**GENERAL NOTES**

STEEL BOLTS, NUTS & WASHERS: All steel bolts, nuts and washers shall meet the requirements of ASTM A325 and shall be galvanized in accordance with ASTM F2329.

BASE CONNECTION: High strength bolts L1 in the base connection shall be tightened only to the torque shown in the table on sheet 2 and 3. Overtightened base connections will not be permitted.

FUSE PLATE: All fuses in fuse plates shall be drilled. All plate cuts shall, preferably, be saw cuts; however, flame cutting will be permitted provided all edges are round. Metal projecting beyond the plane of the plate face will not be permitted.

BRASS SNIM: Provide shim plate per ASTM B36.

SHOP DRAWINGS: When ground sign supports are fabricated in accordance with these plans no shop drawings are required. Shop drawings will be required for approval when the column length exceeds the length shown in the plans by more than ±2 ft.

FABRICATOR NOTE: All bolts, except L1 bolts and Zee Beam to Post Hinge, shall be tightened to the torque shown in the table on sheet 2 and 3. Overtightened base connections will not be permitted.

**DESIGN SPECIFICATIONS**


WELDING: Perform all welding in accordance with the American Welding Society Structural Welding Code (Steel), ANSI/AWS D1-1 current edition.

ALUMINUM MATERIALS: All aluminum materials shall meet the requirements of the Aluminum Association Alloy 6061-T6 and also the following ASTM specifications: Sheets and plates, B209; extruded tube, bars, rods & shapes, B221; and standard structural shapes, B360. Bi-stacking permitted on sheets. Aluminum welding rods shall meet the requirements of Aluminum Association Alloy No. 5556 filler wire.

ALTERNATE MATERIAL: Material meeting the requirements of Aluminum Association Alloy E351-T3 and ASTM B221 may be used for extruded bars, rods, and shapes and tubes.

**SIDE VIEW**

All sign face corners shall be rounded.

**ZEE TYPE WIND BEAM**

**DESIGN WIND SPEEDS BY COUNTY**


**SIZE OF WIND BEAMS**

<table>
<thead>
<tr>
<th>Size of Zee</th>
<th>Length of Sign (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zee 1.75 x 1.75 x 1.08</td>
<td>2 Posts</td>
</tr>
<tr>
<td>Zee 2.00 x 2.00 x 1.38</td>
<td>3 Posts</td>
</tr>
</tbody>
</table>

*Note: Zee Beams Are Aluminum - No Steel Equivalents Available. Designation Gives (Member Depth) x (Flange=Width) x (lb/ft)*
### STEEL POST, BASE, FOUNDATION & FUSE PLATE DETAILS

#### FOUNDATION ELEVATION

**NOTE:** All reinforcing to be Grade 60.

1. Shop-weld assemblies of foundation stirrup reinforcing bars are permitted in reinforced concrete foundation provided that:
   - The shop welding is performed by machines under a continuous, controlled process, approved by the Engineer.
   - Quality control test are performed on shop welded specimens and the test results are available upon request, to the Engineer.

### SHIM DETAIL

**BASE PLATE**

- **SECTION A-A**
  - Plate Thickness: 0.0149" (28 Gauge)
  - Plate Thickness: 0.0149" (28 Gauge)

**BOLT KEEPER PLATE**

- **R (Typ)**
  - Plate Thickness: 0.0149" (28 Gauge)

### BASE CONNECTION DATA

<table>
<thead>
<tr>
<th>Section</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>R</th>
<th>L</th>
<th>W</th>
<th>Torque</th>
<th>Dia</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>3x5.7</td>
<td>4</td>
<td>7</td>
<td>3/4</td>
<td>2</td>
<td>5</td>
<td>1-1/2</td>
<td>3/16</td>
<td>7/16</td>
<td>1/4</td>
<td>9/16</td>
</tr>
<tr>
<td>6x12</td>
<td>4</td>
<td>7</td>
<td>3/4</td>
<td>2</td>
<td>3/8</td>
<td>3/8</td>
<td>3/8</td>
<td>830 75</td>
<td>1/4</td>
<td>9/16</td>
</tr>
</tbody>
</table>

### FUSE PLATE

**HINGE PLATE**

- **Diameter**
  - DIA. 30°

**BASE PLATE**

- **SECTION A-A**
  - Plate Thickness: 0.0149" (28 Gauge)

**BOLT KEEPER PLATE**

- **R (Typ)**
  - Plate Thickness: 0.0149" (28 Gauge)

### PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

1. Assemble post to stub with bolts and flat washers as shown.
2. Shim as required to plumb post (see detail).
3. Tighten all L, bolts the maximum possible with 1/8" to 1-3/8" wrench to bed washers and shims and to clean bolt threads.
4. Burr threads at junction with nut using a center punch to prevent nut loosening.

**SHIM DETAIL**

**BASE PLATE**

- **SECTION A-A**
  - Plate Thickness: 0.0149" (28 Gauge)

**BOLT KEEPER PLATE**

- **R (Typ)**
  - Plate Thickness: 0.0149" (28 Gauge)

**SECTION**

- **A**
  - **B**
  - **C**
  - **D**
  - **R**
  - **L**
  - **W**
  - **Torque**
  - **Dia**
  - **Depth**

**HINGE PLATE**

- **Diameter**
  - DIA. 30°

**BASE PLATE**

- **SECTION A-A**
  - Plate Thickness: 0.0149" (28 Gauge)

**BOLT KEEPER PLATE**

- **R (Typ)**
  - Plate Thickness: 0.0149" (28 Gauge)

**BASE PLATE**

- **SECTION A-A**
  - Plate Thickness: 0.0149" (28 Gauge)

**BOLT KEEPER PLATE**

- **R (Typ)**
  - Plate Thickness: 0.0149" (28 Gauge)

**SECTION A-A**

- **Plate Thickness: 0.0149" (28 Gauge)**

**TYPICAL HINGE**

- **Diameter:**
  - DIA. 30°

**OPTIONAL HINGE**

- **Diameter:**
  - DIA. 30°

**BASE PLATE**

- **SECTION A-A**
  - Plate Thickness: 0.0149" (28 Gauge)

**BOLT KEEPER PLATE**

- **R (Typ)**
  - Plate Thickness: 0.0149" (28 Gauge)

**SECTION**

- **A**
  - **B**
  - **C**
  - **D**
  - **R**
  - **L**
  - **W**
  - **Torque**
  - **Dia**
  - **Depth**

**HINGE PLATE**

- **Diameter:**
  - DIA. 30°

**BASE PLATE**

- **SECTION A-A**
  - Plate Thickness: 0.0149" (28 Gauge)

**BOLT KEEPER PLATE**

- **R (Typ)**
  - Plate Thickness: 0.0149" (28 Gauge)
### BASE CONNECTION

**BASE CONNECTION DATA**

<table>
<thead>
<tr>
<th>Section*</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>L</th>
<th>Torque (lbf·in)</th>
<th>R</th>
<th>b</th>
<th>f</th>
<th>S</th>
<th>t</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 6x12</td>
<td>4-3/4&quot;</td>
<td>T</td>
<td>5-1/8&quot;</td>
<td>T</td>
<td>5/8&quot;</td>
<td>270 ± 45</td>
<td>3/8&quot;</td>
<td>1-1/8&quot;</td>
<td>2-1/2&quot;</td>
<td>1-5/16&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>W 8x18</td>
<td>5-3/4&quot;</td>
<td>2-3/16&quot;</td>
<td>6-1/16&quot;</td>
<td>2-3/16&quot;</td>
<td>5/16&quot;</td>
<td>445 ± 75</td>
<td>7/16&quot;</td>
<td>1-7/8&quot;</td>
<td>2-3/4&quot;</td>
<td>1-7/8&quot;</td>
<td>1/2&quot;</td>
<td>5/8&quot;</td>
</tr>
<tr>
<td>W 8x24</td>
<td>7'</td>
<td>2-3/16&quot;</td>
<td>6-1/16&quot;</td>
<td>2-3/16&quot;</td>
<td>5/16&quot;</td>
<td>445 ± 75</td>
<td>7/16&quot;</td>
<td>1-7/8&quot;</td>
<td>2-3/4&quot;</td>
<td>1-7/8&quot;</td>
<td>1/2&quot;</td>
<td>5/8&quot;</td>
</tr>
<tr>
<td>W 10x33</td>
<td>8&quot;</td>
<td>2-3/16&quot;</td>
<td>6-1/16&quot;</td>
<td>2-3/16&quot;</td>
<td>5/16&quot;</td>
<td>580 ± 90</td>
<td>9/16&quot;</td>
<td>1&quot;</td>
<td>1-9/16&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td>5/16&quot;</td>
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<td>580 ± 90</td>
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<td>1&quot;</td>
<td>1-9/16&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td>5/16&quot;</td>
</tr>
</tbody>
</table>

*Designations: Normal Depth in inches and weight in pounds per linear foot.

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**STEEL POST & ALTERNATIVE BASE DETAILS**