT 202 SIEVE ANALYSIS 77 LBS ONE PER PROJECT TEST VISUALLY INSPECT UNLESS QUESTIONAL PULVERIZED/ MILLED MT 230 (10LB) PROCTOR 77 LBS TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES SAMPLE TEST VISUALLY INSPECT UNLESS QUESTIONAL BITUMINOUS PAVEMENT MT 219 CONTROL-STRIP 302.03.01.01 N/A WHEN RATIO OF BLENDED MATERIAL CHANGES BY MORE THAN 20% OR CHARACTERISTICS OR SITE CONDITIONS CHANGES BY MORE THAN 20% OR CHARACTERISTICS OR SITE CONDITIONS CHANGES TEST Image: Control - STRIP STRICT/ STRICT/ STRICT/ STRIP Image: Control - STRIP STRIP MT 212 COMPACTION AND % MOISTURE N/A 10 TESTS PER 2000 FT TEST Image: Control - STRIP STRIP Image: Control - STRIP STRIP Image: Control - STRIP | SHOULDER GRAVEL | - | | ONE TEST PER SOURCE/PER PROJECT | SAMPLE | | | |
| MATERIAL CODETESTSSIZESAMPLE/TEST FREQUENCYFIELDAREA LABHQ LABHQ LABNOTESAREA LABHQ HABHQ HABHQ HABHQ HABHQ HABHQ HABHQ HA | 301.03.06.01 | - | 30 LB2 | RESAMPLE IF MATERIAL SOURCE CHANGES | | TEST | | |
| INSPECTION N/A ONE PER PROJECT VISUAL MATERIAL PASSES 2-INCH SIEVE MT 202 SIEVE ANALYSIS MILLED MT 230 (10LB) PROCTOR 77 LBS ONE PER PROJECT TEST Image: Comparison of the com | - | TESTS | | SAMPLE/TEST FREQUENCY | FIELD | - | | NOTES |
| SIEVE ANALYSIS 77 LBS ONE PER PROJECT TEST VISUALLY INSPECT UNLESS QUESTIONAL PULVERIZED/ MILLED MT 230 (10LB) PROCTOR TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES SAMPLE TEST VISUALLY INSPECT UNLESS QUESTIONAL BITUMINOUS PAVEMENT 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 Image: Control - Strip TEST TEST 302.03.01.01 MT 212 COMPACTION AND % MOISTURE N/A 10 TESTS PER 2000 FT TEST Image: Control - Strip TEST TEST | | - | N/A | ONE PER PROJECT | VISUAL | | | VISUALLY INSPECT SO THAT 100% OF MATERIAL PASSES 2-INCH SIEVE |
| PULVERIZED/ MILLED MILLED BITUMINOUS PAVEMENTMT 230 (10LB) PROCTORTWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGESSAMPLETESTBITUMINOUS PAVEMENTMT 219 CONTROL-STRIP TEST SECTIONWHEN RATIO OF BLENDED MATERIAL CHANGES BY MORE THAN 20% OR CHARACTERISTICS OR SITE CONDITIONS CHANGETESTTEST302.03.01.01MT 212 COMPACTION AND % MOISTUREN/A10 TESTS PER 2000 FTTESTTEST | | - | 77 PS | ONE PER PROJECT | TEST | | | VISUALLY INSPECT UNLESS QUESTIONABLE |
| PAVEMENT MT 219 CONTROL-STRIP TEST SECTION N/A CHANGES BY MORE THAN 20% OR CHARACTERISTICS OR SITE CONDITIONS CHANGE TEST 302.03.01.01 MT 212 COMPACTION AND % MOISTURE N/A 10 TESTS PER 2000 FT TEST | , | | // LB3 | | SAMPLE | TEST | | |
| COMPACTION AND % MOISTURE N/A 10 TESTS PER 2000 FT TEST | PAVEMENT | CONTROL-STRIP | N/A | CHANGES BY MORE THAN 20% OR CHARACTERISTICS OR SITE CONDITIONS | TEST | | | |
| | | COMPACTION AND % MOISTURE | 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 |
|------------------------------|---------------------------|----------------|-----------------------|--------|-----------------------|---------------|-------|
| | MT 202 SIEVE ANALYSIS | | | TEST | | | |
| POLYMER OVERLAY AGGREGATE | AASHTO T 84 ABSORPTION | 30 LBS | ONE PER PROJECT | SAMPLE | | TEST | |
| 563.02.02.00 | AASHTO T 255 MOISTURE | | | TEST | | | |

MT 601 (01/09/25)

AGGREGATE SURFACING

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

AGGREGATE SURFACING

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

AGGREGATE SURFACING

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

AGGREGATE SURFACING

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|----------------------------|------------------|--|------------|-----------------------|---------------|--|
| | MT 201 SAMPLING | | 1 SAMPLE FOR EACH | SAMPLE | | | |
| | MT 202 SIEVE ANALYSIS | 30 LBS | 0 LBS 38,500 SQ YDS, 1 LOT = 5 SAMPLES OR APPROX. 192,500 SQ YDS | TEST | | | |
| CRUSHED COVER | AASHTO T 335 FRACTURE | | | | | | |
| AGGREGATE | INDEPEN | IDENT ASSU | RANCE (COMPARISON TESTING) | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| TYPE 1 701.02.08.01 | MT 202 SIEVE ANALYSIS | USE FIELD | ONE TEST FOR EACH LOT | | TEST | TEST | |
| TYPE 2 | AASHTO T 335 FRACTURE | TESTED SAMPLE | | | / | | |
| 701.02.08.02 | | | 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. |

AGGREGATE SURFACING

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|---|---------------------------------|--|------------|-----------------------|---------------|--|
| | 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 AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX AASHTO T 134 MOISTURE - | | ONE TEST PER PROJECT RESAMPLE IF MATERIAL CHANGES | SAMPLE | TEST | | |
| | DENSITY RELATIONS OF SOIL-CEMENT | | | | | | |
| | MT 216 SAMPLE CTB | 30 LBS | 1 SET OF CYLINDERS PER 750 CU YDS 1 LOT = 5 SAMPLES | SAMPLE | | | |
| CEMENT TREATED BASE | ASTM D1633 COMPRESSIVE STRENGTH OF MOLDED SOIL- CEMENT CYLINDERS | | | | | TEST | |
| 701.02.09.01 | 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 AASHTO T 89 LIQUID LIMIT AASHTO T 90 PLASTIC LIMIT & SAMPLE | USE | 1 SAMPLE FOR EACH 5 LOTS, MINIMUM OF 1 SAMPLE PER SOURCE | | | | |
| | | 1 SAMPLE PER PROJECT PER SOURCE | | TEST | TEST | | |
| | PLASTICITY INDEX | | | | DISTRICT/ | MDT | |
| | | | Mix Design | FIELD | AREA LAB | 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

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|-----------------------------|--|----------------------------------|-----------------------------------|------------|-----------------------|---------------|---|
| | MT 201 SAMPLING | | 1 SAMPLE FOR EACH | SAMPLE | | | |
| | MT 202 SIEVE ANALYSIS | 30 LBS | 300 TONS, 1 LOT = 5 SAMPLES OR | TEST | | | |
| MICROSURFACING AGGREGATE | AASHTO T 335 FRACTURE | | APPROX. 1,500 TONS | | | | |
| TYPE 2 | INDEPENDENT ASSURANCE (COMPARISON TESTING) | | | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| 701.03.00.01 TYPE 3 | MT 202 SIEVE ANALYSIS | USE FIELD TESTED SAMPLE | ONE TEST FOR EACH LOT | | TEST | TEST | |
| 701.03.00.02 | 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 |

BEARING DEVICES

| 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 |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

BITUMINOUS

| 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 | MT 302 SAMPLING AASHTO R 28 | | | SAMPLE | | | |
| GRADED ASPHALT BINDER | PRESSURIZED AGING VESSEL AASHTO R 92 | | | | | | |
| 58-28 702.01.01.01 | ELASTIC BEHAVIOR BY MSCR AASHTO T 48 | - | | | | TEST | |
| 64-22 702.01.01.02 | CLEVELAND OPEN CUP AASHTO T 240 | - | 1 SAMPLE PER 25 TONS OF ASPHALT BINDER | | | | |
| 64-28 702.01.01.03 | ROLLING THIN-FILM OVEN AASHTO T 313 | 2 - 1 PINT SPECIMEN | | | | | |
| 70-28 702.01.01.04 | BENDING BEAM RHEOMETER AASHTO T 315 | | | | | | |
| 58H-34 (MSCR) | DYNAMIC SHEAR RHEOMETER | | PLANT MIX SURFACING) | | | | |
| 702.01.01.06 58V-34 (MSCR) | AASHTO T 316 VISCOSITY BY ROTATIONAL | | | | | | |
| 702.01.01.07 | VISCOMETER AASHTO T 350 | | | | | | |
| | MSCR | | | | | | |

BITUMINOUS

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

BITUMINOUS

| 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 | | | 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 |
| CSS-1H CATIONIC SLOW SET EMULSION | AASHTO T 72 SAYBOLT VISCOSITY AASHTO T 49 | | | | | | MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED. |
| 702.01.03.01 | PENETRATION OF BITUMINOUS MATERIALS | | | | | TEST | |
| | 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 |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER SHIPMENT | CERT OF COMP | | | QUALIFIED PRODUCTS LIST |
| | MT 302 SAMPLING | | | SAMPLE | | | SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST |
| CSS-1 CATIONIC SLOW SET EMULISION | AASHTO T 72 SAYBOLT VISCOSITY | 2 - 1 QT | | | | | MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED. |
| EMULSION 702.01.03.02 | AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS | SPECIMEN IN PLASTIC BOTTLES | ONE SAMPLE PER TANKER OR TRAILER | | | TEST | |
| | AASHTO T 59 EMULSIFIED ASPHALTS | | | | | | PRIMARY TEST METHOD EVAPORATIVE DISTILLATION SECONDARY TEST METHOD HIGH TEMPERATURE DISTILLATION |

BITUMINOUS

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

BITUMINOUS

| 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 | | | |
| | MT 302 SAMPLING | | | SAMPLE | | | |
| CRS-2 CATIONIC RAPID SETTING EMULSION | AASHTO T 72 SAYBOLT VISCOSITY | 2 - 1 QT | | | | | MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED. |
| 702.01.06.01 | AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS | SPECIMEN IN PLASTIC BOTTLES | ONE SAMPLE PER TANKER OR TRAILER | | | TEST | |
| | 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 |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER SHIPMENT | CERT OF COMP | | | |
| | MT 302 SAMPLING | | | SAMPLE | | | |
| CRS-2P POLYMER MODIFIED CATIONIC | AASHTO T 72 SAYBOLT VISCOSITY | 2 - 1 QT | | | | | MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED. |
| RAPID SET EMULSION 702.01.06.02 | AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS | SPECIMEN IN PLASTIC BOTTLES | ONE SAMPLE PER TANKER OR TRAILER | | | TEST | |
| | AASHTO T 59 | | | | | | PRIMARY TEST METHOD |

BITUMINOUS

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

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

HIGH TEMPERATURE DISTILLATION

ASPHALTS

BITUMINOUS

| 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 | | | |
| | MT 302 SAMPLING | | | SAMPLE | | | |
| CQS-1HP POLYMER MODIFIED CATIONIC | AASHTO T 72 SAYBOLT VISCOSITY | 2 - 1 QT | | | | | MINIMUM OF ONE TEST PER PROJECT PER AASHTO, TEST RESULTS MAY BE WAIVED IF SUCCESSFUL APPLICATION OF MATERIAL IS ACHIEVED. |
| QUICK SET EMULSION 702.01.07.03 | AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS | SPECIMEN IN PLASTIC BOTTLES | ONE SAMPLE PER TANKER OR TRAILER | | | TEST | |
| | 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 |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER SHIPMENT | CERT OF COMP | | | |
| | MT 302 SAMPLING | | | SAMPLE | | | |
| POLYMER MODIFIED | AASHTO T 72 SAYBOLT VISCOSITY | | | | | | MINIMUM OF ONE TEST PER PROJECT |
| REJUVENATING EMULSION 702.01.08.01 | AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS | 2 - 1 QT SPECIMEN IN PLASTIC BOTTLES | ONE SAMPLE PER TANKER OR TRAILER | | | TEST | |
| | AASHTO T 59 TESTING EMULSIFIED ASPHALTS | | | | | | PRIMARY TEST METHOD EVAPORATIVE DISTILLATION SECONDARY TEST METHOD HIGH TEMPERATURE DISTILLATION |

BITUMINOUS PRIME & TACK COAT

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

CONCRETE AND STRUCTURES

| 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 |

CONCRETE AND STRUCTURES

| 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 |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--|--|------------------------------|--|----------------|-----------------------|---------------|--|
| | AASHTO R 60 SAMPLING FRESH CONCRETE | REFER TO TEST FOR SIZE | | SAMPLE | | | |
| CLASS GENERAL CONCRETE | MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPLRESSIVE STRENGTH | | 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 152 AIR CONTENT | | | | | | INCLUDE IN QA |
| 551.03.02.02 CONCRETE UNCLASSIFIED | AASHTO T 119 SLUMP AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE | 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 |
| 551.03.02.99 | AASHTO T 121 UNIT WEIGHT | | | | | | FOR INFORMATION ONLY |
| | | N | /lix 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|--|------------------------------|---|----------------|-----------------------|---------------|---|
| | 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 | | | | | | INCLUDE IN QA |
| CLASS PAVE CONCRETE | AASHTO T 119 SLUMP AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE | 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 |
| 551.03.02.03 | THICKNESS OF CONCRETE (SURVEY METHOD) | | | | | | PRIMARY TEST SEE STANDARD SPECS SECTION 501.03.17 |
| | AASHTO T 148 MEASURING LENGTH OF CORES AASHTO T 24 OBTAIN AND TEST CONCRETE CORES AASHTO T 121 | N/A | MIN OF ONE TEST PER 1000 FEET OF TRAFFIC LANE OF PAVEMENT PLACED | SAMPLE TEST | | | SECONDARY TEST USE FOR VERIFICATION OR RESOLVE DESCREPANCIES AS IDENTIFIED IN MDT STANDARD SPECS SECTION 501.03.17 |
| | UNIT WEIGHT | | | | DISTRICT/ | MDT | FOR INFORMATION ONLY |
| | | N | 1ix Design | FIELD | AREA LAB | 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---------------------------------------|--|------------------------------|--|----------------|-----------------------|---------------|--|
| | AASHTO R 60 SAMPLING FRESH CONCRETE | REFER TO TEST FOR SIZE | | SAMPLE | | | |
| | MT 117 COMPRESSIVE STRENGTH CYLINDERS OF SCC AASHTO T 22 COMPRESSIVE STRENGTH | 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 152 AIR CONTENT SCC | | | | | | INCLUDE IN QA |
| CLASS SCC CONCRETE 551.03.02.05 | AASHTO T 347 SLUMP FLOW SCC AASHTO T 345 PASSING ABILITY OF SCC BY J-RING AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE | 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 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|---|------------------|--|----------------|-----------------------|---------------|--|
| | AASHTO R 60 | REFER TO | | | | | |
| | SAMPLING FRESH CONCRETE | TEST FOR SIZE | | SAMPLE | | | |
| | MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE STRENGTH | | 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 358 RESISTIVITY | | TEST 3 - 28 DAY COMPRESSIVE STRENGTH CYLINDERS | | | | |
| CLASS DECK CONCRETE | AASHTO T 152 AIR CONTENT | | | | | | INCLUDE IN QA |
| 551.03.02.06 | AASHTO T 119 SLUMP | | ONE TEST EVERY 30 YD ³ AND WHEN | | | | TEST EACH LOAD WHEN |
| | AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE | 1 CU FT | COMPRESSIVE STRENGTH CYLINDERS ARE MADE | SAMPLE TEST | | | INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED |
| | AASHTO T 121 UNIT WEIGHT | | | | | | FOR INFORMATION ONLY |
| | | Ν | Λix 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|--|------------------------------|--|---------------|-----------------------|---------------|--|
| | AASHTO R 60 SAMPLING FRESH CONCRETE | REFER TO TEST FOR SIZE | | SAMPLE | | | |
| | MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 | 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)] |
| | COMPRESSIVE STRENGTH AASHTO T 358 | | TEST 3 - 28 DAY COMPRESSIVE STRENGTH | | | | |
| CLASS | RESISTIVITY AASHTO T 152 | | CYLINDERS | | | | |
| OVERLAY-SF | AIR CONTENT | | | | | | INCLUDE IN QA |
| CONCRETE | AASHTO T 119 SLUMP | | ONE TEST FOR THE FIRST LOAD | | | | |
| | AASHTO T 309 | 1 CU FT | AND THEN ONE TEST | SAMPLE | | | TEST EACH LOAD WHEN |
| 551.03.02.07 | TEMPERATURE OF | I CU FI | | TEST | | | INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED |
| | FRESHLY MIXED | | EVERY 16 YD ³ THEREAFTER | | | | ARE ENCOUNTERED |
| | CONCRETE AASHTO T 121 | | | | | | |
| | UNIT WEIGHT | | | | | | FOR INFORMATION ONLY |
| | | N | /lix 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. |

CONCRETE AND STRUCTURES

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

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|-----------------------------|---|------------------------------|--|----------------|-----------------------|---------------|--|
| | AASHTO R 60 SAMPLING FRESH CONCRETE | REFER TO TEST FOR SIZE | | SAMPLE | | | |
| | MT 101 COMPRESSIVE STRENGTH CYLINDERS | | MINIMUM OF 2 SETS PER LOT (200 YD ³ OR EACH DAY'S POUR | | | | 1 SET MAY REPRESENT POURS OF 30 YD ³ |
| | AASHTO T 22 COMPRESSIVE STRENGTH | 1 CU FT | WHICHEVER IS LESS) | SAMPLE | | TEST | OR LESS [551.03.8(C)(1)(a)] |
| | 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 |
| CLASS STRUCTURE CONCRETE | AASHTO T 152 AIR CONTENT | | | | | | INCLUDE IN QA |
| 551.03.02.09 | AASHTO T 119 SLUMP | | ONE TEST EVERY 30 YD ³ AND WHEN | | | | TEST EACH LOAD WHEN |
| | AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE | 1 CU FT | COMPRESSIVE STRENGTH CYLINDERS ARE MADE | SAMPLE TEST | | | INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED |
| | AASHTO T 121 UNIT WEIGHT | , | | | | | FOR INFORMATION ONLY |
| | | Ν | /lix 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--|--|------------------------------|--|----------------|-----------------------|---------------|--|
| | 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 (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)] |
| CLASS DRILLED SHAFT CONCRETE 551.03.02.10 | AASHTO T 119 SLUMP AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE AASHTO T 121 | 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 |
| | UNIT WEIGHT | Γ | /lix Design | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | FOR INFORMATION ONLY 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. |

CONCRETE AND STRUCTURES

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

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|---|------------------------------|--|---------------|-----------------------|---------------|--|
| | AASHTO R 60 SAMPLING FRESH CONCRETE | REFER TO TEST FOR SIZE | | SAMPLE | | | |
| | ASTM C1140 SHOTCRETE PANELS | 24"X24"X4" | TWO SETS OF THREE CORES PER LOT (1 LOT = 100 YD ³) (SMALL QUANTITES TESTED | SAMPLE | | TEST | |
| SHOTCRETE | ASTM C1604 OBTAIN & TEST CONCRETE CORES | PANEL | EVERY 25 YD ³) MINIMUM OF ONE TEST/PANEL PER INSTALLATION | 5, WH EE | | 1231 | |
| 551.03.02.15 | AASHTO T 152 AIR CONTENT | 1 CU FT | ONE TEST FOR THE FIRST LOAD AND ONE TEST EVERY 16 YD ³ | TEST | | | |
| | | Ν | 1ix 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|---|----------------------|--|----------------|-----------------------|---------------|--|
| | AASHTO R 60 SAMPLING FRESH | REFER TO TEST FOR | | SAMPLE | | | |
| | CONCRETE | SIZE | | SAIVII EE | | | |
| | MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE STRENGTH | 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 358 RESISTIVITY | | TEST 3 - 28 DAY COMPRESSIVE STRENGTH CYLINDERS | | | | |
| CLASS JOINT CONCRETE | AASHTO T 152 AIR CONTENT | | | | | | INCLUDE IN QA |
| 551.03.02.16 | AASHTO T 119 SLUMP | | ONE TEST EVERY 30 YD ³ AND WHEN | | | | TEST EACH LOAD WHEN |
| | AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE | 1 CU FT | COMPRESSIVE STRENGTH CYLINDERS ARE MADE | SAMPLE TEST | | | INCONSISTENT OR FAILING TEST RESULTS ARE ENCOUNTERED |
| | AASHTO T 121 UNIT WEIGHT | | | | | | FOR INFORMATION ONLY |
| | | Ν | /lix 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|---|------------------------------|--|----------------|-----------------------|---------------|--|
| | 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 (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)] |
| CLASS STRUCTURE - | AASHTO T 152 AIR CONTENT | | | | | | INCLUDE IN QA |
| LOW SLUMP CONCRETE | AASHTO T 119 SLUMP | • | | | | | |
| 551.03.02.17 | AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE | 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 121 UNIT WEIGHT | | | | | | FOR INFORMATION ONLY |
| | | N | /lix 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. |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---|---|------------------------------|-----------------------------|---------------|-----------------------|-----------------------|--|
| | AASHTO R 60 SAMPLING FRESH CONCRETE | REFER TO TEST FOR SIZE | | SAMPLE | | | |
| CLASS ULTRA HIGH PERFORMANCE CONCRETE | MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE STRENGTH | | SEE SPECIAL PROVISIONS | SAMPLE | | TEST | |
| 551.03.02.18 | | N | /lix 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 |
| | AASHTO R 60 | REFER TO | | | | | |
| | SAMPLING FRESH CONCRETE | TEST FOR SIZE | | SAMPLE | | | |
| CLASS LOW DENSITY CELLULAR CONCRETE | CONCRETE MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE | SIZE | SEE SPECIAL PROVISIONS | SAMPLE | | TEST | |
| CELLULAR | CONCRETE MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 | SIZE | SEE SPECIAL PROVISIONS | | DISTRICT/ AREA LAB | TEST MDT HQ LAB | NOTES |

CONCRETE AND STRUCTURES

| 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 |
| | 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 |
| PRESTRESSED BEAM 553.01.00.01 | 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-INSI | PECTION | |
| 8 | | | | | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| MATERIAL/ MATERIAL CODE | | SAMPLE SIZE 1 EACH | SAMPLE/TEST FREQUENCY ONE PER EACH | FIELD CERT OF COMP VISUAL | DISTRICT/ AREA LAB | MDT HQ LAB | IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER |
| MATERIAL CODE | TESTS CERT/ VISUAL | | · · · · · · · · · · · · · · · · · · · | CERT OF COMP | - | | IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF |
| | TESTS CERT/ VISUAL INSPECTION STEEL CERT | 1 EACH | ONE PER EACH | CERT OF COMP VISUAL | - | | IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER <u>SPECIFICATION 624.03.3</u> MANDATORY SUBMITTAL OF DOCUMENTATION PER |
| PRECAST CONCRETE | TESTS CERT/ VISUAL INSPECTION STEEL CERT CATEGORY 2 ASTM A416 SEVEN WIRE | 1 EACH 1 EACH | ONE PER EACH ONE PER FORM 406 | CERT OF COMP VISUAL | - | HQ LAB TEST | IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3 MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 REQUIRED ONLY WHEN MEMBER |

CONCRETE AND STRUCTURES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--------------------------------|---------------------------------------|-------------|---------------------------|---------------|------------------------|---------------|---|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | VISUAL | | | PRE-INSPECTION IS NOT REQUIRED IF ITEM IS PRODUCED AT A CERTIFIED PLANT (QPL) |
| CATTLE GUARD BASES | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |
| 554.01.00.02 | MT 110 RCP AND ASSOCIATED ITEMS | N/A | | | PRE-INSF QPL FACILI | | 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PROJECT, PER TYPE | DATA SHEET | | | |
| 563.02.00.01 | 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 |
| POLYMER RESIN | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PROJECT, PER TYPE | DATA SHEET | | | |
| 563.02.00.02 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

CONCRETE AND STRUCTURES

| 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 | | | |

CONCRETE SEALANT

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| METHACRYLATE (HMWM) 717.02.02.01 | MT 535 BRIDGE DECK CRACK SEALANT IR TEST | 2 - 4 OZ PLASTIC BOTTLES | ONE PER LOT/BATCH NUMBER | SAMPLE | | TEST | SAMPLE REQUIRED TO BE TAKEN FROM JOB SITE |

CONCRETE SEALANT

| 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 |

MT 601 (01/09/25)

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

CRACK SEALING

| 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 |
| 403.02.00.02 | 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 | | | |

MT 601 (01/09/25)

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

EXCAVATION

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

EXCAVATION

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|------------------------------|--|----------------|---|--------|-----------------------|---------------|-----------------------------------|
| MATERIAL CODE | MT 201 SAMPLING MT 202 | JILL | | SAMPLE | | | |
| | SIEVE ANALYSIS AASHTO T 89 LIQUID LIMIT | | EACH SOURCE OF SPECIAL BORROW IS SUBJECT TO APPROVAL PRIOR TO | | | | |
| | AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX AASHTO M 145 | 77 LBS | PLACEMENT (ONE BORROW SOURCE PER 65,000 YD ³) MINIMUM EIGHT SAMPLES PER | | TEST | | |
| SPECIAL BORROW | SOIL CLASS MT 210 (5.5LB) PROCTOR | | BORROW SOURCE 85% OF THE TESTS MUST MEET SOILS CLASSIFICATION OR R-VALUE | | | | |
| 203.01.00.02 | MT 230 (10LB) PROCTOR AASHTO T 190 | | REQUIREMENT | | | TEST | TEST REQUIRED IF SPECIFIED IN THE |
| | R-VALUE | | | | | 1231 | SPECIAL PROVISIONS |
| | MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY) | N/A | MINIMUM OF ONE TEST | TEST | | | |
| | MT 218 RELATIVE COMPACTION AND % MOISTURE | N/A | PER 2000 YD ³ AND A MINIMUM OF ONE TEST PER LIFT | TLST | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| | MT 201 SAMPLING | | | SAMPLE | | | |
| STEMMING AGGREGATE | MT 202 SIEVE ANALYSIS | | | | | | |
| FOR BLASTING 204.02.00.01 | AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX | 30 LBS | ONE TEST PER SOURCE | | TEST | | |
| | AASHTO T 335 FRACTURE | | | | | | |

FENCING

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|----------------------------------|----------------|-----------------------|----------------------|-----------------------|---------------|--|
| SNOW FENCE | CERT/ VISUAL INSPECTION | N/A | ONE PER PRODUCT | DATA SHEET | | | |
| MATERIAL 607.02.01.01 | 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 |
| CHAIN LINK FABRIC | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET VISUAL | | | |
| 712.01.02.01 | 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 |
| CHAIN LINK STEEL POST | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET VISUAL | | | |
| 712.01.03.01 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

FENCING

| MATERIAL/ | TESTS | SAMPLE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ | MDT | NOTES |
|-------------------------------|---------------------------------------|----------------|-----------------------|----------------------|-----------------------|---------------|--|
| MATERIAL CODE | TESTS | SIZE | SAMPLE/TEST FREQUENCE | FIELD | AREA LAB | HQ LAB | NOTES |
| CHAIN LINK GATE | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET VISUAL | | | |
| 712.01.08.01 | 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 |
| FENCE WIRE | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET VISUAL | | | |
| 712.02.00.01 | 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 |
| STEEL FENCE POST | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET VISUAL | | | |
| 712.02.07.01 | 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 |
| | CERT/ VISUAL INSPECTION | N/A | ONE PER LOT | VISUAL | | | VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS |
| WOOD FENCE POST/BRACE RAIL | MT 404 INSPECTING WOOD PRODUCTS | PER MT 404 | PER MT 404 | | PRE-INSI | PECTION | |
| 712.02.08.01 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

FENCING

| 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 |

GEOTEXTILE

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PROJECT | DATA SHEET | | | SUBMIT SAMPLE OF MATERIAL TO GEOTECHNICAL SECTION FOR REVIEW |
| 716.00.00.03 | 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 |
| SEPARATION GEOTEXTILE MOD SURV | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PROJECT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| 716.02.00.01 HIGH SURV 716.02.00.02 | 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PROJECT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| 716.03.00.01 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

GEOTEXTILE

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PROJECT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| 716.04.00.02 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 |
| | TESTS CERT/ VISUAL INSPECTION | SAMPLE SIZE 1 EACH | SAMPLE/TEST FREQUENCY | FIELD DATA SHEET | - | MDT HQ LAB | NOTES ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |

GEOTEXTILE

| 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 | | | |

GEOTEXTILE

| 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 |

GUARDRAIL

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER ITEM | DATA SHEET | | | |
| GUARDRAIL 705.01.01.05 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

GUARDRAIL

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---|---------------------------------------|----------------|-----------------------|------------------------|-----------------------|---------------|---|
| | CERT/ VISUAL INSPECTION | N/A | ONE PER LOT OR BATCH | VISUAL | | | VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS |
| WOOD GUARDRAIL POST/BLOCKOUT 705.01.02.01 | MT 404 INSPECTING WOOD PRODUCTS | PER MT 404 | PER MT 404 | | PRE-INSI | PECTION | |
| | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE | SAMPLE/TEST FREQUENCY | | DISTRICT/ | MDT | |
| THAT ENGAL CODE | | SIZE | SAMPLE/TEST FREQUENCE | FIELD | AREA LAB | HQ LAB | NOTES |
| NON-WOOD BLOCKOUT | CERT/ VISUAL INSPECTION | SIZE | ONE PER LOT OR BATCH | FIELD DATA SHEET | - | HQ LAB | NOTES |
| NON-WOOD | CERT/ VISUAL | | | DATA | - | HQ LAB | NOTES 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET | | | |
| 705.01.05.01 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

GUARDRAIL

| 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 |

JOINT MATERIAL

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--|----------------------------------|----------------|-----------------------|----------------------------------|-----------------------|---------------|--|
| EXPANSION JOINT FILLERS - CORK | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| 707.01.00.01 | 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 |
| CRACK & JOINT | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| SEALING MATERIAL 707.01.01.01 | 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 |
| EXPANSION JOINT SYSTEM | 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 |
| 707.01.02.01 | 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 |
| SILICONE JOINT SEAL 707.01.02.02 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET | | | |

JOINT MATERIAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

| 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/ | TESTS | SAMPLE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT | NOTES |
| MATERIAL CODE EXPANSION JOINT ASPHALT PLUG 707.01.02.04 | CERT/ VISUAL INSPECTION | SIZE 1 EACH | ONE PER PRODUCT | DATA SHEET | | HQ LAB | |
| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET | | | |
| 707.02.01.01 | 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 |
| FLEXIBLE JOINT SEALER 707.02.02.01 JOINT MATERIAL | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET | | | 76 |

LIGHTING, SIGNALS & COMMUNICATION

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------------|------------------------------|----------------|-----------------------|------------|-----------------------|---------------|--|
| ELECTRICAL SUBMITTAL - | ELECTRICAL ITEM CHECKLIST | 1 EACH | ONE PER PROJECT | DATA SHEET | | | SEE EXAMPLE ELECTRICAL ITEM CHECKLIST |
| STEEL AND IRON 703.00.00.00 | 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 |
| | ELECTRICAL ITEM CHECKLIST | N/A | ONE PER LOT | DATA SHEET | | | VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL |
| STEEL CONDUIT | 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 - | ELECTRICAL ITEM CHECKLIST | 1 EACH | ONE PER LOT/BATCH | DATA SHEET | | | VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL |
| CONCRETE | 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 |
| | ELECTRICAL ITEM CHECKLIST | 1 EACH | ONE PER ITEM/LOT | DATA SHEET | | | VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL |
| SIGNAL STANDARDS TYPE 2/3 | 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 ITEM CHECKLIST | 1 EACH | ONE PER ITEM/LOT | DATA SHEET | | | VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL |
| LUMINAIRE STANDARD TYPE 10 | 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 |

LIGHTING, SIGNALS & COMMUNICATION

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

LIGHTING, SIGNALS & COMMUNICATION

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

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

LIGHTING, SIGNALS & COMMUNICATION

| 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

| 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 |
| | CERT/ VISUAL INSPECTION | N/A | ONE PER CHARGE | VISUAL | | | VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS |
| CLASS 4 TREATED WOOD POLES | MT 404 INSPECTING WOOD PRODUCTS | PER MT 404 | PER MT 404 | | PRE-INSI | PECTION | |
| 703.14.00.01 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MAINTENANCE

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

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

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MAINTENANCE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|-----------------------------------|----------------------------|--|----------------------|-----------------------|---------------|-------------------------------------|
| | CERT/ VISUAL INSPECTION | N/A | ONE PER TRUCK LOAD | DATA SHEET VISUAL | | | VISUALLY EVALUATE FOR CONTAMINATION |
| SALT 8B (WET SALT) | *PNS METHOD 13 SALT GRADATION | AIR TIGHT CONTAINER | AS REQUESTED | | | | *GRADATION - MUST BE HAND SHAKEN |
| MT 1.3 | MT 526 MOISTURE OF PNS SALT | (1 GAL SEALABLE BAG) | ONE PER TRUCK LOAD - TEST EACH SAMPLE - EXCEPT MISSOULA AND KALISPELL TEST EACH 5TH SAMPLE IN CASE OF A FAILURE, TEST EACH SAMPLE | SAMPLE | TEST | | TESTING OF MOISTURE CONTENT |
| MATERIAL/ | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ | MDT | NOTES |
| MATERIAL CODE | MT 501 | | | MAINT | AREA LAB | HQ LAB | |

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

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MAINTENANCE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|-------------------------------------|--|-------------|---|----------------|-----------------------|---------------|-----------------------|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER TRUCK LOAD | DATA SHEET | | | |
| | MT 408 SAMPLING LIQUID DEICING MATERIAL | | | SAMPLE | | | |
| DE-ICER MgCl ₂ MT 3.1 | MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE MT 502 CHEMICAL ANALYSIS MT 504 CYANIDE | 1 GALLON | ONE SAMPLE FOR EVERY 100,000 GALLONS | | | TEST | C.R. = CORROSION RATE |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MAINTENANCE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|-------------------------------------|---|-------------|---|----------------|-----------------------|---------------|-----------------------|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER TRUCK LOAD | DATA SHEET | | | |
| | MT 408 SAMPLING LIQUID DEICING MATERIAL | | | SAMPLE | | | |
| DE-ICER CaCl ₂ MT 3.2 | MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE MT 502 CHEMICAL ANALYSIS | 1 GALLON | ONE SAMPLE FOR EVERY 100,000 GALLONS | | | TEST | C.R. = CORROSION RATE |
| | MT 504 CYANIDE | | | | | | |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MAINTENANCE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--|--|-------------|---|----------------|-----------------------|---------------|-----------------------|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER TRUCK LOAD | DATA SHEET | | | |
| | MT 408 SAMPLING LIQUID DEICING MATERIAL | | | SAMPLE | | | |
| DE-ICER KCH ₃ COO MT 3.3 | MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE MT 502 CHEMICAL ANALYSIS MT 504 CYANIDE | 1 GALLON | ONE SAMPLE PER CONTRACT AND AS REQUESTED | | | TEST | C.R. = CORROSION RATE |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ | MDT HO LAB | NOTES |

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

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MAINTENANCE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|----------------------------------|-------------|-----------------------|----------------|-----------------------|---------------|-------|
| | CERT/ VISUAL INSPECTION | 1 EACH | | DATA SHEET | | | |
| 5/16" SANDING MATERIAL | MT 201 SAMPLING | | | SAMPLE | | | |
| MT 4.2 | MT 202 SIEVE ANALYSIS | 30 LBS | ONE PER 2,000 TONS | | | | |
| | AASHTO T 19 UNIT WEIGHT | | | | TEST | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| ENGINE OIL ANALYSIS | CERT/ VISUAL INSPECTION | 1 EACH | | DATA SHEET | | | |
| MT 5 | MT 520 ENGINE OIL ANALYSIS | 50 mL | YEARLY/AS NEEDED | SAMPLE | | TEST | |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MAINTENANCE

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--------------------------------|---|-------------|---|----------------|-----------------------|---------------|-----------------------|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER TRUCK LOAD | DATA SHEET | | | |
| | MT 408 SAMPLING LIQUID DEICING MATERIAL | | | SAMPLE | | | |
| CORROSION INHIBITOR MT 6 | MT 501 pH INSOLUBLE MTRL C.R. TOTAL SETTLEABLE SOLIDS PERCENT PASSING #10 SIEVE MT 502 CHEMICAL ANALYSIS | 1 GALLON | ONE SAMPLE FOR EVERY 100,000 GALLONS | | | TEST | C.R. = CORROSION RATE |
| | MT 504 CYANIDE | | | | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD MAINT | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| COLD MIX ASPHALT | CERT/ VISUAL INSPECTION | 1 EACH | | DATA SHEET | | | |
| PATCHING MATERIAL | AASHTO T 335 FRACTURE | | ONE PER CONTRACT | SAMPLE | TEST | | |
| MT 7 | MT 322 PERCENT ADHESION | 30 LBS | | | | TEST | |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MISCELLANEOUS

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|-------------------------------|----------------------------------|----------------|-----------------------|-----------------|-----------------------|---------------|--|
| DETECTABLE WARNING DEVICES | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PRODUCT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| 608.02.00.01 | 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 |
| CATTLE GUARD GRATE | 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 |
| 611.02.04.01 | 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 |
| 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 | CERT/ VISUAL INSPECTION | N/A | ONE PER PRODUCT | DATA SHEET | | | |
| AND LUMBER 706.01.00.01 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MISCELLANEOUS

| 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 |
| /15.00.00.00 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MISCELLANEOUS

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|--|-------------------------------|----------------------------|------------|-----------------------|----------------|--|
| WATER FOR CONCRETE | CERT/ VISUAL INSPECTION | N/A | ONE PER SOURCE | VISUAL | | | |
| 713.01.00.01 | 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 |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER GRIND/BIN/SHIPMENT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| HYDRATED LIME | AASHTO M 303 LIME FOR ASPHALT MIXTURES | 5 LBS | | SAMPLE | | | |
| 713.02.00.01 | AASHTO T 218 SAMPLING HYDRATED LIME | AIRTIGHT | AS REQUESTED | | | TEST | PLASTIC SAMPLE CONTAINER REQUIRED (i.e., 1 GAL PLASTIC BUCKET WITH FRICTION TOP LID) |
| | 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 |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOAD | DATA SHEET | | | QUALIFIED PRODUCTS LIST |
| MAGNESIUM CHLORIDE | MT 408 SAMPLING LIQUID DEICING MATERIAL | | | | | | SAMPLE REQUIRED ONLY IF NOT ON THE |
| 713.03.00.01 | MT 502 CHEMICAL ANALYSIS | 1 PINT | ONE PER PROJECT | | | SAMPLE TEST | QUALIFIED PRODUCTS LIST |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

MISCELLANEOUS

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------------|--|----------------|-------------------------|------------|-----------------------|----------------|--|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOAD | DATA SHEET | | | QUALIFIED PRODUCTS LIST |
| CALCIUM CHLORIDE 713.03.00.02 | MT 408 SAMPLING LIQUID DEICING MATERIAL | 1 PINT | ONE PER PROJECT | | | | SAMPLE REQUIRED ONLY IF NOT ON THE |
| 713.03.00.02 | MT 502 CHEMICAL ANALYSIS | 1 FINI | | | | SAMPLE TEST | QUALIFIED PRODUCTS LIST |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT OR BATCH | DATA SHEET | | | CERTIFICATION IS THE MIXTURE AND GRADATION ON THE CONTAINER |
| STRUCTURAL CEMENT GROUT | AASHTO R 64 CUBE SPECIMENS USING GROUT/MORTAR | 1 CU FT | TWO SETS OF THREE CUBES | SAMPLE | | | |
| 713.04.00.01 | AASHTO T 106 COMPRESSIVE STRENGTH OF MORTARS | 10011 | PER EACH DAYS POUR | | | 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 | | | |

PAVEMENT MARKINGS

| 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 |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT OR BATCH | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| EPOXY PAINT 714.06.00.01 | 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 | | | |

PAVEMENT MARKINGS

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--|---|-------------------|------------------------------------|------------|-----------------------|---------------|---|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT OR BATCH | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| REFLECTIVE GLASS BEADS MT TYPE 1 714.08.00.01 | AASHTO T 346 SAMPLING GLASS BEADS | 1 QT (1 LITER) | CONSTRUCTION ONE PER PROJECT | SAMPLE | | TEST | SAMPLE FROM BULK CONTAINER WITH THIEF/PROBE IN ACCORDANCE WITH AASHTO T 346. SAMPLE THIEF/PROBE MAY NOT FILL SAMPLE BOTTLES. |
| MT TYPE 2 714.08.00.02 | AASHTO R 98 SIZE AND SHAPE OF GLASS BEADS | (ILITER) | <u>MAINTENANCE</u> AS REQUESTED | | | | WHEN SAMPLING FROM A BULK CONTAINER IS NOT POSSIBLE, SAMPLES MAY BE COLLECTED FROM THE BEAD GUN ON THE TRUCK. |
| | 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 | 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 |
| 559.02.03.01 | 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 |
| PILE CUTTING SHOE | 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 |
| 559.02.03.02 | 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 |
| | 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 |
| STRUCTURAL STEEL PILES 711.10.01.01 | 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 | 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 |
| 711.10.02.01 | STEEL CERT CATEGORY 1 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT # |

PIPES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---|---------------------------------------|----------------|-----------------------|------------------------------------|-----------------------|---------------|---|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER PROJECT | CERT OF COMP VISUAL | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| REINFORCED CONCRETE PIPE 708.01.00.01 | 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-INS | PECTION | PLANTS NEED TO BE INSPECTED MONTHLY |
| | | | | | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| | TESTS CERT/ VISUAL INSPECTION | | SAMPLE/TEST FREQUENCY | FIELD CERT OF COMP VISUAL | | | NOTES ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| | CERT/ VISUAL | SIZE | | CERT OF COMP | | | ACCEPTANCE ONLY FROM THE QUALIFIED |

PIPES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---|---------------------------------------|----------------|-----------------------|---------------------------|------------------------|---------------|---|
| | 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) |
| CONCRETE PRESSURE PIPE 708.02.00.01 | 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-INSF QPL FACILI | | 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT/BATCH | DATA SHEET | | | |
| 708.08 708.07 708.08 | 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER ITEM | DATA SHEET VISUAL | | | |
| 709.01.01.01 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

PIPES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--|--|----------------|----------------------------------|---|-----------------------|---------------|--|
| STEEL WATER PIPE | 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 |
| 709.01.02.01 | 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 |
| CORRUGATED STEEL PIPE | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER ITEM | DATA SHEET VISUAL | | | |
| 709.02.00.01 | 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 |
| STEEL STRUCTURAL | CERT/ VISUAL | | | DATA | | | |
| | INSPECTION | 1 EACH | ONE PER ITEM | SHEET VISUAL | | | |
| PLATE PIPE 709.03.00.01 | | 1 EACH | ONE PER ITEM ONE PER FORM 406 | | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |
| PLATE PIPE | INSPECTION STEEL CERT | | | VISUAL | DISTRICT/ AREA LAB | MDT HQ LAB | DOCUMENTATION PER |
| PLATE PIPE 709.03.00.01 MATERIAL/ | INSPECTION STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | VISUAL FORM 406 | | | DOCUMENTATION PER SPECIFICATION 106.09 |

PIPES

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|-----------------------------------|----------------------------------|-----------------|---|---|-----------------------|---------------|--|
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER ITEM | DATA SHEET VISUAL | | | |
| PIPE CULVERT 709.07.00.01 | 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 |
| SEAMLESS STEEL PIPE | 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 |
| 709.09.00.01 | 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 |
| COPPER PIPE | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER ITEM | DATA SHEET VISUAL | | | |
| 709.10.00.01 | 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 |
| SOILS/WATER FOR PIPE CORROSION | MT 207 WATER CORROSION | 1 QT (WATER) | PROBABLE, PROPOSED OR EXISTING CENTERLINE OF PIPE, CHANNEL BOTTOM, | | SAMPLE | TEST | |
| PC 3 | MT 232 SOILS CORROSION | 5 LB (SOIL) | BRIDGE LOCATIONS AND PROBABLE BORROW AREAS | | SAMPLE | TEST | |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

PLANT MIX PAVEMENT

| 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 |

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

PLANT MIX PAVEMENT

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--------------------------------|---|---|--|--------|-----------------------|---------------|--|
| | MT 303 SAMPLING BITUMINOUS PAVING MIXTURES | | ONE EVERY 1000 TONS OF PLANT MIX PAVEMENT <u>COMMERCIAL MIXES</u> | | | | |
| | AASHTO R 47 REDUCING SAMPLES | | 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) | | | | |
| | AASHTO T 329 MOISTURE CONTENT | SUFFICIENT | MINIMUM ONE PER DAY | | | | |
| PLANT MIX SURFACING | AASHTO T 166 BULK SPECIFIC GRAVITY | QUANTITY IN 2-10 QUART | | | SAMPLE TEST | | |
| GRADE S (3/4") 401.03.00.01 | MT 319 BINDER CONTENT BY IGNITION METHOD | GALVANIZED BUCKETS | ONE EVERY 1000 TONS OF PLANT MIX PAVEMENT <u>COMMERCIAL MIXES</u> ONE EVERY 2000 TONS OF PLANT MIX PAVEMENT WITH A MINIMUM OF ONE SAMPLE FOR PROJECTS | | | | |
| GRADE S (1/2") 401.03.00.02 | MT 320 IGNITION OVEN AGGREGATE ANALYSIS | | | TEST | | | |
| GRADE S (3/8") 401.03.00.03 | MT 321 RICE SPECIFIC GRAVITY | | OVER 500 TONS (NO TESTS ARE REQUIRED FOR PROJECTS UNDER 500 TONS) | | | | |
| | MT 332 GYRATORY COMPACTION | | | | | | |
| | MT 334 HAMBURG WHEEL- TRACK | 45 1 0 5 | ONCE INITIAL JOB MIX TARGETS ARE ESTABLISHED OR FOR START-UP MIX | | SAMPLE | тест | ADDITIONAL SAMPLES MAY BE TAKEN AT EPM'S |
| | MT 335 LINEAR KNEADING COMPACTION | WITH TEST RESULTS OUTSIDE THE BROADBAND LIMITS | | | TEST | DISCRETION | |
| | 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 | | |

PLANT MIX PAVEMENT

| MATERIAL/ | | | Alia Di si sus | | DISTRICT/ | MDT | |
|----------------|-------------------------------|---------|---------------------------------------|-------|-----------|--------|---|
| MATERIAL CODE | | N | /lix Design | FIELD | AREA LAB | HQ LAB | NOTES |
| | MT 201 | | | | SAMPLE | | |
| | SAMPLING | | | | S/ WIT EE | | |
| | MT 202 | | | | | | |
| | SIEVE ANALYSIS | | | | | | |
| | 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 | | | | | | |
| PLANT MIX | PARTICLES | | | | | | |
| SURFACING | AASHTO T 84 | | | | | | |
| | SPECIFIC GRAVITY FINE AGG | | | | | | |
| GRADE S (3/4") | AASHTO T 85 | | | | | | |
| 401.03.00.01 | SPECIFIC GRAVITY | | | | | | |
| | COARSE AGG | 800 LBS | ONE PER PLANT MIX DESIGN VERIFICATION | | | | |
| GRADE S (1/2") | AASHTO R 47 | | | | | TEST | |
| 401.03.00.02 | REDUCING SAMPLES | | | | | | |
| 101100100102 | AASHTO T 166 | | | | | | |
| | BULK SPECIFIC GRAVITY | | | | | | |
| GRADE S (3/8") | MT 321 | | | | | | |
| 401.03.00.03 | 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 | | | | | | |

PLANT MIX PAVEMENT

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

PLANT MIX PAVEMENT

| MATERIAL/ | Mix Design | | | FIELD | DISTRICT/ | MDT | NOTES |
|---------------|---------------------------------|---------|---|--------|-----------|--------|-------|
| MATERIAL CODE | | | | FIELD | AREA LAB | HQ LAB | NOTES |
| | MT 201 | | | SAMPLE | | | |
| | SAMPLING | | | | S/ WIT EE | | |
| | MT 202 | | LBS ONE PER PLANT MIX SEAL COURSE MIX DESIGN | | | TEST | |
| | SIEVE ANALYSIS | | | | | | |
| | AASHTO T 84 | | | | | | |
| | SPECIFIC GRAVITY | | | | | | |
| | FINE AGG | | | | | | |
| | AASHTO T 85 | | | | | | |
| | SPECIFIC GRAVITY | 800 LBS | | | | | |
| | COARSE AGG | | | | | | |
| | AASHTO T 89 | | | | | | |
| | LIQUID LIMIT | | | | | | |
| | AASHTO T 90 | | | | | | |
| | PLASTIC LIMIT & | | | | | | |
| PLANT MIX | PLASTICITY INDEX AASHTO T 96 | | | | | | |
| SEAL COURSE | LOS ANGELES | | | | | | |
| JEAL COURSE | ABRASION | | | | | | |
| 401.03.00.04 | 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 | | | | | VERIFY | |
| | COMPACTION | | | | | | |

PLANT MIX PAVEMENT

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MT 601 (01/09/25)

| 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 |
| | CERT/ VISUAL INSPECTION | N/A | ONE PER PROJECT | VISUAL | | | VERIFY ITEM MEETS MDT REQUIREMENTS |
| COLD RECYCLED PLANT MIX 405.03.00.01 | AASHTO T 329 MOISTURE CONTENT | MINIMUM 2.2 LB MOISTURE PROOF CONTAINER | ONE EVERY 3000 FT PAVER PATH | SAMPLE | TEST | | |
| 405.05.00.01 | 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 |
| | CERT/ VISUAL INSPECTION | N/A | ONE PER PROJECT | VISUAL | | | VERIFY ITEM MEETS MDT REQUIREMENTS |
| HOT IN-PLACE RECYLCED PLANT MIX | MT 303 SAMPLING BITUMINOUS PAVING MIXTURES | SUFFICIENT QUANTITY IN 2-10 QUART GALVANIZED BUCKETS | PER SPECIAL PROVISION | SAMPLE | TEST | | |
| 405.03.00.02 | | | 1ix 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 |

PLANT MIX PAVEMENT

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MT 601 (01/09/25)

| 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 | |

REVEGETATION

| 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 | | | |

REVEGETATION

| 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 |

MT 601 (01/09/25)

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

SIGNING

| 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 |
| | CERT/ VISUAL INSPECTION | N/A | ONE PER LOT/BATCH | VISUAL | | | VERIFY SEAL NUMBERS CORRESPOND WITH PRE-INSPECTION RECORDS |
| TREATED WOOD POSTS & POLES | MT 404 INSPECTING WOOD PRODUCTS | PER MT 404 | PER MT 404 | | PRE-INSF | PECTION | |
| 704.01.06.01 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

MT 601 (01/09/25)

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

SIGNING

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT/BATCH | DATA SHEET VISUAL | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| DELINEATORS 704.03.00.02 | 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 |
| OVERHEAD | CERT/ VISUAL INSPECTION | N/A | ONE PER EACH | VISUAL | PRE-INSI | PECTION | |
| STRUCTURES 704.08.01.01 | STEEL CERT CATEGORY 1 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT # |

STEEL

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER SHIPMENT | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| GRADE 60 711.01.01.02 GRADE 75 711.01.01.03 | 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 |
| 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 |

STEEL

| 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 | CERT/ VISUAL INSPECTION | N/A | ONE PER SHIPMENT | DATA SHEET | | | |
| RESISTANT-CR- GR100 | 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 |
| | CERT/ VISUAL INSPECTION | N/A | ONE PER SHIPMENT | DATA SHEET | | | |
| REBAR-CORROSION RESISTANT-SS-GR60 | STEEL CEPT | 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 | |

STEEL

| 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 | DATA SHEET OR CERT OF COMP | | | IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3 |
| STRUCTURAL STEEL 711.02.00.01 | 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 |
| MATERIAL/ | TESTS | SAMPLE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ | MDT | IF PRE-INSPECTED, SEE MATERIAL CODE 711.02.00.02 NOTES |
| MATERIAL CODE | 12515 | SIZE | SAMPLE/ TEST FREQUENCE | | AREA LAB | HQ LAB | |
| PREFABRICATED PRE-INSPECTED | 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 |
| STRUCTURAL STEEL MEMBERS | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |
| 711.02.00.02 | MT 415 STRUCTURAL STEEL | 1 EACH | ONE PER ITEM | | PRE-INS | SPECTION | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| STRUCTURAL STEEL TUBING | 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 |
| 711.03.00.01 | STEEL CERT CATEGORY 1 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION FOR EACH HEAT # |

STEEL

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---|---|----------------------|--|------------|-----------------------|---------------|--|
| HIGH TENSILE | 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) |
| STRENGTH HEX BOLTS 711.06.00.01 | ASTM F959 DIRECT TENSION INDICATORS | 3 DTI ASSEMBLIES | ONE TEST PER GRADE, DIAMETER, LENGTH, AND LOT | SAIVIFLL | | IL3I | 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 |
| HIGH TENSILE STRENGTH TENSION CONTROL BOLTS | 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 |
| 711.06.00.02 | 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 |
| GALVANIZED METAL | CERT/ VISUAL INSPECTION | 1 EACH | ONE TEST PER LOT/BATCH | DATA SHEET | | | |
| 711.08.00.01 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

STEEL

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|-----------------------------------|--|----------------|-----------------------|-------------------------------------|-----------------------|---------------|--|
| WELDED STUD | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER SHIPMENT | DATA SHEET OR CERT OF COMP | AREA LAD | | IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3 |
| SHEAR CONNECTORS | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |
| 711.09.00.01 | MT 409 WELDED STUD SHEAR CONNECTORS | 1 EACH | ONE PER ITEM | | PRE-INS | PECTION | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER ITEM | DATA SHEET | | | |
| PRESTRESSING STEEL | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |
| 711.11.00.01 | 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT/ITEM | DATA SHEET | | | |
| 711.12.03.01 | 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 |
| CAST IRON INLET FRAME & GRATES | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT/ITEM | DATA SHEET | | | ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST |
| 711.12.03.02 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

STEEL

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER SHIPMENT | DATA SHEET | | | |
| CONNECTORS 711.18.00.01 | 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 |
| HIGH STRENGTH WIRE ROCKFALL | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER LOT/ITEM | DATA SHEET | | | |
| MESH 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

| 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 |
| | CERT/ VISUAL INSPECTION | N/A | ONE PER MATERIAL TYPE | VISUAL | | | VERIFY ITEM MEETS MDT REQUIREMENTS |
| STREAMBED AGGREGATE | MT 201 SAMPLING | SAMPLE | | SAMPLE | | | |
| 208.02.03.01 | MT 202 SIEVE ANALYSIS | PER MT 201 | ONE PER SOURCE | TEST | | | |

BUILDING MATERIALS

STRUCTURE MATERIAL

| 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 |
| BW.033.01.01 | 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 |
| GLUE LAMINATED | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER BEAM | DATA SHEET | | | |
| BEAMS BM.699.01.02 | 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET | | | |
| BM.699.01.04 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

BUILDING MATERIALS

STRUCTURE MATERIAL

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---------------------------------|----------------------------------|----------------|-----------------------|------------|-----------------------|---------------|--|
| METAL SIDING & | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET | | | |
| SOFFIT BM.699.01.05 | 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 |
| PICNIC SHELTER (NON PRECAST) | 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 |
| BM.699.01.06 | 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 |
| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET | | | |
| BM.699.01.08 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

BUILDING MATERIALS

STRUCTURE MATERIAL

| 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 | 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 |
| FLASHING BM.699.01.10 | 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 | | | |

MT 601 (01/09/25)

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

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 | 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 |
| BM.699.01.15 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

ELECTRICAL/MECHANICAL

| | MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|---|----------------------------|--------------|----------------|-----------------------|------------|-----------------------|---------------|-------------------|
| BM.699.02.01 INSPECTION Image: construction of the state of t | ELECTRICAL | CERT/ VISUAL | 1 FACH | ONE PER FACH | DATA SHEET | | | |
| MATERIAL CODE TESTS SIZE SAMPLE/TEST FREQUENCY FIELD AREA LAB HQ LAB NOTES MATERIAL CODE CERT/VISUAL 1 EACH ONE PER EACH COMPONENT, PER TYPE, PER PROJECT DATA SHEET Image: Construction material used per project BASED ON MATERIAL USED PER PROJECT BASED ON MATERIAL USED PER PROJECT Each CONSTRUCTION 3.5.2 FOR DECISION TREE BM.699.02.02 BABA CONSTRUCTION 1 EACH ONE PER FORM 407 FORM 407 Image: Construction material used per project MANDATORY SUBMITTAL OF DOCUMENTATION PER | BM.699.02.01 | INSPECTION | 1 L/IGH | one renencin | DATAGINE | | | |
| HVAC SYSTEMCERT/ VISUAL INSPECTION1 EACHONE PER EACH COMPONENT, PER TYPE, PER PROJECTDATA SHEETCONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECTBM.699.02.02BABA CONSTRUCTION1 EACHONE PER FORM 407FORM 407MANDATORY SUBMITTAL OF DOCUMENTATION PER | - | TESTS | - | SAMPLE/TEST FREQUENCY | FIELD | - | | NOTES |
| CONSTRUCTION 1 EACH ONE PER FORM 407 FORM 407 DOCUMENTATION PER | | - | | , | DATA SHEET | | | |
| | BM.699.02.02 | CONSTRUCTION | 1 EACH | ONE PER FORM 407 | FORM 407 | | | DOCUMENTATION PER |

| 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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET | | | |
| BM.699.02.04 | STEEL CERT CATEGORY 2 | 1 EACH | ONE PER FORM 406 | FORM 406 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09 |

PLUMBING

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------|-------------------------------------|----------------|-----------------------|----------------------------|-----------------------|---------------|---|
| IRRIGATION SYSTEM | 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 |
| BM.699.03.01 | 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 |
| - | TESTS CERT/ VISUAL INSPECTION | | SAMPLE/TEST FREQUENCY | FIELD DATA SHEET | - | | NOTES CONSTRUCTION MATERIAL DESIGNATION BASED ON MATERIAL USED PER PROJECT. SEE SCOPE SECTION 3.5.2 FOR DECISION TREE |

BUILDING MATERIALS

| PLUN | ABING |
|------|--------------|
|------|--------------|

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|----------------------------------|----------------------------------|----------------|-----------------------|------------|-----------------------|---------------|--|
| WASTE WATER TREATMENT | 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 |
| SYSTEM BM.699.03.03 | 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 |
| WASTE WATER UTILITY PIPE & | 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 |
| APPURTENANCE BM.699.03.04 | 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 & | 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 |
| VALVES BM.699.03.05 | 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 | 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 |
| BM.699.03.07 | BABA CONSTRUCTION MATERIAL | 1 EACH | ONE PER FORM 407 | FORM 407 | | | MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106 |

ACCESSORIES

| 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 | | | |

MT 601 (01/09/25)

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

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 | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET | | | |
| (ALUMINUM) BM.699.04.05 | 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

| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
|--|----------------------------|----------------|-----------------------|------------|-----------------------|---------------|-------|
| ALUMINUM STOREFRONT | CERT/ VISUAL INSPECTION | 1 EACH | ONE PER EACH | DATA SHEET | | | |
| BM.699.05.01 | | | | | | | |
| MATERIAL/ MATERIAL CODE | TESTS | SAMPLE SIZE | SAMPLE/TEST FREQUENCY | FIELD | DISTRICT/ AREA LAB | MDT HQ LAB | NOTES |
| DISPLAY CASES | CERT/ VISUAL INSPECTION | 1 1 FACH | ACH ONE PER EACH | DATA SHEET | | | |
| BM.699.05.02 | | | | | | | |
| 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 | | | |

126

MT 601 (01/09/25)

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.

| 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 |

Table 1. Allowable Tolerances for IACs

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 |
|--------------------------------|--|---|
| | 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 |
| Asphalt Mixtures and Binder | 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 |
| | 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 |
| 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 | AASHTO R 100 Making and Curing Concrete Test Specimens in the Field |
| | Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field for Self- Consolidating Concrete (SCC) | |
| 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 AASHTO T 166 | Mechanical Analysis of Extracted Aggregate Bulk Specific Gravity (G _{mb}) of Compacted Asphalt Mixtures UsingSaturated Surface- Dry Specimens |
|------------------------------|---|
| AASHTO T 209 AASHTO T 308 | Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures 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 (Gmb) of Compacted Asphalt Mixtures Using Saturated Surface- |
|--------------|--|
| | Dry Specimens |
| AASHTO T 209 | Theoretical Maximum Specific Gravity (Gmm) 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

- <u>Dust Ratio</u> 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.
- <u>Degradation Value</u> 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).
- <u>**Gradation**</u> 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.
- <u>Moisture Content</u> The weight of water in a given soil mass divided by the oven dry weight of the soil and is expressed in percent.
- <u>Optimum Moisture</u> The moisture content, which will permit maximum-dry-unit weight to be obtained for a given comp active effort.
- <u>Plastic Limit</u> 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.
- <u>Plastic Index</u> The numerical difference between the moisture content of the Liquid Limit and the moisture content of the Plastic Limit.
- <u>**R-Value**</u> 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.
- <u>Wear Value</u> 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

- <u>Absolute (of solids and liquids)</u> 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).
- <u>Absolute (of gases)</u> 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).

<u>Apparent (of solids and liquids)</u> – 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

- <u>Absolute</u> The ratio of the weight of a given volume of solids to the weight of an equal volume of water at a stated temperature.
- <u>Apparent</u> 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.
- <u>Bulk</u> 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.
- <u>Permeability</u> A measure of the facility of a soil to transmit liquids, largely dependent upon grain size distribution.
- <u>"Rice" Gravity</u> 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.
- <u>Binder Course</u> The course, in sheet asphalt and bituminous concrete pavements, placed between base and surface courses.
- **<u>Bleeding</u>** The upward migration of bituminous material resulting in a film of bitumen on the surface.
- <u>Blow-Up</u> Localized buckling or shattering of rigid pavement caused by excessive longitudinal pressure.
- <u>Cement Treated Base (CTB)</u> 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.

- <u>Contraction Joint</u> 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.
- <u>Corrugations</u> The regular transverse undulations in a pavement surface consisting of alternate valleys and crests.
- <u>Cracks</u> The approximately vertical cleavage due to natural causes or traffic action.
- <u>**Crazing**</u> 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.
- <u>Flexible Base and Pavements</u> 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.
- <u>Frost Heave</u> 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.
- <u>Joints</u> 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.
- <u>Map Cracking</u> Disintegration in which cracking of the slab surface develops in a random pattern; may develop over the entire surface or localized areas.
- <u>**Pitting**</u> The displacement of aggregate particles from the pavement surface due to the action of traffic or disintegration, without major displacement of cementing material.
- <u>Plane of Failure</u> 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.
- <u>Progressive Scale</u> 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.
- **<u>Raveling</u>** The progressive disintegration of aggregate particles, by dislodgement, from the surface downward or edges inward.
- **<u>Resurfacing</u>** Supplemental surface placed on existing pavement to improve surface conformation or increase strength.
- **<u>Rigid base and Pavements</u>** 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.

- <u>Scratch or Wedge Course</u> 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.
- <u>Settlement</u> The reduction in elevation of short sections of pavement or structures.
- <u>Shoving</u> The displacement of bituminous pavement due to the action of traffic, generally resulting in bulging of the surface.
- <u>Shoulder</u> 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.
- <u>Stripping</u> The separation of asphalt from aggregate particles due to the presence of moisture in asphalt pavements.
- **<u>Sub-base</u>** Specified or select material, of a planned thickness, placed as a foundation for pavement.
- <u>Subgrade</u> 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.
- <u>Surface Course</u> The top course of a pavement providing a surface resistant to traffic abrasion or imparting structural value to pavement.
- <u>Surface Scale</u> 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.
- <u>Surface Texture</u> 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.
- <u>Warping</u> The deviation of pavement surface from its original shape caused by temperature and moisture differentials within the slab.
- <u>Warping Joints</u> 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

- <u>Admixtures</u> Materials other than cement, aggregate and water in concrete used or entrain air, retard setting or accelerate setting.
- <u>Anchorage</u> That portion of a reinforcing bar, and any attachment thereto, designed to resist pulling out or slipping of the bar when subjected to stress.
- <u>Bleeding</u> The natural separation of a liquid from a liquid-solid or semisolid mixture; for example, water from freshly poured concrete.
- <u>**Consistency**</u> The degree of solidity or fluidity of freshly mixed concrete and commonly described as slump.
- <u>Curing Period</u> 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.

- <u>Fineness Modulus</u> 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.
- <u>Honeycomb</u> 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.
- <u>Saturated Surface Dry</u> 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

- <u>Asphalt Cement</u> Fluxed or un-fluxed asphalt especially prepared for use in making bituminous pavements.
- <u>**Batch**</u> The quantity of mix discharged from the mixer in one complete operation of the plant before additional materials are introduced.
- <u>Bleeding</u> 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.
- <u>C-Factor</u> 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.
- <u>Cutback Asphalt</u> Asphalt cement that has been rendered liquid by fluxing with a petroleum distillate. (includes: RCs Rapid Curing; MCs Medium Curing; SCs Slow Curing.)
- **<u>Emulsion</u>** An emulsion of asphalt cement and water with a small quantity of an emulsifying agent.
- <u>Prime Coat</u> The initial application of low viscosity liquid asphalt to an absorbent base prior to placing asphalt concrete.
- <u>Tack Coat</u> 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

- <u>Volume Swell</u> 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.
- <u>Acceptance Samples and Tests</u> These are samples taken and tests made to ascertain on a dayto-day basis whether the quality of the materials being incorporated or proposed for incorporation into the construction conform to the plans and specifications.
- <u>Air Voids</u> 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.

- <u>Anti-Rutting Specification</u> 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.
- <u>Coarse Aggregate Angularity</u> The percentage (by mass) of aggregates larger than 4 mesh (4.75 mm) with one or more fractured faces.
- <u>Final Record Samples and Tests</u> 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.
- <u>Fine Aggregate Angularity</u> The percent air voids present in loosely compacted aggregates smaller than No. 8 mesh (2.36 mm).
- <u>Flat and Elongated Particles</u> 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.
- <u>Marshall Method of Asphalt Mix Design</u> 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.
- <u>Marshall Stability</u> 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.
- <u>Marshall Flow</u> 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).
- <u>Quality Assurance</u> 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.
- <u>Sand Equivalent (Clay Content)</u> Clay content is the percentage of clay material contained in the aggregate fraction that is finer than a 4 mesh (4.75 mm) sieve.
- <u>Superpave</u>[™] 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.
- <u>Voids in the Mineral Aggregate (VMA)</u> 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.

<u>Voids Filled with Asphalt (VFA)</u> – 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 AC ASTM BST BTB CAPAC CAPC CSPAC CSPC CTB FHPM FM FR HMA IA LTB MT PC PCCP PG PMB PMS PSI QA RCPAC RCPC RMS | American Association of State Highway and Transportation Officials Asphalt Cement American Society for Testing Materials Bituminous Surface Treatment Bituminous Treated Base Corrugated Aluminum Pipe Arch Culvert Corrugated Aluminum Pipe Culvert Corrugated Steel Pipe Arch Culvert Corrugated Steel Pipe Culvert Cement Treated Base Federal-aid Highway Program Manual Fineness Modulus Final Record Hot Mix Asphalt Independent Assurance Lime Treated Base Montana Test Portland Cement Portland Cement Portland Cement Concrete Pavement Performance Grade Plant Mix Base Plant Mix Surfacing Pounds Per Square Inch Quality Assurance Reinforced Concrete Pipe Arch Culvert Reinforced Concrete Pipe Culvert Road Mix Surfacing |
|--|--|
| | |
| | Road Mix Surfacing |
| SC | Seal Coat |
| SG SPPAC | Specific Gravity Structural (Sectional) Plate Pipe Arch Culvert |
| SPPAC | Structural (Sectional) Plate Pipe Arch Culvert Structural (Sectional) Plate Pipe Culvert |
| 0110 | |

METHODS OF SAMPLING AND TESTING MT 604-04 CONVERSION TABLES

Water

Volume Measurements

| 7.5 gal. water | = | 1 cu. ft. | 1 cu. in. | = | 0.000579 cu. ft. |
|------------------------|---|-----------|------------------|---|-------------------|
| 1 cu. ft. water | = | 62.4 lbs. | 1 cu. ft. | = | 1728 cu. in. |
| 3785 cc water | = | 1 gal. | 1 cu. yd. | = | 27 cu. ft. |
| 8.32 lbs. Water @ 25°c | = | 1 gal. | 1 cu. meter | = | 35.31445 cu. ft. |
| 231 cu. in. water | = | 1 gal. | 1 cu. centimeter | = | 0.0000353 cu. ft. |
| 1728 cu. in. water | = | 1 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 I | Measu | rements | | | | 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

| <u>Multiply</u> | <u>by</u> | <u>To obtain</u> |
|--------------------------|-----------|------------------|
| 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:

| <u>Col. A</u> | <u>Col. B</u> | <u>Col. C</u> |
|---------------|---------------|---------------|
| 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 | <u>Col. B</u> | = | Distance from Beginning of Section, Feet | + | Station at Beginning of section | = | Station Number of Sampling Location |
|-------------------------------|---|-------------------------|---|---|---|---------------------------------------|---|--|
| 16,500 16,500 26,500 | | 0.548 0.739 0.331 | | 9042 12190 546 | | 100+00 100+00 100+00 | | 190+42 221+90 105+46 |

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

| Width of <u>Pavement, Feet</u> | Х | <u>Col. C</u> | = | Offset Distance From Left Edge of Pavement to <u>Sampling Location, Feet</u> |
|-----------------------------------|---|---------------|---|--|
| 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.

MT-416

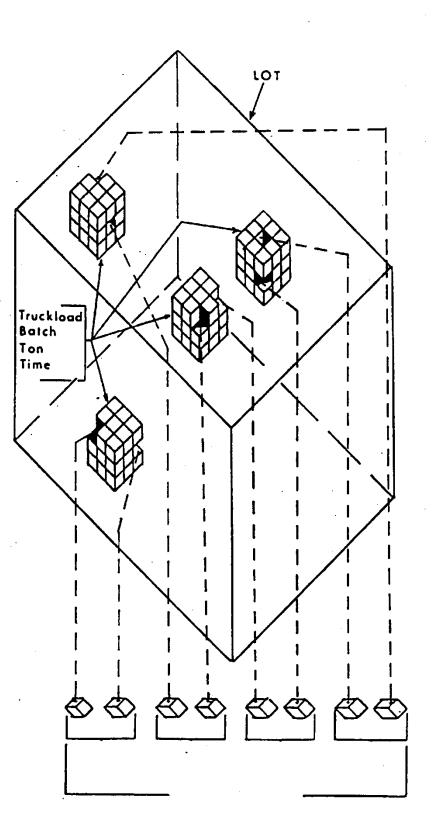


FIGURE 1-Schematic diagram illustrating Lot, Sample, Subsample, and Sample Unit.

| Cal. Na.7 Cal. Na.7 <t< th=""><th></th><th></th><th>TABLE</th><th>ILE X-</th><th>1</th><th>RANDOM</th><th></th><th>NUMBERS</th><th></th><th>FOR</th><th>GENERAL</th><th></th><th>SAM</th><th>SAMPLING</th><th>PRC</th><th>PROCEDURE</th><th>URE</th><th></th><th></th><th> </th></t<> | | | TABLE | ILE X- | 1 | RANDOM | | NUMBERS | | FOR | GENERAL | | SAM | SAMPLING | PRC | PROCEDURE | URE | | | |
|---|--------------|---|-------|--------|--------------|--------|---------------------|--------------|------------|-------------|---------------|-----|---------------|--------------|------------|--------------|--------------|------------|---------------|-------------|
| 0.4 0.7 3 C A C C A C C A C C A C C A C C A C C C C C C C C C C C C C C C C C <th>Cel. No. 1</th> <th>1</th> <th></th> <th>ol. Ne</th> <th></th> <th></th> <th>al. No.</th> <th></th> <th>Ŭ</th> <th>el. Ne.</th> <th>4</th> <th>ٽ</th> <th></th> <th>5</th> <th>J</th> <th>J. No.</th> <th>_</th> <th>о</th> <th>er Ne.</th> <th></th> | Cel. No. 1 | 1 | | ol. Ne | | | al. No. | | Ŭ | el. Ne. | 4 | ٽ | | 5 | J | J. No. | _ | о | er Ne. | |
| 0.4 0.4 <th0.4< th=""> <th0.4< th=""> <th0.4< th=""></th0.4<></th0.4<></th0.4<> | U | | < | - | U | < | - | U | < | - | U | < | - | J | < | • | ų | < | - | • |
| 111 111 121 201 210 <td></td> <td></td> <td>5</td> <td>3</td> <td>170</td> <td>12</td> <td>C 10⁻ .</td> <td>220</td> <td>8</td> <td>680</td> <td>216</td> <td>1</td> <td>.024</td> <td>C98.</td> <td>8</td> <td>000.</td> <td>106.</td> <td>12</td> <td>.029</td> <td>90C.</td> | | | 5 | 3 | 1 70 | 12 | C 10 ⁻ . | 220 | 8 | 680 | 216 | 1 | .024 | C98. | 8 | 000. | 106. | 12 | .029 | 90C. |
| 101 101 101 101 102 101 1 | | | 3 2 | 720 | 156 | 8 | 900 | C58. | 2 | .102 | 000 | 34 | 080. | 20. | 2 | 860 . | .198 | 2 | .112 | .284 |
| 171 171 2 | 919 | | : 2 | 102 | 161. | 2 | .052 | 246 | 2 | 111. | .925 | 36 | .074 | 609. | 2 | 81. | 191. | 2 | 114 | 648 |
| 17 17 29 20 20 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 20 20 <td< td=""><td></td><td></td><td>90</td><td>105</td><td>752.</td><td>25</td><td>190.</td><td>-954</td><td>28</td><td>.127</td><td>078.</td><td>6</td><td>.167</td><td>512</td><td>50</td><td>.13</td><td>98C.</td><td>8</td><td>.121</td><td>.636</td></td<> | | | 90 | 105 | 752. | 25 | 190. | -954 | 28 | .127 | 078. | 6 | .167 | 512 | 50 | .13 | 98C . | 8 | .121 | .636 |
| No. No. <td>74C.</td> <td></td> <td>38</td> <td>179</td> <td>111</td> <td>39</td> <td>-062</td> <td>.507</td> <td>2.</td> <td>132</td> <td>175.</td> <td>38</td> <td>194.</td> <td>.776</td> <td>34</td> <td>861.</td> <td>.062</td> <td>2</td> <td>871.</td> <td>.640</td> | 74C. | | 38 | 179 | 111 | 39 | -062 | .507 | 2. | 132 | 175. | 38 | 194. | .776 | 34 | 861. | .062 | 2 | 871. | .640 |
| Mar Mar <td>į</td> <td></td> <td>i</td> <td></td> <td></td> <td>•</td> <td>201</td> <td></td> <td>9</td> <td>1.00</td> <td></td> <td>Ş</td> <td>910</td> <td>144</td> <td>20</td> <td>1 A.R.</td> <td>144</td> <td>5</td> <td>906</td> <td>121</td> | į | | i | | | • | 201 | | 9 | 1.00 | | Ş | 910 | 144 | 20 | 1 A.R. | 144 | 5 | 906 | 121 |
| 2016 777 777 776 777 776 777 776 777 776 777 776 777 776 777 776 777 776 777 776 777 777 776 777 777 776 777 <th77< th=""> <th77< th=""></th77<></th77<> | | | 97 | | 448. | 22 | | | 2 | | | 38 | | | 2 C 7 C | 55 | | | | |
| 311 311 314 3 | 210 | | 5 | | 4 1 7 | | 5 | | 56 | | | | | | :: | | | 2 | | |
| 348 301 314 402 01 314 403 06 374 403 06 374 403 06 374 403 06 374 403 06 374 403 06 374 10 114 11 474 02 374 10 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 11 114 115 114 115 114 115 114 11 114 11 1144 114 114 | | | 03 | 208 | .577 | 63 | 461. | ACL. | R | | | | | 707 | 1 | | | 4.8 4.0 | | |
| 705 705 706 701 705 701 705 701 7 | .798 | | 8 | 214 | 107 | 5 | 521 | 5 | | | | - | | • | 52 | Ş | | | | |
| 15 741 276 701 15 705 276 700 276 | 0/0. | | 6 | 35. | 080 | 33 | .196 | 579. | 3 | 421 | .282 | 2 | 760. | 501- | 90 | 11E. | 575. | = | 187 | .199 |
| 79 361 301 304 302 401 310 304 30 | 570, | | 15 | .248 | | 26 | .240 | 184. | 1 | 151. | 212 | 90 | 410 | 757. | 03 | .296 | 497 | 03 | 9CC. | 266. |
| 70. 300 300 300 100 401 402 4 | 308 | | 29 | .261 | .007 | 1 | 235 | 171 | 62 | .461 | C20. | 2 | BCY. | 28 | 26 | | 144 | ŝ | C9C. | 78 8 |
| 310 010 070 17 50 17 50 17 50 17 50 17 50 17 50 17 50 17 50 10 | 180 | | 00 | 202 | CBR. | 90 | 010 | 50. | 90 | 787. | 605- | 22 | CS1. | . 605. | 50 | 150. | 141. | 6 | 101 | .635 |
| 10.2 | 573 | | 17 | | 880 | Ξ | 916. | (59. | 80 | 797. | 94E. | 5 | 172 | .624 | 2 | 07C. | 110. | 34 | .466 | :::: |
| 1 10 11 20 20 20 10 | 406 | | - | 376. | 964. | 2 | 126. | .585 | 3 5 | 5 03 | C49. | 50 | .4B8 | 917. | 8 | 38C . | 181. | 2 | ני | 014 |
| 72 10.0 < | C 6 9 . | | 1 | 004 | 111 | 12 | 135. | 275. | 13 | .594 | £0 3 . | 5 | .525 | .222 | 5 | 110 | C70. | 60 | 562 | .678 |
| 01 770 205 01 407 304 653 508 653 508 10 148 740 12 740 12 740 12 740 12 141 138 147 138 148 146 148 146 148 146 148 146 148 146 148 146 148 146 148 146 148 146 148 146 148 146 148 146 | 654 | | 27 | | .676 | 20 | 176. | 515. | 27 | .620 | .894 | 12 | 195. | 006. | 25 | 14 | 200 | 90 | 108. | .673 |
| 09 171 131 172 363 18 685 30 71 17 31 18 16 17 34 34 18 16 17 34 34 18 16 17 34 34 18 18 16 17 16 17 16 17 16 17 11 17 11 | 316 | | 80 | .467 | .205 | 80 | 405 | 242. | 3 | .629 | .841 | 80 | .632 | .508 | 2 | .486 | 916. | 2 | 513. | .859 |
| 817. 12 97. 704. 10. | 121. | | 6 | 474. | 801. | 16 | 445 | .740 | 2 | 169. | 583 | 18 | 899. | 172. | : | .515 | .847 | 26 | C73. | .112 |
| 10 499 492 27 07 709 012 02 701 101 </td <td>-292</td> <td></td> <td>2</td> <td>.492</td> <td>474.</td> <td>3</td> <td>787</td> <td>929.</td> <td>60</td> <td>.708</td> <td>.689</td> <td>20</td> <td>90%</td> <td>¥ € 9.</td> <td>23</td> <td>795.</td> <td>867.</td> <td>23</td> <td>867.</td> <td>.70</td> | -292 | | 2 | .492 | 474. | 3 | 787 | 929. | 60 | .708 | .689 | 20 | 90% | ¥ € 9. | 23 | 795. | 8 67. | 23 | 867. | .70 |
| 19 511 520 170 171 11 711 11 21 25 300 1140 28 300 358 23 591 770 02 499 073 23 570 695 23 58 425 27 14 20 748 70 20 404 730 19 701 501 71 63 27 56 71 20 748 70 20 404 730 19 10 843 10 843 19 19 71 508 07 780 24 .654 .310 22 .816 16 10 .748 .413 10 .814 19 71 .508 .04 .01 .050 .04 .07 .280 .04 .01 .080 .01 .080 .01 .080 .01 .080 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 .01 <td>182.</td> <td></td> <td>1</td> <td>495.</td> <td>.02</td> <td>27</td> <td>543</td> <td>78C.</td> <td>0</td> <td>.709</td> <td>210.</td> <td>6</td> <td>E9<i>C</i>.</td> <td>253</td> <td>Π</td> <td>618.</td> <td>502</td> <td>2</td> <td>CS<i>C</i>.</td> <td>614</td> | 182. | | 1 | 495. | .02 | 27 | 543 | 78C. | 0 | .709 | 210. | 6 | E9 <i>C</i> . | 253 | Π | 618. | 502 | 2 | CS <i>C</i> . | 614 |
| 23 591 770 02 499 073 23 720 695 25 828 425 27 560 711 20 703 20 404 730 19 701 701 701 704 413 10 843 657 16 711 508 07 780 24 454 730 23 748 413 10 843 603 16 701 508 07 780 24 453 706 748 403 160 748 403 16 70 812 04 101 508 07 780 12 778 533 04 116 04 814 502 07 913 103 103 104 913 104 <td>526.</td> <td></td> <td>9</td> <td>ริ</td> <td>.520</td> <td>17</td> <td>.625</td> <td>171.</td> <td>=</td> <td>.714</td> <td>610.</td> <td>23</td> <td>804</td> <td>.140</td> <td>28</td> <td>636.</td> <td>.)48</td> <td>90</td> <td>.758</td> <td>120.</td> | 526. | | 9 | ริ | .520 | 17 | .625 | 171. | = | .714 | 610. | 23 | 804 | .140 | 28 | 636. | .)48 | 90 | .758 | 120. |
| 20 .604 .700 .914 .01 .111 .607 .161 .601 .161 .601 .161 .011 .780 .780 .780 .201 .201 .161 .011 .161 .011 .161 .011 .161 .011 .161 .011 .161 .011 .161 .011 .161 .011 .161 .011 .161 .011 <t< td=""><td>080</td><td></td><td>23</td><td>195</td><td>.770</td><td>03</td><td>669.</td><td>E70.</td><td>23</td><td>.720</td><td>695.</td><td>25</td><td>.828</td><td>.425</td><td>27</td><td>.650</td><td>142</td><td>27</td><td>287</td><td>135.</td></t<> | 080 | | 23 | 195 | .770 | 03 | 669. | E70. | 23 | .720 | 695. | 25 | .828 | .425 | 27 | .650 | 142 | 27 | 287 | 135. |
| 24 .051 .02 20 .781 .602 .781 .603 16 .603 16 .603 .603 .603 .603 .603 .603 .603 .603 .604 .603 .603 .604 .603 .603 .604 .603 .604 .603 .604 .603 .604 .603 .604 .603 .604 | 94C. | | 20 | 604 | 002 | 1 | .702 | 10% | 6 | 748 | | 0 | C78. | .627 | 16 | | 508 | 6 | .780 | |
| 728 .521 04 .04 .04 .00 .052 .051 .04 .04 .00 .051 .04 .04 .051 .051 .051 .051 .051 .051 .051 .051 .051 .051 .051 .052 .052 .052 .053 .053 .05 .051 <td>621.</td> <td></td> <td>24</td> <td>.654</td> <td>000</td> <td>22</td> <td>910.</td> <td>.802</td> <td>20</td> <td>:781</td> <td>E09.</td> <td>16</td> <td>858.</td> <td>.B49</td> <td>61</td> <td>877.</td> <td>.812</td> <td>5</td> <td>.B18</td> <td>.187</td> | 621. | | 24 | .654 | 000 | 22 | 91 0 . | .802 | 20 | :781 | E09. | 16 | 858. | .B49 | 61 | 877. | .812 | 5 | .B18 | .187 |
| 16 .753 .344 15 .904 .116 04 .843 .002 09 .912 .382 08 .806 .952 05 .854 01 .806 .134 28 .949 .742 12 .884 .582 27 .935 .162 18 .841 .14 01 .867 22 .878 .884 09 .974 .046 29 .926 .700 20 .970 .582 12 .918 .114 08 .915 25 .929 .162 05 .977 .494 14 .951 .601 19 077 .07 00 00 70 20 20 | 709. | - | 12 | 728 | | 5 | 8C0. | .166 | 26 | 008. | 78C. | 2 | C04. | 726. | 6 | 804 | .675 | 1 | 7C8. | נגני |
| 01 .806 .134 28 .949 .742 12 .884 .582 27 .935 .162 18 .841 .414 01 .867 22 .878 .984 09 .974 .046 29 .926 .700 20 .970 .582 12 .918 .114 08 .915 25 .929 .162 05 .977 .494 14 951 .601 19 977 .77 01 997 70 20 25 25 | 163. | | 16 | .25 | | 5 | 904. | 911. | 3 | C+8. | 80 | 60 | 212 | . 382 | | 808 | 952 | 50 | 154 | |
| .878 .084 09 .974 .046 29926 .700 20 .970 .582 12 .918 .114 08 .915 .939 .162 05 .977 .494 18 .951 .601 19 973 77 01 997 75 25 | 87 C. | | 5 | 808. | | 28 | 696. | 742 | 12 | 182 | .582 | 27 | 325 | .162 | ; = | 110 | | 10 | 867 | |
| | 3 | | 22 | .878 | | 60 | 97.4 | 046 | 29. | .926 | 007 | 202 | 970 | 582 | : 2 | 018 | | ; 2 | 10 | |
| | | | 56 | 010 | | 50 | 677 | 767 | 1 | 120 | NO1 | 2 | 120 | ;;; | : 2 | | : 8 | 32 | 35 | |
| | | | | | | | | | | | | | | | | | | | | |

RANDOM NUMBERS FOR GENERAL SAMPLING PROCEDURE .

•

| 0 1 C A C | Ŭ | Cel. No. E | • | | Col. No. | • | Ú | Cel. No. 10 | 2 | Ũ | Col. No. 11 | = | | Col. No. 12 | = | | Col. No. 13 | • 13 | | Col. No. 14 | = |
|---|---|------------|---------------|----|--------------|----------|----|-------------|-------|-----|--------------|-------------|-------------|-------------|----------|----|--------------|--------------|------------|-----------------------|------|
| | | - | υ | < | • | U | < | .= | J | < | - | U | < | • | υ | < | - | U | < | = | • |
| 111 02 001 001 010 01 | | .042 | 170, | 1 | 061 | 204. | 26 | 800. | .023 | 11 | .074 | <i>611.</i> | 9[| E 20 | 787. | 6 | | 160. | 26 | 500. | 271. |
| | | 141 | | 0 | 065 | .007 | 8 | 990 | IVC. | 3 | 100. | 945. | 23 | .07 | 020 | 6 | 010 | 196. | 17 | 680 | .363 |
| No. No. <td></td> <td>3</td> <td>.221</td> <td>8</td> <td>160</td> <td>328</td> <td>27</td> <td>C/0.</td> <td>.876</td> <td>24</td> <td>860'</td> <td>524</td> <td>17</td> <td>.096</td> <td>.074</td> <td>28</td> <td>.064</td> <td>C11.</td> <td>2</td> <td>.149</td> <td>189.</td> | | 3 | .221 | 8 | 160 | 328 | 27 | C/0. | .876 | 24 | 8 60' | 524 | 17 | .096 | .074 | 28 | .064 | C 11. | 2 | .149 | 189. |
| 016 11 010 11 010 11 010 110 010 111 110 110 110 110 110 110 110 110 110 110 110 110 110 110 111 | | .162 | 66 8 . | 91 | .122 | 216. | 8 | -095 | 568 | 2 | | 616 | 5 | 151. | C91. | 12 | 200. | 090. | 28 | .238 | .075 |
| 010 12 010 12 000 11 220 201 11 200 11 200 11 200 11 200 11 200 11 200 11 201 | | .285 | 910. | 2 | .13 | 5 | 5 | .180 | 147 | 2 | 187 | 670. | õ | .254 | 10. | 26 | .076 | .532 | [] | .244 | 767 |
| 357 11 71 | | .291 | 100 | 23 | C61. | 464. | 12 | 200 | 128. | 17 | .227 | 767 | 8 | .284 | .628 | 8 | 087 | 101. | 34 | .262 | 366. |
| 310 10 212 21 | | 369 | .557 | 24 | 224 | 572 | 2 | 259 | 720. | 20 | 236 | 175. | 12 | 305 | 616. | 03 | 127 | 187 | | .264 | 15 |
| 708 718 711 711 545 711 711 712 725 701 711 <th71< th=""> <th71< th=""> <th71< th=""></th71<></th71<></th71<> | | 901 | 80C. | 0 | .225 | C22. | 2 | 264 | 199 | 5 | 245 | 988 | 23 | 9IC. | 8 | 80 | 144 | 0.68 | 9 | .205 | |
| 705 70 705 706 705 706 706 705 706 <th706< th=""> <th706< th=""> <th706< th=""></th706<></th706<></th706<> | | .450 | .289 | 8 | £C2. | 809. | 17 | .283 | .645 | 5 | 7IC. | 192. | 5 | CZC. | .212 | 23 | .202 | .674 | 02 | 910 | 151. |
| 715 01 777 700 715 01 777 700 715 711 715 711 715 711 715 711 715 711 711 715 711 | | 55F. | .789 | ñ | .2% | .120 | 23 | 261. | 590. | 29 | 5 | . 116. | 8 | .416 | 276. | 5 | .247 | .025 | 29 | 5 5 C . | .478 |
| 342 11 370 10 200 <t< td=""><td></td><td>.488</td><td>215</td><td>5</td><td>797.</td><td>.242</td><td>30</td><td>19C.</td><td>366.</td><td>26</td><td>000.</td><td>101.</td><td>:</td><td>264.</td><td><u>ل</u></td><td>23</td><td>C22.</td><td>C2C.</td><td>90</td><td>339</td><td>.270</td></t<> | | .488 | 215 | 5 | 797. | .242 | 30 | 19C. | 366. | 26 | 000. | 101. | : | 264. | <u>ل</u> | 23 | C22. | C2C. | 90 | 339 | .270 |
| 342 19 342 19 344 19 344 10 344 11 341 316 315 316 317 27 318 316 317 27 318 316 317 27 318 311 374 112 326 312 316 317 21 318 311 21 311 21 311 21 311 21 311 21 311 21 311 21 311 21 311 21 311 211 21 311 311 | | 496 | .276 | = | 7CC. | 260 | 16 | 29C. | 35 | 38 | .425 | 198. | 03 | .489 | .827 | 24 | .320 | 5 | 30 | 78C. | 248 |
| 697 11 717 21 < | | 505. | 242 | 6 | 985. | 190. | 5 | C27. | 997 | 22 | 117 | .526 | 29 | 503 | 702 | 2 | 328 | 280 | 1 | 295. | 494 |
| 112 20 447 891 10 476 14 541< | | 215. | [69 . | 2 | Ę | 474 | 8 | 2C7. | 902 | 3 | 552. | | 51 , | 518 | 112 | 27 | 900. | .412 | 5 | 108 | 770. |
| 357 27 471 37 394 714 11 572 306 542 354 154 154 177 16 | | 202 | 211. | 20 | 117 | C68. | 2 | .476 | 168 | 2 | 1 64 | 755. | 28 | 122 | 966. | Ξ | .35 6 | 166. | 27 | 110 | .280 |
| 420 27 401 971 01 601 417 21 594 197 19 505 411 216 401 917 01 601 417 21 591 111 216 401 117 111 211 216 401 217 607 524 05 501 101 216 501 401 216 501 401 211 211 211 211 211 211 211 211 211 211 201 201 201 101 101 101 211 201 < | | 755. | 755. | 22 | 47 8 | 120. | 8 | | 174 | = | 572. | 306. | 60 | .542 | 256. | 16 | 101 | 792 | 22 | 161. | 028, |
| 716 72 402 71 70 72 65 70 71 11 < | | 955. | .620 | 29 | 181. | [66] | 5 | 8 | 417 | 31 | 1 92. | 791. | - - - | .585 | 162 | 1 | C21 | .117 | 16 | 527 | 000 |
| 271 00 500 17 10 500 571 10 500 501 571 10 500 401 23 501 773 271 00 500 731 10 500 571 10 500 401 11 701 23 507 773 774 701 703 773 773 284 15 617 701 705 16 701 71 701 703 774 701 703 774 703 774 703 774 703 774 703 774 703 774 703 774 703 774 703 774 703 774 703 774 703 774 703 774 703 701 703 701 703 701 703 701 703 701 703 703 701 703 703 703 701 703 701 703 701 703 701 703 701 701 701 704 701 701 | | .630 | .216 | 27 | 382 | 101 | 33 | 687. | 212. | 8 | 60 3. | 524 | 3 | 695. | Ξ | 2 | | | 20 | 5 | 484 |
| 273 08 303 736 11 701 404 101 11 744 94 19 364 19 364 101 11 744 95 57 797 77 37 37 77 37 77 37 747 95 57 47 11 11 744 15 57 364 15 57 364 15 57 364 15 57 364 15 57 364 15 57 364 15 56 47 15 56 47 15 56 47 15 56 47 15 56 47 15 56 47 15 56 11 36 47 15 56 47 15 56 11 15 56 11 15 56 11 15 16 < | | .672 | | 2 | .566 | 179 | 29 | .697 | .862 | 61 | .059 | .372 | 0 | כני. | 858. | 80 | 160 | 104. | 23 | 678 | 090 |
| 367 15 .677 .97 07 .78 .49 25 .674 .74 18 .79 .74 05 .571 .054 .05 .79 .054 .05 .79 .054 .054 .78 .105 .054 .17 70 .054 .05 .07 .107 .107 .107 .107 .107 .107 .107 .107 .107 .107 .107 .107 .107 .107 .101 .145 .12 .802 .947 .18 .304 .13 .101 .145 .12 .810 .817 .101 .145 .12 .810 .814 .13 .141 .12 .810 .814 .13 .811 .814 .145 .12 .810 .811 .814 .811 | | .709 | 6 72. | 8 | C 09. | .758 | Ξ. | 102 | .605 | 8 | .664 | 101. | = | .744 | .948 | 19 | -564 | 061. | 2 | .725 | 10. |
| 285 06 707 107 10 14 745 57 57 502 567 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 11 504 145 12 506 145 10 10 145 12 504 145 11 504 145 11 504 145 11 204 20 | | 345 | 687 | 5 | 202. | 726. | 0 | .728 | 191. | 23 | .674 | 12Y. | 8 | C42. | 748 | 50 | 172. | .034 | 50 | 797 | 101 |
| 077 21 707 21 10 1 10 1 10 1 10 1 10 1 10 | | .760 | .285 | 8 | 202 | .107 | 2 | 35 | .679 | 03 | 697. | 674 | R | 802 | .947 | - | 587 | 797 | 1 | 108 | 5 |
| 306 11 110 11 | | 145 | 140. | 7 | 167 | 181. | 2 | 918. | 111 | 3 | 787. | 8 2. | 21 | .826 | 187. | 13 | 604 | 145 | 12 | AC8. | 191 |
| 0.07 0.01 0.02 0.02 0.02 0.01 | | 146 | 3 86. | 1 | .146 | <u>8</u> | 1 | 91. 91. | , 123 | 16 | 1 03 | 329 | 24 | 203. | 200. | - | 641 | 298 | 10 | 111 | CUO |
| 874 05 800 678 06 815 15 845 770 14 861 467 20 674 881 19 886 809 27 13 13 845 .57 14 16.1 467 20 674 881 07 19 886 809 27 13 14 27 .53 .534 20 .874 .63 14 07 .729 809 26 040 061 08 .635 .534 20 .974 .560 07 .929 .545 204 27 .61 .711 .30 .929 .036 07 .729 .912 .929 .545 264 201 .722 .021 .122 .031 .723 .912 .721 .970 .912 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 .970 . | | 190. | 705. | 6 | ¥78. | 167 | 23 | 31. | 191 | 2 | . | 162 | 26 | .855 | .142 | 33 | .672 | .136 | = | 484 | 824. |
| - 409 22 14 14 15 14 15 15 15 15 15 15 15 15 15 15 15 15 15 | | 906 | .874 | 5 | 999. | 828. | 8 | 878. | 215 | 13 | 212. | 470 | 1 | 198. | .462 | 20 | 67.4 | .887 | • | A A A | 513 |
| 2315 26 960 365 04 994 827 07 867 718 30 929 036 09 774 560 09 937 356 950 97 932 936 99 774 360 99 932 304 21 978 31 39 910 970 970 970 970 970 970 970 970 970 97 | | 616 | 608 | 8 | . | 629. | = | 2 | 5 | 8 | .855 | .324 | 20 | .874 | 625 | 2 | 757 | | 6 | 0.00 | 510 |
| -304 21 978 194 28 948 004 12 361 722 09 915 512 29 921 752 01 970 361 11 12 982 153 19 020 21 112 916 115 119 020 21 111 112 918 115 119 020 21 111 112 918 115 119 119 111 | | 159. | 25 | 26 | 096. | .365 | 2 | -934 | .827 | 6 | .847 | 117 | ñ | 929 | .036 | 8 | ň | 995 | ; 6 | 200 | 204 |
| 279. 22 .947 .797 .04 .059 .098 .020 .21 .017 .22 .247 .797 .04 .959 .099 .23 .797 | | 1941 | j, | 5 | - 61 | 194. | 3 | 196. | ğ | 12 | 198. | .722 | 8 | 269. | 582 | 29 | .921 | .752 | 5 | 970 | 492 |
| | | -969 | Ę | 12 | .982 | .183 | 6 | 916. | 020 | .23 | 704. | .172 | 22 | 716. | 797. | 5 | 929. | 660. | 33 | 579. | 082 |

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

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

| A C C A C C A C C A C C A C C | 31 C A C C A C C C A C C A C C A C C A C C C A C C C C C C C C C C C C C C | 0 1 0 1 0 | U | Col. No. 15 | 15 | Ŭ | Col. No. 1 | 1 | Ŭ | Cel. No. | 11 | Ŭ | Col. No. 18 | = | " | Cel. No. | = | 6 | Cel. No | 20 | | Col. No. | F |
|--|--|--|-----|--------------|-------------|-----|--------------|--------------|-----------|----------|-----------|------------|--------------|--------------|-----|---------------|---------------|-----|------------|--------------|-----|----------|------------|
| No. No. <th></th> <th></th> <th><</th> <th></th> <th>υ</th> <th><</th> <th>-</th> <th>υ</th> <th><</th> <th>-</th> <th>U</th> <th><</th> <th>-</th> <th>U</th> <th><</th> <th>•</th> <th>U</th> <th><</th> <th>•</th> <th>U</th> <th><</th> <th>•</th> <th></th> | | | < | | υ | < | - | υ | < | - | U | < | - | U | < | • | U | < | • | U | < | • | |
| 111 112 <td></td> <td></td> <td></td> <td>1.00</td> <td>676</td> <td>0</td> <td>062</td> <td></td> <td>CI</td> <td>510</td> <td>100</td> <td>25</td> <td>.027</td> <td>-38</td> <td>12</td> <td>.052</td> <td>.075</td> <td>20</td> <td>000.</td> <td>188.</td> <td>5</td> <td>010.</td> <td>.94</td> | | | | 1.00 | 676 | 0 | 062 | | CI | 510 | 100 | 25 | .027 | -38 | 12 | .052 | .075 | 20 | 000. | 188. | 5 | 010. | .94 |
| 101 1011 101 101 | | | 2 | | SVV | 55 | 080 | 110 | = | 980 | .078 | 8 | .050 | ī | 8 | .075 | 227 | 12 | 10. | 192. | 2 | 10. | 554. |
| 111 1111 111 111 | | | : 5 | 2 | 173 | 8 | ICL | 295 | 26 | .126 | 006. | 26 | 029 | ,026 | 2 | .120 | | 22 | 170. | C68. | 8 | 200. | ž |
| 111 111 211 1111 111 111 | | | 52 | | 002 | | ACL. | | 12 | 128 | 199. | 0 | 201. | 176 | 27 | 145 | 689. | 28 | | E/0. | 8 | 8 | |
| 311 311 312 3 | 111 1111 111 111 | 11 21 <td< td=""><td>;2</td><td>115</td><td>.122</td><td>8</td><td>147</td><td>164.</td><td>8</td><td>.146</td><td>TCC.</td><td>=</td><td>.107</td><td>158</td><td>03</td><td>-209</td><td>-957</td><td>8</td><td>.150</td><td>109.</td><td>1</td><td>151.</td><td>.012</td></td<> | ;2 | 115 | .122 | 8 | 147 | 164. | 8 | .146 | TCC. | = | .107 | 158 | 03 | -209 | -957 | 8 | .150 | 109. | 1 | 151. | .012 |
| 111 1111 111 111 | | | | | | : | | | | | | ç | | 700 | č | | | à | | | | | |
| 111 1111 111 111 | 111 1111 111 111 | | 20 | 31. | 22 | 2 | | | 3 3 | 202 | | 31 | | | | | | 3 : | | 100 | - | | |
| 211 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 11 216 116 11 216 116 11 216 116 | 11 11 <td< td=""><td>11 10 200</td><td>8</td><td>.115</td><td>187.</td><td>20</td><td>11.</td><td>184</td><td>2</td><td>244</td><td></td><td>2</td><td>156</td><td></td><td>33</td><td>299</td><td>215</td><td>-</td><td></td><td>4SC.</td><td>6</td><td>727</td><td>2</td></td<> | 11 10 200 | 8 | .115 | 187. | 20 | 11. | 184 | 2 | 244 | | 2 | 156 | | 33 | 299 | 215 | - | | 4SC. | 6 | 727 | 2 |
| 248 248 214 200 202 000 220 000 15 211 200 15 11 200 15 11 200 101 <td>316 01 000 101 10</td> <td>248 248 248 254 400 123 200 072 00 13</td> <td>8</td> <td>.211</td> <td></td> <td>1</td> <td>.215</td> <td>752</td> <td>3</td> <td>270</td> <td>B 4 9</td> <td>2</td> <td>171.</td> <td>151.</td> <td>-</td> <td>206</td> <td>50.</td> <td>29</td> <td>Į.</td> <td>.615</td> <td>60</td> <td>Ž</td> <td>ž</td> | 316 01 000 101 10 | 248 248 248 254 400 123 200 072 00 13 | 8 | .211 | | 1 | .215 | 752 | 3 | 270 | B 4 9 | 2 | 171. | 151. | - | 206 | 50. | 29 | Į. | .615 | 60 | Ž | ž |
| 249 100 15 270 10 10 270 10 | 201 201 202 202 202 202 202 202 202 201 11 21 | 100 10 100 10 200 201 | 1 | .248 | | 2 | 224 | .646 | 2 | .274 | 407 | 8 | .220 | .097 | 2 | | ເຈ. | 3 | 995. | 3 | ŝ | 316 | 6 |
| 273 514 5 | 252 374 11 310 11 110 11 110 111< | 233 577 11 210 710 17 710 110 17 710 110 11 110 11 100 11 100 11 100 11 100 11 100 11 100 11 100 | 2 | .249 | 8 00 | 3 | .227 | 608 . | 2 | 28 | 523. | 30 | _] | 990. | 13 | 348 | .156 | | 005. | 905. | 1 | .32 | 22 |
| 777 700 10 77 710 10 717 715 10 717 715 10 715 11 275 500 11 717 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 715 11 115 115 115 11 115 | 717 701 1 | 777 000 01 777 000 01 717 715 01 715 716 716 715 716 716 715 716 715 716< | Ę | 56 | E | ; | 780 | | 5 | 173 | 100 | 2 | 240 | 27.6 | Y | | 710 | 12 | | 101 | 66 | 556 | |
| 777 000 01 777 000 01 777 715 01 717 715 01 715 </td <td>777 700 701 7</td> <td>777 700 71 710 71 710 71 710 71 710<!--</td--><td>2</td><td></td><td></td><td></td><td></td><td></td><td>57</td><td></td><td></td><td>; :</td><td></td><td></td><td>2</td><td></td><td></td><td>: ;</td><td></td><td></td><td></td><td></td><td></td></td> | 777 700 701 7 | 777 700 71 710 71 710 71 710 71 710 </td <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>57</td> <td></td> <td></td> <td>; :</td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td>: ;</td> <td></td> <td></td> <td></td> <td></td> <td></td> | 2 | | | | | | 57 | | | ; : | | | 2 | | | : ; | | | | | |
| 777 700 717 717 717 715 716 717 715 715 715 715 716 717 715 711 711 715 711 715 716 717 717 716 717 716 717 716 717 717 717 717 717 716 711 717 716 711 717 716 711 711 711 711 711 711 711 711 711 7 | 777 700 777 700 777 700 777 700 717 700 7 | 717 701 7 | R | | | 5 | | | | į | | | | | 53 | | 8 | 2 | | 201- | 07 | | 2 |
| 717 791 70 < | 377 771 70 771 77 | 111 105 104 174 105 104 174 105 104 174 105 104 174 1 | - | 111. | -000 | 2 | 84C. | | 2 | | | | | 780. | | 117 | 517. | 5 | | 151. | 61 | IY. | Ż |
| J19 J34 J24 J44 O4 J47 J39 O4 J47 J39 O4 J46 J46< | 461 075 01 774 01 774 016 774 105 746 104 107 104 105 104 105 104 | J01 075 01 J12 J24 J2 | 3 | 2 70. | 126. | g | 117 | 787 | 22 | 17C. | .082 | 5 | | 205. | 21 | -02 | 197 | 07 | 117 | .694 | 2 | .487 | 2 |
| J19 516 20 472 464 04 479 104 25 479 010 26 400 26 479 104 25 479 010 26 401 201 211 205 101 356 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 101 356 459 102 356 459 102 356 459 102 356 459 103 356 459 103 356 459 103 356 459 103 356 459 103 356 459 103 366 466 101 456 456 459 450 450 456 456 456 456 456 456 456 456 456 456 456 456 | 570 200 77 70 77 70 77 70 77 70 77 70 77 70 < | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 2 | 461 | .075 | 80 | 664. | 126. | 8 | 207. | 6CI. | 6 | 112 | 089. | 2 | 878 | .885 | 34 | 11 | 546 | 12 | 345 | 640 |
| 320 090 21 200 101 201 101 201 101 101 201 101 101 201 101 101 201 101 201 201 101 201 201 101 201 201 101 20 | 373 510 374 5 | 373 310 314 3 | 2 | | | Ę | | | 2 | 147 | 225 | 71 | 110 | | ľ | | | 2 | | | Ċ | | ě |
| 373 519 000 1 | 373 519 710 7 | 373 519 04 574 500 10 574 500 10 516 10 517 501 10 516 10 517 501 | | | | | | | 5 8 | | | 2 2 | | | 3: | | | | | | 5 | | ָּקָּ ק |
| 712 201 02. 501 00. 502 5 | 713 703 704 7 | 573 574 500 10 574 500 10 574 500 10 574 500 10 574 500 20 574 500 10 517 500 10 517 500 10 517 500 10 517 500 10 517 500 10 517 500 10 517 500 10 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 501 517 | 2: | | 2 5 | | | | | | | 2 8 | | 57 | = ; | | | 2 | | | 8 | Ş | .78(|
| 733 501 523 503 534 504 535 511 545 501 555 511 555 511 555 511 555 511 5 | 573 302 21 304 374 302 354 301 31 | 573 302 01 54 00 10 10 55 10 25 50 10 10 25 10 11 < | 5 | .523 | 5 | 3 | 2 | 945. | 1 | 209. | 141 | 87 | | 90r. | 2 | .576 | .659 | 2 | .517 | 8 | 2 | .621 | 5. |
| 713 101 201 202 202 102 202 101 103 101 103 102 102 102 102 102 102 102 102 102 102 102 102 102 102 103 101 103 101 103 101 103 101 1 | 101 102 107 104 101 1 | 11 703 104 104 105 104 105 104 105 104 104 104 105 104 10 | 38 | 5 | 55 | 5 | | .608 | 91 | 199. | 9C8. | 12 | 32 | 8 | 29 | 3 | 79C. | 8 | .556 | . 65. | 2 | .629 | 5 |
| 643 310 21 410 29 30 39 39 30 45 46 10 27 37 30 30 37 45 11 | 473 110 21 460 590 30 475 174 739 374 599 05 690 30 574 599 35 310 311 111 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 111 101 <td>433 810 21 410 54 480 56 514 514 54 59 57 59 50 76 70 70 70 70 70 70 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 76 76 76 76 70</td> <td>2</td> <td>3</td> <td>-206</td> <td>2</td> <td>202</td> <td>101</td> <td>5</td> <td>.675</td> <td>.629</td> <td>2</td> <td>.</td> <td>120.</td> <td>61</td> <td>907.</td> <td>162.</td> <td>25</td> <td>195-</td> <td>708.</td> <td>Ξ</td> <td>109.</td> <td>8</td> | 433 810 21 410 54 480 56 514 514 54 59 57 59 50 76 70 70 70 70 70 70 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 70 76 76 76 76 76 70 | 2 | 3 | -206 | 2 | 202 | 101 | 5 | .675 | .629 | 2 | . | 120. | 61 | 907. | 162. | 25 | 195- | 708. | Ξ | 109. | 8 |
| 771 701 7 | 712 346 719 714 501 705 445 714 501 705 445 715 712 713 712 712 712 712 712 712 712 712 712 712 712 712 712 712 713 713 713 713 713 712 712 712 712 712 712 712 713 712 712 713 7 | 711 714 7 | 2 | 81.X | 010 | 16 | A B 1 | 114 | 11 | 480 | | 2 | ¥93 | 108 | | 5,0 | 635 | 60 | | | Č | | |
| 701 701 701 702 702 701 701 702 701 7 | 712 246 792 010 770 770 770 770 770 771 7 | 712 246 702 701 7 | 1: | | | : 2 | | | 2 | | |) ; | | | | | | 53 | | , | 3 3 | 040 | Ĩ |
| 700 477 200 477 200 477 200 477 200 477 200 477 200 477 200 477 200 477 201 477 201 477 21 477 21 477 21 477 471 477 201 100 101 470 101 470 101 101 470 101 101 470 101 101 470 101 100 101 470 101 101 470 101 101 470 101< | 700 477 27 791 101 647 11 641 14 29 720 740 </td <td>101. 101.</td> <td>51</td> <td></td> <td></td> <td>5</td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td>Ş</td> <td></td> <td>5</td> <td></td> <td>414.</td> <td>2</td> <td>[0]</td> <td>762</td> <td>23</td> <td>.70</td> <td>6</td> | 101. | 51 | | | 5 | | | 2 | | | | Ş | | 5 | | 41 4 . | 2 | [0] | 762 | 23 | .70 | 6 |
| 710 471 212 172 17 14 713 17 14 713 17 14 711 11 711 14 711 11 711 11 711 11 711 11 <td>710 477 272 477 770 477 17 718 717 710 1101 117 717 718 1101 101</td> <td>710 477 213 1740 17 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 171 161 177 171 1</td> <td></td> <td>27</td> <td>8</td> <td></td> <td>7 . 7</td> <td>010</td> <td>3</td> <td></td> <td>Į</td> <td></td> <td>5</td> <td></td> <td>6</td> <td>867</td> <td></td> <td>=</td> <td>949.</td> <td>C87.</td> <td>30</td> <td>726</td> <td>ที่</td> | 710 477 272 477 770 477 17 718 717 710 1101 117 717 718 1101 | 710 477 213 1740 17 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 177 161 171 161 177 171 1 | | 27 | 8 | | 7 . 7 | 010 | 3 | | Į | | 5 | | 6 | 867 | | = | 949. | C8 7. | 30 | 726 | ที่ |
| 101 106 17 204 05 848 866 06 817 978 16 770 171 105 17 16 909 601 11 747 205 27 867 633 03 814 815 315 315 316 310 314 964 01 815 315 102 035 04 03 1813 205 317 205 317 313 24 851 317 490 102 030 27 313 24 351 107 03 317 490 102 030 27 191 770 313 24 351 317 490 103 24 291 17 790 443 05 493 21 318 2195 177 27 317 483 17 483 17 317 318 317 177 27 914 483 17 3863 270 217 177 <t< td=""><td>161 106 17 234 164 06 637 978 16 770 128 04 00 101 04 102 04 101 101 04 101 04 101 101 101 101 101 04 101 04 101 101 04 102 104 101 101 04 102 101</td><td>101 110 17 141 206 05 144 164 06 17 161 170 121 071 161 170 121 011 171<!--</td--><td>5</td><td></td><td>447</td><td>2</td><td>, 129</td><td></td><td>5</td><td></td><td>930. -</td><td>2</td><td>.120</td><td>617.</td><td>2</td><td></td><td>.647</td><td>2</td><td>215</td><td>.179.</td><td>17</td><td>740</td><td></td></td></t<> | 161 106 17 234 164 06 637 978 16 770 128 04 00 101 04 102 04 101 101 04 101 04 101 101 101 101 101 04 101 04 101 101 04 102 104 101 101 04 102 101 | 101 110 17 141 206 05 144 164 06 17 161 170 121 071 161 170 121 011 171 </td <td>5</td> <td></td> <td>447</td> <td>2</td> <td>, 129</td> <td></td> <td>5</td> <td></td> <td>930. -</td> <td>2</td> <td>.120</td> <td>617.</td> <td>2</td> <td></td> <td>.647</td> <td>2</td> <td>215</td> <td>.179.</td> <td>17</td> <td>740</td> <td></td> | 5 | | 447 | 2 | , 129 | | 5 | | 930. - | 2 | .120 | 6 17. | 2 | | .647 | 2 | 215 | .179. | 17 | 740 | |
| 382 383 03 04 944 01 16. 11 747 205 27 10 | Jaks | 105 317 16 909 .601 11 .747 .205 27 .167 .03 03 .04 04 .03 03 .04 .04 .03 .03 .04 .04 .03 .03 .04 .04 .04 .03 .04 .04 .03 .04 .04 .03 .04 | 2 | 198. | .106 | 1 | 108. | 647 | 1 | 74 | 906 | 05 | 878. | 86 6 | 8 | 758. | 978 | 16 | 5 | 128 | 3 | .802 | |
| 2812 6.315 0.6 914 .420 20 .610 .047 03 .611 .611 .71 | 382 6.35 06 914 4.20 20 0.47 0.1 | 382 6.35 06 914 4.20 20 6.10 100 101 100 101 100 101 | 5 | E A S | 5 | Y. | 800 | NOA | = | 111 | 205 | 5 | 847 | 111 | 5 | | | 2 | | | • | 2 | ļ |
| .902 .020 271 .101 .021 .021 | 777 .172 07 .983 .624 03 .916 .463 29 .950 .443 05 .659 .933 .24 .967 08 .877 .172 07 .983 .624 03 .877 .25 .959 28 .877 .914 .612 .210 0.5 .956 .959 28 .877 .914 .612 .210 0.5 .950 .27 .958 .959 28 .971 .172 07 .983 .624 03 .916 .463 29 .950 .753 09 .863 .147 27 .961 .980 27 .984 | 777 .172 07 .913 .624 03 .916 .463 29 .950 .753 09 .663 .147 27 .961 .980 29 20 .771 .177 27 .961 .981 .977 .172 07 .911 .624 03 .916 .463 29 .950 .753 09 .663 .147 27 .961 .980 27 | | | Ş | 2 | 110 | | : \$ | 5 | | 2 | | | 33 | | 5 | 33 | | | 1 | | - |
| 771, 172, 124, 791, 172, 174, 174, 174, 175, 174, 175, 174, 177, 177, 177, 177, 177, 177, 177 | 178. 82 999. 28. 12 259. 459. 50 54. 700 . 11 955. 759 28. 20 954. 452 17 25 21 17 25 27. 17 25 27. 17 25 17. 172 25 17 | | | | 33 | 36 | | | 22 | | į | 3: | | | | | 5 | 5 | Z/8* | 2 | Bo | 0/8- | Ť |
| . 251 .487 .26 .981 .976 .07 .870 .012 .21 .914 .483 17 .863 .220 02 .958 .177 . | . 771 . 447 . 26 . 941 . 976 . 07 . 1870 . 612 . 21 . 914 . 483 . 17 1863 220 . 02 . 928 . 177 . 25 . 971 . . 977 . 172 . 07 . 913 . 624 . 03 . 916 . 463 . 29 . 950 . 753 . 09 . 863 . 147 . 27 . 961 . 980 . 27 . 984 | . 777 . 702 . 206 . 903 . 976 . 07 . 810 . 012 . 21 . 914 . 483 17 . 863 . 220 02 . 958 . 777 . 25 | 5 | | 20 | | | | 31 | | | 21 | 8 . | | 5 | 4 5 8. | 204. | 3 | .883 | 8 | 28 | .87 | ĥ |
| 980 | . 172 07 .941 .624 03 .916 .463 29 .950 .753 09 .863 .147 27 .961 .980 27 .984 . | 777. 172. 07. 980. 624. 03. 916. 463. 29. 950. 753. 09. 863. 147. 27. 961. 980. 27. 777. | 3 | 104. | | 0 | 194. | 9/4 | 6 | 0/3. | 219. | R | 7 16. | C81- | 2 | C93. | .220 | 8 | 959. | 1 | 23 | 2 | |
| | | | 5 | 6 | .172 | 6 | 11 6. | .624 | 5 | .916. | 3 | 29 | 930 | 753 | 60 | 39. | 147 | 27 | 196. | .980 | 27 | 984 | 5 |
| | | | | | | | | | | | | | | | | | | | | | i | | |

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

.

| | | • | | i a | | | | | - | ዮ | 0 | 0 | - | - | | -0 | = | ¥ | 5 9 4 |) <u>e</u> | 1 | 5 | • | ÷ | 4 | 7 | 0 | | | | e g | <u>ک</u> |
|-------------|---|------|-----|-----|-------|---------------|---|--------------|--------------|------|---------------|------|-------|------|------|------|-------------|------|--------------|------------|------|------|------|------|--------------|--------------|------|------|--------------|-------------|------|----------|
| 7 | | 0 | 30 | Ş | | | | 3 | 5 | 5. | ŝ | .22 | | F | | 5 | 9. | 00 | 2 | 1 | | 66. | | ų | 5 | 86. | .75) | V | | | | 2 |
| Col. No. 20 | | 042 | 105 | 113 | 174 | 205 | | .210 | .234 | .266 | 205. | 272. | 205. | 122 | 3 | 8 | .461 | 187 | 9 | 505 | .583 | 785. | 689. | 727 | 102 | .807 | CC8. | 89A | A19 | 876 | 5 | 111 |
| U | < | 39 | 6 | 5 | 0 | 2 | • | 5 | 23 | 2 | ຊ | 3 | 26 | 8 | 17 | 07 | 27 | 71 | : 2 | 28 | 21 | 22 | 16 | 8 | 5 | 80 | 11 | 61 | | 29 | 1 | |
| 27 | U | .952 | 101 | 674 | 151 | .841 | | C10. | ۲۵ ۲. | 520 | 117 | .012 | 668. | .710 | 194. | 989 | CO . | CM3 | 745 | 268. | CCC. | .076 | 904 | .251 | .122 | 119. | 267. | | 299 | 190 | CVC | |
| Col. No. | - | 030 | 085 | 141 | 154 | 164 | | 197 | .215 | .222 | .269 | .288 | | 346. | 362 | 15 | 140 | 587 | C07 | 615. | .623 | .624 | .670 | 117. | 82 | | C†8. | 244 | 358. | 220 | I LO | |
| Ŭ | < | 21 | 17 | 9 | 5 | 80 | | 6 | 16 | 80 | 2 | 8 | 23 | 38 | 20 | 1 | 26 | 27 | 1 | 39 | 23 | 23 | 16 | 1 | 5 | 2 | 6 | 10 | 2 | 8 | 26 | ľ |
| 3 | υ | 102 | 284 | 444 | 505 | .614 | | .376 | .228 | .365 | .610 | .357 | 573 | 107 | .383 | .708 | 167. | 207 | 129 | 329 | 354 | .884 | .622 | 76E. | 88 C. | 5 03. | 191. | | 79C. | 367 | 142 | |
| Col. No. 26 | - | 026 | 213 | | | | | 901. | act. | .216 | .2 . 2 | .278 | 202 | 421 | .426 | 171 | C/F. | 510 | 512 | 940 | 546. | .680 | E07. | 957. | .759 | | .842 | 870 | 200. | 948 | 934 | |
| ŭ | < | 91 | 5 | 52 | 56 | 12 | | 20 | 20 | 0 | 03 | 07 | 00 | 8 | 12 | 80 | 18 | 6 | 50 | 2 | 00 | 1 | 26 | 29 | 23 | 24 | 27 | 31 | 78 | 2 | 11 | • |
| 23 | υ | 200 | 8 | 220 | C E | 619 | | .658 | .189 | 010. | 171. | .117 | 928 | 118 | .025 | 792 | .959 | 111 | 576 | .225 | 190 | 106 | E | .790 | 23 | 50. | 176. | .726 | 600 . | 529. | .164 | |
| Cel. No. 23 | - | 600 | 041 | 5 | | .123 | | .126 | .161 | .166 | .248 | .255 | 182. | 105. | 100 | 875. | 6/C. | 420 | 447 | 494 | .620 | .623 | .625 | 5 | .715 | .782 | | 111. | .842 | 168. | .917 | |
| ΰ | < | 03 | Y | 2 | 2 = | :6 | | 50 | 1 | 8 | 38 | 8 | 15 | 10 | 24 | 32 | 27 | 0 | 21 | 1 | 60 | 2 | 63 | 80 | 12 | 23 | 20 | 5 | 29 | 25 | 3 | • |
| 34 | υ | 122 | 790 | | | 138 | | .159 | .476 | 000. | .077 | 815. | AC7. | 144 | 925 | 284 | 702. | 761 | | 11 | 170 | 819. | 162. | .034 | 112. | Š | | CZ2. | 751 | | 081. | |
| Col. No. 24 | - | 510 | | | | 5 | | 81. | .192 | 702. | .283 | .284 | 716 | 100 | | 495 | C/Y- | 275 | 155 | 910 | .617 | .641 | 199. | 999 | 717 | 76 | E | .823 | 848. | 241. | 32. | |
| J | < | 8 | 2 | 2 | ; ; | ;= | | 1 | 36 | 5 | 12 | 3 | 10 | 20 | 25 | 2 | 2 | 20 | 90 | 6 | 6 | = | 11 | 3 | 6 | 07 | 79 | 2 | 23 | ę | 28 | l |
| 23 | υ | 107 | 446 | | | 91 C . | | 00 [. | 208 | .132 | 2115 | 480 | 107 | 292 | 085 | 979 | 161. | 17.6 | 000 | 666 | .027 | .620 | 1/2. | 145. | 161 | 101 | 5 | .662 | 181. | 204 | 214 | |
| Col No. | - | 130 | | 35 | 3 | | | 111 | .123 | 901. | 194 | 102. | 174 | | 344 | 28C. | 785. | | | 515 | | 4C5. | .623 | 768. | 11. | .730 | E, | 280 | .924 | .929 | 766. | |
| ບໍ | < | 74 | 2 | 3 8 | | 22 | | 1 | Ξ | 60 | 90 | 32 | 30 | 12 | 80 | 5 | 6 | 38 | | 3 | 17 | 03 | 03 | 8 | 1 | 2 | = | 23 | 2 | 12 | 6 | ,) |
| 22 | U | | | | | 602 | | 744 | .036 | 329 | .051 | 515. | 444 | | 066 | 140 | 080 | AAR | 240 | 421 | 406 | 13 | .972 | 142 | .892 | .712 | -920 | .925 | 193. | SEI. | 215 | |
| Cel. Ne. 22 | - | 120 | | | 5 | 8 | | 121. | .166 | 179 | .187 | 203 | . 016 | 172 | 247 | 283 | | | 101 | 405 | 165 | 464 | 539 | 260 | 575 | 736 | 28 | .047 | .872 | .874 | 116. | |
| S | < | | • | - | - | 52 | | 2 | 20 | 2 | 2 | 33 | | 0 | | 1 | 2 | 2 | 32 | 3 8 | 1 | 11 | 3 | 2 | 38 | 2 | ຊ | 3 | 33 | 34 | 8 | , |

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.

| <u>Table 1</u> Size Passing - 100% | Splitter Opening |
|---------------------------------------|---|
| 2 in. 1½ in. | 3 in. or 6 bars 2¼ in. or 6 bars |
| 1 in. ¾ in. | $1\frac{1}{2}$ in. or 3 bars $1\frac{1}{2}$ in. or 3 bars |
| ½ in. ℁ in. | ¾ in. or 2 bars 9/16 in. or 2 bars |
| 4M | ½ in. or 1 bar |

Each bar = $\frac{1}{2}$ 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.

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

<u>SG x 6.7.355 - wt</u>. x ₁₀₀ SG x 62.3555

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 yd³ (150 m³) of concrete poured, whichever is less, excluding Class Pave. A lot of Class Pave is a single day's pour or every 1,000 yd³ (750 m³) 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 yd³ 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 yd³ 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
- I. 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. yd³ of concrete or yd² 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 |