SECTION 00930 - METAL SIGN SUPPORTS

(Follow all instructions. If there are no instructions above a subsection, paragraph, sentence, or bullet, then include them in the project. The specifications may be modified to include project specific specifications, but all additions, deletions, or modifications must be sent to the ODOT Technical Resource and Senior Specifications Engineer for review and approval.)

Comply with Section 00930 of the Standard Specifications modified as follows:

(Use the following subsection .10 when PSST sign supports are required.)

00930.10 Materials - Replace the paragraph that begins "Except for perforated steel square tube…" with the following paragraph:

Except for perforated steel square tube slip base sign supports and for perforated steel square tube anchor sign supports, galvanizing shall conform to the requirements of Section 02530. Galvanize perforated steel square tube slip base sign supports and perforated steel square tube anchor sign supports according to ASTM A653 G90, zinc coat corner seam weld after scarfing, apply a conversion coating, and apply a final clear polymer coating.

00930.40(c) Welding - Replace the paragraph that begins "AWS D1.1, Clause 3…" with the following bullets:

- AWS D1.1, Clause 3 prequalified welds for complete joint penetration (CJP) are not allowed.
- Qualify CJP welds according to AWS D1.1, Clause 4. Perform V-notch (CVN) testing at 70 °F meeting the requirements of the absorbed energy values of Table 4.14.

00930.40(d-2-a) Direct Tension Indicator Tightening - Replace this subsection, except for the subsection number and title, with the following:

Install new and unused direct tension indicator washers at each bolt. Install so that the direct tension indicator protrusions are in contact with a hardened washer.

Bring the connection to a snug-tight condition. Snug-tight is defined as the condition when all plies of the connection are in firm contact and can be attained by applying the full effort of a worker on the end of a 12 inch long wrench to each bolt in the connection. Tighten all fasteners in the connection by progressing systematically from the most rigid part of the connection to the free edges in a manner that will minimize relaxation of previously tightened fasteners. In some cases, proper tensioning of the bolts may require more than a single cycle of systematic partial tightening.

After attaining a snug-tight condition, tighten all fasteners in the connection by progressing systematically from the most rigid part of the connection to the free edges until all of the

spaces between the direct tension indicator protrusions refuse entry to a 0.005 inch feeler gauge.

00930.40(e-2) Direct Tension Indicator Method - Replace this subsection, except for the subsection number and title, with the following:

Provide the Engineer full opportunity to witness installation of bolted connections. The Engineer will periodically observe the installation and tightening operations to ensure that proper procedures are being adhered to.

Upon completion of a bolted joint, the Engineer will determine that all bolts have been tightened. A minimum of 10 percent, but not less than two bolts in each joint, will be inspected. The joint will be accepted as properly tightened when all spaces between the direct tension indicator protrusions refuse entry to a 0.005 inch feeler gauge. If there are any spaces between the direct tension indicator protrusions that do not refuse entry to a 0.005 inch feeler gauge, re-inspect all bolts, retighten bolts in the joint as required, and resubmit the joint for inspection.

(Use the following lead-in paragraph and subsection .48 to specify coating of steel sign supports. Obtain item and color number from the Designer.)

Add the following subsection:

00930.48 Coating - Prepare and powder coat supports according to the applicable portions of Section 00593 or prepare and coat supports according to the applicable portions of Section 00594. Provide coating materials for field application, repairing damaged coatings, and coating hardware after installation, according to Section 00593 or 00594. Do not coat:

- Slip plate or arm connection surfaces.
- Slip base bolting hardware.
- Anchor rods, anchor rod washers, and anchor rod nuts.

Provide the following colors:

Item	Federal Standard 595 Color Number

(Use the following subsection .80 to list the estimated quantities of steel. List items by pay item name. Obtain information from the Designer)

00930.80 Measurement - Add the following to the end of this subsection:

The estimated quantities of structural steel are as follows:

Item	Estimated Quantity (Pound)

(Use the following subsection .90 when subsection 00930.48 is included in the project special provisions to specify painting or powder coating of steel sign supports.)

00930.90 Payment - Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for coating steel sign supports.