Index 649-020
Steel CCTV Pole

ORIGINATION
Date: 1-15-21
Name: Malcolm Tomatani
Phone: 850 921-7305
Email: Malcolm.tomatani@dot.state.fl.us

COMMENTARY
The handhole should be located downstream of the traffic so all details and notes will be updated for the proper representation. Also added notes to make Index consistent with Standard Plans Index 641-020.

COMMENTS AND RESPONSES
BLACK = Internal Review Comments  RED = Standard Plans Response  GREEN = Change Made to Index

Name: Jeff Cicerello
Date: 5-18-21
COMMENT: Sheet 4: Handhole Detail – Elevation callout “Handhole (See Note 1) and Cover Plate “3/16” Thick Handhole Cover (See Note 2)”.

RESPONSE: The callout should just be “See Note”.
Change made to Index: Update callout to read “See Note”.
Date: 5-19-21
1. Work this Index with Specification 649.

2. This Index is considered fully detailed; only submit shop drawings for minor modifications not detailed in the Plans.

3. See Index 635-001 for additional details for Pull Boxes.

4. Materials:
   A. Pole: ASTM A1011 Grade 50, 55, 60 or 65; (less than or equal to 5½") or ASTM A572 Grade 50, 60 or 65 (greater than or equal to 5½") or ASTM A595 Grade A (55 ksi yield) or Grade B (60 ksi yield).
   B. Steel Plates and Pole Cap: ASTM A36 or ASTM A709 Grade 50.
   C. Weld Metal: E70XX.
   D. Bolts: ASTM F3125, Grade A325, Type 1.
   E. Anchor Bolts: ASTM F1554 Grade 55 with ASTM A563 Grade A heavy-hex nuts and ASTM A36 plate washers.
   F. Handhole Frame: ASTM A369 Grade 36 or ASTM A36.
   G. Handhole Cover: ASTM A1011 Grade 50, 55, 60 or 65.
   H. StainlessSteel Screws: AISI Type 316.
   I. Reinforcing Steel: ASTM A615 Grade 60.
   J. Galvanization: Bolts, nuts and washers: ASTM F-436.
   K. Concrete: Class IV (Drilled Shaft) for all environment classificaitons.

5. Fabrication:
   A. Welding:
      a. Specification 640-A.4 and
   B. Poles:
      a. Round or 16-sided (Min.)
      b. Taper pole diameter at 0.14 inches per foot
      c. Fabricate Pole longitudinal seam welds (O maximum) with 60 percent minimum penetration or fusion welds except as follows:
         1. Use a full-penetration groove weld within 6 inches of the circumferential tube-to-plate connection and
         2. Use full-penetration grooves welds on the female end section of telescopic (i.e., slip type) field splices for a minimum length of one and one-half times the inside diameter of the female section plus 6 inches.
      d. Pole Shaft may be either one or two sections (with telescopic field splice)
      e. Circumferentially welded pole shafts and laminated pole shafts are not permitted
   C. Identification Tag: (Submit details for approval)
      a. ZY'V (Max.) aluminum tag
      b. Locate on the inside of the pole and visible from the handhole
      c. Secure with ⅛ diameter stainless steel rivets or screws
      d. Include the following information on the ID Tag:
         1. Financial Project ID
         2. Pole Project ID
         3. Pole Height
         4. Manufacturers' name
         5. Yield Strength (Fy of Steel)
         6. Base Wall Thickness
      E. Except for Anchor Bolts, bolt hole diameters are bolt diameter plus ⅛" and anchor bolt holes are bolt diameter plus ¹⁄₄" (Max) prior to galvanizing.

6. Pole Installation:
   A. Do not install additional wire access holes (not shown in this Index) with a diameter that exceeds 1½" in diameter.
   B. Install Anchor Bolts in accordance with Specification 649-A.
   C. Cable Supports: Electrical Cable Guides and Eye Bolts.
      a. Locate top and bottom cable guides within the pole aligned with each other.
      b. Position one cable guide 2" below the handhole.
      c. Position other cable guide 1" directly below the top of the tenon.
   D. Install Pole with the handhole located away from approaching traffic.
   E. Coordinate all lowering device hardware requirements (including Tenon, Tenon mounting plates, parking stands, etc.) with lowering device manufacturer.
   F. Furnish and install Surge Protection Devices (SPDs) on all cabling in cabinet.
   G. Install the Pole plumb.

7. Cabinet Installation:
   A. Splice fiber optic cables in cable to preterminated patch panel.
   B. Furnish and install Surge Protection Devices (SPHD) on all wiring in cabinet.
   C. Furnish and install secondary SPDs protection on outlets for equipment in cabinet.
   D. Ensure that all electronic equipment power is protected and conditioned with SPDs.
   E. Ensure that equipment cabinet is bonded to CCTV pole grounding system.
   F. Install the pole mounted cabinet with the hinges next to the pole.
   G. Sizes and types of conduits and inner ducts for network communications between the pullbox and cabinet are stated in the Contract Documents.

8. Lowering Device Installation:
   A. Place the lowering cable that moves within the pole in an interior conduit to prevent it from tangling or interfering with any electrical wire that is in the pole. Ensure that any electrical wire within the pole is routed securely and free from slack.
   B. Mount lowering device perpendicular to the roadway as shown in the plans.
   C. Coordinate all lowering device hardware requirements (including Tenon, Tenon mounting plates, parking stands, etc.) with lowering device manufacturer.
**Shall Design Table**

<table>
<thead>
<tr>
<th>Pole Overall Height (ft)</th>
<th>Shaft Diameter</th>
<th>Shaft Length</th>
<th>Longitudinal Reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>6'-0&quot;</td>
<td>13'-0&quot;</td>
<td>[11] #11</td>
</tr>
<tr>
<td>60</td>
<td>6'-0&quot;</td>
<td>13'-0&quot;</td>
<td>[16] #11</td>
</tr>
<tr>
<td>70</td>
<td>5'-0&quot;</td>
<td>14'-0&quot;</td>
<td>[18] #11</td>
</tr>
</tbody>
</table>

**Additional Shaft Depth Due to Ground Slope**

<table>
<thead>
<tr>
<th>Ground Slope</th>
<th>4'-0&quot; Shaft Diameter</th>
<th>5'-0&quot; Shaft Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>3'-0&quot;</td>
<td>9'-0&quot;</td>
</tr>
<tr>
<td>1.75</td>
<td>4'-0&quot;</td>
<td>10'-0&quot;</td>
</tr>
<tr>
<td>1.75</td>
<td>5'-0&quot;</td>
<td>11'-0&quot;</td>
</tr>
</tbody>
</table>

**Foundation Notes:**

1. Shaft Length is based on 1'-0" height above the finished grade.
2. Shaft Design Table Shaft Length is based on 1'-0" height above the finished grade. The shaft depth in accordance with the additional shaft depth due to ground slope table for foundations with slopes 1.5 and steeper. Use the higher value for slope or diameter values that fall between those shown on the table.

**Base Plate and Anchor Bolt Design Table**

<table>
<thead>
<tr>
<th>Pole Overall Height (ft)</th>
<th>Base Plate Diameter (in.)</th>
<th>Base Plate Thickness (in.)</th>
<th>Anchor Bolt Circle (in.)</th>
<th>Anchor Bolt Number of Bolts</th>
<th>Anchor Bolt Embedment (in.)</th>
<th>Minimum Anchor Bolt Projection (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>27</td>
<td>2</td>
<td>22</td>
<td>6</td>
<td>1.25</td>
<td>38</td>
</tr>
<tr>
<td>60</td>
<td>32</td>
<td>2</td>
<td>22</td>
<td>6</td>
<td>1.75</td>
<td>38</td>
</tr>
<tr>
<td>70</td>
<td>40</td>
<td>2.5</td>
<td>33</td>
<td>8</td>
<td>1.75</td>
<td>38</td>
</tr>
</tbody>
</table>

**Pole Design Table**

<table>
<thead>
<tr>
<th>Pole Overall Height (ft)</th>
<th>Section 1 (Top)</th>
<th>Section 2 (Bottom)</th>
<th>Joint</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length</td>
<td>Wall Thickness (in.)</td>
<td>Length</td>
</tr>
<tr>
<td>50</td>
<td>---</td>
<td>---</td>
<td>14</td>
</tr>
<tr>
<td>60</td>
<td>25'-0&quot;</td>
<td>0.25</td>
<td>14</td>
</tr>
<tr>
<td>70</td>
<td>35'-0&quot;</td>
<td>0.25</td>
<td>14</td>
</tr>
</tbody>
</table>
NOTES:

1. Shaft Length is based on 1'-0" height above the finished grade.
2. Double Nuts: Bottom nut may be half-height (jam nut). Provide individual nut covers (not shown) for each bolt.
3. Conduit and CSL Tubes not shown for clarity.
4. Use these details with Data Table on Sheet 2.

ASSEMBLY

SECTION A-A

SECTION B-B

BASE PLATE

DETAIL "A"

FOUN DATION
NOTE:
To secure the cover plate, install a steel chain from the cover to the pole or, by mounting the cover with hinges and installing a pad lock tab.