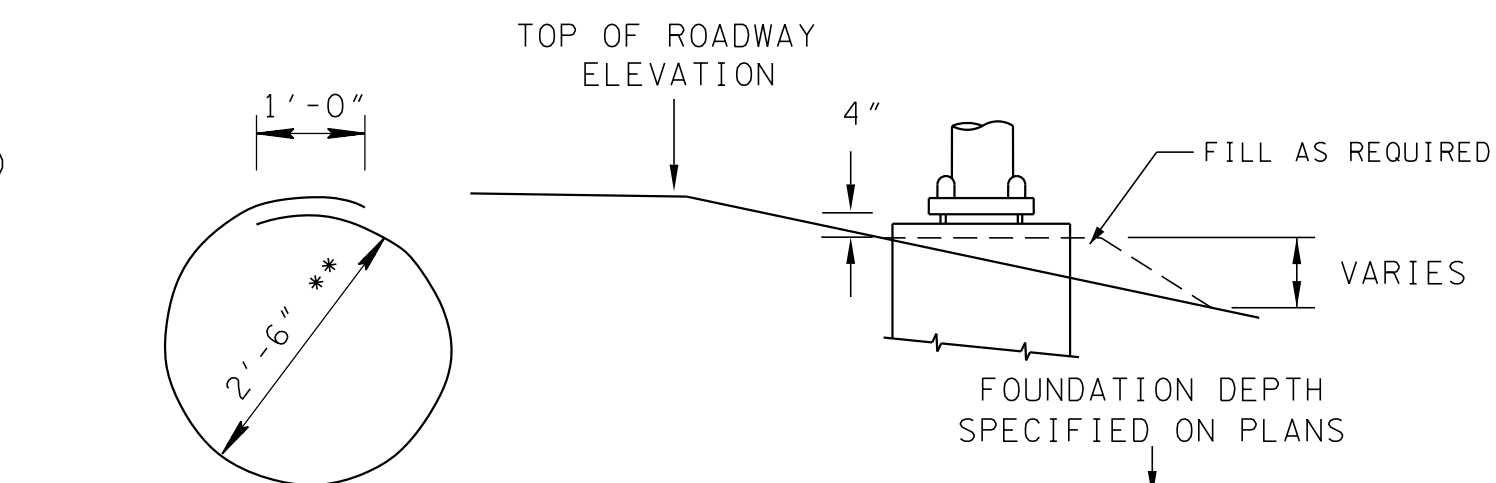
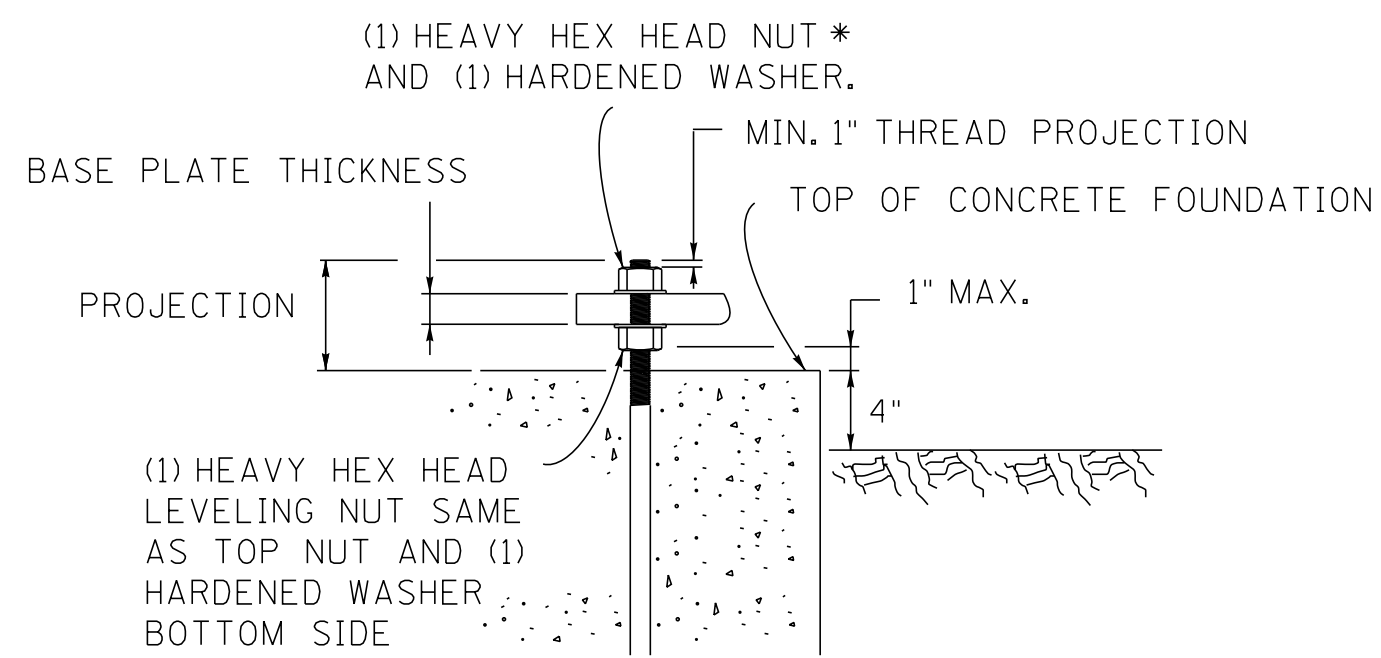


FOUNDATION DETAIL FOR STRAIN OR MAST ARM POLE



T400 BARS SHALL LAP 1'-0"

** FOR 3'-0" DIAMETER FOOTING. USE 3'-6" FOR 4'-0" DIAMETER FOOTING.



ANCHOR BOLT DETAIL

UNDER NO CONDITIONS WILL DRILLED AND GROUTED ANCHOR BOLTS BE ALLOWED

* 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.

REQUIRED BEARING AREA FOR ANCHOR BOLT	
ANCHOR BOLT DIA (IN)	HEAD OR NUT AREA (SQ IN)
1"	1.800
1 1/4"	2.812
1 1/2"	4.050
1 3/4"	5.512
2"	7.199
2 1/4"	9.122
2 1/2"	11.249

GENERAL NOTES

- (A) ALL STEEL STRAIN POLES AND MAST ARM SIGNAL POLES SHALL CONFORM TO "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION, SECTION 730 - TRAFFIC SIGNALS.
- (B) STRAIN POLES AND MAST ARM POLES SHALL BE DESIGNED ACCORDING TO AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS (2015, FIRST EDITION).
- (C) THE CONTRACTOR SHALL FURNISH POLES DESIGNED FOR A BASIC WIND SPEED OF 120 MPH (EXTREME I LIMIT STATE).
- (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 DESIGN CALCULATIONS TO THE ENGINEER OF STRUCTURES FOR APPROVAL PRIOR TO FABRICATION.
- (G) THE MAXIMUM MOMENT CAPACITY OF THE STRAIN POLES AND MAST ARM POLES SHALL BE AS SPECIFIED ON THE POLE SHOP DRAWINGS. CHOOSE A LARGER MAXIMUM DESIGN MOMENT FROM THE TABLE TO THE LEFT TO DETERMINE THE REQUIRED FOOTING DIAMETER AND DEPTH.
- (H) CANTILEVER SIGNAL SUPPORTS SHALL BE DESIGNED BY THE POLE FABRICATOR.
- (I) 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.
- (J) IF ROCK IS ENCOUNTERED WHILE DRILLING FOR FOOTING, AND CORE AND THE DRILLING INDICATES ROCK IS SOLID, THE CONTRACTOR SHALL PROVIDE A ROCK SOCKET TWO TIMES THE DIAMETER OF THE POLE FOUNDATION.
- (K) ALL STRAIN POLES AND MAST ARM POLES TO HAVE SPARE 2" RGS CONDUIT STUB EXTENDING 24" BEYOND POLE FOUNDATION.
- (L) ALL CONDUIT BENDS IN POLE FOUNDATION TO BE 6" RADIUS.
- (M) BASE OF POLE SHALL REMAIN OPEN TO PERMIT DRAINAGE AND AIR CIRCULATION. FINISHED GROUND PROFILE SHOULD DRAIN WATER AWAY FROM FOUNDATION.
- (N) 2' DIAMETER FOUNDATION ONLY TO BE USED WITH PEDESTAL POLE A (SEE T-SG-6).
- (O) FOR POLES WITH A BOLT CIRCLE GREATER THAN 24 INCHES, A 4'-0" DIAMETER FOUNDATION MUST BE SELECTED.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

MAST ARM POLE AND STRAIN POLE FOUNDATION DETAILS BEFORE 9-18-89 T-SG-10

POLE FOUNDATIONS WITH REINFORCEMENT AND QUANTITIES

FOOTING DIAMETER	FOOTING DEPTH	T400 REINFORCING BARS			A800 REINFORCING BARS			CONCRETE (CUBIC YARDS)	MAXIMUM DESIGN MOMENT (FT-KIP) SERVICE LOAD
		NUMBER OF BARS	LENGTH OF EACH BAR	TOTAL WEIGHT IN POUNDS	NUMBER OF BARS	LENGTH OF EACH BAR	TOTAL WEIGHT IN POUNDS		
3'-0"	15'-0"	15	8'-10"	89	14	14'-6"	542	3.9	134
3'-0"	16'-0"	16	8'-10"	95	14	15'-6"	579	4.2	150
3'-0"	17'-0"	17	8'-10"	101	14	16'-6"	617	4.5	167
3'-0"	18'-0"	18	8'-10"	107	14	17'-6"	654	4.7	184
3'-0"	19'-0"	19	8'-10"	113	14	18'-6"	692	5.0	202
3'-0"	20'-0"	20	8'-10"	119	14	19'-6"	729	5.2	221
3'-0"	21'-0"	21	8'-10"	125	14	20'-6"	766	5.5	240
3'-0"	22'-0"	22	8'-10"	130	14	21'-6"	804	5.8	260
3'-0"	23'-0"	23	8'-10"	136	14	22'-6"	841	6.0	280
3'-0"	24'-0"	24	8'-10"	142	14	23'-6"	878	6.3	300
4'-0"	15'-0"	15	12'-0"	121	24	14'-6"	929	7.0	179
4'-0"	16'-0"	16	12'-0"	128	24	15'-6"	993	7.4	200
4'-0"	17'-0"	17	12'-0"	136	24	16'-6"	1057	7.9	223
4'-0"	18'-0"	18	12'-0"	145	24	17'-6"	1121	8.4	246
4'-0"	19'-0"	19	12'-0"	153	24	18'-6"	1185	8.8	270
4'-0"	20'-0"	20	12'-0"	161	24	19'-6"	1250	9.3	295
4'-0"	21'-0"	21	12'-0"	169	24	20'-6"	1314	9.8	320
4'-0"	22'-0"	22	12'-0"	177	24	21'-6"	1378	10.2	346
4'-0"	23'-0"	23	12'-0"	185	24	22'-6"	1442	10.7	373
4'-0"	24'-0"	24	12'-0"	193	24	23'-6"	1506	11.2	401
4'-0"	25'-0"	25	12'-0"	201	24	24'-6"	1570	11.7	429
4'-0"	26'-0"	26	12'-0"	209	24	25'-6"	1634	12.1	458
4'-0"	27'-0"	27	12'-0"	217	24	26'-6"	1698	12.6	487
4'-0"	28'-0"	28	12'-0"	224	24	27'-6"	1762	13.0	517
4'-0"	29'-0"	29	12'-0"	233	24	28'-6"	1826	13.5	547
4'-0"	30'-0"	30	12'-0"	241	24	29'-6"	1890	14.0	578
4'-0"	31'-0"	31	12'-0"	248	24	30'-6"	1954	14.4	609
4'-0"	32'-0"	32	12'-0"	257	24	31'-6"	2019	14.9	641
2'-0"	6'-0"	7	5'-9"	27	6	5'-6"	88	0.7	(N)