

July 4, 2012 M Standard updates compared to July 4, 2006 M & S Standards Book

M-Standards	Significant changes
Revised M-100-1, Standard Symbols	Added bicycle, railroad crossing, wind power generator and ADA symbols.
New M-100-2, Acronyms and Abbreviations	
Revised M-203-1, Superelevation Streets	Corrected R to 1600 from 1660 for Vd =55 mph. Added LN – Travel Lane.
Revised M-203-11, Superelevation Crowned and Divided Highways	Added LN – Travel Lane.
Revised M-206-2, Excavation and Backfill for Bridges	Bridge branch revised for dimensions of excavations at abutments and wingwalls.
Revised M-208-1, Temporary Erosion Control	Revised to meet new water quality control requirements specified in the standard special provision Revision of Sections 101, 107, 208, 213, & 620, Water Quality Control dated August 26, 2010. Changes referenced to classes of Geotextile (Drainage) Class to conform to the new classification system implemented by Standard Special Provisions. The concrete washout detail and accompanying notes were also revised.
Revised M-412-1, Concrete Pavement Joints	General notes 4 thru 6 are new on sheet 1. Centerline D joints are replaced with L joints on sheet 3. The minimum distance from T pavement joint to C pavement joint was increased to 6 feet from the current 2 feet. Changed joints at several locations including C joints to DC joints on the ramps. The Dowel Placement Tolerances have been revised on sheet number 1.
Revised M-601-1, Type "S" Saddle Headwalls for Pipe	Added pipe and washer to anchor bolt detail.

Revised M-601-12, Headwall and Pipe Outlet Paving	Added General Notes 5 and 6 for reinforcing steel.
Revised M-603-3, Precast CBC	Revised to allow CBC Joint Depth to vary from 75% T. The option of placing grout between adjacent concrete box culverts was added. References to Geotextile (Drainage) Classes were revised to conform to the latest classification system. Required LRFD and ASTM C 1577 for spans of at least 20 ft. in general notes 1 & 6. General note 7 gives contractor the option use C 1577 for CBC less than 20 ft. spans. Allowing lifting anchors, and made Typical Joint detail more generic to allow for manufacture variation. Reduced minimum joint depth from 4 ½” to 4” per request by Firebaugh Precast. Allows rubber gaskets in CBC joints and when used the geotextile wrap around joints is not required.
Revised M-603-1, Metal Pipe	Supersedes M-603-1, Metal and Plastic Pipe in the July 2006 Standard Plans Book. High Density Corrugated Polyethylene (HDPE) pipe information was removed. Eliminated Polyvinyl Chloride (PVC) pipe information and changed standard title. New metal pipe sizes are added and fill height tables have been revised. Minimum cover for construction loads is added.
New M-603-4, Corrugated Polyethylene Pipe (AASHTO M294)	The new standard plan for Corrugated Polyethylene Pipe was developed with industry input. The new standard plan allows Corrugated Polyethylene Pipe up to 60 inch diameter instead of the maximum 48 inch diameter allowed on M-603-1, Metal and Plastic Pipe in the July 2006 Standard Plans Book.
New M-603-5, Polyvinyl Chloride (PVC)	Pipe was developed with industry input. New standard allows Polyvinyl Chloride Pipe up to 36” diameter instead of 15” diameter on M-603-1, Metal and PVC Pipe, dated July 9, 2009.

Revised M-603-10, Concrete and Metal End Sections	Revised concrete joint fastener note to allow galvanized, and eliminated older coal tar coating method.
Revised M-604-10, Inlet Type C	Added General Note 1 stating inlet is not HS-20 rated. Added general note 10 for drains to stream message, and drainage medallion.
Revised M-604-11, Inlet Type D	Added General Note 1 stating inlet is not HS-20 rated. Added general note 9 for drains to stream message, and drainage medallion.
Revised M-604-12, Curb Inlet Type R	Moved the station point to the midpoint of inlet along the flowline. Added drains to stream message, and fish symbol.
Revised M-604-13, Concrete Inlet Type 13	With a no dumping message added in general note 8 and on No. 13 Grate detail.
Revised M-604-25, Vane Grate Inlet	With drains to stream note added.
Revised M-606-1, Guardrail Type 3 W-Beam	Raised W-Beam height to 28" from 27" to meet NCHRP 350 and FHWA requirements. Raised thrie-beam height to 32" from 31" to match up with higher W-beam. Median taper for obstructions revised to 15:1 to match 2011 AASHTO Roadside Design Guide. New design for medians with a 15:1 taper. Raised transition on concrete barrier height to 33" from 32" to match up with higher thrie-beam. New design for divided highway with steep embankments. The Fleat-MT median terminal option has been added.
Revised M-606-13, Guardrail Type 7	With note on Transverse Contraction Joint to match joints on concrete pavement, added rebar on bottom of E-E section and updated Flare Rate table (page 3) to match 2011 AASHTO Roadside Design Guide. Show concrete pavement at 34" level on Style CE.

Revised M-606-14, Precast Type 7 Concrete Barrier	Revised sheet 2 to show gap on plan view.
Revised M-607-4, Deer Fence and Gates	Added sheet 3 for breakaway posts in clear zone.
Revised M-607-15, Road Closure Gate	Added letter size to road closed sign, and six tie bars to foundation. Added bolt size for mounting winch.
Revised M-608-1, Curb Ramps	Required 4' minimum sidewalk width to meet current ADA requirements. The truncated dome plate option has been added, and a new mid-block design is included.
Revised M-609-1, Curb, Gutters and Sidewalks	Required 4' minimum sidewalk width to meet current ADA requirements. Revised to allow the Contactor the option of selecting bituminous or concrete curb for Curb Type 6, unless otherwise specified on the plans. The Contractor may use Curb Type 4 (Key-Way) in lieu of Curb and Gutter (Section IB and IM) unless otherwise specified on the plans. Added a Key-Way to the Bituminous Curb Type 6 (Section M). Details of Driveway Entrance Type 3 were added. General Note 7 allows installation of 6 inch sidewalk at locations shown on the plans. For example, the designer may specify 6 inch sidewalk at corner radii subject to off tracking by buses or trucks and at locations where utility vehicles may park during operations. The designer may increase sidewalk thickness where snow plowing is done with pickup trucks. The note on the detail, Transverse Contraction Joint for Concrete Pavement (Driveways), has been revised to recommend joint spacing every 8 feet.
Revised M-614-2, Sand Barrel Arrays	Added general note 6 for 6" thick foundation pad.

Revised M-613-1, Roadway Lighting	Added concrete support ring to alternative light foundation detail and light control cabinet.
Revised M-615-1, Embankment Protector Type 3	Relabeled end section dimensions.
Revised M-620-1, Field Laboratory Class 1	With potable water, shaker sieve mount, and forced air oven reference.
Revised M-620-1, Field Laboratory Class 2	With potable water, shaker sieve mount, forced air oven requirements, added book shelves and cure tank requirements.
Revised M-629-1, Survey Monuments	Brass cap size changed to 3 ½”.