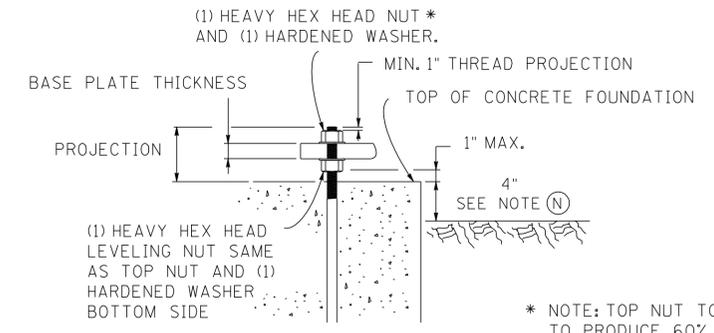
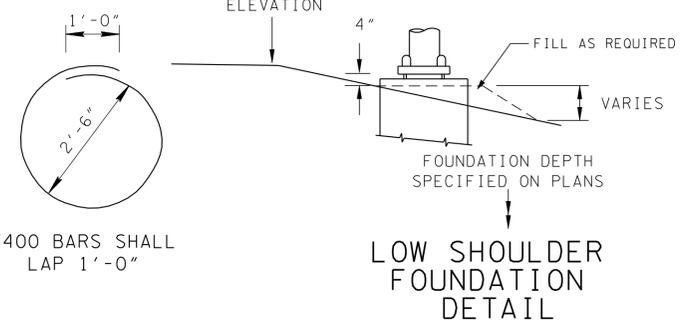


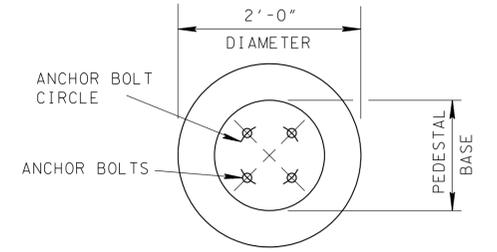
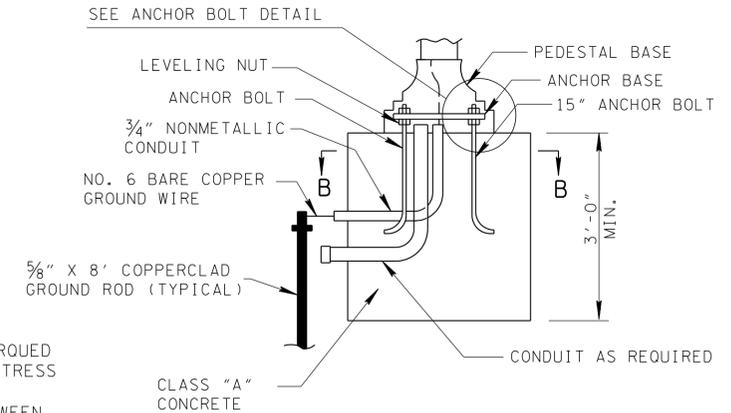
SECTION A-A
FOUNDATION DETAIL FOR STRAIN OR MAST ARM POLE



ANCHOR BOLT DETAIL

UNDER NO CONDITIONS WILL DRILLED AND GROUTED ANCHOR BOLTS BE ALLOWED (CANTILEVER AND BUTTERFLY SIGN BASES SHALL REQUIRE A MINIMUM OF 8 ANCHOR BOLTS 1 1/2" IN DIAMETER)

* NOTE: TOP NUT TO BE TORQUED TO PRODUCE 60% YIELD STRESS OF ANCHOR BOLT. NOTE: DO NOT GROUT BETWEEN BOTTOM OF BASE PLATE AND TOP OF CONCRETE FOUNDATION.



SECTION B-B
FOOTING DETAIL FOR STEEL PEDESTAL POLE

| ESTIMATED FOUNDATION QUANTITIES | | | | | | | |
|---------------------------------|-----------------------|--------------------|------------------------|-----------------------|--------------------|--------------|------------------------|
| FOOTING DEPTH | T400 REINFORCING BARS | | | A700 REINFORCING BARS | | | CONCRETE (CUBIC YARDS) |
| | NUMBER OF BARS | LENGTH OF EACH BAR | TOTAL WEIGHT IN POUNDS | NUMBER OF BARS | LENGTH OF EACH BAR | TOTAL WEIGHT | |
| 15'-0" | 15 | 8'-10" | 89 | 6 | 14'-6" | 178 | 3.9 |
| 15'-6" | 16 | 8'-10" | 95 | 6 | 15'-0" | 184 | 4.1 |
| 16'-0" | 16 | 8'-10" | 95 | 6 | 15'-6" | 190 | 4.2 |
| 16'-6" | 17 | 8'-10" | 101 | 6 | 16'-0" | 197 | 4.3 |
| 17'-0" | 17 | 8'-10" | 101 | 6 | 16'-6" | 203 | 4.5 |
| 17'-6" | 18 | 8'-10" | 107 | 6 | 17'-0" | 209 | 4.6 |
| 18'-0" | 18 | 8'-10" | 107 | 6 | 17'-6" | 215 | 4.7 |
| 18'-6" | 19 | 8'-10" | 113 | 6 | 18'-0" | 221 | 4.8 |
| 19'-0" | 19 | 8'-10" | 113 | 6 | 18'-6" | 227 | 5.0 |
| 19'-6" | 20 | 8'-10" | 119 | 6 | 19'-0" | 233 | 5.1 |
| 20'-0" | 20 | 8'-10" | 119 | 6 | 19'-6" | 240 | 5.2 |
| 20'-6" | 21 | 8'-10" | 125 | 6 | 20'-0" | 246 | 5.4 |
| 21'-0" | 21 | 8'-10" | 125 | 6 | 20'-6" | 252 | 5.5 |
| 21'-6" | 22 | 8'-10" | 130 | 6 | 21'-0" | 258 | 5.6 |
| 22'-0" | 22 | 8'-10" | 130 | 6 | 21'-6" | 264 | 5.8 |
| 22'-6" | 23 | 8'-10" | 136 | 6 | 22'-0" | 270 | 5.9 |
| 23'-0" | 23 | 8'-10" | 136 | 6 | 22'-6" | 276 | 6.0 |
| 23'-6" | 24 | 8'-10" | 142 | 6 | 23'-0" | 282 | 6.2 |
| 24'-0" | 24 | 8'-10" | 142 | 6 | 23'-6" | 289 | 6.3 |
| 24'-6" | 25 | 8'-10" | 148 | 6 | 24'-0" | 295 | 6.4 |
| 25'-0" | 25 | 8'-10" | 148 | 6 | 24'-6" | 301 | 6.6 |

GENERAL NOTES

- (A) ALL STEEL STRAIN POLES SHALL CONFORM TO "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION, SECTION 730 - TRAFFIC SIGNALS.
- (B) STRAIN POLES SHALL BE DESIGNED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (CURRENT EDITION).
- (C) THE CONTRACTOR SHALL FURNISH POLES DESIGNED FOR A WIND VELOCITY ACCORDING TO THE CURRENT STANDARDS AS SPECIFIED IN AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS".
- (D) ANCHOR BOLTS SHALL BE DESIGNED BY THE POLE FABRICATOR. THEY SHALL BE CAPABLE OF RESISTING THE FULL BENDING MOMENT OF THE SHAFT AT ITS YIELD STRENGTH STRESS.
MATERIAL SPECIFICATIONS - BOLTS:
1.) ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 55 ksi WITH THREADS CONFORMING TO THE REQUIREMENTS OF ASTM A563.
2.) NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A563.
3.) ALL HARDWARE, EXCEPT STAINLESS STEEL, SHALL BE HOT DIPPED GALVANIZED ACCORDING TO ASTM A153 OR MECHANICALLY GALVANIZED ACCORDING TO ASTM B695.
- (E) THE COST OF ALL FOOTING MATERIALS AND INSTALLATION SHALL BE INCLUDED IN THE PRICE BID FOR STEEL POLES
- (F) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND NOTES TO THE ENGINEER OF STRUCTURES FOR APPROVAL PRIOR TO FABRICATION.
- (G) THE MOMENT CAPACITY OF THE STRAIN POLES AND THE FOOTING DEPTHS FOR BOTH STRAIN POLE AND MAST ARM POLE SHALL BE AS SPECIFIED IN THE PLANS.
- (H) CANTILEVER SIGNAL SUPPORTS SHALL BE DESIGNED BY THE POLE FABRICATOR.
- (J) TOP OF FOOTING SHALL BE FLUSH IN SIDEWALK OR PAVED ISLANDS. TOP OF FOOTING SHALL NOT EXTEND MORE THAN 4" ABOVE THE GROUND LINE IN OTHER AREAS.
- (K) IF ROCK IS ENCOUNTERED WHILE DRILLING FOR FOOTING, AND CORE AND THE DRILLING INDICATES ROCK IS SOLID, DRILL SIX 1 1/8" DIAMETER HOLES INTO ROCK A MINIMUM DISTANCE OF THREE FEET. FILL HOLES WITH A-B EPOXY MIX AND ROTATE THE A700 BARS UNTIL FULL DEPTH IS ACHIEVED. THE A-B EPOXY MIX SHALL BE APPROVED BY TENNESSEE DEPARTMENT OF TRANSPORTATION, MATERIALS AND TEST DIVISION. GROUND ROD MAY BE PLACED HORIZONTALLY, AS DEEP AS ROCK ALLOWS, WITH A 3" MINIMUM SEPARATION FROM ANY CONDUIT.
- (L) ALL STRAIN POLES AND MAST ARM POLES TO HAVE SPARE 2" RGS CONDUIT STUB EXTENDING 24" BEYOND POLE FOUNDATION.
- (M) ALL CONDUIT BENDS IN POLE FOUNDATION TO BE 6" RADIUS.
- (N) BASE OF POLE SHALL REMAIN OPEN TO PERMIT DRAINAGE AND AIR CIRCULATION. FINISHED GROUND PROFILE SHOULD DRAIN WATER AWAY FROM FOUNDATION.

- REV. 9-18-89: ADDED NOTE (J) AND GRADE DETAILS TO FOOTING DETAIL.
- REV. 1-18-91: REDREW AND REORGANIZED SHEET. ADDED GENERAL NOTE (K) REGARDING FOOTINGS IN ROCK.
- REV. 1-19-96: CHANGED GENERAL NOTE (A).
- REV. 2-14-99: REVISED GENERAL NOTE (K).
- REV. 12-16-03: REVISED SHEET TITLE. DELETED ESTIMATED QUANTITY FOR FOUNDATIONS LESS THAN 10', ADDED SPARE CONDUIT TO STRAIN OR MAST ARM FOUNDATION DETAIL, ADDED LOW SHOULDER FOUNDATION DETAIL. DELETED NOTE G. RE LETTERED REMAINING NOTES AND ADDED NOTES (L) TO (N).
- REV. 7-29-04: MODIFIED ESTIMATED FOOTING QUANTITIES FOR STRAIN POLE TABLE. ADDED LOWER SHOULDER FOUNDATION DETAIL.
- REV. 02-15-07: ADDED ANCHOR BOLT DETAIL. REVISED GENERAL NOTES (D), (G) & (N) AND CHANGED TITLE
- REV. 1-5-10: MODIFIED ESTIMATED FOUNDATION QUANTITIES TABLE.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

MAST ARM POLE
AND
STRAIN POLES
FOUNDATION DETAILS