**Design Standards Letter**

**Letter Number: S-2022-01**

**Letter Date: 11/15/2021**

**Effective Date: 01/01/2022**

**Section: 106, 612, 733, 1029**

**Subject: Revised Supplement to the 2021 Standard Specifications**

**TO:** All Central and District Offices

**FROM:** Sarah Kleinschmit

**DATE:** November 15, 2021

**SUBJECT:** Standard Specifications Letter No. 1, 2022

The Supplemental Revisions to the *2021 Missouri Standard Specifications for Highway Construction*, effective January 1, 2022 are now available on MoDOT’s website.

Questions regarding the Supplemental Revisions to the Missouri Standard Specification should be directed to Tim Oligschlaeger, Central Office, Engineering Policy Services, at 573-751-3813 or myself at 573-751-7412.

**MINOR REVISIONS:**

**SECTION 106 CONTROL OF MATERIAL**

*106.9.3* Add the following to the end of the section. The National Transportation Product Evaluation Program (NTPEP) compliance program verifies that all steel and iron products fabrication processes conform to 23 CFR 635.410 Buy America Requirements and is an acceptable standard per 23 CFR 635.410(d). NTPEP compliant suppliers will not be required to submit step certification documentation with the shipment for some selected steel and iron materials. The NTPEP compliant supplier shall maintain the step certification documentation on file and shall provide this documentation to the engineer upon request.

**SECTION 612 IMPACT ATTENUATORS**

*Sec 612.4.3 Work Zone Crash Cushion.* Added the following as a new section. Location and relocation of the crash cushion shall be as shown on the plans or as directed by the engineer.

*Sec 612.4.3.1* Added the following as new section. Water-filled crash cushions shall be filled and contain a mixture to prevent freezing in accordance with the manufacturer's recommendations.

*Sec 612.4.3.2* Added the following as new section. Damaged or deficient modules shall be replaced by the contractor in accordance with Sec 616.4.

*Sec 612.4.3.3* Added the following as new section. When no longer needed, work zone crash cushions shall be removed and shall remain the property of the contractor.

*Sec 612.5.1* Added the following sentences to the end of the section. Work zone crash cushions will be paid for at the contract unit price. Relocation of work zone crash cushions will be paid for at the contract unit price.

*Sec 612.5.2* Added the following sentence to the end of the section. Replacement of damaged work zone crash cushions is incidental and shall be replaced at no cost to the Commission.

**SECTION 733 PRECAST CONCRETE BOX CULVERTS**

*Sec 733.3.2.1.3.* In the first sentence change, “precast box culvert ties shall be used in accordance with standard plans to connect individual box sections” to “precast box culvert ties may be used in place of collars in accordance with standard plans to connect individual precast box sections”. Add the following sentence to the end of the section. When ties are placed in the wings, plans for the precast wing sections shall be signed and sealed by a professional engineer licensed in the State of Missouri and shall be provided to the engineer for review a minimum of two weeks prior to construction.

**SECTION 1029 FABRICATING PRESTRESSED CONCRETE MEMBERS FOR BRIDGES**

*Sec 1029.3.11 Bond Breakers.* Added the following as new section. Liquid membrane-forming curing compound used as a bond breaker shall be Type 2 in accordance with Sec 1055. Cold-applied asphalt coating used as a bond breaker shall be in accordance with ASTM D 312 (Type 1, non-fibered) or ASTM D1227 (Type III, Class 1).

*Sec 1029.6.1 Shop Drawings.* Modify the following existing section by splitting it into four subsections, remove existing language and add new language.

Shop drawings showing in detail the type, size, number of units, location of tendons, enclosures, method and sequence of releasing the strands, anchorage details and details of proposed lifting loops and lifting procedure shall be submitted to the engineer for approval. The contractor may select the method of prestressing, provided an approved specific method is used and the total prestressing force and the center of gravity of the prestressing tendons as shown on the plans are maintained. The shop drawings shall show a tabulation of the design computations and the total prestress force, size and spacing of all reinforcing steel and concrete compressive strengths for strand release and design. No inspection will be conducted until the plant inspector has received a copy of the approved shop drawings. Prior to making shop drawings, the contractor shall submit in writing for approval of the engineer any proposed tack welding in lieu of tying of the reinforcing bars of prestressed members. If approved by the engineer, the location of tack welding of reinforcing bars shall be shown on the shop drawings submitted for approval. No heat or welding will be permitted in the proximity of prestressing tendons in the members. Shop drawings for the prestressed concrete solid, voided slab and box girder beams shall be required to include the alignment of the holes for the tie rods. The holes shall be aligned in such a way as to prevent damage to the precast units during the placement of the precast units on the beam caps and the installation and tensioning of the tie rods through the precast units.

Below is the revised section.

1. Shop drawings shall be submitted to the engineer for approval. Prior to making shop drawings, the contractor shall submit in writing for approval of the engineer any proposed tack welding in lieu of tying of the reinforcing bars of prestressed members. No heat or welding will be permitted in the proximity of prestressing tendons in the members.
2. Shop drawings shall show in detail the type, size, number of units, location of tendons, enclosures, application of bond breaker, approved locations of tack welding of reinforcing bars, method and sequence of releasing the strands, anchorage details, and details of proposed lifting loops and lifting procedure . Shop drawings for adjacent beams shall show the holes for the tie rods, aligned in such a way as to prevent damage to the precast units during the placement of the precast units on the beam caps and the installation and tensioning of the tie rods through the precast units.
3. Shop drawings shall show a tabulation of the design computations and the total prestress force, size and spacing of all reinforcing steel and concrete compressive strengths for strand release and design.
4. No inspection will be conducted until the plant inspector has received a copy of the approved shop drawings.

*Sec 1029.6.6 Stressing Requirements.* Added the following sentence to the end of the section. The contractor may select the method of prestressing, provided an approved specific method is used and the total prestressing force and the center of gravity of the prestressing tendons as shown on the plans are maintained.

*Sec 1029.6.17 Bond Breakers.* Added the following as new section. All specified locations of the top flange shall be coated with a bond breaker in accordance with the approved shop drawings. The bond breaker may be a liquid membrane-forming curing compound or a cold-applied asphalt coating. The bond breaker shall be applied in accordance with the manufacturer’s recommendations. Surfaces where joint filler will be applied shall be protected from the bond breaker coating. Any material accidentally deposited on surfaces where joint filler will be applied shall be removed by the fabricator. Bond breaker coating damaged or displaced during delivery or installation shall be repaired as directed by the engineer.

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