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 2024
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 рр	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 601-0124 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 section 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 <u>only</u> 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 <u>Visual Inspection</u>

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

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

3.5.1 Steel and Iron Materials

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

- Items designated as Category 1 (Heat Numbers) require supporting documentation showing all steps of manufacturing as being completed in the U.S. This includes the Mill Test Report from the original producing steel mill and certifications documenting the manufacturing processes for all subsequent fabrication, including coatings.
- Items designated as Category 2 (Steel Cert) must have all manufacturing processes completed in the U.S. However, to address concerns with excessive documentation, products may be certified as domestic by the fabricator. Certification by the fabricator must consist of a statement that all materials have been melted and manufactured in the U.S. and are required to be signed by a fabricator representative. Mill Certs (Heat Numbers) are not required to be submitted for Category 2 items, as long as the certification from the fabricator meets the above requirements.
- The Department reserves the right to request additional information and supporting documentation to verify the accuracy of the domestic statement.

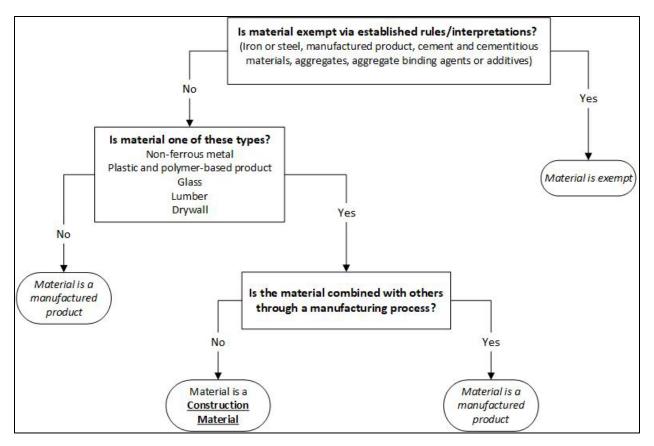
Acceptance requirements for steel and iron materials are identified on the Materials Index and are highlighted in gray within the MT 601 table. A link to MDT's Form 406 - Contractors Certificate of Compliance for Miscellaneous Steel and Iron Items is also included in the MT 601 table.

3.5.2 Construction Materials

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

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

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



3.6 Final Records

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

3.7 Pre-Inspection

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

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

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

3.8 Mix Designs

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

4 Submittals, Documentation, and Reports

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

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

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

MATERIAL INDEX

C - Requires Certificate of Compliance

D - Requires Product Data Sheet

BAC1 - Requires Buy America Category 1 Certification

BAC2 - Requires Buy America Category 2 Certification

BABA-C - Requires Manufacturer's Certification for Construction Materials

QPL - Accepted only from the Qualified Products List

		Material 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
		701.07.00.01	Bank Protection Type 1	17
		701.07.00.01	Bank Protection Type 2	17
		701.07.00.02	Bank Protection Type 3	17
		701.07.00.03	Bank Protection Type 4	17
		701.07.00.04	Wall Backfill	17
		701.09.00.01		18
		701.10.00.01	Drain Aggregate Glass Cullet	
С		701.11.00.01		19 19
			Bridge End Backfill Type 1	
		701.13.00.02	Bridge End Backfill Type 2	20
		701.13.00.03	Bridge End Backfill Type 3	20
		PC 1 PC 2	Proposed Surfacing (Gravel Pit)	21
		PC 2 PC 9	Soils for Soil Survey	22
			Riprap Source Approval	23
		Material Code 301.03.06.01	Aggregate Surfacing (AGGS) Shoulder Gravel	Page 24
		302.03.01.01	Pulverize/Milled Bituminous Pavement	24
		563.02.02.00	Polymer Overlay Aggregate	24
		701.02.04.01	Crushed Base Coarse Grade 5A	25
		701.02.04.02	Crushed Base Coarse Grade 6A	25
	├ ──	701.02.04.03	Crushed Base Coarse Grade 7A	25
	├ ──	701.02.06.01	Crushed Top Surfacing Grade 2A	26
		701.02.07.01	Crushed Top Surfacing Grade 3B	27
		701.02.08.01	Crushed Cover Aggregate Type 1	28
		701.02.08.02	Crushed Cover Aggregate Type 2	28
		701.02.08.03	Crushed Cover Aggregate Type 3	28
		701.02.09.01	Cement Treated Base	29
		701.03.00.01	Microsurfacing Aggregate Type 2	30
		701.03.00.02	Microsurfacing Aggregate Type 3	30
		Material Code	Bearing Devices (BEAR)	Page
D	BAC2	QPL 711.14.00.01	Elastomeric Bearing Devices	31
D		711.20.00.01	Polytetrafluoroethylene (PTFE)	31
		Material Code	Bituminous (BITM)	Page
	<u>г</u>			32
С		702.01.01.01	Performance Graded Asphalt Binder 58-28	
С		702.01.01.02	Performance Graded Asphalt Binder 64-22	32
C C		702.01.01.02 702.01.01.03	Performance Graded Asphalt Binder 64-22 Performance Graded Asphalt Binder 64-28	32 32
С		702.01.01.02	Performance Graded Asphalt Binder 64-22	32

MATERIAL INDEX

			-		
С			702.01.01.07	Performance Graded Asphalt Binder 58V-34 (MSCR)	32
С			702.01.02.01	SS-1h, Anionic Slow Set Emulsion	33
С			702.01.02.02	SS-1, Anionic Slow Set Emulsion	33
С			702.01.03.01	CSS-1h, Cationic Slow Set Emulsion	34
С			702.01.03.02	CSS-1, Cationic Slow Set Emulsion	34
С			702.01.05.01	HF-100, High Float Emulsion	35
С			702.01.05.02	HF-300, High Float Emulsion	35
С			702.01.05.03	CHFRS-2p, Polymer Mod. Cat. High Float Rapid Set Emulsion	35
С			702.01.06.01	CRS-2, Cationic Rapid Setting Emulsion	36
С			702.01.06.02	CRS-2p, Polymer Mod. Cat. Rapid Set Emulsion	36
С			702.01.07.01	CQS-1h, Cationic Quick Setting Emulsion	37
С			702.01.07.02	CQS-1p, Polymer Mod. Cat. Quick Set Emulsion	37
С			702.01.07.03	CQS-1hp, Polymer Mod. Cat. Quick Set Emulsion	38
С			702.01.08.01	Polymer Modified Rejuvenating Emulsion	38
			Material Code	Bituminous Prime and Tack Coat (BPTC)	Page
			701.14.00.00	Blotter Material	39
			Material Code	Concrete and Structures (CONC)	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)	40
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	41
			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	48
			551.03.02.10	Class Drilled Shaft Concrete	49
С			551.03.02.11	Controlled Low Strength Material-Excav	50
С			551.03.02.12	Controlled Low Strength Material-Non-Excav	50
D			551.03.02.13	Pre-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
С	BAC2		553.01.00.01	Prestressed Beam	55
С	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 (CONS)	Page
D		QPL	717.01.03.01	Liquid Membrane-Forming Concrete Curing Compound	58
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)	58
					1
D D		QPL	717.02.02.02 717.02.02.03	Epoxy Bridge Deck Crack Sealant Deck Sealant Sand	59 59

MATERIAL INDEX

Material Code Crack Sealing (CRKS) Page Crack Sealant BABA-C QPL 403.02.00.01 60 D D BABA-C 60 QPL 403.02.00.02 Backer Rod **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 Fencing (FNC) **Material Code** Page **Snow Fence Material** D **BABA-C** 607.02.01.01 63 712.01.02.01 Chain Link Fabric 63 D BAC2 D BAC2 712.01.03.01 Chain Link Steel Post 63 D BAC2 Chain Link Gate 712.01.08.01 64 D 712.02.00.01 Fence Wire 64 BAC2 **Steel Fence Post** 64 D BAC2 712.02.07.01 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 Long Term Rolled Erosion Control Blanket D QPL 713.12.00.02 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 Turf Reinforcement Mat - Natural Fiber D QPL 713.12.00.05 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 BABA-C 716.02.00.01 Separation Geotextile - Moderate Survivability 67 D QPL Separation Geotextile - High Survivability 716.02.00.02 67 D BABA-C QPL Stabilization Geotextile D BABA-C QPL 716.03.00.01 67 BABA-C 716.04.00.01 Subsurface Drain Filter-Class A-Moderate Survivability 68 D QPL D BABA-C QPL 716.04.00.02 Subsurface Drain Filter-Class B-Moderate Survivability 68 Subsurface Drain Filter-Class C-Moderate Survivability 68 D BABA-C QPL 716.04.00.03 D BABA-C QPL 716.04.00.04 Subsurface Drain Filter-Class A-High Survivability 68 716.04.00.05 Subsurface Drain Filter-Class B-High Survivability 68 D BABA-C QPL BABA-C 716.04.00.06 Subsurface Drain Filter-Class C-High Survivability 68 D QPL D 69 BABA-C QPL 716.05.00.01 Permanent Erosion Control-Class-A Mod Survivability 716.05.00.02 Permanent Erosion Control-Class-B Mod Survivability 69 D BABA-C QPL Permanent Erosion Control-Class-C Mod Survivability BABA-C 716.05.00.03 69 D QPL Permanent Erosion Control-Class-A High Survivability D BABA-C QPL 716.05.00.04 69 Permanent Erosion Control-Class-B High Survivability D BABA-C QPL 716.05.00.05 69 D BABA-C QPL 716.05.00.06 Permanent Erosion Control-Class-C High Survivability 69 716.06.00.01 **Temporary Silt Fence** 69 D 70 D 716.07.00.01 Geogrid BABA-C **Material Code Guardrail (GRD)** Page Metal Beam Guardrail D BAC2 QPL 705.01.01.01 71 D BAC2 QPL 705.01.01.02 Box Beam Guardrail 71 Cable Guardrail/Wire Rope 71 D BAC2 705.01.01.03 D BAC2 705.01.01.05 Miscellaneous Guardrail 71 **BABA-C** 705.01.02.01 Wood Guardrail Post/Blockout 72 Non-Wood Blockout 72 D BABA-C 705.01.02.02 705.01.05.01 Steel Guardrail Post 72 D BAC2 D BAC2 QPL 606.02.00.01 W-Beam Terminal Section 73 **Box Beam Terminal Section** 73 D BAC2 606.02.00.02 D 606.02.00.03 Impact Attenuator 73 BAC2 **Material Code** Joint Material (JNT) Page D BABA-C QPL 707.01.00.01 **Expansion Joint Fillers - Cork** 74 74 D QPL 707.01.01.01 Joint Sealing Material C/D BAC2 707.01.02.01 **Expansion Joint System** 74 707.01.02.02 74 Silicone Joint Seal D

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

				MATERIAL INDEX	
D			707.01.02.03	Fabric Reinforced Neoprene Joint Seal	74
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	76
D				Variable Message Sign	76
D				Antenna	76
D	BABA-C			PVC Conduit	76
D	BABA-C			HDPE Conduit	76
D	BAC2			Steel Conduit	77
D	BAC2			Pull Boxes	77
D	BAC2			Signal Standards Type 2/3	77
D	BAC2			Luminaire Standard Type 10	77
D	BAC2			Signal Standards Type 1	78
D	BABA-C		1	Conductor	78
D			1	Cable	78
D			1	Service & Control Assembly	78
D			1	Traffic Signal Cabinet	78
D			1	Traffic Signal Indication	78
D				LED Traffic Signal	79
D				Pedestrian Signal Indication	79
D				Detector Loop	79
D				Pedestrian Push Buttons	79
 D				Luminaire Assembly	79
D				Emergency Vehicle Preemption	79
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	80
 D			MT 7	Cold Mix Asphalt Patching Material	87
U			Material Code	Miscellaneous (MISC)	Page
D	BAC2	QPL	608.02.00.01	Detectable Warning Devices	88 8
<u>с</u>	BAC2 BAC2	۹۲۲	611.02.04.01	Cattle Guard Grate	88
L	DALZ	QPL	623.02.00.01	Mail Box	88
Р			1023.02.00.01		
D	BABA_C	QFL	706 01 00 01	Istructural Timber and Lumber	
D	BABA-C	QrL	706.01.00.01	Structural Timber and Lumber	88 89
D D	BABA-C	QrL	709.04.00.01	Bituminous Coatings	89
D D D	BABA-C		709.04.00.01 710.01.00.01	Bituminous Coatings Steel Structure Paint	89 89
D D D C	BABA-C		709.04.00.01 710.01.00.01 710.03.00.01	Bituminous Coatings Steel Structure Paint Powder Coating	89 89 89
D D C D		QPL	709.04.00.01 710.01.00.01 710.03.00.01 710.04.00.01	Bituminous Coatings Steel Structure Paint Powder Coating Anti-Graffiti Coating	89 89 89 89 89
D D D C	BABA-C BABA-C		709.04.00.01 710.01.00.01 710.03.00.01 710.04.00.01 713.00.00	Bituminous Coatings Steel Structure Paint Powder Coating Anti-Graffiti Coating Miscellaneous Material Accepted on Cert	89 89 89 89 89 89
D D C D C/D		QPL	709.04.00.01 710.01.00.01 710.03.00.01 710.04.00.01 713.00.00.00 713.01.00.01	Bituminous CoatingsSteel Structure PaintPowder CoatingAnti-Graffiti CoatingMiscellaneous Material Accepted on CertWater for Concrete	89 89 89 89 89 89 90
D D C D C/D			709.04.00.01 710.01.00.01 710.03.00.01 710.04.00.01 713.00.00.00 713.01.00.01 713.02.00.01	Bituminous CoatingsSteel Structure PaintPowder CoatingAnti-Graffiti CoatingMiscellaneous Material Accepted on CertWater for ConcreteHydrated Lime	89 89 89 89 89 89 90 90
D D C D C/D		QPL	709.04.00.01 710.01.00.01 710.03.00.01 710.04.00.01 713.00.00.00 713.01.00.01	Bituminous CoatingsSteel Structure PaintPowder CoatingAnti-Graffiti CoatingMiscellaneous Material Accepted on CertWater for Concrete	89 89 89 89 89 89 90

MATERIAL INDE	Х
---------------	---

			713.04.00.01	Structural Cement Grout	91
D D			713.04.00.01	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 D			714.03.00.01 714.04.00.01	Temporary Waterborne Paint Waterborne Paint	92 92
D		QPL	714.04.00.01		92
		QPL	714.05.00.01	High Durability Waterborne Paint	92
D		QPL	714.08.00.01	Epoxy Paint Preformed Plastic Pavement Marking	92
D D	BABA-C	QPL	714.07.00.01	Reflective Glass Beads - Type 1	92
D	BABA-C BABA-C	-	714.08.00.01	Reflective Glass Beads - Type 1	93
	DADA-C	QPL	Material Code	Pile (PILE)	
С	BAC2		559.02.03.01	Pile Driving Point	Page 94
c	BAC2 BAC2		559.02.03.02	Pile Cutting Shoe	94
c	BAC2 BAC1		711.10.01.01	Structural Steel Piles	94
c	BAC1 BAC1		711.10.02.01	Steel Pipe Piles	95
	DACI		Material Code	Pipes (PIPE)	Page
с	BAC2	QPL	708.01.00.01	Reinforced Concrete Pipe	96
c	BAC2 BAC2		708.01.00.02	Reinforced Concrete Box	96
c	BAC2 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
	ļ		PC 4	Cores for Stripping Analysis	106
			PC 5	Preconstruction Soil Chemistry	106
			PC 6	Hot In Place Recycled Cores	106
-	-		Material Code	Revegetation	Page
D			610.01.00.01	Plants - Trees & Shrubs	107
			713.05.00.01	Topsoil	107
			713.05.00.02	Landscape Grade Topsoil	107
D		QPL	713.06.00.01	Weed Control Mat	107
D		QPL	713.08.00.01	Reclamation Seed	107
D			713.08.00.02	Landscaping Seed	107
D		-	713.09.00.01	Fertilizer	107
C/D		QPL	713.10.00.01	Mulch	108
D			713.11.00.01	Sod	108
C/D		QPL	713.13.00.01	Compost	108

MATERIAL INDEX

Image Material Code Signing (SIGN) Page 0 8AC2 704.01.01.01 Mumium Sign Sheeting. 109 0 8AC2 704.01.04.02 Structural Steel Sign Posts 109 0 8AC2 QPL 704.01.04.02 Structural Steel Sign Posts 109 0 8AC2 QPL 704.01.06.01 Treated Wood Posts & Poles 100 0 8AC2 QPL 704.03.00.02 Dividuel Flexible Delineators 110 0 8AC2 QPL 704.03.00.02 Dividuel Flexible Delineators 110 0 8AC2 711.00.00.01 Steel Asim Steel (STL) Page 0 8AC2 711.01.00.01 Rebra Grade 40 111 0 8AC2 QPL 711.01.01.02 Rebra Grade 40 111 0 8AC2 QPL 711.01.01.03 Rebra Grade 40 111 0 8AC2 QPL 711.01.01.04 Rebra Grade 40 111 10 8AC2 QPL 711.01.01.04						
D BAC2 704.01.04.01 Steel Sign Posts 109 D BAC2 0PL 704.01.04.02 Structural Steel Sign Posts 109 D BAC2 0PL 704.01.04.03 Breakaway Devices 109 D ABAA-C 704.01.00.01 Retro-Affective Sheeting 110 D QPL 704.03.00.01 Surface Mount Flexible Delineators 110 D BAC2 QPL 704.03.00.02 Divable Flexible Delineators 110 D BAC2 QPL 704.03.00.02 Divable Flexible Delineators 110 D BAC2 QPL 704.03.00.01 Steel Social Andron 111 D BAC2 711.00.00.01 Rek/Social Andron 111 D BAC2 QPL 711.01.01.02 Rebar Grade 50 111 D BAC2 QPL 711.01.01.03 Rebar Grade 40 111 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 112 D BAC2 711.01.01.01 Rebar Grade 55 111 D<				Material Code	Signing (SIGN)	Page
D BAC2 P7440.0403 Brackwary Devices 109 D BASA-C 704.01.0403 Brackwary Devices 109 BABA-C 704.01.001 Freated Wood Posts & Poles 109 D - 704.01.001 Barca Wood Flocks Poles 110 D BAC2 QPL 704.03.001 Surface Mount Flockble Delineators 110 D BAC2 QPL 704.03.00.01 Deviced Structures 110 D BAC2 QPL 711.03.00.01 Rebrad Structures 111 D BAC2 QPL 711.01.00.01 Rebra Grade 40 1111 D BAC2 QPL 711.01.01.03 Rebra Grade 40 1111 D BAC2 QPL 711.01.01.04 Reobar Grade 40 1111 D BAC2 QPL 711.01.01.01 Rebra Grade 40 1112 D BAC2 QPL 711.01.01.01 Rebra Grade 40 1112 D BAC2 ZP1.10.01.01 Rebra Grade 40 111	D			704.01.01.01	Aluminum Sign Sheeting	109
D BABA-C 704.01.04.03 Breakawap Devices 109 D 704.01.00.01 Retro-Reflective Sheeting 110 D QPL 704.03.00.01 Surface Mount Flexible Delineators 110 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 110 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 110 D BAC2 QPL 711.00.00.01 Rock/Solid Anchor 111 D BAC2 QPL 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 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar - Corrosion Resistant - CorfolO 112 D BAC2 711.01.01.01 Rebar - Corrosion Resistant - SS - Gr 60 112 D BAC2 711	D	BAC2		704.01.04.01		109
BABAC 704.01.06.01 Treated Wood Posts & Poles 109 D 704.01.001 Retro-Reflective Sheeting 110 D QPL 704.03.00.01 Surface Mount Flexible Delineators 110 D BAC2 QPL 704.03.00.02 Divable Flexible Delineators 110 BAC2 QPL 704.03.00.01 Strefa Mount Flexible Delineators 110 D BAC2 Z11.00.00.01 Steel Railing 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar Grade 75 111 D BAC2 QPL 711.01.01.04 Rebar Corrosion Resistant - Cr - Gr100 111 D BAC2 QPL 711.01.01.01 Rebar - Corrosion Resistant - Cr - Gr100 112 D BAC2 ZPL 711.01.01.00 Rebar - Corrosion Resistant - Cr - Gr100 112 D BAC2 ZPL T11.01.00.01 Structural Steel 113 G/D BAC2 Z111.	D	BAC2		704.01.04.02	Structural Steel Sign Posts	109
D 704.01.10.01 Retro-Reflective Sheeting 110 D 8AC2 QPL 704.03.00.01 Surface Mount Flexible Delineators 110 D 8AC2 QPL 704.03.00.02 Dirvable Flexible Delineators 110 D 8AC2 711.00.00.01 Rock/Solf.Andron 111 D 8AC2 711.00.00.01 Rock/Solf.Andron 111 D 8AC2 711.00.00.01 Rock/Solf.Andron 111 D 8AC2 QPL 711.01.00.01 Rebar Grade 40 111 D 8AC2 QPL 711.01.01.03 Rebar Grade 40 111 D 8AC2 QPL 711.01.01.01 Rebar Grade 40 111 D 8AC2 QPL 711.01.01.01 Rebar Grade 40 111 D 8AC2 QPL 711.01.01.01 Rebar Grade 40 111 D 8AC2 QPL 711.01.00.01 Rebar - Corrosion Resistant - C Gr100 112 C/D 8AC1 711.02.00.01 Structural St	D	BAC2	QPL	704.01.04.03	Breakaway Devices	109
D QPL 704.03.00.01 Surface Mount Flexible Delineators 110 D BAC2 QPL 704.03.00.02 Drivable Flexible Delineators 110 BAC2 QPL 704.03.00.01 Dverhead Structures 110 D BAC2 711.00.00.01 Reck-Steel (STL) Page D BAC2 QPL 710.10.00.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar Corrosion Resistart -Cr Gr100 112 D BAC2 711.01.00.01 Structural Steel Varutural Steel V		BABA-C		704.01.06.01	Treated Wood Posts & Poles	109
D BAC2 QPL 704.08.01.01 Overhead Structures 110 BAC2 704.08.01.01 Overhead Structures Steel (STL) Page D BAC2 711.00.00.01 Rock/Soll Anchor 111 D BAC2 711.01.00.01 Rock/Soll Anchor 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar Corrosion Resistant - Corrosion 112 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - So - 60 112 C/D BAC1 711.03.00.01 Structural Steel Structural Steel Members 113 G/D BAC2 711.03.00.01 Structural Steel Structural Steel 114 D BAC2 <td>D</td> <td></td> <td></td> <td>704.01.10.01</td> <td>Retro-Reflective Sheeting</td> <td>110</td>	D			704.01.10.01	Retro-Reflective Sheeting	110
BAC1 704.08.01.01 Overhead Structures Steel (STL) Page D BAC2 711.00.00.01 Steel Railing 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 711.01.01.03 Rebar Grade 75 111 D BAC2 QPL 711.01.01.03 Rebar Grade 75 111 D BAC2 QPL 711.01.03.01 Rebar Scrows (New Weire Mesh 112 D BAC2 QPL 711.01.03.01 Rehar Corrosion Resistant - CF - Gr100 112 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SG - GR 0 113 C/D BAC1 711.02.00.01 Structural Steel Tubing 113 BAC2 711.02.00.01 Wirutural Steel Tubing 113 BAC2 711.03.00.01 Structural Steel Structural Steel Members 114 C/D BAC2 711.1	D		QPL	704.03.00.01	Surface Mount Flexible Delineators	110
BAC1 704.08.01.01 Overhead Structures Steel (STL) Page D BAC2 711.00.00.01 Steel Railing 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 711.01.01.03 Rebar Grade 75 1111 D BAC2 QPL 711.01.01.03 Rebar Grade 75 1111 D BAC2 QPL 711.01.03.01 Rebar Grade 75 1112 D BAC2 QPL 711.01.03.01 Rehar Graves Resistant 5Gr 6G0 112 C/D BAC1 711.02.00.01 Structural Steel Tubing 113 C/D BAC2 711.02.00.01 Structural Steel Tubing 113 BAC2 711.02.00.01 Welded Stud Shear Connectors 114 C/D BAC2 711.13.00.01 Structural Steel Tubing 115 BAC2 711.11.00.01 Pretreasing Steel <td>D</td> <td>BAC2</td> <td>QPL</td> <td>704.03.00.02</td> <td>Drivable Flexible Delineators</td> <td>110</td>	D	BAC2	QPL	704.03.00.02	Drivable Flexible Delineators	110
Material Code Steel (STL) Page D BAC2 711.00.00.01 Steel Railing 111 D BAC2 711.01.00.01 Reck/Soil Anchor 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.02 Rebar Grade 60 111 D BAC2 QPL 711.01.01.01 Rebar Grade 60 111 D BAC2 QPL 711.01.02.01 Rebar Grade 40 111 D BAC2 QPL 711.01.02.01 Rebar Corrosion Resistant - Cr - Gr100 112 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Sr - Gr 60 112 C/D BAC1 711.02.00.01 Structural Steel Trubing 113 G/D BAC2 711.03.00.01 Structural Steel Trubing 114 D BAC2 711.03.00.01 Werdward Metal 114 C/D BAC2 711.03.00.01 Werdward Metal 114 D </td <td></td> <td>BAC1</td> <td>•</td> <td>704.08.01.01</td> <td>Overhead Structures</td> <td>110</td>		BAC1	•	704.08.01.01	Overhead Structures	110
D BAC2 711.00.00.01 Steel Railing 111 D BAC2 QPL 711.01.00.01 Rock/Soli Anchor 111 D BAC2 QPL 711.01.01.01 Robar Grade 40 111 D BAC2 QPL 711.01.01.02 Rebar Grade 40 111 D BAC2 QPL 711.01.01.03 Rebar Grade 40 111 C QPL 711.01.01.03 Rebar Grade 40 111 D BAC2 QPL 711.01.03.01 Rebar Corrosion Resistant - Cr - Gr100 112 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - SS - Gr 60 112 C/D BAC1 711.02.00.01 Structural Steel 113 G/D BAC2 711.03.00.01 Structural Steel 114 D BAC2 711.08.00.01 Galvanized Mretal 114 D BAC2 711.08.00.01 Galvanized Mretal 114 D BAC2 711.18.00.01 Metal Steel Anconnectors 114<		<u> </u>		Material Code		Page
D BAC2 711.01.00.01 Rock/Soil Anchor 111 D BAC2 QPL 711.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.02 Rebar Grade 60 111 D BAC2 QPL 711.01.01.02 Rebar Grade 60 111 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 111 D BAC2 QPL 711.01.02.01 Rebar Corrosion Resistant - Cr-Gr100 112 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Cr-Gr100 112 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr-Gr100 112 D BAC2 711.02.00.01 Structural Steel 113 C/D BAC1 711.02.00.01 Structural Steel 114 D BAC2 711.02.00.01 Wireutural Steel 114 D BAC2 711.02.00.01 Wireded Stud Stear Connectors 114 D BAC2 711.10.00.01 Pret	D	BAC2		711.00.00.01		_
D BAC2 QPL 111.01.01.01 Rebar Grade 40 111 D BAC2 QPL 711.01.01.02 Rebar Grade 60 111 D BAC2 QPL 711.01.01.03 Rebar Grade 75 1111 D BAC2 QPL 711.01.02.01 Rebar Grade 40 1111 D BAC2 QPL 711.01.02.01 Rebar Sport Coating 1111 D BAC2 QPL 711.01.02.01 Rebar Sport Coating 1112 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 1112 C/D BAC1 711.02.00.01 Structural Steel Tubing 1133 C/D BAC2 711.02.00.01 Structural Steel Tubing 1134 C/D BAC2 711.08.00.01 Galvanized Metal 1144 C/D BAC2 711.08.00.01 Galvanized Metal 1144 D BAC2 711.10.00.01 Wetel Study Steel Tubing 1155 D BAC2 711.1.10.00.01 Structural Anchor Bolt						
D BAC2 QPL 711.01.01.02 Rebar Grade 75 111 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 1111 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 1111 D BAC2 QPL 711.01.02.01 Rebar Foxy Coating 1111 D BAC2 QPL 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 1112 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 1112 C/D BAC1 711.02.00.01 Structural Steel 1133 C/D BAC2 711.03.00.01 Structural Steel 1134 D BAC2 711.03.00.01 Galvanized Metal 1144 D BAC2 711.03.00.01 Galvanized Metal 114 D BAC2 711.03.00.01 Metal Stud Shear Connectors 114 D BAC2 711.12.03.01 Miscellaneous iron Castings 115 D BAC2 <th711.12.03.01< th=""> Miscella</th711.12.03.01<>			OPL		·	
D BAC2 QPL 711.01.01.03 Rebar Grade 75 111 D BAC2 QPL 711.01.01.04 Smooth Dowel Bar Grade 40 1111 D BAC2 QPL 711.01.02.01 Rebar Foxy Coating 1111 D BAC2 QPL 711.01.03.01 Rehar Foxy Coating 1111 D BAC2 QPL 711.01.03.01 Rehar Foxy Coating 1111 D BAC2 QPL 711.01.04.02 Rebar - Corrosion Resistant - Cr - Gr100 112 D BAC2 711.02.00.01 Structural Steel Structural Steel 113 C/D BAC1 711.03.00.01 Structural Steel Tubing 113 BAC2 711.08.00.01 Galvanized Metal 114 D BAC2 711.10.00.01 Weide Stud Steel Tobing 114 D BAC2 711.11.03.01 Miscelaneous ron Castings 115 D BAC2 711.12.03.01 Miscelaneous ron Castings 115 D BAC2 711.12.03.02			-			
D BAC2 OPL 711.01.01.04 Smooth Dowel Bar Grade 40 111 C OPL 711.01.02.01 Rebar Epoxy Coating 111 D BAC2 711.01.03.01 Reinforcing Wire, Wire Meth 112 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 112 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - SS - Gr 60 112 C/D BAC1 711.02.00.01 Structural Steel 113 C/D BAC2 711.03.00.01 Structural Steel 113 BAC2 711.03.00.01 Galvaria Steel 113 BAC2 711.03.00.01 Galvaria Steel 114 D BAC2 711.12.03.02 Connectors 114 D BAC2 711.12.03.01 Miceleal Study Shear Connectors 114 D BAC2 711.12.03.01 Structural Anchor Bolts 115 D BAC2 711.12.03.01 Structural Anchor Bolts 115 D BAC2 711.12.03.01			-			
C QPL 711.01.02.01 Rebar Epoxy Coating 111 D BAC2 QPL 711.01.03.01 Reinforcing Wire, Wire Mesh 112 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 112 C/D BAC2 711.01.04.00 Rebar - Corrosion Resistant - SS - Gr 60 112 C/D BAC2 711.02.00.01 Structural Steel Tulas 113 C/D BAC2 711.03.00.01 Structural Steel Twing 113 BAC2 711.08.00.01 Galvanized Pre-Inspected Structural Steel Members 114 D BAC2 711.09.00.01 Welded Stud Shear Connectors 114 D BAC2 711.12.03.01 Miscellaneous Ioro Castings 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.13.00.01 Miscellaneous Ioro Castings 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.12.00.01 Miscellaneous			-			
D BAC2 QPL 711.01.03.01 Reinforcing Wire, Wire Mesh 112 D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 112 C/D BAC1 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 113 C/D BAC2 711.02.00.01 Structural Steel Tubing 113 C/D BAC2 711.03.00.01 Structural Steel Tubing 113 BAC2 711.06.00.01 High Tensile Strength Bolts 114 D BAC2 711.09.00.01 Welded Stud Shear Connectors 114 D BAC2 711.12.03.00 Structural Steel Tubing 115 D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 T11.12.03.01 Structural Anchor Bolts 115 D BAC2 T11.12.03.01 Structural Anchor Bolts 115 D BAC2 T11.12.03.01 Structural Anchor Bolts 115 D BAC2 T11.12.03.02 Cast Iron Inlet Frames and Grates 1116 <td></td> <td>DACZ</td> <td>· · ·</td> <td></td> <td></td> <td></td>		DACZ	· · ·			
D BAC2 711.01.04.01 Rebar - Corrosion Resistant - Cr - Gr100 112 D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 112 C/D BAC1 711.02.00.01 Structural Steel 113 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 113 C/D BAC2 711.03.00.01 Structural Steel Tubing 113 BAC2 711.03.00.01 Galwanized Metal 114 D BAC2 711.03.00.01 Galwanized Metal 114 D BAC2 711.10.00.01 Welded Stud Shear Connectors 115 D BAC2 711.13.00.01 Miscellaneous Iron Castings 115 D BAC2 711.13.00.01 Mechanical Rebar Connectors 115 D BAC2 711.13.00.01 Mechanical Rebar Connectors 115 D BAC2 711.12.00.02 Gabin Baskets 116 D BAC2 711.12.00.02 Gabin Baskets 117 D 20		BAC2				
D BAC2 711.01.04.02 Rebar - Corrosion Resistant - SS - Gr 60 112 C/D BAC1 711.02.00.01 Structural Steel 113 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 113 C/D BAC2 711.03.00.01 Structural Steel Tubing 113 BAC2 711.08.00.01 High Tensile Strength Bolts 114 D BAC2 711.08.00.01 Galvanized Metal 114 C/D BAC2 711.10.00.01 Prestressing Steel 115 D BAC2 711.12.03.02 Cast tron Inlet Frames and Grates 115 D BAC2 711.12.03.01 Mixeulance Rebar Connectors 115 D BAC2 711.12.03.01 Structural Anchor Bolts 115 D BAC2 711.12.03.01 Mixeutal Anchor Bolts 116 D BAC2 711.12.03.02 Gabion Baskets 116 D BAC2 711.21.00.01 Babact Connectors 117 D 208.02.00.0			QFL			
C/D BAC1 711.02.00.01 Structural Steel 113 C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 113 C/D BAC1 711.03.00.01 Structural Steel Tubing 113 BAC2 711.06.00.01 High Tensile Strength Bolts 114 D BAC2 711.08.00.01 Galvanized Metal 114 C/D BAC2 711.109.00.01 Weled Stud Shear Connectors 114 D BAC2 711.109.00.01 Weled Stud Shear Connectors 115 D BAC2 711.12.03.02 Cast Iron Inder Frames and Grates 115 D BAC2 711.12.03.01 Miccellaneous Iron Castings 115 D BAC2 711.12.03.01 Mechanical Rebar Connectors 115 D BAC2 711.12.03.02 Gabion Baskets 116 D BAC2 711.21.00.01 Temporary Rolled Erosion Control 117 D 208.02.00.01 Temporary Seld 117 117 D 20						
C/D BAC2 711.02.00.02 Prefabricated Pre-Inspected Structural Steel Members 113 C/D BAC1 711.03.00.01 Structural Steel Tubing 113 BAC2 711.06.00.01 High Tensile Strength Bolts 114 D BAC2 711.08.00.01 Galvanized Metal 114 D BAC2 711.09.00.01 Welded Stud Shear Connectors 114 D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.12.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.21.00.01 High Strength Mire Rockfall Mesh 116 D BAC2 711.21.00.02 Gabion Baskets 117 D 208.02.00.03 Stream Preservation Materials 117 D						
C/D BAC1 711.03.00.01 Structural Steel Tubing 113 BAC2 711.06.00.01 High Tensile Strength Bolts 114 D BAC2 711.08.00.01 Galvanized Metal 114 D BAC2 711.09.00.01 Welded Stud Shear Connectors 114 D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 QPL 711.32.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 QPL 711.32.03.01 Kechanical Rebar Connectors 115 D BAC2 711.32.03.01 Mechanical Rebar Connectors 115 D BAC2 711.32.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.32.00.02 Gabion Baskets 116 V Attraction Code Stream Preservation (STPR) Page D 208.02.00.03 Stream Preservation Materials 117 D 208.02.00.03 Streamber Aggregate 117 D 208.02.00.03 Stream	-					
BAC2 711.06.00.01 High Tensile Strength Bolts 114 D BAC2 711.08.00.01 Galvanized Metal 114 C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 114 D BAC2 711.11.00.01 Prestressing Steel 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.12.03.02 Gabion Baskts 116 D BAC2 711.12.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.12.00.02 Temporary Rolled Erosion Control 117 D 208.02.00.03 Temporary Rolled Erosion Control 117 D 208.02.00.03 Streambed Aggregate 117 D 208.02.03.03 Insulatio						
D BAC2 711.08.00.01 Galvanized Metal 114 C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 114 D BAC2 711.10.00.01 Prestressing Steel 115 D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.13.00.01 Structural Anchor Bolts 115 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.21.00.02 Gabion Baskets 116 D BAC2 711.21.00.02 Temporary Rolled Erosion Control 117 D 208.02.00.03 Stream Preservation (STPR) Page Material Code Stream Preservation Materials 117 D 208.02.03.01 Stream Preservation Materials 117 D 208.02.03.01 Stream Preservation Materials 117 D 208.02.00.03 Streambed Aggregate 117 <td>C/D</td> <td></td> <td></td> <td></td> <td></td> <td></td>	C/D					
C/D BAC2 711.09.00.01 Welded Stud Shear Connectors 114 D BAC2 711.11.00.01 Prestressing Steel 115 D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.13.00.01 Structural Anchor Bolts 115 D BAC2 711.12.00.01 Mechanical Rebar Connectors 115 D BAC2 711.21.00.02 Gabion Baskets 116 V 208.02.00.01 Temporary Rolled Erosion Control 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.03.01 Streambed Aggregate 117 D 208.02.03.01 Streambed Aggregate 117 D 208.02.03.01 Streambed Aggregate 117 D 208.02.03.01 Bird Spikes 118 D BAA-C BM.699.01.03 Insulation 118 D <						
D BAC2 711.11.00.01 Prestressing Steel 115 D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.13.00.01 Structural Anchor Bolts 115 D BAC2 711.11.00.01 Mechanical Rebar Connectors 115 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.21.00.01 Temporary Rolled Erosion Control 117 D 208.02.00.01 Temporary Seed 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.00.01 Streambed Aggregate 117 D 208.02.00.01 Streambed Aggregate 117 D 208.02.00.01 Insulation 118 D BABA-C BM.699.01.03 Insulation 118 D BABA-C BM.699.01.05 Metal Siding & Soffit 119						
D BAC2 711.12.03.01 Miscellaneous Iron Castings 115 D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.13.00.01 Structural Anchor Bolts 115 D BAC2 711.13.00.01 Mechanical Rebar Connectors 115 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.21.00.02 Gabion Baskets 117 D 208.02.00.03 Stream Preservation Control 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.00.03 Stream Preservation Materials 117 D BABA-C BM.699.01.01 Bird Splikes	-					
D BAC2 QPL 711.12.03.02 Cast Iron Inlet Frames and Grates 115 D BAC2 711.13.00.01 Structural Anchor Bolts 115 D BAC2 711.13.00.01 Mechanical Rebar Connectors 115 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.21.00.02 Gabion Baskets 116 D BAC2 711.21.00.02 Gabion Baskets 116 D BAC2 711.21.00.02 Temporary Rolled Erosion Control 117 D 208.02.00.01 Temporary Rolled Erosion Control 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.00.03 Stream Preservation Materials 117 U 208.02.03.01 Stream Preservation Materials 117 D 208.02.03.01 Stream Preservation Materials 118 D BABA-C BM.699.01.02 Glue Laminated Beams 118 D BABA-C BM.699.01.03 Insulation						
D BAC2 711.13.00.01 Structural Anchor Bolts 115 D BAC2 711.18.00.01 Mechanical Rebar Connectors 115 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.21.00.02 Gabion Baskets 116 D 208.02.00.01 Temporary Rolled Erosion Control 117 D 208.02.00.02 Temporary Seed 117 D 208.02.03.03 Stream Preservation Materials 117 D 208.02.03.03 Streambed Aggregate 117 Bace BM.699.01.02 Glue Laminated Beams 118 D BM.699.01.02 Glue Laminated Beams 118 D BAC2 BM.699.01.03 Insulation 118 D BAC3 BM.699.01.04						115
D BAC2 711.18.00.01 Mechanical Rebar Connectors 115 D BAC2 711.21.00.01 High Strength Wire Rockfall Mesh 116 D BAC2 711.21.00.02 Gabion Baskets 116 D BAC2 711.21.00.02 Gabion Baskets 116 D 208.02.00.01 Temporary Rolled Erosion Control 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.03.01 Stream Preservation Materials 117 D 208.02.03.01 Stream Preservation Materials 117 Building Materials (BM) Page BABA-C BM.699.01.01 Bird Spikes 118 D BABA-C BM.699.01.02 Glue Laminated Beams 118 D BABA-C BM.699.01.03 Insulation 118 D BABA-C BM.699.01.05 Metal Siding & Soffit 119 D BABA-C BM.699.01.06 Picnic Shetter (Non Precast)	D	BAC2	QPL			
DBAC2711.21.00.01High Strength Wire Rockfall Mesh116DBAC2711.21.00.02Gabion Baskets116Material CodeStream Preservation (STPR)PageD208.02.00.01Temporary Rolled Erosion Control117D208.02.00.03Stream Preservation Materials117Q208.02.00.03Stream Preservation Materials117D208.02.03.01Streambed Aggregate117Building Materials (BM)PageMaterial CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes118DBM.699.01.02Glue Laminated Beams118DBM.699.01.03Insulation118DBAC2BM.699.01.05Metal Soffit119DBAC2BM.699.01.06Picnic Shelter (Non Precast)119DBAC2BM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist120DBAAC2BM.699.01.10Masonry/Through Wall Flashing120DBAAC3BM.699.01.11Pre-Packaged Mortar120DBABA-CBM.699.01.12Interior/Exterior Glass and Glazing121DBABA-CBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical121DBABA-CBM.699.02.02Itvice/Exterior Glass and Glazing121	D				Structural Anchor Bolts	
DBAC2711.21.00.02Gabion Baskets116Material CodeStream Preservation (STPR)PageD208.02.00.01Temporary Rolled Erosion Control117D208.02.00.02Temporary Seed117D208.02.00.03Stream Preservation Materials117D208.02.00.03Stream Preservation Materials117D208.02.00.03Stream Preservation Materials117Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes118DBABA-CBM.699.01.02Glue Laminated Beams118DBAC2BM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBAC2BM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist120DBAR-CBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBABA-CBM.699.01.14Masonry Siding121DBABA-CBM.699.01.14Masonry Siding121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBABA-CBM.699.02.02HVAC System121Mat	D	BAC2		711.18.00.01	Mechanical Rebar Connectors	115
Material CodeStream Preservation (STPR)PageD208.02.00.01Temporary Rolled Erosion Control117D208.02.00.02Temporary Seed117Q08.02.00.03Stream Preservation Materials117Q08.02.03.01Streambed Aggregate117Building Materials (BM)Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes118DBM.699.01.02Glue Laminated Beams118DBM.699.01.03Insulation118DBM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBAA-CBM.699.01.06Picnic Shelter (Non Precast)119DBAA-CBM.699.01.07Quarry Tile119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.15Interior/Exterior Glass and Glazing121DBAA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121	D	BAC2		711.21.00.01	High Strength Wire Rockfall Mesh	116
D 208.02.00.01 Temporary Rolled Erosion Control 117 D 208.02.00.02 Temporary Seed 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.00.03 Stream Preservation Materials 117 D 208.02.03.01 Stream Preservation Materials 117 D 208.02.03.01 Stream Preservation Materials 117 Building Materials (BM) Building Materials (BM) Page BABA-C BM.699.01.01 Bird Spikes 118 D BM.699.01.02 Glue Laminated Beams 118 D BM.699.01.03 Insulation 118 D BM.699.01.04 Metal Roofing 118 D BAC2 BM.699.01.05 Metal Soffit 119 D BAA-C BM.699.01.07 Quarry Tile 119 D BM.699.01.09 Interior/Exterior Building Tape & Paint 120 D BM.699.01.10 Masonry/Through Wall Flashing 120 D BM.699.01.11	D	BAC2		711.21.00.02	Gabion Baskets	116
D208.02.0.02Temporary Seed117208.02.00.03Stream Preservation Materials117208.02.03.01Streambed Aggregate117Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes118DBABA-CBM.699.01.02Glue Laminated Beams118DBAC2BM.699.01.03Insulation118DBAC2BM.699.01.05Metal Siding & Soffit119DBAC2BM.699.01.06Picnic Shelter (Non Precast)119DBAAC2BM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBM.699.01.09Interior/Exterior Building Tape & Paint120DBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding121DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBM.699.02.01Electrical121DBM.699.02.02HVAC System121DBM.699.02.03Interior Fixtures & Features121		-		Material Code	Stream Preservation (STPR)	Page
208.02.00.03Stream Preservation Materials117208.02.03.01Streambed Aggregate117Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes118DBABA-CBM.699.01.02Glue Laminated Beams118DBAC2BM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBAC2BM.699.01.06Picnic Shelter (Non Precast)119DBAC2BM.699.01.07Quarry Tile119DBM.699.01.09Interior/Exterior Building Tape & Paint120DBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.12Interior/Exterior Glass and Glazing121DBM.699.01.14Masonry Siding121DBM.699.02.01Electrical121DBM.699.02.02HVAC System121DBM.699.02.03Interior Fixtures & Features121	D			208.02.00.01	Temporary Rolled Erosion Control	117
Image: system of the system	D			208.02.00.02	Temporary Seed	117
Building Materials (BM)Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes118DBABA-CBM.699.01.02Glue Laminated Beams118DBM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBAC2BM.699.01.06Picnic Shelter (Non Precast)119DBM.699.01.07Quarry Tile119DBM.699.01.08Roof Joist119DBM.699.01.09Interior/Exterior Building Tape & Paint120DBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.14Masonry Siding120DBM.699.01.15Interior/Exterior Glass and Glazing121DBM.699.02.01Electrical121DBM.699.02.03Interior Fixtures & Features121				208.02.00.03	Stream Preservation Materials	117
Material CodeStructure Material (STR)PageBABA-CBM.699.01.01Bird Spikes118DBABA-CBM.699.01.02Glue Laminated Beams118DBM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBABA-CBM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.14Masonry/Through Wall Flashing120DBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.01.16Hetrical/Mechanical (ELMC)PageDBABA-CBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121				208.02.03.01	Streambed Aggregate	117
BABA-CBM.699.01.01Bird Spikes118DBABA-CBM.699.01.02Glue Laminated Beams118DBAC2BM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBABA-CBM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBABA-CBM.699.01.11Pre-Packaged Mortar120DBABA-CBM.699.01.12Interior/Exterior Glass and Glazing121DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical121DBABA-CBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121				·	Building Materials (BM)	
DBABA-CBM.699.01.02Glue Laminated Beams118DBM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBABA-CBM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBABA-CBM.699.01.11Pre-Packaged Mortar120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBABA-CBM.699.02.01Electrical121DBABA-CBM.699.02.03Interior Fixtures & Features121				Material Code	Structure Material (STR)	Page
DBM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBAC2BM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBABA-CBM.699.01.11Pre-Packaged Mortar120DBABA-CBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01ElectricalPageDBABA-CBM.699.02.01Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Ilectrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121		BABA-C		BM.699.01.01		
DBM.699.01.03Insulation118DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBAC2BM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBABA-CBM.699.01.11Pre-Packaged Mortar120DBABA-CBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01ElectricalPageDBABA-CBM.699.02.01Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Ilectrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121	D			BM.699.01.02	•	118
DBAC2BM.699.01.04Metal Roofing118DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBABA-CBM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBABA-CBM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBABA-CBM.699.01.11Pre-Packaged Mortar120DBABA-CBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBABA-CBM.699.02.01Interior Fixtures & Features121DBABA-CBM.699.02.03Interior Fixtures & Features121						
DBAC2BM.699.01.05Metal Siding & Soffit119DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121		BAC2				
DBABA-CBM.699.01.06Picnic Shelter (Non Precast)119DBM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBAC2BM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding120DBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121						
DBM.699.01.07Quarry Tile119DBAC2BM.699.01.08Roof Joist119DBM.699.01.09Interior/Exterior Building Tape & Paint120BABA-CBM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121						
DBAC2BM.699.01.08Roof Joist119DBM.699.01.09Interior/Exterior Building Tape & Paint120DBABA-CBM.699.01.00Masonry/Through Wall Flashing120DBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121						
DBM.699.01.09Interior/Exterior Building Tape & Paint120BABA-CBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121DBABA-CBM.699.02.01Electrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121		BAC2				
BABA-CBM.699.01.10Masonry/Through Wall Flashing120DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121Material CodeElectrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBABA-CBM.699.02.03Interior Fixtures & Features121						
DBM.699.01.11Pre-Packaged Mortar120DBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121Material CodeElectrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBM.699.02.02HVAC System121DBM.699.02.03Interior Fixtures & Features121	-	BABA-C				
DBM.699.01.14Masonry Siding120DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121Material CodeElectrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBM.699.02.03Interior Fixtures & Features121	П	D. IDA-C				
DBABA-CBM.699.01.15Interior/Exterior Glass and Glazing121Material CodeElectrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121DBM.699.02.03Interior Fixtures & Features121						
DBM.699.02.01Electrical/Mechanical (ELMC)PageDBM.699.02.01Electrical121DBABA-CBM.699.02.02HVAC System121Image: BM.699.02.03Interior Fixtures & Features121	_	BABAC				
D BM.699.02.01 Electrical 121 D BABA-C BM.699.02.02 HVAC System 121 D BM.699.02.03 Interior Fixtures & Features 121	U	DADA-C				
D BABA-C BM.699.02.02 HVAC System 121 BM.699.02.03 Interior Fixtures & Features 121	D	[[
BM.699.02.03 Interior Fixtures & Features 121						
	U	DADA-L			,	
D DACZ IBIVI.039.02.04 IPTOPANE TANK 122	~	DACO				
	U	DALZ		10111099.02.04	ILIOHAIIE IAIIK	122

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

		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	22122	ONE EVERY 200 YD ³ OF	SAMPLE			
MATERIAL AGGREGATE 701.01.02	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		TEST		
COMBINED/ INTERMEDIATE	AASHTO T 104 SOUNDNESS SODIUM SULFATE	50 205	FROM EACH SOURCE			TEST	
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
	MT 201 SAMPLING MT 202 SIEVE ANALYSIS	77 LBS	ONE TEST PER SOURCE	SAMPLE			
FOUNDATION MATERIAL 701.04.02.01	MT 210 (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
GRANULAR BEDDING MATERIAL	MT 201 SAMPLING	77 1 00		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 EB3	UNE TEST FER 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	ONE TEST PER SOURCE	SAMPLE			
701.05.00.02	MT 202 SIEVE ANALYSIS	,, 255		TEST			

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

AGGREGATE

701.07.00.04

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 701-21 RANDOM RIPRAP	N/A	ONE TEST PER PROJECT	TEST			OPTICAL GRANULOMETRY SOFTWARE
701.06.02.02 CLASS 3 701.06.02.03	MDT FORM 127 RIPRAP	N/A	ONE TEST PER SOURCE	VISUAL			
				1			
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	TESTS SPEC TABLE 701-22 BANK PROTECTION		SAMPLE/TEST FREQUENCY	FIELD TEST	-		NOTES

AGGREGATE

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	MT 201			SAMPLE			
	SAMPLING			SAIVIFLE			
	MT 202						
	SIEVE ANALYSIS AASHTO T 89				1		
	LIQUID LIMIT						
	AASHTO T 90				1		
	PLASTIC LIMIT &						
	PLASTICITY INDEX	77 LBS	ONE TEST PER SOURCE				
	AASHTO T 335				TEST		
	FRACTURE AASHTO M 145				4		
	SOIL CLASS						
	MT 210				1		
	(5.5LB) PROCTOR						
	MT 230				1		
	(10LB) PROCTOR						
WALL BACKFILL	AASHTO T 104						
701.09.00.01	SOUNDNESS			SAMPLE			
701.09.00.01	SODIUM SULFATE AASHTO T 267						
	ORGANIC CONTENT						
	IN SOILS						
	AASHTO T 288						TEST MAY BE REQUIRED PER SPECIAL
	SOIL RESISTIVITY	30 LBS	ONE TEST PER SOURCE			TEST	PROVISION
	AASHTO T 289						PROVISION
	pH OF SOIL						
	AASHTO T 290						
	SULFATE CONTENT						
	IN SOIL AASHTO T 291						
	CHLORIDE IN SOIL						
	MT 212						
	COMPACTION AND	N1/A	MINIMUM OF ONE TEST PER INSTALLATION	TEAT			
	% MOISTURE	N/A	AND PER LIFT	TEST			
	(IN-PLACE DENSITY)						

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	// 205			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	AASHTO T 335 FRACTURE	77 LBS	ONE TEST PER SOURCE		TEST		
BACKFILL TYPE 1	MT 210 (5.5LB) PROCTOR				TLST		
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
	MT 201 SAMPLING MT 202 SIEVE ANALYSIS			SAMPLE			
BRIDGE END BACKFILL TYPE 2	MT 210 (5.5LB) PROCTOR MT 230 (10LB) PROCTOR	77 LBS	ONE TEST PER SOURCE		TEST		
701.13.00.02	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	°					
	AASHTO T 327 MICRO-DEVAL					TEST	
	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 SPECIFIC GRAVITY				11231		
	AASHTO T 104						
	SOUNDNESS SODIUM SULFATE						

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

AGGREGATE SURFACING

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SHOULDER GRAVEL	MT 201 SAMPLING	20105	ONE TEST PER SOURCE/PER PROJECT	SAMPLE			
301.03.06.01	MT 202 SIEVE ANALYSIS	30 LBS	RESAMPLE IF MATERIAL SOURCE CHANGES		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
	MT 202 SIEVE ANALYSIS	77 LBS	ONE PER PROJECT	TEST			VISUALLY INSPECT UNLESS QUESTIONABLE
PULVERIZED/ MILLED	MT 230 (10LB) PROCTOR	// LB3	TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
BITUMINOUS PAVEMENT 302.03.01.01	MT 219 CONTROL-STRIP TEST SECTION	N/A	WHEN RATIO OF BLENDED MATERIAL CHANGES BY MORE THAN 20% OR CHARACTERISTICS OR SITE CONDITIONS CHANGE	TEST			
	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	10 TESTS PER 2000 FT	TEST			
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	MT 202 SIEVE ANALYSIS			TEST			
POLYMER OVERLAY	AASHTO T 84			SAMPLE		TEST	

ONE PER PROJECT

SAMPLE

TEST

TEST

ABSORPTION

AASHTO T 255

MOISTURE

30 LBS

AGGREGATE

563.02.02.00

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	RACTURE	MINIMUM OF 1 SAMPLE PER SOURCE				
	AASHTO T 89 LIQUID LIMIT	FIELD TESTED SAMPLE	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 2,500 TONS (1,250 CU YDS),	SAMPLE			
	MT 202 SIEVE ANALYSIS AASHTO T 335 FRACTURE	30 LBS	(1,250 CO (D3), 1 LOT = 5 SAMPLES OR APPROX. 12,500 TONS (6,250 CU YDS)	TEST			
	AASHTO T 89 LIQUID LIMIT AASHTO T 90 PLASTIC LIMIT & PLASTICITY INDEX MT 210 (5.5LB) PROCTOR MT 230	30 LBS	TWO TESTS PER MATERIAL TYPE RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
CRUSHED TOP SURFACING GRADE 2A 701.02.06.01	(10LB) PROCTOR MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	10 TESTS PER 2000 FT	TEST			
	INDEPEN	IDENT ASSU	RANCE (COMPARISON TESTING)	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	MT 202 SIEVE ANALYSIS AASHTO T 335 FRACTURE	USE FIELD TESTED	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	SAMPLE	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	30 LBS	1 SAMPLE FOR EACH 2,500 TONS	SAMPLE			
	MT 202 SIEVE ANALYSIS		(1,250 CU YDS), 1 LOT = 5 SAMPLES OR				
	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		TWO TESTS PER MATERIAL TYPE		TEST		
CRUSHED TOP	MT 210 (5.5LB) PROCTOR	30 LBS	RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
SURFACING GRADE 3B	MT 230 (10LB) PROCTOR						
701.02.07.01	MT 212 COMPACTION AND % MOISTURE (IN-PLACE DENSITY)	N/A	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	1 SAMPLE FOR EACH 5 LOTS, MINIMUM OF 1 SAMPLE PER SOURCE				
	AASHTO T 89 LIQUID LIMIT	FIELD TESTED SAMPLE	1 SAMPLE PER PROJECT PER SOURCE		TEST	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	38,500 SQ YDS, 1 LOT = 5 SAMPLES OR				
CRUSHED COVER	AASHTO T 335 FRACTURE		APPROX. 192,500 SQ YDS	TEST			
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 AASHTO T 335	USE FIELD TESTED	ONE TEST FOR EACH LOT		TEST	TEST	
TYPE 2	FRACTURE	SAMPLE			DISTRICT	MDT	
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		1 SAMPLE FOR EACH 1,500 TONS (750 CU YDS),	SAMPLE			
	MT 202 SIEVE ANALYSIS		1 LOT = 5 SAMPLES	TEST			
	AASHTO T 89 LIQUID LIMIT						
	AASHTO T 90 PLASTIC LIMIT &	30 LBS	ONE TEST PER PROJECT				
	PLASTICITY INDEX AASHTO T 134		RESAMPLE IF MATERIAL CHANGES	SAMPLE	TEST		
	MOISTURE - DENSITY RELATIONS OF SOIL-CEMENT						
	MT 216 SAMPLE CTB			SAMPLE			
CEMENT TREATED BASE	ASTM D1633 COMPRESSIVE STRENGTH OF MOLDED SOIL- CEMENT CYLINDERS	30 LBS	1 SET OF CYLINDERS PER 750 CU YDS 1 LOT = 5 SAMPLES			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
		DENT ASSU	RANCE (COMPARISON TESTING)	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	MT 202 SIEVE ANALYSIS	USE	1 SAMPLE FOR EACH 5 LOTS, MINIMUM OF 1 SAMPLE PER SOURCE				
	AASHTO T 89 LIQUID LIMIT	FIELD			TEST	TEST	
	AASHIUI90	SAMPLE	1 SAMPLE PER PROJECT PER SOURCE				
			Mix Design	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	CERT/ VISUAL INSPECTION	1 EACH	ONE MIX DESIGN PER SOURCE	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN

AGGREGATE SURFACING

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)				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		EN AL 1 SAMPLE PER 450 TONS OF PLANT MIX SURFACING				
64-22 702.01.01.02	AASHTO T 48 CLEVELAND OPEN CUP AASHTO T 240						
64-28 702.01.01.03	ROLLING	2 - 1 PINT SPECIMEN				TEST	
70-28 702.01.01.04	BENDING BEAM RHEOMETER	IN METAL CANS					
58H-34 (MSCR)	AASHTO T 315 DYNAMIC SHEAR RHEOMETER		(1 LOT = 2700 TONS OF 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	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
SLOW SET EMULSION 702.01.02.01	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
	AASHTO T 59 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
		1 EACH	ONE PER SHIPMENT				QUALIFIED PRODUCTS LIST SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
SS-1 ANIONIC	INSPECTION MT 302		ONE PER SHIPMENT	СОМР			SAMPLE REQUIRED ONLY IF NOT ON THE
	INSPECTION MT 302 SAMPLING AASHTO T 72 SAYBOLT VISCOSITY AASHTO T 49		ONE PER SHIPMENT	СОМР		TEST	SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST

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
CSS-1H CATIONIC	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
SLOW SET EMULSION 702.01.03.01	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
	AASHTO T 59 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
	-		ONE PER SHIPMENT			HQ LAB	QUALIFIED PRODUCTS LIST SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST
CSS-1 CATIONIC	INSPECTION MT 302		ONE PER SHIPMENT	СОМР		HQ LAB	SAMPLE REQUIRED ONLY IF NOT ON THE
CSS-1	INSPECTION MT 302 SAMPLING AASHTO T 72		ONE PER SHIPMENT	СОМР		TEST	SAMPLE REQUIRED ONLY IF NOT ON THE QUALIFIED PRODUCTS LIST

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			
HIGH FLOAT	MT 302 SAMPLING			SAMPLE			
EMULSION HF-100	AASHTO T 72 SAYBOLT VISCOSITY	2 4 07					MINIMUM OF ONE TEST PER PROJECT
HF-300 HF-300 702.01.05.02	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
702.02.03.02	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		-	
	MT 302 SAMPLING			SAMPLE			
CHFRS-2P POLYMER	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
MODIFIED CATIONIC HIGH FLOAT RAPID SET EMULSION 702.01.05.03	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
702.01.05.05	AASHTO T 59 TESTING 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			
CRS-2 CATIONIC	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
RAPID SETTING EMULSION 702.01.06.01	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
,02102100101	AASHTO T 59 TESTING EMULSIFIED ASPHALTS	DOTTELS					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	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
CATIONIC RAPID SET EMULSION	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
702.01.06.02	AASHTO T 59 TESTING EMULSIFIED ASPHALTS						<u>PRIMARY TEST METHOD</u> EVAPORATIVE DISTILLATION <u>SECONDARY TEST METHOD</u> 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			
CQS-1h CATIONIC	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
QUICK SETTING EMULSION 702.01.07.01	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
MATERIAL/	TESTS	SAMPLE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/	MDT	NOTES
MATERIAL CODE	CERT/ VISUAL	SIZE 1 EACH	ONE PER SHIPMENT	CERT OF COMP	AREA LAB	HQ LAB	
	MT 302 SAMPLING			SAMPLE			
CQS-1P POLYMER	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
MODIFIED CATIONIC QUICK SET EMULSION 702.01.07.02	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
102.01.07.02	AASHTO T 59 TESTING 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			
000 1110	MT 302 SAMPLING			SAMPLE			
CQS-1HP POLYMER MODIFIED	AASHTO T 72 SAYBOLT VISCOSITY						MINIMUM OF ONE TEST PER PROJECT
CATIONIC QUICK SET EMULSION	AASHTO T 49 PENETRATION OF BITUMINOUS MATERIALS	2 - 1 QT SPECIMEN IN PLASTIC BOTTLES	ONE SAMPLE PER TANKER OR TRAILER			TEST	
702.01.07.03	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
	TESTS CERT/ VISUAL INSPECTION		SAMPLE/TEST FREQUENCY	FIELD CERT OF COMP	-		NOTES
	CERT/ VISUAL	SIZE		CERT OF	-		NOTES
POLYMER	CERT/ VISUAL INSPECTION MT 302	SIZE 1 EACH		CERT OF COMP	-		NOTES
MATERIAL CODE	CERT/ VISUAL INSPECTION MT 302 SAMPLING AASHTO T 72	SIZE 1 EACH		CERT OF COMP	-		

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
MATERIAL CODE	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
		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	/lix 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
		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	REFER TO					
	SAMPLING FRESH	TEST FOR		SAMPLE			
	CONCRETE MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE	SIZE 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)]
	STRENGTH 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 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 OVERLAY-SF	AASHTO T 152 AIR CONTENT						INCLUDE IN QA
CONCRETE	AASHTO T 119 SLUMP		ONE TEST FOR THE FIRST LOAD				TEST EACH LOAD WHEN
551.03.02.07	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE	1 CU FT	AND THEN ONE TEST EVERY 16 YD ³ THEREAFTER	SAMPLE TEST			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
	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 CONCRETE	TEST FOR SIZE		SAMPLE			
CLASS OVERLAY-LM CONCRETE	MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE STRENGTH AASHTO T 358	1 CU FT	MINIMUM OF 2 SETS PER LOT (200 YD ³ OR EACH DAY'S POUR WHICHEVER IS LESS) TEST 3 - 28 DAY COMPRESSIVE	SAMPLE		TEST	1 SET MAY REPRESENT POURS OF 30 YD ³ OR LESS [551.03.8(C)(1)(a)]
551.03.02.08	RESISTIVITY AASHTO T 152		STRENGTH CYLINDERS				
	AIR CONTENT AASHTO T 121 UNIT WEIGHT	1 CU FT	ONE TEST PER EACH MOBILE MIXER	SAMPLE TEST			FOR INFORMATION ONLY
		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 OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH	1 CU FT	WHICHEVER IS LESS)	SAMPLE		TEST	
	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
		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		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 FOR INFORMATION ONLY
	UNIT WEIGHT	n.	Лix 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
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, 1011 22		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	/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	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 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
		N	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		MINIMUM OF 2 SETS PER LOT (200 YD ³ OR EACH DAY'S POUR				1 SET MAY REPRESENT POURS OF 30 YD ³ OR LESS [551.03.8(C)(1)(a)]
	AASHTO T 22 COMPRESSIVE STRENGTH	1 CU FT	WHICHEVER IS LESS)	SAMPLE		TEST	
	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 - LOW SLUMP	AASHTO T 152 AIR CONTENT						INCLUDE IN QA
CONCRETE	AASHTO T 119 SLUMP		ONE TEST EVERY 30 YD ³ AND WHEN COMPRESSIVE STRENGTH CYLINDERS ARE MADE	SAMPLE TEST			TEST EACH LOAD WHEN
551.03.02.17	AASHTO T 309 TEMPERATURE OF FRESHLY MIXED CONCRETE	1 CU FT					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			
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
	TESTS AASHTO R 60 SAMPLING FRESH CONCRETE	SAMPLE SIZE REFER TO TEST FOR SIZE	SAMPLE/TEST FREQUENCY	FIELD SAMPLE			NOTES
	AASHTO R 60 SAMPLING FRESH CONCRETE MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22 COMPRESSIVE	REFER TO TEST FOR SIZE	SAMPLE/TEST FREQUENCY				NOTES
MATERIAL CODE CLASS LOW DENSITY CELLULAR	AASHTO R 60 SAMPLING FRESH CONCRETE MT 101 COMPRESSIVE STRENGTH CYLINDERS AASHTO T 22	REFER TO TEST FOR SIZE		SAMPLE		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-INSF	PECTION	
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
-	TESTS CERT/ VISUAL INSPECTION	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD CERT OF COMP VISUAL	-	MDT HQ LAB	IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 624.03.3
MATERIAL CODE	CERT/ VISUAL			CERT OF COMP	-		IF WELDING OCCURS, CERTIFICATE OF COMPLIANCE IS SUBMITTAL OF
-	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 SPECIFICATION 624.03.3 MANDATORY SUBMITTAL OF DOCUMENTATION PER
PRECAST CONCRETE	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 <u>SPECIFICATION 624.03.3</u> MANDATORY SUBMITTAL OF DOCUMENTATION PER <u>SPECIFICATION 106.09</u> 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-INSI 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

CRACK SEALING

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			ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
CRACK SEALANT 403.02.00.01	ASTM D6690 JOINT AND CRACK SEALANTS	30 LBS	AS REQUESTED	SAMPLE		TEST	
	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 ONE PER PRODUCT	FIELD DATA SHEET	-		NOTES ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST

MT 601 (01/11/24)

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/	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/		NOTES
MATERIAL CODE	MT 201	SIZE		SAMPLE	AREA LAB	HQ LAB	
	SAMPLING MT 202						
	SIEVE ANALYSIS						
	AASHTO T 89 LIQUID LIMIT		EACH SOURCE OF SPECIAL BORROW IS				
	AASHTO T 90		SUBJECT TO APPROVAL PRIOR TO PLACEMENT (ONE BORROW SOURCE				
	PLASTIC LIMIT &		PER 65,000 YD^3)		TECT		
	PLASTICITY INDEX AASHTO M 145	77 LBS	MINIMUM EIGHT SAMPLES PER		TEST		
	SOIL CLASS		BORROW SOURCE				
SPECIAL	MT 210		85% OF THE TESTS MUST MEET SOILS				
BORROW	(5.5LB) PROCTOR MT 230		CLASSIFICATION OR R-VALUE				
202 01 00 02	(10LB) PROCTOR		REQUIREMENT				
203.01.00.02	AASHTO T 190					TEST	TEST REQUIRED IF SPECIFIED IN THE
	R-VALUE						SPECIAL PROVISIONS
	MT 212						
	COMPACTION AND % MOISTURE						
	(IN-PLACE DENSITY)	N/A	MINIMUM OF ONE TEST PER 2000 YD ³ AND A	TEST			
	MT 218		MINIMUM OF ONE TEST PER LIFT	11.51			
	RELATIVE						
	COMPACTION AND % MOISTURE						
MATERIAL/	TESTS	SAMPLE		FIELD	DISTRICT/	MDT	NOTES
MATERIAL CODE	IESIS	SIZE	SAMPLE/TEST FREQUENCY	FIELD	AREA LAB	HQ LAB	NOTES
	MT 201			SAMPLE			
	SAMPLING			_			
	MT 202						
STEMMING AGGREGATE	SIEVE ANALYSIS						
FOR BLASTING	AASHTO T 90	30 LBS	ONE TEST PER SOURCE				
	PLASTIC LIMIT &				TEST		
204.02.00.01	PLASTICITY INDEX				1251		
	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/		SAMPLE			DISTRICT/	MDT	
MATERIAL CODE	TESTS	SIZE	SAMPLE/TEST FREQUENCY	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-INSF	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/TEST FREQUENCY ONE PER PROJECT	FIELD DATA SHEET	-		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
		1			DISTRICT/	MDT	
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	AREA LAB	HQ LAB	NOTES

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
	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 SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
NON-WOOD	CERT/ VISUAL INSPECTION	1 EACH	ONE PER LOT OR BATCH	DATA SHEET			

BLOCKOUT						
705.01.02.02	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
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

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

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
JOINT SEALING MATERIAL 707.01.01.01	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
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			
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			

JOINT MATERIAL

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MATERIAL/ SAMPLE DISTRICT/ MDT FIELD TESTS SAMPLE/TEST FREQUENCY NOTES AREA LAB MATERIAL CODE SIZE HQ LAB **EXPANSION JOINT** ASPHALT PLUG **CERT/ VISUAL** 1 EACH **ONE PER PRODUCT** DATA SHEET INSPECTION 707.01.02.04 MATERIAL/ SAMPLE DISTRICT/ MDT TESTS NOTES SAMPLE/TEST FREQUENCY FIELD AREA LAB MATERIAL CODE SIZE HQ LAB PREFORMED **EXPANSION JOINT CERT/ VISUAL** FILLER 1 EACH **ONE PER PRODUCT** DATA SHEET INSPECTION 707.01.03.01 MATERIAL/ SAMPLE MDT DISTRICT/ TESTS SAMPLE/TEST FREQUENCY FIELD NOTES AREA LAB SIZE MATERIAL CODE HQ LAB **CERT/ VISUAL** 1 EACH **ONE PER PRODUCT** DATA SHEET INSPECTION RUBBER GASKET 707.02.01.01 BABA MANDATORY SUBMITTAL OF CONSTRUCTION 1 EACH **ONE PER FORM 407 FORM 407** DOCUMENTATION PER MATERIAL **SPECIAL PROVISION 106** MATERIAL/ SAMPLE MDT DISTRICT/ TESTS SAMPLE/TEST FREQUENCY NOTES FIELD MATERIAL CODE SIZE AREA LAB HQ LAB FLEXIBLE JOINT

DATA SHEET

CERT/ VISUAL

INSPECTION

1 EACH

ONE PER PRODUCT

SEALER

707.02.02.01

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
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
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
	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER SIZE	DATA SHEET			QUALIFIED PRODUCTS LIST VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
PVC CONDUIT	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 ITEM CHECKLIST	1 EACH	ONE PER SIZE	DATA SHEET			QUALIFIED PRODUCTS LIST VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
HDPE CONDUIT	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			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
	ELECTRICAL ITEM CHECKLIST	N/A	ONE PER LOT	DATA SHEET		-	QUALIFIED PRODUCTS LIST 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
	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER LOT/BATCH	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
PULL BOXES	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
CONDUCTOR	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
CONDUCTOR	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
CABLE	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER LOT	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
SERVICE & CONTROL ASSEMBLY	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TRAFFIC SIGNAL CABINET	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
TRAFFIC SIGNAL INDICATION	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			QUALIFIED PRODUCTS LIST 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
LED TRAFFIC SIGNAL	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			QUALIFIED PRODUCTS LIST VERIFY ITEM SUPPLIED MATCHES APPROVED SUBMITTAL
MATERIAL/		SAMPLE	· · · · · · · · · · · · · · · · · · ·		DISTRICT/	MDT	
MATERIAL CODE	TESTS	SIZE	SAMPLE/TEST FREQUENCY	FIELD	AREA LAB	HQ LAB	NOTES
PEDESTRIAN SIGNAL INDICATION	ELECTRICAL ITEM CHECKLIST	1 EACH	ONE PER ITEM	DATA SHEET			QUALIFIED PRODUCTS LIST 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
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/	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
MATERIAL CODE							

LIGHTING, SIGNALS & COMMUNICATION

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-INSF	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 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 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

MISCELLANEOUS

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MT 601 (01/11/24)

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/		SAMPLE			DICTDICT/	AADT	
MATERIAL CODE	TESTS	SAIVIPLE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	TESTS CERT/ VISUAL INSPECTION		SAMPLE/TEST FREQUENCY	FIELD DATA SHEET	-		NOTES ACCEPTANCE ONLY FROM THE QUALIFIED PRODUCTS LIST
MATERIAL CODE ANTI-GRAFFITI COATING	CERT/ VISUAL	SIZE			-		ACCEPTANCE ONLY FROM THE
MATERIAL CODE ANTI-GRAFFITI COATING 710.04.00.01 MATERIAL/	CERT/ VISUAL INSPECTION	SIZE 1 EACH SAMPLE	ONE PER PRODUCT	DATA SHEET	AREA LAB	HQ LAB	ACCEPTANCE ONLY FROM THE 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
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	4 0117					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	I 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 MT TYPE 2 714.08.00.02	AASHTO T 346 SAMPLING GLASS BEADS AASHTO R 98 SIZE AND SHAPE OF GLASS BEADS	1 QT (1 LITER)	<u>CONSTRUCTION</u> ONE PER PROJECT <u>MAINTENANCE</u> AS REQUESTED	SAMPLE		TEST	SAMPLE FROM BULK CONTAINER WITH THIEF/PROBE IN ACCORDANCE WITH AASHTO T 346. SAMPLE THIEF/PROBE MAY NOT FILL SAMPLE BOTTLES. WHEN SAMPLING FROM A BULK CONTAINER IS NOT POSSIBLE, SAMPLES MAY BE COLLECTED FROM THE BEAD GUN ON THE TRUCK.
	BABA CONSTRUCTION MATERIAL	1 EACH	ONE PER FORM 407	FORM 407			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIAL PROVISION 106

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

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

PILE

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

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 #

PILE

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-INSI 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

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

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 INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
PLATE PIPE 709.03.00.01	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
PRECOATED CORRUGATED STEEL PIPE	CERT/ VISUAL INSPECTION	1 EACH	ONE PER ITEM	DATA SHEET VISUAL			
709.05.00.02	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
	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	45 LBS	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		

MDT MATERIALS SAMPLING, TESTING, AND ACCEPTANCE GUIDE

PLANT MIX PAVEMENT

MATERIAL/					DISTRICT/	MDT	
MATERIAL CODE		N	/lix Design	FIELD	AREA LAB	HQ LAB	NOTES
	MT 201				SAMPLE		
	SAMPLING				SAIVIT 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						
Sonracing	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			TEST	
GRADE S (1/2")	AASHTO R 47					TEST	
401.03.00.02	REDUCING SAMPLES 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						
	MT 320						USED FOR PLANT MIX DESIGNS CONTAINING RAP
	IGNITION OVEN						
	AGGREGATE ANALYSIS						

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
	AASHTO T 335 FRACTURE	5 20 LBS	ONE EVERY 600 TONS PMSC		SAMPLE TEST		
	MT 303 SAMPLING BITUMINOUS PAVING MIXTURES						
PLANT MIX SEAL COURSE 401.03.00.04	AASHTO R 47 REDUCING SAMPLES						
	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				0, 1111 22		
	MT 202						
	SIEVE ANALYSIS						
	AASHTO T 84						
	SPECIFIC GRAVITY						
	FINE AGG						
	AASHTO T 85					TEST	
	SPECIFIC GRAVITY						
	COARSE AGG						
	AASHTO T 89						
	AASHTO T 90	800 LBS	800 LBS ONE PER PLANT MIX SEAL COURSE MIX DESIGN				
	PLASTIC LIMIT &						
PLANT MIX	PLASTICITY INDEX AASHTO T 96						
SEAL COURSE	LOS ANGELES						
	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 (01/11/24)

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/					DISTRICT/	MDT	
MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	AREA LAB	HQ LAB	NOTES
COLD RECYCLED PLANT MIX 405.03.00.01	CERT/ VISUAL INSPECTION	N/A	ONE PER PROJECT	VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS
	AASHTO T 329 MOISTURE CONTENT	MINIMUM 2.2 LB MOISTURE PROOF CONTAINER	ONE EVERY 3000 FT PAVER PATH	SAMPLE	TEST		
	Mix Design			FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	CERT/ VISUAL INSPECTION	1 EACH	ONE PER COLD RECYCLED PLANT MIX DESIGN	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN
MATERIAL/ MATERIAL CODE	TESTS	SAMPLE SIZE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	CERT/ VISUAL INSPECTION	N/A	ONE PER PROJECT	VISUAL			VERIFY ITEM MEETS MDT REQUIREMENTS
HOT IN-PLACE RECYLCED PLANT MIX 405.03.00.02	MT 303 SAMPLING BITUMINOUS PAVING MIXTURES	SUFFICIENT QUANTITY IN 2-10 QUART GALVANIZED BUCKETS	PER SPECIAL PROVISION	SAMPLE	TEST		
	Mix Design			FIELD	DISTRICT/ AREA LAB	MDT HQ LAB	NOTES
	CERT/ VISUAL INSPECTION	1 EACH	ONE PER HOT IN-PLACE RECYCLED PLANT MIX DESIGN	MIX DESIGN		APPROVAL	CERTIFICATION IS THE CONTRACTOR'S MIX DESIGN

PLANT MIX PAVEMENT

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

MT 601 (01/11/24)

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 (01/11/24)

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-INSI	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 (01/11/24)

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 CERT CATEGORY 2	1 EACH	ONE PER FORM 406	FORM 406			MANDATORY SUBMITTAL OF DOCUMENTATION PER SPECIFICATION 106.09
711.01.04.02	MT 414 REINFORCING STEEL	2 - 3 FT SECTIONS	ONE TEST PER BAR SIZE	SAMPLE		TEST	

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	12313	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	APPLICABLE FOR STANDARD HEX BOLTS
STRENGTH BOLTS 711.06.00.01	ASTM F3125	3 BOLT ASSEMBLIES	ONE TEST PER GRADE, DIAMETER, LENGTH, AND LOT	SAMPLE		TEST	APPLICABLE FOR TENSION CONTROL BOLTS
	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
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			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	

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 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
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

STEEL

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			
							MANDATORY SUBMITTAL OF

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 PER		SAMPLE			
208.02.03.01	MT 202 SIEVE ANALYSIS	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
BWI.099.01.01	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 (01/11/24)

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
ELECTRICAL	CERT/ VISUAL	4 5 4 6 1					
BM.699.02.01	INSPECTION	1 EACH	ONE PER EACH	DATA SHEET			
ΜΑΤΕΡΙΑΙ /		SAMDLE				MDT	

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

SPECIALS, DETAILED DWGS, STANDARD SPECS, FORMS

PLUMBING

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 (01/11/24)

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	1 EACH	ONE PER EACH	DATA SHEET			
BM.699.05.02	INSPECTION	IEACH	ONE PER EACH	DATA SHEET			
MATERIAL/	TESTS	SAMPLE	SAMPLE/TEST FREQUENCY	FIELD	DISTRICT/	MDT	NOTES
MATERIAL CODE		SIZE	<i>o,</i> <u>12</u> ,		AREA LAB	HQ LAB	
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

BUILDING MATERIALS

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			

MT 601 (01/11/24)

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		
Asphalt Mixtures and Binder	N/A	AASHTO R 47 Reducing Samples of Asphalt Mixtures to Testing Size		
	N/A	AASHTO T 166 Bulk Specific Gravity (Gmb) of Compacted Asphalt Mixtures Using Saturated Surface Dry Specimens		
	MT 319 Determining the Asphalt Binder Content of PMS by the Ignition Method	AASHTO T 308 Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method		
	MT 320 Mechanical Analysis of Aggregate Recovered from Ignition Oven Burn	AASHTO T 30 Mechanical Analysis of Extracted Aggregate		
	MT 321 Determining Theoretical Maximum Specific Gravity of Bituminous Paving Mixtures – "Rice Gravity"	AASHTO T 209 Theoretical Maximum Specific Gravity (Gmm) and Density of Hot Mix Asphalt (HMA) Paving Mixtures		
	MT 332 Determining the Percent of Adhesion of Bituminous Materials to Aggregate	AASHTO T 312 Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor		
	MT 302 Sampling and Testing Bituminous Materials	AASHTRO R 66 Sampling Asphalt Mixtures		
	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

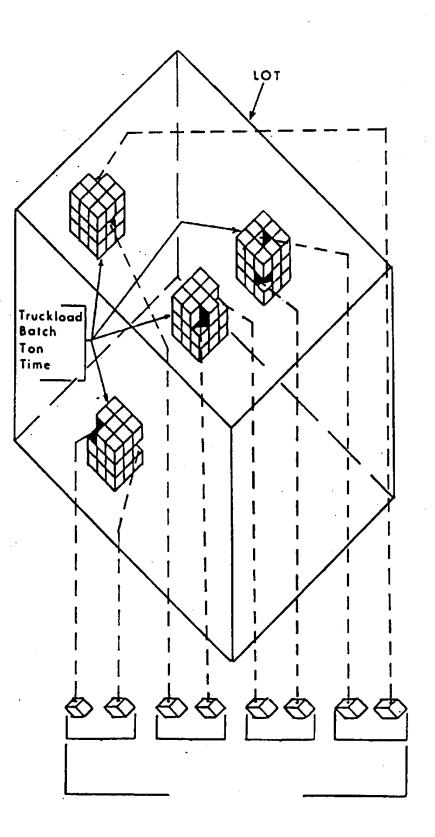


FIGURE 1-Schematic diagram illustrating Lot, Sample, Subsample, and Sample Unit.

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			
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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
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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
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10.2 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
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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 .

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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	=
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		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.
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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
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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