ANCHOR-BOLT NUT TIGHTENING PROCEDURE:
1) This work shall be performed only on days with winds less than 15 mph. All tightening of the nuts is to be done in the presence of the inspector. Once the tightening procedure is started, it must be completed on all of the base plate nuts without pause or delay.
2) Provisions are defined for tightening nuts and/or bolts shall be used to avoid rounding or other damage to the nuts. Adjustable end wrenches or pipe wrenches shall not be used.
3) Base plate anchor bolts and nuts are to be free of any dirt or debris.
4) Apply thread wax or Gee wax to the threads and bearing surfaces of the anchor bolts, nuts and washers.
5) Tighten top nuts so they fully contact the base plate. Tighten leveling nuts to snug-tight condition. Once tight is defined as the full effort of one person on a wrench with a length equivalent to 42 inches, apply force as close to the end of the wrench as possible. Pull firmly by leaning back and using entire body weight on the end of the wrench until the nut stops rotating. A minimum of two separate passes of tightening should be employed. The tightening should be done so that the forces applied to the end effective possible, be subsequently tightened until all nuts in that pass have been tightened.
6) Tighten top nuts to snug tight as described for the leveling nuts.
7) Matchmark the top nuts and base plate using paint, crayon or other approved means for a reference to determine the relative location of the nut and base plate during tightening.
8) Stiffen the keyway with a minimum of two bolts to avoid rounding or other damage to the nuts. Adjacent end wrenches or pipe wrenches shall not be used. Fasten nuts to the base plate so that the nuts are at the same level, and then tighten the top nuts until all nuts in that pass are tightened.
9) Do not rotate the leveling nuts during the top nut tightening.
10) Anchor bolt size first pass second pass total rotation

<table>
<thead>
<tr>
<th><strong>ANCHOR BOLT SIZE</strong></th>
<th>FIRST PASS</th>
<th>SECOND PASS</th>
<th>TOTAL ROTATION</th>
</tr>
</thead>
</table>

| 3"½ | 1/12 turn | 1/12 turn | 1/6 turn |

Lubricate, place and tighten the jam nuts to snug tight.

GALVANIZED STEEL NOTES:
- All steel diagonals and struts shall comply with ASTM A53 Grade B, Type E or S, the American Petroleum Institute API 5L Grade B, ASTM A500 Grade C, ASTM A490, and J295 and shall have a minimum yield strength of 36 ksi.
- The steel end post shall comply with ASTM A500 Grade C, ASTM A653, and A569 Grade 60. The post shall have a minimum yield strength of 42 ksi.
- The steel, shanks, rods, plates, and panels shall comply with ASTM A36, ASTM A572 Grade 50, ASTM A572 Grade 50, and ASTM A709 Grade 50.
- Steel welding shall be in accordance with the current edition of the AWS and AASHTO specifications.
- Ultrasonic testing shall be performed on all post-to-base-plate complete-joint-penetration groove welds.
- All steel sections shall be hot-dipped galvanized after fabrication in accordance with ASTM A653. Provide vent holes for galvanizing. Horizontal location and size of vent holes on shop drawings.
- Charpy V-notch toughness requirements in accordance with ASTM A370 of the standard specifications shall apply to all steel greater than 3/4 inch in thickness.

ANCHOR BOLT MATERIALS AND GALVANIZING SHALL BE IN ACCORDANCE WITH ARTICLE 4187 OF THE STANDARD SPECIFICATIONS.

GENERAL NOTES:
- All steel cantilever sign supports are designed for 50 lb/ft² wind pressure on supports and 50 lb/ft² on signs.
- Shop drawings shall be submitted by the contractor in accordance with Article 4152 of the standard specifications.
- All galvanized steel fasteners shall be used to address changes to the standard specifications.
- Steel cantilever sign supports shall not be used on bridges without the approval of the engineer.

STRUCTURAL ALIGNMENT/TOLERANCE NOTES:
- The precise installation and alignment of all components of the cantilever sign support and its support shall be considered essential. The contractor shall submit documentation to the engineer showing that the various components have been measured and are located within the tolerances listed below.

1) The foundation shall be accurately located, with the center of the anchor bolt group not more than 1 inch from the plan location in the direction parallel with the truss and not more than 1 inch from the plan location in the direction perpendicular to the truss.
2) Anchor bolts shall be flush within 1 inch of vertical from the top of the foundation.
3) Anchor bolts shall be flush within 1 inch of horizontal from the top of the foundation.
4) The horizontal distance between chords shall be within 1 inch of vertical from the top of the foundation.
5) The horizontal distance between chords shall be within 1 inch of horizontal from the top of the foundation.

SPECIFICATIONS:
- Reinforcing Steel in accordance with AASHTO LRFD Bridge Design Specifications Series of 2014, Section 6.4.6.
- Reinforcing Steel in accordance with AASHTO LRFD Bridge Design Specifications Series of 2014, Section 6.4.6.

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