**Design Standards Letter**

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**Section/Plan No.: 215, 401, 503, 610, 616, 620, 703, 903, 1032, 1042, 1048**

**Subject: Revised Supplement to the 2016 Standard Specifications**

**Body**

**TO:** All Central and District Offices

**FROM:** Llans Taylor

**DATE:** Aug 24, 2016

**SUBJECT:** Engineering Policy

Standard Specifications Letter No. 5, 2016

Revisions Supplement to the 2016 Standard Specifications

The Supplemental Revisions to the *2016 Missouri Standard Specifications for Highway Construction*, effective October 1, 2016 are now available on MoDOT’s website.

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

**MINOR REVISIONS:**

**SECTION 503 BRIDGE APPROACH SLAB**

*Sec 503.3* Changed to require that Bridge Approach slabs shall be sealed with a concrete sealer.

**SECTION 703 CONCRETE MASONRY CONSTRUCTION**

*Sec 703.3.8* Corrected list of concrete surfaces that require penetrating concrete sealer application.

**MAJOR REVISIONS:**

**SECTION 215 SHAPING SLOPES**

*Sec 215.1.3* Created specification for Class III Shaping Slopes for constructing additional shoulder width for the installation of guardrail and Type A crashworthy end terminals.

*Sec 215.1.3.1* Added specification for use of earth material in lieu of aggregate base for Shaping Slopes, Class III.

*Sec 215.2.1* Added specification to allow benching of the existing slope for constructing Shaping Slopes, Class III.

*Sec 215.3.2* Added to include Shaping Slopes, Class III to be only applied to sections that have been specifically designated on plans.

*Sec 215.3.3* Deleted the corrections to the contract quantity specification.

*Sec 215.4* Added to include Shaping Slopes, Class III to Basis of Payment specification.

**SECTION 401 PLANT MIX BITUMINOUS BASE AND PAVEMENT**

*Sec 401.4.5* Revised requirements for moisture susceptibility.

*Sec 401.5* Added notification requirements if changes are made to cold feed settings, hot bin settings or the binder content.

*Sec 401.7.5* Removed the maximum thickness for bituminous pavement mixture.

*Sec 401.7.8* Revised minimum density will be waived for shoulders overlays or new shoulders constructed on a sub-grade or base that does not specify density control.

*Sec 401.8.4* Added “The cores from each day’s production will be averaged to determine acceptance.”

*Sec 401.9* Modified requirements that QA will complete an acceptance test for plasticity index in the field during the first week of production on individual fractions. When the results deviate from the mix design by more than 2 percentage points, moisture susceptibility testing will be required. Also, a sample will be retained by QA for 7 days after testing is complete.

**SECTION 610 PAVEMENT SMOOTHNESS**

*Sec 610.4.5.1* Revised specification to add “Average segment IRIs shall meet the threshold requirement in Table 1.”

*Sec 610.4.5.3* Deleted minimum daily smoothness requirement and moved Sec 610.4.5.4 and revised requirements for areas of localized roughness.

*Sec 610.4.5.4* Revised method of correction to eliminate ALRs and improve average IRI. Added Table 1 to show maximum threshold for ALRs and IRIs.

*Sec 610.4.5.5* Moved to by Sec 610.4.5.4, see above.

*Sec 610.4.6.1* Revised to add “, except that segment average IRIs shall meet the threshold requirements for multi-lift overlays less than or equal to 3 inches in Table 1.”

*Sec 610.4.6.3*  Deleted minimum daily smoothness requirement and added revised requirements for areas of localized roughness.

*Sec 610.4.6.4* Revised method of correction to eliminate ALRs and improve average IRI.

*Sec 610.4.7.1* Renamed title to “Pre-Construction Quality Control Testing”.

*Sec 610.4.7.2* Renamed title to “Post-Construction Quality Control Testing”.

*Sec 610.4.7.3* Added “Post-Construction Quality Assurance Testing. The requirements are the same as Sec 610.4.5.2, except that testing shall only be performed in the right wheel path.”

*Sec 610.4.7.4* Addedmethod of correction to eliminate ALRs and improve average IRI.

*Sec 610.5.1.1* Changed reference to “Table 1” to reference “Table 2” and “Table 2” to reference “Table 3”.

*Sec 610.5.1.2* Changed reference to “Table 1” to reference “Table 2” and “Table 2” to reference Table 3”. Revised incentive payment for smoothness requirements for Table 2 and Table 3. Renamed “Table 1” to “Table 2” and Renamed “Table 2” to “Table 3”.

*Sec 610.5.1.1* Changed reference to “Table 3” to reference “Table 4” and Renamed “Table 3” to “Table 4”.

**SECTION 616 TEMPORARY TRAFFIC CONTROL**

*Sec 616.11* Added work zone lighting and work area lighting to the list of items with no direct payment.

**SECTION 620 PAVEMENT MARKING**

*Sec 620.60.3.1.1* Removed the restriction that Type 1 Temporary RPM’s, with no covers can be just used for edgeline markings when used for other than surface treatment projects.

*Sec 620.60.3.1.2* Revised to limit the use of Type 2 Temporary RPM’s to when shown on plans.

**SECTION 903 HIGHWAY SIGNING**

*Sec 903.6.1* Revised the basis of payment to specify that breakaway assemblies for pipe posts and structural steel posts, including the base connection, hinge plate, fuse plate, structural bolts and all other fabrication, complete in place, are incidental. Breakaway assemblies for perforated square steel tube posts, complete in place, will be paid for at the contract unit price each, regardless of the post size.

**SECTION 1032 PRECAST CONCRETE FLARED END SECTIONS**

*Sec 1032.2.1* Added that specification that the PAL process as outlined in Sec 106 shall apply to steel fibers used in flared end sections. Relocated the specification that steel fibers shall be in accordance with ASTM A820 from Sec 1032.3.4 to here.

*Sec 1032.3* Added specification title “DESIGN.”

*Sec 1032.3.1* Relocated specification for Standard Reinforcement from Sec 1032.3.3 to here and revised that reinforcement shall be in accordance with the Missouri Standard Plans for Highway Construction.

*Sec 1032.3.2* Deleted certification specification. Added “Steel fibers may be used exclusively or in combination with standard reinforcement. When steel fibers are used, the amount of steel fibers and standard reinforcement required shall be determined through proof of design testing accordance with ASTM C1765, Section 9, for Class III pipe of the same diameter. Proof of design testing shall be performed every three years and the results provided to the engineer upon request. Additional proof of design testing shall be performed when the type of steel fiber is changed or when the dosage rate of the steel fibers is changed.”

*Sec 1032.3.3* Relocated and revised Sec 1032.3.1 see specification above.

*Sec 1032.3.4* Relocated and revised Sec 1032.2.1 see specification above.

*Sec 1032.3.4.1* Deleted specification for Design.

*Sec 1032.3.4.2* Deleted specification for Mix Verification.

*Sec 1032.4* Basis of Acceptance renumbered from Sec 1032.3.

*Sec 1032.4.1* Acceptance Criteria renumbered from Sec 1032.3.1.

*Sec 1032.4.2* Workmanship renumbered from Sec 1032.3.4.3.

**SECTION 1042 HIGHWAY SIGN MATERIAL**

*Sec 1042.2.7.2* Revised specification for background sheeting to include “yellow green” and “fluorescent yellow green” colors and removed “red” and “prismatic red” colors from specification.

*Sec 1042.2.10* Deleted sentence, “Type L-1 and L-3 characters shall not be intermixed on a single sign face, unless otherwise shown on the plans or as approved by the engineer.”

*Sec 1042.2.10.1* Changed title to “Screen Print, Transparent Overlay and Opaque Black Film.”

*Sec 1042.2.10.2* Changed title to “Direct Applied Characters.”

**SECTION 1048 PAVEMENT MARKING MATERIAL**

*Sec 1048.50.2* Revised to increase specification for Type 1 Temporary Raised Pavement Markers to have a minimum of 6.0 square inches of ASTM Type V reflective Sheeting and that the protective sleeve shall be affixed in two locations.

LET/IWS