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Waterproofing Primer, Liquid Asphalt, RC 250	904.03B
Waterstop (Metallic).....	908.07, 908.08
Watertight Joints	909.03
Weed Spray (Herbicides)	917.16
Welded Wire Reinforcement (Mesh).....	905.06
Wire, Electrical Cable	918.03
Wire, High Tensile Fence	907.05A
Wire, Rope.....	908.11B
Wire Mesh.....	905.06
Wood Fence Posts	912.07B
Wood Mulch/Chips.....	917.14
Wood Posts and Lath for Silt Fence	916.02
Wood Posts for Guardrail (Dimensioned Sawed).....	912.08
Wood Posts for Signs	912.08, 919.05
Woven Wire Fence Materials	907.03
Wrap, Filter Fabric	910.03A

-X- -Y- -Z-

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
401.03E End Section Grate for Culverts	VI	-	-	-	See Standard Plans for Sizes.
401.03E Precast Concrete Headwalls	Gen Cert	-	-	-	24" or less. For larger than 24" construct per Section 706 of Standard Specifications.
404.02C Underdrain Outlet Endings	VI	-	-	-	See Standard Plans.
501.02 Asphalt, Release Agents	VI	-	-	-	
NOTE: Must be approved by the project engineer. No fuel or oil based agents.					
502.02B Overband Crackfill, Asphalt Rubber (Alt. 2)	Gen Cert	-	-	-	Must be a Qualified Product (502.02B).
603.03B2 Adhesive Systems for Grouting Dowel Bars and Tie Bars for Full-Depth Concrete Pavement Repairs	Gen Cert	-	-	-	Must be a Qualified Product (603.03B2).
NOTE: Use for grouting to existing concrete in the same direction of traffic in the same lane as the repair. For grouting lane ties (deformed bars positioned transverse to the direction of traffic located between traffic lanes) select from Adhesive Anchor Systems for Structural Anchors and Lane Ties (712.03J).					
603.03B11 Bond Breaker Tape	VI	-	-	-	
702.02A Standard Mortars and Grouts	VI	-	-	-	
702.02B Non-Shrinking Mortar and Grout, Type H-1(Non-Metallic) Pre Mixed	Gen Cert	-	-	-	Must be a Qualified Product (702.02B).
702.02C Admixture for Expansive Grout, Type E-1	Test Data Cert	-	-	-	
NOTE: Certification to include manufacturers recommended dosage per sack of cement. Include all General Certification documentation and sample of the cement with which it is being used with CV samples.					
703 Prepackaged Hydraulic Fast Set Mortar	Gen Cert	-	-	-	Must be a Qualified Product (703).
706.03K4 Expansion Joint Devices for Bridges	See Remark	-	-	-	See Bridge Standard Plans for list of approved devices and details.
706.03S Penetrating Water Repellent (Protective Coating for Concrete)	Gen Cert	-	-	-	Must be a Qualified Product (706.03S).

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707.02 Bushings for Pins and Link Plates	Gen Cert	-	-	-	Must be a Qualified Product (707.02).
708.03A Prestressed Concrete	Fabrication Inspection	-	-	-	MQAP Manual Section 4.04.
710.03D Waterproofing Shotcrete	VI	-	-	-	
712.03A1c Abrasive, Low Dusting	Gen Cert	-	-	-	See Section 715.02.
712.03D Epoxy Mastic	VI	-	-	-	
712.03J Adhesive Anchor Systems for Structural Anchors and Lane Ties	Gen Cert	-	-	-	Must be a Qualified Product (712.03J).
712.03K Structure Expansion Anchors (Mechanical Expansion Anchors)	Gen Cert See Remark	-	-	-	Must be a Qualified Product (712.03K). Pull-out testing is required see MQAP Manual Section 4.03.
712.03L Mechanical Reinforcement Splicing	Gen Cert See Note	1 per project	2 splices	-	See Special Instructions. Must be a Qualified Product (712.03L).
712.03X Grout Under Masonry Plates	VI	-	-	-	
712.03Y Embedded Galvanic Anodes	Gen Cert See Remark	-	-	-	Must be a Qualified Product (712.03Y).
713.02B Sealant for Perimeter of Beam Repairs	Gen Cert	-	-	-	Must be a Qualified Product (713.02B).
715.02 Coating Systems for New Hanger Assemblies	Gen Cert See Remark	-	-	-	Must be a Qualified Product (915).
715.02 Abrasive, Low Dusting	Gen Cert	-	-	-	Must be a Qualified Product (715.02).
715.02 Abrasive, Steel Grit	VI	-	-	-	Verify uniform profile after blasting of 1 to 2.8 mils per SSPC.
716.02 Abrasive, Low Dusting	Gen Cert	-	-	-	See Section 715.02.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
803.02B Detectable Warning Surfaces	Gen Cert	-	-	-	Must be a Qualified Product (803.02B).
804.01 Glare Screen	VI	-	-	-	Included in Concrete Spec.
808.03C Temporary Fence Materials	VI	-	-	-	
811.03D1 Waterborne, Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D1).
811.03D2 Low Temperature Waterborne, Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D2).
811.03D3 Regular Dry Paint, Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D3).
811.03D4 Cold Plastic Tape, Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.16. Must be a Qualified Product (811.03D4).
811.03D5 Thermoplastic Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D5).
811.03D5 Thermoplastic, Blocks Rumble Strips and Snowmobile Crossings	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D5).
811.03D6 Thermoplastic, Sprayable, Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D6).
811.03D7 Polyurea, Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D7).
811.03D8 Modified Urethane, Liquid Pavement Marking Materials	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D8).
811.03D9 Preformed Thermoplastic, Preformed Pavement Marking Material	Gen Cert	-	-	-	Must be a Qualified Product. MQAP Manual Section 6.15. Must be a Qualified Product (811.03D9).
901 Cement	Appr Mfr	See Remark	10 lb	45 ton	See Special Instructions, see MQAP Manual Section 3.07.
901.06 Slag Cement	Appr Mfr	-	10 lb	-	See Special Instructions for Cement.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
901.07 Fly Ash, Pozzolanix Admixtures for Concrete	Appr Mfr	-	10 lb	-	See Special Instructions for Cement.
902 Prequalified Aggregate Sources See Current List of all Prequalified Aggregate Sources at Construction Field Services Web Page. Instructions to Construction Field Services web page: From MDOT home page (michigan.gov/mdot), click on Maps and Publications (left side), then click on Manuals, Guides, Advisories & Memos, then Materials Source Guide. The link to the <u>Prequalified Aggregate Source List</u> is under Additional Resources. Actual Current List of Prequalified Aggregate Sources web page address: http://www.michigan.gov/documents/mdot/MDOT_PrequalifiedAggregateSourceList_387538_7.pdf					See Special Instructions
902 Non-Prequalified Aggregate Sources (see below)					
902 Coarse Aggregates	Test	1 per 1000 ton	50 lb	100 ton	
902 Dense-Graded Aggregates	Test	1 per 1000 ton	50 lb	500 ton	
902 Open-Graded Aggregates	Test	1 per 1000 ton	50 lb	100 ton	
902 Granular Material Class I	Test	1 per 1000 ton	50 lb	100 ton	
902 Granular Material Class II (Subbase) and Class IIA	Test	1 per 3000 cyd	50 lb	500 cyd	
902 Class II (Abutment B. F.)	Test	1 per structure	50 lb	100 cyd	
902 Granular Material Class III	Test	1 per 10,000 cyd	50 lb	500 cyd	
902 Granular Material Class IIIA	Test	1 per 1000 cyd	25 lb	100 cyd	
902 Fine Aggregate	Test	1 per 1000 ton	25 lb	100 ton	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
902 Mineral Filler for HMA Mixtures	Test See Remark	1 per project	1 qt	10 ton	Refer to Section 902.11 of the 2012 Standard Specifications.
903.01 Air Entraining Admixtures	Gen Cert	-	-	-	Must be a Qualified Product (903.01).
903.02 Water Reducing and Water Reducing Retarding Admixtures for Concrete	Gen Cert	-	-	-	Must be a Qualified Product (903.02).
903.03 Latex Admixture for Concrete	Appr Mfr	1 per lot	1 qt	-	
903.04 Concrete Accelerators 1. Calcium Chloride 2. All Others	VI Gen Cert	- -	- -	- -	For calcium chloride note the chemical composition. Other accelerators must be Qualified Products (903.04).
903.06 Membrane Curing Compound	Test Data Cert	1 per lot or batch	1 qt	200 gal	
NOTE: Curing compounds must not be used after ONE year from manufacture. Date of manufacture must be clearly printed on the outside of containers.					
903.07A Interim Curing (Linseed Oil Based)	Test Data Cert	1 per lot or batch	1 qt	50 gal	See Note for 903.06 above.
903.07C Insulating Blanket	Test Data Cert	-	-	10 sheets	
903.07D Polystyrene Insulation	Test Data Cert	-	-	-	
904.03A Asphalt Binder for HMA Mixtures	See Remark	1 per batch	(2) 1 qt containers	-	See Special Instructions.
904.03B Liquid Asphalt (MC)	Gen Cert	1 per batch	See Remark	-	1 gal from the top and 1 gal from the bottom of tank.
904.03B Liquid Asphalt (RC-250)	Gen Cert	1 per batch	2 qt	5 gal	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
904.03C Emulsified Asphalt	Appr Mfr * See Remark	See Remark	See Remark	-	See Special Instructions.
905.03 Bar Reinforcement (Uncoated)	Appr Mfr *	1 per project per mfr per size	See Remark	500 lb	See Special Instructions.
905.03 Bar Reinforcement (Epoxy Coated) 1. Bar 2. Epoxy Coating Companies 3. Epoxy Coating Material (905.03C)	Appr Mfr * Appr Mfr * Gen Cert	1 per project per mfr per size	See Note	500 lb	See Special Instructions. Epoxy coating must be a Qualified Product (905.03C).
905.03D Bar Chairs and Wire Ties for Epoxy Coated Steel Reinforcement	VI	-	-	-	
905.06 Welded Steel Wire Reinforcement (Mesh)	Appr Mfr *	1 per project per mfr	See Remark	500 syd	See Special Instructions.
905.07 Strand for Prestressed Concrete	Appr Mfr *	1 per heat	2 pcs each 80 in long	-	See Special Instructions.
905.08 Tendons for Post Tensioning of Box Beams (Prestressing Strand)	Appr Mfr * See Remark	1 per heat	2 pcs each 80 in long	-	See Special Instructions.
905.08 Tendons for Post Tensioning of Box Beams (Post Tensioning Bar)	Test	1 per heat per project	2 pcs each 30 in long	-	
906.04 Structural Steel	Fabrication Inspection	-	-	-	MQAP Manual Section 4.05.
906.05 Foundation Piles (Steel H Piling and Special Sections, Steel Shells for Cast- in- Place Concrete Piles and Pile Points)	Test Data Cert	-	-	-	
906.05 Pile Cutoffs	Gen Cert	-	-	-	
906.06 Steel Piles (Temporary and Permanent Steel Sheet Piling)	Gen Cert	-	-	-	
906.07 High Strength Steel Bolts, Nuts, and Washers for Structural Joints	Test	1 assembly per dia per length per heat per project	3 assemblies	-	See Special Instructions.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
906.08 Pins and Link Plates for Steel Bridge Construction	Fabrication Inspection	-	-	-	MQAP Manual Section 4.05
906.09 Shear Developers (Studs)	Gen Cert	-	-	-	Must be a Qualified Product (906.09).
907.03A - C Woven Wire Fence (Woven Wire Fabric, Barbed Wire, Smooth Line Wire)	Test Data Cert	1 per project per mfr	Full width of roll 5 ft 6 ft 4 ft	400 ft	
907.03D Woven Wire Fence (Steel Posts)	Test Data Cert	1 per project per mfr	1 post	25 posts	
907.03E Woven Wire Fence (Treated Wood Posts)	See Remark	-	-	-	See Section 912.07B.
907.03F Woven Wire Fence (Gates)	VI	-	-	-	
907.04A Steel Chain Link Fence (Fabric)	Test Data Cert	See Remark	5 ft full width of roll	250 ft	1 per height and/or mesh size, per project and 1 per mfr per project.
907.04B Steel Chain Link Fence (Tension Wire)	Gen Cert	1 per project per mfr	3 ft	500 ft	
907.04C Steel Chain Link Fence (Post for Fence and Gates), (Pedestrian Fence and Structure Fencing (Steel))	Test Data Cert	1 per project per mfr	1 post	25 posts	See Special Instructions.
NOTE: An alternative zinc/clear coat system will be allowed for pipe sections only. This alternative coating system shall comply with subsection 907.03D of the Standard Specifications for Construction.					
907.04C Steel Chain Link Fence (Top Rail), ((Horz. Rail) (Pedestrian Fence))	Test Data Cert	1 per project per mfr See Remark	5 ft	250 ft	See Special Instructions.
907.04D & E Steel Chain Link Fence (Gates, Fence Fittings and Hardware)	VI	-	-	-	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
907.05A High Tensile Wire Fence (Wire)	Test	1 per project per mfr	3 ft	250 ft	
907.05B High Tensile Wire Fence (Treated Wood Posts)	See Remark	-	-	-	See Section 912.07B.
907.05C High Tensile Wire Fence (Hardware)	VI	-	-	-	
907.06 Protective Fence	VI	-	-	-	
908 Castings, Manhole 908.03 Malleable Iron 908.04 Steel 908.05 Gray Iron	VI	-	-	-	
908.07 Sheet Lead	Gen Cert	-	-	25 sft	
908.08 Sheet Copper	Gen Cert	1 per consignment	13 in square or equivalent area	25 sft	May be accepted in field if weight requirements can be documented.
908.09A Tubing, Steel Railings (Base Plate, Angle, and Post Elements)	Fabrication Inspection	1 per heat per project	1 base plate, 1 post 9 in length	-	MQAP Manual Section 4.05. Test Data Cert document must be attached to the sample ID.
908.09B Tubing, Steel Railings (Rail Elements)	Fabrication Inspection	1 per heat per project	36 in long, galv	-	MQAP Manual Section 4.05. Chemical analysis must include silicon. Test Data Cert document must be attached to the sample ID.
908.09C Tubing, Steel Railings (Hardware)	Test	1 per heat per diameter per project	A bolt, nut, washer, coupling and base plate, if applicable	-	
908.10 Hardware for Timber Construction	VI	-	-	-	
908.11A Guardrail, Steel Beam Elements, End Sections	Appr Mfr *	1 per project per mfr	1 piece at least 1 ft length	125 ft	Including Anchorage, Bridge, Shoes, Departing End Terminals.
908.11A Guardrail Approach Terminals	Appr Mfr *	-	-	-	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
908.11B & C B. Hardware C. Steel Sleeves, Soil Plates, Bearing Plates, Backup Plates	VI	-	-	-	Item supplied by guardrail supplier.
908.11B Wire Rope	Gen Cert	-	-	-	
908.12 Steel Posts for Beam Guardrail	Appr Mfr *	1 per 1000 posts or fraction thereof	1 post	25 posts	
908.13 Reflective Washers	VI See Remark	-	-	-	Inspect galvanizing, dimensions and type of sheeting.
908.14 Anchor Bolts, Nuts, and Washers	Test	1 per heat per diameter per project	See Remark	-	See Special Instructions.
908.14D Anchor Bolts and Nuts for Other Purposes	Gen Cert	-	-	-	See Special Instructions.
909.01 Recycled Rubber Adjusting Rings for Manholes and Drainage Castings	Gen Cert	-	-	-	Must be a Qualified Product (909.01).
909.03 Watertight Joint Systems	Gen Cert	-	-	-	Must be a Qualified Product (909.03).
909.03 Gasket, Compression (O-Rings)	VI	-	-	-	Part of Watertight Joint System.
909.03 Gasket, External Rubber Type	VI	1 per lot or shipment	18 in length full width of gasket	-	Part of Watertight Joint System.
909.04A Reinforced Concrete Pipe	Appr Mfr *	1 percent of number of pcs of each size	See Remark	5 pieces of 42 in or smaller	See Special Instructions.
909.04B Reinforced Concrete Elliptical Pipe	Appr Mfr *	1 percent of number of pcs of each size	See Remark	5 pieces of 42 in or smaller	See Special Instructions.
909.04C Non-Reinforced Concrete Pipe	Appr Mfr *	See Remark	See Remark	10 pcs	See Special Instructions.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
909.04D Precast Concrete Box Sections	Appr Mfr * See Remark	-	-	-	Spans 20 ft. and greater require QA inspection. QA inspection may be required for spans from 10-20 ft Box = 4 sided. See MQAP Manual section 4.11.
909.04E Precast Concrete End Section for Culverts and Sewers	Appr Mfr *	1 percent of number of pcs	Full size units	10 pcs	Strength test by coring or cylinders, VI dimensions and conditions. Test for air content.
909.04G Precast Concrete Three-Sided or Arch Culverts	Appr Mfr See Remark	-	-	-	Spans 20 ft. and greater require QA inspection. QA inspection may be required for spans from 10-20 ft, See MQAP Manual section 4.11.
909.05A Corrugated Steel Pipe	Appr Mfr *	See Remark	See Remark	-	See Special Instructions. General Cert to Construction Field Services.
909.05A1 Corrugated Steel Sheets (Galvanized)	Gen Cert	See Remark	See Remark	-	See Special Instructions.
909.05A1 Polymer Coating, Galvanized Corrugated Steel Pipe	Gen Cert	-	-	-	Coating must be from Qualified Products List (909.05A1).
909.05A4 Coupling Bands	Gen Cert	-	-	5 pcs	
909.05B Corrugated Aluminum Alloy Sheet	Gen Cert	See Remark	See Remark	25 sheets	See Special Instructions.
909.05B Corrugated Aluminum Alloy Pipe	Gen Cert	1 per 1000 ft	See Remark	250 ft	Sample Size: A 6 in by 3 in (minimum) section cut from the end of the pipe avoiding the seams. Do not damage coating.
909.05C Steel End Section	Gen Cert	-	-	4 pcs	
909.05D 1. Steel Pipe (Jacked-in-Place)	Gen Cert	-	-	-	
909.05D 2. Casing, Steel Pipe	VI	-	-	-	
909.06 1. Corrugated Polyethylene Pipe (CPE/HDPE), (Smooth Lined Type S)	Test or Tested Stock if ≥12 in. dia	≥12 in. dia 1 per 1000 ft straight lengths	See Remark	12 in. dia and over, 100 ft	Over 12 in. dia- one 10 ft length and one 6 ft length plus coupling. See Special Instructions.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
909.06 2. Corrugated Polyvinyl Chloride (CPV) Pipe	Test	1 per 1000 ft straight lengths	See Remark	12 in. dia and over, 100 ft	Over 12 in. dia- one 10 ft and one 6 ft. length plus coupling.
909.06 3. Class B (CPE/HDPE & CPV)	Gen Cert See Note	-	-	-	Must be a Qualified Product (909.06).
NOTE: Watertight Joint Systems (909.03) and Pipe (401 & 402; Class B Bury) must be listed on QPL. Pipe (909.06) must be accepted by "Test" or "Tested Stock" for use on project.					
909.06 4. Smooth Polyvinyl Chloride (PVC) Pipe and Fittings for Sanitary Sewer	VI	1 per 6000 ft	1 piece, 5 ft in length	-	If bell and spigot joint, sample from spigot end.
909.07A Pipe for Underdrains Smooth Perforated Plastic Pipe (PVC)	Test	1 per 2500 ft or fraction thereof	5 ft length	250 ft	
909.07B Pipe for Underdrains Corrugated Plastic Tubing (Perforated and Non-Perforated) (Wrapped and Non-Wrapped)	Appr Mfr * 4-, 6-, or 8- in dia	1 per 5000 ft sample from coils	See Remark	250 ft	Sample Size, one 10 ft length plus coupling. For perforated tubing wrapped in fabric, tie fabric securely in place before cutting sample.
909.07C Outlet Pipe for Underdrains 1. Polyvinyl Chloride (PVC) Pipe	Test	1 per 2500 ft or fraction thereof	5 ft length	250 ft	See 404.02C for Underdrain Outlet Endings.
909.07C Outlet Pipe for Underdrains 2. Corrugated Steel Pipe	Appr Mfr *	See Remark	See Remark	-	See Special Instructions for 909.05A,. See 404.02C for Underdrain Outlet Endings.
909.07C Outlet Pipe for Underdrains 3. Corrugated Aluminum Alloy Pipe	Gen Cert	1 for 1000 ft	6 in x 3 in	250 ft	See 404.02C for Underdrain Outlet Endings. See 909.05B.
909.08A Bridge Deck Downspouts	VI	-	-	-	
909.08B Culvert, Downspouts 1. Corrugated Steel Pipe	Appr Mfr *	See Remark	See Remark	-	See 909.05A Corrugated Steel Pipe.
909.08B Culvert, Downspouts 2. Corrugated Aluminum Alloy Pipe	Gen Cert	1 per 1000 ft	6 in x 3 in	250 ft	See 909.05B.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
909.08B Culvert, Downspouts 3. Corrugated Polyethylene Pipe (Corrugated Lined Type C) (CPE/HDPE)	Test	See Remark	See Remark	<12 in. dia up to 250 ft >12 in. dia up to 100 ft	See 909.06 (1)
909.08C Bridge Deck Drain Extensions (Polyethylene)	Gen Cert	-	-	-	
909.09 Cold Applied Pipe Joint Sealer (Mastic)	Test	1 per shipment from a single container	1 qt	10 gal	
909.10 Drainage Marker Post	See Delineator Posts	-	-	-	
910.03A Geotextiles 1. Blankets 2. Filter Bags	Test	See Remark	See Remark	See Remark	See Special Instruction 910.03. Anticipate up to 28 calendar days for the testing of geotextile samples.
910.03A Knitted Sock Pipe Wrap	See Remark	-	-	-	See 909.07B Certified with Corrugated Plastic Tubing.
910.03B Liner for Rip-Rap	Test	See Remark	See Remark	See Remark	See Special Instruction 910.03. Anticipate up to 28 calendar days for the testing of geotextile samples.
910.03B Liner for Heavy Rip-Rap	Test	See Remark	See Remark	See Remark	See Special Instruction 910.03. Anticipate up to 28 calendar days for the testing of geotextile samples.
910.03C Separator/Stabilization Geotextile	Test	See Remark	See Remark	See Remark	See Special Instruction 910.03. Anticipate up to 28 calendar days for the testing of geotextile samples.
910.03D Geogrids	Test	1 per type per project	1 pc 6 ft long full roll width	-	Sample must be <u>rolled</u> not folded. Anticipate up to 28 calendar days for the testing of geotextile samples.
910.04 Silt Fence; (Geotextile Fabric only)	Gen Cert	-	-	-	Must be a Qualified Product (910.04).
910.05A Prefabricated Drainage System	Appr Mfr *	1 per 10,000 ft or less	1 pc 6 ft long plus 3 syd filter-wrap	-	Test Data Cert must be attached to sample ID Form.

MATERIALS ACCEPTANCE REQUIREMENTS

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
910.05B Wall Drain	Test	1 per 1000 ft or less	1 pc 6 ft long plus 3 syd filter-wrap	100 sft	
911 Water	Test See Remark	1 per source	1 qt	-	Water approved for drinking by the Michigan Dept of Public Health may be used without sampling and testing.
912.05 Structural Timber and Lumber	Appr Mfr *	Each Charge	22 cores See Remark	-	48 cores if treatment is creosote.
912.06 Timber Piles	VI	-	-	-	
912.07B Treated Wood; Fence Posts, Guide Posts, Guard Posts and Mail Box Posts	VI	-	-	-	
912.08 Wood Posts and Blocks for Guardrail and Highway Signs (Dimension Sawed)	Appr Mfr *	Each Charge	22 cores	-	Cedar post need not be treated.
NOTE: All post must be treated except Northern White Cedar. General Certification document required for Northern White Cedar in lieu of approved manufacturer.					
912.08Q Recycled Plastic or Rubber Guardrail Offset Blocks	Gen Cert	-	-	-	Must be a Qualified Product. May only be used on Steel Posts (912.08Q).
912.09 Timber for Rustic Construction	Gen Cert	-	-	-	
913.03 Clay and Sand Lime Brick and Block	Test	1 per 250,000 or fraction thereof	6 pcs	1000 pcs	
913.03C Concrete Brick	Test Data Cert	See Remark	6 pcs	1000 pcs	1 from each 10,000 bricks or fraction thereof; 2 from lots more than 10,000 to 100,000; 3 from each lot over 100,000.
913.05 Concrete Block	Test Data Cert	See Remark	4 pcs	1000 pcs	One from lot of 10,000 or fraction thereof; 2 from lots more than 10,000.
913.06 Precast Reinforced Concrete Units for Drainage Structures	Appr Mfr *	1 percent per size	See Remark	10 pcs total	Submit QA cylinder test results and core samples. Submit sample 1-3 sq.in. from wall of unit if absorption is required.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
913.07 Precast Concrete Bases, for Drainage Structures	Appr Mfr *	5 percent of total	-	10 pcs total	
913.08 Structural Tile	Test	1 per proj.	6 tiles	1000 tiles	
913.09 Slope Pavement Blocks	Appr Mfr *	1 per 25,000	6 blocks	1000 pcs	
914.03 Bituminized Fiber Joint Filler	Test Data Cert	1 per 1000 sft or fraction thereof	2 ft See Remark	150 sft	Sample for structure to be at least 5 in. wide. ¼ in. filler need not be sampled.
914.03B Recycled Rubber Joint Filler	Gen Cert	-	-	-	Must be a Qualified Product (914.03B).
914.04A Hot-Poured Joint Sealant	Test or Tested Stock	1 per batch from a single container	5 lb.	100 lb	Do not submit melted samples.
914.04B Backer Rod for Use with Hot-Poured Joint Sealant	VI	-	-	-	
914.05 Epoxy Binder, For Joint Spall Repair	Test or Tested Stock	1 per lot or batch number	See Remark	5 gal	See Special Instructions.
914.06 Epoxy Resin Adhesive and Temporary Seal (Crack Injection)	Gen Cert	-	-	-	Must be a Qualified Product (914.06).
914.07 Transverse Pavement Joints 1. Dowel Bars	Appr Mfr *	1 per project per mfr	1 bar	240 bars	Epoxy coating must be a Qualified Product (905.03C).
2. Dowel Baskets (Load Transfer Assemblies)	Appr Mfr *	1 per 3000 assemblies or fraction thereof	Full size unit	20 assemblies	Bond Release Agent must be a Qualified Product (914.07A). See Special Instructions 914.07.
914.07A Coatings for Dowel Bars 1. Epoxy Coating Companies	Appr Mfr *	1 per project per mfr	1 bar	240 bars	
2. Epoxy Coating Material	Gen Cert	-	-	-	Coating must be a Qualified Product (905.03C).
3. Bond Release a. Bituminous Material	Gen Cert	-	-	20 gal max	Must be a Qualified Product (914.07A) or meet Standard Spec 914.07A.
b. Alternate Bond Release Agents	Gen Cert	-	-	-	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
914.07C Dowel Bar Expansion Caps	VI	-	-	-	Caps must conform to Standard Plan R-40 Series.
914.08 End-of-Pour Joint Devices	VI	-	-	-	
914.08 Deformed Bars 1. Bars 2. Epoxy Coating	Appr Mfr * Gen Cert	1 per project per mfr	-	500 lb	Epoxy Coating must be Qualified Product (905.03C).
914.09 Straight and Bent Tie Bars for Longitudinal Pavement Joints (Lane Ties) 1. Bars 2. Epoxy Coating	Appr Mfr * Gen Cert	1 per project per mfr	2 bar	500 lb	Coating must be a Qualified Product (905.03C). See Note.
914.10 Bolts for Structure Expansion Anchors	Test	1 per 5000 pcs or fraction thereof	1 bolt	250 units	
914.11 Preformed Waterproofing Membrane and Joint Waterproofing Membrane	Gen Cert See Remark	-	-	-	Must be a Qualified Product (914.11). Do not use on Treated Wood Materials.
914.12 Elastomeric Bearings	Test Data Cert	-	-	-	Show Test Result for Shear Modulus, ASTM D4014.
915 Bridge Coating Systems	Gen Cert	-	-	-	Must be a Qualified Product (915).
916.01A Cobblestone	VI	-	-	-	
916.01C Riprap	VI	-	-	-	
916.02 Silt Fence 1. Fabricated Fence 2. Fabric (see 910.04) NOTE: Sample to include identifying markings of fabricator. Indicate on sample ID description of markings. Note where markings were found.	Appr Mfr * Gen Cert	See Remark	See Remark	500 ft	1 sample for the first 3000 ft or fraction thereof; 1 sample for each additional 10,000 ft or fraction thereof; 1 piece 8 ft long by full fence height include 2 attached posts and lath. As per 910.04 of Standard Specifications, fabric must be from the Qualified Product List (910.04).
916.07 Turbidity Curtain	VI				

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
917.03 Nursery Stock	VI	-	-	-	
917.04 Tree Wrapping Material	VI	-	-	-	
917.05 Balling Material	VI	-	-	-	
917.06A Wire for Bracing and Guying	VI	-	-	-	
917.06B Hose for Bracing and Guying	VI	-	-	-	
917.06C Stakes for Bracing and Guying	VI	-	-	-	
917.08 Compost	VI	-	-	-	
917.10 Chemical Fertilizer for Grass Seed	VI See Remark	-	-	-	Provide the bag label, showing the guaranteed analysis.
917.12 Grass Seeding Mixtures Grass Seed Varieties	VI See Remarks Gen Cert	1 per lot per shipment	1/2 lb	1100 lbs	For projects that include more than 5 acres of seeding, see Grass Seed Testing Special Provision in contract. Varieties of seed must be Qualified Product (917.12).
917.13 Sod	VI	-	-	-	
917.13A Pegs for Sodding	VI	-	-	-	
917.14 Mulching Materials for Nursery Stock	VI	-	-	-	Only shredded bark, wood chips not allowed.
917.15B1 & 2 High Velocity Mulch Blankets and Standard Mulch Blanket	Gen Cert	-	-	-	Must be a Qualified Product (917.15B 1 & 2). High velocity - netting 2 sides. Standard - netting 1 side.
917.15C Mulch Anchoring - Latex, Recycled Newsprint, Wood Fiber, Guar Gum, Other Tackifiers	Gen Cert	-	-	-	Must be a Qualified Product (917.15C).
917.16 Weed Control (Herbicides)	Test Data Cert	-	-	-	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
918.01 Flexible Metal Conduit	VI	-	-	-	
918.01A Electrical Conduit, Rigid (Galvanized Steel)	Gen Cert	See Remark	6 ft, include coupling, if applicable	400 ft	1 sample for 2500 ft or fraction thereof; 2 samples over 2500 to 10,000 ft; 1 sample for each additional 10,000 ft.
918.01B & C Electrical Conduit (Polyvinyl Chloride) Schedule 40 and 80	Gen Cert	See Remark	6 ft sample w/ bell end incl coupling	400 ft	1 sample for 2500 ft or fraction thereof; 2 samples over 2500 to 10,000 ft; 1 sample for each additional 10,000 ft.
918.01D & E Electrical Conduit (Polyethylene/HDPE) Schedule 40 and 80	Gen Cert	See Remark	See Remark	400 ft	1 sample for 2500 ft or fraction thereof; 2 samples over 2500 to 10,000 ft; 1 sample for each additional 10,000 ft; 6 ft plus a separate section consisting of 2- 18 in. long pcs. connected by the joint.
918.01F Electrical Conduit (Rigid Fiberglass)	Gen Cert	See Remark	6 ft sample w/ bell end incl. coupling	400 ft	1 sample for 2500 ft or fraction thereof; 2 samples over 2500 to 10,000 ft; 1 sample for each additional 10,000 ft.
918.02 Grounding System	VI	-	-	-	
918.02C Grounding Rods	VI	-	-	-	
918.03 Electrical Cable	See Note	-	-	-	
NOTE: Suitability and compliance with specifications will be determined by the agency responsible for maintaining the system. This agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection (including review of Test Data Cert) has been made and that the material is acceptable.					
918.06 Precast Concrete Handholes and Manholes for Electrical and Telephone Connections	Appr Mfr *	1 percent per size	-	10 pcs	
918.06D Light Weight Composite Handholes	Gen Cert	-	-	-	Must be a Qualified Product (918.06D).
918.08 Light Standards (Steel and Aluminum Light Standards)	Gen Cert	-	-	-	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
918.08C Light Standards, Frangible Transformer Bases	Gen Cert	-	-	-	Must be a Qualified Product (918.08C).
918.09 Luminaries	Gen Cert	-	-	-	
918.10A Tower Lighting Units	Fabrication Inspection	-	-	-	MQAP Manual Section 4.06.
918.11A Guy Wire	Test	1 per size	3 ft	-	
919 Steel Sleeves for Wood Posts	Gen Cert	-	-	-	
919.02 Signs (Permanent)	See Remark	-	-	-	See Joint Construction IM 1997 C-S. General Cert must be attached and inspected at project site.
919.02A1 Metal Sections (Extruded Aluminum)	Tested Stock See Remark	1 from each width in shipment	12 in. long and full width of section	-	Test Data Cert must be attached to the Sample ID form.
919.02A2 Plywood	Gen Cert See Remark	-	-	-	Grade mark on materials serves as certification.
919.02A3 Aluminum Sheet	Tested Stock See Remark	See Note	Min. of 12 in. square	100 sft	Test Data Cert must be attached to the Sample ID form.
NOTE: 2 samples per heat per Tested Stock Supplier up to 10,000 sft; 4 samples per heat per Tested Stock Supplier over 10,000 sft.					
919.02B1 Reflective Sheeting	Gen Cert See Remark	1 per run or lot	See Remark	1 roll, for less than 3 in. in width	Must be a Qualified Product (919.02B1) 4 pcs each 12 in. square. For rolls less than 12 in. width, at least 7.5 ft.
919.02C Sign Hardware	Gen Cert See Remark	-	-	-	Identifying marks on items may serve as certification.
919.03A Delineators 1. Plastic Reflectors	Gen Cert	1 per shipment per color	21 pcs	25 pcs each color	
919.03B Delineators 2. Reflective Sheeting Reflectors	Gen Cert	1 per shipment per color	2 pcs each color	25 pcs each color	

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
919.03D Delineator Posts 1. Steel	Gen Cert	1 per project per mfr	1 post	80 post	
919.03D Delineator Posts 2. Plastic	Gen Cert	-	-	-	Must be a Qualified Product (919.03D).
919.04 Steel, Galvanized Sign Posts	Test Data Cert	1 per project per mfr	See Remark	20 posts	Sample 30 in. length min. length. Posts for temporary signs may be painted.
919.05 Wood Sign Posts	Appr Mfr *	Each charge	22 cores	20 posts	General Cert to Construction Field Services. See 912.08.
919.06 Breakaway Column Sign Supports	Fabrication Inspection	-	-	-	MQAP Manual Section 4.06.
919.07 Cantilever Sign Supports	Fabrication Inspection	-	-	-	MQAP Manual Section 4.06.
919.08 Truss Sign Supports	Fabrication Inspection	-	-	-	MQAP Manual Section 4.06.
920.02 Glass Beads	Gen Cert	1 from each lot	2 lb	500 lbs	
921.02 Span Wire	Gen Cert	1 per size	3 ft	-	
921.03 Traffic Signals and Mounting Assemblies	See Note	-	-	-	
NOTE: Compliance with specifications will be determined by the agency responsible for maintaining the system. Agency must provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and the material is acceptable.					
921.05 Traffic Signal Strain Pole	Test Data Cert	-	-	-	
921.05A Strain Pole Band Clamps	Gen Cert	-	-	-	Must be a Qualified Product (921.05A).
921.08B Traffic Loop Sealant	Gen Cert	2 from each lot	Tubes	-	
922.02 Temporary Traffic Control Temporary Signs	See Remark	-	-	-	See MQAP Manual Section 4.10.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
922.02B Temporary Traffic Control Reflective Sheeting (Signs)	See Remark	-	-	-	See MQAP Manual Section 4.10.
922.02D Temporary Traffic Control Sign Covers	See Remark	-	-	-	See MQAP Manual Section 4.10.
922.03 Temporary Traffic Control A. Cones B. Drums	See Remark	-	-	-	See MQAP Manual Section 4.10.
922.03E Temporary Traffic Control Type III Barricade, Reflective Sheeting	See Remark	-	-	-	See MQAP Manual Section 4.10.
922.04 Temporary Traffic Control Temporary Concrete Barriers (TCB)	Test Data Cert See Remark	Each project	-	-	Contractor must provide certifications and documentation confirming the TCB provided meets the requirements of subsection 922.04.A of the Standard Specifications for Construction.
922.04A Barrier Reflector Markers Temporary and Permanent	See Remark	-	-	-	See MQAP Manual Section 4.10.
922.06A Temporary Traffic Control Temporary Pavement Markings; Type R and NR Tape	Gen Cert	-	-	-	Must be a Qualified Product (922.06A).
922.06A2 Temporary Traffic Control Temporary Pavement Markings; Paint	Gen Cert	-	-	-	Must be a Qualified Product (811.03D).
922.06B Temporary Traffic Control Temporary Raised Pavement Markers	Gen Cert	-	-	-	Must be a Qualified Product (922.06B).
922.07A Temporary Traffic Control Lighted Arrows; Type B and C (Solar Assist)	See Remark	-	-	-	See MQAP Manual Section 4.10.
922.07B Temporary Traffic Control Warning Flashers and Lights; Type A, B, C	See Remark	Each project	3 each type	-	See MQAP Manual Section 4.10.
922.07C Temporary Traffic Control Portable Changeable Message Signs	See Remark	-	-	-	See MQAP Manual Section 4.10.

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Spec. No. and Material Name	Basis of Acceptance	Sample Frequency If Required by the Engineer**	Sample Size	Maximum VI Quantity	Remarks (QPL Reference)
922.11 Temporary Traffic Control Sign Paddles and Vests	See Remark	-	-	-	See MQAP Manual Section 4.10.
922.12A Temporary Traffic Control Dust Palliative 1. Calcium Chloride Solids	Test Data Cert	1 per project	5 lb	5000 lb	
922.12A Temporary Traffic Control Dust Palliative 2. Calcium Chloride Solutions	Test Data Cert	1 per project	1 qt	1000 gal	
923 Watermain Materials	Gen Cert	-	-	250 ft of pipe	See contract documents as applicable.
Misc. #2 Culvert, Cast and Ductile Iron	Gen Cert	-	-	250 ft	
Misc. #3 Clay Pipe	Gen Cert	See Remark	See Remark	10 pieces	See Special Instructions.
Misc. #5 Galvanized Slotted Drain Pipe	VI See Remark	-	-	-	MDOT approval of Design is required. Coating thickness checked at project site.
Misc. #7 ABS Pipe	Test	1 per 6000 ft	1 piece, 6 ft in length	600 ft	If bell and spigot joint, sample from bell end.
Misc. #8 Corrugated Galvanized Steel Structural Plated	Gen Cert	1 per 100 plates or fraction thereof	1 piece at least 3 in. by 3 in.	10 plates	
Misc. #9 Aluminum Alloy Structural Plates	Gen Cert	-	-	-	
Misc. #13 Pavement Warning Strips	VI	-	-	-	
Misc. #14 Bituminized Cotton Fabric and Fiberglass Fabric	Gen Cert	See Remark	1 piece full width of roll, min of 3 ft	5 rolls	1 per 100 rolls (50 sft per roll) or fraction thereof; for lots of more than 100 rolls - 1 sample plus 1 for each 500 rolls or fraction thereof. Do not sample from first 3-4 ft of roll.

***** See following pages for SPECIAL INSTRUCTIONS *****

SPECIAL INSTRUCTIONS

712.03L Mechanical Reinforcement Splicing

The contractor must make test splices, witnessed by the Engineer, on the largest bar sizes that are to be spliced. See Bridge Field Services Advisory (BFSA) 2012-03. Test splice consists of 2 pieces of reinforcing bar joined by the coupler with 12 inches of bar exposed on each end of the coupler.

901 Cement

Samples of fly ash and slag cement must be accompanied by a sample of the Portland cement with which it is being used. The plastic lined cement sample bags furnished by the laboratory will hold 10 pounds when full.

902 Prequalified Aggregate Sources

Quality Assurance tests will be conducted by Department personnel at the frequencies stated in Section 3.04.08 of the *Pre-Qualified Supplier Program*, found in the *Materials Quality Assurance Procedures Manual*.

Every Project Engineer will verify passing quality assurance tests by contacting the Region/Transportation Service Center's Material's Supervisor. Enter a telephone record memo or copy of the test report in the project file.

The statement on each delivery ticket required in Section 3.04.05.B of the *Pre-Qualified Supplier Program*, is to be provided by the supplier, and represents the results of quality control testing. This statement does not signify acceptance by MDOT.

904.03A Asphalt Binder for HMA Mixtures

If the Asphalt Binder is supplied from a source currently on the Approved Asphalt Binder Certifier List, a certification meeting the requirements of Section 3.05.05 of the Materials Quality Assurance Procedures Manual is required. See the contract documents for sampling, acceptance, and daily monitoring requirements.

If the binder is supplied from a source that is **not** currently shown in the Approved Asphalt Binder Certifier List, the asphalt binder must be sampled, tested, and approved for use prior to incorporation into the project. See contract documents for sampling, acceptance, and monitoring requirements.

See Current List of Asphalt Binder Certifiers at Construction Field Services Web Page.

Instructions to Construction Field Services web page: From MDOT home page (michigan.gov/mdot), click on about MDOT (left side), then click on Highway Field Services, and then click Construction Field Services. The [Approved Asphalt Binder Certifier List](#) is under Resources & Publications.

Actual Current List of Approved Asphalt Binder Certifier web page address: http://michigan.gov/documents/AppBinderCertlist_49824_7.pdf

904.03C Emulsified Asphalt

Size of Sample – For CV Sampling see Section 3.06.06 of the *Materials Quality Assurance Procedures Manual*. For all other sampling see contract documents for criteria. Submit the samples in plastic containers only.

905.03 Bar Reinforcement (Uncoated)

Sample size, 2 pieces, 1 of which is 24 in. and 1 of 36 in. Sample ID to include name of epoxy coating company, epoxy resin trade name and lot number, bar manufacturer and heat number. Test Data Cert must be sent to Construction Field Services.

905.03C Bar Reinforcement (Epoxy Coated)

Sample size must be 2 pieces, one 24 in. and one 36 in. Sample ID must include the name of the epoxy coating company, epoxy resin trade name, name of bar manufacturer, lot number, and heat number. Test Data Cert must be sent to Construction Field Services. Epoxy coating must be a Qualified Product (905.03C).

905.06 Welded Steel Wire Reinforcement

Sample size must be one piece, full width of fabric with two transverse wires. Longitudinal wires must extend 6 in. to 8 in. either side of transverse wires. Sampling not required when larger wire is less than 0.13 in. (w1.5) in dia. Include on sample ID the size that the wires are supposed to be. Sample may be folded or cut into approx. 3 ft. sections. If cut, pieces should be wired together and identified. Test Data Cert must be sent to Construction Field Services.

905.07 Strand for Prestressed Concrete

Do not obtain sample from within 5 feet of the end of the reel. Test Data Cert must be sent to Construction Field Services.

905.08 Tendons for Post Tensioning of Box Beams – Prestressing Strand

Do not obtain sample from within 5 feet of the end of the reel. Test Data Cert must be sent to Construction Field Services.

906.07 High Strength Steel Bolts

An assembly is typically a combination of a bolt, nut, and washer but may be any combination of a bolt, nut, washer, lock washer, etc. depending on the project specifications. Test Data Certs must identify the manufacturer of each component of the assemblies and must be attached to the sample ID.

907.04C Steel Chain Link Fence-Posts for Fence and Gates

An alternative zinc/clear coat system will be allowed for pipe sections only. This alternative coating system shall comply with subsection 907.03D of the Standard Specifications for Construction.

907.04C Steel Chain Link Fence-Top Rail, Horizontal Rail

An alternative zinc/clear coat system will be allowed for pipe sections only. This alternative coating system shall comply with subsection 907.03D of the Standard Specifications for Construction.

908.14 Anchor Bolts, Nuts, and Washers

An assembly is typically a combination of a bolt, nut, and washer but may be any combination of a bolt, nut, washer, lock washer, etc. depending on the project specifications. For cantilever foundations, the sampling frequency is 1 assembly per heat, per diameter for a max of 3 per project. Full length bolts are required for testing but if the total length is less than 20", a second sample must be submitted for testing. Non MDOT standard plan bolts require shop drawings along with a test data cert.

908.14D Anchor Bolts and Nuts for Other Purposes

A General Cert is acceptable for stainless steel anchor bolts, pedestal foundations for pedestrian signals, push buttons, controller cabinets, and Hawks signals and repeaters. Anchor bolts for all other purposes require testing.

909.04A Reinforced Concrete Pipe

909.04B

Size of Sample - Full size units for strength test. For absorption tests, 26-inch square to 81-inch square in area from the wall of each piece of pipe tested.

Number of Samples - One percent of the number of pieces of each size.

Reinforced concrete pipe 42-inch diameter and larger may be tested by coring. Size of core will be 4-inch nominal diameter (but not less than 3 ¼ inches actual). Up to 1 percent of the number of pieces of pipe for each size, but not less than 3 pieces, will be selected for coring. One core will be drilled and tested from each of these test pieces. Reinforcement will be inspected prior to incorporation in the pipe.

Maximum for VI – 5 pieces of 42" diameter and smaller.

909.04C Nonreinforced Concrete Pipe

Size of Sample - Same as reinforced concrete pipe.

Number of Samples - One percent of the number of pieces, but not less than 2 pieces of each size except that at the option of the department the following sampling schedule will apply for 4 inches through 24 inches in diameter sewer pipe for quantities of 500 or more:

Sampling Schedule - Per the following:

<u>Concrete Pipe</u>	<u>Number of Samples</u>
500 to 1,000 pieces	6
1,001 to 2,000 pieces	8
2,001 to 5,000 pieces	11
Over 5,000 pieces	2 samples per 1,000 or fraction thereof

Maximum for VI – 10 pieces.

909.05A Corrugated Steel Pipe

Size of Sample - A 6-inch by 3-inch (minimum) section cut from the pipe. The sample should be taken from the end of the pipe avoiding the seams. Care should be taken to assure the coating is not damaged during sampling.

Number of Samples - Per the following:

<u>Diameter of Pipe</u>	<u>Quantity Represented (maximum)</u>
12 inches or less	2500 ft
15 inches through 54 inches	1000 ft
60 inches and over	500 ft

Less than 5 percent of the quantity in the above table may be visually inspected.

909.05A1 Corrugated Galvanized Steel Sheets

Size of Sample - One strip the full width of the sheet and 3 ½ inches in the direction of the length of the sheet. The strip may be cut from the end of the sheet for material coated in coils. If the sheets were individually coated after being cut to length, as indicated by heavy accumulations of zinc at one end, the sample strip shall be cut from the end opposite the heavy accumulation and after cutting 4 inches from the end of the sheet.

Number of Samples - Per the following:

<u>Diameter of Pipe</u>	<u>Length of Sheet</u>	<u>Quantity Represented (max)</u>
12 inches or less	44 inches or less	2500 ft
15 through 54 inches	50 to 175 inches, approx*	1000 ft
60 inches and over	190 inches and over*	500 ft

*Larger pipe may be made from combination of shorter sheets. Less than 5 percent of the quantity in the table above may be visually inspected.

NOTE: Normally each heat and thickness is to be sampled. Exception may be made where quantities are limited and/or mixtures of heat numbers are excessive.

909.05B Corrugated Aluminum Alloy Sheets

Size of Sample - A transverse strip full width of the sheet and at least 3 inches in length cut from the end of the sheet.

Number of Samples - A sample shall be taken from each of 3 different sheets for lots weighing 5 tons or less, from 4 sheets for lots weighing more than 5 tons and less than 10 tons, and from 5 sheets for lots weighing 10 tons or more.

Maximum for VI – 25 sheets.

909.06 Corrugated Polyethylene Pipe (Smooth Lined Type S or Corrugated Type C)

Sampling Frequency - Straight Lengths, 12-inch diameter and over - 1 per 1000 ft

If the manufacturer has developed a history of five consecutive passing tests over the past two years for a given diameter of pipe (12 to 24-inch), at the discretion of the MDOT testing laboratory the sampling frequency may become 1 per 2500 ft for that diameter of pipe provided the stockpile consists of pipe manufactured with a single "Plant" and "Date" code. The Tested Stockpile sampling frequency of one sample per 1000 ft of pipe (12 to 36-inch) may be re-instituted if the manufacturer experiences three failing test results for a given diameter of pipe over a one year period. Up to date information on sampling frequency may be acquired from MDOT's Construction Field Services Division.

Size of Sample - Over 12-inch diameter - one 10-ft length and one 6-ft length plus coupling

Maximum for VI - 12-inch diameter and over - 100 ft

For perforated pipe wrapped in geotextile fabric, tie fabric securely in place on sample before cutting pipe sample. Do not disturb fabric after cutting.

Suppliers shall provide MDOT inspector with list of date codes on pipe in stockpile to be tested prior to sampling.

Each size pipe is a different material. Stockpile each pipe size separately.

Preparation of 30 & 36 Inch Diameter Corrugated Polyethylene Pipe

The manufacturer will be responsible for preparing the sample specimens and delivering them to the laboratory for testing.

Preparation by manufacturer of each 20 foot length of pipe sample include:

1. Cut three specimens from each length of pipe sampled, at least once the diameter in length. (For 30 in. pipe this would mean three specimens just over 30 inches in length, cuts may be made in the valley of the first corrugation beyond 30 inches, etc.)
2. Cut 1 specimen from each length of pipe sampled at least 60 inches in length.
3. Assemble a joint from each length of pipe sampled with approximately 6 inches of pipe protruding from each end of the joint.
4. Mark all specimens cut from the sample length of pipe so they can be identified at the laboratory as having come from the same length of pipe.

Call the CFS- Materials Testing Laboratory in Lansing with any questions regarding the above instructions. (517-322-1217)

Perforated Pipe

Twelve inches in diameter and above shall be tested for acceptance on a project-by-project basis when specified by Special Provision (No Tested Stock).

Soil tight sleeves shall be submitted with a pipe section 12 inches minimum length and gasket fully inserted into one end of the sleeve. A second gasket shall be supplied already installed on

either the 10-ft specimen or on a separate specimen at least 12 inches in length, from the same stockpile.

Single Gasket Bell and Spigot Fused Coupling System - Couplers shall be submitted as attached part of 10-ft specimen and a second piece of the specimen, minimum of 12 inches in length, with gasket installed shall be included with the sample.

Each size pipe is a different material. Stockpile each pipe size separately.

For perforated pipe and tubing wrapped in geotextile fabric, tie fabric securely in place on sample before cutting pipe sample. Do not disturb fabric after cutting.

910.03 Geotextiles

Sampling Frequency - Obtain samples to represent the required quantity of geotextile according to the following schedule:

<u>Geotextile</u>	<u>First Sample</u>	<u>Additional Samples</u>
Blanket	500 to 1500 syd	7,500 syd or less
Liner for Riprap	500 to 1500 syd	5,000 syd or less
Separator/Stabilization	500 to 1500 syd	25,000 syd or less
Liner for Heavy Riprap	500 to 1500 syd	4,000 syd or less

Maximum for VI - 500 syd (4500 sq ft)

Size of Sample - Sample must be a minimum of 75 sft, taken across the full roll width. For rolls over 15 ft wide, sample must be a minimum of 5 ft long, taken across the full roll width.

Geotextile samples submitted for testing must be identified with the lot number and/or roll number, the name of the manufacturer, and the product or style number.

NOTES:

Geotextiles must be unwrapped one full roll circumference prior to sampling.

Geotextiles must be **rolled**, not folded, and shipped in a manner to prevent creases in the fabric.

914.05 Epoxy Binder, For Joint Spall Repair

Normal Sampling Frequency - 1 per lot or batch number

Size of Sample - For material mixed at 1:1 ratio - 2 quart, 1 quart of each component: For material mixed at 2:1 ratio - 1/2 gallon of resin and 1 quart of curing agent. Material limited to shelf life of one year from date of manufacture. Material must be labeled with date of manufacture. MAY BE "TESTED STOCK" ITEM.

Maximum for VI - 5 gallons

914.07 Load Transfer Assemblies; Dowel Baskets

Sampling Frequency - 1 per 3000 assemblies

Size of Sample - One full assembly

Assemblies must meet the requirements of Standard Plan, R-40-H.

All shipments of load transfer assemblies will be accompanied by proper certification documentation.

- Certification from steel (dowel bar) manufacturer.
- Certification from epoxy coating company.
- Documentation on epoxy coating.
- Certification from assembly manufacturer.
- Documentation on bond release.

When shipment is made to a project, each bundle will bear a legible tag with the following information:

- Assembly manufacturer name and plant location.
- Control section/project number.
- Lot number or other identification that will also be shown on the accompanying certification.
- Supplier and/or contractor's name.

Misc. #3 Clay Pipe

Normal Sampling Frequency - One percent of the number of pieces, but not less than 2 pieces of each size except that at the option of the department the following sampling schedule will apply for 4-inch through 24-inch diameter sewer pipe for quantities of 500 or more:

Sampling Schedule - Per the following:

<u>Clay Pipe</u>	<u>Number of Samples</u>
500 to 1,000 pieces	6
1,001 to 2,000 pieces	8
2,001 to 5,000 pieces	11
Over 5,000 pieces	2 samples per 1,000 or fraction thereof

Size of Sample - Full size units for strength test. For absorption tests, 26 inches square to 82 inches square in area from the wall of each piece of pipe tested.

Maximum for VI - 10 pieces