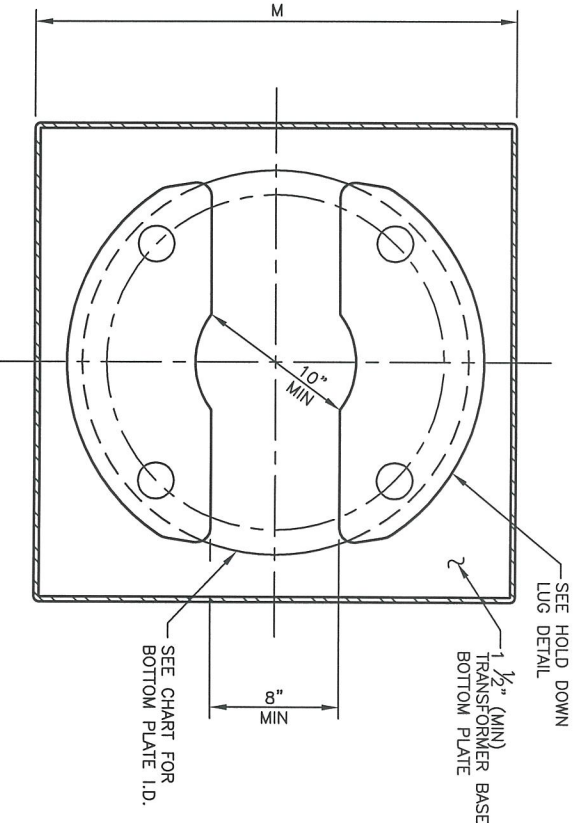
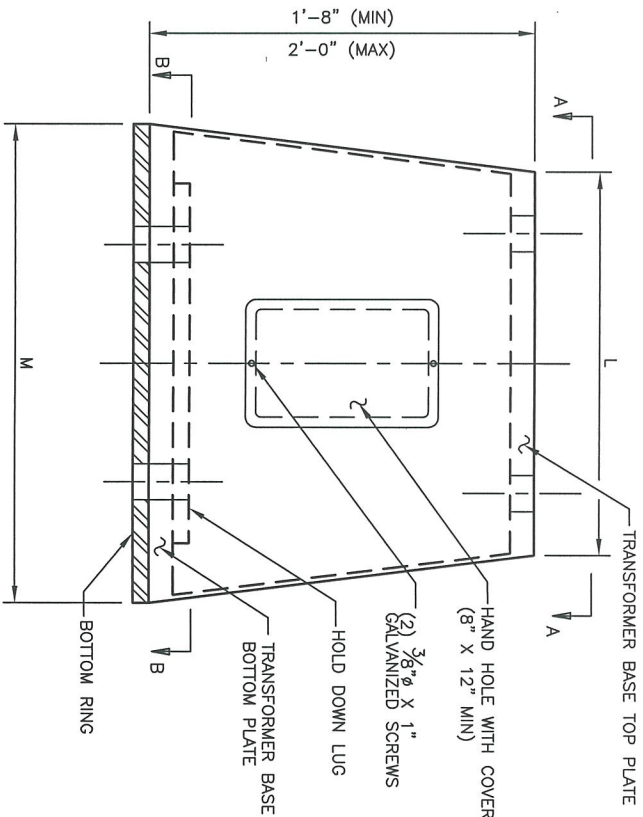


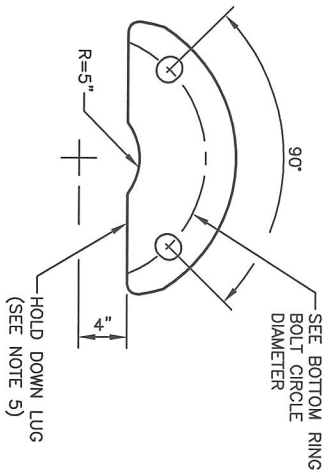
NOTES:

1. SEE GENERAL NOTES FOR TRAFFIC SIGNAL, MAST, AND ARMS SERIAL 707S-02-1/1 FOR DESIGN INFORMATION AND SPECIFICATIONS.
2. REFERENCE NMDOT SPECIFICATION 707 FOR ADDITIONAL TRANSFORMER BASE REQUIREMENTS.
3. TRANSFORMER BASE DETAILS ARE PROVIDED AS MINIMUM GEOMETRIC REQUIREMENTS. DESIGN AND DETAILS SHALL BE SUBMITTED TO NMDOT FOR REVIEW AND APPROVAL. ALL TRANSFORMER BASES SHALL ALLOW 90° ROTATION AT BOTTOM OF TRANSFORMER.
4. MINIMUM BOLT CIRCLE DIAMETER IS PROVIDED. LARGER DIAMETERS ARE PERMITTED, BUT SHALL AVOID CONFLICTS WITH DRILLED SHAFT REINFORCING. SEE SERIAL 708S-02-1/1 FOR FOUNDATION INFORMATION. REVISED BOTTOM RING DESIGN AND DETAILS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
5. GEOMETRY OF HOLD DOWN LUG MAY BE MODIFIED, BUT SHALL BE DESIGNED TO PERMIT 90° ROTATION.
6. INCREASE ANCHOR BOLT PROJECTION BASED ON FINAL DESIGN OF TRANSFORMER BASE, BOTTOM RING, AND HOLD DOWN LUG.



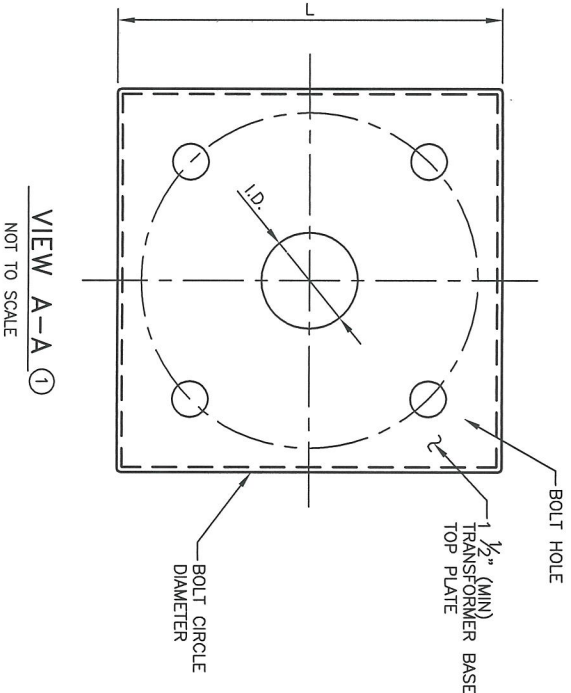
BOTTOM HOLD DOWN LUG DETAIL

2 REQ'D (ALLOWS 360° ROTATION)  
NOT TO SCALE



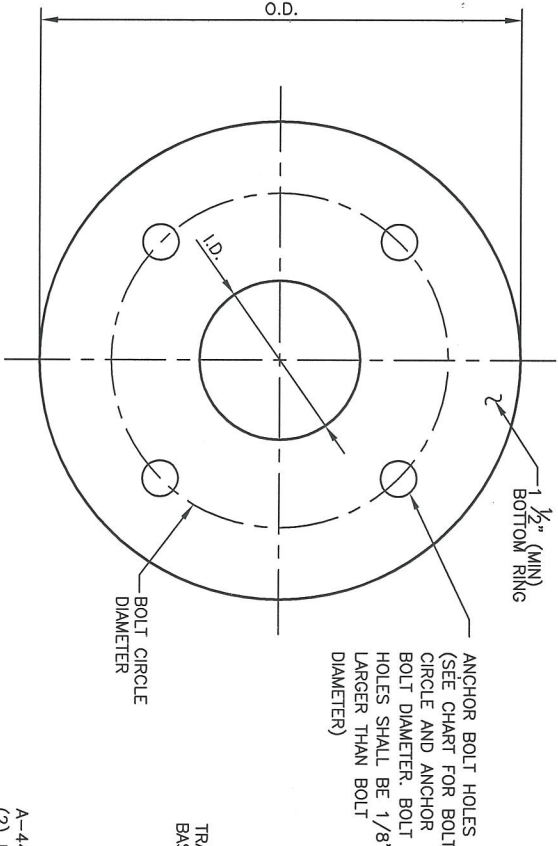
TRANSFORMER BASE DETAIL

NOT TO SCALE



VIEW A-A

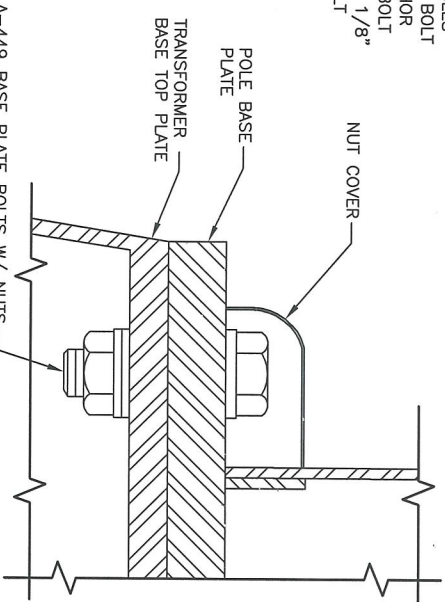
NOT TO SCALE



BOTTOM RING AND ANCHOR BOLT TEMPLATE

- 4- BOLT PATTERN SHOWN.
- 6-BOLT PATTERN NOT SHOWN FOR CLARITY. BOLTS SHALL BE EQUALLY SPACED ON BOLT CIRCLE.

(ALL ANCHOR BOLTS TO BE SET USING BOTTOM RING AS TEMPLATE.)  
NOT TO SCALE



NOT TO SCALE

MAST ARM LENGTH (FT)	TRANSFORMER BASE TOP PLATE				TRANSFORMER BASE BOTTOM PLATE				BOTTOM RING				ANCHOR BOLT TEMPLATE				ANCHOR BOLTS		
	L (IN)	I.D. (IN)	BOLT CIRCLE DIAMETER (IN)	THICK (IN)	M (IN)	I.D. (IN)	BOLT CIRCLE DIAMETER (IN)	THICK (IN)	O.D. (IN)	I.D. (IN)	BOLT CIRCLE DIAMETER (IN)	THICK (IN)	O.D. (IN)	I.D. (IN)	BOLT CIRCLE DIAMETER (IN)	THICK (IN)	NO.	SIZE (IN)	LENGTH (IN)
20	21	6	19.0	NOTE 3	NOTE 3	NOTE 3	19.0	NOTE 3	NOTE 3	10	19.0	NOTE 3	20.5	17.5	19.0	0.3125	4	1.5	68
25	21	6	19.0	NOTE 3	NOTE 3	NOTE 3	19.0	NOTE 3	NOTE 3	10	19.0	NOTE 3	20.5	17.5	19.0	0.3125	4	1.5	68
30	21	6	19.0	NOTE 3	NOTE 3	NOTE 3	19.0	NOTE 3	NOTE 3	10	19.0	NOTE 3	20.5	17.5	19.0	0.3125	4	1.5	68
35	21	6	19.0	NOTE 3	NOTE 3	NOTE 3	19.0	NOTE 3	NOTE 3	10	19.0	NOTE 3	20.5	17.5	19.0	0.3125	4	1.5	68
40	27	6	21.0	NOTE 3	NOTE 3	NOTE 3	21.0	NOTE 3	NOTE 3	10	21.0	NOTE 3	22.5	19.5	21.0	0.3125	6	1.5	68
45	27	6	21.0	NOTE 3	NOTE 3	NOTE 3	21.0	NOTE 3	NOTE 3	10	21.0	NOTE 3	22.5	19.5	21.0	0.3125	6	1.5	68
50	27	6	21.0	NOTE 3	NOTE 3	NOTE 3	21.0	NOTE 3	NOTE 3	10	21.0	NOTE 3	22.5	19.5	21.0	0.3125	6	1.5	68
55	29	6	23.0	NOTE 3	NOTE 3	NOTE 3	23.0	NOTE 3	NOTE 3	10	23.0	NOTE 3	24.0	21.0	23.0	0.3125	6	1.75	68
60	31	6	25.0	NOTE 3	NOTE 3	NOTE 3	25.0	NOTE 3	NOTE 3	10	25.0	NOTE 3	26.0	23.0	25.0	0.3125	6	1.75	68
65	31	6	25.0	NOTE 3	NOTE 3	NOTE 3	25.0	NOTE 3	NOTE 3	10	25.0	NOTE 3	26.0	23.0	25.0	0.3125	6	1.75	68

NO.

DATE

REV/BY

REVISIONS (OR CHANGE NOTICES)

DESCRIPTION

DESIGNED BY MS

DRAWN BY CCS

CHECKED BY APM

707S-04-2/2

2 of 2

NEW MEXICO

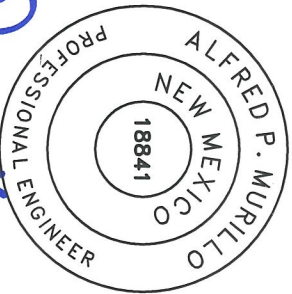
DEPARTMENT OF TRANSPORTATION

STANDARD DRAWING

SIGN, SIGNAL, AND LUMINAIRE

SUPPORT STRUCTURES

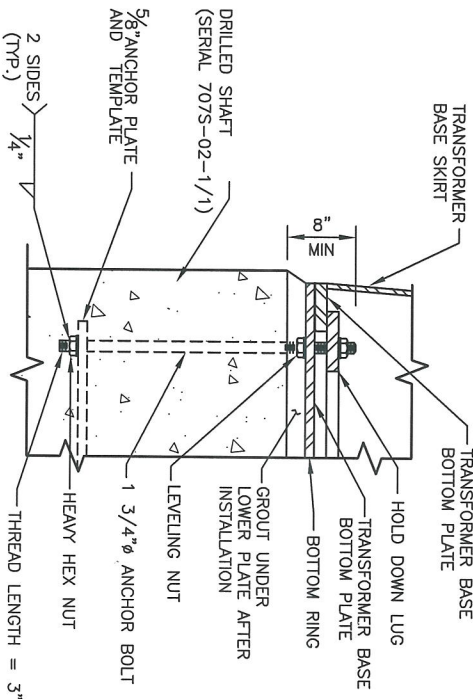
TYPE II AND III



Alfred P. Murillo  
12-15-08

ANCHOR BOLT DETAIL

NOT TO SCALE

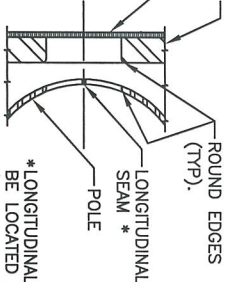




ORDERING INFORMATION	
POLE ONLY	POLE WITH ALTERNATE SECTION
IIA	IIIA

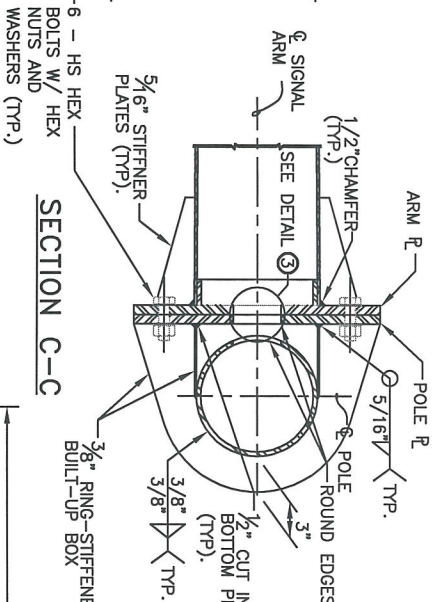
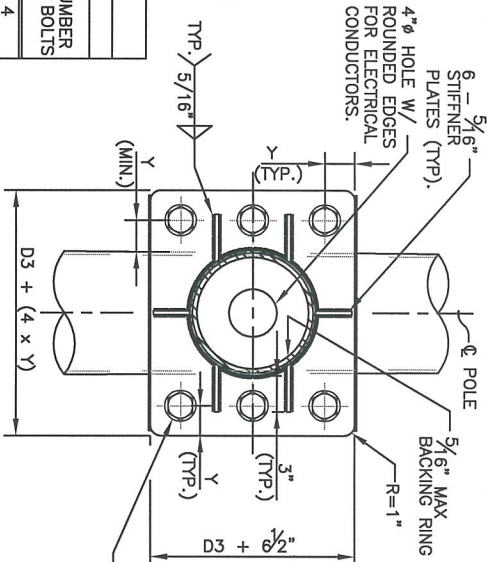
### GENERAL SIGNAL AND LIGHTING STANDARDS DATA

TYPE	# OF SIGNALS	H (ft)	A (ft)	B (ft)	C (ft)
IIA	1	VARIABLE	20	20'-3"	VARIABLE
	1	VARIABLE	25	20'-3"	VARIABLE
	2	VARIABLE	30	20'-3"	VARIABLE
	2	VARIABLE	35	20'-3"	VARIABLE



\*LONGITUDINAL SEAM TO BE LOCATED AS SHOWN (CENTERED TO CONFORM WITH THE LONGITUDINAL AXIS OF THE SIGN AND SIGNAL ARM).

LUMINAIRE ARM DATA										
TYPE	L LENGTH AT POLE (ft)	MINIMUM O.D.		ARM THICKNESS t <sub>arm</sub> (in)	ARM PLATE		POLE PLATE		BOLTS	
		AT FREE END D6 (in)			E t <sub>arm-PL</sub> (in)	BOLT CIRCLE Ø (in)	F t <sub>pole-PL</sub> (in)	DIAMETER OF BOLTS (in)	NUMBER OF BOLTS	
IIIA	17	5	2.4	0.1875	10	1	8 1/2	10	5/8	4

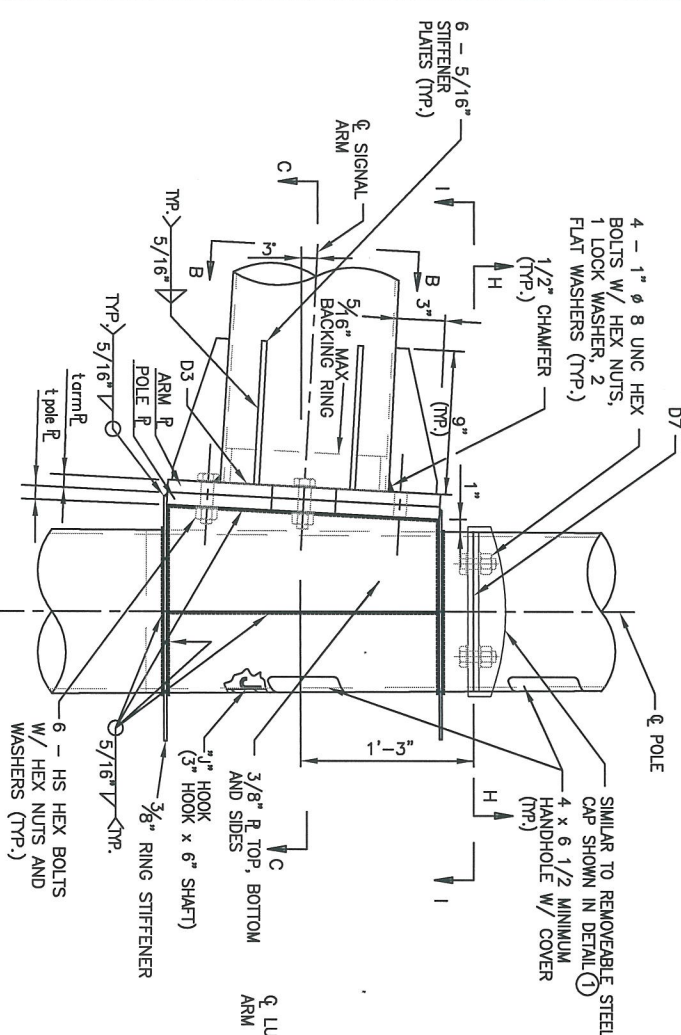


### SECTION C-C

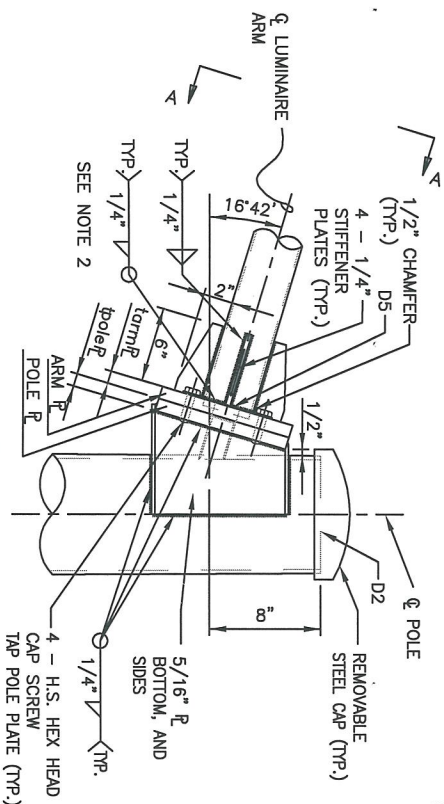
FOR DETAILS, SEE "SIGNAL MOUNTING DETAILS" SERIAL 707S-04-1/2.

### SECTION B-B

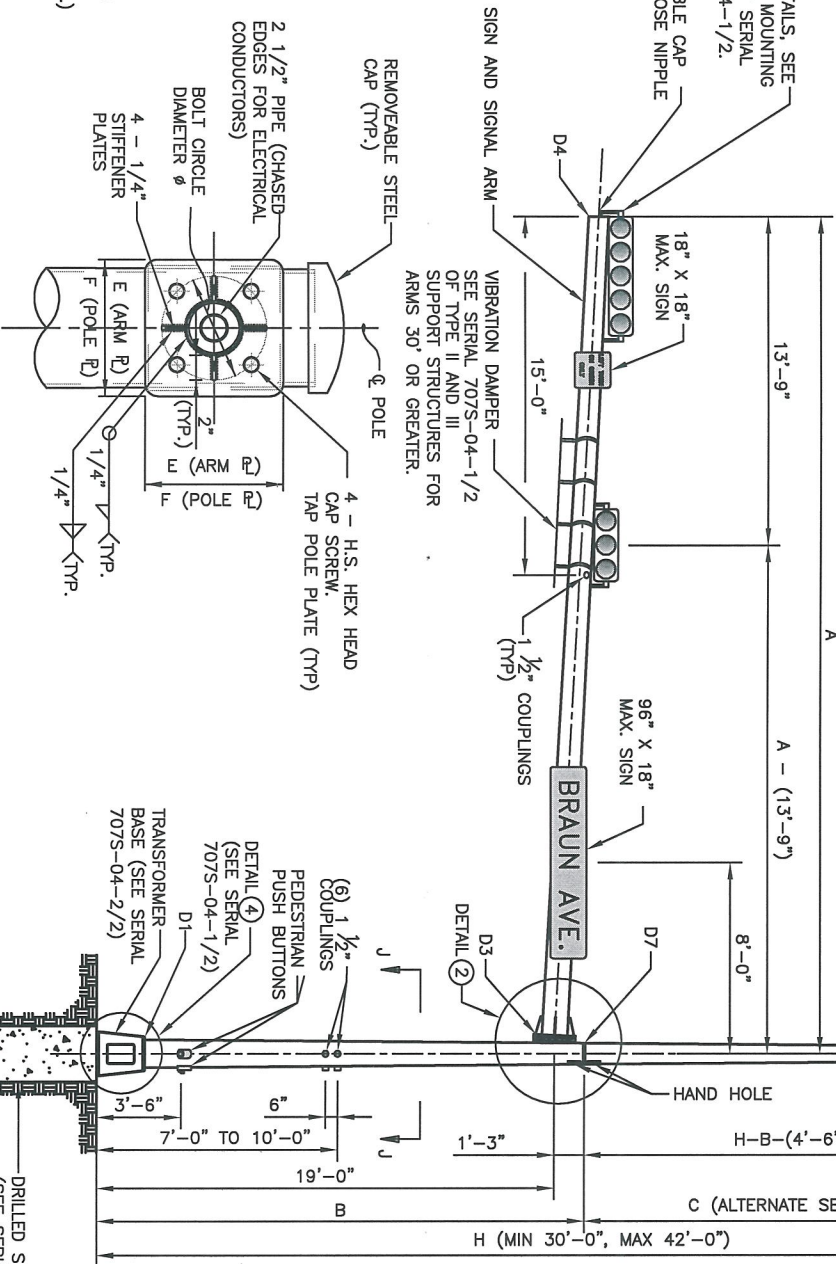
Y = 1.5 X BOLT DIAMETER (MIN).



### ELEVATION DETAIL 2



### ELEVATION DETAIL 1



### SECTION A-A

LUMINAIRE EXTENSION				
TYPE	(=H-B)	AT BASE D7 (ft)	AT TOP D2 (in)	THICKNESS t <sub>coil-sec</sub> (in)
IIIA	20'-3"	9.95	VARIABLE	0.3125

POLE DATA									
TYPE	(ft)	MINIMUM O.D.		MIN. POLE THICKNESS		BASE PLATE		BOLTS	
		AT BASE D1 (in)	AT TOP D7 (in)	t <sub>D1</sub> (in)	t <sub>D7</sub> (in)	t <sub>base-PL</sub> (in)	t <sub>pole-PL</sub> (in)	BOLT CIRCLE Ø (in)	DIAMETER (in)
IIA	20'-3"	12 1/2	9.95	0.3125	21	2.5	19	1 1/2	4

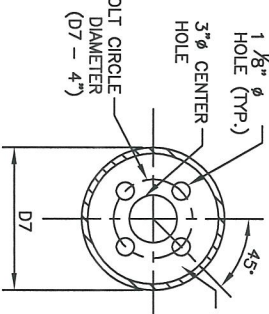
### SIGN & SIGNAL ARM DATA

TYPE	(ft)	MINIMUM O.D.		MIN. ARM THICKNESS		ARM PLATE		POLE PLATE		BOLTS	
		AT POLE D3 (in)	AT FREE END D4 (in)	t <sub>D3</sub> (in)	t <sub>arm</sub> (in)	t <sub>arm-PL</sub> (in)	t <sub>pole-PL</sub> (in)	DIAMETER (in)	NUMBER OF BOLTS	DIAMETER OF BOLTS	NUMBER OF BOLTS
IIA	20	10 1/2	7.7	0.3125	2	2	2	1 1/2	6		6
	25	10 1/2	7	0.3125	2	2	2	1 1/2	6		6
	30	10 1/2	6.3	0.3125	2	2	2	1 1/2	6		6
	35	10 1/2	5.6	0.3125	2	2	2	1 1/2	6		6

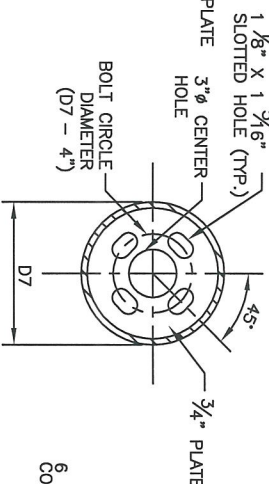
### NOTES:

- SEE GENERAL NOTES FOR TRAFFIC SIGNAL, MAST, AND ARMS SERIAL 707S-02-1/1 FOR DESIGN INFORMATION AND SPECIFICATIONS.
  - LUMINAIRE ARM TO BASE PLATE CONNECTION FOR DETAIL 1 SHALL BE A FILLET-WELDED SOCKET CONNECTION.
- NOTE: CARE SHALL BE TAKEN TO PROPERLY PLACE AND SIGNS ON ARMS.

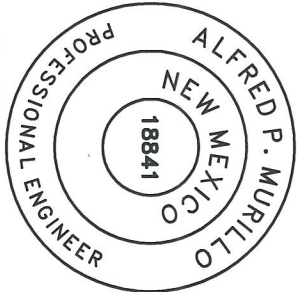
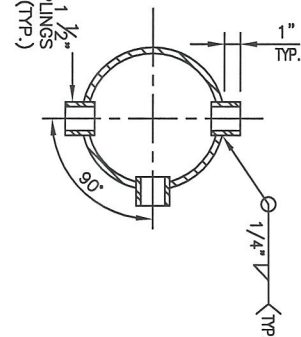
### SECTION H-H



### SECTION I-I



### SECTION J-J



### NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING

### SIGN, SIGNAL, AND LUMINAIRE SUPPORT STRUCTURES TYPE IIA AND IIIA

DESIGNED BY MS DRAWN BY CCS CHECKED BY APM  
**707S-03A-1/1**

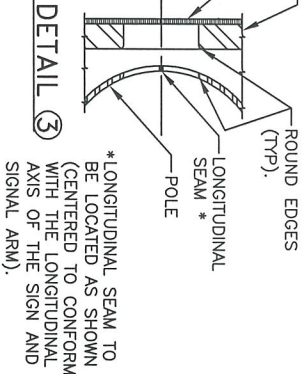




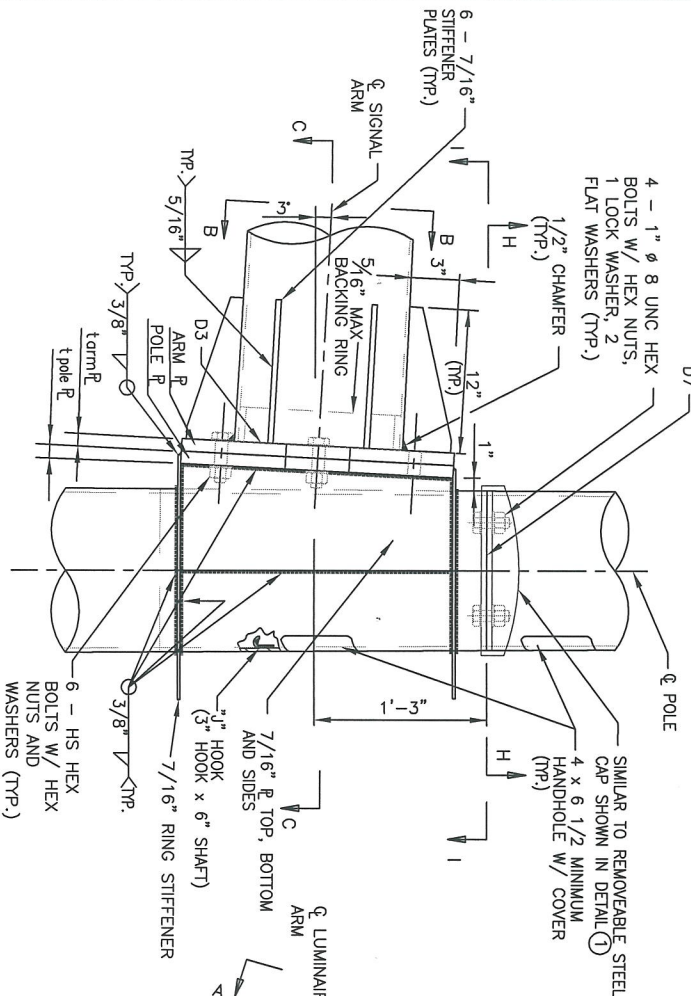


ORDERING INFORMATION	
POLE ONLY	POLE WITH ALTERNATE SECTION
IIC	IIC

GENERAL SIGNAL AND LIGHTING STANDARDS DATA				
TYPE	# OF SIGNALS	H (ft)	A (ft)	B (ft)
IIC	5	VARIABLE	55	20'-3"
	5	VARIABLE	60	20'-3"
	5	VARIABLE	65	20'-3"



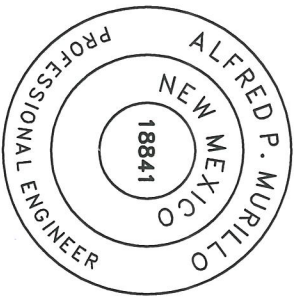
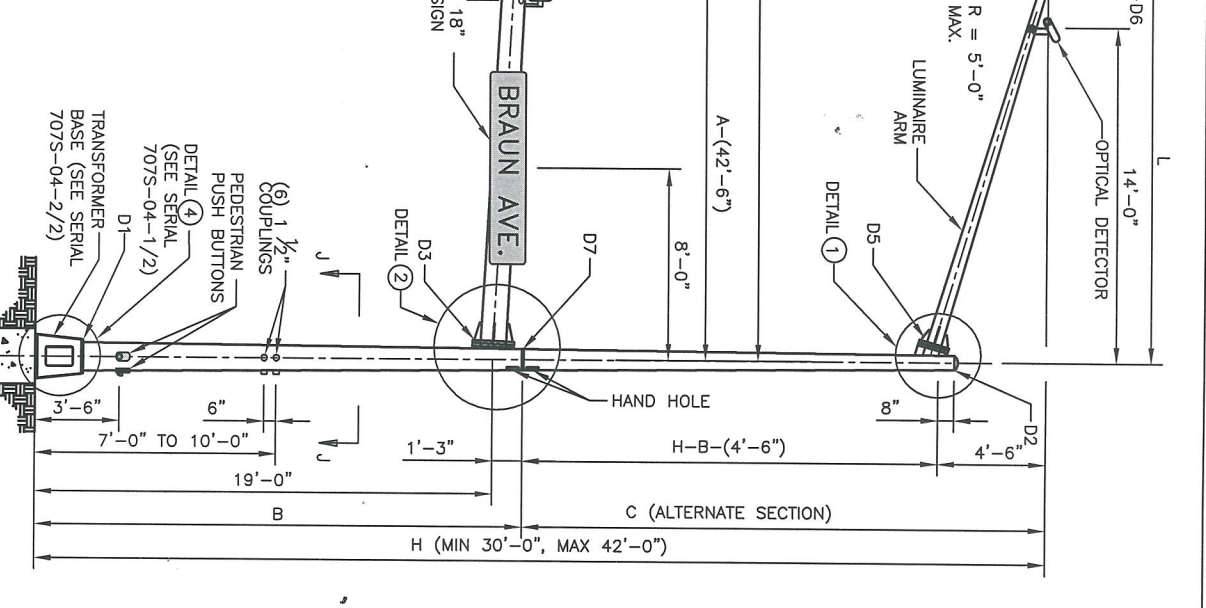
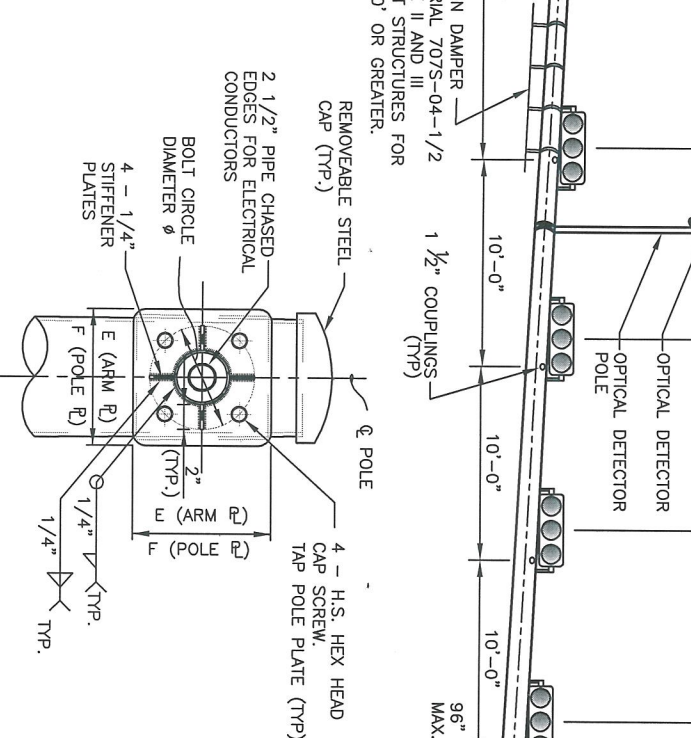
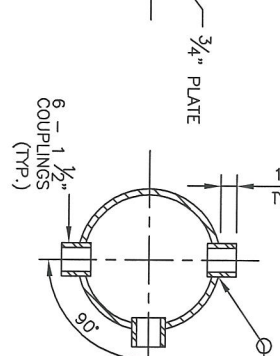
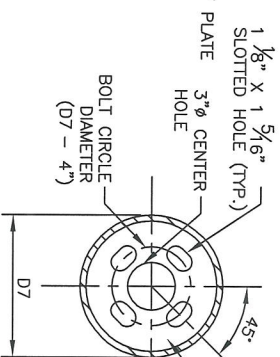
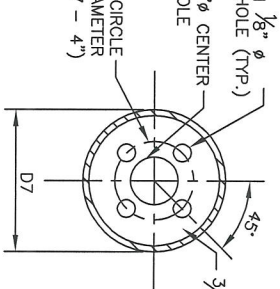
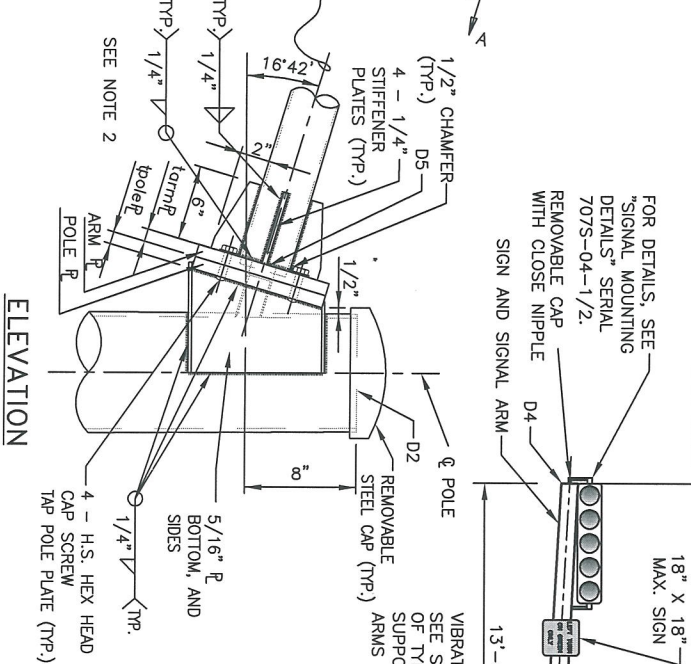
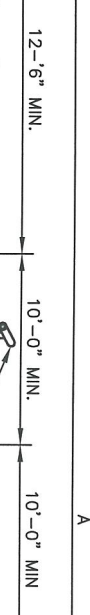
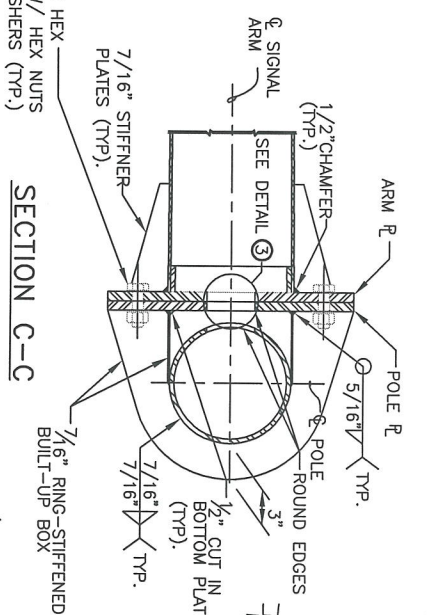
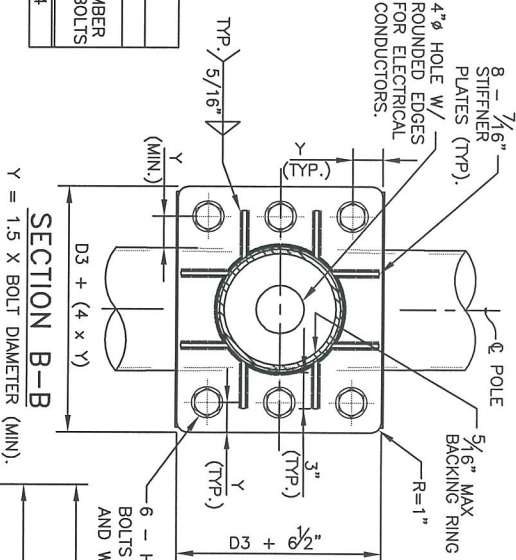
LUMINAIRE ARM DATA									
TYPE	LENGTH (ft)	MINIMUM O.D.		ARM THICKNESS		ARM PLATE		POLE PLATE	
		AT POLE D5 (in)	AT FREE END D6 (in)	$t_{arm}$ (in)	$t_{end}$ (in)	$t_{arm-pl}$ (in)	$t_{end-pl}$ (in)	BOLT CIRCLE Ø (in)	DIAMETER OF BOLTS (in)
IIC	17	5	2.4	0.1875	12	1	8 1/2	12	5/8



LUMINAIRE EXTENSION				
TYPE	A	C	MINIMUM O.D.	MIN. THICKNESS
(ft)	(ft)	(ft)	(in)	(in)
IIC	55	VARIABLE	13.45	VARIABLE
	60	VARIABLE	15.45	VARIABLE
	65	VARIABLE	15.45	VARIABLE

POLE DATA									
TYPE	A	B	MINIMUM O.D.		MIN. POLE THICKNESS		BASE PLATE		BOLTS
			AT BASE D1 (in)	AT TOP D7 (in)	$t_{pole}$ (in)	$t_{base-pl}$ (in)	BOLT CIRCLE Ø (in)	DIAMETER OF BOLTS (in)	NUMBER OF BOLTS
IIC	55	20'-3"	16.00	13.45	0.3125	25	2 1/2	23	1 3/4
	60	20'-3"	18.00	15.45	0.3125	27	2 1/2	25	1 3/4
	65	20'-3"	18.00	15.45	0.3125	27	2 1/2	25	1 3/4

SIGN & SIGNAL ARM DATA									
TYPE	A	MINIMUM O.D.		MIN. ARM THICKNESS		ARM PLATE		BOLTS	
		AT POLE D3 (in)	AT FREE END D4 (in)	$t_{arm}$ (in)	$t_{end}$ (in)	$t_{arm-pl}$ (in)	$t_{end-pl}$ (in)	DIAMETER OF BOLTS (in)	NUMBER OF BOLTS
IIC	55	15.50	7.8	0.3125	2	2	2	1 1/2	6
	60	17.50	9.1	0.3125	2 1/2	2 1/2	2 1/2	2	6
	65	17.50	8.4	0.3125	2 1/2	2 1/2	2 1/2	2	6

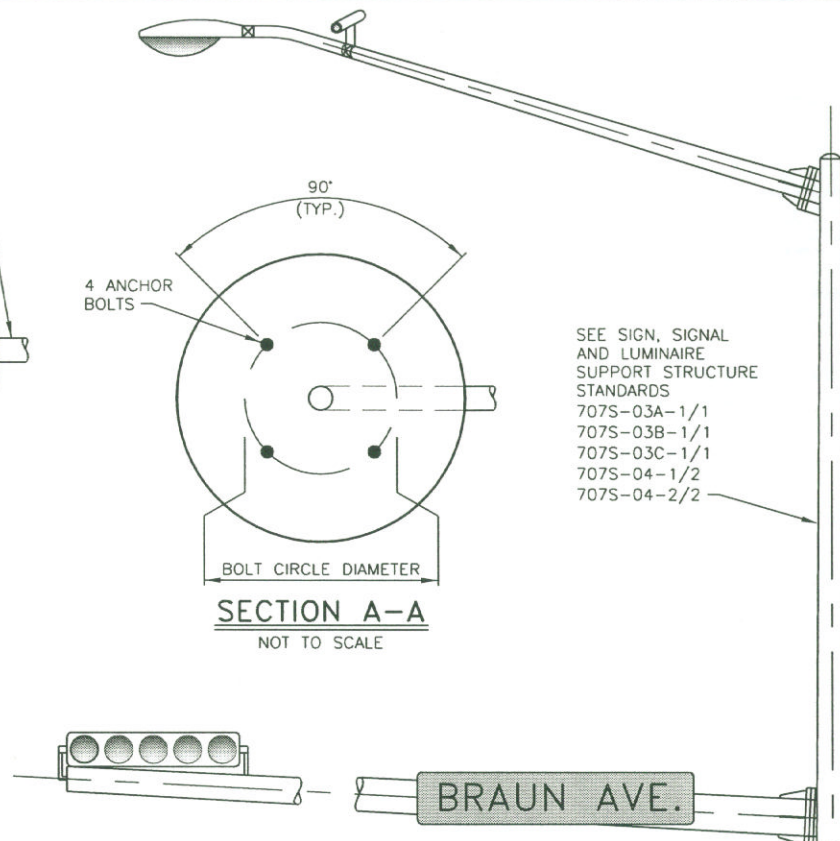
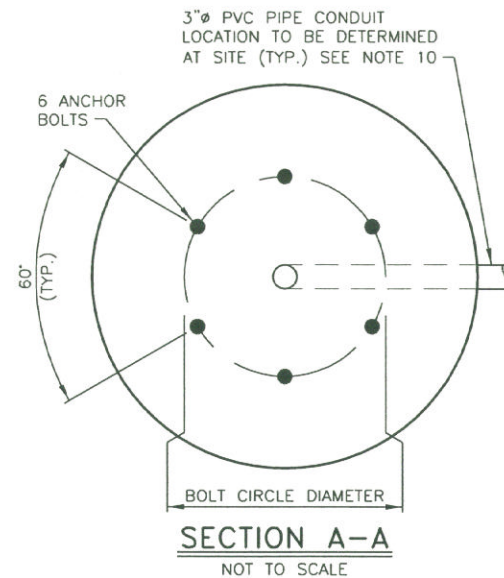
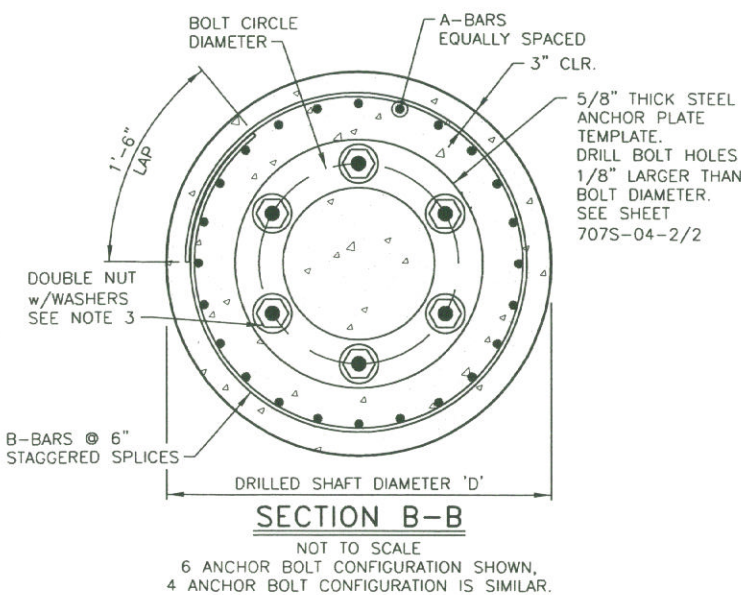
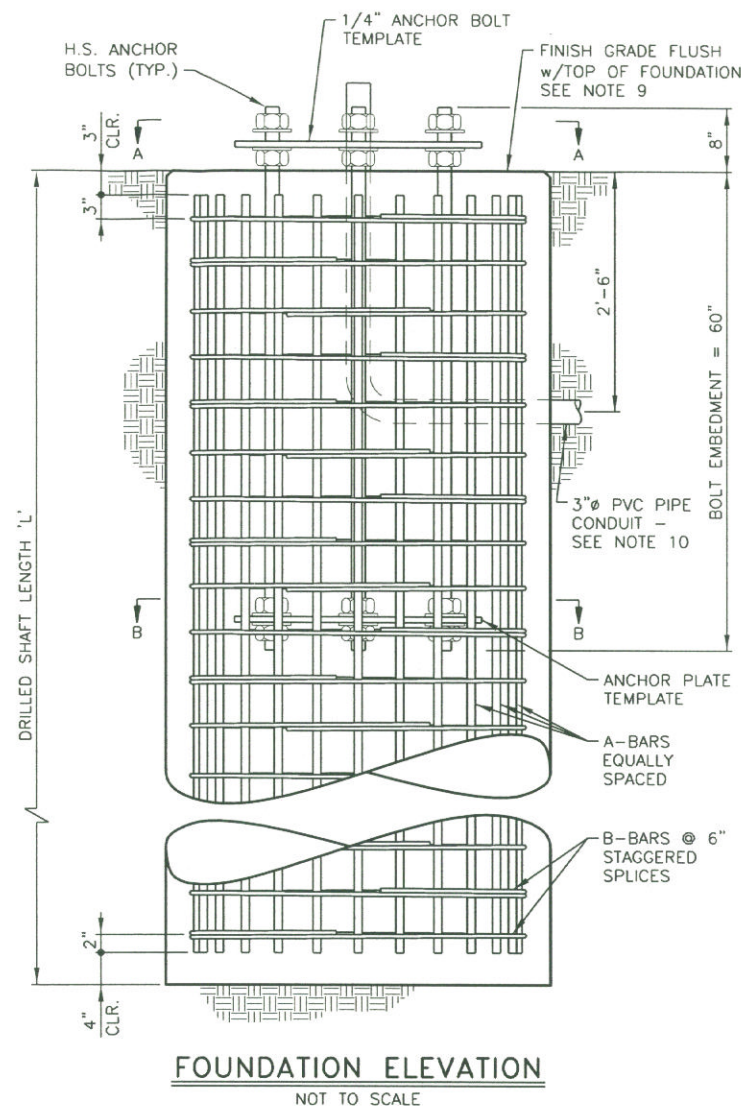


NO.	DATE	REV/BY	DESCRIPTION

NEW MEXICO  
DEPARTMENT OF TRANSPORTATION  
STANDARD DRAWING  
SIGN, SIGNAL, AND LUMINAIRE  
SUPPORT STRUCTURES  
TYPE IIC AND IIC

DESIGNED BY NB/MS DRAWN BY CCS CHECKED BY APM  
707S-03C-1/1





#### ANCHOR BOLTS

SIGNAL POLE MAST ARM LENGTH (ft)	VERTICAL POLE DIAMETER O.D. (in)	BOLT DIAMETER (in)	BOLT LENGTH (in)	NUMBER OF BOLTS	BOLT CIRCLE DIAMETER (in)
20-35	12.5	1.5	68	4	19
40-45	14.5	1.5	68	6	21
50	16	1.5	68	6	21
55	16	1.75	68	6	23
60	18	1.75	68	6	25
65	18	1.75	68	6	25

#### TRAFFIC SIGNAL: COHESIVE SOIL

SIGNAL POLE MAST ARM LENGTH (ft)	DRILLED SHAFT DIAMETER 'D' (in)	DRILLED SHAFT LENGTH 'L' (ft)	A-BARS			B-BARS			ESTIMATED QUANTITIES		
			SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	CONCRETE (cu. yd.)	BARS (lbs.)	EXCAVATION (cu. yd.)**
20-35	36	15	#8	14	14'-6"	#4	30	9'-4"	4.0	730	4
40-50	42	20	#8	18	19'-6"	#4	40	11'-0"	7.2	1236	7
55-65	48	22	#8	24	21'-6"	#4	44	12'-6"	10.2	1746	10

#### TRAFFIC SIGNAL: NON-COHESIVE SOIL

SIGNAL POLE MAST ARM LENGTH (ft)	DRILLED SHAFT DIAMETER 'D' (in)	DRILLED SHAFT LENGTH 'L' (ft)	A-BARS			B-BARS			ESTIMATED QUANTITIES		
			SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	CONCRETE (cu. yd.)	BARS (lbs.)	EXCAVATION (cu. yd.)**
20-35	36	20	#8	14	19'-6"	#4	40	9'-4"	5.3	978	5
40-50	42	20	#8	18	19'-6"	#4	40	11'-0"	7.2	1236	7
55-65	48	18	#8	24	17'-6"	#4	36	12'-6"	8.4	1422	8

#### TRAFFIC SIGNAL: ROCK

SIGNAL POLE MAST ARM LENGTH (ft)	DRILLED SHAFT DIAMETER 'D' (in)	DRILLED SHAFT LENGTH 'L' (ft) *	A-BARS			B-BARS			ESTIMATED QUANTITIES		
			SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	CONCRETE (cu. yd.)	BARS (lbs.)	EXCAVATION (cu. yd.)**
20-35	36	10	#8	14	9'-6"	#4	20	9'-4"	2.7	480	3
40-50	42	12	#8	18	11'-6"	#4	24	11'-0"	4.3	730	4
55-65	48	12	#8	24	11'-6"	#4	24	12'-6"	5.6	938	6

DRILLED SHAFT LENGTH 'L' IS MEASURED AS THE LENGTH OF SHAFT IN SOIL.

\* DRILLED SHAFT LENGTH 'L' IN ROCK IS BASED ON UNWEATHERED ROCK CONDITION.  
IF WEATHERED ROCK IS ENCOUNTERED, THE CAPACITY OF WEATHERED ROCK SHOULD BE NEGLECTED.

\*\* FOR CONTRACTOR'S INFORMATION ONLY.

#### NOTES:

- CONCRETE SHALL CONFORM TO SECTION 510 - PORTLAND CEMENT CONCRETE. CONCRETE IS TO BE CLASS "C",  $f'_c = 3000$  PSI.
- REINFORCING STEEL (REBAR) SHALL CONFORM TO SECTION 540 - STEEL REINFORCEMENT AASHTO M-31 (ASTM A 615), GRADE 60. DIMENSIONS REFER TO THE CENTERLINE OF BARS.
- ANCHOR BOLTS SHALL CONFORM TO AASHTO M-314 (ASTM F 1554 GRADE 55). PROVIDE A HEX NUT, LEVELING NUT AND 2 WASHERS TOP AND BOTTOM OF EACH BOLT. ANCHOR BOLTS SHALL BE CONSIDERED INCIDENTAL TO THE FOUNDATIONS.
- CONCRETE IS TO BE PLACED IN DRILLED HOLES. DUE TO EXISTING SOIL CONDITIONS THE USE OF A HOLE CASING MAY BE REQUIRED. THE CASING SHALL BE PULLED AS THE CONCRETE IS PLACED WITH A 6" MINIMUM OVERLAP.
- FOUNDATION DESIGN IS FOR THE SIGN, SIGNAL AND LUMINAIRE STANDARD DIAMETERS SHOWN AND A ROUND OR DODECAGONAL SHAPE SHAFT. IF A LARGER DIAMETER IS FURNISHED, THE CONTRACTOR SHALL BUILD A LARGER FOUNDATION AS DETERMINED NECESSARY BY THE BRIDGE ENGINEER AND NO ADDITIONAL PAYMENT OR COMPENSATION SHALL BE MADE.
- ALTERNATE DESIGNS FOR STANDARD FOUNDATIONS TO BE SUBMITTED TO THE BRIDGE ENGINEER FOR APPROVAL.
- THE FOLLOWING SOIL DESIGN PARAMETERS WERE ASSUMED FOR THE POLE FOUNDATION DESIGN:
  - COHESIVE SOIL:  
SOIL UNIT WEIGHT  $\gamma = 100$  lb/ft<sup>3</sup>  
SOIL COHESION  $c = 400$  lb/ft<sup>2</sup>  
SOIL STRAIN  $\epsilon_{50} = 0.02$   
THIS DESCRIPTION WOULD APPLY WHERE SOFT TO STIFF CLAY SOILS EXIST.
  - NON-COHESIVE SOIL:  
SOIL UNIT WEIGHT  $\gamma = 120$  lb/ft<sup>3</sup>  
INTERNAL FRICTION ANGLE  $\phi = 15^\circ$   
SOIL MODULUS  $K = 90$  lb/in<sup>3</sup>  
THIS DESCRIPTION WOULD APPLY WHERE LOOSE TO MEDIUM DENSE SANDY SOILS EXIST.
  - ROCK  
ROCK UNIT WEIGHT  $\gamma = 140$  lb/ft<sup>3</sup>  
ROCK UNCONFINED STRENGTH  $S_u = 21,600$  lb/ft<sup>2</sup>  
THIS DESCRIPTION WOULD APPLY WHERE FAIR ROCK TO VERY GOOD ROCK EXISTS.
- EVALUATE SOIL CONDITIONS TO DETERMINE WHICH SOIL DESIGN PARAMETERS BEST MATCHES SITE CONDITIONS. PROVIDED DESIGN IS LIMITED TO THE NOTED PARAMETERS.
- SHOULD THE SOIL CONDITIONS VARY IN SIGNIFICANT CONTRAST TO ANY OF THOSE DESCRIBED IN a, b OR c ABOVE, THE STATE GEOTECHNICAL ENGINEER SHALL BE CONSULTED FOR APPROVAL OF ANY REQUIRED REMEDIAL MEASURES BEFORE THE FOUNDATION PLACEMENT.
- ALL HOLES FOR FOUNDATION SHAFTS SHALL BE POURED AGAINST UNDISTURBED EARTH. IF SHAFT IS NOT LOCATED IN UNDISTURBED SOILS THEN ALL SOILS THE SHAFT IS PLACED INTO SHALL BE COMPACTED TO 95% MINIMUM.
- FINISHED GRADE FOR ALL FOUNDATIONS TO BE DETERMINED BY THE PROJECT ENGINEER. THE TOP OF STANDARD FOUNDATIONS SHALL BE FLUSH WITH ADJACENT SIDEWALK OR PAVED AREAS WHEN PRESENT AND SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT.
- PVC CONDUIT SHALL BE CALLED OUT IN SHOP DRAWINGS USING A MINIMUM 3" CONDUIT PIPE OR AS REQUIRED BY THE SIGN, SIGNAL AND LUMINAIRE MANUFACTURER.
- ALL FOUNDATIONS SHALL INCLUDE COPPERWELD GROUND RODS AS REQUIRED BY THE SIGN, SIGNAL AND LUMINAIRE MANUFACTURER. PLACEMENT AND INSTALLATION OF GROUND RODS SHALL BE SHOWN WITH SHOP DRAWINGS AND SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE FOUNDATION.

SIGN, SIGNAL AND LUMINAIRE  
POLE ELEVATION  
NOT TO SCALE



NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
SIGN, SIGNAL AND LUMINAIRE SUPPORT STRUCTURES FOUNDATION DETAILS			
DESIGNED BY AYB DRAWN BY BDC CHECKED BY JSM			
708S-02-1/1			



GENERAL NOTES FOR TRAFFIC SIGNAL, MAST, AND ARMS

1. SPECIFICATIONS:

A. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE CURRENT NEW MEXICO DEPARTMENT OF TRANSPORTATION'S (NMDOT) STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

B. STRUCTURAL DESIGN SHALL BE AS PER AASHTO STANDARDS SPECIFICATIONS OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGN LUMINAIRES AND TRAFFIC SIGNALS (2001 EDITION). DETAILS SHOWN ARE FOR ROUND STEEL POLES. POLES AND ARMS MAY BE USED ONLY WHEN PRE-APPROVED BY THE NMDOT TRAFFIC TECHNICAL SUPPORT SECTION IN CONCERT WITH THE BRIDGE DESIGN SECTION.
2. GALVANIZING:

A. POLES, ARMS, PLATES AND BASES SHALL BE HOT DIPPED GALVANIZED PER AASHTO M-111-94 (ASTM A-123).

B. HARDWARE AND ANCHOR BOLTS SHALL BE HOT DIPPED GALVANIZED PER ASTM F-2329.
3. MATERIALS (POLES, ARMS, LUGS, ETC.):

A. POLES, ARMS, LUGS, ETC. SHALL BE STEEL OF 55,000 PSI MINIMUM YIELD. POLE AND ARM MINIMUM THICKNESSES ARE CALLED OUT IN THE TABLES PROVIDED FOR EACH STRUCTURE TYPE. LINEAR TAPER OF APPROXIMATELY 0.14"/FT WILL BE PROVIDED FOR SIGNAL ARM, LUMINAIRE ARM AND MAIN POLE. 10' LENGTHS MAY BE WELDED TOGETHER PROVIDED A BACKING RING IS USED AT THESE LOCATIONS AND THE FABRICATOR CAN GUARANTEE THE STRUCTURAL STRENGTH AT THESE JOINTS IS SUFFICIENT FOR THEIR INTENDED PURPOSE.

B. TRANSFORMER BASES SHALL BE ASTM A-36 STEEL AND A MINIMUM THICKNESS OF 0.3125".

C. BASE PLATES, ARM PLATES, AND POLE PLATES SHALL BE PER AASHTO M-183M (ASTM A-36).
4. SIGNAL AND LUMINAIRE ARMS:

A. CONNECTION BETWEEN ARMS AND POLES SHALL BE MADE BY MEANS OF A DESIGN PERMITTING SIMPLE REMOVAL OF THE ARMS. MAST ARM SHALL BE MARKED AS TO WHICH IS TOP AND BOTTOM ON SIMPLEX PLATE. POLE AND ARM SHAFTS SHALL BE MARKED WITH NMDOT 20, 25, 30, 35, 40, 45, 50, 55, 60, AND 65 FT. AND DATE OF FABRICATION (MONTH/YEAR) AS APPLICABLE.

B. ON HORIZONTAL SIGNAL - ROTATE HEAD UP AS HIGH AS POSSIBLE.
5. BOLTS:

A. FOUNDATION ANCHOR BOLTS: SEE INDIVIDUAL SHEETS AND DETAILS FOR NUMBER OF BOLTS REQUIRED. BOLTS SHALL BE PER AASHTO M-314 (ASTM F-1554 GR. 55). PROVIDE THREE HEAVY HEX NUTS AND 2 WASHERS FOR EACH BOLT. THREADS SHALL BE ROLLED. BOLTS SHALL BE GALVANIZED OR PLATED AFTER THREADS ARE FORMED. EACH BOLT SHALL BE PROVIDED WITH 12" OF THREADS.

B. ALL OTHER BOLTS SHALL BE ASTM A-449 HEX BOLTS WITH HEX NUTS AND WASHERS.

C. NUTS SHALL BE HEAVY HEX ASTM A-563 GR. DH. WASHERS SHALL BE ASTM A-436.

D. PRELOAD BOLTS BASED ON BOLT TYPE AND DIAMETER. PROVIDE LOCKING ADHESIVE AT BOLT CONNECTIONS (USE ND INDUSTRIES; NYLOCK; LOCKTITE, OR APPROVED EQUAL).
6. TRANSFORMER BASE:

THE BOTTOM OF ALL TRANSFORMER BASES FOR TYPE II AND III STANDARDS SHALL BE DESIGNED TO PERMIT THE STANDARD TO BE ROTATED 90°. THE BASE SHALL BE SECURED BY HOLDING DOWN LUGS. DESIGN AND SHOP DRAWINGS FOR TRANSFORMER BASES SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY NMDOT BRIDGE ENGINEER IN COMPLIANCE WITH THE DETAILS PROVIDED.
7. WELDS:

A. ALL FABRICATORS SHALL BE CERTIFIED UNDER SECTION 541.3 "CERTIFICATION OF STEEL FABRICATORS". SHALL CONFORM TO THE STRUCTURAL WELDING CODE (ANSI/AMS D1.1:2008) AND SHALL CONFORM TO SECTION 707 "SIGNAL AND LIGHTING STANDARDS" OF THE CURRENT NMDOT'S STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS OR MEET THE DATA SHOWN ON THESE DRAWINGS.

B. LONGITUDINAL SEAM WELDS BY SUBMERGED ARC AT 60% PENETRATION AND CIRCUMFERENTIAL BUTT WELDS AT FULL PENETRATION SHALL CONFORM TO SECTION 5.15 OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND HAVE OPTIONAL BACK-UP RINGS. ALL EXPOSED BUTT WELDS SHALL BE GROUND FLUSH.

C. FOR WELD SIZES NOT SHOWN, USE MINIMUM SIZE WELD AS SPECIFIED BY THE LATEST WELDING CODE.

D. BREAK ALL SHARP EDGES FOR WIRE PROTECTION.
8. POLE FOUNDATION:

SEE SERIAL 708S-02-1/1 FOR FOUNDATION INFORMATION.
9. FOR TYPE IIA AND IIIA SUPPORT STRUCTURE, SEE SERIAL 707S-03A-1/1. FOR TYPE IIB AND IIIB SUPPORT STRUCTURE, SEE SERIAL 707S-03B-1/1. FOR TYPE IIC AND IIIC SUPPORT STRUCTURE, SEE SERIAL 707S-03C-1/1.
10. CONTRACTOR/FABRICATOR SHALL SUBMIT GROUNDING DESIGN AND DETAILS TO NMDOT FOR REVIEW AND APPROVAL BY THE PROJECT MANAGER.
11. SEE NMDOT SPECIFICATIONS AND PROJECT DEVELOPMENT PLANS FOR POWER REQUIREMENTS AND OPTICAL DETECTOR REQUIREMENTS.
12. ALL DESIGNS AND DETAILS TO BE SUBMITTED TO NMDOT FOR REVIEW AND APPROVAL SHALL BE SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF NEW MEXICO.
13. SIGN MANUFACTURER SHALL PROVIDE SIGN ATTACHMENT HARDWARE DETAILS.

DESIGN NOTES

DESIGN CRITERIA:

RECURRENCE INTERVAL = 50 YEARS

SERVICE LIFE = 50 YEARS

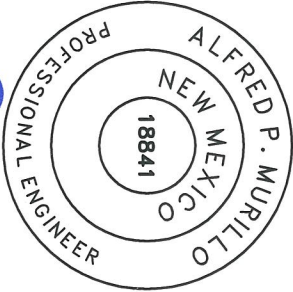
DESIGN WIND SPEED = 90 MPH

GUST EFFECT FACTOR G = 1.14

FATIGUE CATEGORY II

MAXIMUM ALLOWABLE VERTICAL DEFLECTION AT FREE END OF TRAFFIC SIGNAL ARM FROM GALLOPING AND TRUCK INDUCED GUSTS SHALL BE 8 INCHES PER AASHTO 11.8 COMMENTARY.

MAXIMUM SIGN AREA = 21.00 SF

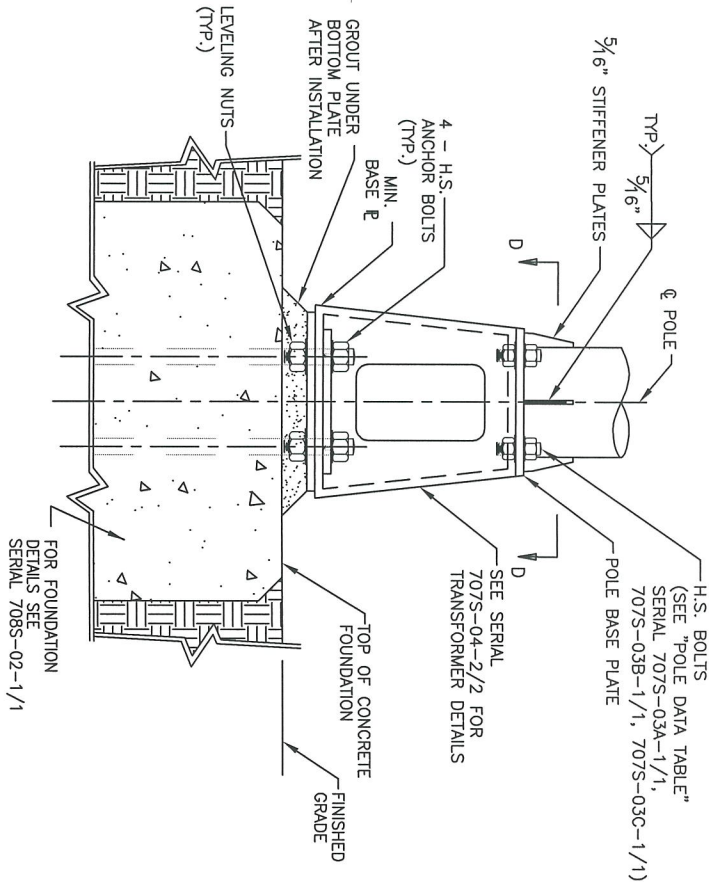


Alfred P. Murillo

12-15-08

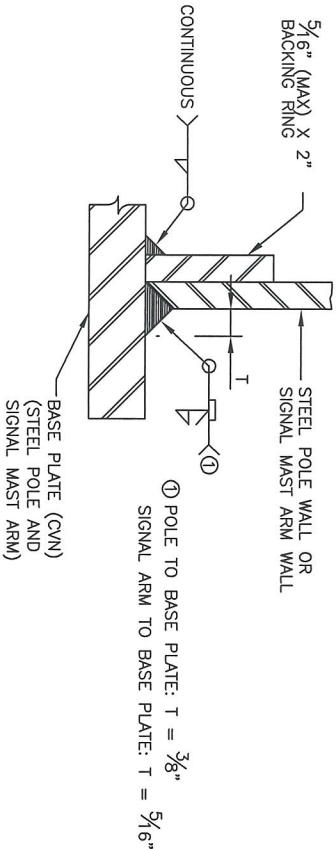
NO.	DATE	REV. BY	DESCRIPTION
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DEPARTMENT OF TRANSPORTATION			
STANDARD DRAWING			
SIGN, SIGNAL, AND LUMINAIRE			
SUPPORT STRUCTURES			
GENERAL NOTES			
DESIGNED BY <u>NB/MS</u> DRAWN BY <u>CCS</u> CHECKED BY <u>APM</u>			
707S-02-1/1			





ELEVATION  
DETAIL ④

NOT TO SCALE

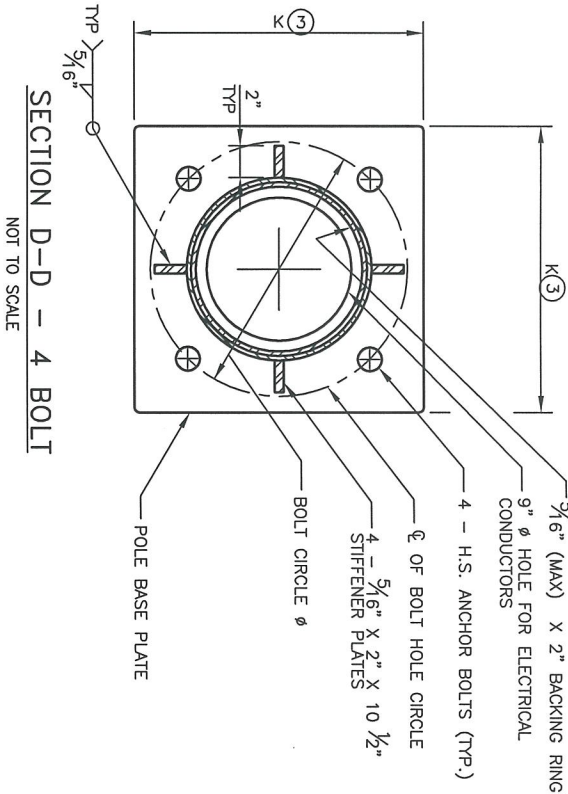


WELD DETAIL

NOT TO SCALE

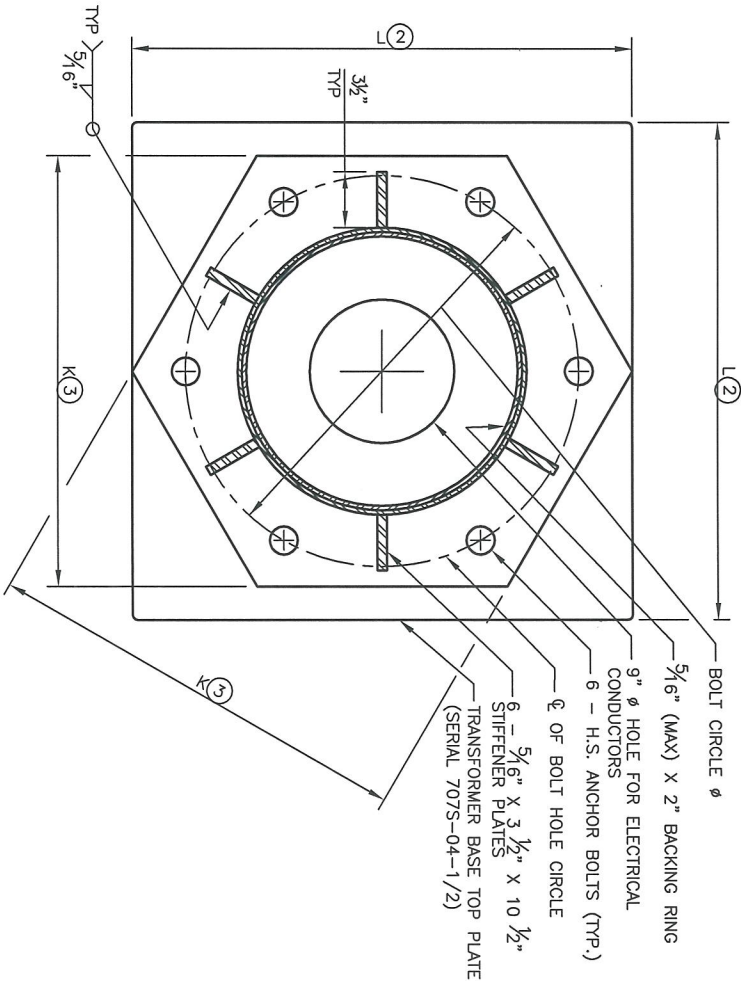
NOTE:

BACKING RING MUST BE FITTED/SIZED TO THE STEEL POLE AND CONTINUOUSLY FILLET WELDED TO THE BASE PLATE BEFORE FULL PENETRATION GROOVE WELD IS MADE.



SECTION D-D - 4 BOLT

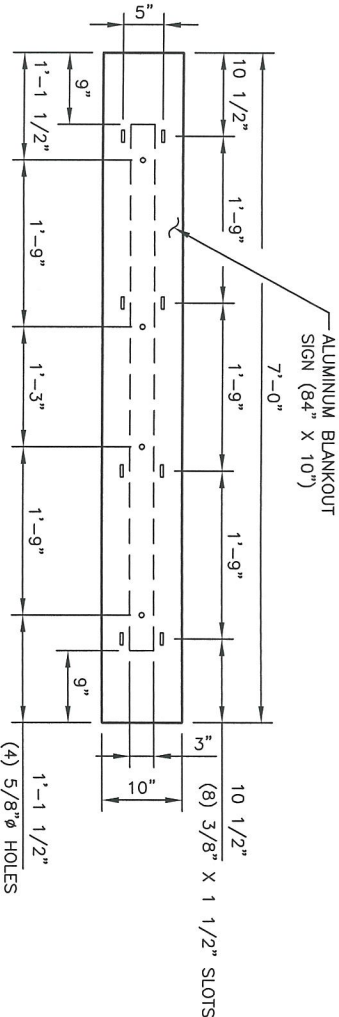
NOT TO SCALE



SECTION D-D - 6 BOLT

NOT TO SCALE

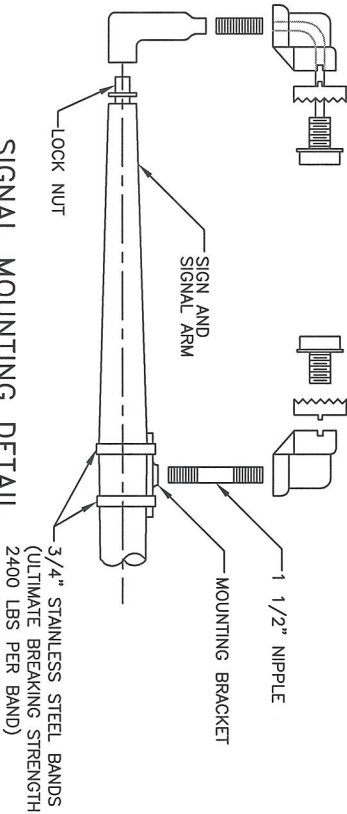
- ② SEE SERIAL NO. 707S-04-2/2
- ③ SEE "POLE DATA" TABLE, SEE SERIAL NO. 707S-03A-1/1 707S-03B-1/1 707S-03C-1/1



VIBRATION DAMPER DETAIL - PLAN VIEW

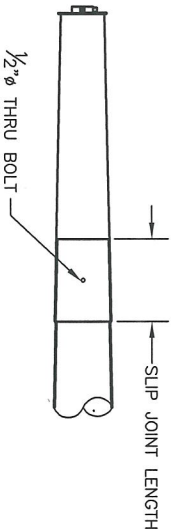
NOT TO SCALE

- NOTES:
- SEE GENERAL NOTES FOR TRAFFIC SIGNAL, MAST, AND ARM SPECIFICATIONS.
  - VIBRATION DAMPER SHALL BE A ALUMINUM BLANKOUT SIGN WITH DIMENSIONS AS SHOWN. REFERENCE NMDOT SPECIFICATIONS FOR ADDITIONAL SIGN AND ATTACHMENT REQUIREMENTS.



SIGNAL MOUNTING DETAIL

NOT TO SCALE

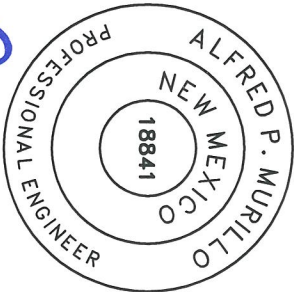


MAST ARM SLIP JOINT

(FOR ARMS OVER 50' IN LENGTH)  
NOT TO SCALE

NOTE:

FIELD ASSEMBLY TO ACHIEVE A SNUG TIGHT JOINT (MIN. OVERLAP NOT LESS THAN 1.5 TIMES THE O.D. OF THE FEMALE END SECTION).



*Alfred Murillo*  
12-15-08

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NEW MEXICO	
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STANDARD DRAWING	
SIGN, SIGNAL, AND LUMINAIRE	
SUPPORT STRUCTURES	
TYPE II AND III	
DESIGNED BY	MS
DRAWN BY	CCS
CHECKED BY	APM
707S-04-1/2	