<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Drawing Index</td>
</tr>
<tr>
<td>2</td>
<td>Single Signal Arm Pole Elevation, Dimensions, and Base Plate Weld Detail</td>
</tr>
<tr>
<td>3</td>
<td>Signal Arm Dimensions &amp; Details</td>
</tr>
<tr>
<td>4</td>
<td>Signal Arm Pole Base Plate, Bottom Splice Plates, and Pole Top Cover Details</td>
</tr>
<tr>
<td>5</td>
<td>Signal Arm Connection Details</td>
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<tr>
<td>6</td>
<td>Handhole Details</td>
</tr>
<tr>
<td>7</td>
<td>Placement of Signals and Signs, Loading for Arm of 35' or Less</td>
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<tr>
<td>8</td>
<td>Placement of Signals and Signs, Loading for Arm of Greater Than 35' to 60'</td>
</tr>
<tr>
<td>9</td>
<td>Combination Pole Elevation, Dimensions, and Base Plate Weld Detail</td>
</tr>
<tr>
<td>10</td>
<td>Combination Arm Dimensions &amp; Details</td>
</tr>
<tr>
<td>11</td>
<td>Combination Arm Connection Details</td>
</tr>
<tr>
<td>12</td>
<td>Combination Pole Splice Details for Arms 35' or Less</td>
</tr>
<tr>
<td>13</td>
<td>Combination Pole Splice Details for Arm of Greater Than 35' to 60'</td>
</tr>
<tr>
<td>14</td>
<td>Combination Arm Loading for Arm of 35' or Less</td>
</tr>
<tr>
<td>15</td>
<td>Combination Arm Loading for Arm of Greater Than 35' to 60'</td>
</tr>
<tr>
<td>16</td>
<td>Drilled Shaft Foundation Type A for Arm of 35' or Less</td>
</tr>
<tr>
<td>17</td>
<td>Drilled Shaft Foundation Type B for Arm of Greater Than 35' to 60'</td>
</tr>
<tr>
<td>18</td>
<td>Spread Footing Foundation Type C for Arm of 35' or Less</td>
</tr>
<tr>
<td>19</td>
<td>Spread Footing Foundation Type D for Arm of Greater Than 35' to 60'</td>
</tr>
</tbody>
</table>
**NOTES:**

2. See Standard Drawing E 805-SGGR-01 to -03 for grounding details.
3. Use continuous backing ring, 5/16" x 2" minimum. Tack weld only in root area of final weld.

---

**POLE DIMENSIONS**

<table>
<thead>
<tr>
<th>CANTILEVER ARM LENGTH</th>
<th>SECTION 1</th>
<th>WALL THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15' to 35'</td>
<td>Base Diameter</td>
<td>17&quot;</td>
</tr>
<tr>
<td></td>
<td>Wall Thickness</td>
<td>5/16&quot;</td>
</tr>
<tr>
<td>&gt;35' to 60'</td>
<td>Base Diameter</td>
<td>24&quot;</td>
</tr>
<tr>
<td></td>
<td>Wall Thickness</td>
<td>5/16&quot;</td>
</tr>
</tbody>
</table>

---

**POLE ELEVATION**

See Standard Drawing E 805-TSCS-05.

---

**POLE/BASE PLATE WELD DETAIL A**

See Detail A

---

**Base Plate**

See Standard Drawing E 805-TSCS-05.

---

**Top Cover**


---

**Back Ring 3**

(5/16 + 0.44) x 5/16"
**NOTES:**

1. Number of cable inlets depends on arm L (See Arm Dimensions Table). The inlet diameter shall be 1 3/4" with rubber grommet (Typ.)

2. Optional splice can be used for arm length of greater than 40'. Field assembly shall achieve a snug tight joint, with minimum overlap not less than 1.5 times the inside dimension of the end section.

3. Arm rise R is measured in the undeflected position without vertical loads on the arm.

4. See Standard Drawings E 805-TSCS-07 and -08 for placement of signal and signs for each arm length.

5. If seam welds are used, the weld location for the arms shall be along the bottom, and on the side of pole as shown.
BOTTOM SPLICE PLATE
(For Cantilever Arm Length of 35' or Less)

BOTTOM SPLICE PLATE
(For Cantilever Arm Length Greater Than 35' to 60')

NOTES:
2. Bolt circle shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.

INDIANA DEPARTMENT OF TRANSPORTATION
TRAFFIC SIGNAL CANTILEVER STRUCTURE
SIGNAL ARM POLE BASE PLATE, BOTTOM SPLICE PLATES, AND POLE TOP COVER DETAILS
SEPTEMBER 2013

STANDARD DRAWING NO. E 805-TSCS-04

/s/ Alfredo B. Hanza 03/26/13
DESIGN STANDARDS ENGINEER  DATE

/s/ Mark A. Miller 03/27/13
CHIEF ENGINEER  DATE
**Signal Arm Connection Detail**

### Plates and Bolts for Signal Single Arm Cantilever

<table>
<thead>
<tr>
<th>Arm Length</th>
<th>Flange Plate A x B</th>
<th>Bolt Pattern C x D</th>
<th>Ring Stiffener Gusset Plate W</th>
<th>Flange Plate Thickness t</th>
<th>Bolt</th>
</tr>
</thead>
<tbody>
<tr>
<td>15' to 35'</td>
<td>22'' x 22''</td>
<td>17 1/2'' x 17 1/2''</td>
<td>3/8''</td>
<td>1 1/2''</td>
<td>1 1/8'' - 7 UNC x 4 1/4'' Long</td>
</tr>
<tr>
<td>&gt;35' to 60'</td>
<td>33'' x 33''</td>
<td>27 1/2'' x 27 1/2''</td>
<td>1/2''</td>
<td>1 3/4''</td>
<td>1 1/2'' - 6 UNC x 6 1/4'' Long</td>
</tr>
</tbody>
</table>

**Notes:**

2. The required signal arm rise shall be built into the gusset plate at the angle X. The angle X is described as arc tan R/L, where R is the arm rise and L is the arm length. Both R and L vary and are listed in the Arm Dimension Table on Standard Drawing E 805-TSCS-03.
3. Use continuous backing ring, 5/16'' x 3'' minimum. Tack weld only in root area of final weld.
Handhole A shall be used at the base of the pole. Handhole B shall be used at all other locations.

In lieu of fabricated handhole frame as shown, frame may be cut from 3" plate with rolling direction vertical.

See Standard Drawings E 805-TSCS-02 and -09 for handhole locations.
NOTE:

1. The structure arms and pole are designed for the above loading conditions. Foundation types A and C are designed for arms having length of 35 ft or less. See Standard Drawings E 805-TSCS-16 and -18 for foundation types A and C.
NOTES:


2. The structure arms and pole are designed for the above loading conditions. Foundation types B and D are designed for arms having length of greater than 35 ft to 60 ft. See Standard Drawings E 805-TSCS-17 and -19 for foundation types B and D.
NOTES:

2. See Standard Drawing E 805-SGGR-01 to -03 for grounding details.
3. Base diameter of Pole Section 2 shall be equal to top diameter of Pole Section 1.
4. Use continuous backing ring, 5/16" x 2" minimum. Tack weld only in root area of final weld.

VERTICAL CLEARANCE CRITERIA:
Maintain 40'-0" minimum clearance from top of pavement to the camera lens.

### POLE DIMENSIONS

<table>
<thead>
<tr>
<th>CANTILEVER ARM LENGTH L</th>
<th>POLE SECTION 1</th>
<th>POLE SECTION 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BASE DIAMETER</td>
<td>WALL THICKNESS</td>
</tr>
<tr>
<td>15' to 35'</td>
<td>17&quot;</td>
<td>5/16&quot;</td>
</tr>
<tr>
<td>&gt;35' to 60'</td>
<td>24&quot;</td>
<td>5/16&quot;</td>
</tr>
</tbody>
</table>

**POLE/BASE PLATE WELD DETAIL A**

- **Base Plate**
- **Back Ring**
- **Weld**
- **Seal**

**POLE ELEVATION**

- **Combination Arm Mounting Height (32 Max.)**
- **Combination Arm Mounting Height (22 Max.)**
- **Pole Section 1**
- **Pole Section 2**
- **Handhole A**
- **Handhole B**

**POLE/BASE PLATE WELD**

- **Pole Top Luminaire**
- **See Detail A**
- **See Note**

**INFORMATION**

- **Date:** SEPTEMBER 2014
- **Dimensions, and Base Plate Weld Detail**
- **Traffic Signal Cantilever Structure**
- **Indiana Department of Transportation**
- **Standard Drawing No. E 805-TSCS-09**
NOTES:

1. Number of cable inlets depends on L. See Arm Dimensions Table.
   The inlet diameter shall be 1 3/4" with rubber grommet (typ.).

2. Optional splice can be used for arm length of greater than 40 ft. Field
   assembly shall achieve a snug tight joint having overlap not less than
   1.5 times the inside dimension of the end section.

3. Arm rise R is measured in the undeflected position without vertical
   loads on the arm.


5. If seam welds are used, the weld location for the arms shall be along
   the bottom, and on the side of the pole as shown.

<table>
<thead>
<tr>
<th>L</th>
<th>ARM DIAMETER AT POLE</th>
<th>ARM WALL THICKNESS</th>
<th>R</th>
<th>CABLE INLETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>15'</td>
<td>5 1/2&quot;</td>
<td>1/8&quot;</td>
<td>7 1/2&quot;</td>
<td>A</td>
</tr>
<tr>
<td>20'</td>
<td>5 1/2&quot;</td>
<td>1/8&quot;</td>
<td>10&quot;</td>
<td>A</td>
</tr>
<tr>
<td>25'</td>
<td>7&quot;</td>
<td>1/8&quot;</td>
<td>1'-0 1/2&quot;</td>
<td>A</td>
</tr>
<tr>
<td>30'</td>
<td>8&quot;</td>
<td>1/8&quot;</td>
<td>1'-3&quot;</td>
<td>A, B</td>
</tr>
<tr>
<td>35'</td>
<td>8&quot;</td>
<td>1/8&quot;</td>
<td>1'-5 1/2&quot;</td>
<td>A, B</td>
</tr>
<tr>
<td>40'</td>
<td>9&quot;</td>
<td>1/8&quot;</td>
<td>1'-8&quot;</td>
<td>A, B, C</td>
</tr>
<tr>
<td>45'</td>
<td>10&quot;</td>
<td>1/8&quot;</td>
<td>1'-10 1/2&quot;</td>
<td>A, B, C</td>
</tr>
<tr>
<td>50'</td>
<td>11&quot;</td>
<td>1/8&quot;</td>
<td>2'-1&quot;</td>
<td>A, B, C</td>
</tr>
<tr>
<td>55'</td>
<td>11&quot;</td>
<td>1/8&quot;</td>
<td>2'-3 1/2&quot;</td>
<td>A, B, C</td>
</tr>
<tr>
<td>60'</td>
<td>12&quot;</td>
<td>1/8&quot;</td>
<td>2'-6&quot;</td>
<td>A, B, C</td>
</tr>
</tbody>
</table>
**ELEVATION OF GUSSET PLATES**

**TOP OF GUSSET PLATES**

- **Stiffener Plate**
  - Thickness 3/8"

- **Gusset Plate**

- **Backup Ring**

**SECTION F-F**

- **Combination Arm**
- **Rotation Point**
- **Gusset Plate Thickness 3/8"**
- **3" Ø Hole With Rubber Grommet for Cable Access in Pole and Flanges**

**ELEVATION**

**SECTION G-G**

- **Gusset Plates**
- **Flange Plate**
- **4 - Bolts Each With 1 - Hex Nut & 2 - Flat Washers**
- **1/8" - 9 UNC x 3.5" Long**
- **3° Max**

**DETAIL C - ARM WELD**

- **Seal Weld**
- **Back Ring**
- **3" Ø Hole With Rubber Grommet for Cable Access in Pole and Flanges**

**PLATES AND BOLTS FOR COMBINATION ARM CANTILEVER**

<table>
<thead>
<tr>
<th>ARM LENGTH</th>
<th>FLANGE PLATE A x B</th>
<th>BOLT PATTERN C x D</th>
<th>FLANGE PLATE THICKNESS</th>
<th>BOLT</th>
</tr>
</thead>
<tbody>
<tr>
<td>15&quot; to 35&quot;</td>
<td>20&quot; x 20&quot;</td>
<td>17&quot; x 17&quot;</td>
<td>1&quot;</td>
<td>7/8&quot; - 9 UNC x 3.5&quot; Long</td>
</tr>
<tr>
<td>&gt;35&quot; to 60&quot;</td>
<td>25&quot; x 25&quot;</td>
<td>22&quot; x 22&quot;</td>
<td>1&quot;</td>
<td>7/8&quot; - 9 UNC x 3.5&quot; Long</td>
</tr>
</tbody>
</table>

**NOTES:**

2. The required combination arm rise shall be built into the gusset plate at the angle X. The angle X is described as arc tan R/L, where R is the combination arm rise and L is the arm length. Both R and L vary and are listed in the Arm Dimensions Table on Standard Drawing E 805-TSCS-03.
3. Use continuous backing ring, 5/16" x 2" minimum. Tack weld only in root area of final weld.

**INDIANA DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL CANTILEVER STRUCTURE COMBINATION ARM CONNECTION DETAILS**

**SEPTEMBER 2014**

**STANDARD DRAWING NO.**

**E 805-TSCS-11**

/s/ Alfredo B. Hanza 12/02/13

/s/ Mark A. Miller 12/05/13

DESIGN STANDARDS ENGINEER  DATE  CHIEF ENGINEER  DATE
NOTES:
3. Diameter at the bottom of Pole Section 2 shall match the diameter at the top of Pole Section 1.
1. Orient bottom splice and bottom connection plates with combination arm as shown on the top of pole section 1.

2. All plate dimensions shall be based upon the outside diameter D at the top of pole section 1.

3. Diameter at bottom of pole section 2 shall match the diameter at the top of pole section 1.

**NOTES:**

- **1** Combination Arm direction
- **2** Combining arm as shown on the bottom splice plate detail on Standard Drawings E 805-TSCS-04 and -12.
- **3** Diameter at bottom of pole section 2 shall match the diameter at the top of pole section 1.
1. The structure arms and pole are designed for the above loading conditions. Foundation types A and C are designed for arms having length of 35 ft or less. See Standard Drawings E 805-TSCS-16 and -18 for foundation types A and C.
NOTES:
2. The structure arms and pole are designed for the above loading conditions. Foundation types B and D are designed for arms having length of greater than 35 ft to 60 ft. See Standard Drawings E 805-TSCS-17 and -19 for foundation types B and D.
NOTES:
1 Alternate 6" x 6" x 1/2" square washer with hex nut welded to lower end may be substituted for bent anchor bolt.
2 Bolt circle, b, shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.
4 A tooled line or other type of permanent marking shall be provided on the top of the foundation to indicate the direction of the conduit.
**INDIANA DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL CANTILEVER STRUCTURE**

**DRILLED SHAFT FOUNDATION TYPE B**

**FOR ARM OF GREATER THAN 35' TO 60'**

**SEPTEMBER 2013**

**BILL OF MATERIALS**

**DRILLED SHAFT TYPE B**

<table>
<thead>
<tr>
<th>REINFORCING BARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE OR MARK</td>
</tr>
<tr>
<td>#7</td>
</tr>
<tr>
<td>#7</td>
</tr>
<tr>
<td>Total #7</td>
</tr>
</tbody>
</table>

**CONCRETE**

Concrete, Class A 7.5 CYS

**NOTES:**

1. Alternate 8" x 8" x 1/2" square plate tapped and welded to the anchor bolt may be substituted for bent anchor bolt.

2. Bolt circle, b, shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.


4. A tooled line or other type of permanent marking shall be provided on the top of the foundation to indicate the direction of the conduits.

**ANKOR BOLT B DETAIL**

- #7 401 x 12'-6"
- 2 1/4" Ø anchor bolts
- 1" Ø conduit for ground wire
- See Standard Drawing E 805-SGGR-01

**GROUNDING BUSHING**

- 1" Ø conduit
- Bolt circle, 2 1/2" Min. Clearance To Weld At Pole
- Metal skirt (See detail)

**BASE PLATE B**


**ANCHOR BOLT B DETAIL**

- 2 1/4" Ø anchor bolts
- 1" Ø conduit
- 2 1/2"Ø Hole

**SIDE VIEW**

- 2'-6" 1'-9 7/8" 2'-6" 3"
- 1"Ø conduit
- 15-#7 x 15'-6" (Typ.)
- 2 1/4"Ø x 8'-0" Anchor bolts (Typ.) on 2'-7"
- 2" Ø conduits even spaced

**SHAF SECTION**

- 4'-0"
- 2" Ø conduits
- 1" Ø conduit
- Grounding Bushing

**SECTION I-I**

- 2 1/4" anchor bolts
- 10-#7 x 15'-6" (Typ.)
- 17-#7 x 1'-0" Max. Spacing
- Grounding Bushing

**PLAN**

- Base plate B
- Metal skirt (See detail)

**ELEVATION**

- 5/16" Ø Stud Bolt (Typ.)
- 3/8" x 2" Slots
- 1"Ø conduit

**CONCRETE**

Concrete, Class A 7.5 CYS

**NOTES:**

1. Alternate 8" x 8" x 1/2" square plate tapped and welded to the anchor bolt may be substituted for bent anchor bolt.

2. Bolt circle, b, shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.


4. A tooled line or other type of permanent marking shall be provided on the top of the foundation to indicate the direction of the conduits.

**ANKOR BOLT B DETAIL**

- #7 401 x 12'-6"
- 2 1/4" Ø anchor bolts
- 1" Ø conduit
- Bolt circle, 2 1/2" Min. Clearance To Weld At Pole
- Metal skirt (See detail)

**BASE PLATE B**


**ANCHOR BOLT B DETAIL**

- 2 1/4" Ø anchor bolts
- 1" Ø conduit
- 2 1/2"Ø Hole

**SIDE VIEW**

- 2'-6" 1'-9 7/8" 2'-6" 3"
- 1"Ø conduit
- 15-#7 x 15'-6" (Typ.)
- 2 1/4"Ø x 8'-0" Anchor bolts (Typ.) on 2'-7"
- 2" Ø conduits even spaced

**SHAF SECTION**

- 4'-0"
- 2" Ø conduits
- 1" Ø conduit
- Grounding Bushing

**SECTION I-I**

- 2 1/4" anchor bolts
- 10-#7 x 15'-6" (Typ.)
- 17-#7 x 1'-0" Max. Spacing
- Grounding Bushing

**PLAN**

- Base plate B
- Metal skirt (See detail)

**ELEVATION**

- 5/16" Ø Stud Bolt (Typ.)
- 3/8" x 2" Slots
- 1"Ø conduit

**CONCRETE**

Concrete, Class A 7.5 CYS

**NOTES:**

1. Alternate 8" x 8" x 1/2" square plate tapped and welded to the anchor bolt may be substituted for bent anchor bolt.

2. Bolt circle, b, shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.


4. A tooled line or other type of permanent marking shall be provided on the top of the foundation to indicate the direction of the conduits.

**ANKOR BOLT B DETAIL**

- #7 401 x 12'-6"
- 2 1/4" Ø anchor bolts
- 1" Ø conduit
- Bolt circle, 2 1/2" Min. Clearance To Weld At Pole
- Metal skirt (See detail)

**BASE PLATE B**


**ANCHOR BOLT B DETAIL**

- 2 1/4" Ø anchor bolts
- 1" Ø conduit
- 2 1/2"Ø Hole

**SIDE VIEW**

- 2'-6" 1'-9 7/8" 2'-6" 3"
- 1"Ø conduit
- 15-#7 x 15'-6" (Typ.)
- 2 1/4"Ø x 8'-0" Anchor bolts (Typ.) on 2'-7"
- 2" Ø conduits even spaced

**SHAF SECTION**

- 4'-0"
- 2" Ø conduits
- 1" Ø conduit
- Grounding Bushing

**SECTION I-I**

- 2 1/4" anchor bolts
- 10-#7 x 15'-6" (Typ.)
- 17-#7 x 1'-0" Max. Spacing
- Grounding Bushing

**PLAN**

- Base plate B
- Metal skirt (See detail)

**ELEVATION**

- 5/16" Ø Stud Bolt (Typ.)
- 3/8" x 2" Slots
- 1"Ø conduit

**CONCRETE**

Concrete, Class A 7.5 CYS

**NOTES:**

1. Alternate 8" x 8" x 1/2" square plate tapped and welded to the anchor bolt may be substituted for bent anchor bolt.

2. Bolt circle, b, shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.


4. A tooled line or other type of permanent marking shall be provided on the top of the foundation to indicate the direction of the conduits.
**BILL OF MATERIALS**

**SPREAD FOOTING TYPE C**

<table>
<thead>
<tr>
<th>Size or Mask</th>
<th>Number of Bars</th>
<th>Length</th>
<th>Weight (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>6</td>
<td>11'-4&quot;</td>
<td></td>
</tr>
<tr>
<td>702</td>
<td>8</td>
<td>6'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>Total #7</td>
<td>237</td>
<td></td>
<td></td>
</tr>
<tr>
<td>501</td>
<td>15</td>
<td>11'-8&quot;</td>
<td></td>
</tr>
<tr>
<td>Total #5</td>
<td>183</td>
<td></td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>5</td>
<td>11'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>302</td>
<td>10</td>
<td>3'-4&quot;</td>
<td></td>
</tr>
<tr>
<td>Total #4</td>
<td>224</td>
<td></td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>5</td>
<td>11'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>302</td>
<td>10</td>
<td>3'-4&quot;</td>
<td></td>
</tr>
<tr>
<td>Total #3</td>
<td>33</td>
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<td></td>
</tr>
<tr>
<td>Total Reinforcing Bars</td>
<td>677</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Concrete, Class A**

**8.2 CYS**

---

**NOTES:**
1. Alternate 6" x 6" x 1/2" square washer with hex nut welded to lower end may be substituted for the bend in the anchor bolt.
2. Minimum H required is 4 ft. soil cover over the entire footing area.
3. Bolt circle, B, shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.
6. A tooled line or other type of permanent marking shall be provided on the top of the foundation to indicate the direction of the conduits.

---

**INDIANA DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL CANTILEVER STRUCTURE**

**SPREAD FOOTING FOUNDATION TYPE C**

**FOR ARM OF 35' OR LESS**

**SEPTEMBER 2013**

---

**STANDARD DRAWING NO.**

**E 805-TSCS-18**

---

**DATE**

<table>
<thead>
<tr>
<th>Designer</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfredo B. Hanza</td>
<td>02/05/13</td>
</tr>
<tr>
<td>Mark A. Miller</td>
<td>03/27/13</td>
</tr>
</tbody>
</table>

---

**STATE OF INDIANA**

**PROFESSIONAL ENGINEER**

---

**ANCHOR BOLT C DETAIL**

---

**SECTION K-K**

---

**SECTION L-L**

---

**SECTION J-J**

---

**PLAN**

---

**ELEVATION**

---

**GROUNDING BUSHING**

---

**SECTION 3-3**

---

**REINFORCING BARS**

---

**6-701 (Bottom)**

---

**8-#4 x 10'-6" (Bottom)**

---

**15-501 (Bottom)**

---

**12-#4 x 10'-6" (Top) @ 12" Max. spacing**

---

**11 Spaces @ 1'-0" Max. = 10'-6" (Top)**

---

**14 Spaces @ 9" = 10'-6" (Bottom)**

---

**SECTION K-K**

---

**ANCHOOR BOLT C DETAIL**

---

**STANDARD DRAWING NO.**

**E 805-TSCS-18**

---

**DATE**

<table>
<thead>
<tr>
<th>Designer</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfredo B. Hanza</td>
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</tr>
<tr>
<td>Mark A. Miller</td>
<td>03/27/13</td>
</tr>
</tbody>
</table>

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**STATE OF INDIANA**

**PROFESSIONAL ENGINEER**

---

**ANCHOR BOLT C DETAIL**

---

**SECTION L-L**

---

**GROUNDING BUSHING**

---

**SECTION K-K**

---

**1'-0" Ø conduit for ground wire**

---

**SECTION J-J**

---

**PLAN**

---

**ELEVATION**

---

**GROUNDING BUSHING**

---

**SECTION K-K**

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**ANCHOR BOLT C DETAIL**

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**STATE OF INDIANA**

**PROFESSIONAL ENGINEER**

---
### Bill of Materials

<table>
<thead>
<tr>
<th>Rebar Size</th>
<th>Length</th>
<th>Weight (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#7</td>
<td>13'-0&quot;</td>
<td>341</td>
</tr>
<tr>
<td>#3</td>
<td>302</td>
<td>17</td>
</tr>
<tr>
<td>#4</td>
<td>701</td>
<td>701</td>
</tr>
<tr>
<td>#8</td>
<td>562</td>
<td>562</td>
</tr>
<tr>
<td>#4</td>
<td>1468</td>
<td>1468</td>
</tr>
</tbody>
</table>

### Reinforcing Bars

- **Concrete, Class A**
- **Total Reinforcing Bars**: 1468
- **Total #7**: 13'-0"
- **Total #3**: 10'-6"
- **Total #4**: 302
- **Total #8**: 504
- **REINFORCING BARS**
  - **SECTION O-O**: 1 1/2" Min. clearance to weld at pole
  - **SECTION M-M**: Base plate B, 2'-7" circle, evenly spaced
  - **SECTION N-N**: 1" Ø conduit

### Notes:

1. Alternate 8" x 8" x 1/2" square plate gapped and welded to anchor bolt may be substituted for the bent anchor bolt.
2. Minimum H required is 4 ft. soil cover over the entire footing area.
3. Bolt circle, B, shall allow clearance for the plate washer. Cutting or trimming the washer will not be allowed.
6. A tooled line or other type of permanent marking shall be provided on the top of the foundation to indicate the direction of the conduits.

---

**SHOP DRAWING NO.**

- **STATE OF**
- **E 805-TSCS-19**

---

**BILL OF MATERIALS**

**SPREAD FOOTING TYPE D**

- **SIZE OR MARK**
  - 801: 8" 11'-5"
  - 802: 16" 6'-1"

---

**INDIANA DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL CANTILEVER STRUCTURE**

**SPREAD FOOTING FOUNDATION TYPE D**

**FOR ARM OF GREATER THAN 35' TO 60' SEPTEMBER 2013**

---

**ANCHOR BOLT D DETAIL**

- **ANCHOR BOLT COVER**
- **Steel base plate B**
- **Galvanized metal skirt**

---

**CONCRETE**

- **Concrete, Class A**: 12.0 CYS

---

**DESIGN STANDARDS ENGINEER**

**CHIEF ENGINEER**

**DATE**

**STATE OF**

**IN**

**PROFESSIONAL ENGINEER**

**DATE**