COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

Standard Drawings
for
Traffic Signals
and
Highway Lighting

Traffic Engineering

Boston, Massachusetts
1968
<table>
<thead>
<tr>
<th>INDEX</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbols Used on Signal Layouts</td>
<td>3</td>
</tr>
<tr>
<td>Symbols Used on Lighting Layouts</td>
<td>4</td>
</tr>
<tr>
<td>Traffic Signal Cable - Color Code</td>
<td>5</td>
</tr>
<tr>
<td>Design Loading - Highway Lighting Poles</td>
<td>6</td>
</tr>
<tr>
<td>Conduit</td>
<td></td>
</tr>
<tr>
<td>Fibre duct in trench</td>
<td>7</td>
</tr>
<tr>
<td>Fibre duct - concrete encased</td>
<td>8</td>
</tr>
<tr>
<td>Duct crossing roadway</td>
<td>9</td>
</tr>
<tr>
<td>Duct end location</td>
<td>10</td>
</tr>
<tr>
<td>Electric Manholes</td>
<td></td>
</tr>
<tr>
<td>3&quot; Diameter x 3 1/2&quot; - (SD2.010)</td>
<td>11</td>
</tr>
<tr>
<td>3 1/2&quot; x 4 1/2&quot; x 5 1/2&quot; - (SD2.011)</td>
<td>12</td>
</tr>
<tr>
<td>4 1/4&quot; x 4 1/4&quot; x 6 1/2&quot; - (SD2.012)</td>
<td>13</td>
</tr>
<tr>
<td>5 1/2&quot; x 7 1/2&quot; x 7 1/2&quot; - (SD2.013)</td>
<td>14</td>
</tr>
<tr>
<td>6 1/2&quot; x 9 1/2&quot; x 10 1/2&quot; - (SD2.014)</td>
<td>15</td>
</tr>
<tr>
<td>4 1/2&quot; x 4 1/2&quot; x 6 1/2&quot; - (SD2.015)</td>
<td>16</td>
</tr>
<tr>
<td>Electric Handholes</td>
<td></td>
</tr>
<tr>
<td>13&quot; Diameter - Fibre - (SD2.020)</td>
<td>17</td>
</tr>
<tr>
<td>24&quot; Diameter - Fibre - (SD2.021)</td>
<td>18</td>
</tr>
<tr>
<td>24&quot; x 13&quot; x 36&quot; - Concrete - (SD2.022)</td>
<td>19</td>
</tr>
<tr>
<td>24&quot; x 24&quot; x 36&quot; - Concrete - (SD2.023)</td>
<td>20</td>
</tr>
<tr>
<td>36&quot; x 36&quot; x 36&quot; - Concrete - (SD2.024)</td>
<td>21</td>
</tr>
<tr>
<td>Pull Boxes</td>
<td></td>
</tr>
<tr>
<td>8&quot; x 23&quot; - (SD2.030)</td>
<td>22</td>
</tr>
<tr>
<td>12&quot; x 12&quot; - (SD2.031)</td>
<td>23</td>
</tr>
<tr>
<td>Pull Box Frame &amp; Cover</td>
<td>24</td>
</tr>
<tr>
<td>Light Standard Foundations</td>
<td></td>
</tr>
<tr>
<td>Anchor Base Foundation - (SD3.010)</td>
<td>25</td>
</tr>
<tr>
<td>Anchor Base Foundation - (SD3.011)</td>
<td>26</td>
</tr>
<tr>
<td>Transformer Base Foundation - (SD3.012)</td>
<td>27</td>
</tr>
<tr>
<td>Foundation for 30'-40' Mounting Height - (SD3.013)</td>
<td>28</td>
</tr>
<tr>
<td>Foundation for 40'-100' Mounting Height - (SD3.014)</td>
<td>29</td>
</tr>
<tr>
<td>Foundation on Structures</td>
<td></td>
</tr>
<tr>
<td>Lighting Load Center Foundation - (SD3.020)</td>
<td>30</td>
</tr>
<tr>
<td>Traffic Signal Post Foundations</td>
<td></td>
</tr>
<tr>
<td>Standard Signal Post Foundation - (SD3.030)</td>
<td>31</td>
</tr>
<tr>
<td>Pedestal Type Foundation - (SD3.031)</td>
<td>32</td>
</tr>
<tr>
<td>Mast Arm Foundation - (SD3.040)</td>
<td>33</td>
</tr>
<tr>
<td>Traffic Signal Control Box Foundation - (SD3.050)</td>
<td>34</td>
</tr>
<tr>
<td>Traffic Signal Control Box Locks &amp; Keys</td>
<td>35</td>
</tr>
<tr>
<td>Traffic Signal Service Connection - Overhead</td>
<td>36</td>
</tr>
<tr>
<td>Painting</td>
<td></td>
</tr>
<tr>
<td>Standard marking on signal post to indicate pedestrian push button</td>
<td>37</td>
</tr>
<tr>
<td>location</td>
<td></td>
</tr>
<tr>
<td>Traffic Signal Posts and Poles</td>
<td></td>
</tr>
<tr>
<td>Standard Post and Base</td>
<td>38</td>
</tr>
<tr>
<td>Standard Post with Signal and Pedestrian Housings</td>
<td>39</td>
</tr>
<tr>
<td>Signal Post - Pedestal Type</td>
<td>40</td>
</tr>
</tbody>
</table>
## INDEX

| Column Base - Pedestal Type | 41 |
| Pedestal Base | 42, 43 |
| Mast Arm | 44 |
| Monolever Signal Pole | 45 |

### Signal Assemblies and Mounting Assemblies

| 8" Traffic Signal Assembly | 46 |
| Standard Arrow for 8" Signal Lens | 47 |
| Standard Arrow for 12" Signal Lens | 48 |
| Post Top Mounted 8" Traffic Signals | 49 |
| Mounting 8" Traffic Signals | 50 |
| Pole Clamps for Steel Pole Mounting | 51 |
| Mast Arm Hanger - Type 2 | 52 |
| Mast Arm Hanger - Type 1 | 53 |
| Side Mounted Slip Fitter for Mast Arm Mounting | 54 |
| Louvers for 8" Signals | 55 |
| Backplates for 8" Signals | 56 |
| Meter Box Casting for 4" Pipe Post | 57 |
| Meter Box Casting - Flat Front Pipe Entrance | 58 |
| Wire Loop Detector Installation | 59 |
| Pedestrian Actuated Signal Signs | 60 |
| Wiring Diagram for Mercury Luminaire | 61 |
| Utility Service Pole Riser - Highway Lighting | 62 |
| Flashing Beacons | 63 |
| Illuminated Turn & Curve Signs | 64 |
SYMBOLS USED ON SIGNAL LAYOUTS

- Signal Post
- 12" X 12" Pull Box
- 8" X 23" Pull Box
- Control Cabinet
- Flashing Beacon Control & Meter Pedestal
- Wooden Pole
- Mast on Wooden Pole
- Steel or Aluminum Mast Arm
- Magnetic Detector
- Magnetic Lane Detector
- Pressure Detector
- Directional Magnetic Detector
- Radar Detector
- Sonic Detector
- Inductive Loop Detector
- Pedestrian Push Button
- Signal or Flasher Housing
- Proposed Conduit
- Existing Conduit
- Overhead Cable
- Pedestrian Walk—Dont Walk Signal
- Direct Burial Cable
SYMBOLS USED ON LIGHTING LAYOUTS

- High Mast Pole or Tower
- Bracket Arm Length
- Type of Light Distribution
- Stationing Designation of Light Standard
- Letter (A) Indicates Circuit
- Number (7) Indicates Standard
- Existing or Future Assembly By Others
- Flood Type Luminaire
- Fluorescent Luminaire
- Electric Handhole
- Electric Manhole
- Ground
- Load Center Assembly
- 12" X 12" Pull Box
- 6" X 23" Pull Box
- Control Cabinet
- Wooden Pole
- Proposed Conduit (Size, Type, No. Cables)
- Existing Conduit
- Overhead Cable
- Direct Burial Cable (Size)
<table>
<thead>
<tr>
<th>No.</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Black</td>
<td>Power-Pedestrian Push Button, Arrows, Spare</td>
</tr>
<tr>
<td>2.</td>
<td>White</td>
<td>Common</td>
</tr>
<tr>
<td>3.</td>
<td>Red</td>
<td>Phase-Main St.</td>
</tr>
<tr>
<td>4.</td>
<td>Green</td>
<td>Phase-Main St.</td>
</tr>
<tr>
<td>5.</td>
<td>Orange</td>
<td>Phase-Main St.</td>
</tr>
<tr>
<td>6.</td>
<td>Blue</td>
<td>Pedestrian Walk, Arrows, Spare</td>
</tr>
<tr>
<td>7.</td>
<td>White-Black</td>
<td>Pedestrian Don't-Walk, Arrows, Spare</td>
</tr>
<tr>
<td>8.</td>
<td>Red-Black</td>
<td>Phase-Side St.</td>
</tr>
<tr>
<td>10.</td>
<td>Orange-Black</td>
<td>Phase-Side St.</td>
</tr>
<tr>
<td>11.</td>
<td>Blue-Black</td>
<td>Pedestrian Walk, Arrows, Spare</td>
</tr>
<tr>
<td>15.</td>
<td>Blue-White</td>
<td>Phase-Side St.</td>
</tr>
<tr>
<td>16.</td>
<td>Black-Red</td>
<td>Miscellaneous and Spare</td>
</tr>
<tr>
<td>17.</td>
<td>White-Red</td>
<td>Miscellaneous and Spare</td>
</tr>
<tr>
<td>18.</td>
<td>Orange-Red</td>
<td>Miscellaneous and Spare</td>
</tr>
<tr>
<td>19.</td>
<td>Blue-Red</td>
<td>Miscellaneous and Spare</td>
</tr>
<tr>
<td>20.</td>
<td>Red-Green</td>
<td>Miscellaneous and Spare</td>
</tr>
<tr>
<td>21.</td>
<td>Orange-Green</td>
<td>Miscellaneous and Spare</td>
</tr>
</tbody>
</table>

Either Type I or Type 2 Traffic Signal Cable as specified in Section 804 may be installed when the air temperature is above 32°F. Type 2 Traffic Signal Cable shall be installed when the air temperature falls between 32°F and 20°F. No Cable is to be installed when the air temperature is below 20°F.

When Pedestrian Signal Heads have been incorporated in the installation at least 2 spare conductors shall be provided in all Signal Cable Runs. All other installations shall have at least 5 spare conductors provided in all Signal Cable Runs.
The design shall maintain a minimum safety factor of 1.8 on yield strength for weight load and basic wind pressure (P) and a safety factor of 4.0 on yield strength for weight loads only.

To obtain wind pressure (P) apply shape factor (C) to the velocity pressure (Q).

\[ P = Q \times C; Q_{(psf)} = 0.00256 \times V^2 \times F^2 \times C_h; V = \text{wind velocity (mph)}, F = \text{gust factor (1.3)}; C_h = \text{correction factor for height. (Taken into consideration in determining Q in chart below)} \]

<table>
<thead>
<tr>
<th>Height Above Ground Elev. (feet)</th>
<th>Velocity Pressure Q West of 71°-41'</th>
<th>Velocity Pressure Q East of 71°-41'</th>
<th>Type of Structure or Member</th>
<th>Shape Factor C</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-30</td>
<td>20</td>
<td>43</td>
<td>Ellipsoidal + Cylindrical</td>
<td>0.67</td>
</tr>
<tr>
<td>30-50</td>
<td>21</td>
<td>47</td>
<td>Flat or Angular</td>
<td>0.83</td>
</tr>
<tr>
<td>50-100</td>
<td>24</td>
<td>53</td>
<td></td>
<td>1.30</td>
</tr>
<tr>
<td>100-300</td>
<td>29</td>
<td>64</td>
<td>Max Luminaire Weight 75 #</td>
<td></td>
</tr>
<tr>
<td>300-500</td>
<td>32</td>
<td>71</td>
<td>Max Lum. Projected Area 3.3</td>
<td></td>
</tr>
<tr>
<td>( V = 67 \text{ mph} )</td>
<td></td>
<td></td>
<td>Max Lum. Support Length 15 ft.</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: + Standard metallic vapor luminaire shape.
\[ \text{□ Poles and bracket arm shapes.} \]
100 mm CEM. CONC. SIDEWALK

900mm (750mm MIN.)
750mm (600mm MIN.)
600mm
(450 mm MIN.)

CONTROLLED DENSITY FILL
Metal Foil
YELLOW MARKING TAPE
(on top)

450 mm

75 mm NM CONDUIT

CONDUIT DETAIL FOR SIDEWALK CROSSING
NOT TO SCALE
CONDUIT DETAIL FOR ROADWAY CROSSING
NOT TO SCALE
TYPICAL CONDUIT ENCASEMENT
UNDER PAVEMENT

All 3" Fibre Ducts in Concrete Envelopes to be 30 inches
Under All Paved Surfaces
LOCATION OF TRAFFIC SIGNAL DUCT END

Tie point for location of proposed junction or end marker.

EXCEPTION
When signal post location is less than 30" from curb, extend duct to back of curb.

Finished Surface

2" X 6" Plank

Scale: $\frac{3}{32}'' = 1''$
3' Dia. X 3'-6" ELECTRIC MANHOLE

CONSTRUCTION: Either Brick or Concrete.

MASS. D.P.W.

40"

27½"

36" Dia.

30" min.

42"

4"

MASS. D.P.W. TRAFFIC ENGINEERING SECTION
SEPTEMBER 1967
SD2-010
3'-6" X 4'-6" X 5'-0" ELECTRIC MANHOLE

CONSTRUCTION: Either Brick or Concrete.

2-3/4" Rods
4'-0" Long

2-3/4" Rods
4'-0" Long

Street Level

5'-0"

30" min

8"

4'-6"

3'-2"

Sump

Brick Collar Course

MASS. D.P.W. TRAFFIC ENGINEERING SECTION

SEPTEMBER 1967

SD2-011
4' X 4' X 6' ELECTRIC MANHOLE

Mass. D.P.W.

P.S. 1/2

30" (min.)

1'-9"

72"

5'-0"

3" Bell End

Pulling Irons

8"

5'-4"

12"

8"
ELECTRIC MANHOLE
18 in. Dia. & 24 in. Dia. ELECTRIC HANDBOKE

BITUMINIZED FIBER TUBE

MASS. D.P.W. TRAFFIC ENGINEERING SECTION

SEPTEMBER 1967
24 in. X 13 in. X 36 in. ELECTRIC HANDHOLE

MASS.
D. P. W.

2'-0"  4"

Bell End  2" x 6" Plank

Gravel

MASS. D. P. W. TRAFFIC ENGINEERING SECTION
SEPTEMBER 1967
24 in. X 24 in. X 36 in. ELECTRIC HANDHOLE

MASS. D.P.W.

Excess as Otherwise Indicated

2' - 0" (min)

3' Bell End

2" Steel Conduit

Pulling Irons

Class A' Cement
Conc. Masonry

SD2 - 024
Cast Iron Frame & Cover
Letter MASS D.P.W. on Cover.
Approx Wt. 350 lbs.

NOTE:
For the exact number, size and orientation of the conduits entering the handhole, see the contract lighting plans.

ELECTRIC HANDBOKE
FRAME AND COVER FOR JUNCTION BOX

MASS. D.P.W.

ALL DIMENSIONS IN INCHES

<table>
<thead>
<tr>
<th>SIZE OF COVER</th>
<th>DEPTH</th>
<th>CLEAR OPENING</th>
<th>OVERALL</th>
<th>FLANGE</th>
<th>APPROX. WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 x 12</td>
<td>3 1/2</td>
<td>10 1/2 x 10 1/2</td>
<td>17 1/4 x 17 1/4</td>
<td>1/2</td>
<td>80</td>
</tr>
<tr>
<td>8 x 23</td>
<td>2 1/2</td>
<td>6 1/2 x 21 1/2</td>
<td>13 3/4 x 28 1/2</td>
<td>1/2</td>
<td>80</td>
</tr>
</tbody>
</table>

MASS. D.P.W.

THE WORD MASS. HAS 1/4 SPACING. Scale: 1/4 = 1"
Anchor Bolts shall be set by the Light Standard Manufacturers recommendations.

Anchor. Bolts to be supplied by Light Standard Manufacturer.

Light Standard with Anchor Base. (By Others)

Ground Neutral

Grounding Stud

Ground Line

2"-10 Cables

2" Steel Sweep Conduit.

Anchor Bolts 1" X 40" lg.

6'-6" Min.

Class "D" Cem. Conc. for Precast.

6-4 Hoops.

2" Steel Conduit

PLAN

ANCHOR BASE FOUNDATION
(Precast or Cast in Place)
ROADWAY ILLUMINATION ANCHOR BASE FOUNDATION
(PRECAST OR CAST IN PLACE)
Scale: 3/4" = 1'-0"

Anchor Bolts Shall be Set to Manufacturer of Light Standard Recommendation.

Section G-G

8-3/4 Bars
(One for each Corner & One Between Corners)

1/2 Tie Bar

2'6" Galy Sweep
Conduit Sweep

Ground Line

Class D Cement Conc. For Precast
Class A Cement Conc. for Cast in Place

5'6"

2'6"
TYPICAL LIGHT STANDARD FOUNDATION

1" Drainage Trough.

2" Clearance

#3 Spirals @ 3" Pitch (Typ)

"A" See Charts

"B" See Charts

3" Steel Conduit

3" Cl. Top & Bottom

FOUNDAION DESIGN CHART

<table>
<thead>
<tr>
<th>Mounting Height</th>
<th>Diameter &quot;B&quot;</th>
<th>Depth &quot;D&quot;</th>
<th>Vertical Reinforcement &quot;A&quot;</th>
<th>Std. Detail Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>30'-40'</td>
<td>3'-0&quot;</td>
<td>7'-0&quot;</td>
<td>8 - #5</td>
<td>SD3.013</td>
</tr>
<tr>
<td>40'-100'</td>
<td>3'-0&quot;</td>
<td>10'-0&quot;</td>
<td>12 - #5</td>
<td>SD3.014</td>
</tr>
</tbody>
</table>

NOTES:

1. Cement concrete for foundations to be class 'A' cement concrete masonry.
2. A minimum slope of 1/8" per. ft. from edge of base plate to face of concrete.
3. The actual depth of foundation will be the "D" dimension above plus the 1/2" reveal.
4. The anchor bolts shall be supplied by the light standard manufacturer. The manufacturer shall also supply a template for setting the bolts and shall indicate the necessary projection.
Traffic Engineering Section 29
Standard Traffic Lighting Detail

SEE DETAIL NO. 2
CAST IRON JUNCTION BOX & GASKETED BOLT ON COVER, ENCLOSURE TO BE CAST IN PLACE.
LEVELING NUT
INSULATED GROUNDING BUSHING
HEX NUTS & WASHERS
2" MIN. GROUT AT C POLE

FLUSH
3/8" TOP BOTTOM & SIDES
NEOPRENE GASKET
STAINLESS STEEL CAP SCREW
3/8" HEX HEAD
3/8" BOLT ON COVER

NOTE:
BOX FLANGE & COVER TO BE MACHINED AT JUNCT.
DETAIL NO. 2
SCALE: NONE

CONSSTRUCTION JOINT
3" W.I. CONDUIT
1" DRAIN

ILLUMINATING ASSEMBLY
2'-6"
TOP OF COPING

CAST IRON JUNCTION BOX
24" X 10" X 14" DEEP
2" W.I. CONDUIT
3" W.I. CONDUIT
3/4" DRAIN

ANCHOR 'U' BOLT
2 REQUIRED PER STANDARD
1 DIA., 27" LONG, 4" THREAD.
COWL CIRCLE DIA. AS PER LIGHTING STANDARD MFG. RECOMMENDATION.

ELEVATION B-B
SCALE: 3/4" = 1'-0"

VIADUCT LIGHTING DETAILS
LIGHTING LOAD CENTER FOUNDATION

30\( \pm \)"

Finished Grade

5/8\( " \times 12" \) O.C. Copper Clad Ground Rod

Class "D" Concrete

Proposed Cabinet

16"

12"

5/8\( " \times 12" \) O.C. Both Ways - Top

#3 @ 18" O.C. Both Ways - Bottom

12" Gravel Subbase

Fiber to Steel Adapter

3" Steel Conduits As Required

#3 @ 18" O.C. Both Ways - Top

#5 @ 12" O.C. Both Ways - Bottom

48\( + \)

3'-0"
CONCRETE BASE
STANDARD TRAFFIC SIGNAL POST

Outline of Signal Base

Maximum distance between bolts 12 3/4"
Stirrups - 3/4" USS Thread

Class "D" Cement Concrete

SECTION A-A

Scale: 3/32" = 1"
CONCRETE BASE
PEDESTAL TYPE

Outline of Signal Base

To Suit Post Base
Anchor Rods 3/4" x 4'-0" long overall, 3/4"-10 USS threads. Galvanized

Dimensions before bending.
1" x 45° Chamfer.

Class D Cement Concrete

SECTION B-B

Scale 3/32" = 1"

3'-0" min.
TRAFFIC SIGNAL
MAST ARM FOUNDATION

Anchor bolts shall be set according to pole manufacturers recommendation.

GRANULAR BACKFILL
THOROUGHLY COMPACTED

SD3-040
Scale: 1/2 = 1'
STANDARD MARKING ON SIGNAL POSTS TO INDICATE PEDESTRIAN PUSH BUTTON LOCATION
STANDARD TRAFFIC SIGNAL
POST & BASE

Hand Hole Area
60+ Sq. inches
5\" x 10\" x 8\"

Scale: $\frac{3}{16} = 1\"$
Bottom of Pedestrian Housing Shall Be Mounted Not Less Than 7 Feet, Nor More Than 10 Feet Above The Sidewalk Level And So That There Is A Signal In The Line Of Vision Of Pedestrians Crossing In Any Cross Walk.
TRAFFIC SIGNAL POST
PEDESTAL TYPE

<table>
<thead>
<tr>
<th>TYPE</th>
<th>POST HT.</th>
<th>H</th>
<th>S</th>
<th>PIPE SHAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 A</td>
<td>8'-0&quot;</td>
<td>8'-0&quot;</td>
<td>5'-10&quot;</td>
<td>6'-1&quot;</td>
</tr>
<tr>
<td>3 B</td>
<td>9'-0&quot;</td>
<td>9'-0&quot;</td>
<td>6'-10&quot;</td>
<td>7'-1&quot;</td>
</tr>
<tr>
<td>3 C</td>
<td>10'-0&quot;</td>
<td>10'-0&quot;</td>
<td>7'-10&quot;</td>
<td>8'-1&quot;</td>
</tr>
<tr>
<td>3 P</td>
<td>5'-0&quot;</td>
<td>5'-0&quot;</td>
<td>2'-10&quot;</td>
<td>3'-1&quot;</td>
</tr>
</tbody>
</table>

4" Std. Pipe Shaft. Bottom End to be Threaded Outside, 4" Std. Pipe Thread.

SECTION D-D
Top Ends of Anchor Rods to Have 3/4"-10 Threads 4" Long.
Scale: 1" = 1'

BILL OF MATERIAL

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Qty</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedestal Base</td>
<td>1</td>
<td>Sheet Steel</td>
</tr>
<tr>
<td>2</td>
<td>Column Base *</td>
<td>1</td>
<td>Malleable Iron</td>
</tr>
<tr>
<td>3</td>
<td>Pipe Shaft</td>
<td>1</td>
<td>Steel</td>
</tr>
<tr>
<td>4</td>
<td>Anchor Rods</td>
<td>4</td>
<td>Steel Cadmium Plated</td>
</tr>
<tr>
<td>5</td>
<td>3/4&quot;-10 Hex Cap Nuts</td>
<td>4</td>
<td>Brass</td>
</tr>
<tr>
<td>6</td>
<td>3/4&quot;-10 Hex Nuts</td>
<td>4</td>
<td>Steel Cadmium Plated</td>
</tr>
<tr>
<td>7</td>
<td>Flat Washers</td>
<td>4</td>
<td>Steel Cadmium Plated</td>
</tr>
</tbody>
</table>

* See Column Base Drawing

SECTION B-B

SECTION A-A

4-3/4"X48" Long Steel Anchor Rods

SECTION C-C

By 30" Deep With Anchor Rods as Shown

Top of Anchor Rods to Project 2½" Above Conc. Base Before Bending.

Bottom Ends of Anchor Rods to be Bent as Shown.

Scale: 1" = 1'
NOTES
1. Material to be Malleable Iron.
2. All Surfaces to be Painted with a Prime Coat of Red Lead.

SECTION B-B

SECTION A-A
Scale: 1/2 = 1"
PEDESTAL BASE
TRAFFIC SIGNAL POST

9 3/4 Octagonal
6" Dia.

1 7/8

3/16"

Weld All Around

3/16" 1/4"

15" 15" 15" 15"

5 7/8 Dia. Opening

SHEET 1 OF 2 SHEETS

SECTION C-C
Scale: 1/2 = 1"

SECTION B-B

1 1/2" Opening
9 3/4 Octagonal
15/2.5 Octagonal, not shown, but referred to.

6" Dia.

1 7/8

9 3/4 Octagonal

Holes to be punched on center line with holes not to exceed 1/4"

3/16" Flat Bar, Weld Sides & Bottom.

1/2 x 1/2 x 1/4 Angle on All Sides

3/32" Gasket Plates

1 5/8" Dia. Opening

DOOR
Material: 10 Ga. Steel Plate
2-Lugs 2" x 1 3/16"
See Sect. A-A

Scale: 1/4 = 1"

These Faces to be Exactly Parallel and at Right Angles to the Vertical Axis of the Base.
PEDESTAL BASE
TRAFFIC SIGNAL POST

NOTES
1. All welds to be continuous & of std. proportions
2. All exterior joints to be watertight.
3. Sides of base to be fabricated of 10 gauge (min. thickness) sheet steel. Top to be fabricated from 3/8" steel plate.
4. All material & workmanship are to be to the complete satisfaction of the Department of Public Works.
5. All exterior welds to be ground smooth after fabrication.
6. Entire Pedestal Base to be Hot-Dipped Galvanized and all surfaces to be prepared for paint adherence.

SECTION "A-A"
Scale: 1”/2 = 1”

SHEET 2 OF 2 SHEETS
Mast Arms shall be wired from base to housing with Stranded Type 2 Traffic Signal Cable; or with Type 5 Traffic Signal Head Wire protected with Flexible Metal Conduit (liquid-tight as specified in subsection M5.07.2B) at the junction of Arm and Signal Heads and when permitted by the Engineer, at the junction of Shaft and Arm.
### MONOLEVER SIGNAL POLE

<table>
<thead>
<tr>
<th>Arm Spread (Ft)</th>
<th>Max. Weight Each Qty</th>
<th>Weight Each Lbs</th>
<th>Max. Weight Each</th>
<th>Arm Size</th>
<th>Pole Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>2</td>
<td>2.5</td>
<td>20</td>
<td>3</td>
<td>7 Ga. 5.0 x 3.0 x 3.0 x 20.0</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>2.5</td>
<td>20</td>
<td>3</td>
<td>7 Ga. 5.0 x 3.0 x 3.0 x 20.0</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>2.5</td>
<td>20</td>
<td>3</td>
<td>7 Ga. 5.0 x 3.0 x 3.0 x 20.0</td>
</tr>
<tr>
<td>22</td>
<td>3</td>
<td>2.5</td>
<td>20</td>
<td>3</td>
<td>7 Ga. 5.0 x 3.0 x 3.0 x 20.0</td>
</tr>
<tr>
<td>24</td>
<td>3</td>
<td>2.5</td>
<td>20</td>
<td>3</td>
<td>7 Ga. 5.0 x 3.0 x 3.0 x 20.0</td>
</tr>
</tbody>
</table>

Anchor Bolts Are Set To Manufacturers Specification.
EIGHT INCH TRAFFIC SIGNAL ASSEMBLY

HOUSING AND DOOR

LENS

TWIST ON VISOR

DOOR GASKET

LENS GASKET

REFLECTOR RING

REFLECTOR RING SPRING

LAMP

REFLECTOR

ATTACHING WASHERS

TERMINAL BLOCK

REFLECTOR GASKET

LAMP HOLDER

REFLECTOR BAIL

SHURLOCK BOSS
STANDARD ARROW FOR 12" SIGNAL LENS

Scale: 3/8" = 0'-1"
POST TOP MOUNTED
8" TRAFFIC SIGNALS

ONE WAY
THREE SECTION

TWO WAY
THREE SECTION

THREE WAY
THREE SECTION

FOUR WAY
THREE SECTION
MOUNTING 8" TRAFFIC SIGNALS

SPAN WIRE MOUNTED

ONE WAY
THREE SECTION

TWO WAY
THREE SECTION

THREE WAY
THREE SECTION

FOUR WAY
THREE SECTION

MAST ARM MOUNTED
POLE CLAMPS FOR
STEEL POLE MOUNTING
(MALLEABLE IRON)

POLE SIZE

<table>
<thead>
<tr>
<th>SINGLE 1 1/2&quot; HUB</th>
<th>DOUBLE 1 1/2&quot; HUB</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOM. I.D.</td>
<td>ACTUAL O.D.</td>
</tr>
<tr>
<td>4&quot;</td>
<td>4 1/2&quot;</td>
</tr>
<tr>
<td>5&quot;</td>
<td>5 9/16&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>6 5/8&quot;</td>
</tr>
<tr>
<td>7&quot;</td>
<td>7 5/8&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>8 5/8&quot;</td>
</tr>
</tbody>
</table>

---

Image of a pole clamp diagram with dimensions.
After signal has been plumbed and secured, drill 7/16" hole through mast arm in line with hole through slip fitter.
Place 3/8" galvanized bolt with washer under bolt head through hole and secure with two nuts and a washer.
MAST ARM HANGER
TYPE 1
SIDE MOUNTED SLIP FITTER
FOR MAST ARM MOUNTING

After signal has been plumbed and secured drill 7/16" hole through mast arm in line with hole through slip fitter.

Place 3/8" galvanized bolt, with washer under head through hole and secure with two nuts and a washer.

(Use only when indicated on plans.)
LOUVERS FOR 8" SIGNALS

Directional, 3-Vane, with 3° cut-off right of center. Rotate louver 180° for 3° cut-off left of center.

Directional, 6-Vane, with 3° cut-off right of center. Rotate louver 180° for 3° cut-off left of center.
MAST ARM MOUNTING
BACKPLATES
FOR
8" SIGNAL

Drill signal head and attach back plate using (6) 1/4-20 plated brass machine screws with nut and lock washer.

5" Border for mast arm.

8" Border for post mounting.

Slip fitter
Mast arm
Back plate
12" Lens
Top Mounted
Side Mounted 
Slip Fitter

(Use only when indicated on plans.)

BACKPLATES
FOR
12" SIGNALS

To fit 12" signal face.

To fit 12" signal face equipped with Elevator Plumblizer.
METER BOX CASTING
FOR 4" PIPE POST

3/8 Hole

Scale: 3/4 = 1"
INSTALLATION OF WIRE LOOP DETECTOR

45° Sawcut at Corners, overlap Cut so that Slot At Corner has Full Depth.

Cut in to take 1/2" Flexible Metal Conduit and Fill with Asphalt Joint Sealer.

USE #12 AWG WIRE PER MANUFACTURERS RECOMMENDATION.

Flexible Steel Conduit. Loop Conduit to Pull Box or Signal Foundation.

SECTION A-A

SECTION B-B

Not to Scale
Pushbutton should be at a height of 3-1/2 to 4 feet above the sidewalk, and the Pedestrian-Actuated Signal Sign, should be mounted immediately above it.
WIRING DIAGRAM FOR MERCURY LUMINAIRE
UTILITY SERVICE POLE RISER
HIGHWAY LIGHTING
TYPE A
To be used at point where traffic can go to either left or right of the Beacon.

TYPE B
To be used at point where traffic must go to right of Beacon.

METER & FLASHER PEDESTAL

ALL POSTS SHALL BE STANDARD TYPE 8 FT. LONG INCLUDING BASE