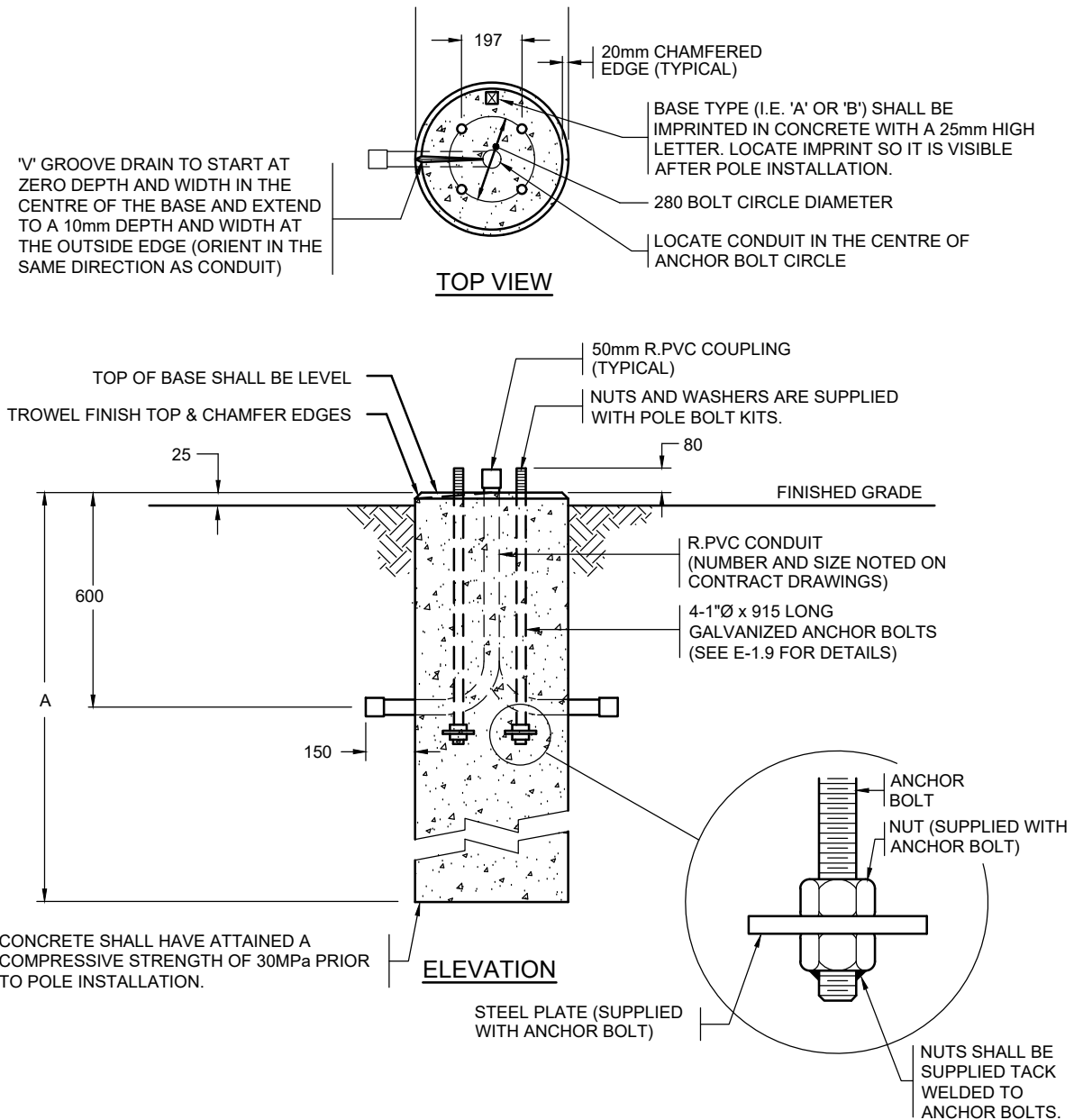


| BASE INDEX |               |                                                                                                           |
|------------|---------------|-----------------------------------------------------------------------------------------------------------|
| TYPE       | DRAWING       | POLE TYPES                                                                                                |
| A          | E-1.2         | TYPE 4 SIGNAL POST                                                                                        |
| B          | E-1.2         | TYPE 4A & 5 SIGNAL POST &<br>4.5m TO 7.5m<br>POST TOP LUMINAIRE POLES                                     |
| C          | E-1.3 & E-1.4 | 7.5m, 9.0m & 11.0m DAVIT LUMINAIRE<br>POLES                                                               |
| C1         | E-1.3 & E-1.4 | 6.6m, 8.1m & 10.1m LUMINAIRE POLES &<br>3.1m, 5.1m & 6.6m POST TOP LUMINAIRE<br>ON 0.9m HIGH SERVICE BASE |
| S2         | E-1.7 & E-1.8 | TYPE S POLE                                                                                               |
| L2         | E-1.7 & E-1.8 | TYPE L SIGNAL POLE                                                                                        |

NOTES:

1. REFER TO SECTION 10 FOR SPECIFICATIONS



| BASE TYPE | POLE TYPE                                              | APPROXIMATE MASS | VOLUME OF CONCRETE | DIM A |
|-----------|--------------------------------------------------------|------------------|--------------------|-------|
| A         | TYPE 4 SIGNAL POST (2.5m)                              | 600 kg           | 0.24 m3            | 1200  |
| B         | TYPE 4A SHAFTS & 4.5m TO 7.5m POST TOP LUMINAIRE POLES | 760 kg           | 0.30 m3            | 1500  |

**NOTES:**

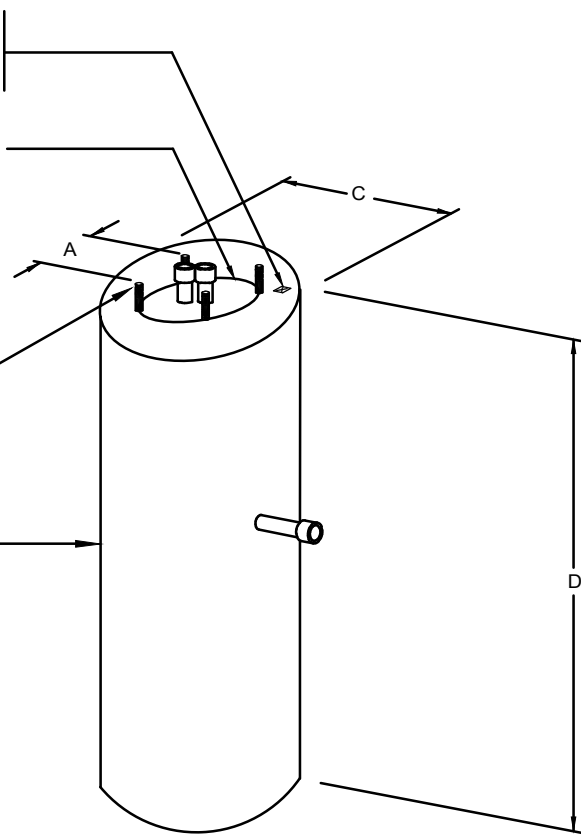
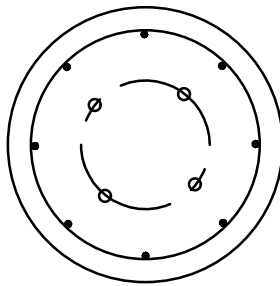
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. SEE DRAWINGS E-1.13 & E-1.14 FOR BACKFILL REQUIREMENTS.

BASE TYPE (I.E. 'D' OR 'D1') SHALL BE IMPRINTED IN CONCRETE WITH A 25mm HIGH LETTER(S). LOCATE IMPRINT SO IT IS VISIBLE AFTER POLE INSTALLATION.

B (ANCHOR BOLT CIRCLE)

4-1"Ø x 915mm LONG GALVANIZED ANCHOR BOLTS (SEE E1.9 FOR DETAILS)

CONCRETE SHALL HAVE ATTAINED A COMPRESSIVE STRENGTH OF 30MPa PRIOR TO POLE INSTALLATION



### PRECAST OR CAST IN PLACE CONCRETE BASES

| BASE TYPE | POLE TYPE              | APPROXIMATE MASS | VOLUME OF CONCRETE | A   | B   | C   | D    | REINFORCING                  |
|-----------|------------------------|------------------|--------------------|-----|-----|-----|------|------------------------------|
| D         | 7.5m, SINGLE LUMINAIRE | 2000 kg          | 0.39m <sup>3</sup> | 197 | 250 | 500 | 2200 | 6-15M VERTS 10M SPIRAL @ 150 |
| D1        | 9.1m, DOUBLE LUMINAIRE | 2000 kg          | 0.62m <sup>3</sup> | 269 | 380 | 600 | 2200 | 8-15M VERTS 10M SPIRAL @ 150 |

#### NOTES:

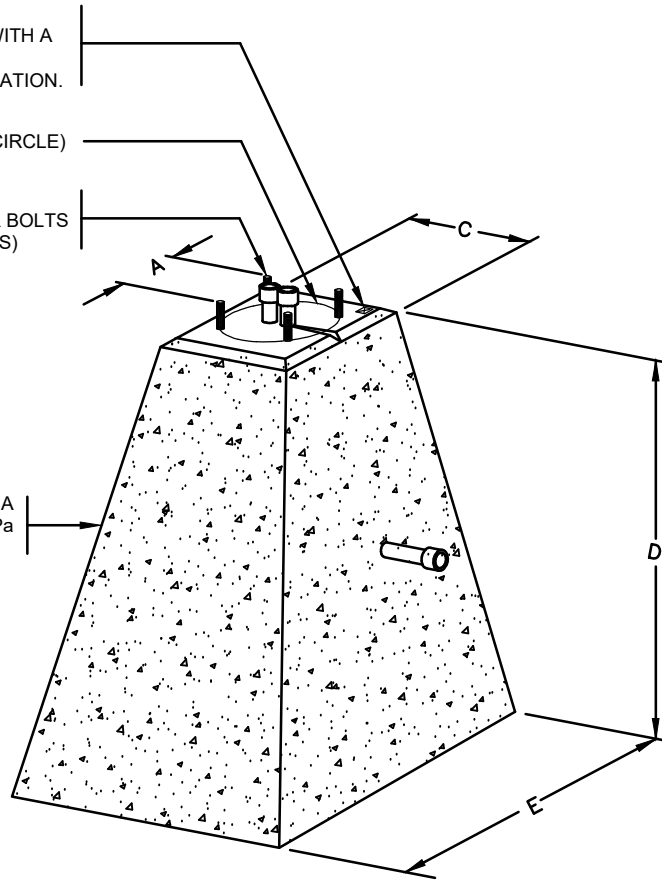
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. SEE DRAWING E-1.4 FOR ADDITIONAL DETAILS.
4. SEE DRAWINGS E-1.13 & E-1.14 FOR BACKFILL REQUIREMENTS.
5. CLEAR COVER TO REINFORCING 50mm.

BASE TYPE (I.E. 'C' OR 'C1')  
SHALL BE IMPRINTED IN CONCRETE WITH A  
25mm HIGH LETTER. LOCATE IMPRINT  
SO IT IS VISIBLE AFTER POLE INSTALLATION.

B (ANCHOR BOLT CIRCLE)

4-1"Ø x 915mm LONG  
GALVANIZED ANCHOR BOLTS  
(SEE E1.9 FOR DETAILS)

CONCRETE SHALL HAVE ATTAINED A  
COMPRESSIVE STRENGTH OF 30MPa  
PRIOR TO POLE INSTALLATION



### PRECAST CONCRETE BASES

| BASE TYPE | POLE TYPE                                                                                                 | APPROXIMATE MASS | VOLUME OF CONCRETE | A   | B   | C   | D    | E    |
|-----------|-----------------------------------------------------------------------------------------------------------|------------------|--------------------|-----|-----|-----|------|------|
| C         | 7.5m, 9.0m & 11.0m<br>DAVIT LUMINAIRE POLES                                                               | 2000 kg          | 0.83m <sup>3</sup> | 197 | 280 | 450 | 1500 | 1000 |
| C1        | 6.6m, 8.1m & 10.1m DAVIT LUMINAIRE &<br>3.1m, 5.1m & 6.6m POST TOP LUMINAIRE<br>ON 0.9m HIGH SERVICE BASE | 2000 kg          | 0.83m <sup>3</sup> | 269 | 380 | 450 | 1500 | 1000 |

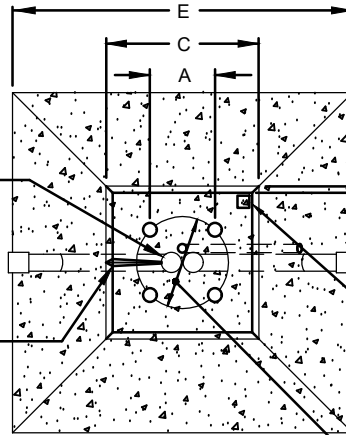
#### NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. SEE DRAWING E-1.4 & E-1.4A FOR ADDITIONAL DETAILS.
4. SEE DRAWING E-1.4A & E-1.14 FOR BACKFILL REQUIREMENTS.



LOCATE ALL CONDUITS, EXCEPT THE SERVICE CONDUITS IN THE CENTRE OF ANCHOR BOLT CIRCLE. LOCATE SERVICE CONDUIT TO SUIT ENTRANCE KNOCKOUT IN SERVICE PANEL

"V" GROOVE DRAIN TO START AT ZERO DEPTH AND WIDTH IN THE CENTRE OF THE BASE AND EXTEND TO A 10mm DEPTH AND WIDTH AT THE OUTSIDE EDGE (ORIENT IN THE SAME DIRECTION AS CONDUIT)



20mm CHAMFERED EDGE (TYPICAL)

BASE TYPE SHALL BE IMPRINTED IN CONCRETE WITH A 25mm LETTER. LOCATE IMPRINT SO IT IS VISIBLE AFTER POLE INSTALLATION.

B (ANCHOR BOLT CIRCLE)

NUTS AND WASHERS ARE SUPPLIED WITH POLE BOLT KITS.

TOP OF BASE SHALL BE LEVEL

TROWEL FINISH TOP & CHAMFER EDGES

R.PVC COUPLING (TYPICAL)

50 - 100

80

FINISHED GRADE

700

4-1"Ø x 915mm LONG GALVANIZED ANCHOR BOLTS (SEE E1.9 FOR DETAILS)

150

R.PVC CONDUITS  
ADDITIONAL R.PVC CONDUIT WHERE REQUIRED FOR SEPARATE METERED BC HYDRO SERVICE.  
(NUMBER AND SIZE AS NOTED ON CONTRACT DRAWINGS)

25mmØ R.PVC FOR GROUND ROD (WHERE REQUIRED)

**ELEVATION**

STEEL PLATE (SUPPLIED WITH ANCHOR BOLT)

ANCHOR BOLT  
NUT (SUPPLIED WITH ANCHOR BOLT)

NUTS SHALL BE SUPPLIED TACK WELDED TO ANCHOR BOLTS.

SEE DRAWING E-1.3 FOR NOTES AND ADDITIONAL DETAILS

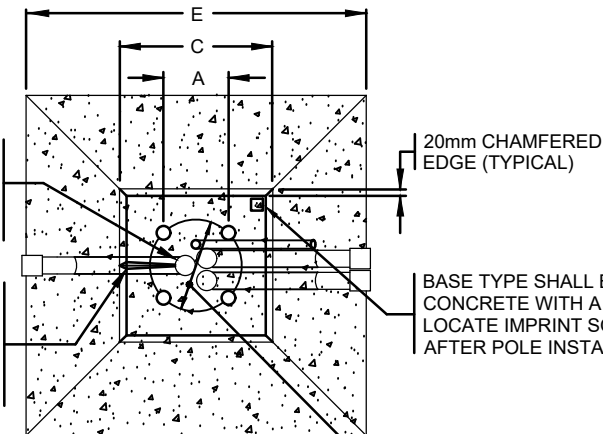
**CITY OF NANAIMO**  
THE HARBOUR CITY

**TYPE C & C1 TRAPEZOIDAL SHAPE CONCRETE BASES**

Scale: NTS  
Created: JUN 2013  
Rev Date: NOV 2016  
Dwg No: E-1.4

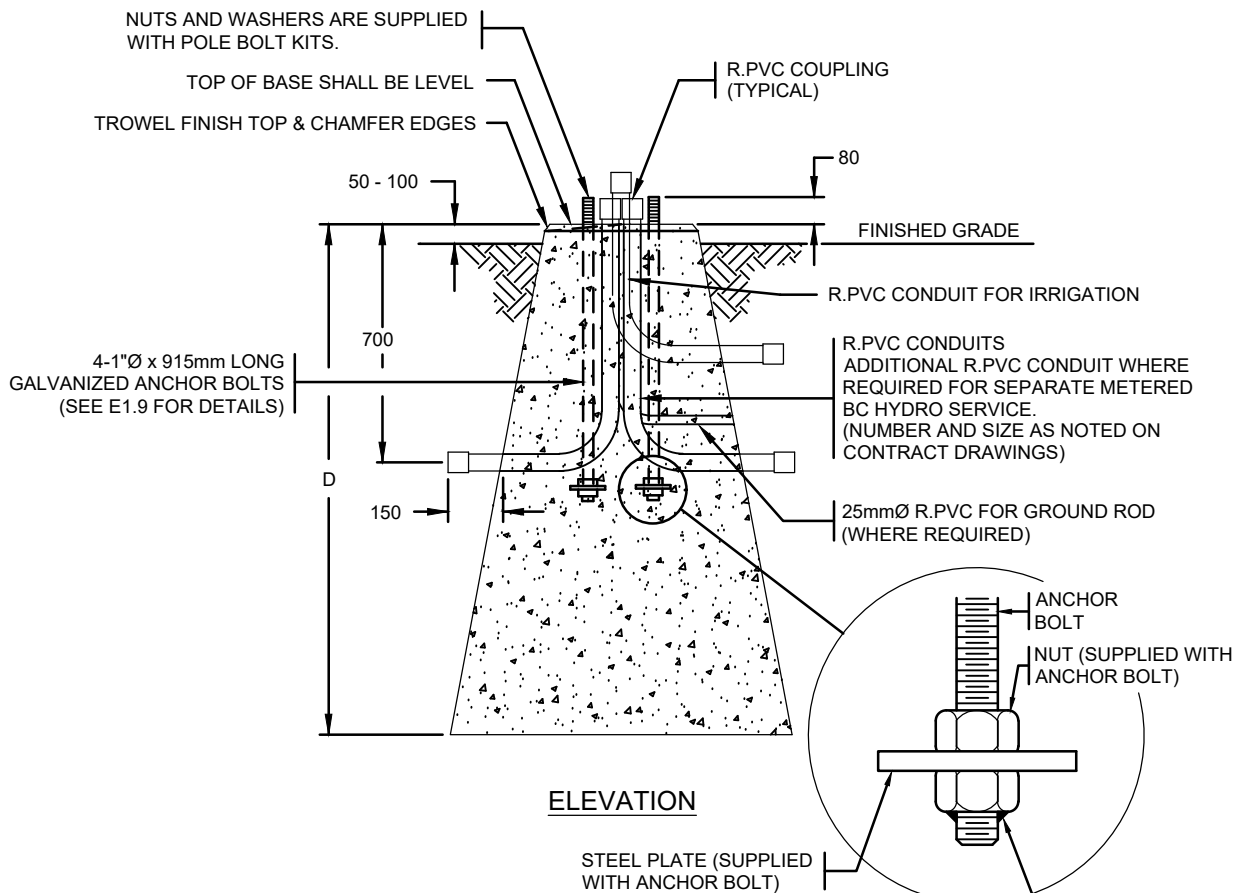
LOCATE ALL CONDUITS, EXCEPT THE SERVICE CONDUITS IN THE CENTRE OF ANCHOR BOLT CIRCLE. LOCATE SERVICE CONDUIT TO SUIT ENTRANCE KNOCKOUT IN SERVICE PANEL

'V' GROOVE DRAIN TO START AT ZERO DEPTH AND WIDTH IN THE CENTRE OF THE BASE AND EXTEND TO A 10mm DEPTH AND WIDTH AT THE OUTSIDE EDGE (ORIENT IN THE SAME DIRECTION AS CONDUIT)



**TOP VIEW**

BASE TYPE SHALL BE IMPRINTED IN CONCRETE WITH A 25mm LETTER. LOCATE IMPRINT SO IT IS VISIBLE AFTER POLE INSTALLATION.

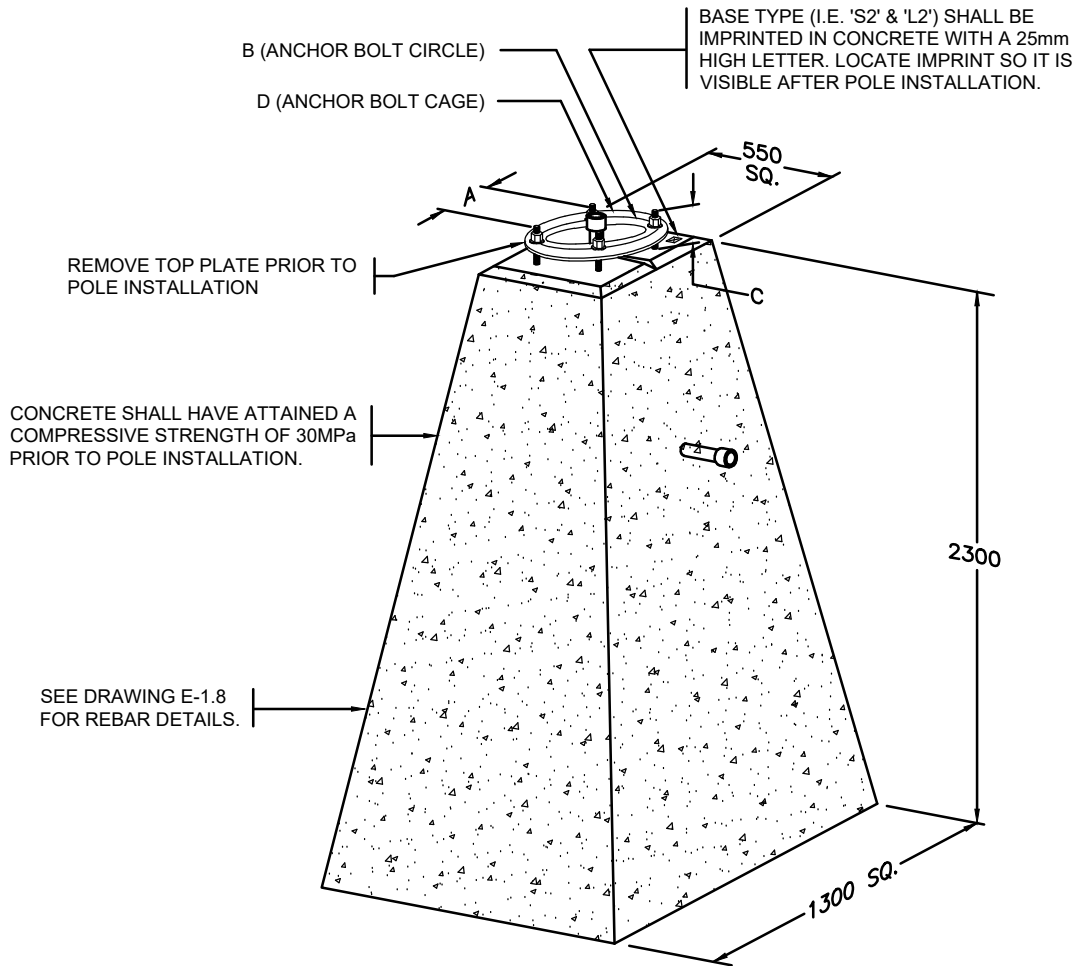


**ELEVATION**

SEE DRAWING E-1.3 FOR NOTES AND ADDITIONAL DETAILS

Scale: NTS  
Created: JUN 2013  
Rev Date: NOV 2019  
Dwg No: E-1.4A

TYPE C & TYPE C1 TRAPEZOIDAL SHAPE  
CONCRETE BASES WITH IRRIGATION

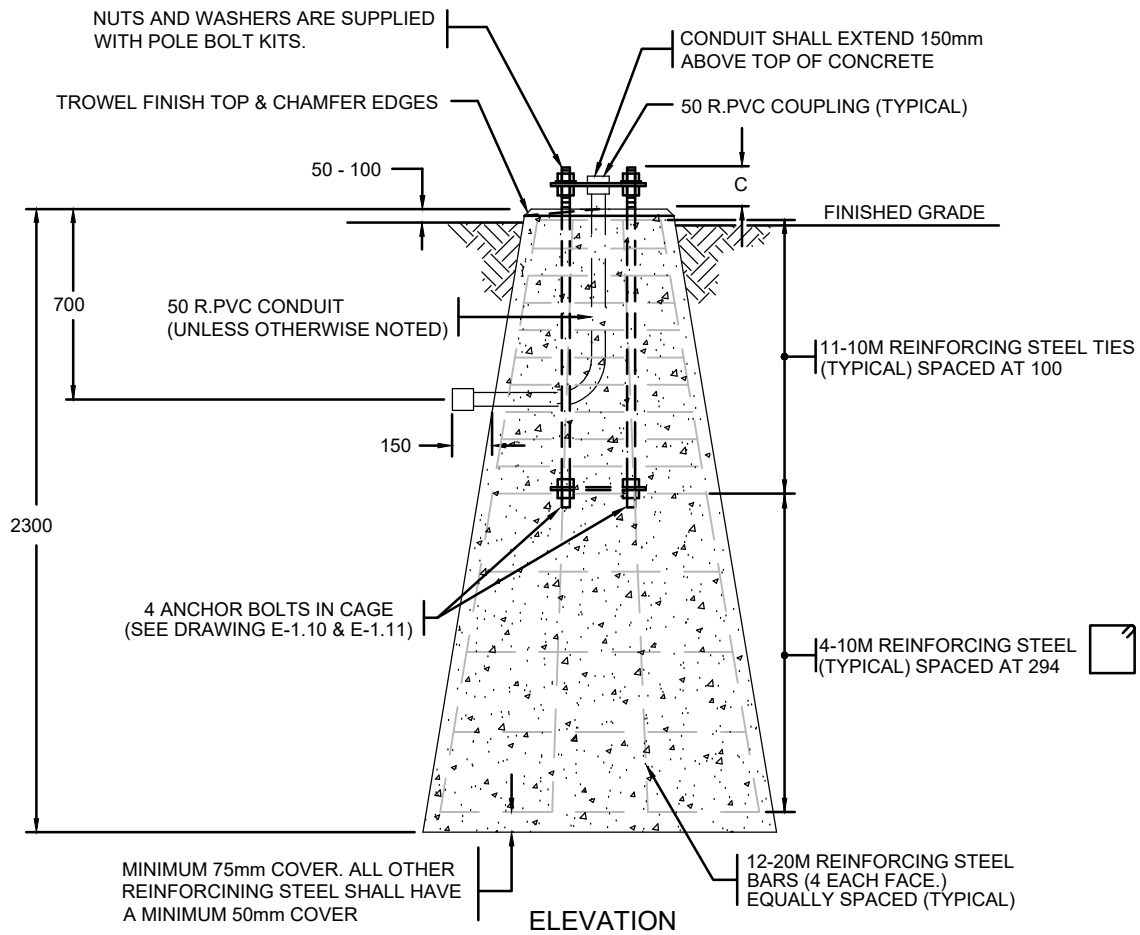
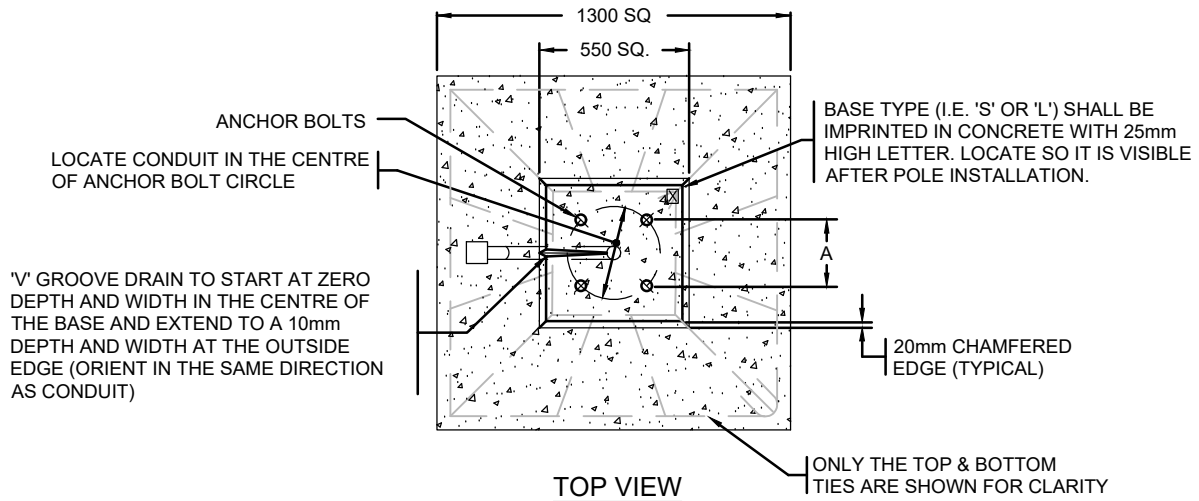


### PRECAST CONCRETE BASES

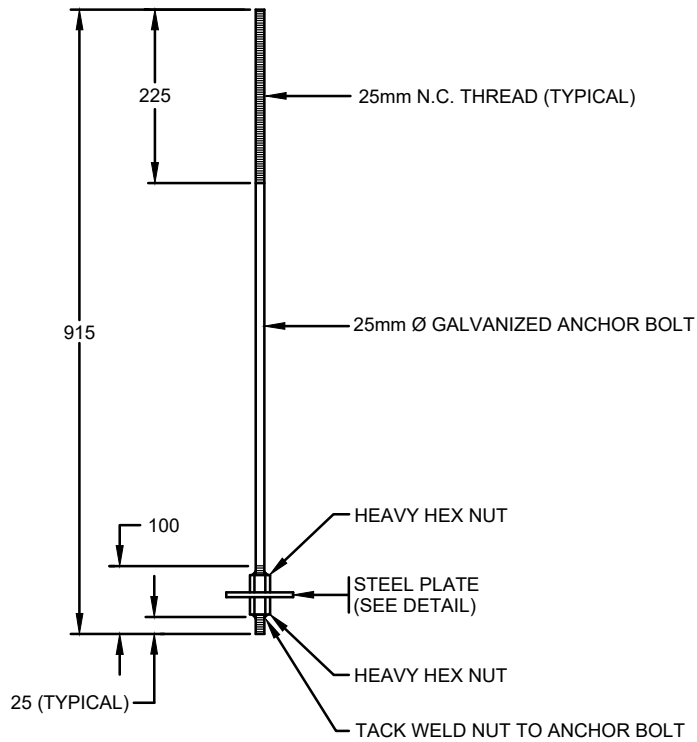
| BASE TYPE | POLE TYPE    | APPROXIMATE MASS | VOLUME OF CONCRETE | A   | B   | C   | D (ANCHOR BOLTS)                                                              |
|-----------|--------------|------------------|--------------------|-----|-----|-----|-------------------------------------------------------------------------------|
| S2        | TYPE S POLE  | 5000 kg          | 2.0 m3             | 243 | 343 | 160 | 4-25 (1") Ø x 1220 (48") GALVANIZED GRADE 150 DYWIDAG PRE-ASSEMBLED IN A CAGE |
| L2        | TYPE L POLES | 5040 kg          | 2.0 m3             | 276 | 390 | 140 | 4-1 1/2"Ø x 1370 GALVANIZED ANCHOR BOLTS PRE-ASSEMBLED IN A CAGE              |

#### NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. SEE DRAWING E-1.8 FOR ADDITIONAL DETAILS.
4. SEE DRAWINGS E-1.13 & E-1.14 FOR BACKFILL REQUIREMENTS.

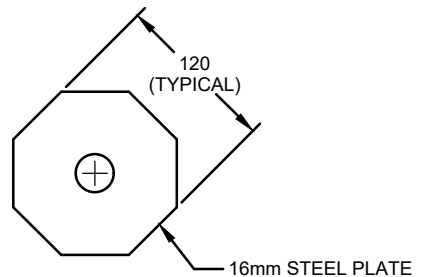


SEE DRAWING E-1.7 FOR NOTES AND ADDITIONAL DETAILS



**ANCHOR BOLT**  
4 PER SET

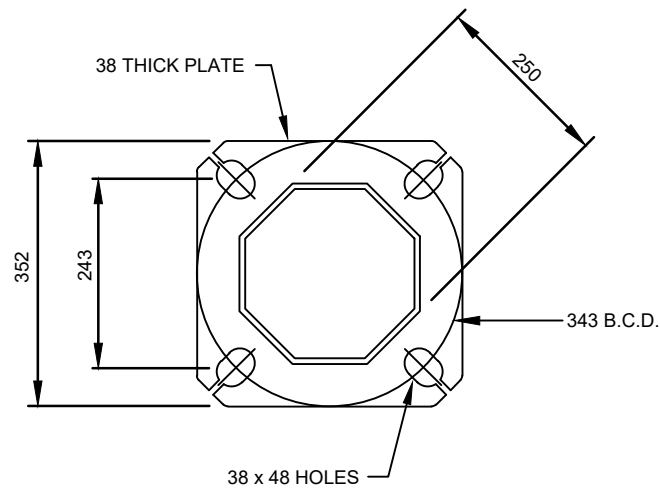
| APPROXIMATE<br>MASS (PER SET) |
|-------------------------------|
| 21 kg                         |



**STEEL PLATE**

**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



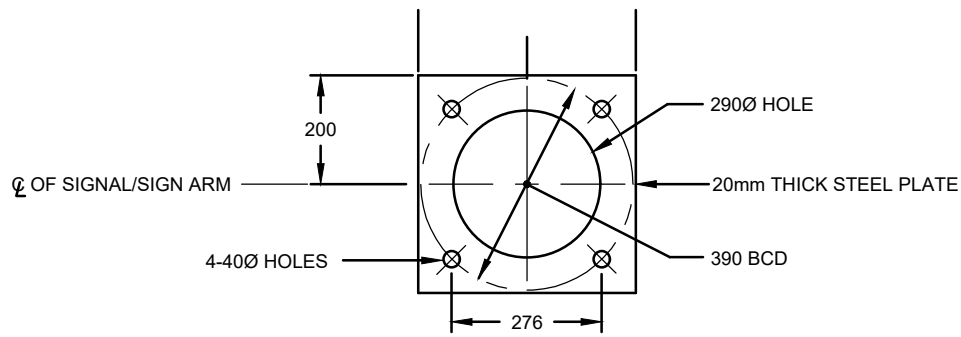
**TYPE S POLE BASE PLATE**

1:10

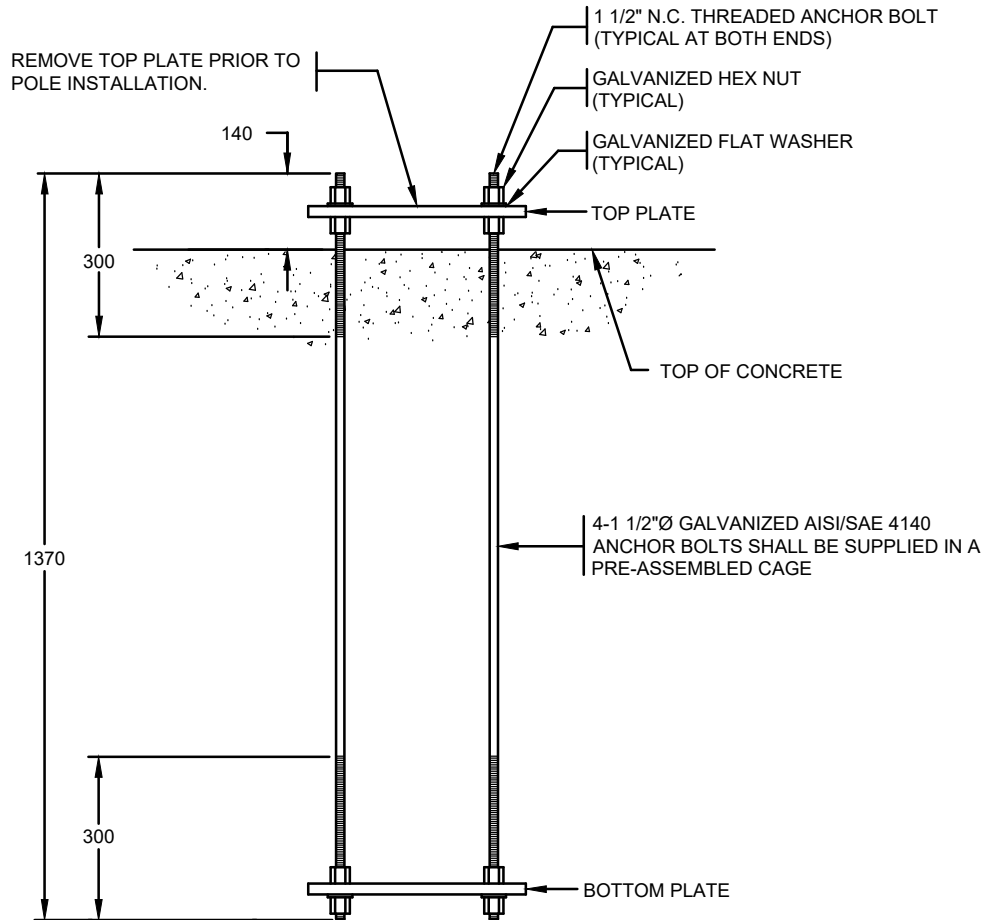
**PARTS LIST FOR TYPE S SIGNAL POLE**

| PART                                         | MINISTRY STOCK NUMBER | MASS (kg) |
|----------------------------------------------|-----------------------|-----------|
| TYPE [S] POLE SHAFT                          | SN3152                | 385       |
| TYPE [5S] SIGNAL ARM - 5.0m                  | SN3150                | 104       |
| TYPE [5.5S] SIGNAL ARM - 5.5m                | SN3155                | 111       |
| TYPE [6S] SIGNAL ARM - 6.0m                  | SN3160                | 118       |
| TYPE [6.5S] SIGNAL ARM - 6.5m                | SN3165                | 125       |
| TYPE [7S] SIGNAL ARM - 7.0m                  | SN3170                | 132       |
| TYPE [7.5S] SIGNAL ARM - 7.5m                | SN3175                | 192       |
| TYPE [8S] SIGNAL ARM - 8.0m                  | SN3180                | 204       |
| TYPE [8.5S] SIGNAL ARM - 8.5m                | SN3185                | 214       |
| TYPE [9S] SIGNAL ARM - 9.0m                  | SN3190                | 224       |
| TYPE [9.5S] SIGNAL ARM - 9.5m                | SN3195                | 292       |
| TYPE [10S] SIGNAL ARM - 10.0m                | SN3100                | 306       |
| TYPE [10.5S] SIGNAL ARM - 10.5m              | SN3105                | 320       |
| TYPE [11S] SIGNAL ARM - 11.0m                | SN3110                | 340       |
| TYPE [1.75L] LUMINAIRE ARM EXTENSION - 1.75m | SN2063                | 29        |
| TYPE [0.25L] LUMINAIRE ARM EXTENSION - 0.25m | SN2064                | 10        |
| TYPE [2A] LUMINAIRE ARM                      | SN1832                | 35        |
| TYPE 1 FLANGE COVER PLATE [1 FCP]            | SN1367                | 1.5       |
| TYPE S FLANGE COVER PLATE [S FCP]            | SN1368                | 3         |
| TYPE 3 FLANGE COVER PLATE [3 FCP]            | SN2084                | 4         |
| POST TOP TENON [PTT]                         | SN1831                | 5         |

\* [ ] I.D. LABEL ON POLE



TOP AND BOTTOM PLATES



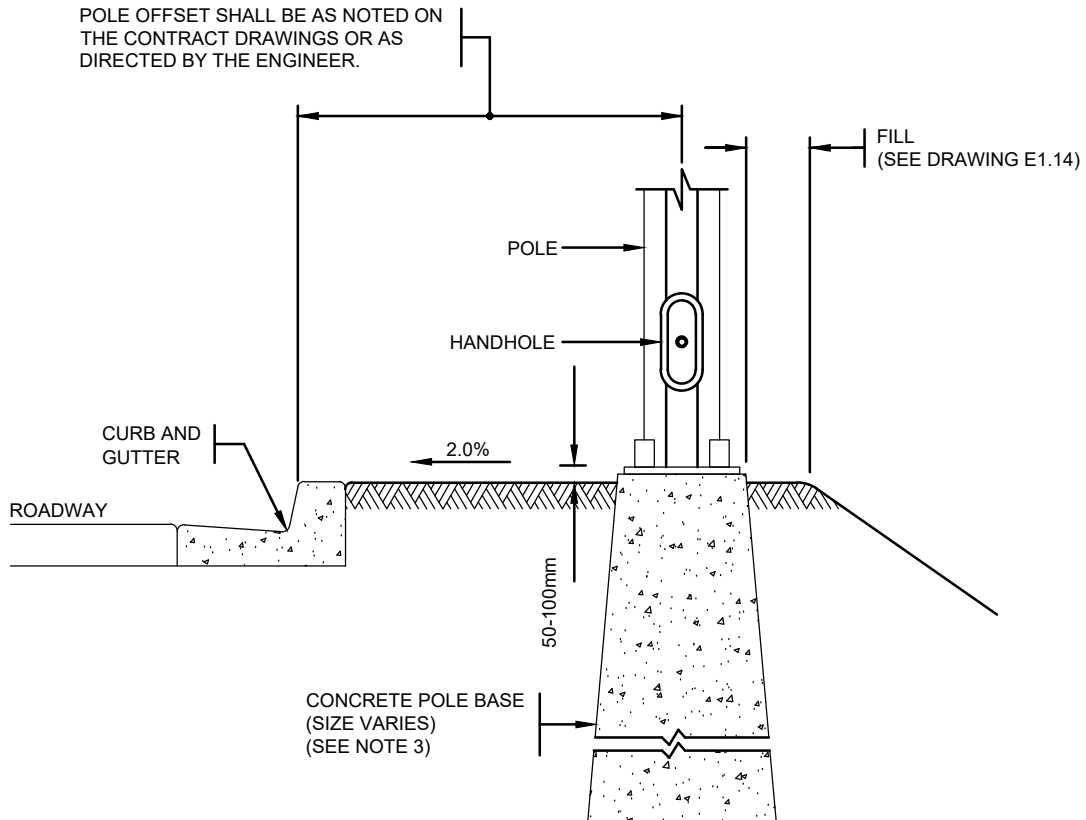
ANCHOR BOLT CAGE

APPROXIMATE  
MASS

95 kg

NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.



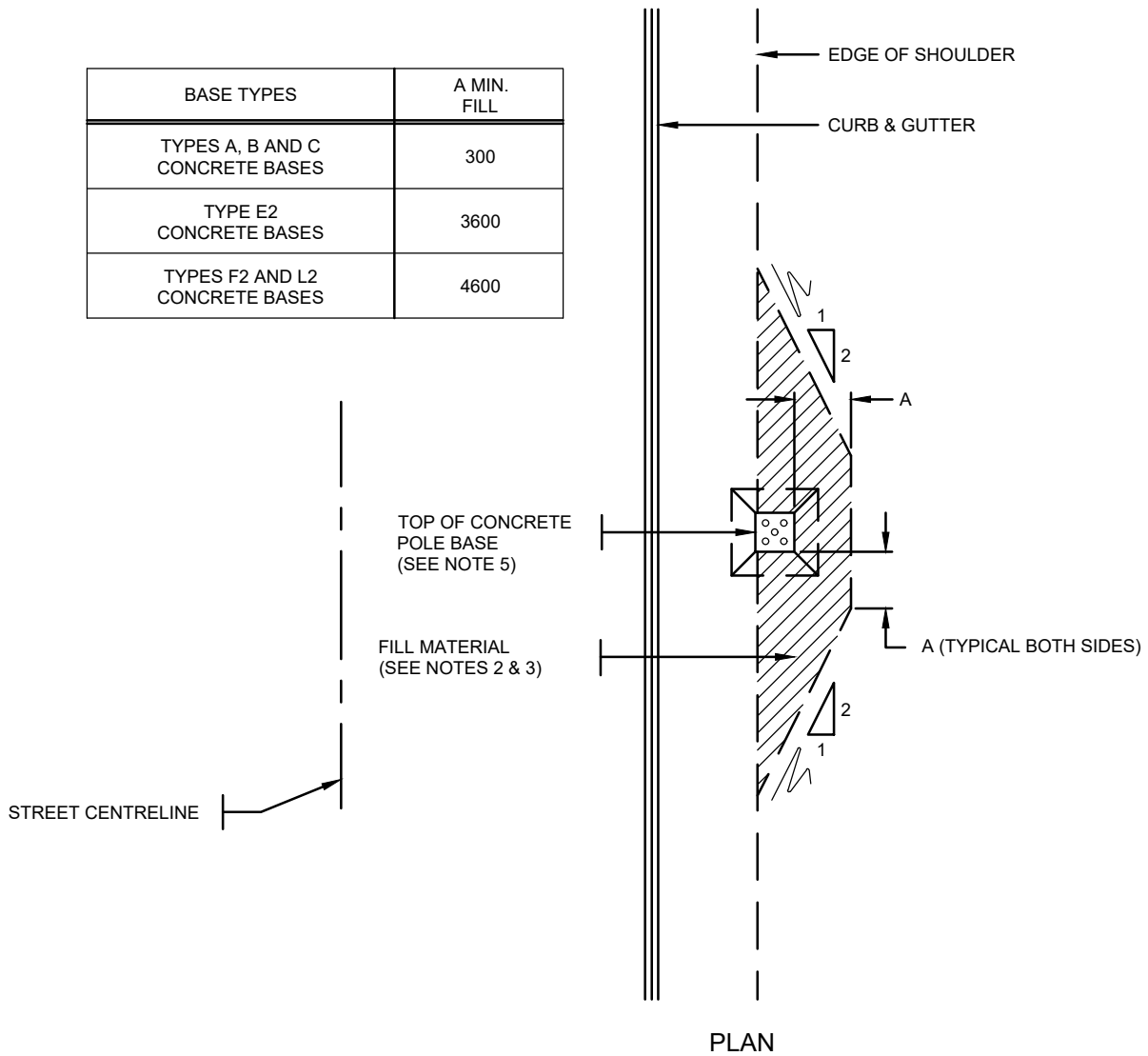
ELEVATION

NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. CONCRETE BASE SHALL BE INSTALLED PARALLEL TO STREET CENTRELINE, NOT FACE OF CURB.

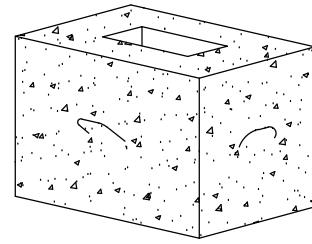
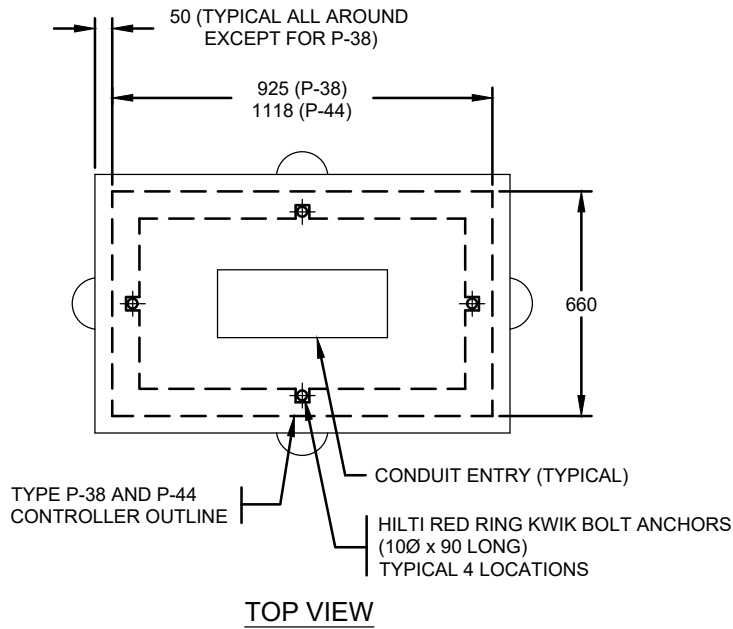


| BASE TYPES                         | A MIN. FILL |
|------------------------------------|-------------|
| TYPES A, B AND C<br>CONCRETE BASES | 300         |
| TYPE E2<br>CONCRETE BASES          | 3600        |
| TYPES F2 AND L2<br>CONCRETE BASES  | 4600        |



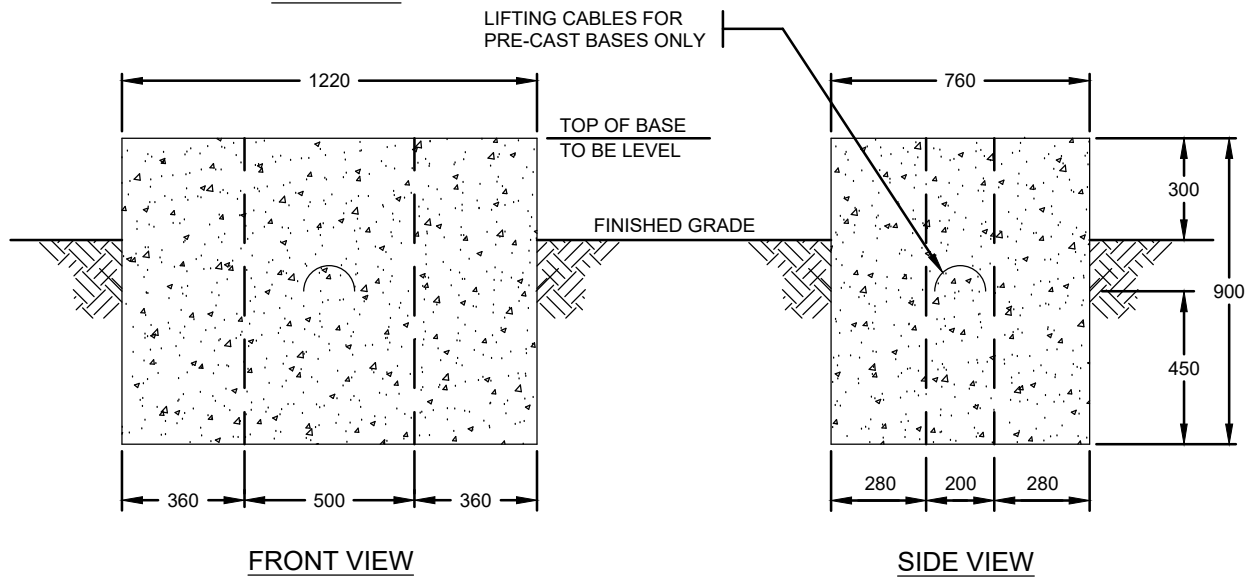
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. FILL MATERIAL SHALL CONSIST OF CLEAN WELL GRADED GRANULAR SOIL HAVING A MAXIMUM FINES CONTENT OF 8% (SILT AND CLAY SIZE PARTICLES) AND A MAXIMUM AGGREGATE SIZE OF 100mm.
3. FILL MATERIAL SHALL BE SUPPLIED, INSTALLED AND FULLY COMPACTED IN ACCORDANCE WITH SECTION 4 FOR THE MINIMUM AREA ALL AROUND THE BASE AS SHOWN ABOVE.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
5. CONCRETE BASE SHALL BE INSTALLED PARALLEL TO STREET CENTRELINE, NOT FACE OF CURB.



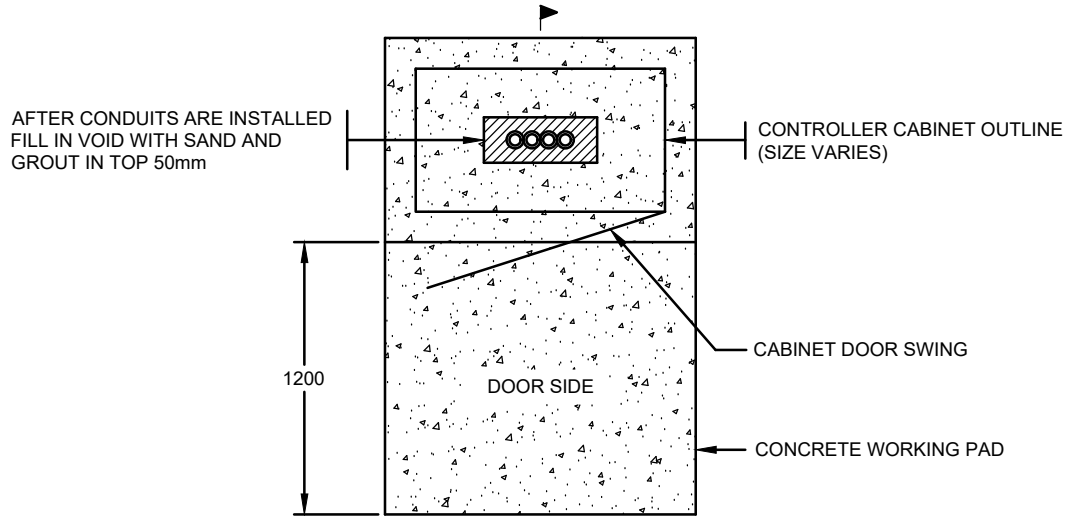
**PICTORIAL VIEW**

| APPROXIMATE<br>MASS |
|---------------------|
| 1861 kg             |

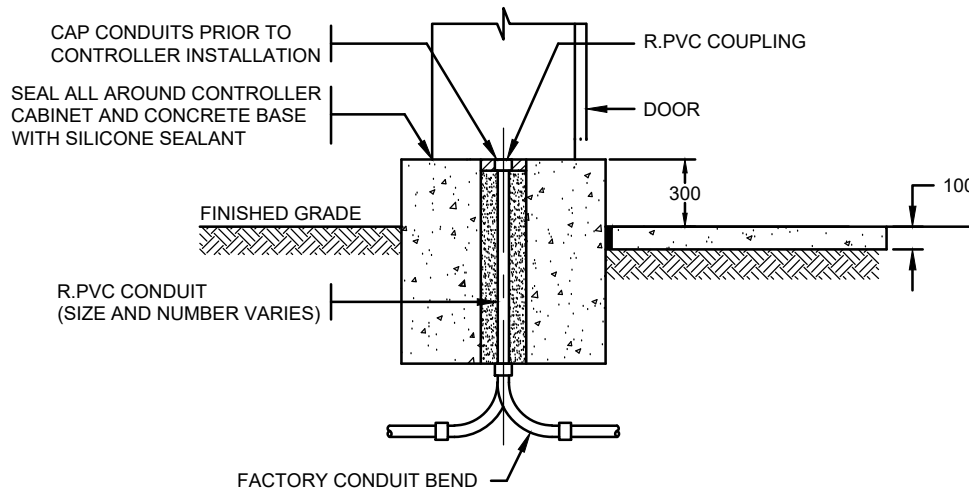


**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. BASES TO BE PRE-CAST OR CAST-IN-PLACE



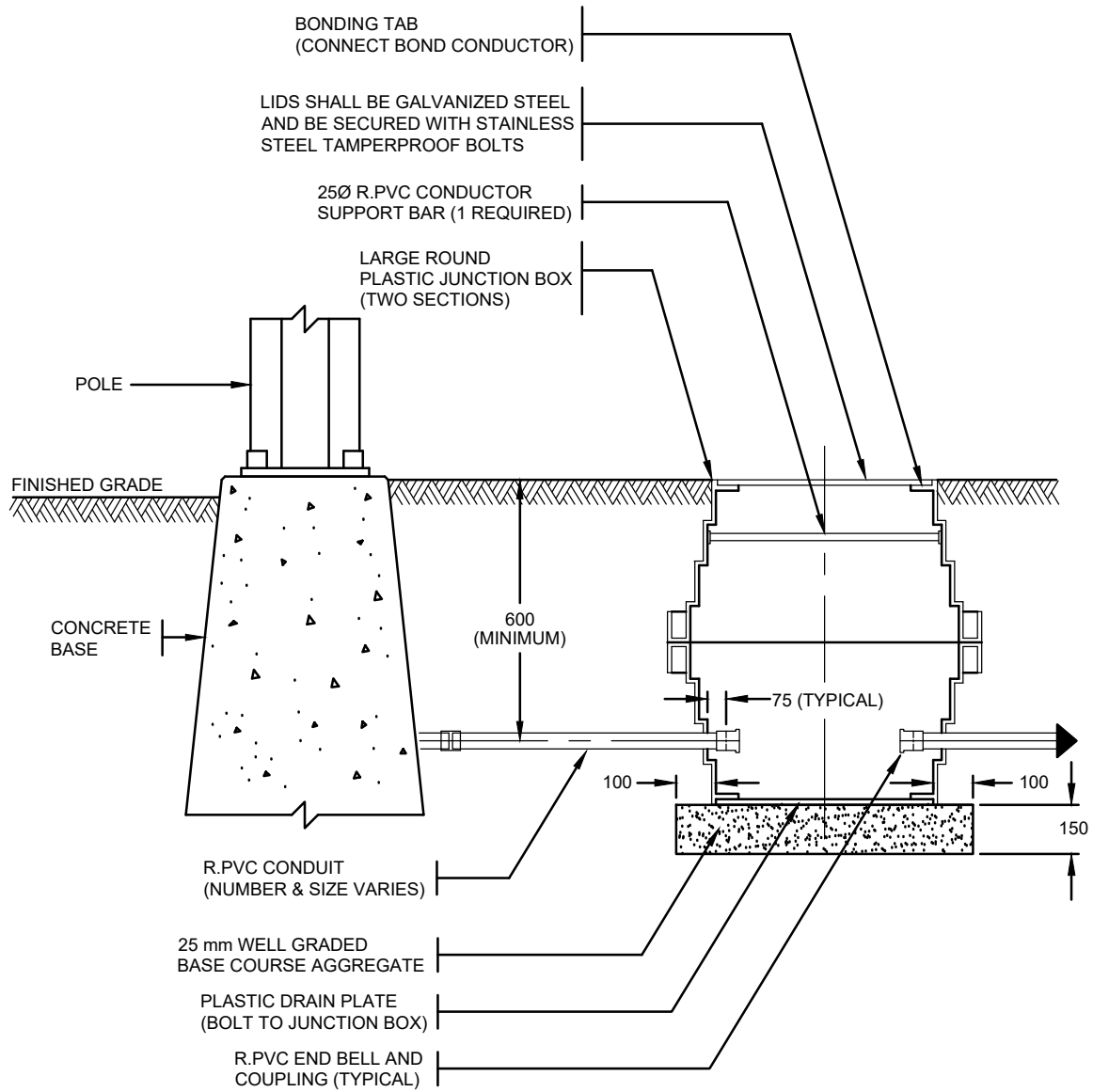
TOP VIEW



SECTION A

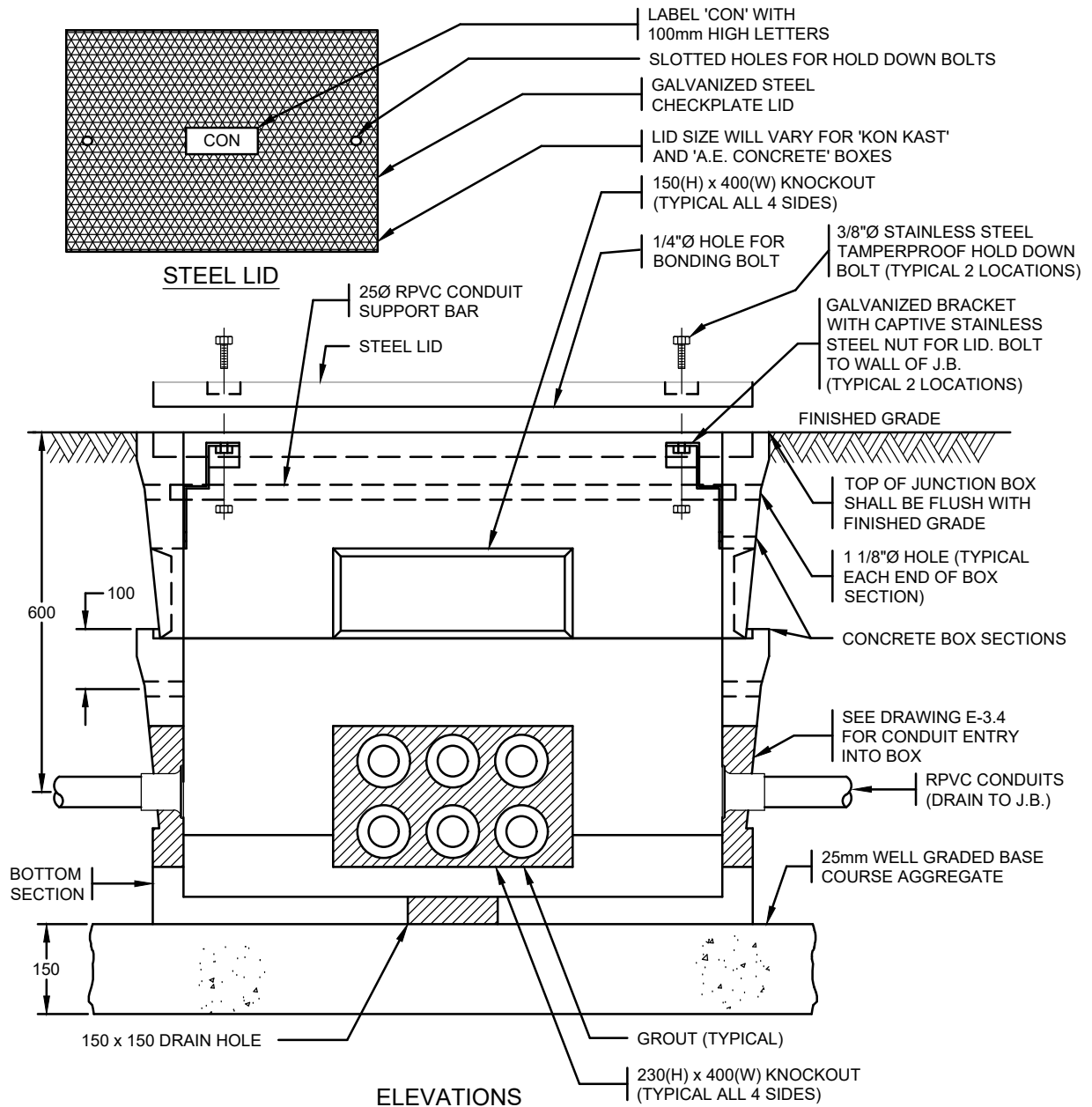
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.



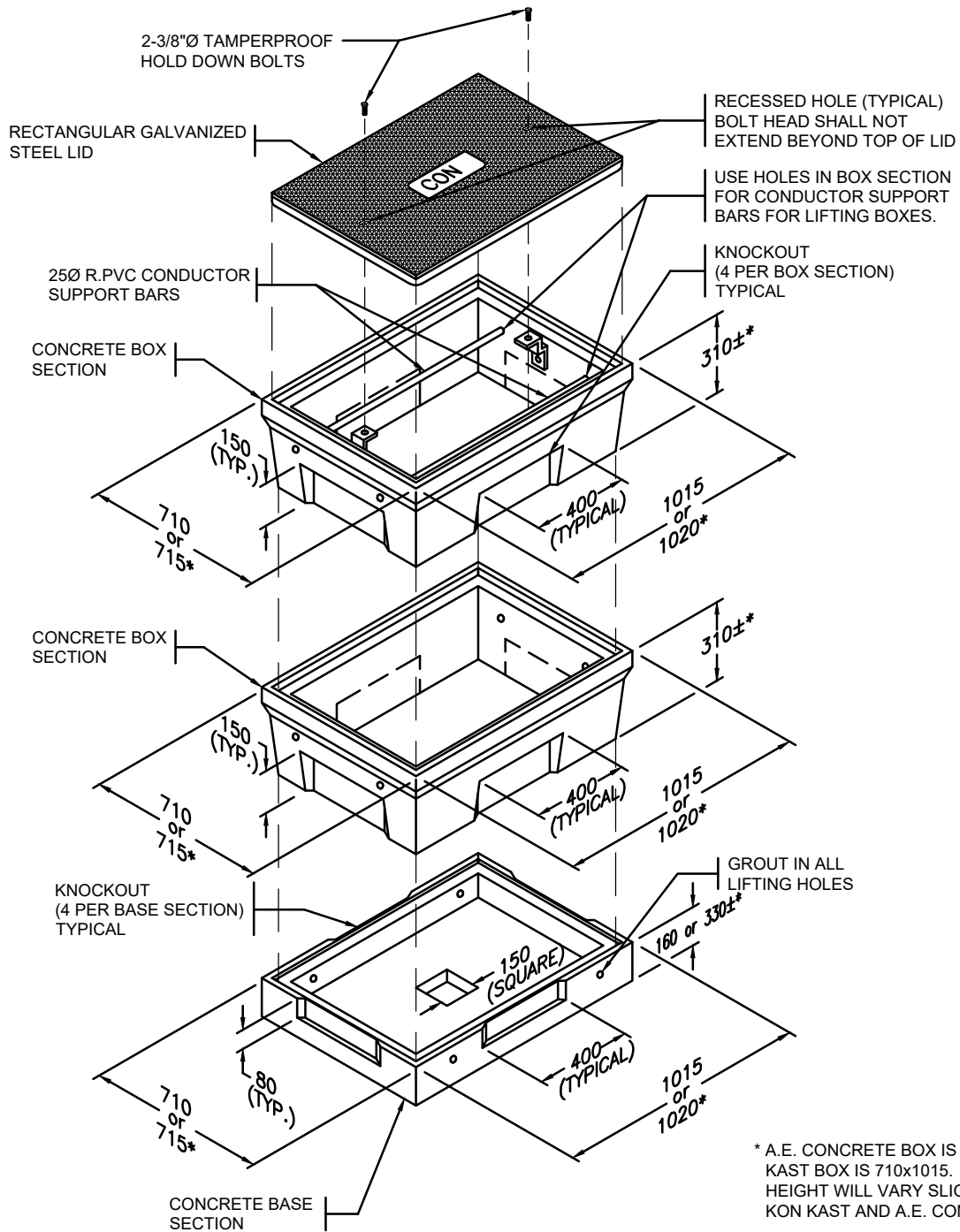
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. INSTALL LID ON PLASTIC JUNCTION BOX BEFORE BACKFILLING, TAMPING & PAVING OPERATIONS.
3. INSTALL TOP OF JUNCTION BOX FLUSH WITH FINISHED GRADE.
4. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
5. CONCRETE JUNCTION BOX INSTALLATION SIMILAR.
6. NUMBER OF CONDUITS ENTERING JUNCTION BOX NOT TO EXCEED 10 (UNLESS OTHERWISE NOTED).



**NOTES:**

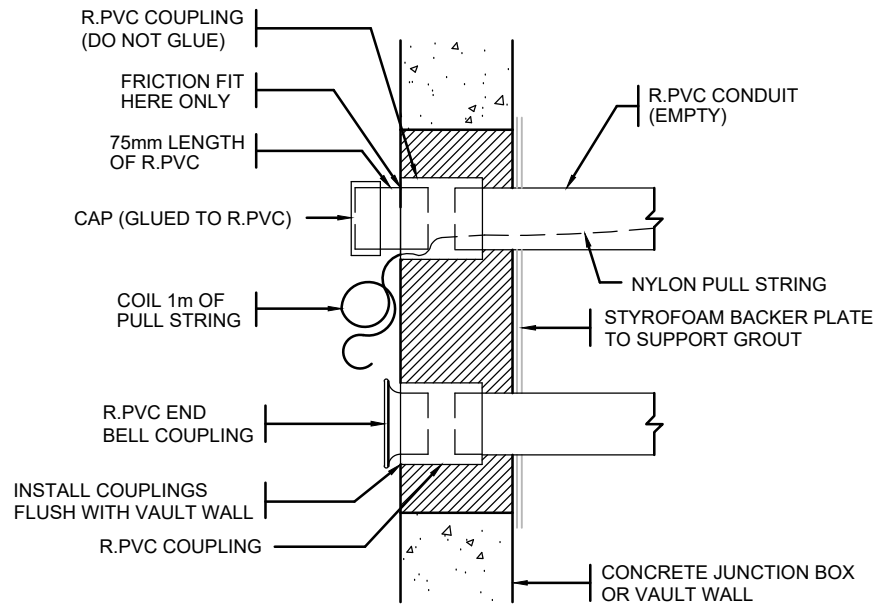
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS
2. ONLY PRODUCTS WITHIN THE CITY OF NANAIMO'S APPROVED PRODUCTS LIST, AND APPROVED BY THE CITY ENGINEER SHALL BE USED.
3. JUNCTION BOX SHALL BE DESIGNED FOR 5000kg STATIC LOADING.
4. VAULTS SHALL BE PRE-CAST CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 35 MPa AT 28 DAYS.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



\* A.E. CONCRETE BOX IS 715x1020. KON KAST BOX IS 710x1015. BOX SECTION HEIGHT WILL VARY SLIGHTLY BETWEEN KON KAST AND A.E. CONCRETE BOXES.

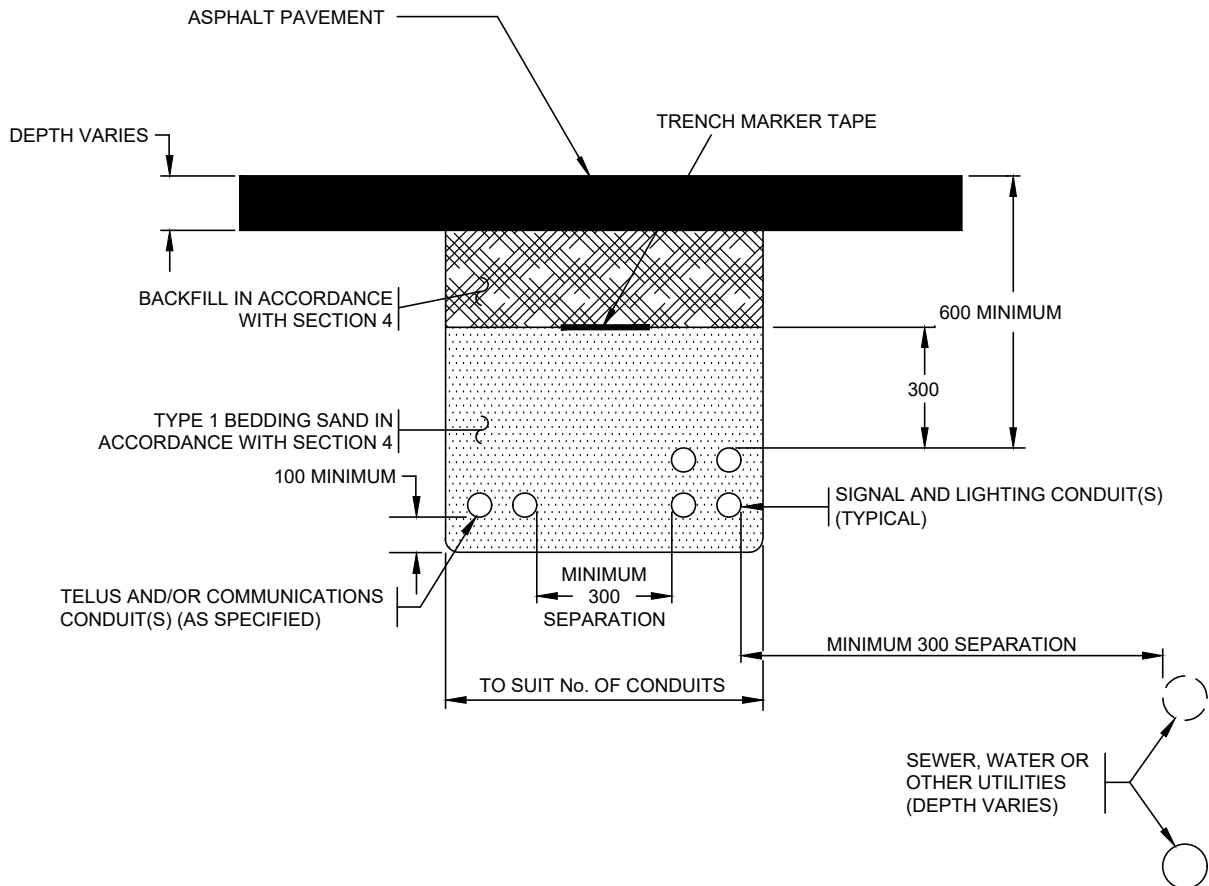
NOTE: THESE BOXES ARE NOT INTERCHANGEABLE.

SEE DRAWING E-3.2 FOR NOTES



### CONDUIT ENTRY TO VAULT OR CONCRETE JUNCTION BOX

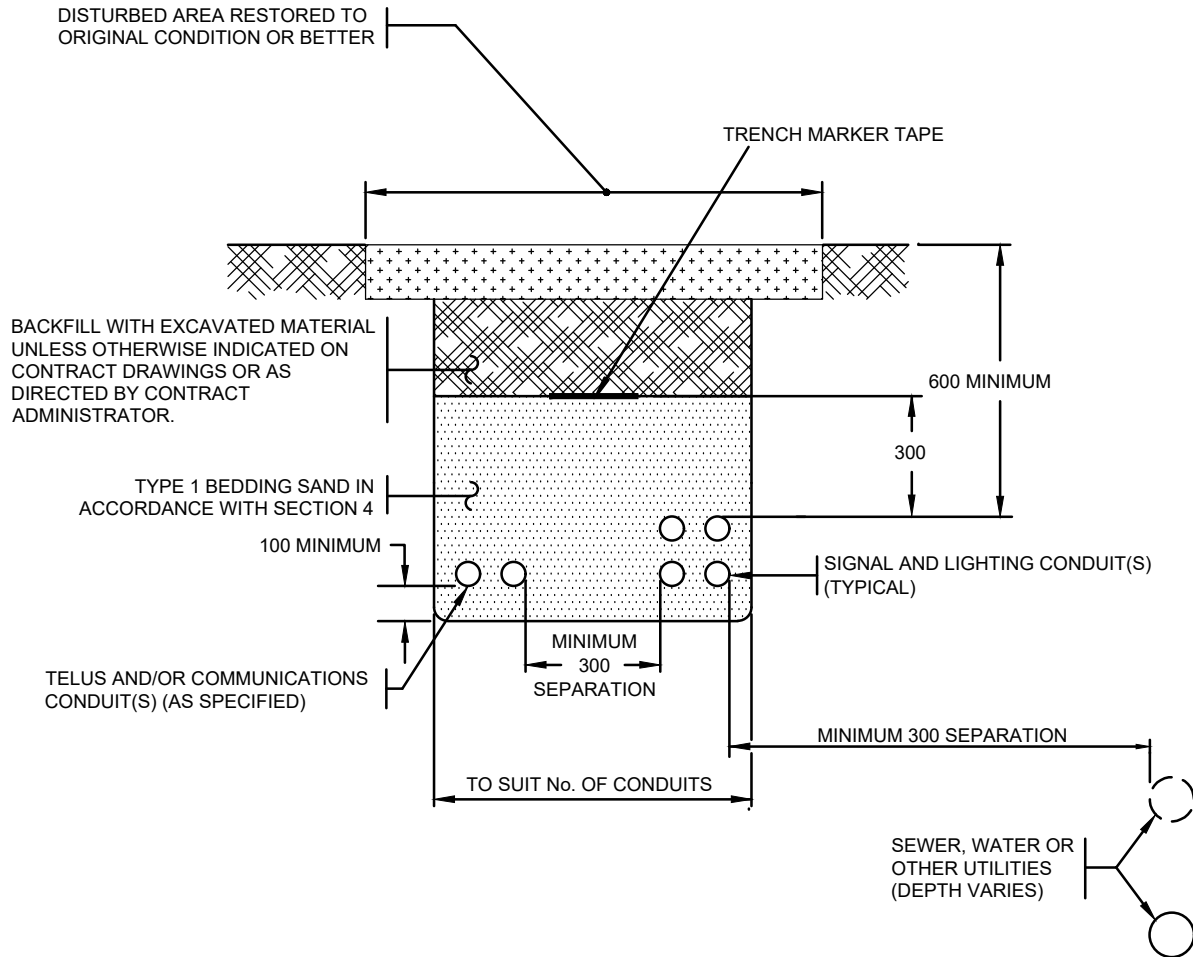
SEE DRAWINGS E-3.2 & E-3.3  
FOR NOTES AND ADDITIONAL DETAILS.



**NOTES:**

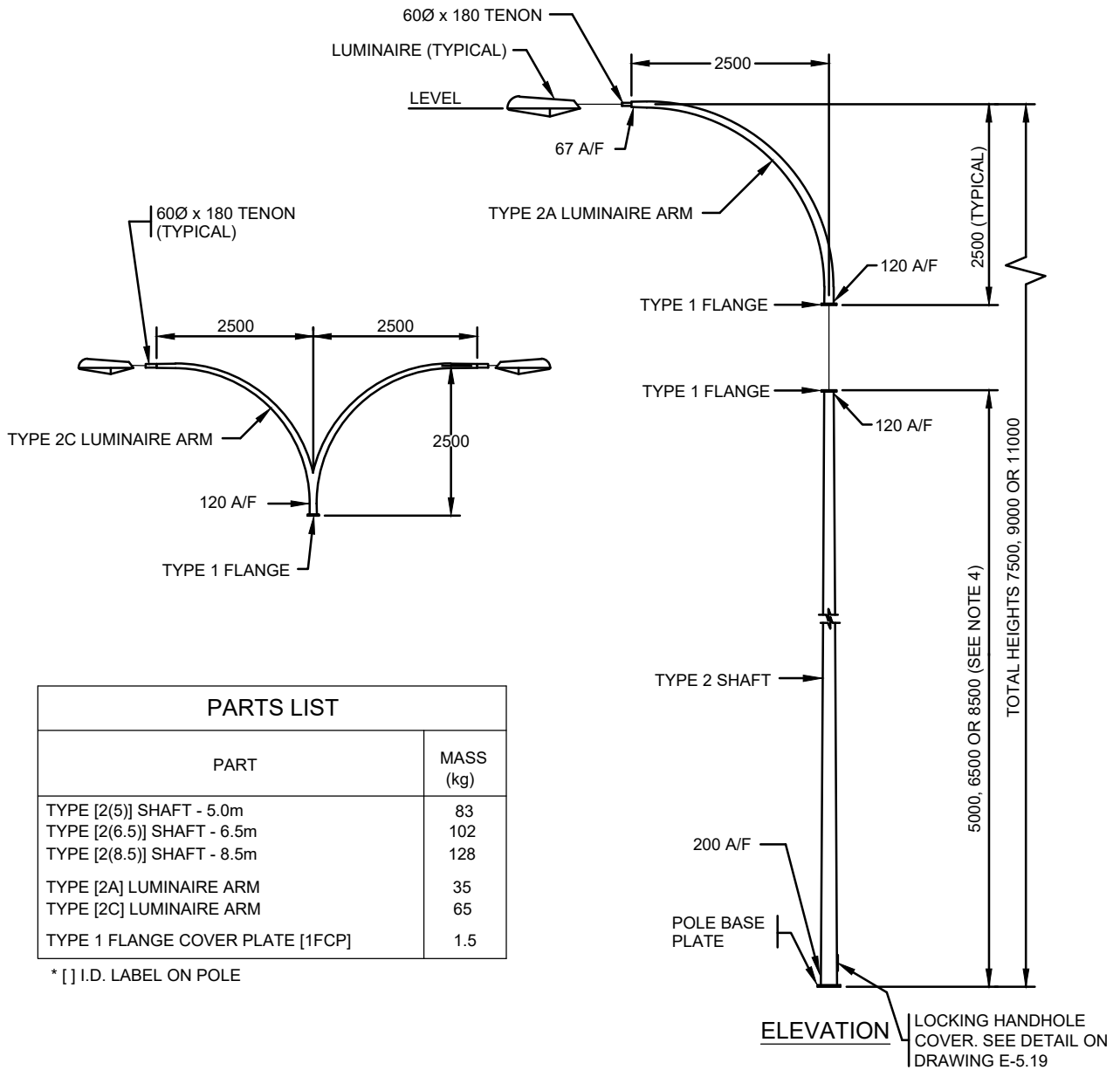
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.





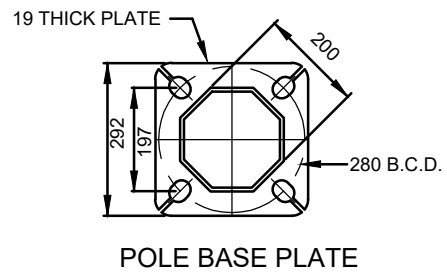
NOTES:

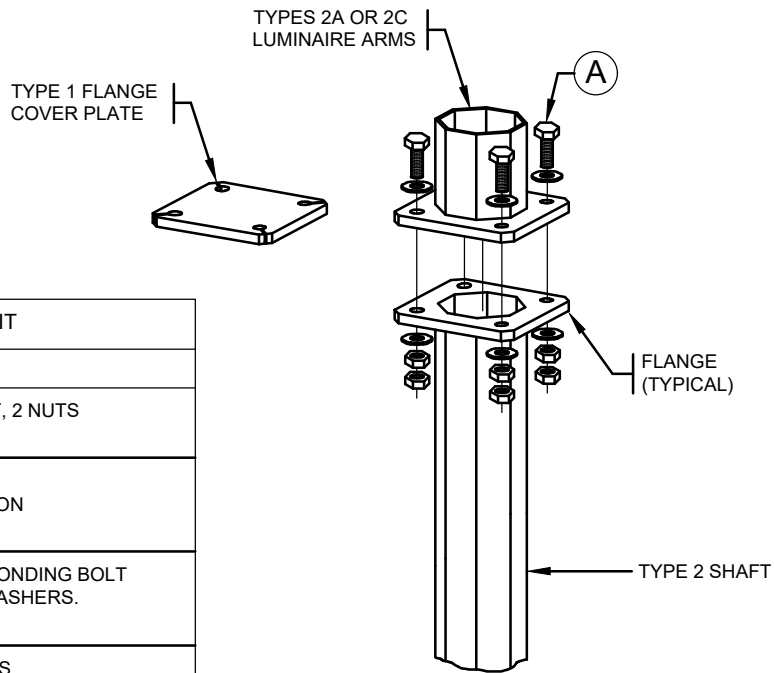
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.



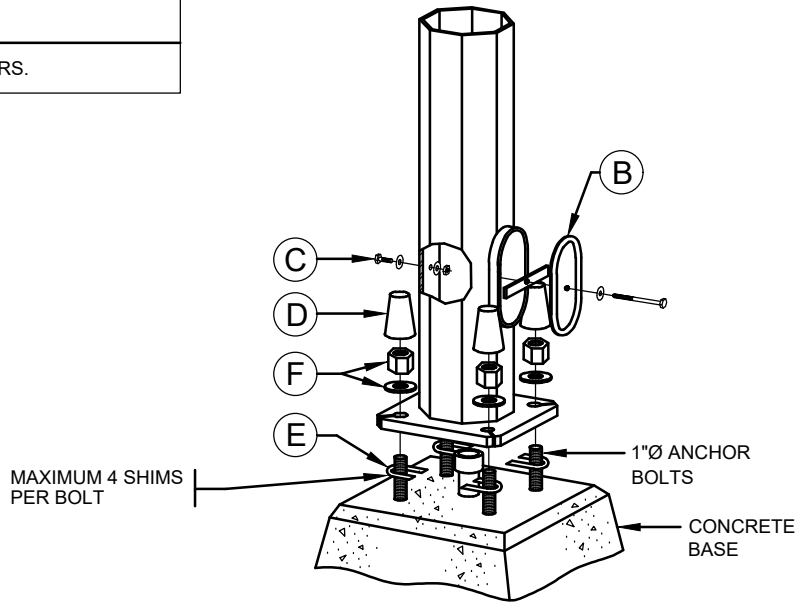
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SEE DRAWING E-5.2 FOR TYPE 2 SHAFT, BOLT KITS AND POLE ASSEMBLY DETAILS.
3. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
4. POLE SHAFTS TO BE SUPPLIED 0.9m SHORTER WHERE BEING INSTALLED ON SERVICE BASE.





| TYPE 2 SHAFT BOLT KIT |          |                                                            |
|-----------------------|----------|------------------------------------------------------------|
| ITEM                  | QUANTITY | DESCRIPTION                                                |
| A                     | 4        | 5/8"Ø x 3" LONG BOLT, 2 NUTS AND 2 WASHERS.                |
| B                     | 1        | LOCKING HANDHOLE COVER. SEE DETAIL ON DRAWING E-5.19       |
| C                     | 1        | 3/8"Ø x 1 1/4" LONG BONDING BOLT WITH 1 NUT AND 2 WASHERS. |
| D                     | 4        | PLASTIC NUT COVERS FOR 1" NUTS.                            |
| E                     | 4        | LEVELLING SHIMS.                                           |
| F                     | 4        | 1"Ø NUTS AND WASHERS.                                      |



**POLE ASSEMBLY DETAIL**

**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SHAFTS TO BE INSTALLED PLUMB.
3. ALL SHAFTS, ARMS AND EXTENSIONS TO BE SUPPLIED WITH A GALVANIZED FINISH, UNLESS OTHERWISE NOTED.
4. APPLY GREASE TO ANCHOR BOLT THREADS.
5. TOUCH UP ANY SCRATCHES IN GALVANIZED SURFACES WITH COLD GALVANIZING COMPOUND.

TRAFFIC LOGIX SAFEPLACE EVOLUTION 15FM  
SOLAR PANEL c/w BATTERY. SOLAR PANELS  
TO BE MOUNTED FACING SOUTH.

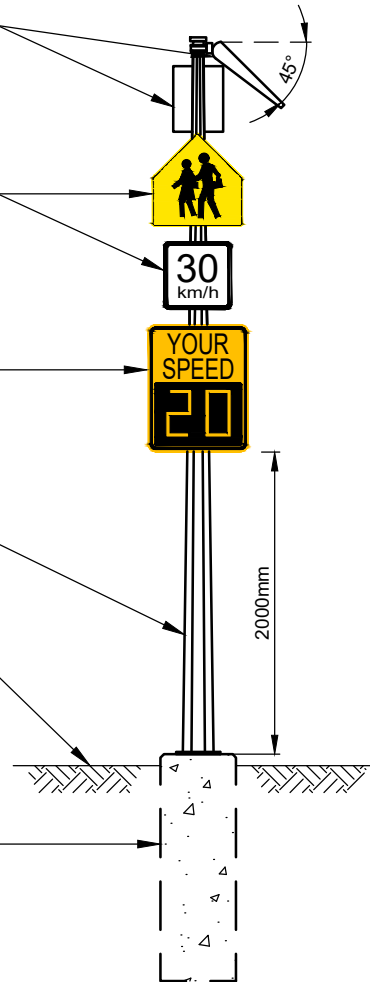
WC-1 & RB-1-2.2 SIGNS

TRAFFIC LOGIX SAFEPLACE EVOLUTION  
15FM SPEED READER SIGN c/w UNIVERSAL  
MOUNTING BRACKET

SIGNAL OR STREET LIGHT POLE

EXISTING GRADE

CONCRETE BASE TO SUIT POLE



PEDESTRIAN ACTIVATED 50W SOLAR ENGINE c/w  
RECTANGULAR BIDIRECTIONAL BEACONS. SOLAR  
PANEL TO BE MOUNTED FACING SOUTH.

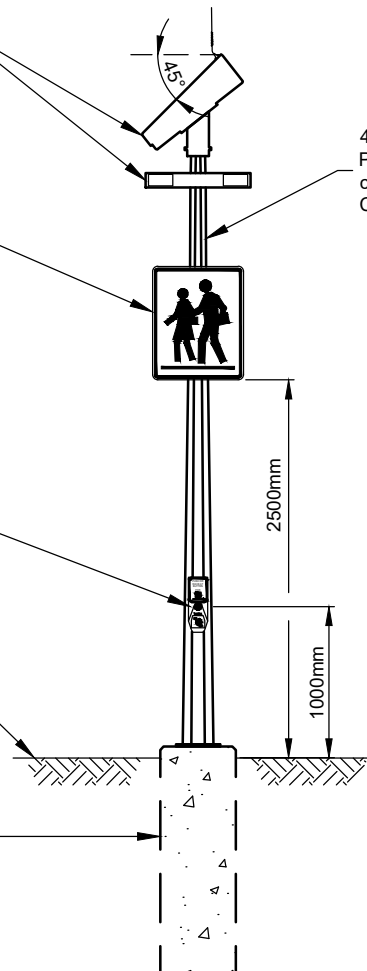
RA-3R & RA-3L SIGNS ON NEW POST

4.0m TALL TYPE 4A SIGNAL  
POLE AS PER CoN STD E-5.15  
c/w LOCKING HAND HOLE  
COVERS

INSTALL GUARDIAN WAVE  
PUSHBUTTON FACING THE  
SIDEWALK

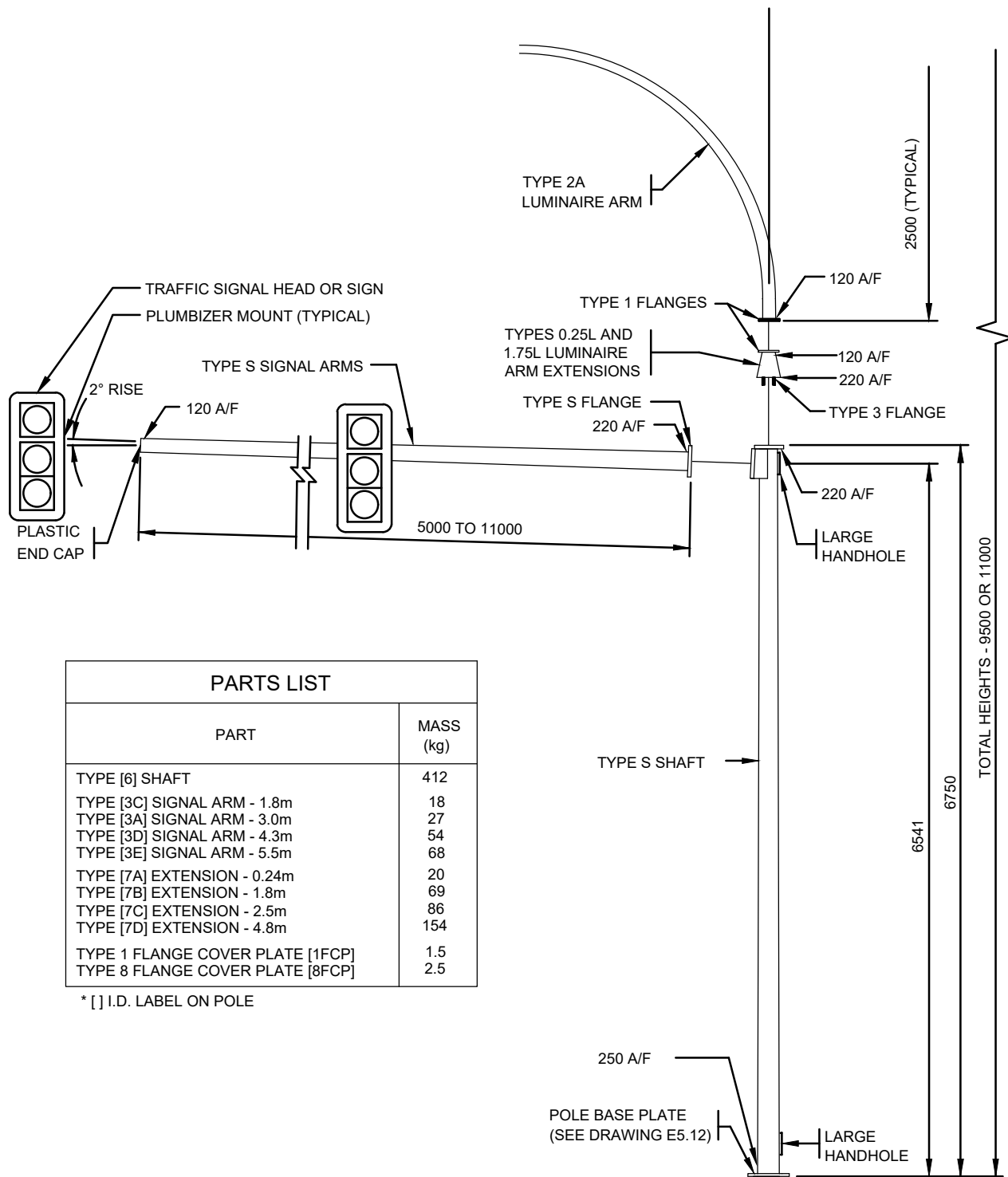
EXISTING GRADE

CONCRETE BASE TO SUIT POLE



#### NOTES:

1. POLE TO BE INSTALLED ON ONCOMING SIDE OF CROSSWALK WHERE POSSIBLE.

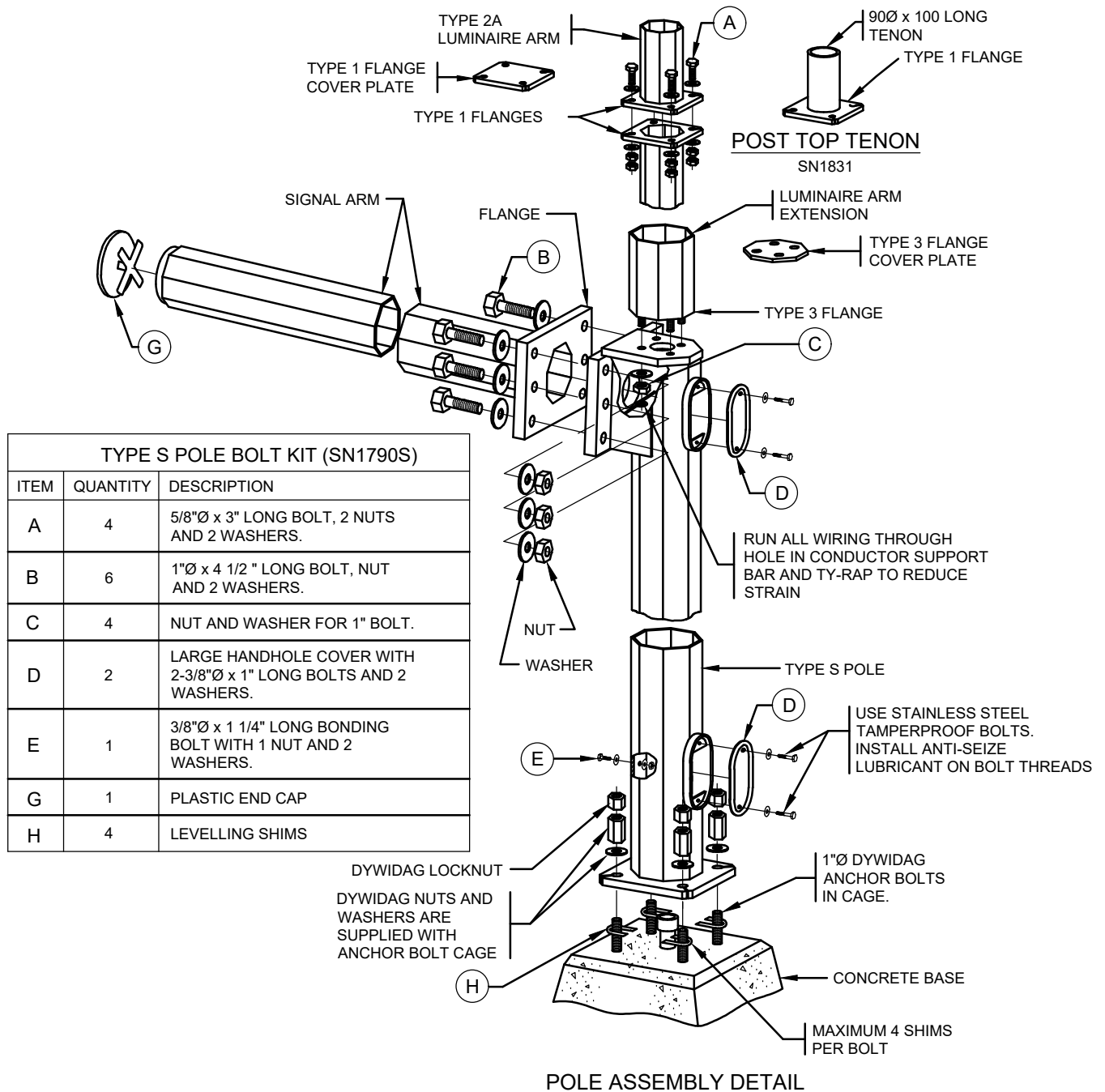


| PARTS LIST                       |           |
|----------------------------------|-----------|
| PART                             | MASS (kg) |
| TYPE [6] SHAFT                   | 412       |
| TYPE [3C] SIGNAL ARM - 1.8m      | 18        |
| TYPE [3A] SIGNAL ARM - 3.0m      | 27        |
| TYPE [3D] SIGNAL ARM - 4.3m      | 54        |
| TYPE [3E] SIGNAL ARM - 5.5m      | 68        |
| TYPE [7A] EXTENSION - 0.24m      | 20        |
| TYPE [7B] EXTENSION - 1.8m       | 69        |
| TYPE [7C] EXTENSION - 2.5m       | 86        |
| TYPE [7D] EXTENSION - 4.8m       | 154       |
| TYPE 1 FLANGE COVER PLATE [1FCP] | 1.5       |
| TYPE 8 FLANGE COVER PLATE [8FCP] | 2.5       |

\* [ ] I.D. LABEL ON POLE

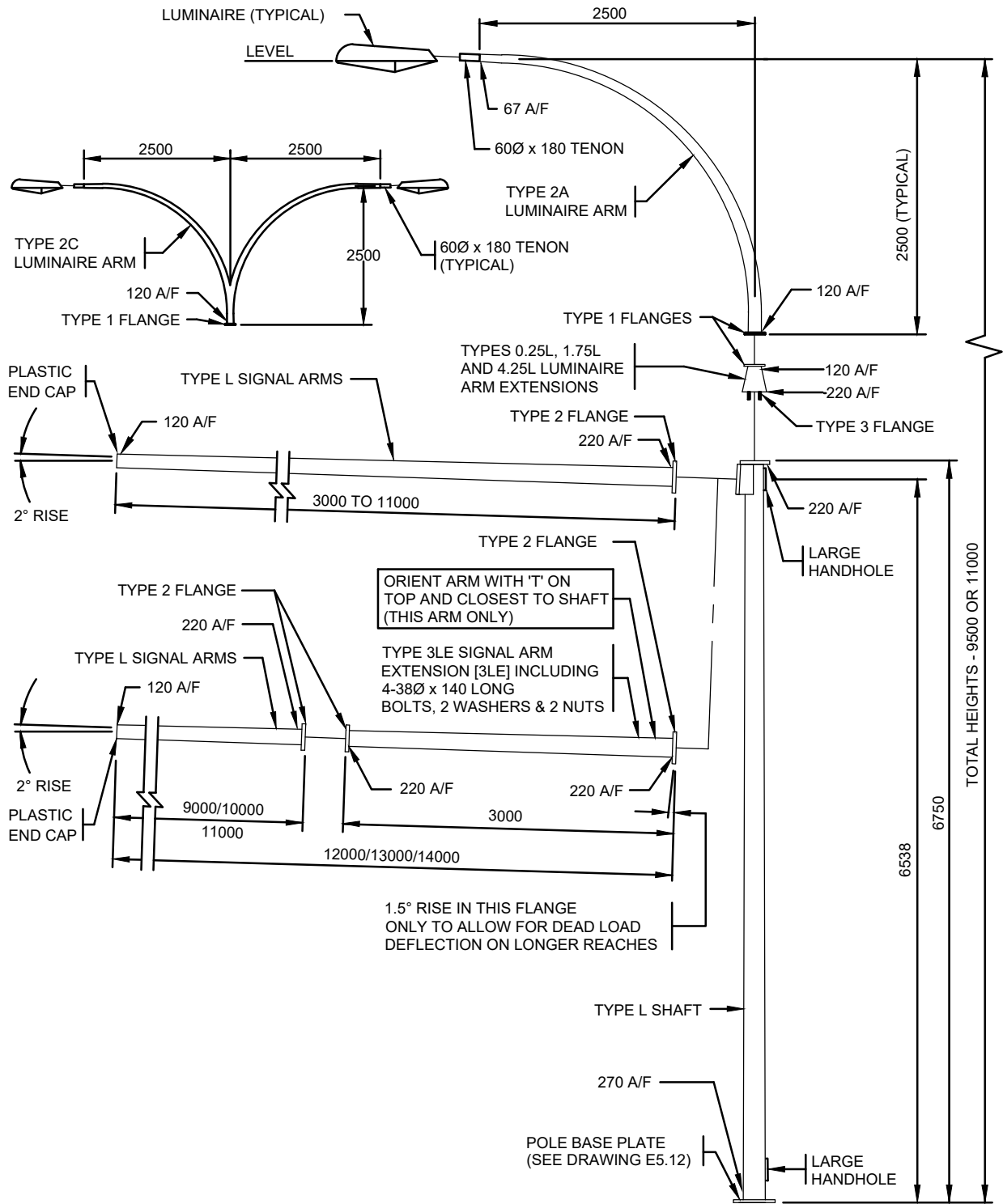
NOTES:

1. SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.



**NOTES:**

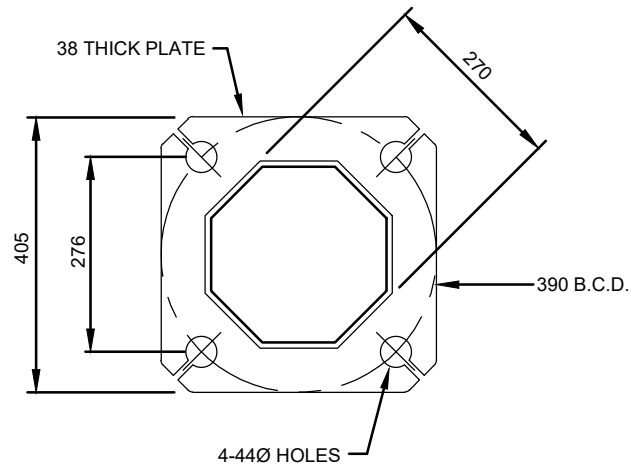
1. SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
2. SHAFTS TO BE INSTALLED PLUMB.
3. ALL SHAFTS, ARMS AND EXTENSIONS TO BE SUPPLIED WITH A GALVANIZED FINISH.
4. APPLY GREASE TO ANCHOR BOLT THREADS.
5. TOUCH UP ANY SCRATCHES IN GALVANIZED SURFACES WITH COLD GALVANIZING COMPOUND.



**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SEE DRAWING E-5.13 FOR BOLT KITS AND POLE ASSEMBLY DETAILS.
3. SEE DRAWING E-5.12 FOR BASE PLATE AND PARTS LIST.
4. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

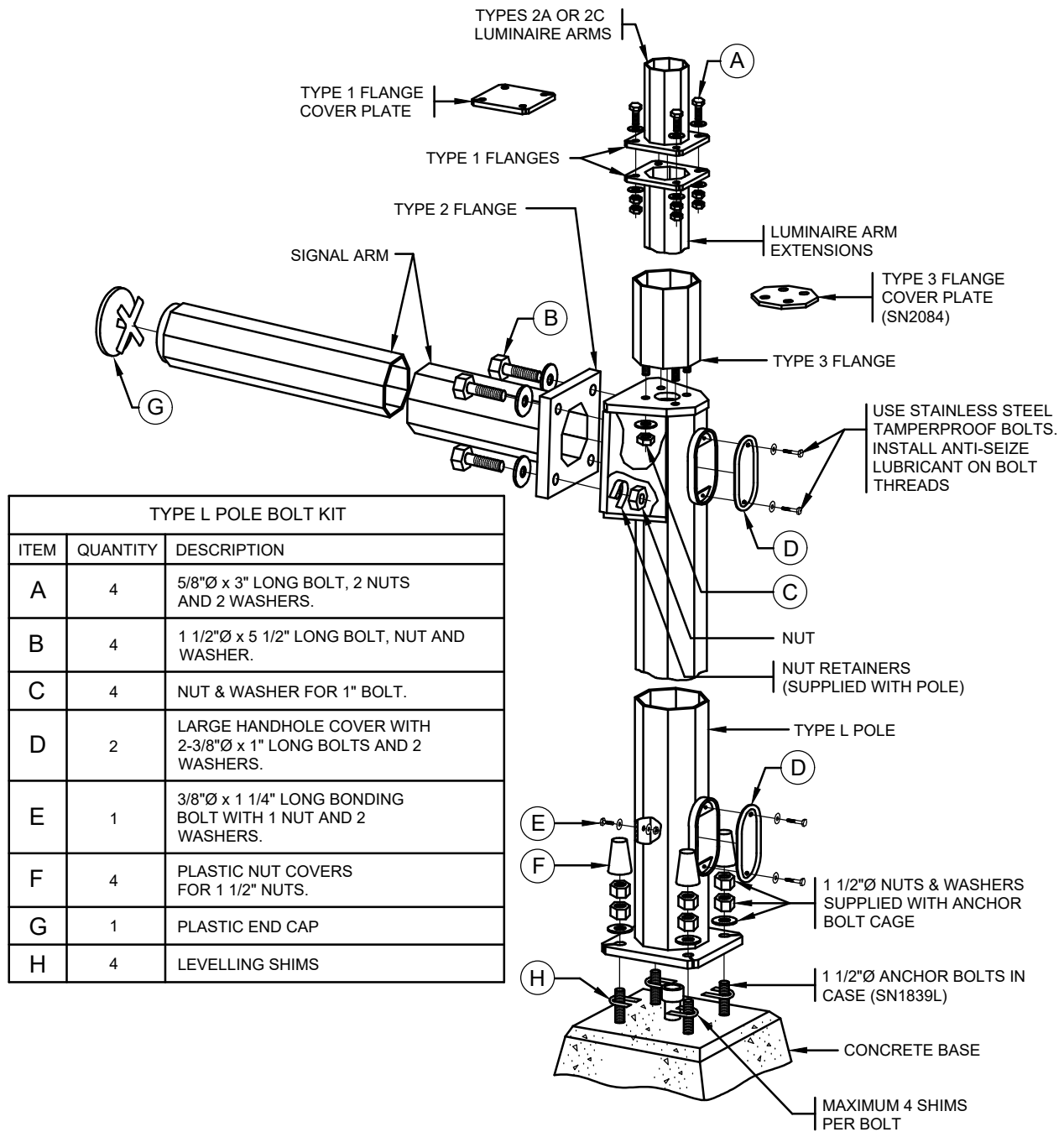




**TYPE L POLE BASE PLATE**

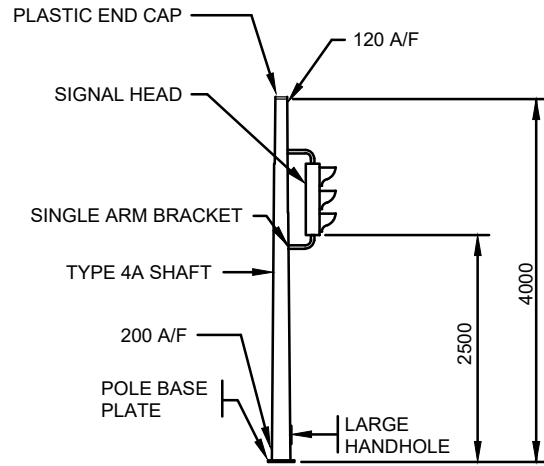
| PARTS LIST FOR TYPE L SIGNAL POLE            |              |
|----------------------------------------------|--------------|
| PART                                         | MASS<br>(kg) |
| TYPE [L] POLE SHAFT                          | 442          |
| TYPE [3L] SIGNAL ARM - 3.0m                  | 97           |
| TYPE [4L] SIGNAL ARM - 4.0m                  | 118          |
| TYPE [5L] SIGNAL ARM - 5.0m                  | 173          |
| TYPE [6L] SIGNAL ARM - 6.0m                  | 201          |
| TYPE [7L] SIGNAL ARM - 7.0m                  | 229          |
| TYPE [8L] SIGNAL ARM - 8.0m                  | 259          |
| TYPE [9L] SIGNAL ARM - 9.0m                  | 284          |
| TYPE [10L] SIGNAL ARM - 10.0m                | 377          |
| TYPE [11L] SIGNAL ARM - 11.0m                | 410          |
| TYPE [3LE] SIGNAL ARM EXTENSION - 3.0m       | 114          |
| TYPE [4.25L] LUMINAIRE ARM EXTENSION - 4.25m | 82           |
| TYPE [1.75L] LUMINAIRE ARM EXTENSION - 1.75m | 29           |
| TYPE [0.25L] LUMINAIRE ARM EXTENSION - 0.25m | 10           |
| TYPE [2A] LUMINAIRE ARM                      | 35           |
| TYPE [2C] LUMINAIRE ARM                      | 65           |
| TYPE 1 FLANGE COVER PLATE [1 FCP]            | 1.5          |
| TYPE 2 FLANGE COVER PLATE [2 FCP]            | 4            |
| TYPE 3 FLANGE COVER PLATE [3 FCP]            | 4            |

\* [ ] I.D. LABEL ON POLE

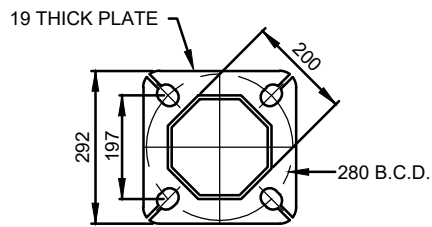


**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SHAFTS TO BE INSTALLED PLUMB.
3. ALL SHAFTS, ARMS AND EXTENSIONS TO BE SUPPLIED WITH A GALVANIZED FINISH, UNLESS OTHERWISE NOTED.
4. APPLY GREASE TO ANCHOR BOLT THREADS.
5. TOUCH UP ANY SCRATCHES IN GALVANIZED SURFACES WITH COLD GALVANIZING COMPOUND.



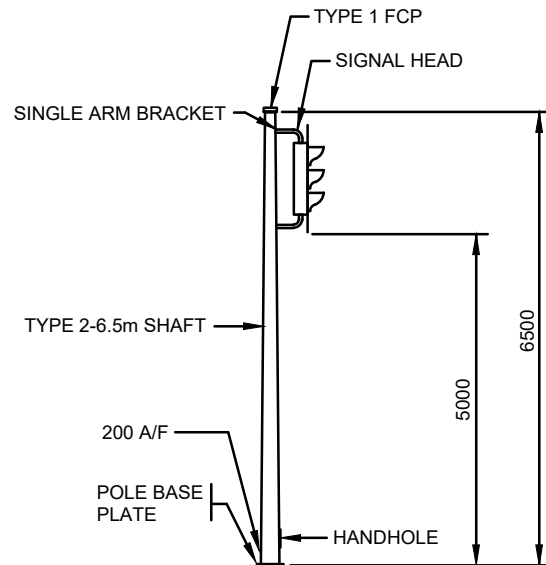
**TYPE 4A SHAFT**



**POLE BASE PLATE**

| PARTS LIST      |           |
|-----------------|-----------|
| PART            | MASS (kg) |
| TYPE [2] SHAFT  | 102       |
| TYPE [4A] SHAFT | 66        |

\* [ ] I.D. LABEL ON POLE

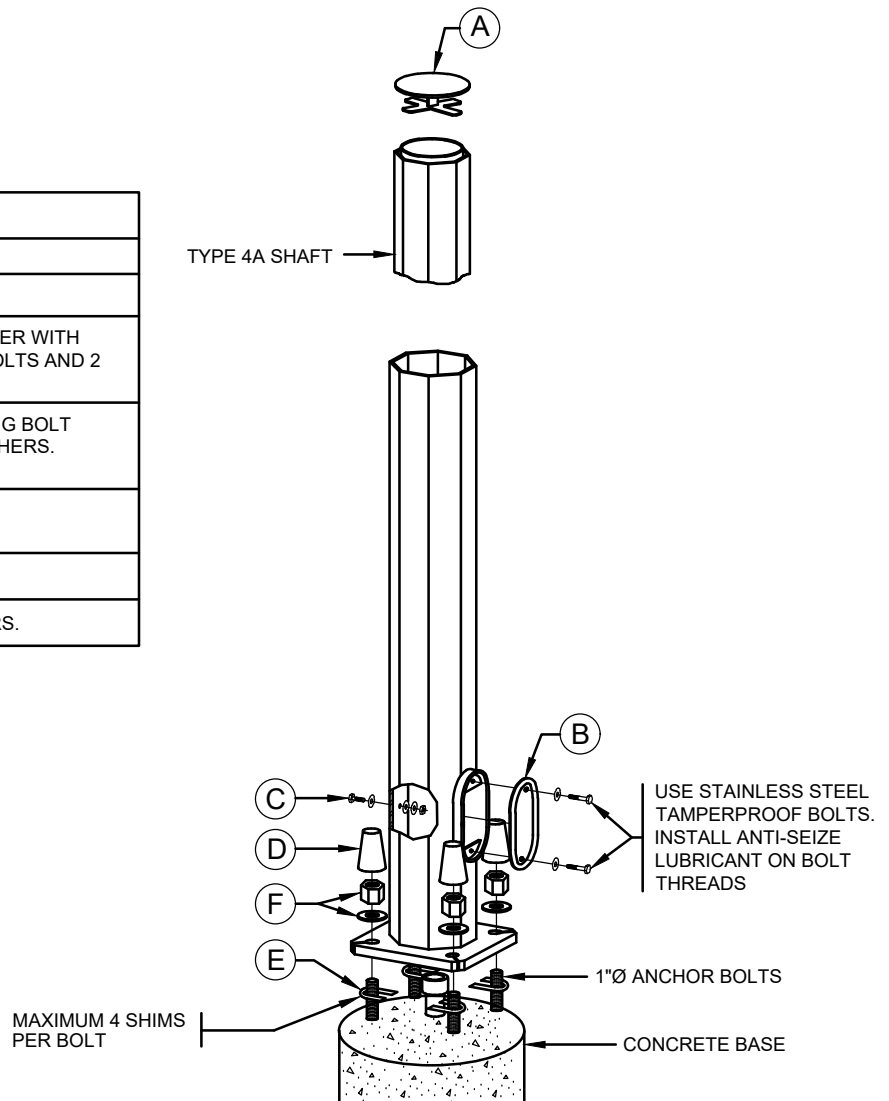


**TYPE 2-6.5m SHAFT**

**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SEE DRAWING E-5.15 FOR TYPE 4A SHAFT, BOLT KITS AND POLE ASSEMBLY DETAILS.
3. ALL DIMENSION IN MILLIMETERS UNLESS OTHERWISE NOTED.
4. POLE SHAFTS TO BE SUPPLIED 0.9m SHORTER WHERE BEING INSTALLED ON SERVICE BASE.

| TYPE 4A SHAFT BOLT KIT |          |                                                                      |
|------------------------|----------|----------------------------------------------------------------------|
| ITEM                   | QUANTITY | DESCRIPTION                                                          |
| A                      | 1        | PLASTIC END CAP                                                      |
| B                      | 1        | LARGE HANDHOLE COVER WITH 2-3/8"Ø x 1 1/4" LONG BOLTS AND 2 WASHERS. |
| C                      | 1        | 3/8"Ø x 1" LONG BONDING BOLT WITH 1 NUT AND 2 WASHERS.               |
| D                      | 4        | PLASTIC NUT COVERS FOR 1"Ø NUTS.                                     |
| E                      | 4        | LEVELING SHIMS.                                                      |
| F                      | 4        | 1"Ø NUTS AND WASHERS.                                                |

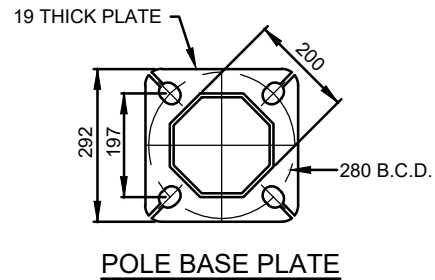
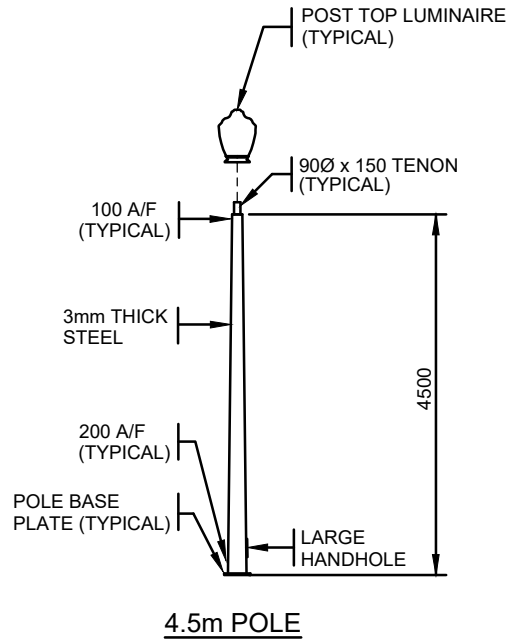


POLE ASSEMBLY DETAIL

NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SHAFTS TO BE INSTALLED PLUMB.
3. ALL SHAFTS, ARMS AND EXTENSIONS TO BE SUPPLIED WITH A GALVANIZED FINISH, UNLESS OTHERWISE NOTED.
4. APPLY GREASE TO ANCHOR BOLT THREADS.
5. TOUCH UP ANY SCRATCHES IN GALVANIZED SURFACES WITH COLD GALVANIZING COMPOUND.

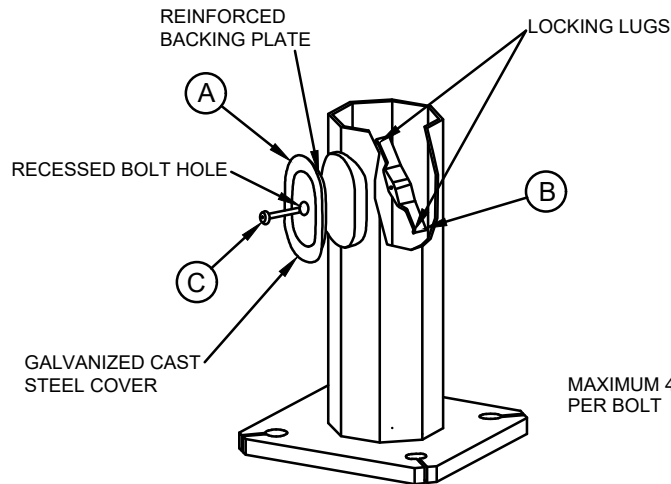
| PARTS LIST                     |           |
|--------------------------------|-----------|
| PART                           | MASS (kg) |
| 4.5m - POST TOP LUMINAIRE POLE | 55        |



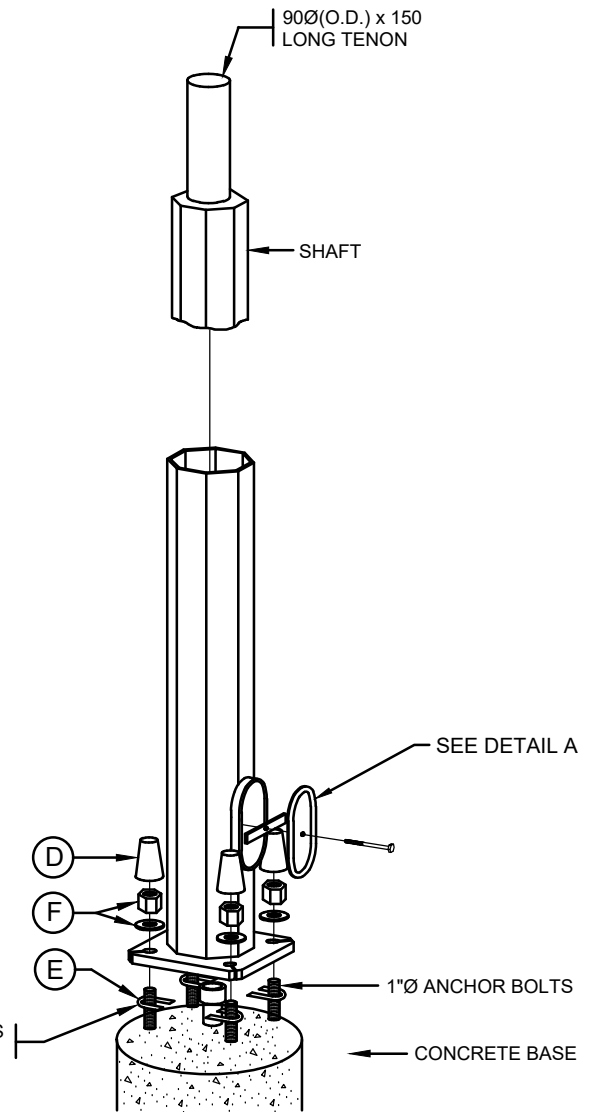
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SEE DRAWING E-5.17 FOR BOLT KIT AND POLE ASSEMBLY DETAILS.
3. ALL DIMENSION IN MILLIMETERS UNLESS OTHERWISE NOTED.
4. POST TOP POLES TO BE SUPPLIED 0.9m SHORTER WHEN INSTALLED ON A SERVICE BASE.

| POST TOP POLE BOLT KIT |          |                                                                                 |
|------------------------|----------|---------------------------------------------------------------------------------|
| ITEM                   | QUANTITY | DESCRIPTION                                                                     |
| A                      | 1        | LOCKABLE HANDHOLE COVER                                                         |
| B                      | 1        | TAMPER PROOF BACKING BAR                                                        |
| C                      | 1        | STAINLESS STEEL TAMPER PROOF BOLT. INSTALL ANTI-SEIZE LUBRICANT ON BOLT THREADS |
| D                      | 4        | PLASTIC NUT COVERS FOR 1" NUTS                                                  |
| E                      | 4        | LEVELLING SHIMS                                                                 |
| F                      | 4        | 1"Ø NUTS AND WASHERS                                                            |



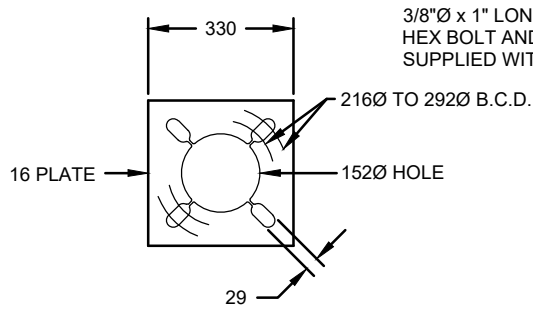
DETAIL A



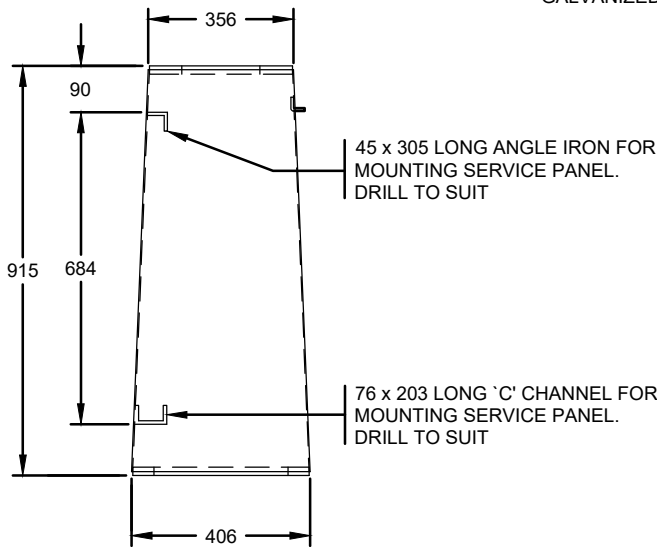
POLE ASSEMBLY DETAIL

NOTES:

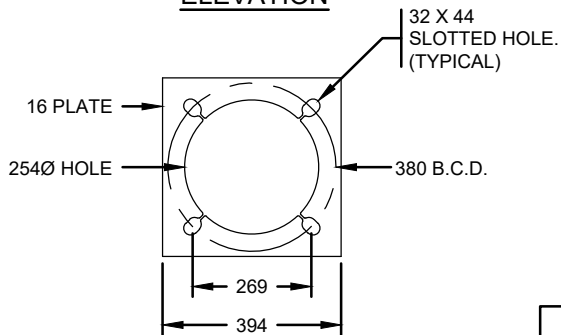
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SHAFTS TO BE INSTALLED PLUMB.
3. ALL SHAFTS, ARMS AND EXTENSIONS TO BE SUPPLIED WITH A GALVANIZED FINISH, UNLESS OTHERWISE NOTED.
4. APPLY GREASE TO ANCHOR BOLT THREADS.
5. TOUCH UP ANY SCRATCHES IN GALVANIZED SURFACES WITH COLD GALVANIZING COMPOUND.



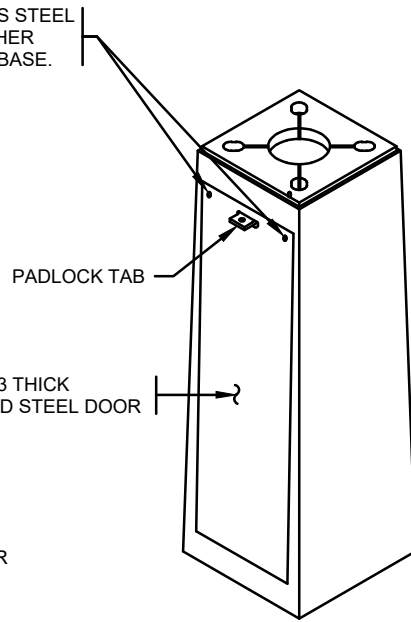
**TOP VIEW**



**ELEVATION**



**BOTTOM VIEW**

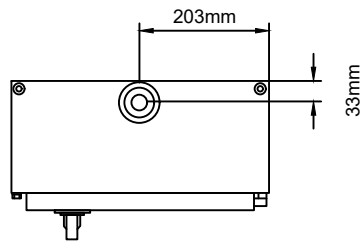


**PICTORIAL VIEW**

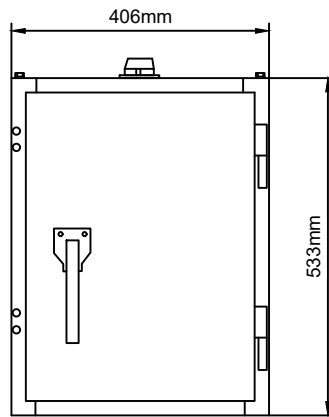
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SERVICE BASE TO BE USED WITH TYPE 2 SHAFTS AND POST TOP POLES ONLY.
3. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

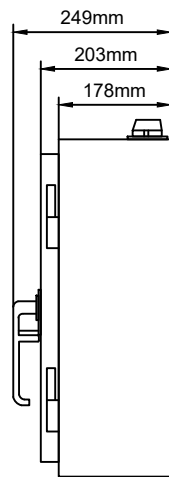
| SERVICE BASE BOLT KIT |          |                                                               |
|-----------------------|----------|---------------------------------------------------------------|
| ITEM                  | QUANTITY | DESCRIPTION                                                   |
| POLE CONNECTION BOLTS | 4        | 1"Ø x 3" LONG SAE GRADE 5 BOLT, NUT AND GALVANIZED 2 WASHERS. |



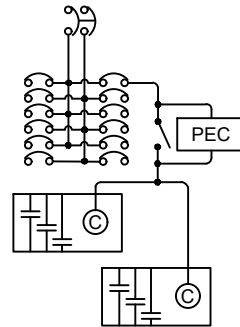
TOP VIEW



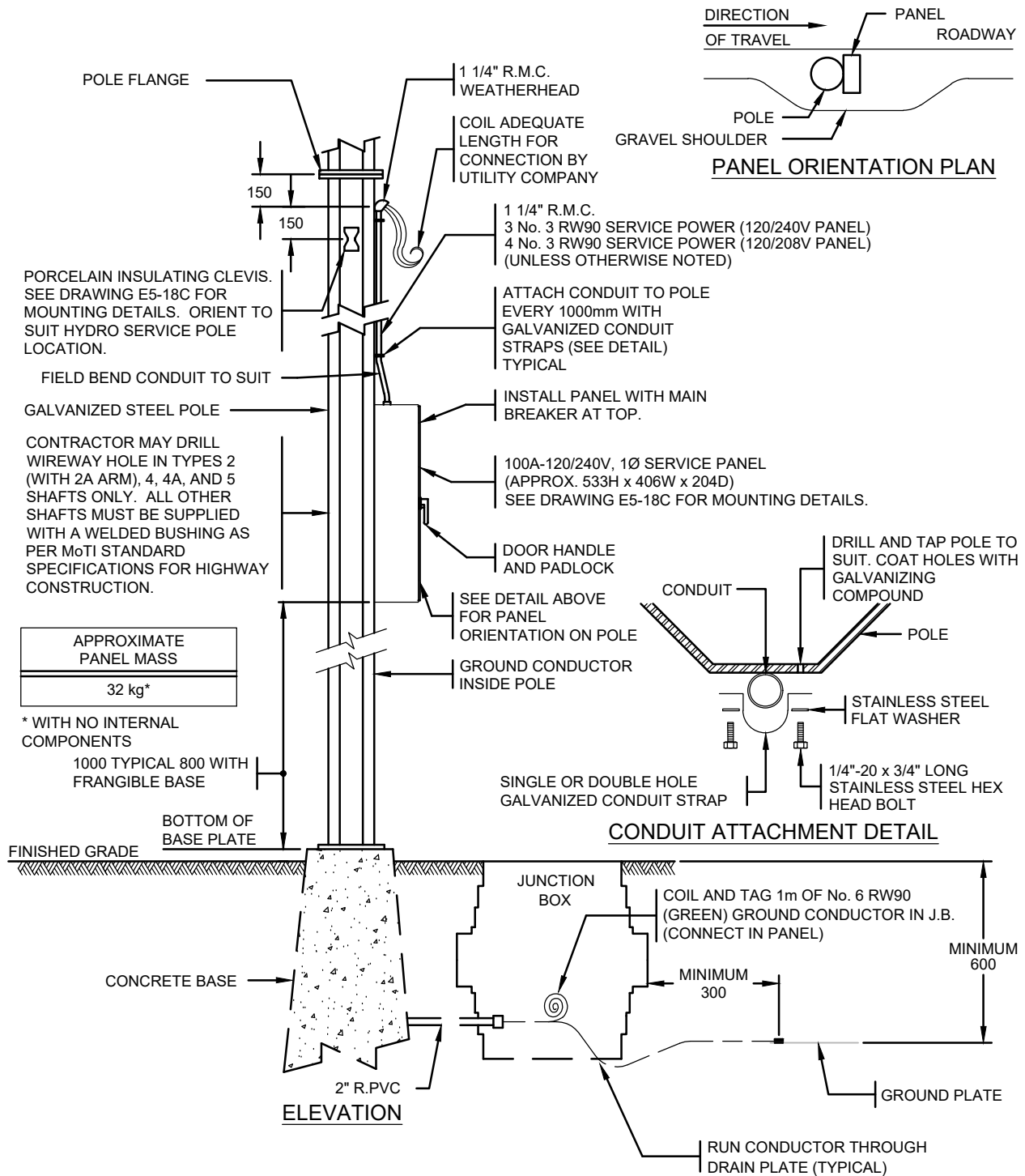
FRONT VIEW



SIDE VIEW

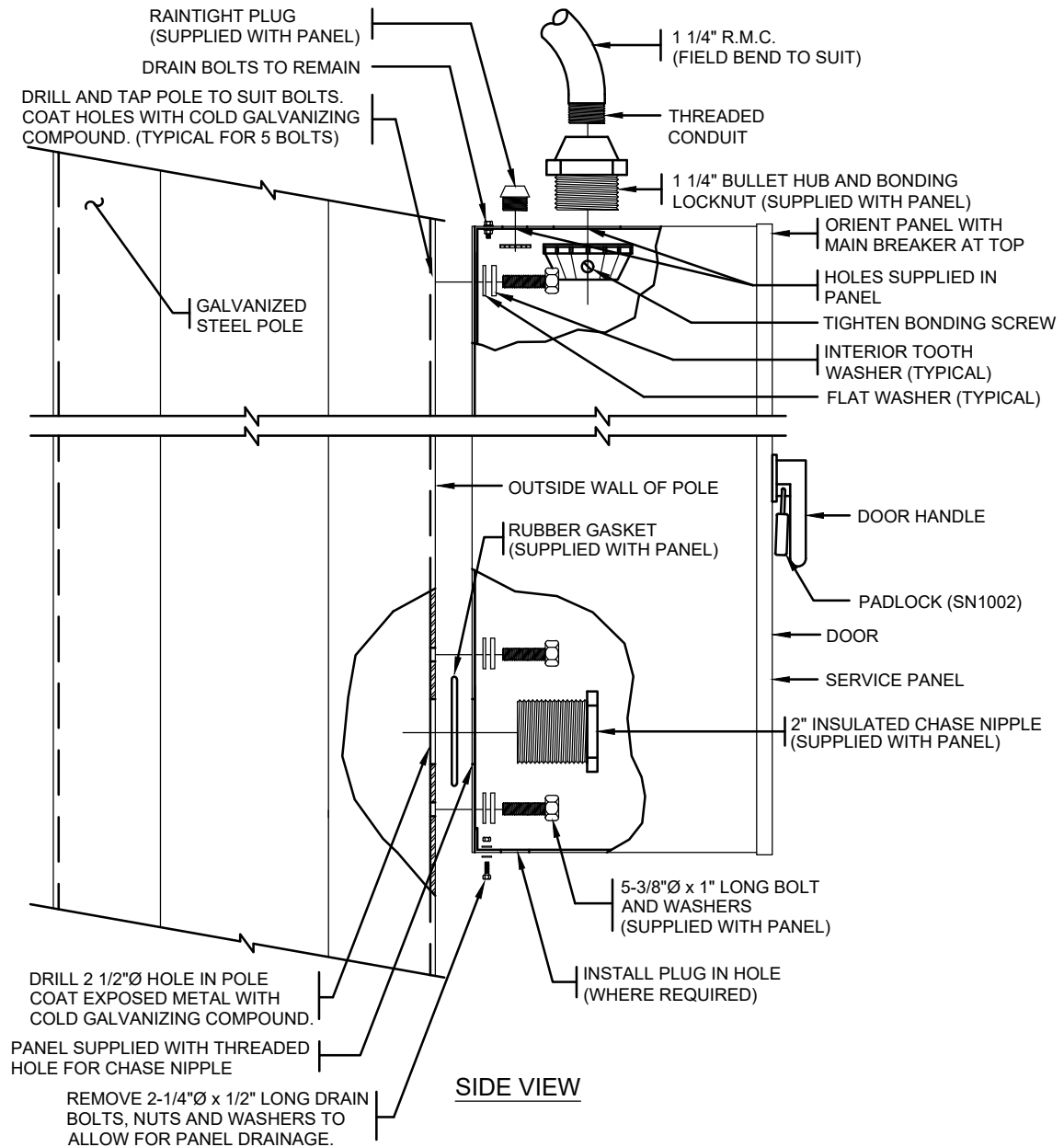






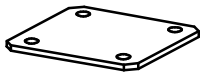
**NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

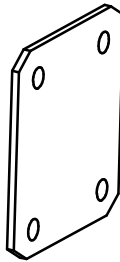


**NOTES:**

1. SEE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. PANEL ASSEMBLY AND INSTALLATION INSTRUCTIONS SUPPLIED WITH PANEL.

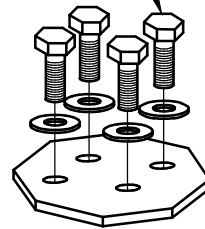


TYPE 1 FLANGE  
COVER PLATE

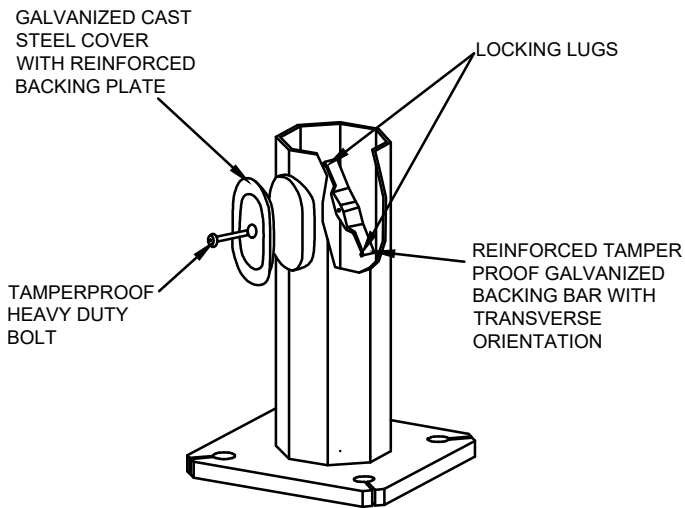


TYPE 2 FLANGE  
COVER PLATE

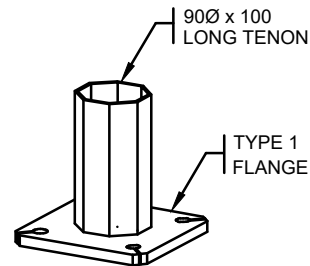
4-1"Ø x 2 1/2" LONG BOLTS  
AND WASHERS



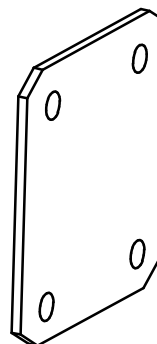
TYPE 3 FLANGE  
COVER PLATE



SECURITY 4 X 7 HANDHOLE  
COVER KIT



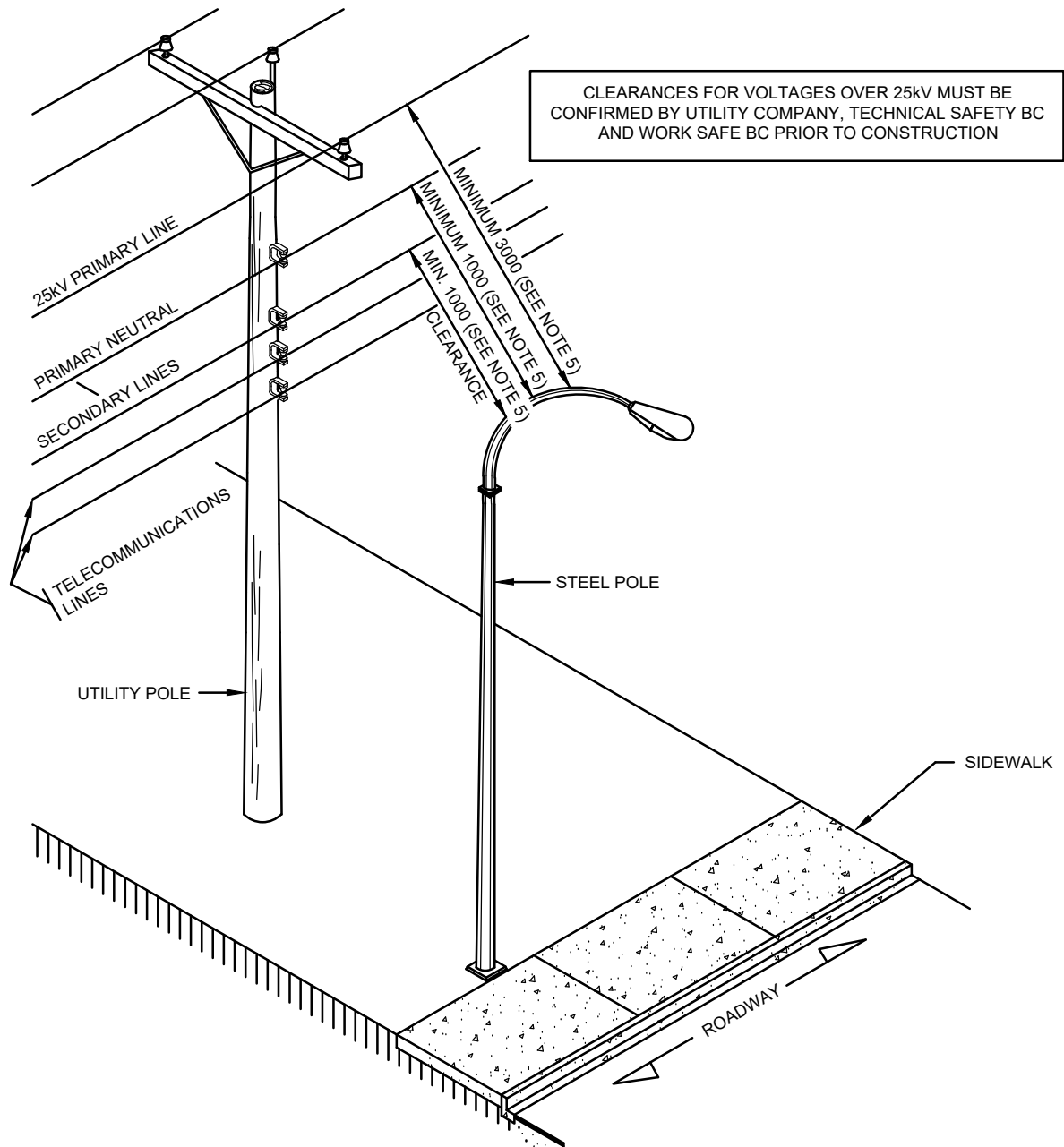
POST TOP  
TENON



TYPE 8 FLANGE  
COVER PLATE

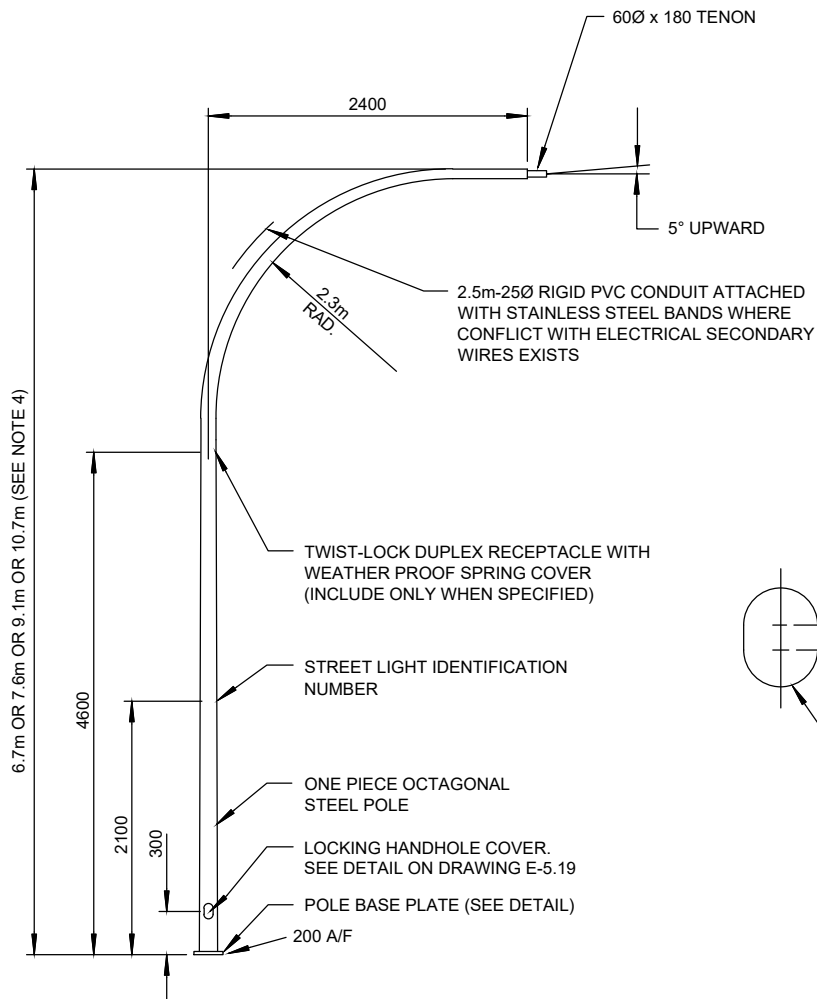
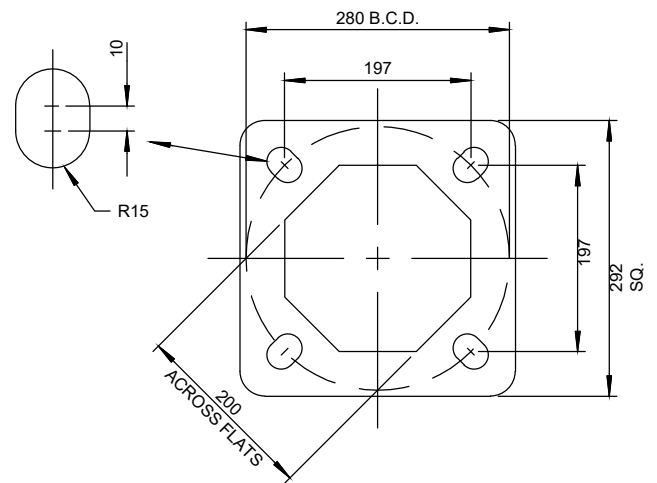
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.



**NOTES:**

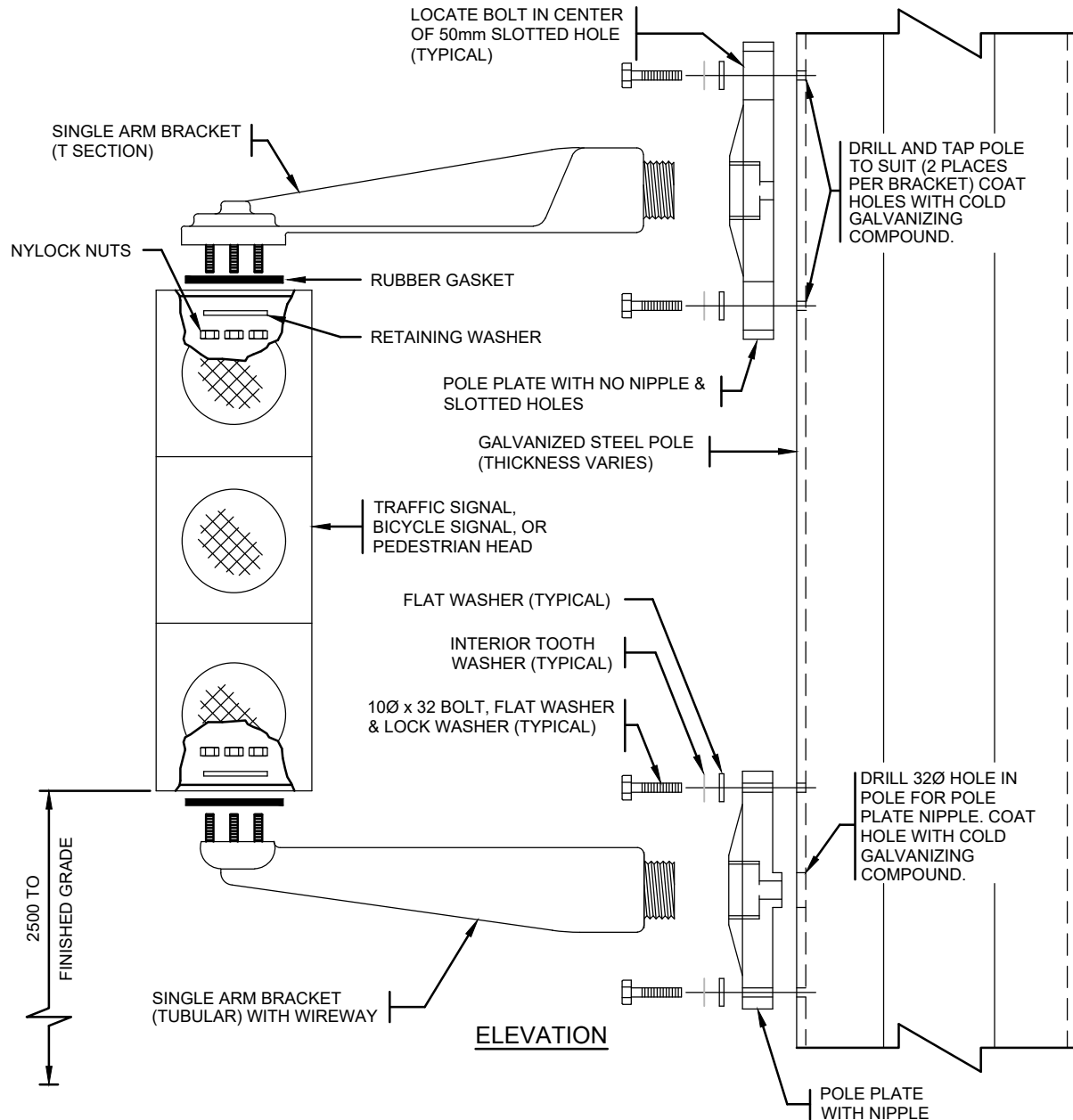
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. CLEARANCES LISTED ABOVE ARE TO BE USED AS A GUIDELINE ONLY. EXACT REQUIRED CLEARANCES MAY VARY AND MUST BE CONFIRMED BY CONTRACTOR PRIOR TO CONSTRUCTION. AS PER THE REQUIREMENTS OF THE UTILITY COMPANY.
3. FOR CLEARANCES LESS THAN SHOWN, CONTRACTOR TO OBTAIN APPROVAL FROM UTILITY COMPANY AND WORKERS COMPENSATION BOARD PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL COORDINATE WITH TELECOMMUNICATIONS UTILITIES TO INSTALL PLASTIC WEAR SHIELDS ON LINES THAT COME INTO CONTACT WITH POLES.
5. MINIMUM DISTANCE TO INCLUDE MAXIMUM SAG AND SWING.

ELEVATION

POLE BASE PLATE

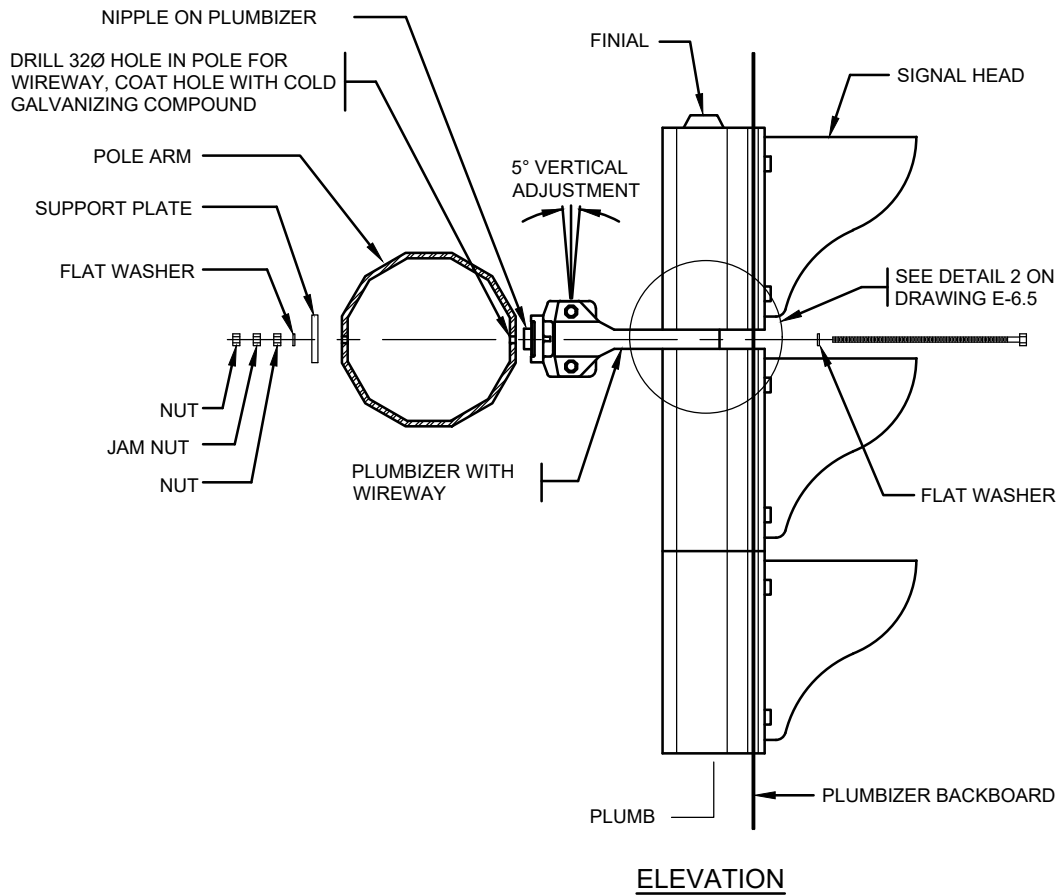
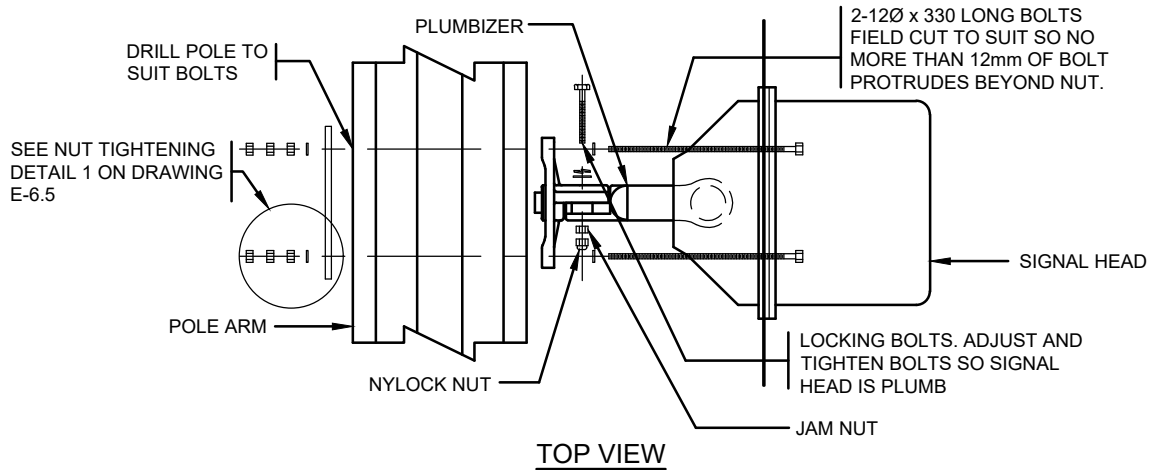
NOTES:

1. STRICT ADHERENCE TO CLEARANCES FROM HIGH VOLTAGE POWER AS SPECIFIED IN THE CANADIAN ELECTRICAL CODE IS REQUIRED
2. ALL DIMENSIONS IN MILLIMETERS UNLESS SHOWN OTHERWISE
3. POLE TO BE SUPPLIED 0.9m SHORTER WHERE BEING INSTALLED ON SERVICE BASE.
4. 6.7m AND 7.6m POLES REQUIRE APPROVAL FROM THE CITY ENGINEER.



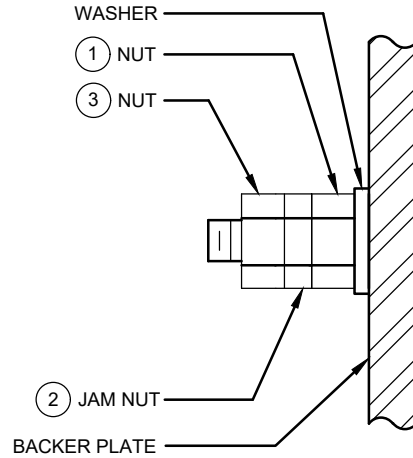
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. AIM SIGNAL HEADS AS DIRECTED BY THE CITY ENGINEER.
3. WHERE 3 OR MORE SIDE MOUNT SIGNAL HEADS ARE REQUIRED ON POLE, LOCATE 3rd & 4th PEDESTRIAN HEAD ARM BRACKETS WITH WIREWAY & POLE PLATE WITH NIPPLE TO TOP OF HEAD TO AVOID EXCESSIVE DRILLING OF POLE IN ONE AREA.
4. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.



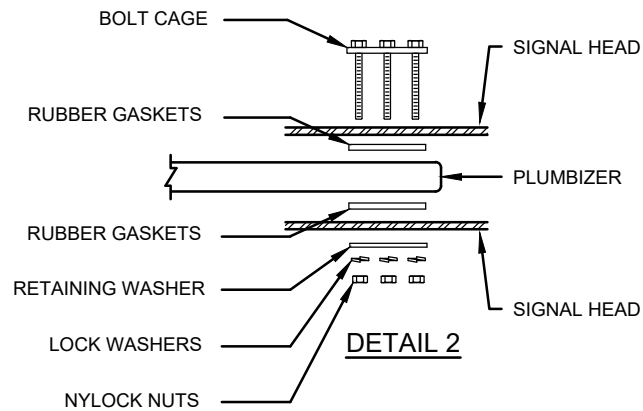
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. AIM SIGNAL HEADS AS DIRECTED BY THE CITY ENGINEER.



- TIGHTEN NUT ① AGAINST WASHER,
- TIGHTEN JAM NUT ② AGAINST NUT,
- SNUG NUT ③ AGAINST JAM NUT ② AND THEN TIGHTEN NUT ③ AND JAM NUT ② INTO EACH OTHER.

#### DETAIL 1

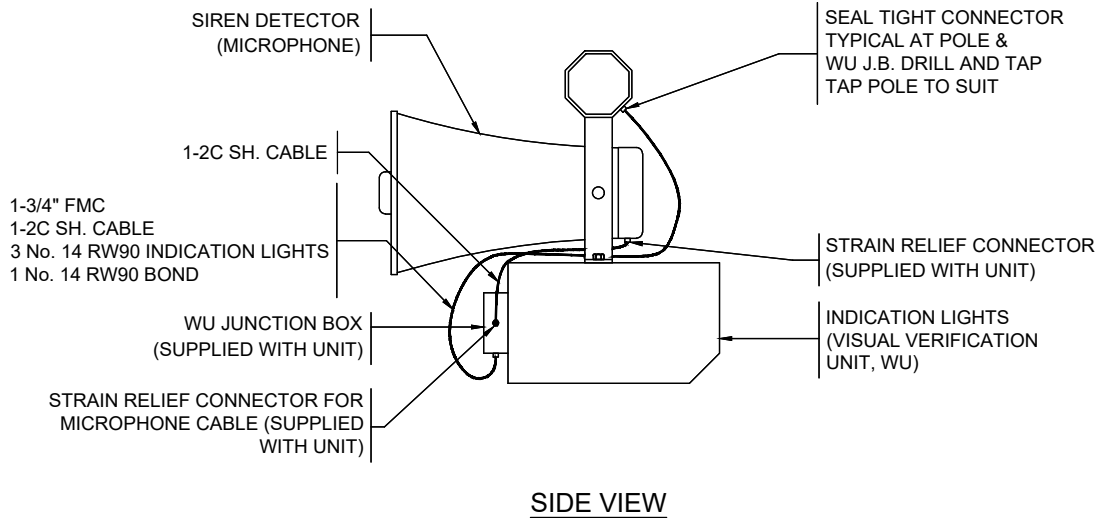
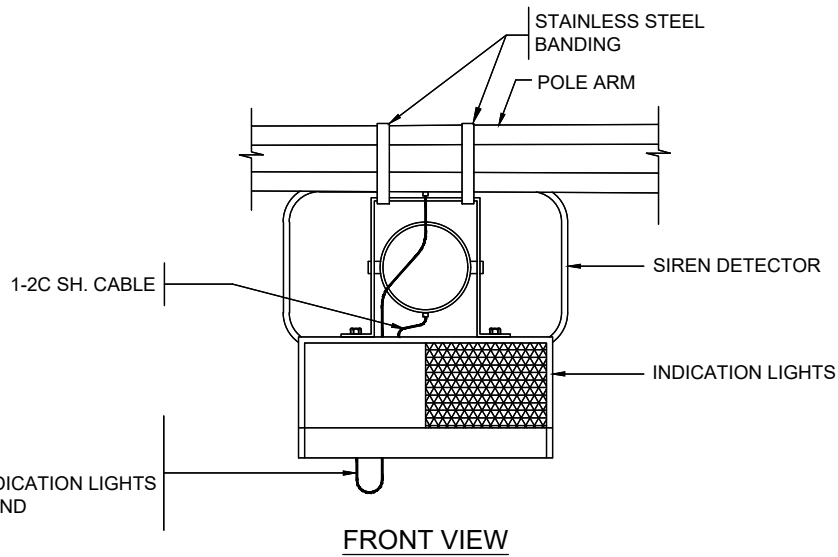


#### DETAIL 2

#### NOTES:

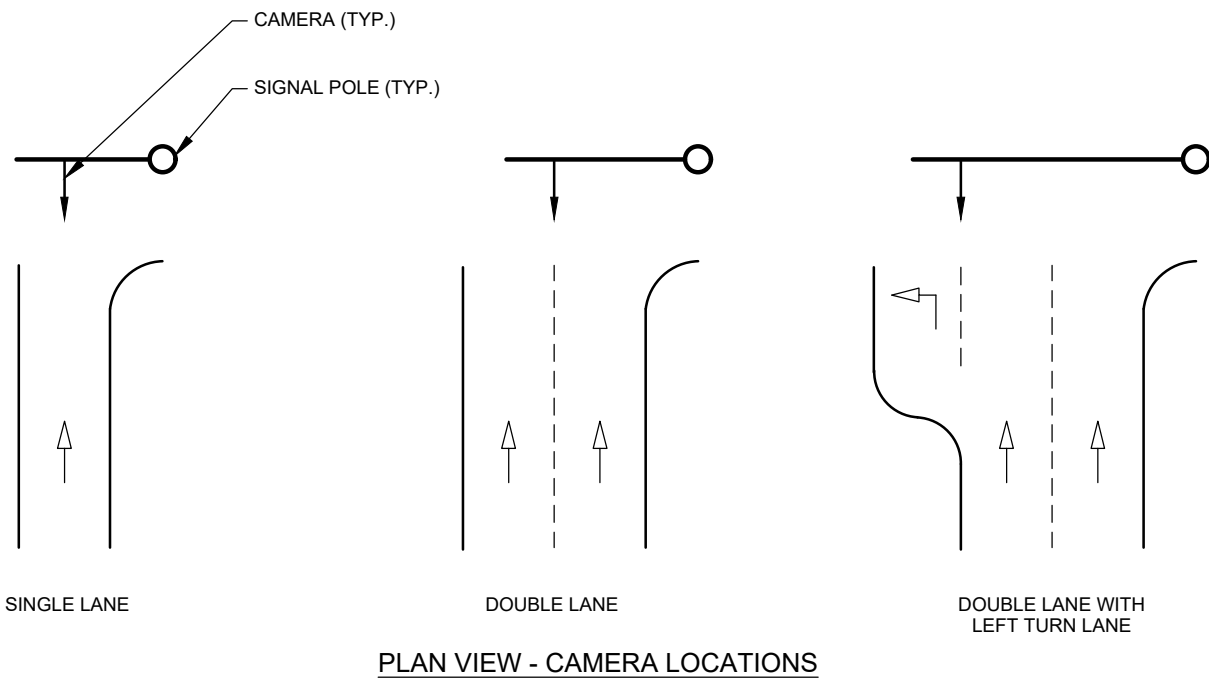
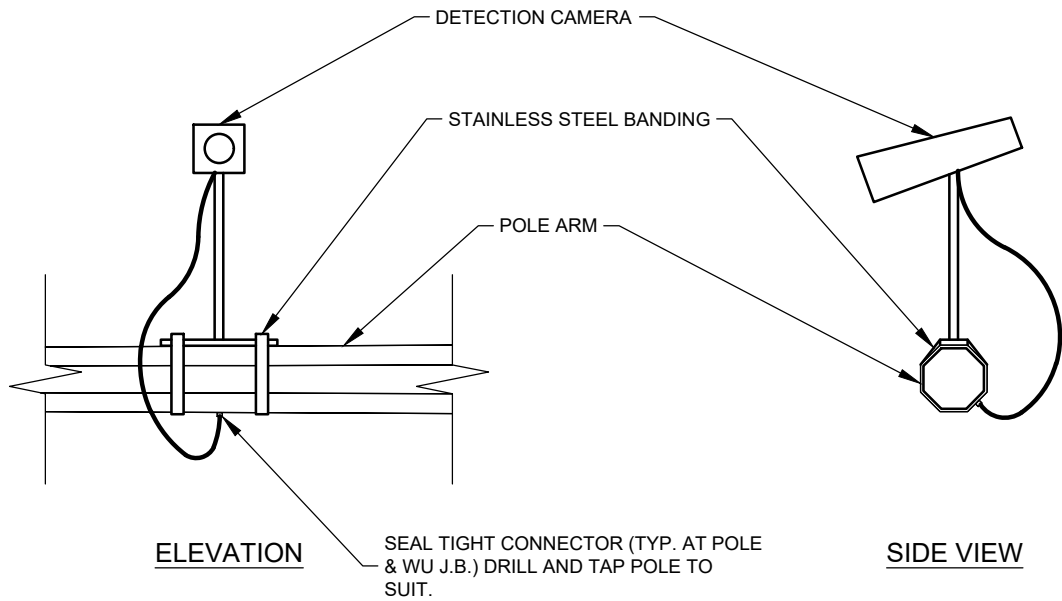
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. AIM SIGNAL HEADS AS DIRECTED BY THE CITY ENGINEER.





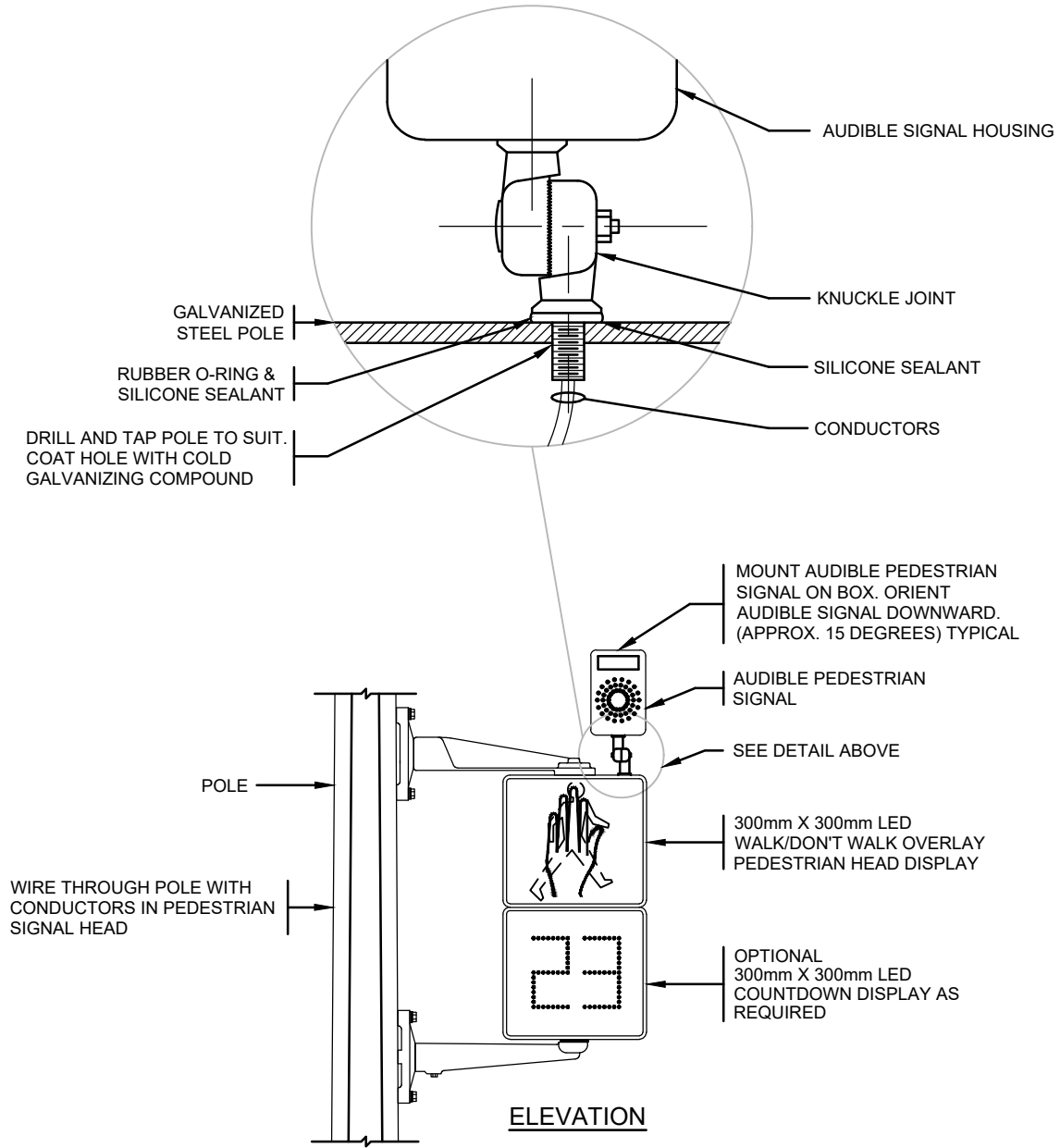
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. PRE-EMPTION UNIT IS TO BE SUPPLIED BY THE CITY OF NANAIMO AND INSTALLED BY THIS CONTRACTOR.
3. AIM, ADJUST SIREN PRE-EMPTION UNIT AS DIRECTED BY THE CITY ENGINEER.



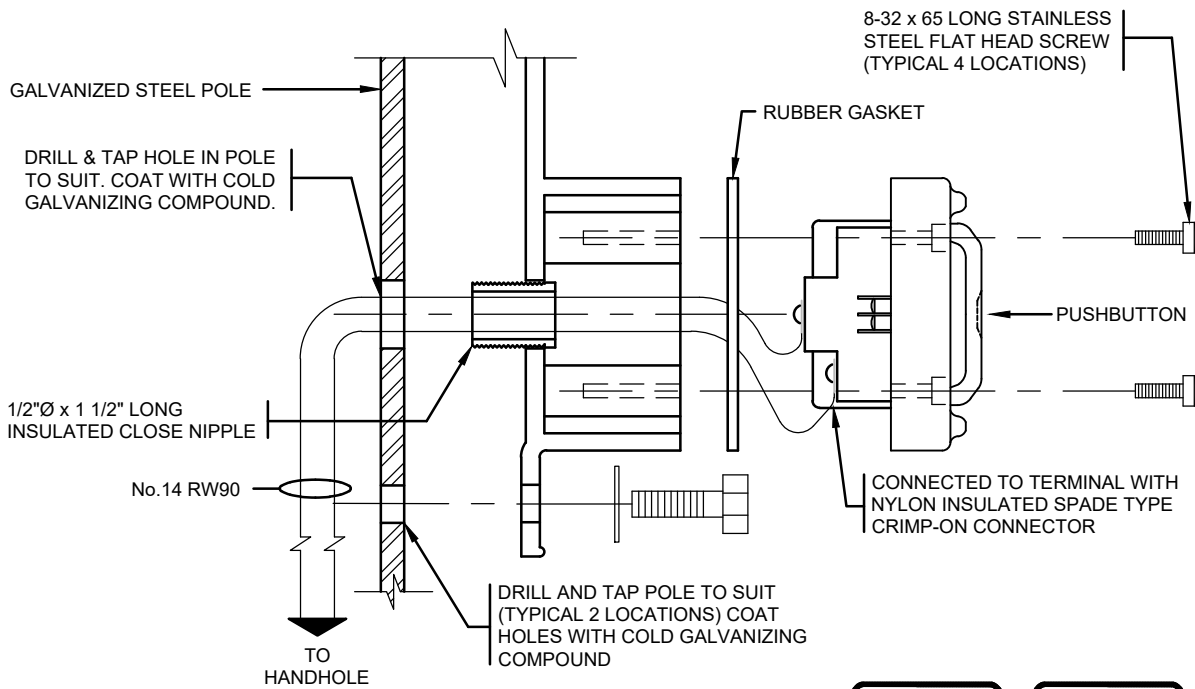
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. CAMERA MANUFACTURER / MODEL VARIES. INSTALL CAMERA AS PER MANUFACTURER'S REQUIREMENTS WITH STAINLESS STEEL HARDWARE.
3. AIM, ADJUST CAMERA AS DIRECTED BY THE CITY.
4. CITY TO PROVIDE PROGRAMMING FOR CAMERA DETECTION SYSTEM.

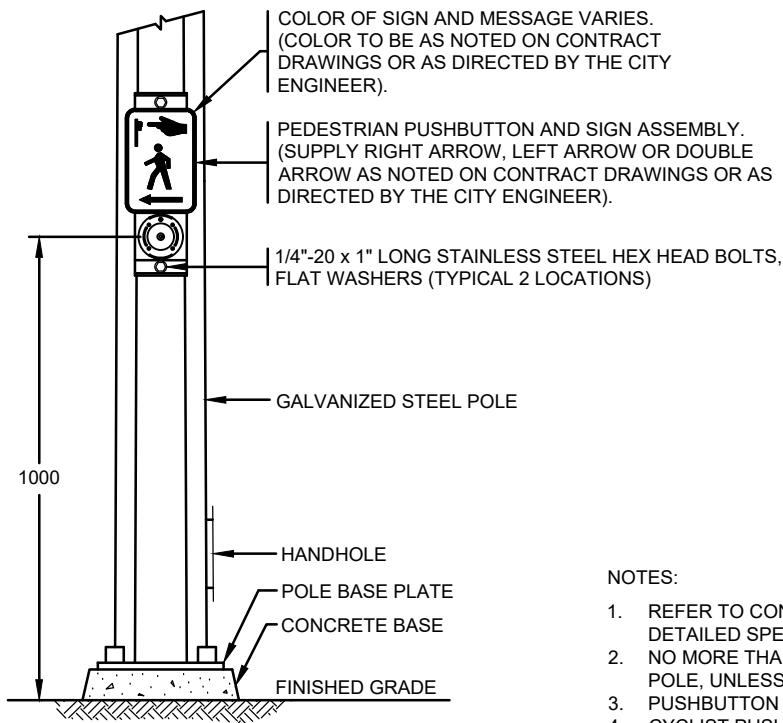


**NOTES:**

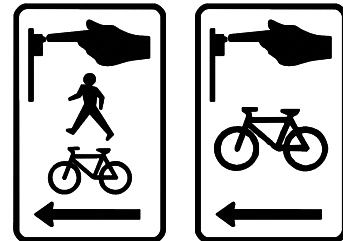
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. AIM, ADJUST AND CONNECT AUDIBLE SIGNAL AS PER MANUFACTURERS INSTRUCTIONS TO SATISFACTION THE CITY ENGINEER.
3. AUDIBLE SIGNAL TO 'CHIRP' FOR EAST TO WEST CROSSINGS & 'CUCKOO' FOR NORTH TO SOUTH CROSSINGS. AT INTERSECTIONS WHERE NORTH/SOUTH AND EAST/WEST ARE NOT EASILY DEFINED CONTACT CITY ENGINEER FOR DIRECTION.
4. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
5. ORDER AUDIBLE SIGNAL HEAD WITH MINIMUM 3.0m OF CONDUCTORS.



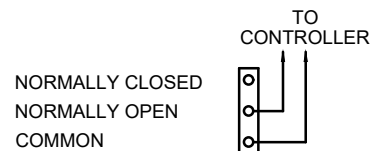
SIDE VIEW



ELEVATION



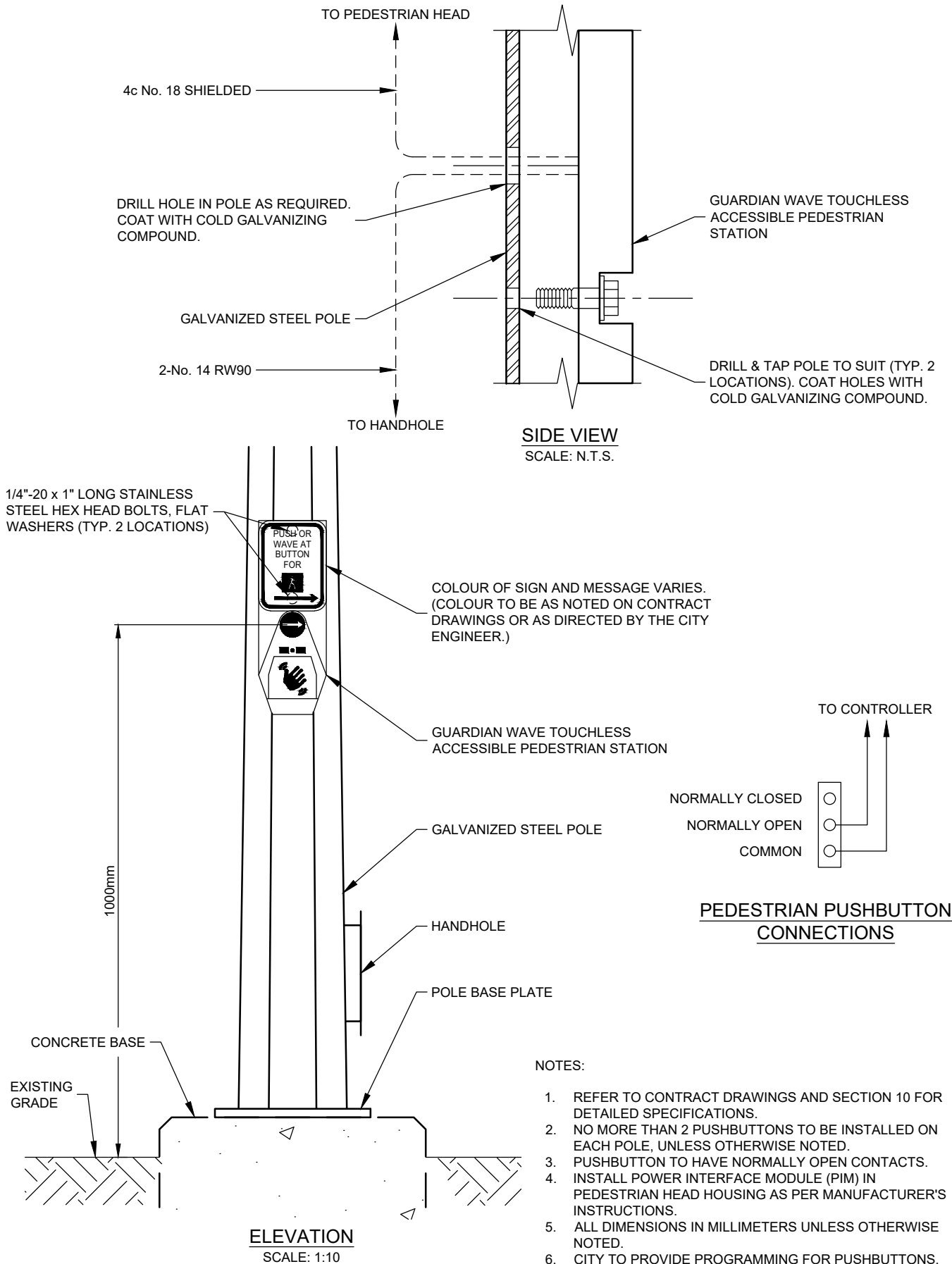
ALTERNATE  
PEDESTRIAN PUSHBUTTON  
SIGNS

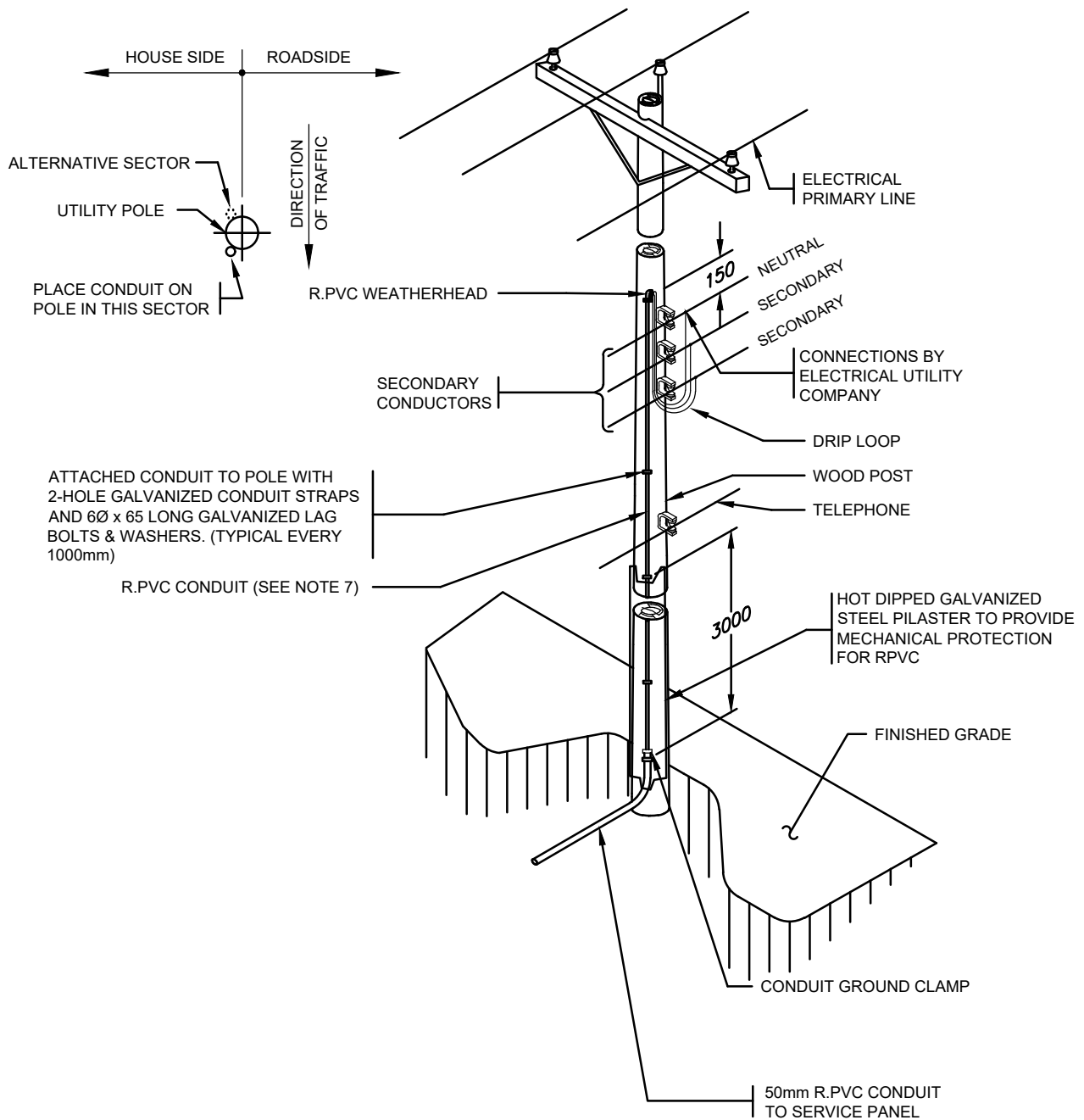


PEDESTRIAN PUSHBUTTON  
CONNECTIONS

**NOTES:**

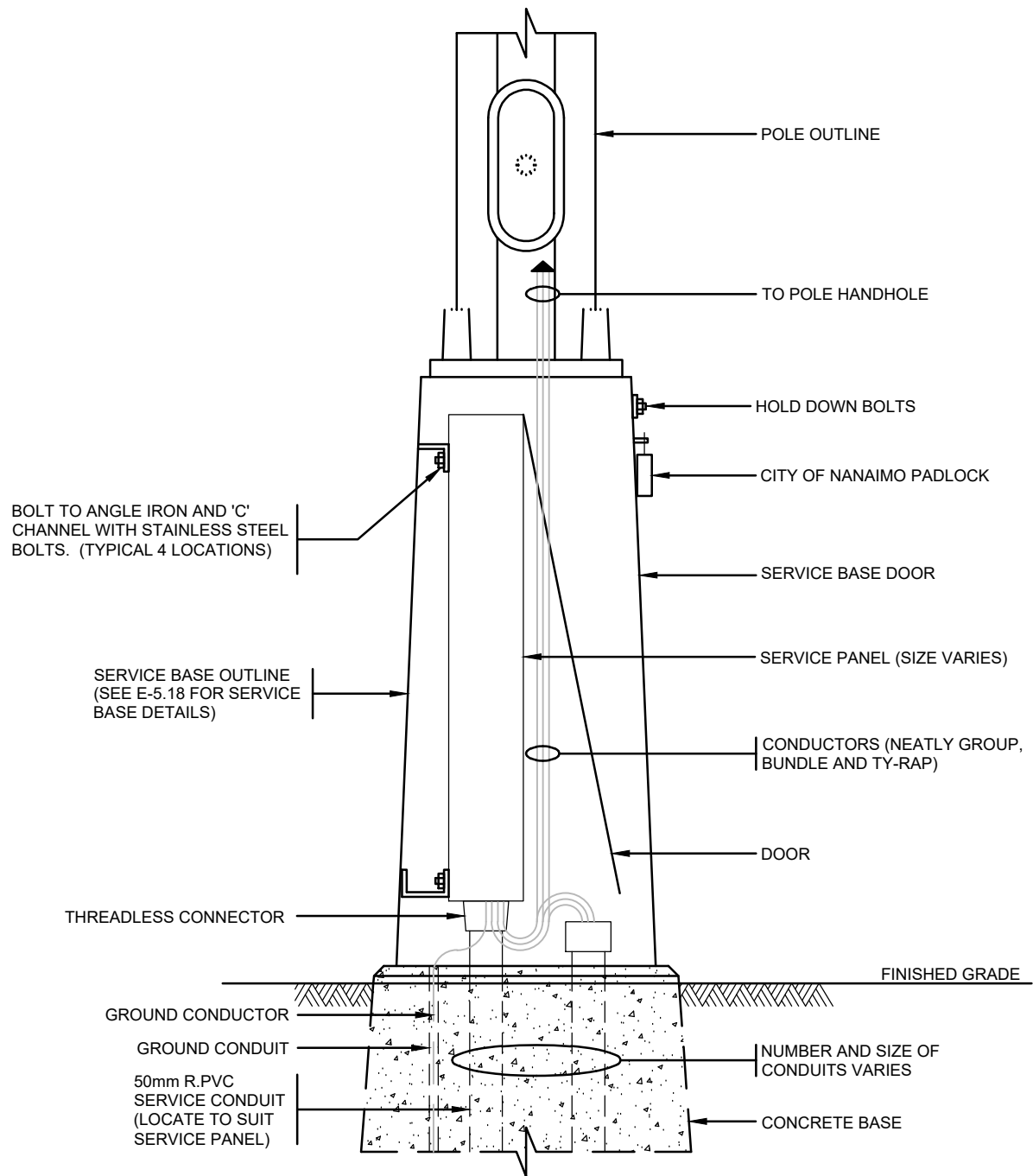
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. NO MORE THAN 2 PUSHBUTTONS TO BE INSTALLED ON EACH POLE, UNLESS OTHERWISE NOTED.
3. PUSHBUTTON TO HAVE NORMALLY OPEN CONTACTS.
4. CYCLIST PUSHBUTTON TO BE INSTALLED AS DIRECTED ON THE DRAWINGS OR BY THE CITY ENGINEER.
5. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.





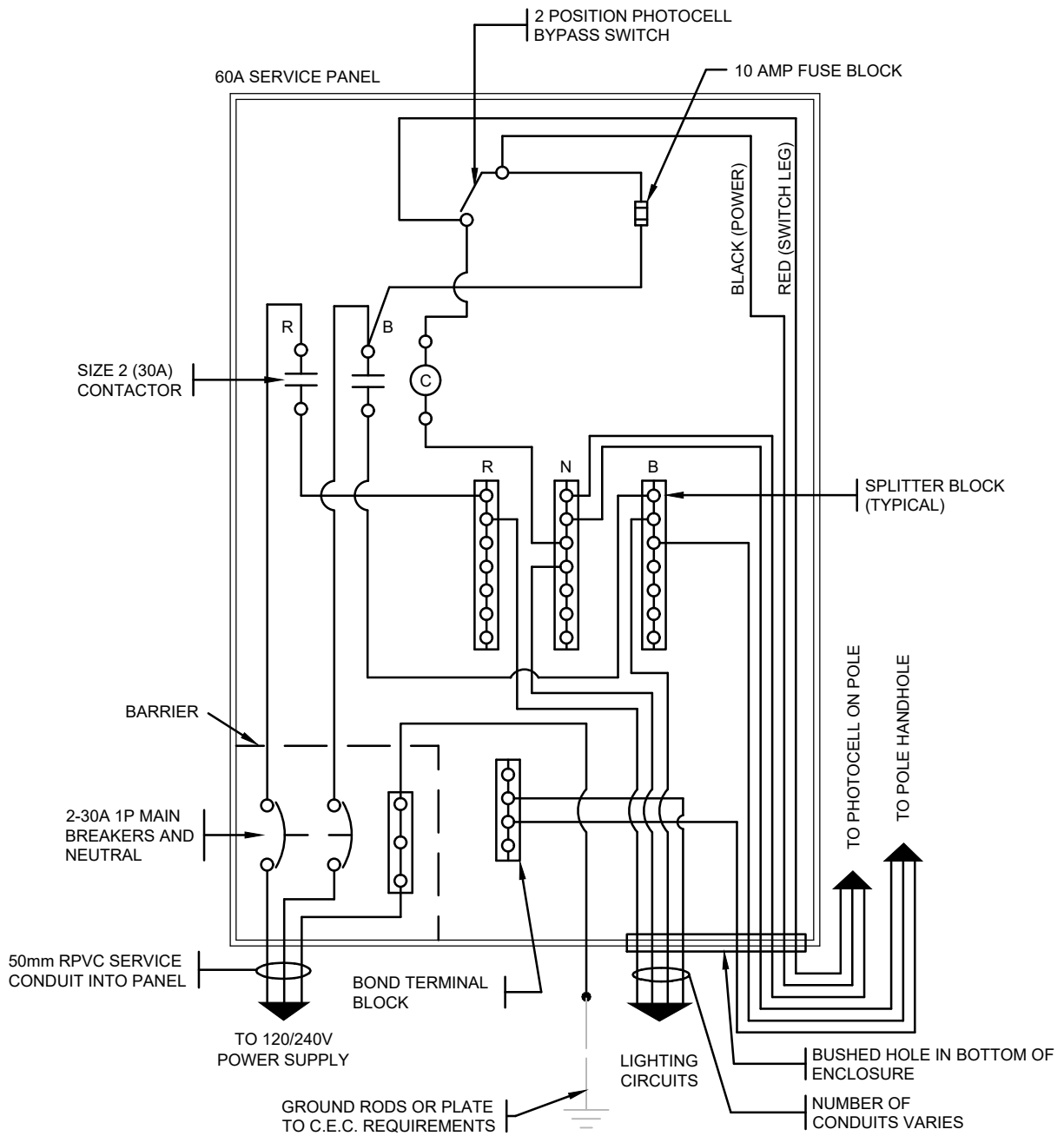
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SERVICE CONDUCTORS. CONNECTION BY ELECTRICAL UTILITY COMPANY UNLESS OTHERWISE NOTED.
3. CONTRACTOR TO OBTAIN PERMISSION FROM UTILITY COMPANY PRIOR TO INSTALLING CONDUIT ON THEIR POLE.
4. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
5. SERVICE CONDUCTORS AS DETAILED ON CONTRACT DRAWINGS.
6. MOUNT CONDUIT ON CONCRETE POLE WITH 19mm STAINLESS STEEL BANDING.
7. CONDUIT UP POLE TO SUIT SERVICE CONDUCTORS (MINIMUM 30mmØ).

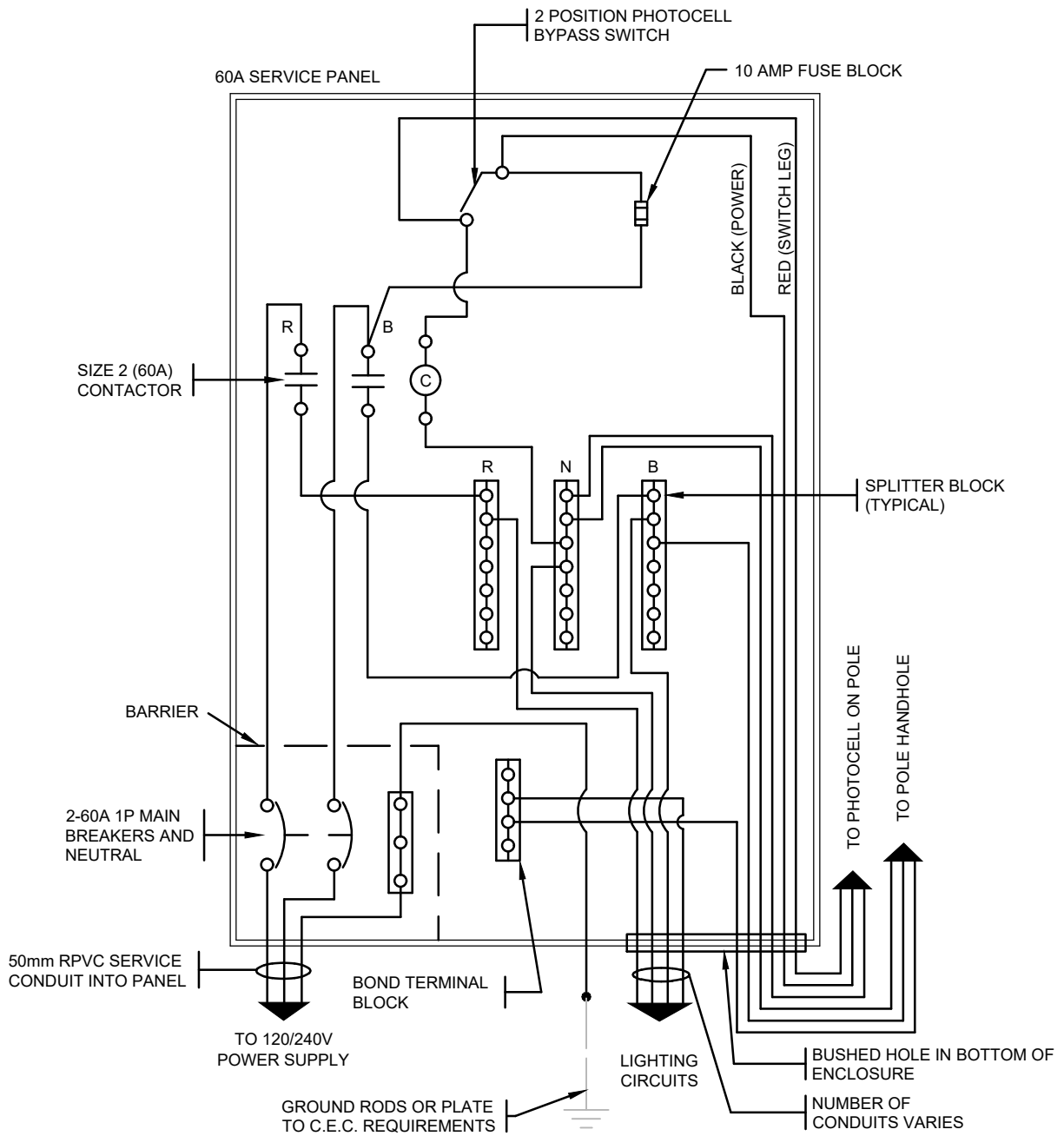


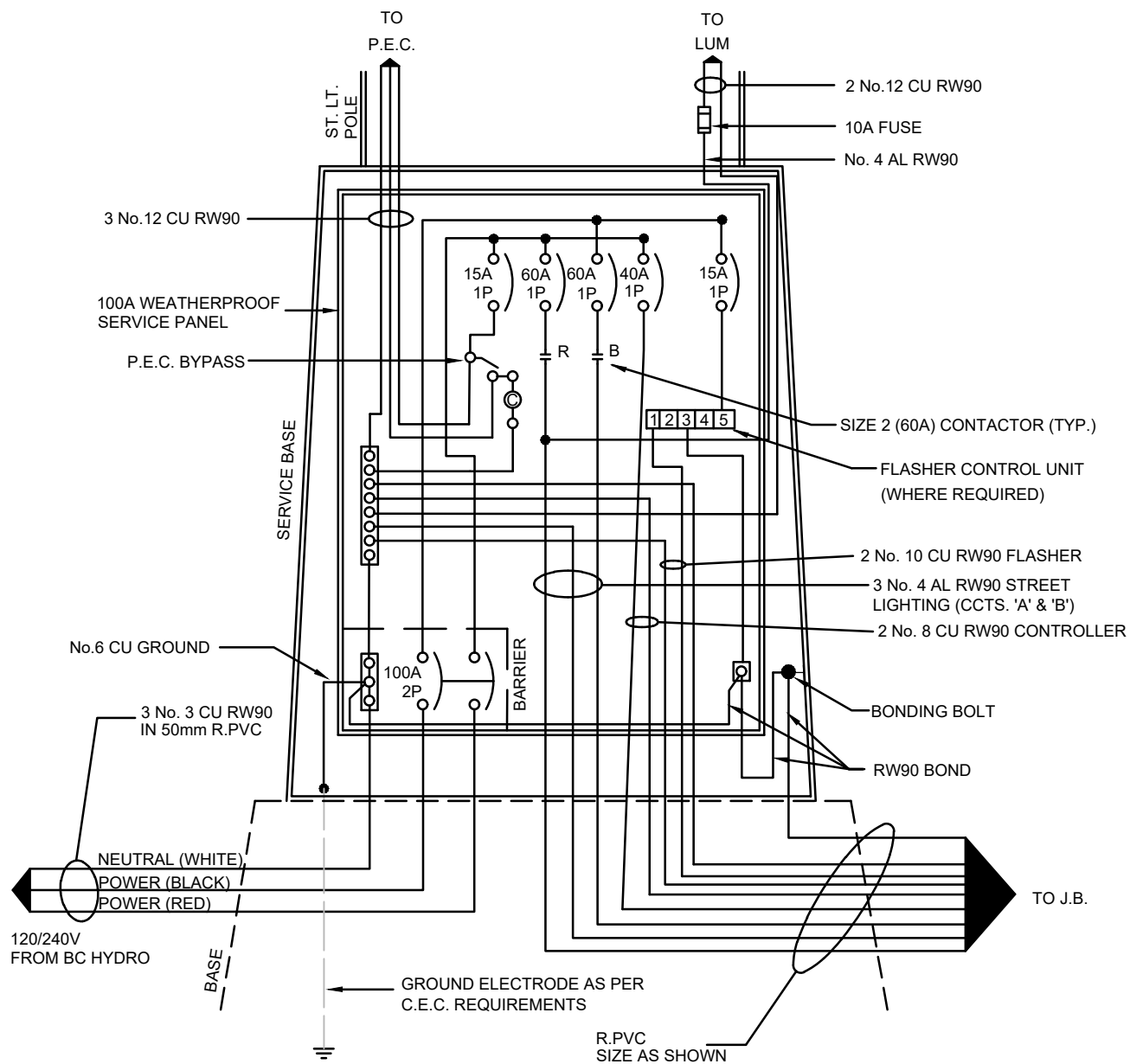
**NOTES:**

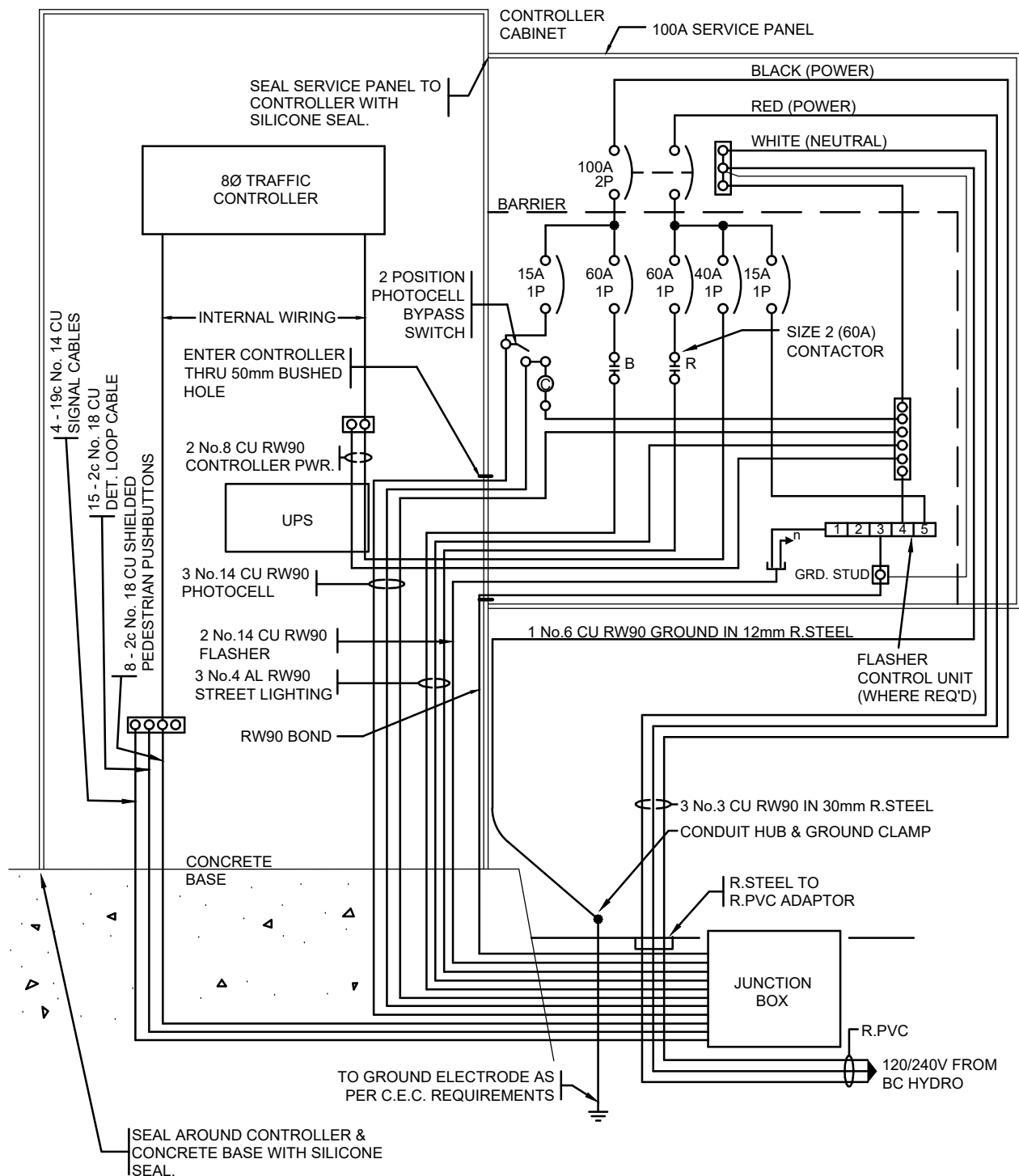
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.

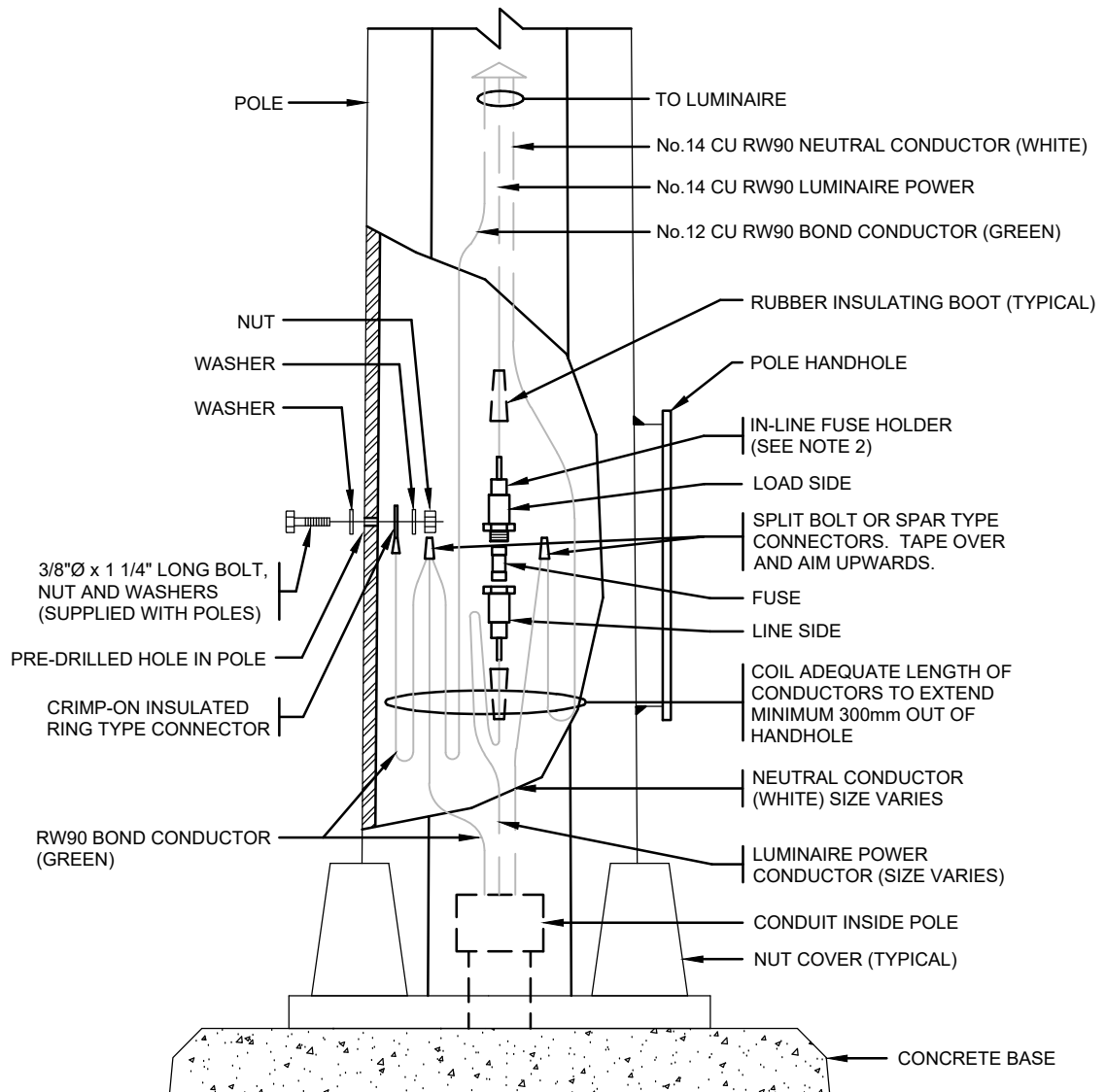








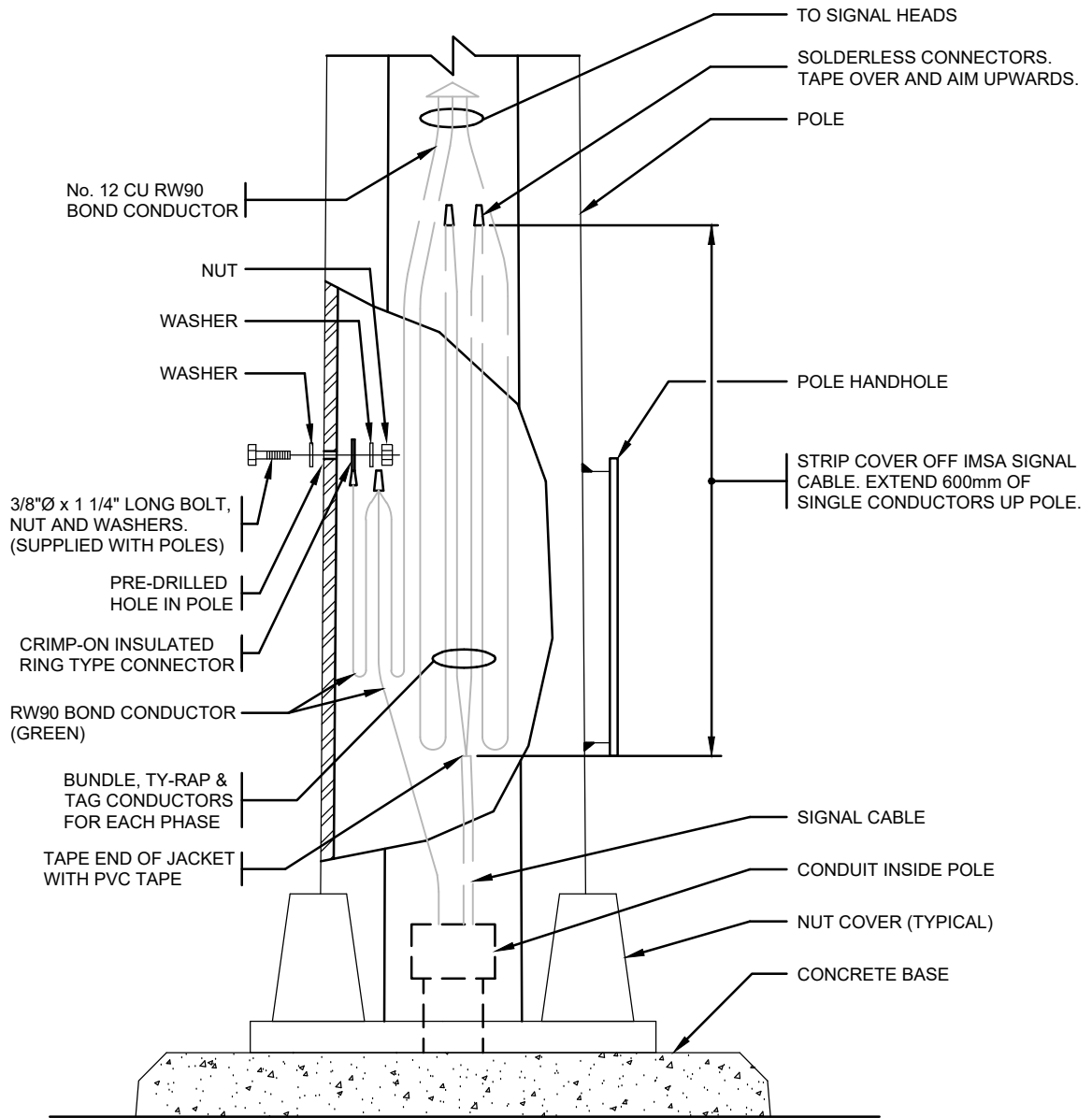




ELEVATION

NOTES:

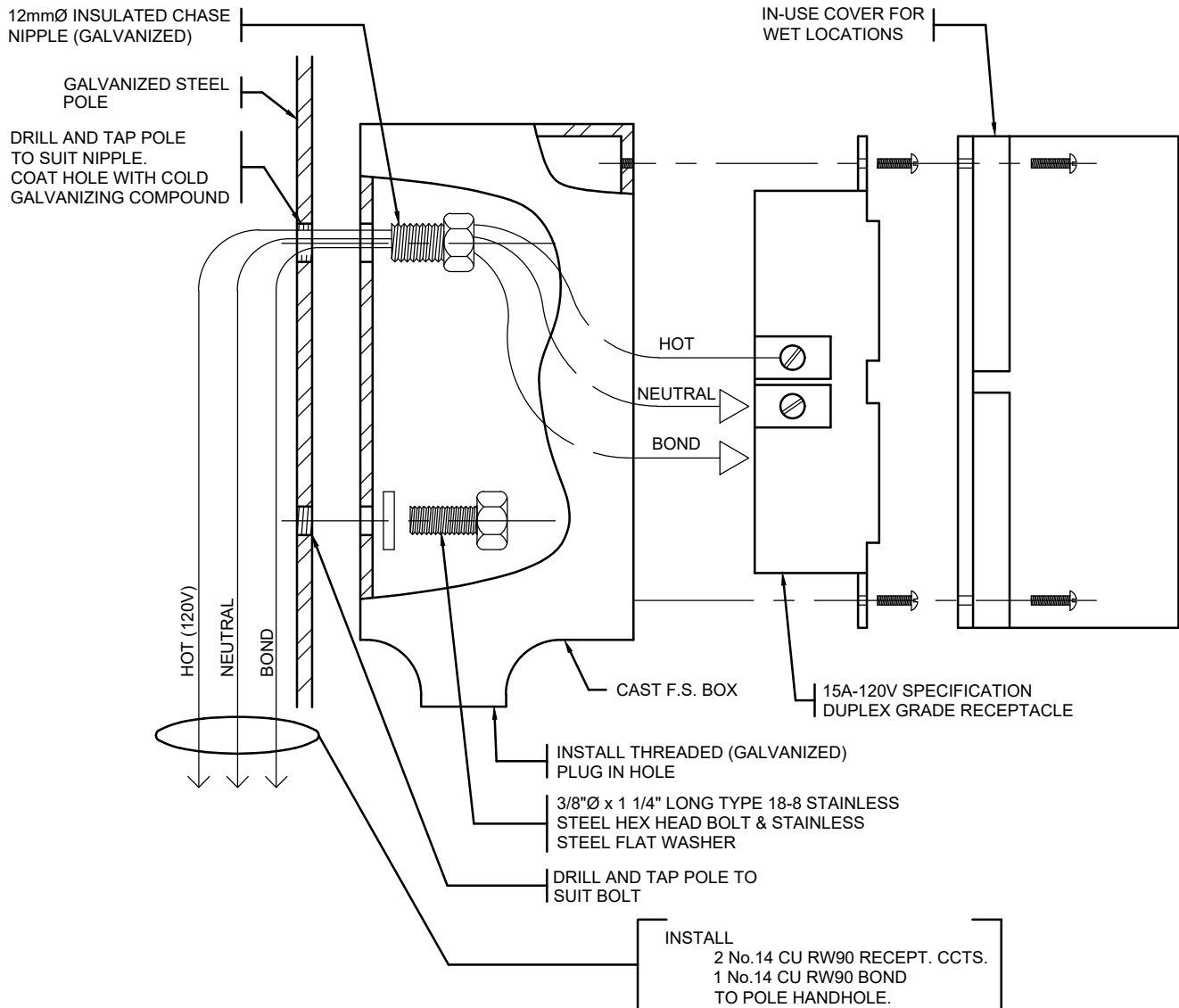
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. FUSE INSTALLATION IN JUNCTION BOXES SIMILAR.



ELEVATION

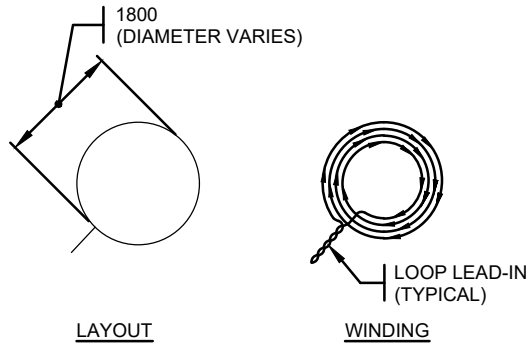
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.

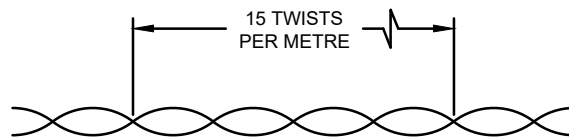


**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. RECEPTACLE MOUNTING HEIGHT AND ORIENTATION ON POLE TO BE NOTED ON CONTRACT DRAWING.
3. FUSE RECEPTACLE CIRCUITS, WITH A 10AMP FUSE, IN HANDHOLE AT BASE OF POLE AS PER DRAWING E12-1.
4. RECEPTACLES TO NOT BE INSTALLED ON POLES WITHIN 50m OF A SIGNALIZED INTERSECTION AND NOT UNDER ANY CIRCUMSTANCES TO BE INSTALLED ON TRAFFIC SIGNAL OR SIGN POLES.



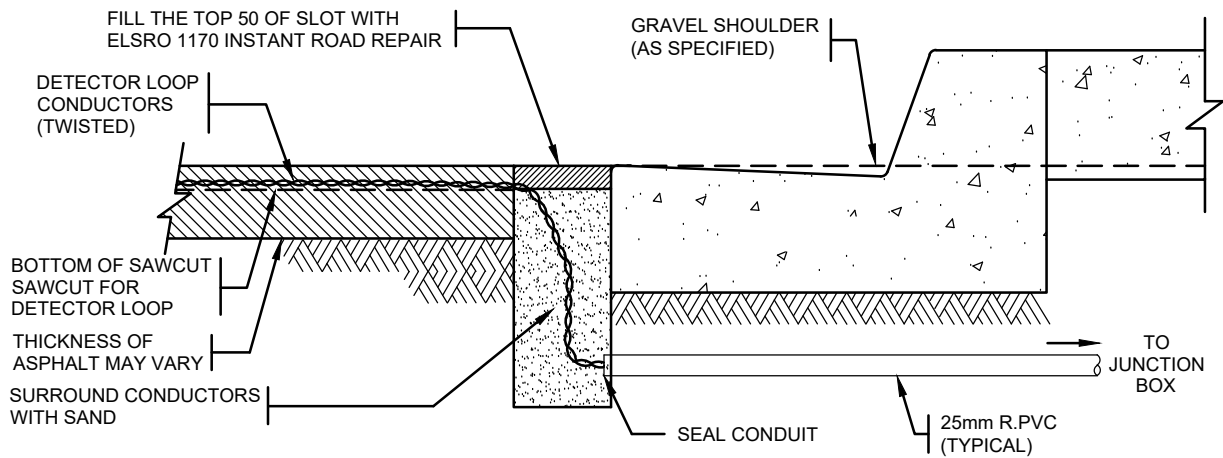
### ROUND LOOP



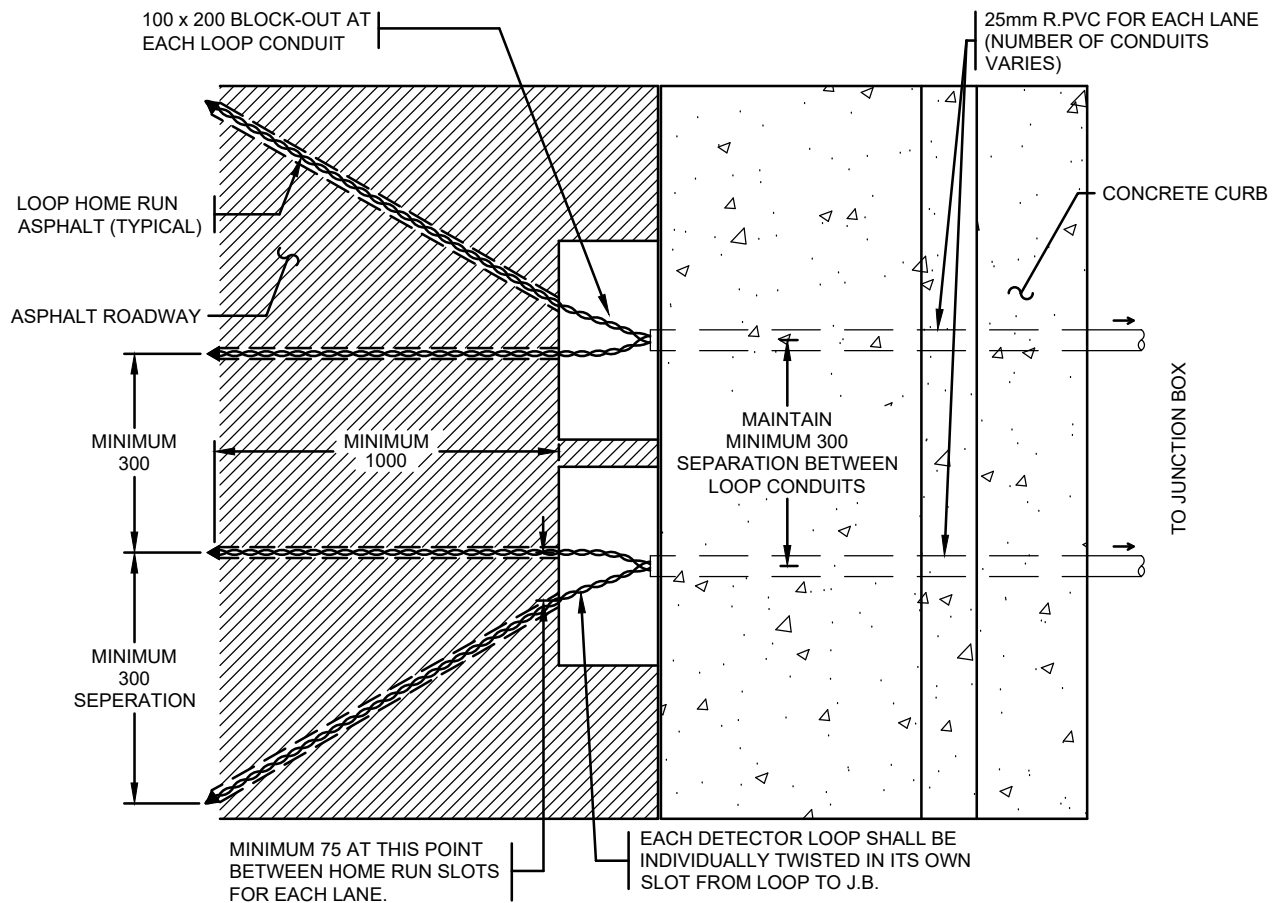
### LOOP LEAD-IN CONDUCTORS (TYPICAL FROM LOOP TO SHIELDED CABLE SPLICE IN JUNCTION BOX)

#### NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. LOOP INDUCTANCE TO BE EQUAL TO OR GREATER THAN SHIELDED CABLE INDUCTANCE.  
(A 2:1 RATIO IS PREFERABLE) SHIELDED CABLE INDUCTANCE IS 0.72  $\mu$ H PER METER.



ELEVATION

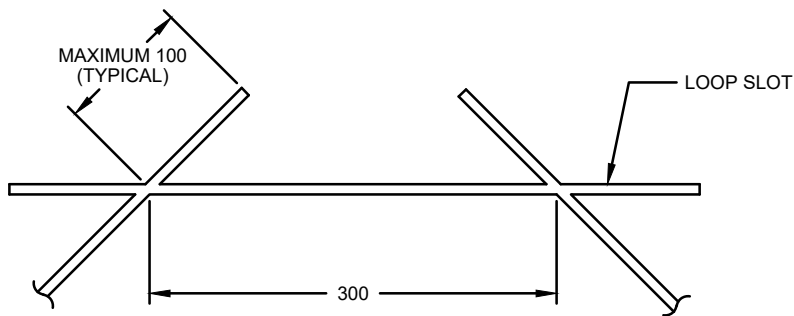


TOP VIEW

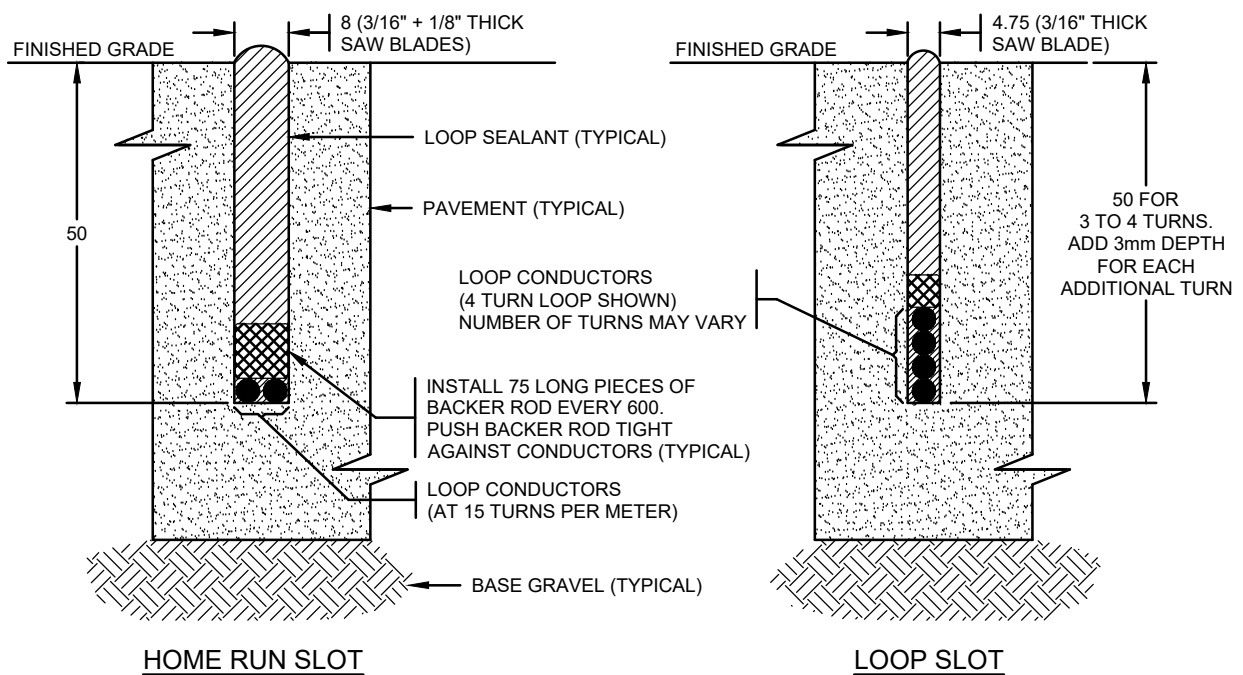
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.





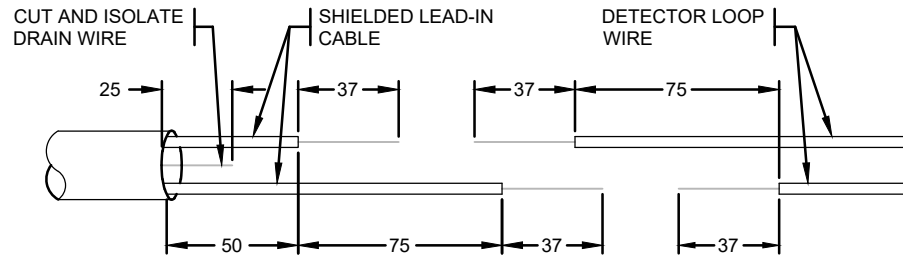
TYPICAL LOOP CORNER DETAIL



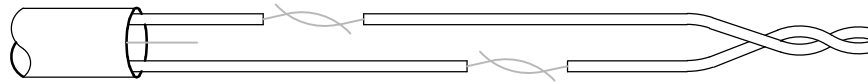
NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. LOOP SLOT SEALANTS SHALL BE ELSRO HOT POUR CRACK FILLER No. 1190 OR B.P. BURFALT 16607 170, TYPE 2 OR APPROVED EQUAL.
4. BACKER RODS SHALL BE DETECTOR SYSTEMS BR-625 OR APPROVED ALTERNATE.
5. ONLY ONE LOOP SHALL BE INSTALLED IN EACH HOME RUN SLOT.

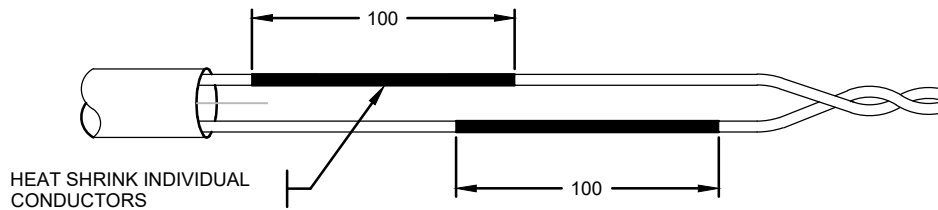
**STEP 1.** STRIP LOOP WIRES AND LEAD-IN CABLE  
AND SLIDE ON HEAT SHRINKS



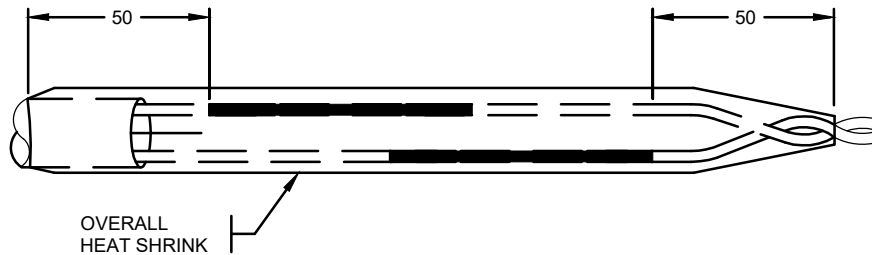
**STEP 2.** CONNECT AND SOLDER.  
TWIST BARE CONDUCTORS TOGETHER AND SOLDER  
WITH 60/40 (TIN/LEAD) RESIN SOLDER.



**STEP 3.** INSULATE EACH SOLDER JOINT SEPARATELY



**STEP 4.** ENVIRONMENTALLY SEAL TOTAL SPLICE



**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. HEAT SHRINK SHALL BE PREMIER CLEAR-SEAL (6mm I.D. INDIVIDUAL CONDUCTORS & 10mm I.D. FOR OVERALL)

**STEP 1** LAYOUT DETECTOR LOOPS AND REVIEW LOCATIONS WITH THE ENGINEER PRIOR TO SAWCUTTING THE ROADWAY. THE GENERAL LAYOUT OF THE DETECTOR LOOPS IS INDICATED ON DRAWING E-14.7. STOP BARS AND LANE LINES MUST BE LAID OUT PRIOR TO LOCATING DETECTOR LOOPS.

**RULE 1**

DETECTOR LOOPS SHALL NOT BE INSTALLED WHEN THE ROAD IS WET OR WHEN THE AMBIENT (AIR) TEMPERATURE IS LOWER THAN 5°C, UNLESS APPROVED IN WRITING BY THE CITY ENGINEER. SEALANTS DO NOT ADHERE PROPERLY IN WET CONDITIONS. SHOULD THE CONTRACTOR BE ASKED IN WRITING BY THE ENGINEER TO INSTALL LOOPS IN THE WET AND/OR WHEN THE AIR TEMPERATURE IS BELOW 5°C, THE INSTALLATION WARRANTY WILL NOT BE ENFORCED.

**RULE 2**

DETECTOR LOOPS SHALL NOT BE INSTALLED WHEN THE PAVEMENT IS CRACKED OR BADLY RUTTED UNLESS THE INSTALLATION IS APPROVED BY THE CITY ENGINEER.  
SAW CUTS CAN OFTEN CAUSE PAVEMENT CONDITIONS TO DETERIORATE FURTHER.  
IF RE-SURFACING OF THE INTERSECTION IS NOT PLANNED THEN PHOTOGRAPHS SHOULD BE TAKEN TO DOCUMENT THE PAVEMENT CONDITIONS BEFORE AND AFTER THE LOOP INSTALLATION.

**STEP 2** CUT LOOP AND HOME RUN SLOTS IN ASPHALT.  
ALL LOOP AND HOME RUN SLOTS SHALL BE CUT TO THE SAME DEPTH, WITH A PAVEMENT SAW.  
SLOTS SHALL NOT PASS THROUGH PAVEMENT INTO THE BASE GRAVEL.

**RULE 3**

LOOP AND HOME RUN SLOT MUST BE INSTALLED AT LEAST 300mm FROM ANY OTHER LOOP AND EACH LEAD-IN SLOTS, EXCEPT WHERE THE LEAD-IN CONDUCTORS ENTER THE 1" RPVC CONDUIT. THIS WILL REDUCE THE PROBABILITY OF INTERFERENCE BETWEEN LOOPS.

**RULE 4**

WHEN REPLACING LOOPS, CUT THROUGH TWICE ON EACH SIDE OF EXISTING LOOP. THIS MAY REQUIRE ADDITIONAL SAW CUTS, IF THE EXISTING LOOP IS NOT LOCATED IN THE SAW CUT PATH OF THE NEW LOOP. THIS WILL ELIMINATE THE POSSIBILITY OF INTERFERENCE BETWEEN THE OLD AND THE NEW LOOP.

**STEP 3** CLEAN THE SLOT WITH A PROFESSIONAL GRADE PRESSURIZED WATER SYSTEM. REMOVE ALL WATER AND DIRT OUT OF THE SLOT CUT AND THE SURROUNDING 100mm OF ROAD SURFACE USING COMPRESSED AIR. SLOT MUST REMAIN COMPLETELY CLEAN AND DRY UNTIL THE SLOT IS SEALED.

**STEP 4** INSTALL THE LOOP CONDUCTOR INTO THE LOOP SLOT. ENSURE CONDUCTORS ARE TIGHTLY WOUND AND PUSHED INTO THE BOTTOM OF THE SLOT. TWIST CONDUCTOR HOME RUN AT 15 TURNS PER METRE. INSTALL 75mm STRIPS OF BACKER ROD EVERY 600mm TO HOLD CONDUCTORS INTO SLOT.

**RULE 5**

ONLY ONE CONTINUOUS CONDUCTOR SHALL BE INSTALLED IN EACH LOOP AND HOME RUN SLOT TO THE JUNCTION BOX.

**RULE 6**

LOOP CONDUCTORS MUST BE INSTALLED IMMEDIATELY AFTER THE LOOP AND HOME RUN SLOTS ARE CUT.

**STEP 5** INSTALL LOOP SEALANT AFTER CONDUCTORS HAVE BEEN INSTALLED. LOOP SEALANTS SHALL BE HEATED AS PER MANUFACTURER'S INSTRUCTIONS AND NEATLY APPLIED USING A FUNNEL WITH A NARROW SPOUT. ANY EXCESS SEALANT ON ROAD SURFACE SHALL BE REMOVED. AN ADDITIONAL APPLICATION OF LOOP SEALANT MAY BE REQUIRED WHERE THE SEALANT IS NOT UP TO THE PAVEMENT GRADE.

**NOTES:**

1. SEE DRAWING E-14.6 FOR CONTINUATION OF PROCEDURES AND RULES.

CONTINUED FROM DRAWING E-14.5

**STEP 6** ONCE THE SEALING OF THE SLOT HAS BEEN PROPERLY COMPLETED, A DUST SUCH AS PORTLAND CEMENT SHALL BE SPRINKLED ONTO THE SEALANT TO PREVENT TRACKING BY ROADWAY TRAFFIC. ANY EXCESS DUST SHALL BE SWEEPED OFF THE ROADWAY PRIOR TO ALLOWING TRAFFIC TO PASS OVER THE SEALED SLOT.

**RULE 7**

SPLICES WILL NOT BE ALLOWED IN LOOP CONDUCTORS OR SHIELDED CABLES.

**STEP 7** THE SPLICES BETWEEN DETECTOR LOOP CONDUCTORS AND THE SHIELDED CABLE ARE TO BE SOLDERED AND SEALED WITH HEAT SHRINK IN ACCORDANCE WITH DRAWING E-14.4

**STEP 8** REPEAT STEP 7 AT THE JUNCTION BOX OR VAULT NEAREST CONTROLLER.

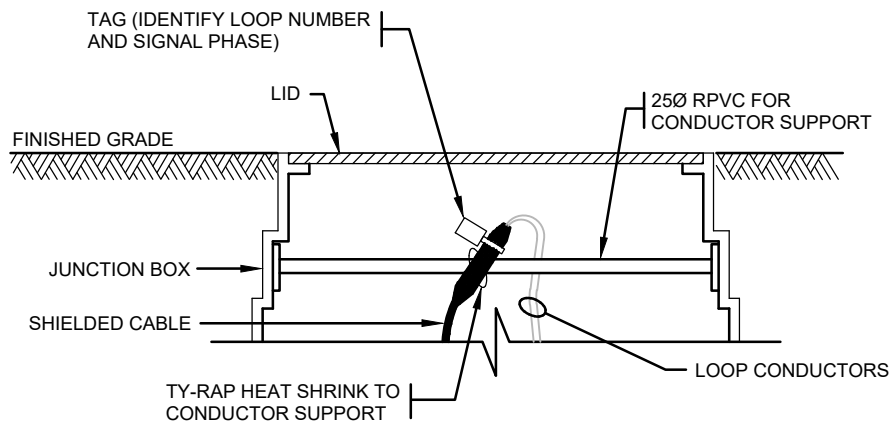
**RULE 8**

LOOP DETECTOR RESISTANCE TO GROUND SHALL BE GREATER THAN 1 MEGOHM, & LOOP INDUCTANCE SHALL BE WITHIN 25% OF THE VALUES SHOWN ON THE CONTRACT DRAWINGS.

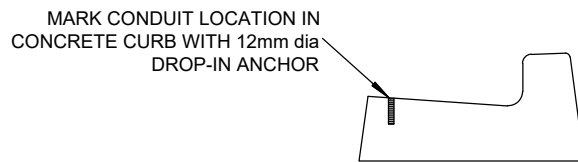
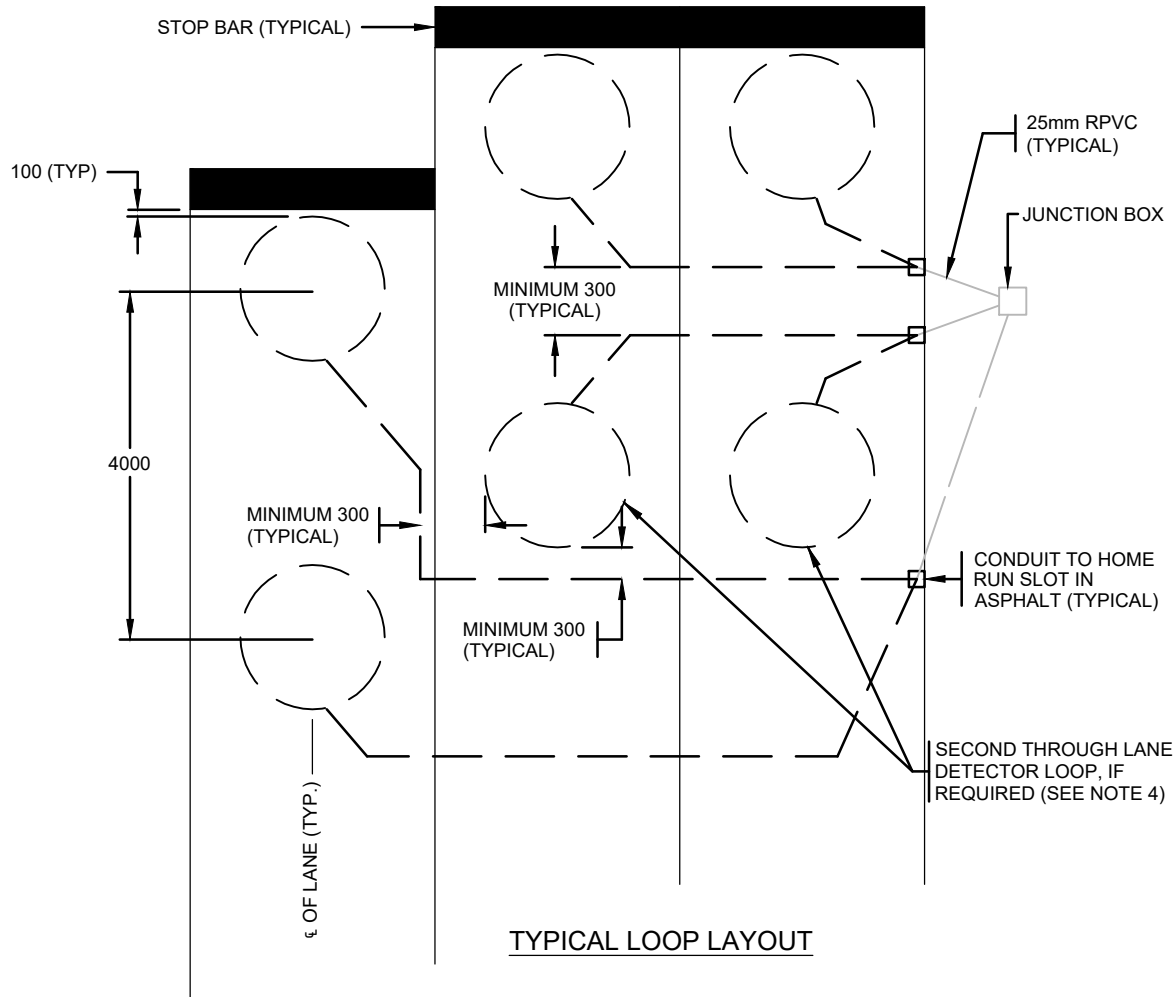
**STEP 9** TAG EACH LOOP CABLE AS INDICATED BELOW.

**RULE 9**

MAINTAIN THE MAXIMUM SEPARATION POSSIBLE IN THE JUNCTION BETWEEN THE LOOP CONDUCTORS AND POWER CONDUCTORS.

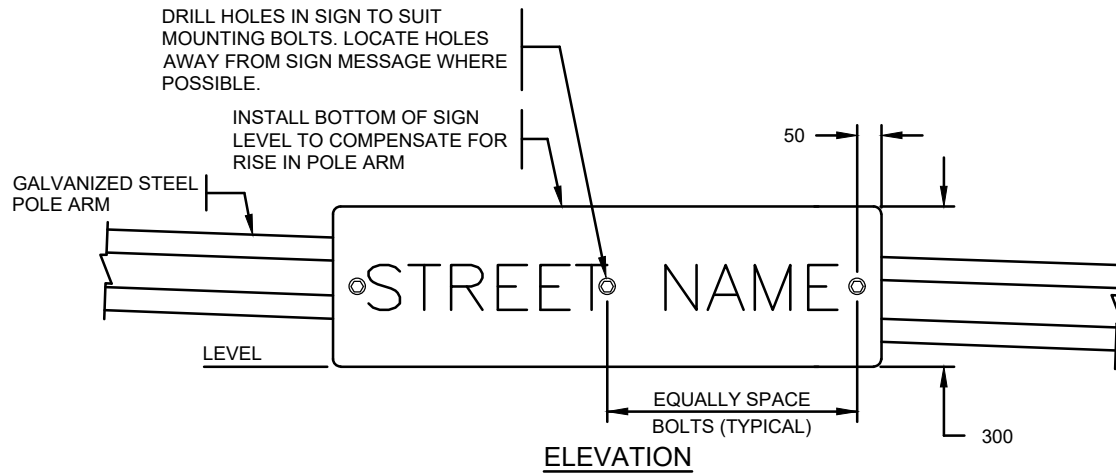


LOOP DETECTOR CONDUCTORS IN JUNCTION BOX

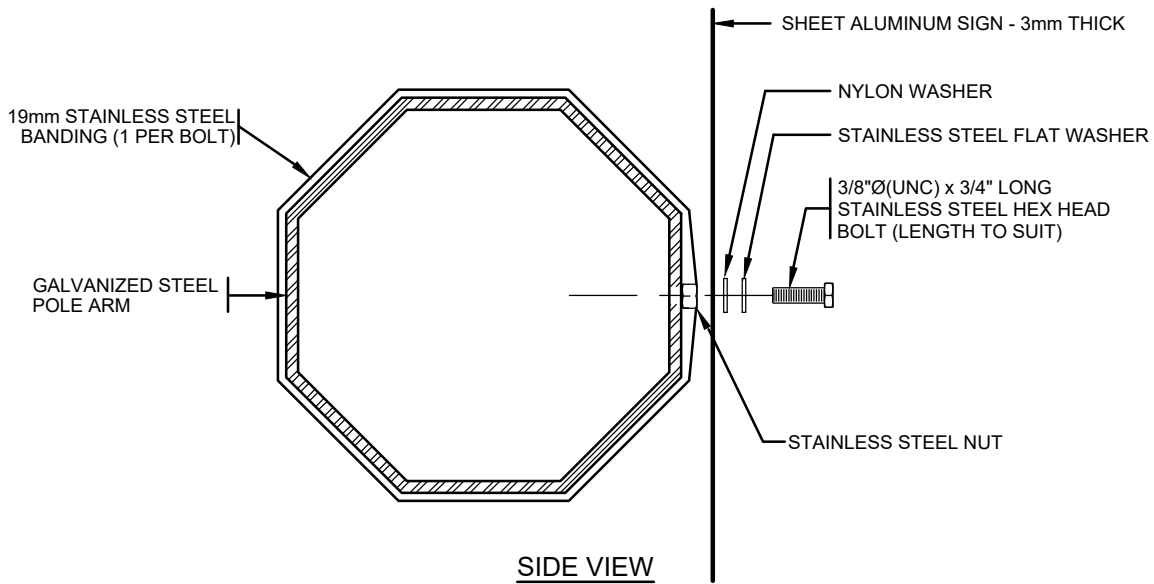


**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. LOCATE LOOP CONDUITS IN ASPHALT TO SUIT LOOP LOCATIONS & MINIMIZE THE LENGTHS OF HOME RUN SLOTS IN THE ASPHALT.
4. NORMALLY NOT REQUIRED WHERE THROUGH PHASE IS RECALLED TO GREEN.

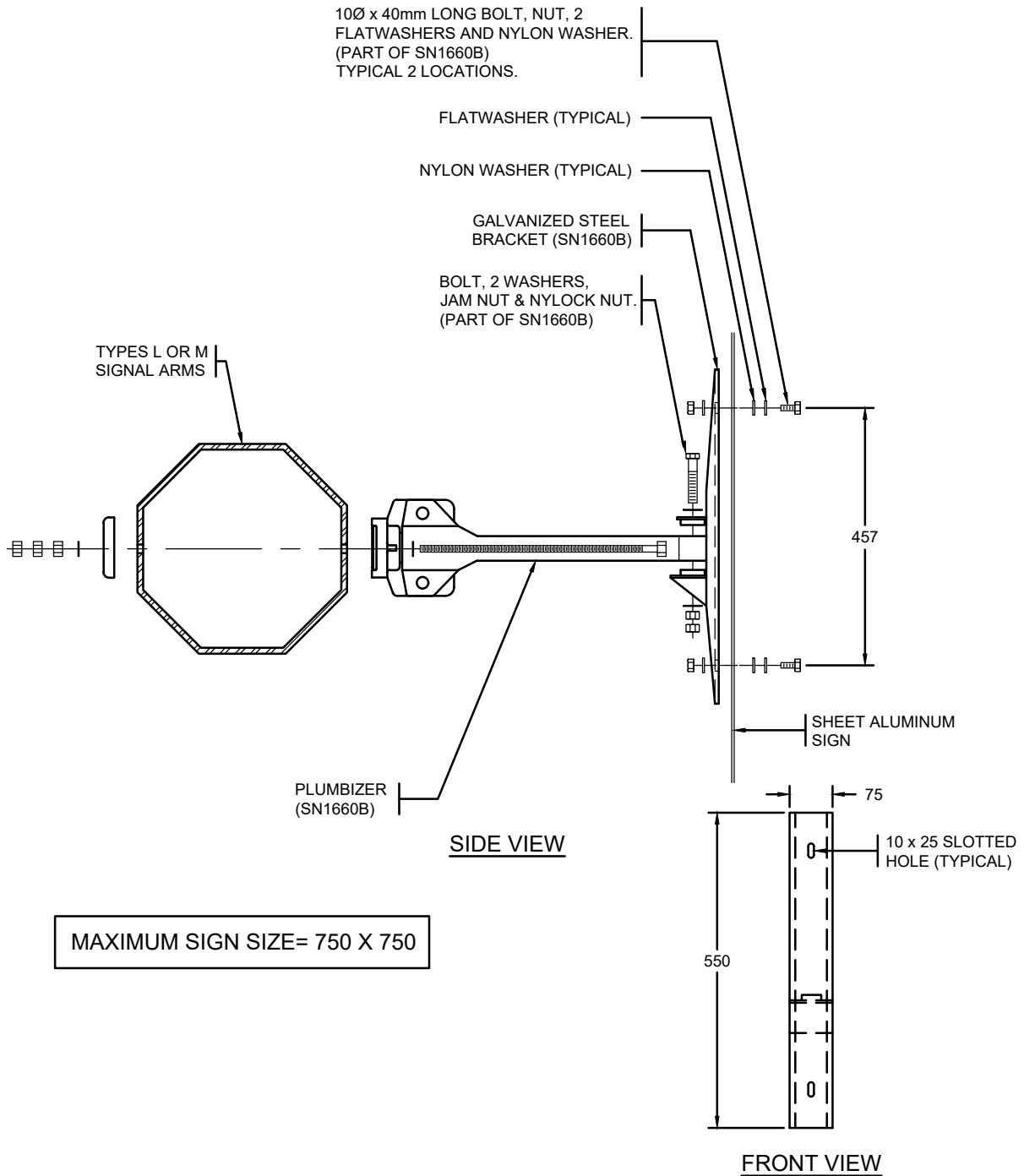


| SIGN WIDTH | NUMBER OF BOLTS |
|------------|-----------------|
| 900 WIDE   | 3               |
| 1200 WIDE  | 4               |
| 1500 WIDE  | 5               |
| 1800 WIDE  | 6               |
| 2100 WIDE  | 7               |



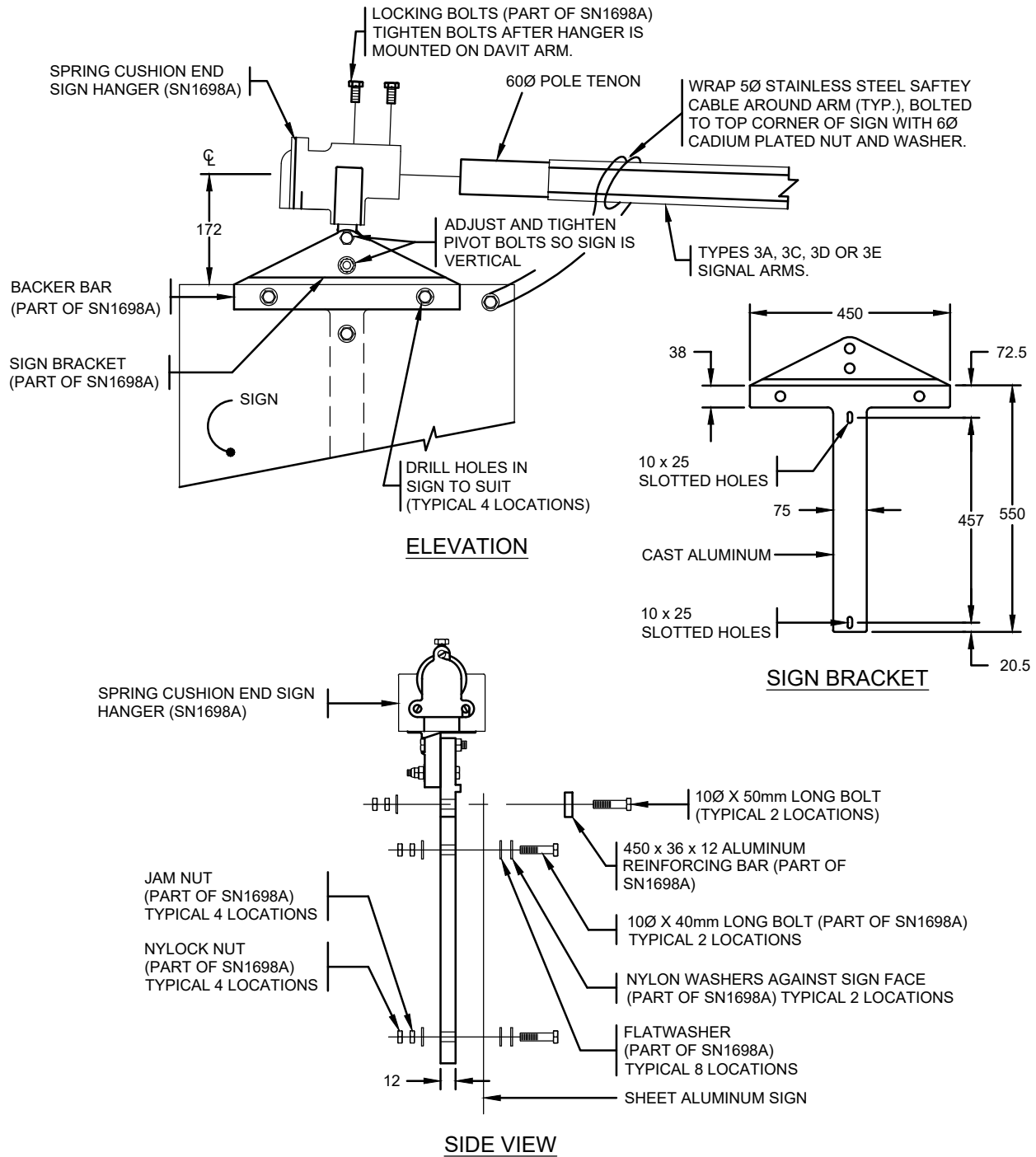
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. POSITION SIGN ON POLE ARM AS INDICATED ON THE PLANS OR AS DIRECTED BY THE CITY ENGINEER.
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. AIM AS DIRECTED BY THE CITY ENGINEER.

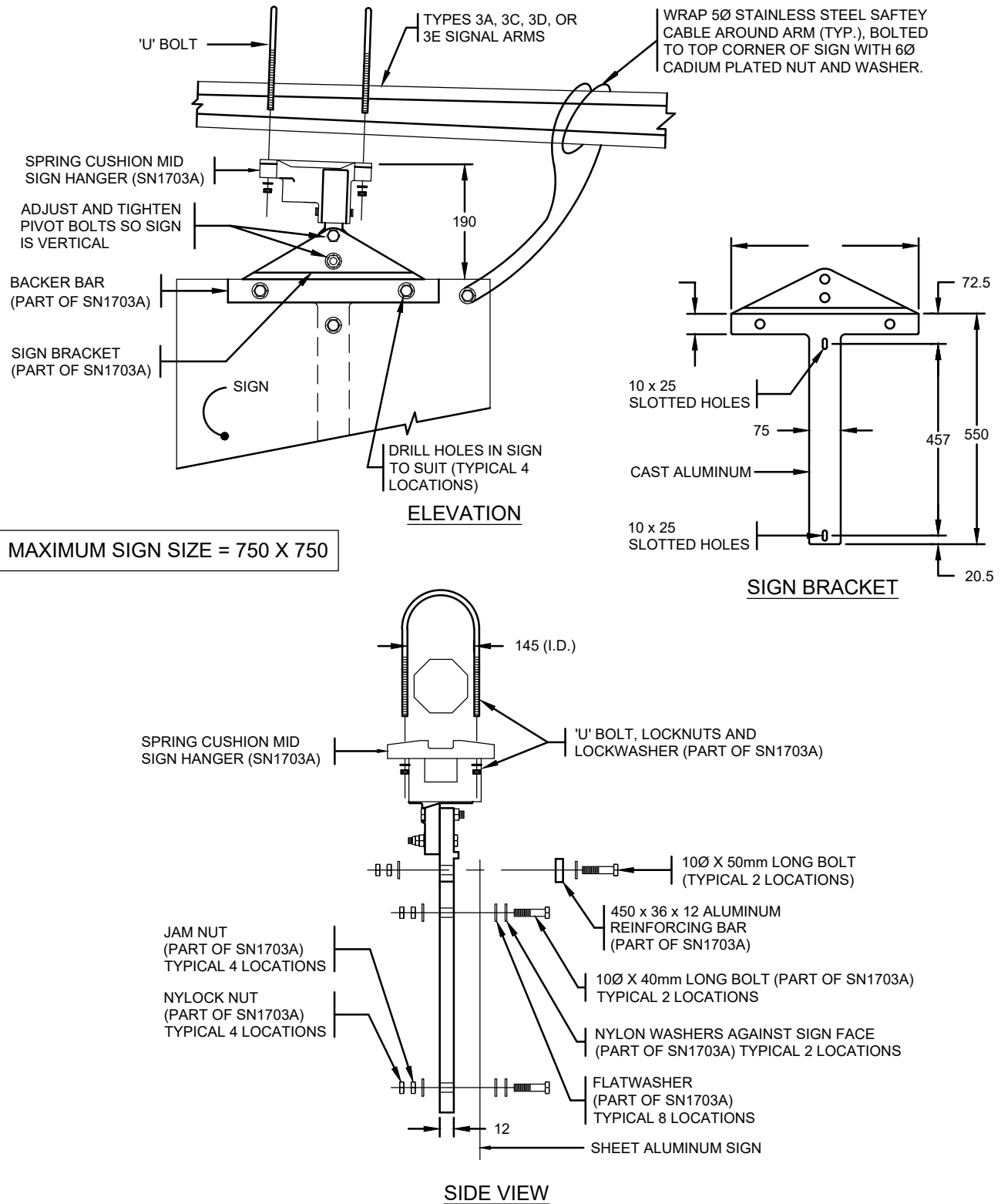


MAXIMUM SIGN SIZE = 750 X 750

**NOTES:**

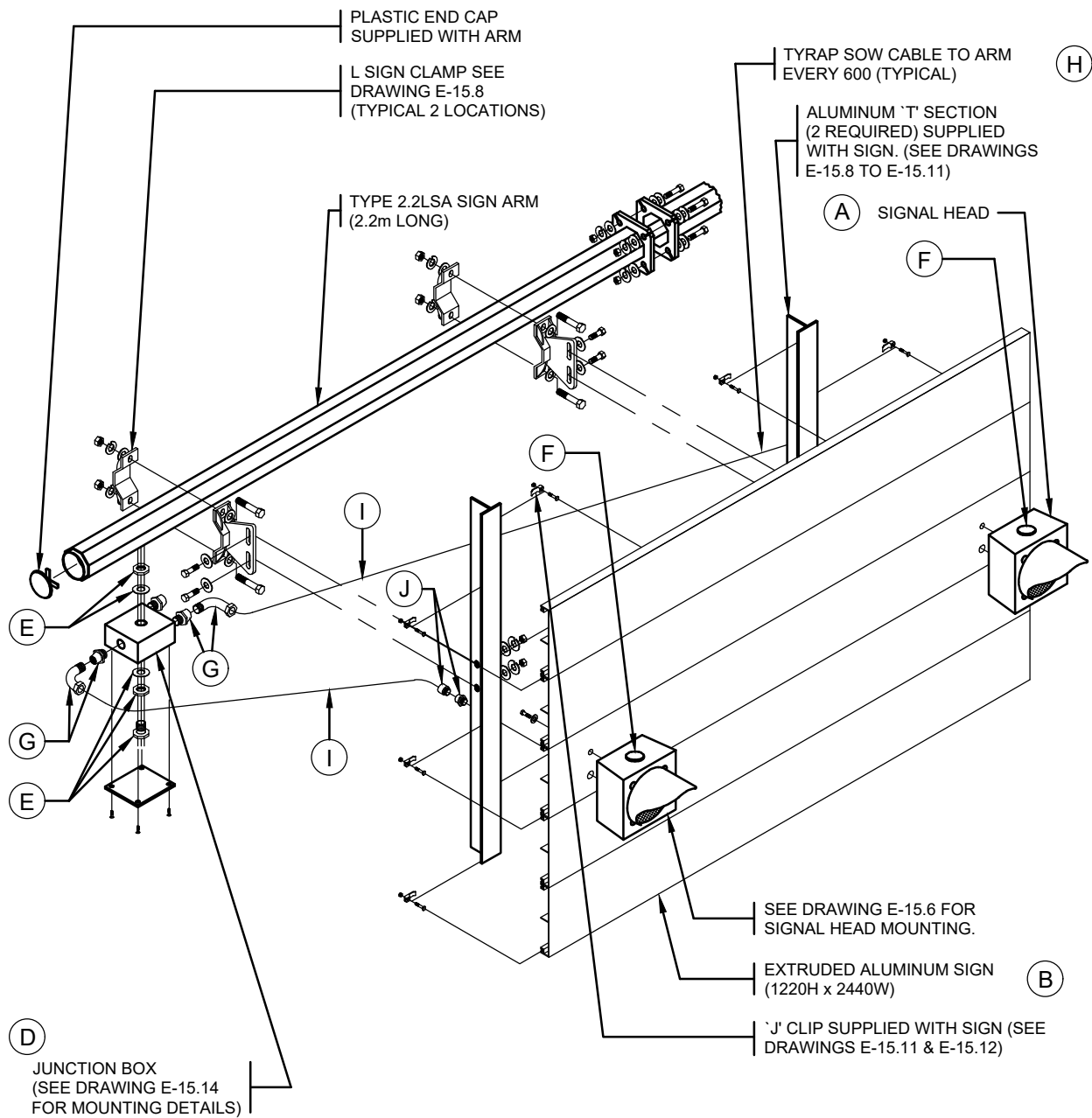
1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. AIM SIGNS AS DIRECTED BY THE MINISTRY REPRESENTATIVE.
3. 'SN' DENOTES MINISTRY STOCK NUMBER.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

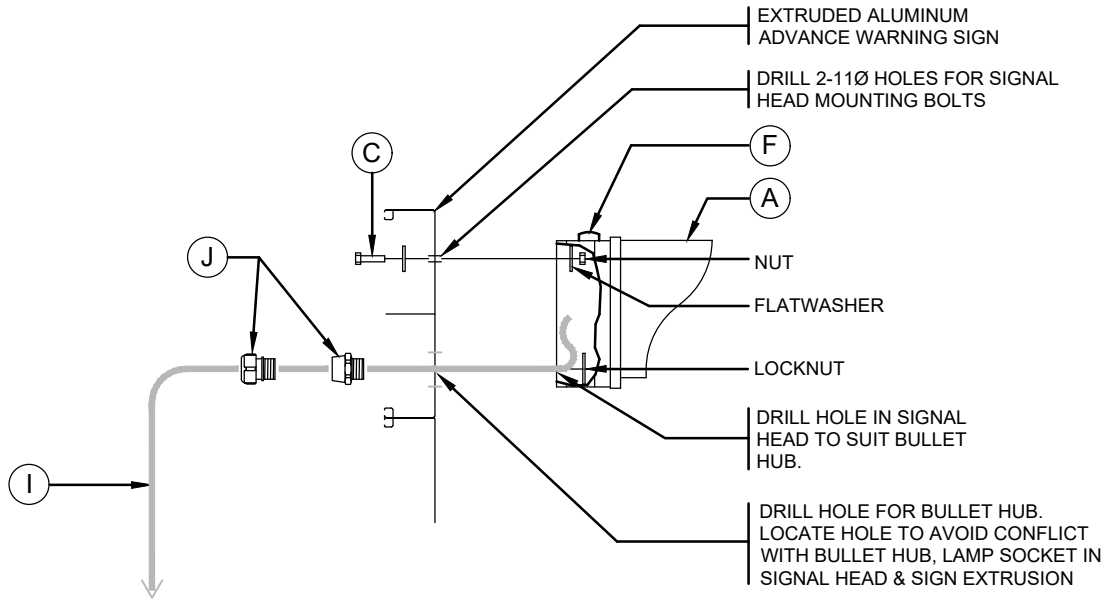




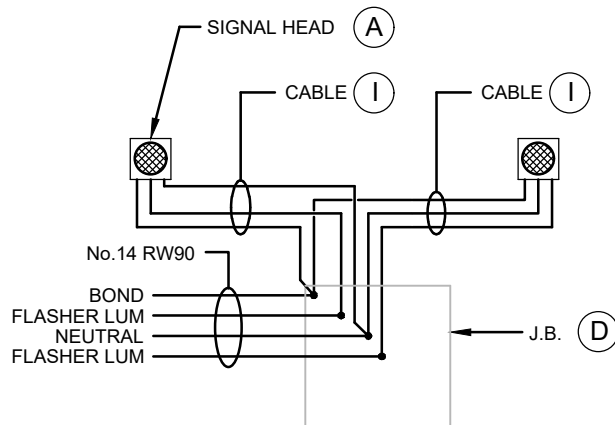
**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. AIM SIGNS AS DIRECTED BY THE CITY ENGINEER.
3. 'SN' DENOTES MINISTRY STOCK NUMBER.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.



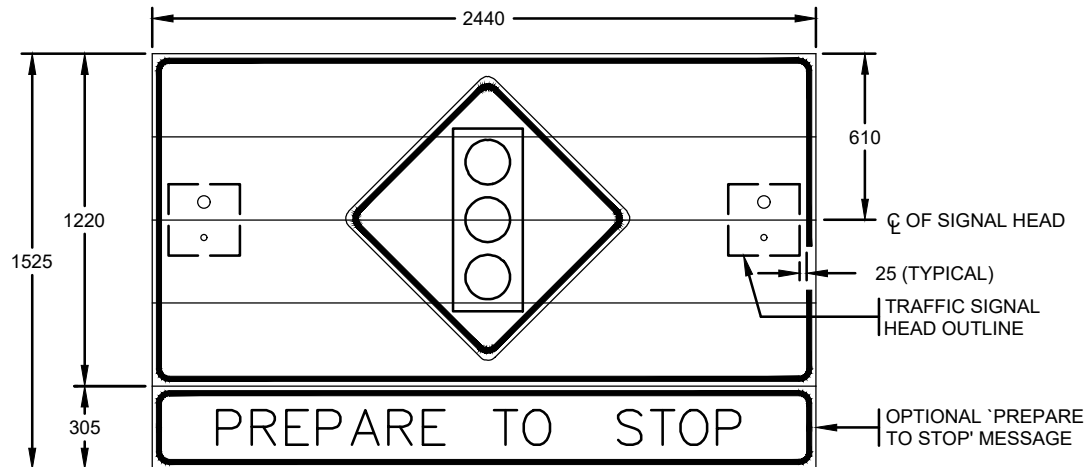


SIGNAL HEAD MOUNTING DETAIL



WIRING DIAGRAM

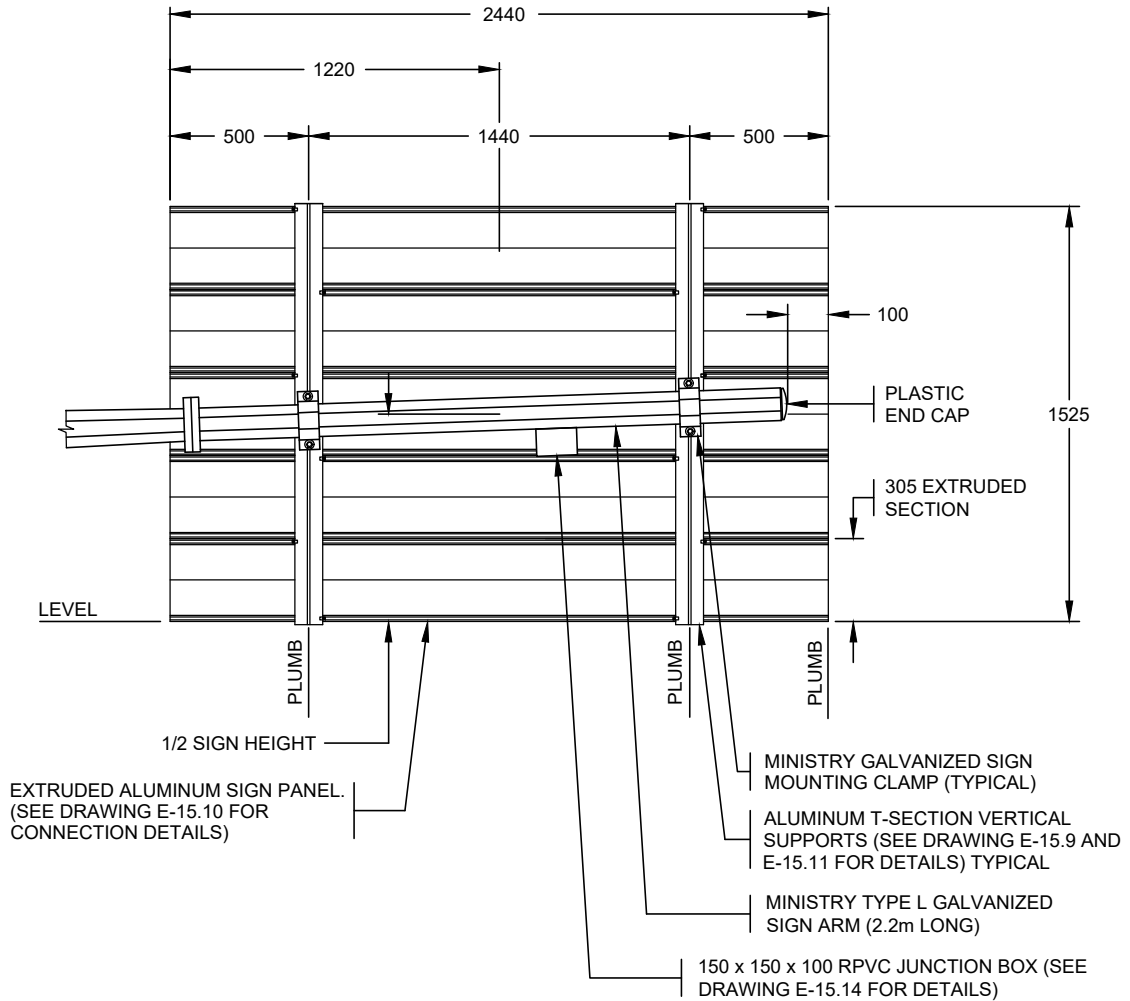
SEE DRAWING E-15.8 FOR NOTES AND  
ADDITIONAL DETAILS



### TRAFFIC SIGNAL ADVANCE WARNING SIGN

| TRAFFIC SIGNAL ADVANCE WARNING SIGN KIT PARTS LIST |                                                                                                          |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| ITEM                                               | DESCRIPTION                                                                                              |
| A                                                  | 200mm SIGNAL HEAD SECTION C/W YELLOW LENS, LAMP AND COWL VISOR                                           |
| B                                                  | TRAFFIC SIGNAL EXTRUDED ALUMINUM ADVANCE WARNING SIGN COMPLETE WITH 3M DIAMOND GRADE REFLECTIVE SHEETING |
| C                                                  | 10Ø x 25mm LONG STAINLESS STEEL HEX HEAD BOLT, NUT, 2 FLAT WASHERS AND 1 LOCKWASHER                      |
| D                                                  | 150 x 150 x 100 PVC J.B.                                                                                 |
| E                                                  | INSULATED CHASE NIPPLE, 2 LOCKNUTS AND 2 FLAT WASHERS                                                    |
| F                                                  | FINIAL                                                                                                   |
| G                                                  | 12mm BULLET HUB AND 90° STRAIN RELIEF CONNECTOR AND LOCKNUT                                              |
| H                                                  | LARGE TY-RAP                                                                                             |
| I                                                  | 3c No. 14 S.O.W. CABLE                                                                                   |
| J                                                  | 12mm BULLET HUB AND STRAIN RELIEF CONNECTOR AND LOCKNUT                                                  |

SEE DRAWING E-15.8 FOR NOTES AND ADDITIONAL DETAILS



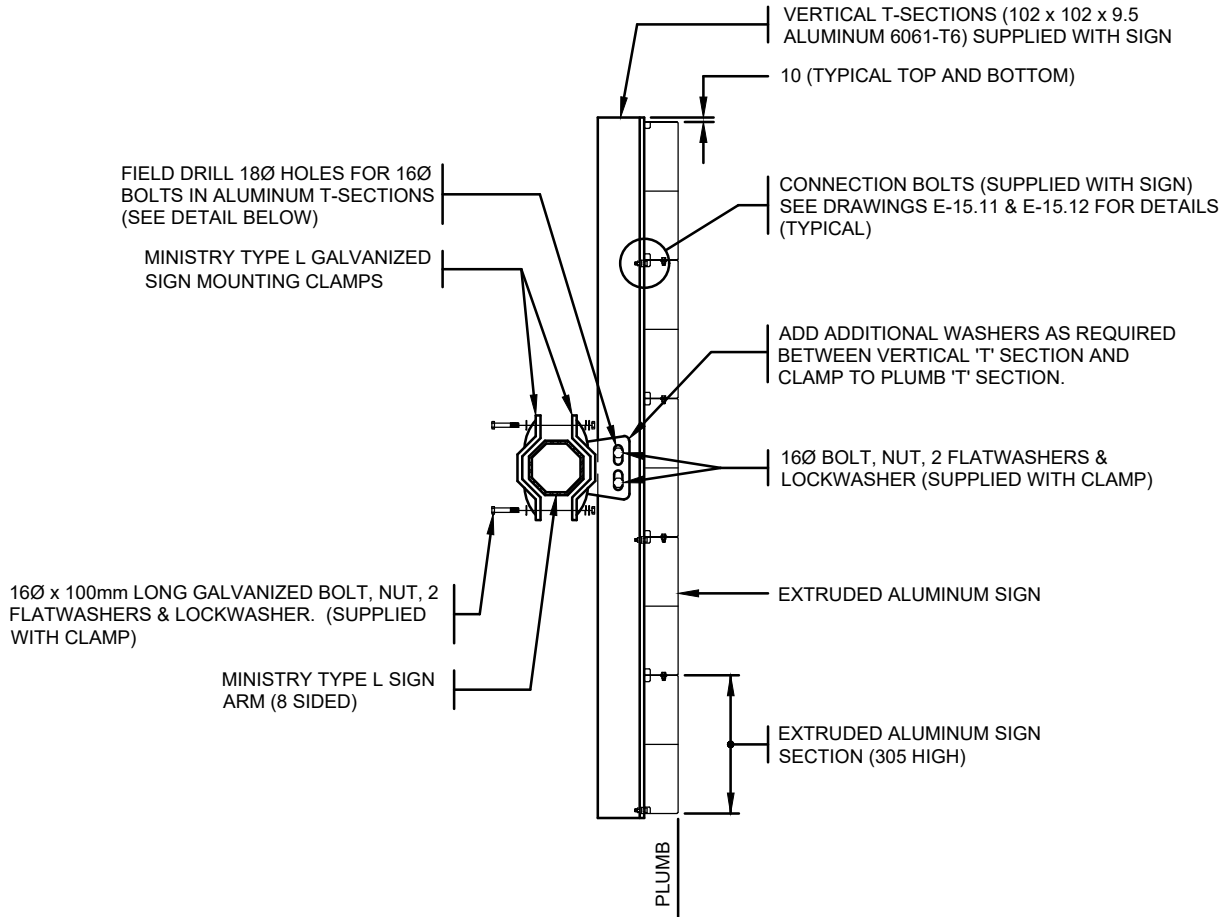
**REAR ELEVATION**

|                                |
|--------------------------------|
| TOTAL MASS                     |
| EXTRUDED ALUMINUM SIGN = 48 kg |

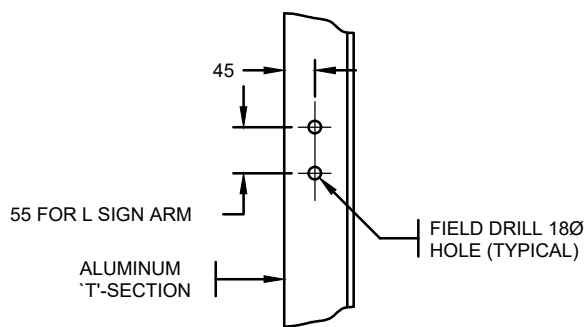
SEE DRAWING E-15.13 FOR  
SIGN LIGHTING DETAILS.

**NOTES:**

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. SEE DRAWING E-15.5 FOR SIGN ASSEMBLY DETAILS.
3. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.



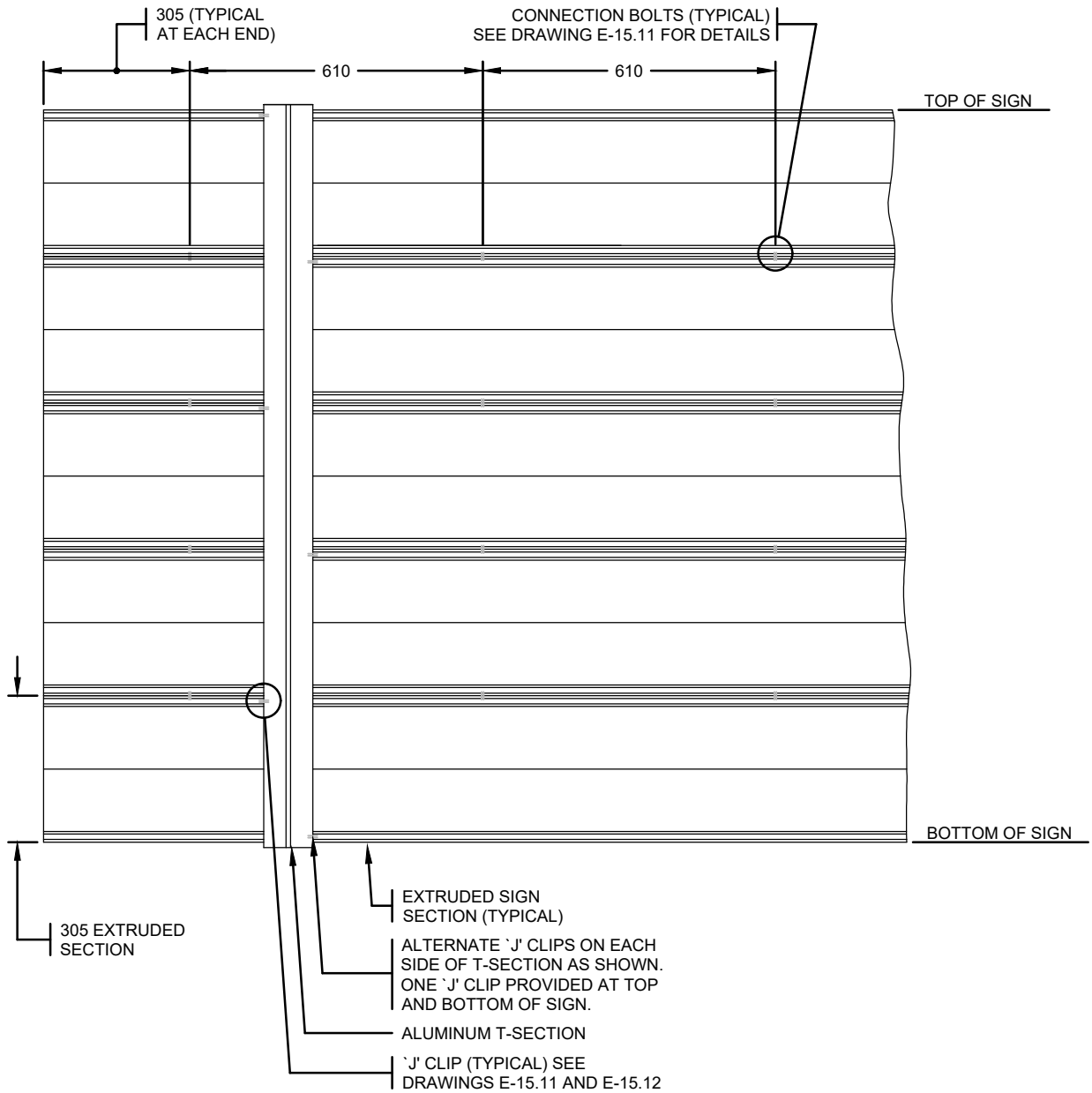
**SIGN BRACKET ASSEMBLY**  
SIDE VIEW



**'T'-SECTION HOLE DETAIL**

SEE DRAWING E-15.8 FOR NOTES AND ADDITIONAL DETAILS.

SIGN LIGHTING NOT SHOWN. SEE DRAWING E-15.13 FOR SIGN LIGHTING DETAILS.



REAR VIEW OF SIGN

SEE DRAWING E-15.8 FOR NOTES AND ADDITIONAL DETAILS.

'J' CLIPS (SUPPLIED WITH SIGN SECTION)  
SEE DRAWING E-15.12 FOR DETAILS (TYPICAL)

ADJUST SIGN SECTIONS  
SO THAT SIGN MESSAGES  
LINE UP (TYPICAL)

305 SECTION  
(TYPICAL)

SLOTTED HOLES SUPPLIED  
IN EXTRUDED ALUMINUM  
SECTIONS

CONNECT SIGN SECTIONS  
TOGETHER EVERY 610  
(305 AT ENDS) WITH  
10Ø x 25mm LONG STAINLESS  
STEEL JOINER BOLTS,  
NUTS AND FLATWASHERS.  
(SUPPLIED WITH SIGN SECTIONS)

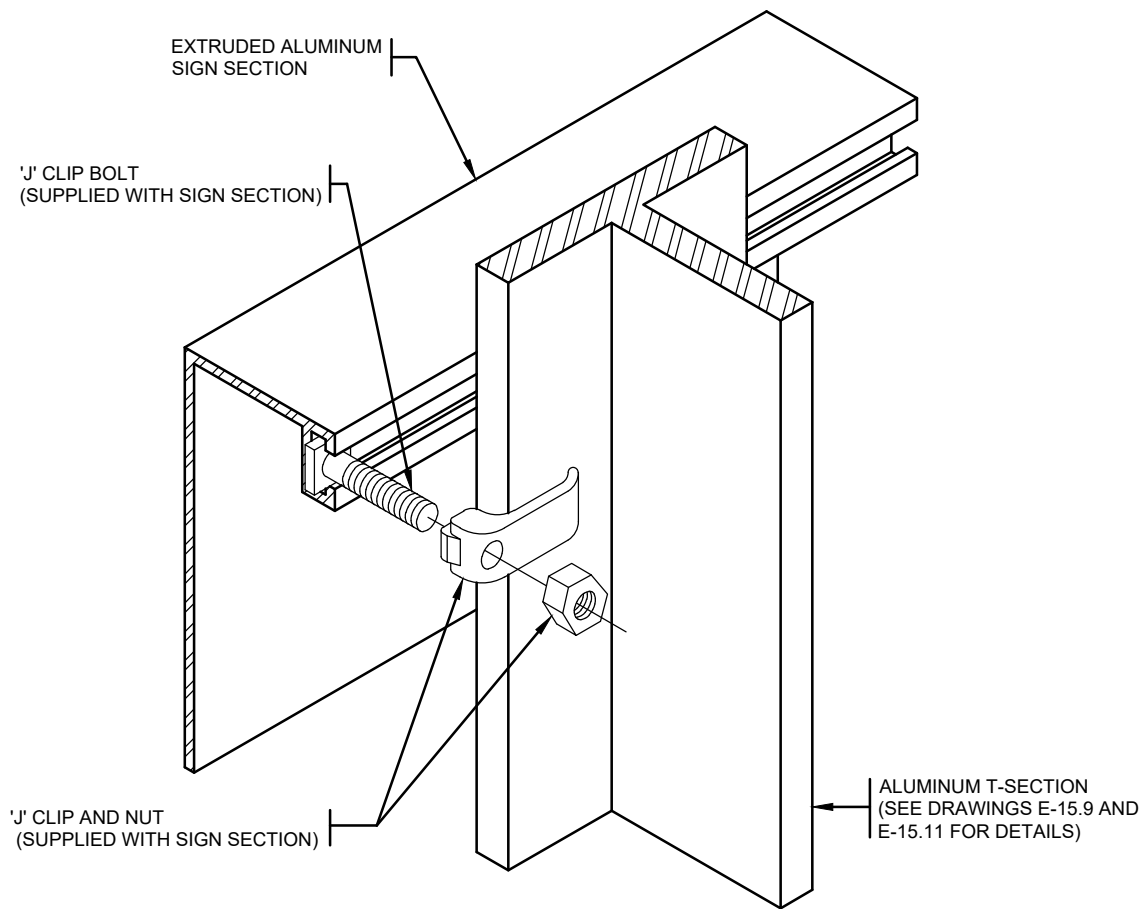
102 x 102 x 9.5 ALUMINUM 6061-T6  
T-SECTION (SUPPLIED WITH SIGN)

### ASSEMBLY VIEW

SEE DRAWING E-15.8 FOR NOTES  
AND ADDITIONAL DETAILS.

TORQUE JOINER BOLTS AND  
'J' CLIPS TO 19 ft. lbs.

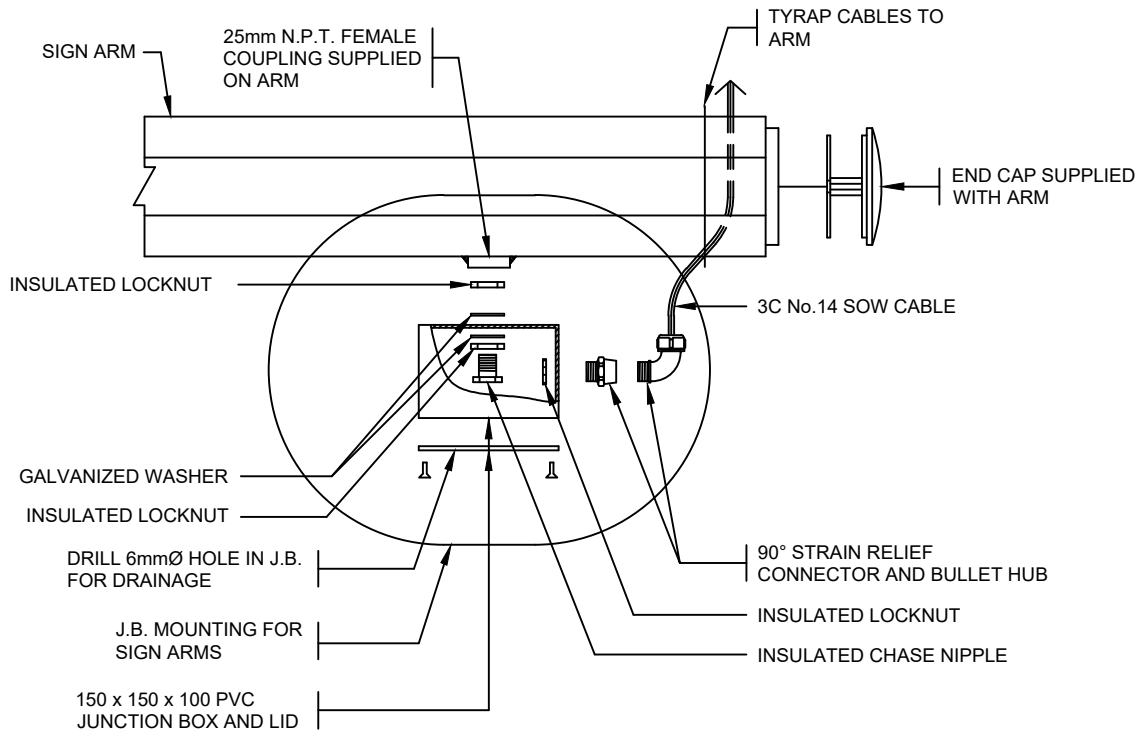




ASSEMBLY VIEW

SEE DRAWING E-15.8 FOR  
NOTES AND ADDITIONAL DETAILS.

TORQUE JOINER BOLTS AND  
'J' CLIPS TO 19 ft. lbs.



J.B. MOUNTING DETAIL

NOTES:

1. REFER TO CONTRACT DRAWINGS AND SECTION 10 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETERs UNLESS OTHERWISE NOTED.