**Design Standards Letter**

**Letter Number: P-2017-03**

**Letter Date: 06/08/2017**

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**Section/Plan No.: 203.20, 203.21, 203.22, 606.41, 606.50, 606.60, 606.70, 606.80, 617.10, 620.10, 702.02, 902.00, 902.80, 903.03**

**Subject: Revised Supplement to the 2016 Missouri Standard Plans for Highway Construction and New Publication of the 2017 Missouri Standard Plans for Highway Construction**

**Body**

**TO:** All Central and District Offices

**FROM:** Llans Taylor

**DATE:**  June 8, 2017

**SUBJECT:** Engineering Policy

Standard Plans Letter No. 3, 2017

Supplemental Revisions to 2016 Missouri Standard Plans for Highway Construction and the New Publication of the 2017 Missouri Standard Plans for Highway Construction

The Supplemental Revisions to the *2016 Missouri Standard Plans for Highway Construction* are now included in the new publication of the *2017 Missouri Standard Plans for Highway Construction* along with the following additional revision listed below. The *2017 Missouri Standard Plans for Highway Construction* effective July 1, 2017 are now available.

Questions regarding the Supplemental Revisions to the Missouri Standard Plans for Highway Construction should be directed to Ivan Schmidt, Central Office, Engineering Policy Group, at 573-751-0269 or myself at 573-751-7412.

**REVISIONS:**

**203.20** *(sheet 1 of 4)*. Updated the entire Superelevation Standard Plans to match 2011 Geometric Design of Highways and Streets.

**203.20** *(sheet 2 of 4)*. Updated the entire Superelevation Standard Plans to match 2011 Geometric Design of Highways and Streets.

**203.20** *(sheet 3 of 4)*. Updated the entire Superelevation Standard Plans to match 2011 Geometric Design of Highways and Streets.

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**203.21** *(sheet 1 of 3)*. Updated the entire Superelevation Standard Plans to match 2011 Geometric Design of Highways and Streets.

**203.21** *(sheet 2 of 3)*. Updated the entire Superelevation Standard Plans to match 2011 Geometric Design of Highways and Streets.

**203.21** *(sheet 3 of 3)*. Updated the entire Superelevation Standard Plans to match 2011 Geometric Design of Highways and Streets.

**203.22** *(sheet 1 of 2)*. New sheet providing tables of the Minimum Radii for Design Superelevation Rates, Design Speeds, and emax 4% or emax 8%.

**203.22** *(sheet 2 of 2)*. New sheet providing tables of “W” the wideing for surfacing at inside shoulders.

**606.41** *(sheet 1 of 7)* *–* Removed Slip Base Plate, Anchor Bracket & Section A-A details to sheet 4 of 7. Added Section D-D detail from sheet 4 of 7. Added to show aggregate bedding at section details.

**606.41** *(sheet 2 of 7)* *–* Removed double asterisk from title for Profile of Transition at Median Obstacle with Bullnose or in a Median Narrower Than 60’.

**606.41** *(sheet 3 of 7)* *–* Removed asterisk from call out for 3 Compensating End Assemblies.

**606.41** *(sheet 4 of 7)* *–* Removed Section D-D detail. Added Slip Base Plate, Anchor Bracket & Section A-A details from sheet 1 of 7. Added a detail of Cable Support.

**606.50** *(sheet 1 of 8)* *–* In third note under General Notes corrected sheet reference to sheet 6 of 8 and changed “Longer” to “8 foot”.

**606.50** *(sheet 3 of 8)* *–* Added ± 1/16” tolerance for holes sizes and added ± 1/8” tolerance for hole locations in post. Added note that holes may be punched on both side of steel post and front and back. Removed duplicate details of delineators already shown in standard plan 903.03.

**606.50** *(sheet 6 of 8)* *–* Added that steel post can be W6x8.5 or W6x9. Moved location of area of concern (obstacle) to be shown beyond the slope hinge point.

**606.50** *(sheet 7 of 8)* *–* Added ± 1/16” tolerance for holes sizes and added ± 1/8” tolerance for hole locations in post.

**606.50** *(sheet 8 of 8)* *–* Replaced “or 9 foot posts shall be used. (see plan view – Alignment taper) form end (1) note with “Where site constraints prohibit the post from being placed at least two feet in front of the slope break point, use 8 foot posts as shown on sheet 6 of 8.

**606.60** *(sheet 1 of 6)* *–* Revised first note under General Notes to “MGS guardrail shall be tangential with Bridge Approach Transition for 12’-6” beyond the two nested W-Beam Stiffness transition.” Changed the labeling to “(Extended Curb)” from “(Major Route)” in note located at bottom left corner of sheet.

**606.60** *(sheet 2 of 6)* *–* Added note “The cost of furnishing, fabricating and installing Bridge Approach Transition (Regular/No Curb), complete in place, will be paid for at the contract unit price per each.

**606.60** *(sheet 3 of 6)* *–* Added ± 1/16” tolerance for holes sizes and added ± 1/8” tolerance for hole locations in post. Added that steel post can be W6x8.5 or W6x9. Added an Optional 5/8” Bearing Plate detail.

**606.60** *(sheet 4 of 6)* *–* Added missing hole for 5 hole pattern in detail for Plate and Stiffener Identification.

**606.60** *(sheet 5 of 6)* *–* Added new sheet showing Welding Instruction.

**606.70** *(sheet 1 of 5)* *–* Added that steel post can be W6x8.5 or W6x9.

**606.70** *(sheet 2 of 5)* *–* Added ± 1/16” tolerance for holes sizes and added ± 1/8” tolerance for hole locations in post. Added that steel post can be W6x8.5 or W6x9.

**606.70** *(sheet 3 of 5)* *–* Added ± 1/16” tolerance for holes sizes and added ± 1/8” tolerance for hole locations in post. Added that steel post can be W6x8.5 or W6x9.

**606.80** *(sheet 1 of 7)* *–* Rearranged sheet to show obstacle behind MGS guardrail, should not be placed behind Anchor Ends and moved Detail A to sheet 3 of 7.

**606.80** *(sheet 2 of 7)* *–* Added welding dimension to detail of Strut and Yoke Assembly.

**606.80** *(sheet 3 of 7)* *–* Added Detail A from sheet 1 of 7.

**617.10** *(sheet 1 of 11)* *–* Added #4 Bar or ½” prestressing strand call-out to Typical View Barrier for Stepped Pavement.

**617.10** *(sheet 3 of 11)* *–* Added to tilt transverse pavement reinforcement hooks from vertical alignment to maintain 1-1/2” minimum clearance in 8” and 9” pavements.

**617.10** *(sheet 4 of 11)* *–* Updated views to clarify reinforcing layout.

**617.10** *(sheet 6 of 11)* *–* Updated call-outs to clarify embedment of resin anchor system in PCCP shoulder. In seventh note under General Notes correct spelling error for “of” and in last note changed “curb” to “barrier”.

**617.10** *(sheet 7 of 11)* *–* Updated views to clarify 1” dia. round steel dowel layout.

**617.10** *(sheet 8 of 11)* *–* Added to tilt transverse pavement reinforcement hooks from vertical alignment to maintain 1-1/2” minimum clearance in 8” and 9” pavements. Removed “Table B”.

**617.10** *(sheet 10 of 11)* *–* Updated call-outs to clarify embedment of resin anchor system in PCCP shoulder. In last note under General Notes changed “curb” to “barrier”.

**617.10** *–* Deleted sheet 12 of 12 showing details of Concrete Barrier End Anchorage at Bridge. These details will be covered in Bridge Plans.

**620.10** *(sheet 1 of 5)* *–* Removed “Type 1” form call-outs for Temporary Raised Pavement Marker.

**702.02** *(sheet 1 of 1)* *–* Deleted Standard Plans for Cast-In-Place Concrete Piles. This standard will be covered in Bridge Plans.

**902.00** *(sheet 2 of 2)* *–* Removed figure showing Louvers, Pedestrian Visors, Lenses and Pedestrian Module. Added Circular, Arrow and Pedestrian indications figure.

**902.80** *(sheet 1 of 1)* *–* Revised pedestrian symbol and description. Revised symbol to remove “Lens” from description. Added symbol and description for “Red Left Arrow” and “Flashing Yellow Arrow”. Removed “R10-5 Left only on Left Arrow” and “R10-12 Left Turn Yield to Green (Symbolic circular Green)” in Sign Legend. Changed “D3–16” to “D3-1” for Street Name (One Line), changed “D3-18” to “D3-1B” for Street Name (Two Line) and changed “R10-3B” to “R10-3E” for Crosswalk (Pedestrian Symbol) in Sign Legend. Added “R10-27A Left Turn Yield on Flashing Arrow” to Sign Legend.

**903.03** *(sheet 4 of 16)* *–* Added note to see Standard Plans 903.02 sheet 4 of 7 for details of Extruded Aluminum Panel and Post Clip.

**903.03** *(sheet 8 of 16)* *–* Added note to see Standard Plans 903.02 sheet 4 of 7 for details of Post.

**903.03** *(sheet 9 of 16)* *–* Added note to see Standard Plans 903.02 sheet 4 of 7 for details of Post.

**903.03** *(sheet 12 of 16)* *–* Removed Median Guard Cable and Guardrail Delineator to new sheet 13 of 16. Added “and Safety Barrier Curb” to title for Type B barrier. Added “and Type E” to title for Type C barrier. Added to see Standard Plans 617.10 or Bridge Plans for Concrete Barrier Details. Revised call-out for Delineator Reflector to “Delineator Reflector Body”. Added details for secondary delineators. Under Notes, revised second note to remove “channel post” and add “reflector body” and revised third note to change “Reflective” to “Retoreflective” and removed last sentence. Added details showing Concrete Traffic Barrier Delineation layout and spacing.

**903.03** *(sheet 13 of 16)* *–* New sheet showing Median Guard Cable and Guardrail Delineator details.

LET/IWS