POLE DESIGN LOADING

<table>
<thead>
<tr>
<th>Load Component</th>
<th>Weight (lbs.)</th>
<th>Wind Area (Top) (sq. ft.)</th>
<th>Fatigue Area (Bottom) (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ladder</td>
<td>60</td>
<td>5.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Sign</td>
<td>45</td>
<td>3.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Sign</td>
<td>45</td>
<td>3.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>1.4</td>
<td>7.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Sign</td>
<td>2.5</td>
<td>59.7</td>
<td>30.0</td>
</tr>
</tbody>
</table>

NOTES:
1. Provide pole assemblies designed, manufactured and installed according to 2013 ASME Standard Specifications for Structural Steel for Highway Bridges, and suitable standards for Scaffolding and Temporary Structures. Adequate自有 reinforced concrete foundation designed to support the pole loading. Provide reinforcing steel in accordance with the requirements of ASME A6061. Design for fatigue Category I with 95% loading, and with a basic wind speed of 100 mph. Pole design shall include material bend, wind-induced bend, and an approved vibration mitigating device in lieu of Galloping affect.

2. Provide poles to accommodate the maximum height shown in the mastarm data with the given loads, dimension, and materials requirements.

3. This drawing shows loads and design assumptions to be used by manufacturers when designing poles. It does not show actual loading of poles/mastarm or individual projects. This pole design may be used without further analysis of the following conditions:
   - The sign (load #1) is attached to the mastarm base section.
   - Not more than 6 traffic signs and/or signs are attached to the mastarm.
   - If these conditions are not met, this standard pole/mastarm design may not be used and design computations shall be performed by the manufacturer.

4. The manufacturer is to determine weld sizes, all welds and fastening shall conform to the latest edition of the American Welding Code AWS D1.1. Provide weld testing (VT) of 50% of all welds. Provide magnetic particle testing (MT) of 100% of all fillet welds. Provide radiographic testing (RT) or ultrasonic testing (UT) of 100% of all complete pipe penetrations welds and a random 25% of all partial joint penetrations longitudinal seam welds.

5. Fabricate pole tubes and mastarm tubes from no less than 2 pieces of steel. When using 2 pieces, place the projections welded some distance apart on the transverse welds provided.

6. Fabricate hardware and connections according to the latest fabrication standard detail.

7. Provide permanent tags on all pole sections per section 760 of the specifications. Provide a weatherproof label on all exposed surfaces of the structure.

8. The manufacturer shall select and design holes for any of the following: variations from approved drawings, variations from material requirements, sections more than 60" from ground, and sections greater than 60' in length, and sections between 20' and 60'. Each section shall have a nominal section size larger than the length of the pole, section, or segment, and be designed for the end use specified.

9. In addition to welding, field drill 3/4" diameter holes on each traffic signal head location. Orient the hole in the horizontal axis of the mastarm.

10. Install posts radiused outward from plate position in the horizontal opposite the mastarm such that the sides of the pole opposite the mastarm are vertical.

11. Clean and remove dirt, debris, rust, and excess galvanization on all galvanized and threaded parts before assembly. Lubricate the threads of all bolts and nuts with lubricant containing a suitable dry lubricant (720) according to section 504 of the specifications.

MASTARM DATA

<table>
<thead>
<tr>
<th>Mastarm</th>
<th>Mastarm End Section</th>
<th>Mastarm Side Section</th>
<th>Mastarm Intermediate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (ft.)</td>
<td>Max. Belt Deflection (in.)</td>
<td>Length (ft.)</td>
<td>Taper Thickness (in.)</td>
</tr>
<tr>
<td>65</td>
<td>2.0</td>
<td>35.0</td>
<td>0.758</td>
</tr>
<tr>
<td>75</td>
<td>2.0</td>
<td>35.0</td>
<td>0.758</td>
</tr>
<tr>
<td>85</td>
<td>2.0</td>
<td>35.0</td>
<td>0.758</td>
</tr>
</tbody>
</table>

Fixed end diameter measured at connection to mastarm plate.

State of Alaska DOT&PF
ALASKA STANDARD PLAN
SIGNAL POLE
WITH 55 TO 65 MASTARM
LOADING & NOTES

Adopted as an Alaska Standard Plan by
Carolyn Warehouse, P.E.,
Chief Engineer
Adoption Date: 7/30/2012

Last Code and Standard Review
By: 5/13/2021

Next Code and Standards Review due: 5/13/2026
State of Alaska DOT&PF
ALASKA STANDARD PLAN

SIGNAL POLE WITH 55' TO 65' MASTARM LOWER SECTION

Adopted as an Alaska Standard Plan by

Carolyn Workhouse, P.E.
Chief Engineer

Adoption Date: 7/20/2021

Last Code and Style Review
By: Date: 5/13/2021

Next Code and Standards Review Date: 5/13/2023
UPPER SECTION OPTIONS

POST TOP STANDARD
UPPER SECTION
BASE DETAIL

MASTARM SLIP SPLICE ELEVATION DETAIL

POST TOP CONNECTING PLATE DETAIL

DAVIT UPPER SECTION
BASE DETAIL

State of Alaska DOT&PF
ALASKA STANDARD PLAN
WITH 55' TO 65' MASTARM
UPPER SECTION

Adapted as an Alaska Standard Plan by
Carolyn Workhouse, P.E.
Chief Engineer

Adaptation Date: 7/30/2021

Last Code and Stds. Review
By: Date: 5/13/2021
Next Code and Standards Review Date: 5/13/2023