

MICHIGAN DEPARTMENT OF TRANSPORTATION
2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION
SUMMARY OF SIGNIFICANT CHANGES

TECHNICAL EDITING

Many specification requirements are presented in outline format or lists instead of in paragraph format for clarity. Individual topics are organized to flow from general requirements to specific details. The technical divisions (Divisions 2-9) were edited to ensure that information pertaining to materials, construction, and measurement and payment appears in the proper subsection of each section, or was moved to the materials division in the case of materials requirements.

CROSS-REFERENCES

Requirements that apply to more than one process or work type are included at the earliest point in the book and later subsections cross-reference those requirements. The result is a more concise and consistent set of specifications. Hundreds of links within and between sections were included in the electronic version of the standard specifications enabling the reader to easily follow these cross-references.

WRITING STYLE

In 2003, MDOT introduced the active voice-imperative mood writing style to the technical divisions (Divisions 2-9) of the standard specifications; this writing style is continued in the 2012 edition of the book. Because the technical divisions follow a uniform four-part outline of subsections and the requirements primarily reflect the responsibilities of the Contractor, the active voice-imperative mood is used, with some exceptions. (Ex: Place backfill in layers...) The active voice-indicative mood is used primarily in the materials sections where the action required of the Contractor is to ensure use of specified materials. (Ex: Cement must meet the requirements of ...)

Division 1 General Provisions does not follow a uniform outline of subsections and the sections address requirements of the Contractor, the Department, and both the Contractor and Department. When the responsibilities of both parties are written in the same sentence it is necessary to distinguish clearly between Contractor and Department rights and responsibilities. This is accomplished in Division 1 by the use of the active voice and indicative mood both for statements containing Contractor rights and responsibilities (Ex: The Contractor must submit...) and for statements containing Department rights and responsibilities (Ex: The Department will notify the Contractor when...).

STYLE GUIDE

MDOT developed a specification style guide, for use by the specification revision committees and the technical editing team, during the revision project to encourage the use of standardized phrasing of similar requirements. Application of the style guide to all aspects of specification writing at MDOT - special provisions, plan notes, technical notes etc. - while encouraged, is not required at this time.

SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS

As appropriate, supplemental specifications and frequently used special provisions developed since the release of the 2003 book were incorporated into the 2012 edition, either completely or partially. Many other special provisions representing best practices in materials or construction

methods were also incorporated into the book. Since the discussion of materials, construction and payment are all contained in a special provision, incorporating these documents into the book often required that the materials requirements be separated out and placed in the appropriate materials section in Division 9.

Many of the supplemental specifications and frequently used special provisions incorporated into the 2010 standard specifications are called out in the Division summaries below. Refer to the separate listing of the status of all frequently used special provisions in effect against the 2003 Standard Specifications for Construction for more information on their status on projects let under the 2012 Standard Specifications for Construction.

SIGNIFICANT CHANGES

Examples of significant changes, when the change is more than minor in nature, include:

- Incorporation of supplemental specifications and frequently used special provisions
- Addition or deletion of pay items
- Changes in materials specifications
- Changes in equipment requirements or construction methods
- Change in how a pay item is measured for payment.

DIVISION 1 GENERAL PROVISIONS

In addition to being written in active voice, some sections of Division 1 underwent significant reorganization in order to consolidate similar construction contracting concepts. These changes are identified in detail for Division 1 to assist the user in locating these concepts.

101 – Terms, Format and Definitions

- 101.02 The following abbreviations were added:
- AIS American Iron and Steel Institute
 - CFR Code of Federal Regulations
 - ITS Intelligent Transportation System

- 101.03 Incorporated 03SP 101(A) Definition Changes
The following definitions were added or revised:
- Addendum (revised)
 - Advertisement (revised)
 - Bid (revised)
 - Bid Appeal Committee (was Proposal Appeal Committee)
 - Bid Document (revised Proposal Form)
 - Bid Guaranty (was Proposal Guaranty)
 - Bid Review Committee (revised Proposal Review Committee)
 - Bidder (added affiliated bidder definition)
 - Determined Low Bidder (revised)
 - Inspector (revised)
 - Limits of Earth Disturbance (added)
 - Liquidated Damages (added)
 - Materially Unbalanced Bid (added)
 - Mathematically Unbalanced Bid (added)
 - Notice of Award (was Notice to proceed)
 - Pay Item (was Contract Item (Pay Item))
 - Proposal (revised)

- Roadway (revised)
- Seasonal Suspension (revised)
- Segregation (revised)
- State (revised)
- Work (revised)

102 – Bid Submission Award and Execution of Contract

- 102.03 Interpretation of Bid Items in the Proposal – Removed language referring to payment since this is included in section 109.
- 102.05 Preparation of Bid – Updated to reflect new electronic bid procedures; language moved into Department’s written procedures as appropriate.
- 102.07 Delivery of Bid – Updated to current electronic bid procedures. Incorporated 03SP102B Electronic Bidding.
- 102.09 Downloading of Bids – Updated to current electronic bid procedures.
- 102.16 Requirements of Contract Bonds – Incorporated information from Notice to Bidder.

103 – Scope of the Work

- 103.02.B Significant Changes in the Character of the Work – Retained CFR language defining Significant Changes in the Character of the Work. Capped the payment for reduced quantities of major items of work below 75% of contract quantity.
- 103.02.D Suspension of Work Ordered by the Engineer – Added new subsection incorporating portions of 2003 subsection 104.01.B Authority of the Engineer to Suspend Work, that is considered to be scope of work and not control of work.
- 103.02. F Eliminated Work – Added new subsection replacing 2003 subsection 109.05 Adjustments for Eliminated Items.
- 103.03 Contractor Engineer Communication – Added new subsection incorporating various written noticed required of Contractor, Engineer and Department.

104 – Control of the Work

- 104.01.C Authority of the Engineer to Direct the Acceleration of the Work – Added new subsection. This subsection applies only when the Engineer directs acceleration to complete earlier than the original contract time. Subsection 108.05.B Prosecution of the Work applies when the Contractor has fallen behind schedule and is directed to provide additional resource to get back on schedule.
- 104.01.F Authority to Inspect Scales – Incorporated 03SP104(B) Scale Inspections
- 104.04 Conformity with the Contract – Changed title. Moved all references to materials into subsection 105.08 Nonconforming Materials.
- 104.07 Contractor Obligations – Changed title. This subsection now contains the language from the following 2003 subsections:
 - 108.04 Competence of Contractor Supervision
 - 104.01.B Contractor’s ability to suspend work for safety reasons.
 - 103.06 Maintenance during Construction
 - 103.07 Final Cleanup
 - 104.10 Safety and Health Requirements
- 104.08 Cooperation by the Contractor – Incorporated language from 2003 subsection 108.03 dealing with disputes between two or more contractors or others.

- Moved detailed specifications for Contractor Staking into a new section 824 Contractor Staking.
- 104.10 Claims for Extra Compensation or Extension of Time – Contains much of the information from BOHIM 2008-02 Contractor Claims.
- 104.11 Work Zone Safety and Mobility – Includes parts of 2003 subsection 103.05 Traffic Control and language from the Work Zone Safety and Mobility Manual.
- 104.12 Approval for Use of the ROW – Added new subsection incorporating a process for Contractor to request and Engineer to evaluate the use of ROW and applicable language from 2003 subsection 105.06 Storage of Materials.
- 105 – Control of Materials
- 105.01 Quality and Source of Supply – Added requirement for a written notification, by the Contractor to the Engineer, of availability of materials for testing and visual inspection.
- 105.06 Storage of Materials – Added a statement requiring material storage to be done in a manner that will prevent damage to existing woody vegetation not identified for removal.
- 105.08 Non-Conforming Materials – replaces 2003 subsection 105.08 Unacceptable Materials and includes more detail. Incorporated applicable language from 2003 subsection 104.04 Conformity with Plans and Specifications.
- 106 – Quality Assurance Acceptance Program
- Removed details on the calculation of quality parameter indices from the spec book and placed language in the Materials Quality Assurance Manual and/or the Michigan Test Methods. All that remains as section 106 is an introductory paragraph.
- 107 – Legal Relations and Responsibilities to the Public
- 107.01 Laws to be Observed – Incorporated language from the Notice to Bidders regarding prevailing wage compliance.
- 107.07 Protection and Restoration of Property – Incorporated plan note on cost of restoration when undertaken by the Engineer.
- 107.12 Contractor's Responsibility for Utility Property and Services – Removed telephone numbers related to the ITS system and instead referred to the Region maintenance supervisor since ITS is now in Grand, University, and Metro.
- 107.15.A.4 Demolition or Renovation Notification – Added new subsection incorporating notification requirements from 03SP204(B) Notification for Building and/or Structure Demolition or Renovation.
- 107.15.B, C Construction Site Storm Water Runoff and Control of Hazardous and Polluting Materials – Language incorporated to address requirements of the MDOT statewide Storm Water Discharge Permit.
- 108 – Prosecution and Progress
- 108.03 Competence of Workers – Language added allowing the Department to have workers that do not possess skill and experience necessary to perform assigned work removed from a project.
- 108.04 Adequacy of Methods and Equipment – Added new subsection incorporating language from 2003 subsection 108.03 Limitations of Operations dealing with disputes between two or more contractors or others.

- 108.05 Construction Progress Schedule – Incorporated much of 2003 subsection 102.14 Construction Progress Schedule.
- 108.09.B, C Compensable Delays and Nonexcusable Delays – These two subsections were added or created by consolidating language from 2003 subsection 109.03.A Payment for Documented Increases in Labor Costs and part of 2003 subsection 103.02. Changes in the Work.
- 108.05.B Prosecution of the Work – Incorporated language from 2003 subsection 108.02 Performance of the Work that deals with Prosecution of the Work.
- 108.06.C.4 No Work Day – Language from 2003 subsection 108.07.C.3 and C.6, dealing with work days charged when Department suspends controlling operation, has been consolidated with additional language added to create this subsection.
- 108.09.B Request for Time Extension – Incorporated language from 2003 subsection 109.03 Payment for increased Contractor Costs. Payment is discussed in subsection 109.05 Payment for Contract Revisions.
- 108.10.C Assessment of Liquidated Damages – Table 108-1 Schedule of Liquidated Damages updated to reflect current costs. The phrase “other department costs” added to this subsection refers to various incentive/disincentive clauses that would be explained in special provisions.

109 – Measurement and Payment

- 109.01.B.6 Measuring weight on scales – Incorporated 03SP104(B) Scale Inspections.
- 109.04 Progress and Partial Payments – Added new subsection. Subsection 109.04.B Delivered and Stockpiled Materials incorporates language dealing with materials stockpiled offsite from 2003 subsection 109.06.C Materials Stockpiled Offsite.
- 109.05 Payment for Contract Revisions – All contract revisions are now paid in accordance with this subsection. Incorporated language from 2003 subsection 103.03 Adjustments.
- 109.05.D.6 Equipment and Plant – Incorporated new definitions for rental rate, operating rate and base hourly rate. Added new project maximum on payment for contractor owned equipment – Project maximum cannot exceed invoiced cost of equipment plus documented improvements. Hourly reimbursement in any month cannot exceed the monthly rental rate.
- 109.05.D.11 Statements – New item added, to this list of statements of cost under subsection 109.05.D. Force Account, requiring that Contractor show total annual earnings to date for each employee to determine if unemployment taxes were required for the force account work.
- 109.05.E Delay Costs – Added new subsection.
- 109.05.F Directed Acceleration – Added new subsection.
- 109.05.G Unrecoverable costs – Added new subsection.
- 109.07 Final Acceptance, Acceptance and Final Payment – Added subsections to address Partial Acceptance and Delayed Acceptance.

150 – Mobilization

No significant change to content or intent.

DIVISION 2 EARTHWORK

The term “grading limits” was replaced with “limits of earth disturbance” throughout Division 2.

201 – Clearing

No significant change to content or intent.

202 – Removing Trees, Stumps, and Corduroy

No significant change to content or intent.

203 – Removing Drainage Structures, Culverts, and Sewers

No significant change to content or intent.

204 – Removing Miscellaneous Structures and Materials

- Added pay items Concrete Barrier, Rem and Glare Screen, Rem.
- Revised measurement and payment for HMA Pavt, Rem.
- Revised measurement and payment for Sidewalk, Rem.
- Revised measurement and payment for HMA Surface, Rem.

205 – Roadway Earthwork

- Incorporated 03SP205B Special Provision for Crushed Concrete into 205.03.
- Added pay item Ditch Cleanout.

206 – Excavation and Backfill for Structures

No significant change to content or intent.

207 – Obliterating Roadway

No significant change to content or intent.

208 – Soil Erosion and Sedimentation Control

- Added pay items Turbidity Curtain, Shallow and Turbidity Curtain, Deep; material requirements added to section 916.
- Revised language in 208.03.B dealing with time limitations. The major revisions include the use of “final earth grade” versus “final grading” or “final earth change”, clarification on what final earth grade means, the parameters to determine when the final earth grade has been reached and added emphasis for the Contractor to avoid prolonging trimming and/or finishing the final earth grade.

209 – Project Cleanup

No significant change to content or intent.

DIVISION 3 BASES

301 – Subbase

No significant change to content or intent.

302 – Aggregate Base Course

- Added language to subsection 302.03.A Placing and Compacting requiring specific equipment when compacting layers 3 inches or less.

303 – Open-Graded Drainage Courses

- Deleted 2003 language. Work will be according to frequently used special provision 03SP303(A) Open Graded Drainage Course, Modified.

304 – Rubblizing

This section was removed from the spec book and replaced with a placeholder section. Discussion and revision of Rubblizing specifications will continue outside the spec book process with the goal of having a new special provision ready for use with the 2012 standard specifications.

305 – HMA Base Crushing and Shaping

No significant change to content or intent.

306 – Aggregate Surface Courses

- Added language to 306.03.B Placing and Compacting listing of information required on the delivery ticket.
- Added requirements for layer thickness, compaction and moisture content.
- Added language requiring specific equipment when compacting layers 3 inches or less.

307 – Aggregate Shoulders and Approaches

- Added 21A and 21AA in list of allowable aggregates, in subsection 307.02, for class 1 shoulders and approaches that will later receive a paved surface.
- Increased density requirement, in subsection 307.03.A, for trenches under HMA to 98 percent.
- Added listing, in subsection 307.03.B, of information required on the delivery ticket. Added statements, in subsection 307.03.B, regarding uniformity of material, prohibition of contamination, segregation, placing on frozen or rutted surfaces, and rutting of subgrade, subbase or aggregate base.
- Added language, in subsection 307.03.C, requiring specific equipment when compacting layers 3 inches or less.

308 – Geotextiles for Base

- This is a new section for 2010 based on existing special provisions for Geotextile Separator, and Geotextile Stabilization.
- Incorporated geotextile materials specifications from special provisions into Section 910.

DIVISION 4 DRAINAGE

401 – Culverts and 402 – Storm Sewers

- Box Culverts moved from Section 401 to new Section 406.
- 30" and 36" HDPE added to Sections 401 and 402.
- Added Load Rating Criteria.
- Added use of trench undercut and backfill to Sections 401 and 402.
- If unstable soil conditions, or obstructions other than rock, require excavation of the sewer trench below the elevation shown on the plans, excavate, backfill, and compact the trench as directed by the Engineer. Use coarse aggregate 6A, 17A, or 34R to backfill trench undercutting due to unstable soil conditions.
- Omitted Culver Bedding in trench details.
- Require 6 inches of bedding under pipes in trench details.

403 – Drainage Structures

- Changed the units of measure for Drainage Structure Covers from pounds to each.
- Changed the cover material specification from AASHTO M105 Standard Specifications for Gray Iron Castings to AASHTO M306 Standard Specifications for Drainage, Sewer, Utility, and Related Castings.

404 – Underdrains

No significant change to content or intent.

405 – Pump Station Construction

This section was removed from the spec book and replaced with a placeholder section. Discussion and revision of Pumpouse specifications will continue outside the spec book process with the goal of having a new special provision ready for use with the 2012 standard specifications.

406 – Box Culverts

- This is a new section for 2012 and includes box culvert specifications from 2003 Section 401 and 03SP401(A) Precast Three-sided or Arch Culvert.

DIVISION 5 HMA PAVEMENT AND SURFACE TREATMENTS

Division 5 has been significantly reorganized so that each section focuses on an individual material/product type and includes applicable requirements for quality control/quality assurance, and acceptance.

501 – Plant Hot Mixed Asphalt

- This section combines applicable language from the following sections of the 2003 standard specifications:
 - 501 Plant Mixed Hot Mix Asphalt
 - 502 Hot Mix Asphalt Construction Practices
 - 503 Contractor Quality Control for Hot Mix Asphalt
 - 504 Furnishing and Placing Hot Mix Asphalt Mixtures (Quality Assurance and Acceptance)
- Specific revisions to the specifications for Plant Hot Mixed Asphalt:
 - Added roller cracking as a HMA acceptance factor in Table 501-6.
 - Added Footnote (d) to Table 501-6 calling for material transfer device as a requirement for not controlling segregation.
 - Included Contractor Quality Control Plan requirements.
 - Added new language to differentiate inspection and testing acceptance requirements for HMA Mixture Acceptance.
- The following FUSPs were incorporated into Section 501:
 - 03SP501(C) Price Adjustments on Asphalt Binder
 - 03SP501(D) High Stress Hot Mix Asphalt
 - 03SP501(F) Superpave HMA Mixtures
 - 03SP502(F) Pavement Acceptance for Hot Mix Asphalt
 - 03SP502(J) Controlling Uniformity in Hot Mix Asphalt During Paving Operations

502 – HMA Crack Treatment

- This section combines applicable language from the following sections of the 2003 standard specifications:
 - 505 Overband Crack Fill
 - 502 Hot Mix Asphalt Construction Practices
 - 503 Contractor Quality Control for Hot Mix Asphalt
 - 504 Furnishing and Placing Hot Mix Asphalt Mixtures (Quality Assurance and Acceptance)
- The following FUSPs were incorporated into Section 502:
 - 03SP505(C) Overband Crack Fill Crack Pretreatment Application (Preventive Maintenance)
 - 03SP505(D) Overband Crack Fill Stand-Alone Application (Preventive Maintenance)

503 – Paver Placed Surface Seal

- This is a new section incorporating language from 03SP507C Pavement Performance Warranty for Paver Placed Surface Seal (CPM). Warranty aspects of Paver Placed Surface Seal will remain as a special provision.

504 – Micro Surfacing

- This section incorporates applicable language from the following sections of the 2003 standard specifications:
 - 507 Micro-surfacing
 - 502 Hot Mix Asphalt Construction Practices
 - 503 Contractor Quality Control for Hot Mix Asphalt
 - 504 Furnishing and Placing Hot Mix Asphalt Mixtures (Quality Assurance and Acceptance)

505 – Chip Seals

- This section incorporates applicable language from the following sections of the 2003 standard specifications:
 - 508 Chip Seals
 - 502 Hot Mix Asphalt Construction Practices
 - 503 Contractor Quality Control for Hot Mix Asphalt
 - 504 Furnishing and Placing Hot Mix Asphalt Mixtures (Quality Assurance and Acceptance)
- The following FUSPs were partially incorporated into Section 505. Warranty aspects will remain as special provisions.
 - 03SP508(A) Pavement Performance Warranty for Single Chip Seals (CPM)
 - 03SP508(C) Pavement Performance Warranty for Double Chip Seals (CPM)

506 – Slurry Seal

- This section incorporates applicable language from the following sections of the 2003 standard specifications:
 - 506 Slurry Seal
 - 502 Hot Mix Asphalt Construction Practices
 - 503 Contractor Quality Control for Hot Mix Asphalt
 - 504 Furnishing and Placing Hot Mix Asphalt Mixtures (Quality Assurance and Acceptance)

DIVISION 6 PORTLAND CEMENT CONCRETE FOR PAVEMENT

601 – Portland Cement Concrete

- This section has been coordinated with section 701 Portland Cement Concrete for Structures in order to eliminate repetitious and inconsistent wording related to concrete production specifications.
- Clarified that continuous batching and mixing equipment is not allowed for proportioning concrete other than latex modified concrete or prepackaged hydraulic fast set patching mixtures.
- Included provisions for use of mixes using optimized aggregate gradation for pavements (Grade P1M) and other applications.
- Removed references for concrete mix design requirements that refer to contractor mix designs. This information will be included in the Special Provision for Contractor Quality Control for Concrete.
- Added Grade P1M to Table 601-2 Concrete Pavement Mixtures
- Modified Footnote (d) in Table 601-2 Concrete Pavement Mixtures referring to seasonal limitations for supplemental cementitious materials.
- Removed references to the use of calcium chloride as a set accelerator.

602 – Concrete Pavement Construction

- Incorporated 03SP602(H) Cleaning and Sealing Joints in Concrete Pavement.
- Added allowance for using Grade P1M for other applications as approved by the Engineer.
- Included requirements for vibrator monitors on paver.
- Removed all references to neoprene and cold-applied joint sealants.
- Revised base repair requirement to the following: “If the prepared base is damaged by construction equipment, reconstruct the grade and cross section, as directed by the Engineer.”
- Unless specified otherwise, longitudinal texturing will be the Department’s standard surface treatment for concrete pavements.
- Included the following requirement: “Random cracked panels will be removed and replaced as directed by the Engineer.”
- Prohibit the use of artificial heat to dry pavement joint reservoir.
- Moved the pay item for Cement to section 603 Concrete Pavement Restoration
- Section 602.04.C, Concrete Overlays. Revised the measurement and payment language as follows: “The Engineer will determine the volume of concrete placed each day based on in place quantities. Deductions will be made for waste.”

603 – Concrete Pavement Restoration

- Defined the length of a pavement repair as follows: “Replacing sections of concrete pavement one lane wide and greater than 50 feet long in accordance with section 602.”
- Included tied joints and contraction joints in the pay items for pavement repair and pavement remove.
- Clarified that the specified minimum flexural strength is required prior to opening to traffic; 28-day compressive strength test cylinders are not required.
- Simplified the concrete patching mixture selection as follows:
 - Less than 72 hours opening to traffic: Grade P-NC at 300 psi flexural strength.

- 72 hours or greater opening to traffic: Grades P1 or P1M at 550 psi opening to traffic strength.
- Included the following clarification for Grade P-NC concrete mixtures: “A set accelerating admixture is not required if the minimum flexural strength at the contract specified opening to traffic time can be achieved without its use.”
- Included the following language regarding dowel bar installation. This will allow the engineer the ability to verify that the grout has been properly installed into the dowel hole prior to insertion of the dowel: “Do not proceed until the Engineer verifies that the dowel bars are properly installed and the grout is sufficiently set.”
- Included Maturity Method for opening to traffic strength determination for pavement repairs, as follows: “The maturity method may be used to determine the in place opening to traffic flexural strength provided the necessary preliminary flexural strength versus opening to traffic time correlations are made prior to placing concrete.”
- Included the “sand patch test” requirements for measuring surface texture for diamond grinding of concrete pavements.
- Eliminated the pay item “Moving from Repair to Repair”. This work is now included in the pay item “Pavement Repair, Removal”.

604 – Concrete Quality Control

This section has been removed from the spec book and replaced with a placeholder section. Discussion and revision of Concrete Quality Control for Concrete will continue outside the spec book process with the goal of having a new special provision ready for use with the 2012 standard specifications.

605 – Concrete Quality Assurance

This section has been removed from the spec book and replaced with a placeholder section. Discussion and revision of Concrete Quality Assurance will continue outside the spec book process with the goal of having a new special provision ready for use with the 2012 standard specifications.

DIVISION 7 STRUCTURES

701 – Portland Cement Concrete for Structures

- References Section 601 Portland Cement Concrete for structure concrete Mixtures.
- Revised requirements for air content of structural concrete
- Changed Ground granulated blast-furnace slag terminology to Slag cement.
- Modified cold weather requirements.

702 – Mortar and Grout

- Modified expansive grout requirements.

703 – Mortar and Concrete Patching, Repair, and Resurfacing Mixtures

- Added strength requirements for Latex Modified Concrete and Silica Fume Modified Concrete.

704 – Steel Sheet Piling and Cofferdams

- Revised design requirements for sheeting and cofferdam.
- Clarified minimum nominal section modulus requirements when installed adjacent to traffic or when supporting traffic loads.

- Added new section 906 in materials to cover hot rolled steel sheet piling meeting ASTM A328 or A572 for temporary applications and A572 for permanent applications.
- Added requirements for cut off and redriving.
- Clarified payment of temporary sheet piling and cofferdams.

705 – Foundation Piling

- Updated driven piles to AASHTO LRFD code.
- Clarified pile welding requirements.

706 – Structural Concrete Construction

- Revised the lighting requirements for night time casting of deck concrete.
- Revised the requirements for Insulated Forms-Superstructure Concrete.
- Added pay items for Conc, Grade S2, Subfooting; Expansion Joint, Cover Plate.
- Revised pay items for Conduit, _inch and Pipe Sleeve, _ inch.
- Deleted pay item for Conc Quality Assurance, Structure.
- Clarified payment of structure concrete when placed by the pumping method.

707 – Structural Steel Construction

- Revised requirements for Facilities for Inspection.
- Updated Cambering, Camber Adjustment, and Horizontal Curvature to AASHTO LRFD code.
- Clarified welder requirements for Welding for Form Supports and Accessories.

708 – Prestressed Concrete

- Updated plant certification requirements.
- Added requirements for slag cement to Design and Proportioning of Concrete Mixtures.

709 – Timber Structures

No significant change to content or intent.

710 – Waterproofing and Protective Covers

- Clarified requirements for shotcrete placement.

711 – Bridge Railings

- Clarified payment of bridge railings.

712 – Bridge Rehabilitation - Concrete

- Added requirements for machine mounted hydraulic or pneumatic hammers under Equipment for Preparation of Existing Concrete for Removing Superstructure Concrete at Expansion and Construction Joints on Steel Beam Bridges.
- Added requirement for use of a vibrator with a rubber coated head where epoxy coated or other coated reinforcement is present.
- Added requirement for protection of work and environment to be according to Section 715 Cleaning and Coating Existing Structural Steel when painting exposed structural steel.
- Added limitations on heavy equipment use during the hydrodemolition process.
- Added requirements for managing runoff during the hydrodemolition process.
- Clarified requirements for patch forming.

- Added galvanic anode requirements and payment method for Embedded Galvanic Anode.
- Clarified payment of full depth patches.

713 – Bridge Rehabilitation - Steel

- Added Diaphragm -Type Supports to Temporary Supports.
- Added payment method for Rocker Realignment; Cutting Simple Span Beam Ends; and Structural Steel Welded Repair Furn, Fab, and Erect work descriptions.

714 – Temporary Structures and Approaches

No significant change to content or intent.

715 – Cleaning and Coating Existing Structural Steel

- Updated Disposal of Spent Material requirements.
- Added requirements for solvents.

716 – Shop Cleaning and Coating Structural Steel

- Added AISC Sophisticated Paint Endorsement requirement.
- Added galvanizing option to painting steel.

717 – Downspouts and Drains

- Clarified payment of drain castings. Deleted “Type ____” from Drain Casting Assembly pay item.

718 – Drilled Shafts

- Added new section and pay items for drilled shafts including:
 - Drilled Shaft, ____ inch
 - Drilled Shaft Equipment, Furnished (Structure No.)
 - Temp Casing-Left in Place
 - Temp Casing
 - Permanent Casing
 - Obstruction Removal

DIVISION 8 INCIDENTAL CONSTRUCTION

801 – Concrete Driveways

No significant change to content or intent.

802 – Concrete Curb, Gutter & Dividers

No significant change to content or intent.

803 – Concrete Sidewalk, Sidewalk Ramps and Steps

- Clarified the required use of pre-fabricated detectable warning surface (DWS) products and the prohibition of stamped truncated domes in green sidewalk concrete.
- Added requirement of mechanical anchors for surface applied products.
- Added reference to Qualified Products List for Detectable Warning Surfaces.
- Gutter cross section and profile at ramp is required to follow standard plan R-28-Series rather than adjacent gutter cross section and profile.

- Separated payment for detectable warning surface (DWS) from payment for the sidewalk ramp. The pay item Sidewalk Ramp will cover both ramps with and without DWS. The pay item Sidewalk Ramp, "ADA" will become obsolete. Added a new pay item Detectable Warning Surface.
- Clarified that landing measurement and payment is not included if it is part of new or existing sidewalk that already meets ADA requirements for landings to prevent payment for a landing where one already exists.

804 – Concrete Barrier and Glare Screen

- Clarified measurement of Concrete Barrier, Split and Concrete Glare Screen, Split. Previous language had been mistakenly interpreted to provide for payment of barrier not constructed when only tapers to existing structures are called for on the plans. The new language refers to barrier in place including tapers and refers to the details shown in the standard plan.
- Incorporated 03SS804(1) Reflective Markers on Permanent Concrete Barriers.

805 – HMA Curb and Gutter

- Redefined Curb, HMA as Curb Vertical, HMA.
- Added pay item for Curb Sloped, HMA.

806 – Shared Use Paths

- Changed Bicycle Paths to Shared Use Paths.

807 – Guardrail, Guardrail Terminals and Miscellaneous Posts

No significant change to content or intent.

808 – Fencing

- Clarified that Clearing for Fence will always be paid separately. It will no longer be included in fence placement items.

809 – Field Office

- Added water and sanitary sewer monthly fees.

810 – Permanent Traffic Signs and Supports

- Added Michigan Standard Highway Signs Book as fabrication criteria for signs.
- Added construction information on hand chipping for cantilever and truss foundations.
- Moved construction information for Drilled Piles for Cantilever Foundations to Section 705 Foundation Piling with materials specifications moved to appropriate section of Division 9 Materials.
- Added Bridge Sign Connection subsection.
- Require contractor to replace damaged salvaged signs with a new sign.
- Added following pay items:
 - Median Barrier Conn, Conc, Perforated Steel Square Tube
 - Glare Screen Conn, Conc, Perforated Steel Square Tube
 - Perforated Steel Square Tube Breakaway System
 - Fdn, Truss Sign Structure Type, __ inch Dia, Cased
 - Fdn, Truss Sign Structure Type __, __ inch Dia, Uncased
 - Fdn, Cantilever Sign Structure Type __, __ inch Dia, Cased
 - Fdn, Cantilever Sign Structure Type __, __ inch Dia, Uncased
 - Fdn, Entire, Cantilever, Rem
 - Fdn, Entire, Truss, Rem
 - Truss Fdn Anchor Bolts, Replace

811 – Permanent Pavement Markings

- Added the following pavement marking materials:
 - Low Temperature Waterborne
 - Sprayable Thermoplastic
 - Polyurea
- Deleted the following pavement marking materials:
 - Epoxy
 - Raised Pavement Markers
- Revised Table 811-1 Pavement Marking Material Application Rates per Mile to include new marking materials, deleted materials no longer used, and add new marking widths.
- Separated Cold Plastic into two subcategories; with primer and primerless.
- Revised Table 811-2 Minimum Material Placement Temperature and Seasonal Restrictions to include new marking materials and deleted materials no longer used.
- Incorporated the following FUSP:
 - 03SP811(A) 6-inch Edge Lines and 12-inch Gore Markings
 - 03SP811(B) Delayed Acceptance of Permanent Pavement Markings
 - 03SP811(C) Polyurea Pavement Markings
 - 03SP811(D) Equipment Certification
 - 03SP811(F) Second Application of Permanent Pavement Markings
 - 03SP811(G) Contractor Layout of Permanent Pavement Markings
 - 03SP811(I) 4-inch Shoulder Rumble Strip Marking (SRSM)

812 – Temporary Traffic Control for Construction Zone Operations

- Incorporated much of 2003 subsection 103.05 Traffic Control.
- Temporary signs on lightweight trailers no longer allowed.
- Included the use of Type D Warning Lights.
- Removed methods for pavement marking removal.
- All Temporary Signs must have prismatic sheeting.
- The Contractor is required to maintain all lights in working order at all times without direction from the Engineer.

- Incorporated the following FUSP:
 - 03SP812(A) Mobile Attenuator
 - 03SP812(H) Temporary Signs
 - 03SP812(N) Lights on Traffic Control Devices
- Deleted the following pay items:
 - Sign, Type __, Temp, Furn
 - Sign, Type __, Temp, Oper
- Added the following pay items:
 - Temporary Portable Traffic Signal System
 - Pavt Mrkg Cover, Type R, (color)
 - Channelizing Device, 42 Inch, Furn
 - Channelizing Device, 42 Inch, Oper
 - Conc Barrier Ending, Temp, Detail ____, Furn
 - Conc Barrier Ending, Temp, Detail ____, Oper
 - Portable Traffic Signal System, Furn
 - Portable Traffic Signal System, Oper
- Renamed Flag Control to Traffic Regulator Control.

813 – Slope Protection

No significant change to content or intent.

814 – Paved Ditches

No significant change to content or intent.

815 – Landscaping

- Incorporated 03SP815(A) Landscaping.

816 – Turf Establishment

- Eliminated reference to Pins and Staples. Only wood pegs allowed for sod, mulch blanket, and mulch netting.

817 – Landscape Mowing

No significant change to content or intent.

818 – Dune Grass Planting

No significant change to content or intent.

819 – Electrical and Lighting

- Incorporated 03SP810(C) Frangible Light Standard Transformer Base.
- Incorporated the following Traffic & Safety Special Provisions:
 - 03TC820(A010) Traffic Signal Work
 - 03T819(030) Directionally Drilled Pipe 8 inches or greater in Pipe Diameter
 - 03T819(040) Small Diameter Bores 4 inch Nominal Diameter or less
 - 03T819(050) Directionally Bored Pipe 6 inches or less in Pipe Diameter or Drilled Pipe
 - 03T819(135) Bore and Jack Construction
 - 03T819(165) Pipe Jacked in Place
 - 03T819(255) Handhole, Square, 4 foot
 - 03T819(259) Handhole, Round, 3 foot Diameter
 - 03T819(418) Cable, Sec, Triplex, 1,3/c#4

- 03T819(420) Communications Cable
- 03T819(511) Concrete Pole, Fit Up, TS Cable Pole
- 03T819(516) Steel Pole, Fit Up, TS Cable Pole
- 03T819(601) Conduit, Directional Bore
- 03T819(608) Conduit, Jacked Bored

820 – Traffic Signals

- Incorporated 03SP820A Strain Pole Foundation and Anchor Bolts, with minor modifications.
- Incorporated the following Traffic & Safety Special Provisions:
 - 03T820(002) Pole Guy
 - 03T820(017) Light Emitting Diode (LED) Changeable Message Case Sign
 - 03T820(021) Light Emitting Diode (LED) Internally Illuminated Case Sign
 - 03T820(027) Conduit Repair (Under Pavt , Sidewalk or Earth)
 - 03T820[030] Controller and Cabinet, Rem
 - 03T820(037) Controller and Cabinet, Salv
 - 03T820(045) Controller Foundation, Base Mount
 - 03T820(046) Controller Foundation, Rem
 - 03T820(060) Exploratory Trenching - Signals
 - 03T820[090] Metered Service
 - 03T820(106) Pedestal Foundation, Rem
 - 03T820(115) Power Co. (Est. Cost to Contractor)
 - 03T820(123) Pushbutton Pedestal, Alum
 - 03T820(136) Service Disconnect, Rem
 - 03T820(138) Service Disconnect, Salv
 - 03T820(145) Steel Pole, Rem
 - 03T820(146) Steel Pole, Rem (Embedded)
 - 03T820(173) Loop Detector, Rem
 - 03T820(176) Traffic Signal, 4th Level Arrow, Rem
 - 03T820(184) Cabinet, Rem
 - 03T820(185) Riser, Rem
 - 03T820(247) TS, Lens
 - 03T820(250) Mast Arm Mount Signal Bracket 1-Way Stainless Steel Band Mount
 - 03T820(260) Warning Sign Rem & Salv
 - 03T820(313) Light Emitting Diode (LED) Vehicle Traffic Signals
 - 03T820(336) Light Emitting Diode (LED) Countdown Pedestrian Traffic Signals
 - 03T820(337) Light Emitting Diode (LED) Pedestrian Traffic Signals
 - 03T820(369) TS, Antenna, Salv
 - 03T820(373) Sign Optical (LED)
 - 03T820(374) Steel Truss Arms
 - 03T820(412) Concrete Pole, Rem
 - 03T820(415) Emergency Pre-emption, Rem & Salv
 - 03T820(430) Case Sign, Non-Illuminated
- Incorporated portions of 03TC820(A010) Traffic Signal Work – Construction Methods with the remaining information retained as a frequently used special provision.

821 – Preservation of Land Monuments and Property Corners

- Section re-written to incorporate language from the Special Provision for the Preservation and Perpetuation of Public Land Survey Corners, Property Controlling Corners, Alignment Control Points and Horizontal Control Points.

822 – Ground or Cut Shoulder Corrugations

- No significant change to content or intent.

823 – Water Mains

- New section incorporates water main special provisions. Water main materials specifications incorporated into new Section 923 Water Main Materials.

824 – Contractor Staking

- New section with language taken primarily from 2003 subsection 104.08 Lines, Grades, and Elevations.

DIVISION 9 MATERIALS

901 – Cement and Lime

- 901.06 – Ground Granulated Blast-Furnace Slag will now be known as Slag Cement.

902 – Aggregates

- Added AASHTO T 167 & AASHTO T 304 to test list.
- Revised definition of Manufactured Fine Aggregate to “100 percent crushed rock...” from “Produced by totally crushing rock...”
- 902.03.C Aggregate for Optimized Gradation - Made the following revisions:
 - Added new sub-section to list aggregate requirements for the optimized gradation “Shilstone” concrete mixtures. This language was in the P-1 Modified special provision.
 - “Coarse Aggregates for HMA Mixtures” is deleted. “Chip Seal Aggregates” changes sub-section as result.
 - Change in aggregate designation from 25A to 34CS as a result of the aggregate used in special provision. Aggregate designation in chip seal special provision did not match standard aggregate terminology. Therefore, the designation is changed to 34CS. There are no changes in gradation or physical properties from those listed in the special provision.
- 902.05 Dense-Graded Aggregates for Base Course, Surface Course, Shoulders, Approaches and Patching - Made the following revisions:
 - Revised to clarify restriction on use of crushed concrete.
- 902.06 Open-Graded Aggregates for Earthwork, Open Graded Drainage Course and Underdrains - Made the following revisions:
 - Removed 2G & 3G from list as these materials are no longer used by the Department.
 - Added crushed concrete to list of acceptable source materials.
 - Added second paragraph to control the amount of building rubble in crushed concrete material.
 - Added sentence to restrict crushed concrete to only 4G aggregate.
- 902.07 Granular Material for Fill and Subbase - Made the following revisions:
 - Class IIAA is new material for granular material applications
- 902.08 Fine Aggregates for Portland Cement Concrete and Mortar - Made the following revisions:
 - Added sentence to ensure contractor refers to fineness modulus requirements.

- 902.09 Aggregate General Requirements for HMA Mixtures - This is a new subsection added as result of inclusion of HMA special provisions.
 - Included Fine Aggregates for HMA Mixtures.
 - Covers the expanded HMA surface treatment aggregates; ultra-thin overlay, paver-placed surface seal, micro-surfacing, and slurry seal.
 - Changed wording to direct contractor to correct location for selection of mineral filler material.
- Removed 2G & 3G from Table 902-1 Grading Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open-Graded Aggregates.
- Removed 2G & 3G from Table 902-2 Physical Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open-Graded Aggregates.
- Added footnote (n) to Table 902-2 Physical Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open-Graded Aggregates.
- Added new granular material Class IIAA to Table 902-3 Grading Requirements for Granular Materials to replace footnote (d). This will promote less confusion.
- Moved 2FA & 3FA from Table 902-4 Grading Requirements for Fine Aggregates to new Table 902-7 CPM Aggregate Blend Physical Requirements. Footnote associated with 2FA & 3FA also moved to new table.
- Table 902-5 Superpave Final Aggregate Blend Gradation Requirements
 - Added new table for Superpave aggregate gradation requirements. The result of incorporation of Superpave into standard specifications.
 - Standard aggregate designation 13SP replaces LVSP aggregate designation used in special provision. No other changes to this aggregate.
- Added new Table 902-6 Superpave Final Aggregate Blend Physical Requirements.
- Added new Table 902-7 CPM Aggregate Blend Gradation Requirements for capitol preventive maintenance (CPM) aggregates.
 - UTO 1A, UTO 1B, and UTO 1C replace designations in ultra-thin overlay special provision to provide a more standardized format.
 - 27SS and 30SS replace designation in special provision for paver-placed surface seal to provide a more standardized format.
 - 34CS replaces designation in chip seal special provision to provide a more standardized format.
- Added new Table 902-8 Aggregate Blend Physical Requirements.

903 – Admixtures and Curing Materials for Concrete

- No significant change to content or intent.

904 – Asphaltic Materials

- Tabulated polyester fiber characteristics.
- Added Table for CPM Emulsions to coincide with addition of CPM work in Division 5.
- Moved Temperatures for Asphaltic Materials table to end of tables to keep all of the emulsion tables together.
- Renumbered tables accordingly.
- Updated test and specification references throughout tables.

905 – Steel Reinforcement

No significant change to content or intent.

906 – Structural Steel

- Added several steel types/grades to subsection 906.04.B High Strength Structural Steel.

- Added subsection 906.06 Sheet Piles

907 – Fencing Materials

No significant change to content or intent.

908 – Miscellaneous Metals

No significant change to content or intent.

909 – Drainage Products

- Added new Table 909-20 Dual Wall Polymer-Precoated Galvanized Corrugated Steel Pipe Wall Thickness Requirements in inches based on diameter and size of corrugation.

910 – Geosynthetics

- Incorporated materials specifications for base geotextile from special provisions for Geotextile Separator, and Geotextile Stabilization.

911 – Water

No significant change to content or intent.

912 – Timber and Lumber

- Made change to preservative retention requirements for oil based preservatives, cited AWPA table instead of a nominal figure.

913 – Masonry Units

No significant change to content or intent.

914 – Joint and Waterproofing Materials

- Added subsection 914.03.B Recycled Rubber Joint Filler
- Removed subsection 914.04.C Preformed Joint Seals for Concrete Pavement
- Removed subsection 914.04.D Lubricant-Adhesive for Neoprene Joint Seals
- Added subsection 914.07.C New Subsection for Dowel Bar Expansion Caps
- Removed subsection 914.09.C Hook Bolts for Bulkhead Joints
- Removed subsection 914.09.D Expansion-Anchored Lane Tie Devices for Bulkhead Joints
- Removed subsection 914.09.E Other Longitudinal Bulkhead Joint Devices

915 – Bridge Coating Systems

No significant change to content or intent.

916 – Erosion Control Materials

- Added materials requirements for Turbidity Curtain.

917 – Turf and Landscape Materials

No significant change to content or intent.

918 – Electrical and Lighting Materials

- Added multiplex (triplex) cable requirements.
- Added HS-20-44 loading for handholes.
- Added 4-foot square handhole specifications.
- Added 3-foot diameter round handhole specifications.

- Revised Frangible Transformer Base specifications.

919 – Permanent Traffic Sign and Support Materials

- Changes in cantilever and truss support structures (919.07-919.08) requirements to align specifications with MDOT Standard Details.
- Removed cantilever sign support types (919.07) to align with MDOT Standard Details.

920 – Permanent Pavement Marking Materials

- Revised lead free marking materials requirement to heavy metal free. Prohibit encapsulated heavy metals.
- Added Glass Bead requirement for Low Temperature Waterborne and Polyurea pavement marking materials.
- Deleted Glass Bead requirement for Epoxy pavement marking materials.
- Deleted Raised Pavement Markers.

921 – Permanent Traffic Signal Materials

- Added LED signal specifications throughout the section.
- Revised Digital Loop Detector materials specifications.
- Added Steel Truss Arm materials specifications.

922 – Temporary Traffic Control Materials

- Removed reference to Engineering Grade reflective sheeting.
- Included 42 Inch Channelizing Devices.
- Included items from FUSP 812 (G), Temporary Concrete Barrier.
- Slip forming temporary concrete barrier no longer allowed.
- Included items from the previously used SP for Temporary Concrete Barrier Ending.
- Included Pavement Marking Cover (aka Black/Gray Tape).
- Included items from the previously used SP for Portable Temporary Traffic Signal System.

923 – Water Main Materials

- Added new section on materials from special provisions for water mains to correspond to new section 823 Water Mains.