

SECTION 00560 - STRUCTURAL STEEL BRIDGES

(Follow all instructions and make all edits with “Track Changes” turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00560 of the Standard Specifications modified as follows:

(Use the following subsection .04 for straight single span bridges less than 150 feet)

00560.04 Erection Plan - Replace this subsection, except for the subsection number and title, with the following:

Submit an erection plan with unstamped Working Drawings according to 00150.35 at least 21 Calendar Days before the start of the steel erection Work. Include the proposed erection method and the amount and character of Equipment to be used for review. Do not perform Work until approval has been obtained. This review does not relieve the Contractor of the responsibility for the safety of the method or Equipment, or from carrying out the Work in full according to the Plans and Specifications.

00560.29(d)(1)(a)(2) Verification Testing – Replace the paragraph that begins “First, demonstrate the method...” with the following paragraph:

First, use a calibrated torque wrench to estimate the snug-tight condition to be used on the final product. Record the snug-tight tension and the torque used to achieve tension. Calibrate the torque wrench annually.

00560.29(d)(2)(a)(2) Verification Testing – Replace the paragraph that begins “First, demonstrate the method...” with the following paragraph:

First, use a calibrated torque wrench to estimate the snug-tight condition to be used on the final product. Record the snug-tight tension and the torque used to achieve tension. Calibrate the torque wrench annually. Match mark the bolt, nut, and plate.

00560.29(d)(2)(c) Inspection – Replace Table 00560-3 with the following table:

Table 00560-3
Nut Rotation from Snug-Tight Condition ^{1,2}

Disposition of Outer Faces of Bolted Parts

Bolt Length³ (underside of head to end of bolt)	Both faces normal to bolt axis	One face normal to bolt axis and other sloped not more than 1:20 (beveled washer not used)	Both Faces sloped not more than 1:20 from normal to bolt axis (beveled washer not used)
Up to and including 4 diameters	1/3 turn	1/2 turn	2/3 turn
Over 4 diameters but not exceeding 8 diameters	1/2 turn	2/3 turn	5/6 turn
Over 8 diameters but not exceeding 12 diameters	2/3 turn	5/6 turn	1 turn

¹ Nut rotation is relative to bolt, regardless of the element (nut or bolt) being turned. For all required nut rotations, the tolerance is plus 60 degrees (1/6 turn) and minus 0 degrees.

² Applicable only to joints in which all material within the grip is steel.

³ No research has been performed by the Research Council on Structural Connections to establish the turn-of-nut procedure for bolt lengths exceeding 12 diameters. Therefore, the required rotation shall be determined by actual test in a suitable tension measuring device according to 00560.29(d)(2).

Add the following subsection:

00560.40(j) Surface Finish (Non-Coated Weathering Steel Only) -

(1) Sandblast and Mill Scale Removal – Sandblast all exposed surfaces of AASHTO M 270 (ASTM A709), non-coated weathering steel, according to SSPC-SP6, *Commercial Blast Cleaning*, SSPC's *Steel Structures Painting Manual*. Visually verify the appearance of the blast-cleaned surface using Pictorial Standard Sa 2 of SSPC-VIS 1, *Pictorial Surface Preparation Standards for Painting Steel Surfaces*.

(2) Exterior Face of Fascia Girders – Brush-off blast clean, according to SSPC-SP7, *Brush-Off Blast Cleaning*, SSPC's *Steel Structures Painting Manual* to achieve a uniform surface finish and patina immediately after fabrication and prior to environmental exposure. After brush-off blast, and prior to environmental exposure or shipping, pressure wash exterior faces of fascia girders with a stream of potable water to ensure uniform weathering and patina.

(3) All Non-Coated Weathering Steel – Prior to environmental exposure, clean all exposed surfaces that do not receive a brush-off blast clean according to SSPC-SP 1,

Solvent Cleaning, SSPC's Steel Structures Painting Manual to remove all visible oil, grease, dust, dirt, drawing and cutting compounds, and other visible contaminants.

(4) Post-Fabrication Sandblast – If, as determined by the Engineer, the uniform weathering properties of the steel have been compromised and solvent cleaning is unable to adequately clean the surface, sandblast all exposed surfaces after fabrication and prior to shipment according to SSPC-SP 6. Pressure wash sandblasted surfaces with a stream of potable water to ensure uniform weathering and patina.

00560.70 Finish (Non-Coated Weathering Steel Only) – Replace this subsection with the following subsection:

00560.70 Surface Finish Cleanup (Non-Coated Weathering Steel Only) – At all times during fabrication, shipping, and installation, promptly clean exposed surfaces of steel contaminated with stains, oil or foreign material to preserve conditions for uniform weathering of steel. The use of acids to remove scale and stains in the field is not allowed.

(Use the following subsection .80 to list the estimated quantities of structural steel. Obtain information from the Bridge Designer.)

00560.80 Measurement - Add the following to the end of this subsection:

The estimated quantity of structural steel is:

(Use the appropriate bid item name as the "Steel Type". List each bridge separately.)

Structure	Steel Type	Quantity (Pound)
Bridge No. _____		