The design of the Single Arm Overhead Sign Support presented on this drawing meets the requirements of the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition 2015 (LRFDTS-1) and all interim releases prior to the bid date of the project.

Dimensions noted as required shall be as indicated on the drawing and shall not be altered. Calculations are required for any modifications to the information shown on this drawing. Modifications shall meet the requirements of LRFDTS-1 and the design criteria shown in Note 28. Calculations shall be stamped by a Professional Engineer registered in the State of Ohio and shall be submitted for review and approval with the shop drawings.

Arm plate hole diameter to be bolt diameter plus \( \frac{3}{8} \)". Pole plate tapped hole to have threads with 75% minimum I.D. of DTI washers shall be ground or reamed to properly fit over attachment bolts. Provide proper DTI washer. An ASTM F436 washer shall be used directly under the head of the bolt when required with all DTI washers. Assure that the flat washer does not spin during bolt tightening with DTI washers. Proper DTI washer to be used under the head of the bolt with all DTI washers. Assure that the DTI washers do not spin during bolt tightening with DTI washers.

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The design was based on Fatigue Category II. For foundation details, see Standard Construction Drawing (SCD) TC-21.21. For pole and base plate dimensions, see Sheet 2.

For construction details and location of handholes, see SCD TC-41.41.

For modification of pole to support roadway lighting, see SCD HL-10.12. For additional sign mounting details, see SCD TC-41.41.

A minimum of one bolt thread shall remain above the anchor nut. For pole and base plate dimensions, see Sheet 2. For additional sign mounting details, see SCD TC-41.41.

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THESE DESIGNS USE FULL PENETRATION WELDS AT THE ARM AND BASE PLATE CONNECTIONS

ALL DIMENSIONS IN INCHES, UNLESS OTHERWISE NOTED

<table>
<thead>
<tr>
<th>DESIGN NO.</th>
<th>WALL THK.</th>
<th>POLE</th>
<th>ARM</th>
<th>TWO PIECE ARM</th>
<th>ARM ATTACHMENT</th>
<th>ANCHOR BASE</th>
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<tbody>
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<td></td>
<td>WALL THK.</td>
<td>SIZE</td>
<td>MAX. ARM LENGTH</td>
<td>WALL THK.</td>
<td>SIZE</td>
<td>OVERLAP</td>
</tr>
<tr>
<td>7</td>
<td>.239</td>
<td>11 x 8.06 x 21'</td>
<td>179</td>
<td>8 x 3.80 x 30'</td>
<td>30'</td>
<td>15.7</td>
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<tr>
<td>9</td>
<td>.239</td>
<td>13 x 10.06 x 21'</td>
<td>239</td>
<td>10 x 4.96 x 36'</td>
<td>36'</td>
<td>15.7</td>
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<tr>
<td>12</td>
<td>.250</td>
<td>14 x 11.06 x 21'</td>
<td>239</td>
<td>12 x 5.7 x 45'</td>
<td>45'</td>
<td>15.7</td>
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<tr>
<td>13</td>
<td>.3125</td>
<td>16 x 13.06 x 21'</td>
<td>250</td>
<td>14 x 5.26 x 30'</td>
<td>30'</td>
<td>15.7</td>
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<tr>
<td>14</td>
<td>.3125</td>
<td>17 x 14.06 x 21'</td>
<td>250</td>
<td>14 x 6.44 x 30'</td>
<td>30'</td>
<td>15.7</td>
</tr>
</tbody>
</table>

- **Load Parameters:**
- **Wind Load:** 750-year MRL Basic Wind Speed Map, 115 mph Design Wind Speed
- **Service Life:** Infinity per LRFDLTS-1 11.9.3
- **Service (Wind) Velocity:** 75 mph per LRFDLTS-1 Table 3.4.1 and Figure 3.8.4b
- **AOD:** Greater than 10,000

- **Serviceability Parameters:**
- **Deflection:** maximum of 0.75 inch/foot
- **Slope at Top of Pole:** maximum of 0.35 inch/foot
- **Natural Wind Gust:** include
- **Truck-Induced Gust:** include
- **Galloping:** Do not include (since Mechanical Dampening device is required)

- **Materials Engineer:**
- **Steel hardware - Galvanizing - ASTM A 153 (Hot-dipped)
- **Anchor bolt washers shall meet the requirements of ASTM A 563 Grade DH or A 194 Grade 2H.
- **Anchor bolt nuts shall meet the requirements of ASTM A 194 Grade 2H.
- **Flat washers shall meet the requirements of C&MS 730.08 and shall also meet the requirements of ASTM A 563 Grade DH or A 194 Grade 2H.
- **Anchor bolts shall meet the requirements of C&MS 630.06 and shall also meet the requirements of ASTM A 595 Grade A.
- **Anchor bolts shall be installed as close as possible to the end of the arm.
- **Required on arms over 39' in length.
- **Required on arms 39' or less if directed by the Engineer.
- **Valmont Structures or a Stockbridge type damper shall be installed as close as possible to the end of the arm.
- **A Mitigator TR1 Traffic Damper manufactured by Galco shall be used to prevent wind-induced vibrations.
- **Two-piece arms shall be used for arms over 39' in length.
- **TWO PIECE ARM
- **ARM ATTACHMENT
- **ANCHOR BASE
- **NOTES:**
- **(cont' from Sheet 1)"