**POLE DESIGN LOADING**

<table>
<thead>
<tr>
<th>Load Component</th>
<th>Height (ft)</th>
<th>Load Area (Top) (sq ft)</th>
<th>Load Area (Bottom) (sq ft)</th>
<th>Total Area (sq ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Load</td>
<td>20</td>
<td>63.0</td>
<td>63.0</td>
<td>126.0</td>
</tr>
<tr>
<td>2 = Ice</td>
<td>15</td>
<td>47.3</td>
<td>47.3</td>
<td>94.6</td>
</tr>
<tr>
<td>3 = Wind</td>
<td>75</td>
<td>70.5</td>
<td>70.5</td>
<td>141.0</td>
</tr>
<tr>
<td>4 = Ice Load</td>
<td>20</td>
<td>90.0</td>
<td>90.0</td>
<td>180.0</td>
</tr>
<tr>
<td>5 = Load</td>
<td>20</td>
<td>63.0</td>
<td>63.0</td>
<td>126.0</td>
</tr>
</tbody>
</table>

**NOTES:**


2. Provide pole to accommodate the maximum length shown in the mastarm data with the given loads, dimensions, and material requirements.

3. This drawing shows loads (signs and signals) to be used in manufacturers when designing poles. It does not show actual loading of poles/mastarms or individual projects. Thus, pole/mastarm design may be made without further analysis if the following conditions are met:
   - The guide arm (load #5) is attached to the mast arm section and
   - Not more than 2 traffic signals and/or signs are attached to the mast arm section
4. If these conditions are not met, then standard pole/mastarm may be used if design computations are submitted that demonstrate compliance to design criteria (note 1) using actual loads. Designs with less than 1 square foot of projected area may be added to the external without causing a need for additional design computations.

5. The manufacturer must determine weld sizes. All welds and assembly shall conform to the latest edition of the Structural Welding Code AWS D1.1. Provide welding testing (WT) of 100% of all welds. Provide magnetic particle testing (MT) of 100% of all fillet welds. Provide radiographic testing (RT) of 100% of all complete joint penetration welds and a random 25% of all partial joint penetration longitudinal seam welds.

6. Fabricate all tubes and mastarm from no more than 2 pieces of steel. When using 3 pieces, place the longitudinal welds directly opposite one another. Transverse weld seams prohibited.

7. Fabricate all luminaires and accessories according to the latest lighting standard detail.

8. Provide permanent tags on all pole sections per Section 740 Table 740-1 of the specifications. Provide a weather proof wood clip on all exposed sections of the structure.

9. The Department will reject damaged or defective poles for any of the following reasons: improper preparation, corrosion, or material requirements. Sections exceeding 15 feet are considered oversized and must be delivered as 15 foot sections. Sections exceeding 15 feet are considered oversized and must be delivered as 15 foot sections. Sections exceeding the width of the pole, mast arm, or other sign and shall be delivered as 15 foot sections.

10. To allow for wiring, field drill a ¾" minimum diameter hole on each traffic signal head location. Cover the hole on the horizontal arm of mastarm.

11. Install poles rated upward from plumb position in the direction opposite the mast arm such that the angle of the pole opposes the mast arm in vertical.

12. Clean and remove dirt, dust, oil, and any other debris or accumulations on all mating surfaces and threaded parts before assembly. Lubricate the threads of all bolts and nuts with lubricate containing a suitable dye. Tighten all bolts according to section 504 of the specifications.
UPPER SECTION OPTIONS

POST TOP STANDARD
UPPER SECTION BASE DETAIL

POST TOP CONNECTING PLATE DETAIL

POST TOP CONNECTING PLATE DETAIL

DOUBLE LUMINAIRE

SINGLE LUMINAIRE

DAVIT LUMINAIRE

UPPER SECTION OPTIONS

MASTARM SLIP SPlice ELEVATION DETAIL

UPPER SECTION OPTIONS

State of Alaska DOT&PF
ALASKA STANDARD PLAN
SIGNAL POLE
WITH 40' TO 50' MASTARM UPPER SECTION

Adopted by the State of Alaska (Standard Plan)
Adopter: Carolyn Morgan, PE
Adopter Date: 07/17/2005

Next Code and Standard Review: 07/17/2030