

ELEVATION - MAST ARM POLE

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES		STANDARD PLAN FOR TRAFFIC SIGNAL MAST ARM POLE AND MAST ARM DETAILS - CATEGORY III		
APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT		(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-033-A

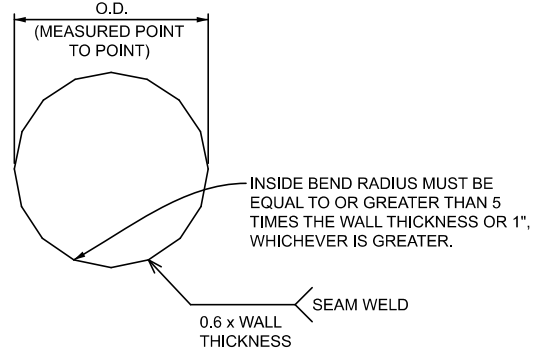
DEPARTMENT DIRECTOR
 BRADLEY C. WIEFERICH, PE

TAPERED STEEL MAST ARM POLE	
POLE DIMENSIONS*	LUMINAIRE ARM DIMENSIONS
0.4375"-14.00" x 11.06" x 21'-0"	6'-0"
0.4375"-14.00" x 9.80" x 30'-0"	8'-0"
0.4375"-14.00" x 8.96" x 36'-0"	10'-0"
0.4375"-14.00" x 8.40" x 40'-0"	24'-0"

POLE TUBE TAPER IS 0.140 IN/FT
 * DIAMETERS GIVEN ARE O.D.

TAPERED STEEL MAST ARM	
MAST ARM LENGTH	MAST ARM DIMENSIONS*
20'-0"	0.2500"-8.00" x 5.20" x 20'-0"
25'-0"	0.2500"-8.00" x 4.50" x 25'-0"
30'-0"	0.2500"-8.00" x 3.80" x 30'-0"
35'-0"	0.2500"-11.00" x 6.10" x 35'-0"
40'-0"	0.2500"-11.00" x 5.40" x 40'-0"
45'-0"	0.3125"-11.00" x 8.66" x 16'-9" 0.1793"-9.18" x 5.10" x 29'-5"
50'-0"	0.3750"-15.00" x 12.66" x 16'-9" 0.2391"-13.37" x 8.48" x 34'-11"

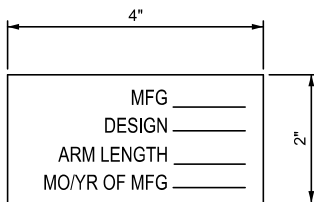
MAST ARM TUBE TAPER IS 0.140 IN/FT
 * DIAMETERS GIVEN ARE O.D.



1 DETAIL - 16-SIDED SECTION

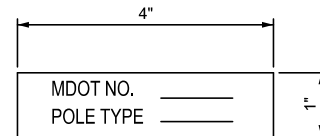
NOTES:

- THE DESIGN OF THIS STRUCTURE IS BASED ON CATEGORY III GALLOPING, NATURAL WIND GUSTS, AND TRUCK INDUCED FATIGUE LOADS.
- WELD THE LONGITUDINAL ARM SEAM ON THE INBOARD AND OUTBOARD SECTIONS OF THE TELESCOPIC FIELD SPLICE WITH A COMPLETE JOINT PENETRATION (CJP) WELD WITH A LENGTH EQUAL TO THE TELESCOPIC FIELD SPLICE LENGTH PLUS 6 INCHES. THE LAP OF THE ARM SECTIONS CANNOT EXTEND BEYOND THE LONGITUDINAL ARM SEAM CJP WELD WHEN THE FIELD SPLICE IS ERECTED AND IN ITS FINAL POSITION. IN ADDITION, LONGITUDINAL SEAM WELDS MUST HAVE 60% MINIMUM PENETRATION OR FUSION AND MUST BE CJP FOR A MINIMUM OF 6 INCHES FROM TUBE TO PLATE CJP WELDS.
- SEAM WELDS IN MAST ARM POLE MUST BE 90° ± FROM HAND HOLE AT BASE. SEAM WELDS IN MAST ARM MUST BE LOCATED ON BOTTOM OF MAST ARMS.
- LUMINAIRE ARM IS 11 GAUGE ROUND STEEL WITH 0.140 INCH PER FOOT TAPER.
- BACKING BAR FOR PIPE TO BASE PLATE (□) AND MAST ARM TO MAST ARM PLATE MUST BE MINIMUM 5/16 INCH X 2 INCH PLATE.
- 1/2 INCH DIAMETER (Ø) ROUND STOCK C-HOOK ATTACHED TO ALL POLE SIZES. 1 INCH SCHEDULE (SCH.) 80 PIPE ATTACHED TO ALL POLE SIZES AND INBOARD AND OUTBOARD ARM.
- S.S. DENOTES STAINLESS STEEL. GA. DENOTES GAUGE. O.D. DENOTES OUTSIDE DIAMETER. I.D. DENOTES INSIDE DIAMETER. H.S. DENOTES HIGH STRENGTH.
- ROUND OR 16-SIDED SECTIONS ARE ALLOWED.
- MULTI-PLY SECTIONS ARE NOT ALLOWED.



ATTACH TO POLE OR MAST ARM AT LOCATIONS SHOWN
 4" FROM BASE OF TUBE BELOW HANDHOLE WITH (4) #8 x 3/8"
 S.S. TYPE U DRIVE SCREWS.
 (LETTERS STAMPED IN 3/8" CHARACTERS)

2 DETAIL - ARM/POLE S.S. ID TAG



WELD TAG TO EDGE OF BASE PLATE
 (LETTERS STAMPED IN 3/8" CHARACTERS)

3 DETAIL - BASE S.S. ID TAG

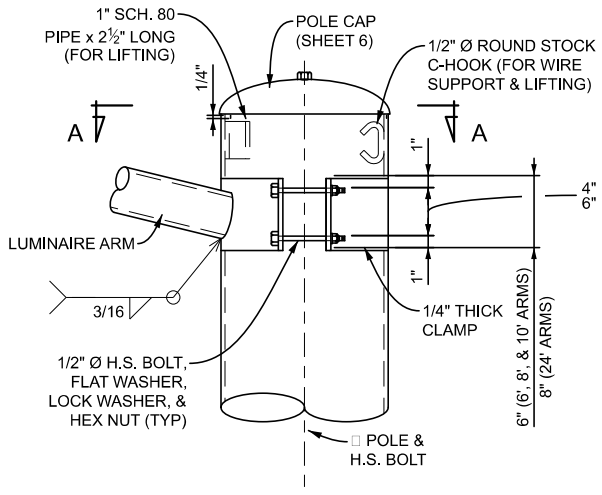
MDOT
 Michigan Department of Transportation

DEPARTMENT DIRECTOR
 BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
MAST ARM POLE AND MAST ARM REQUIREMENTS

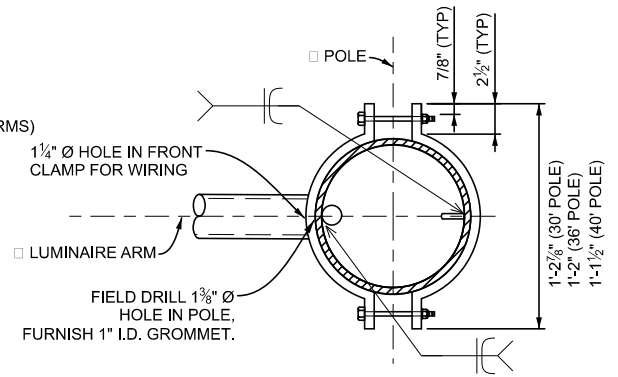
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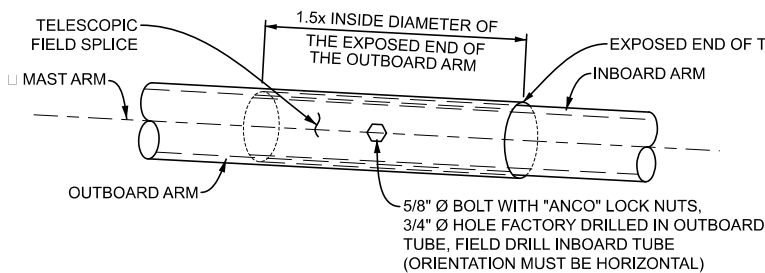


ORIENTATION OF SCH. 80 PIPE 180° FROM HAND HOLE AT BASE & C-HOOK 180° FROM SCH. 80 PIPE

4 DETAIL - LUMINAIRE ARM BRACKET

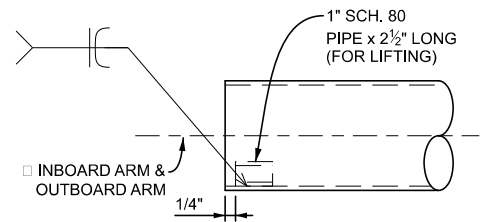


A SECTION - LUMINAIRE ARM BRACKET

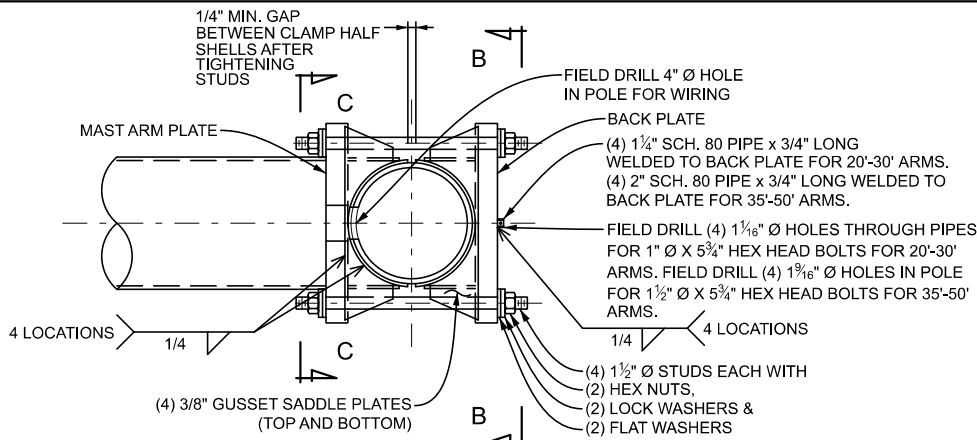


NOTES:
 1. FOR 45'-0" ARMS AND GREATER.
 2. THE INBOARD AND OUTBOARD ARMS MUST FIT TIGHTLY.

5 DETAIL - TELESCOPIC SPLICE

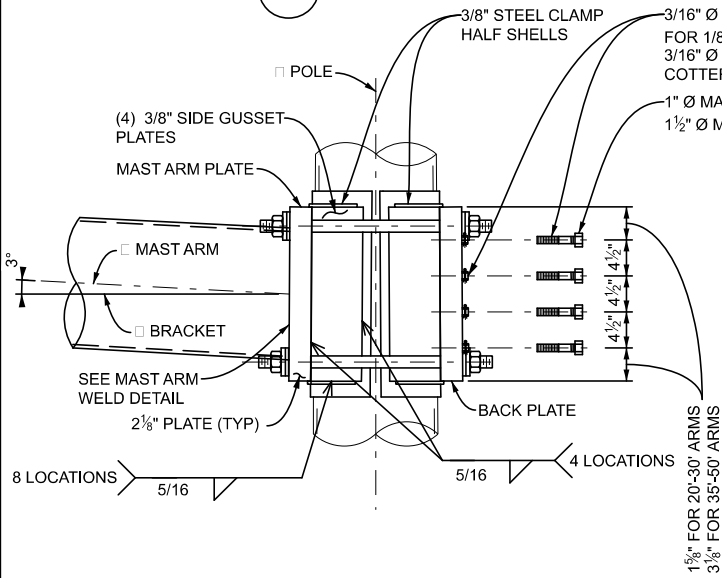


6 INBOARD/OUTBOARD ARM DETAIL - LIFTING DEVICE

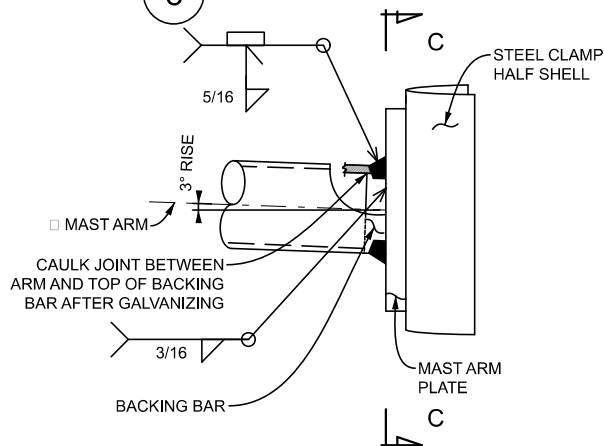


ROUND SECTION SHOWN.
SAME CONNECTION DETAILS FOR 16-SIDED SECTION
GUSSET SADDLE PLATES MUST MATCH 16-SIDED POLE SHAPE

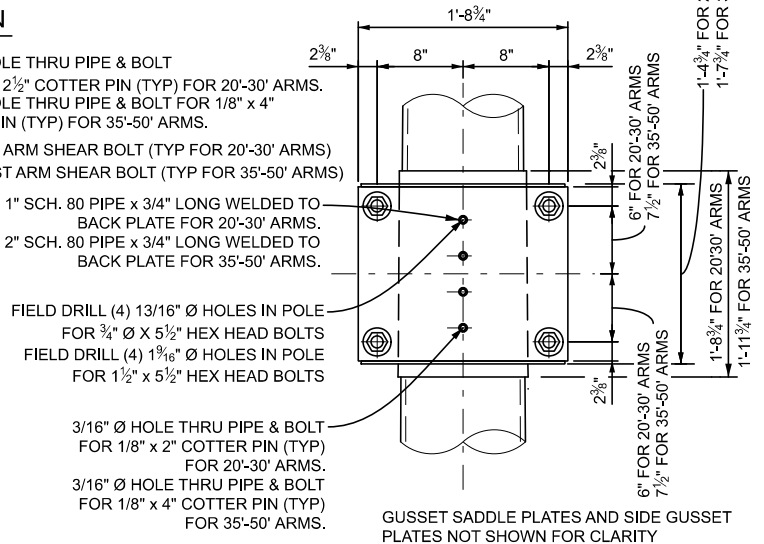
7 DETAIL - MAST ARM BRACKET PLAN



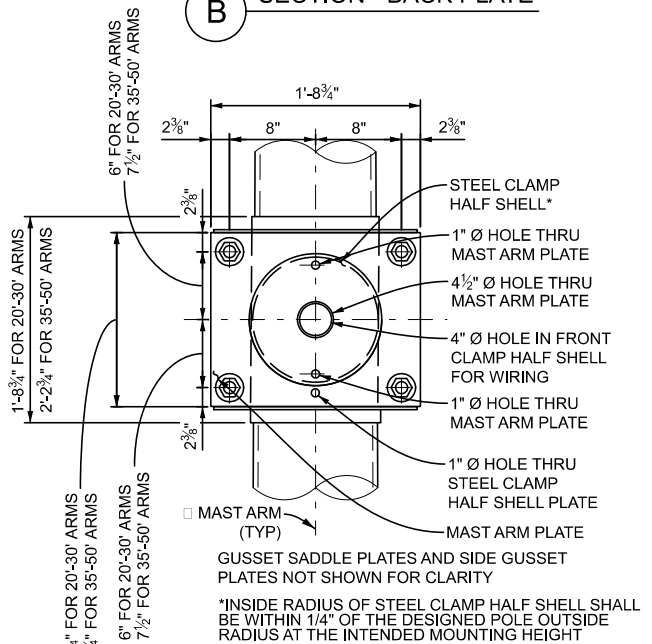
8 DETAIL - MAST ARM BRACKET ELEVATION



9 DETAIL - MAST ARM WELD



B SECTION - BACK PLATE



C SECTION - MAST ARM PLATE



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
MAST ARM BRACKET DETAILS

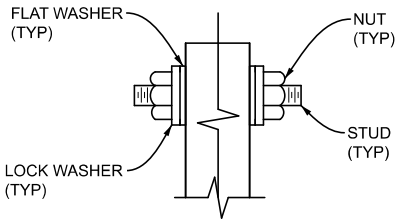
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FHWA APPROVAL

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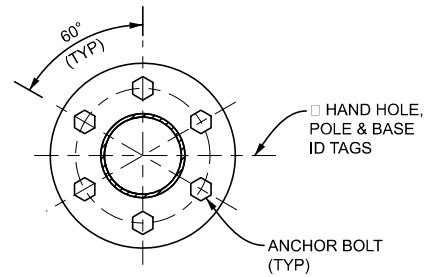
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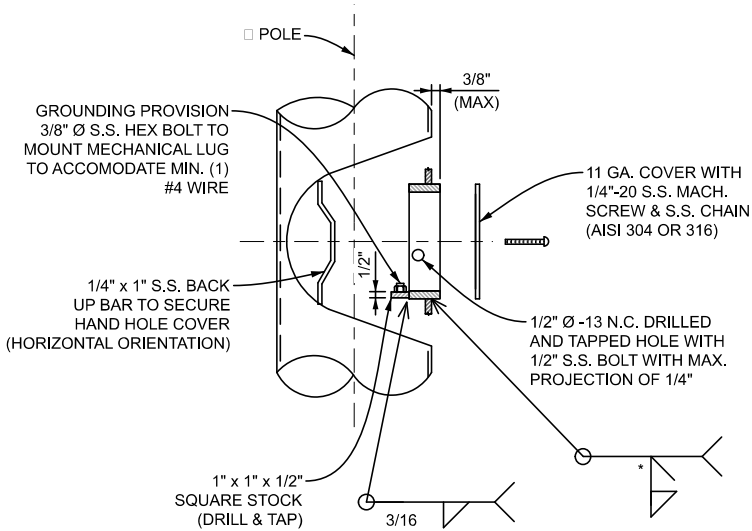
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10 DETAIL - MAST ARM BRACKET WASHERS

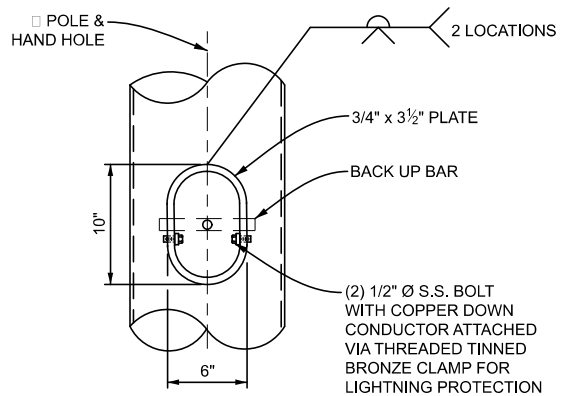


11 DETAIL - ORIENTATION OF HAND HOLE

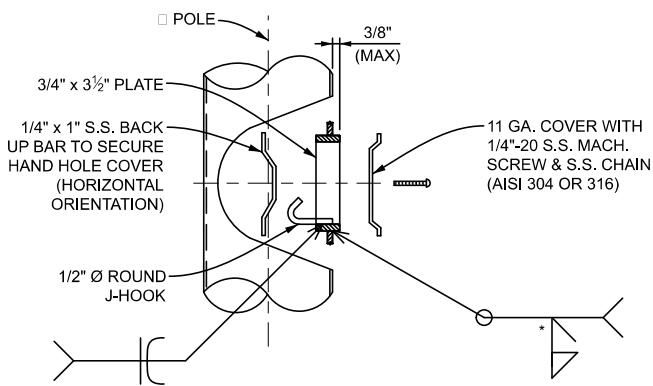


*S (WELD SIZE) = 0.9 x POLE WALL THICKNESS

12 DETAIL - 6" X 10" BAR BOTTOM HAND HOLE

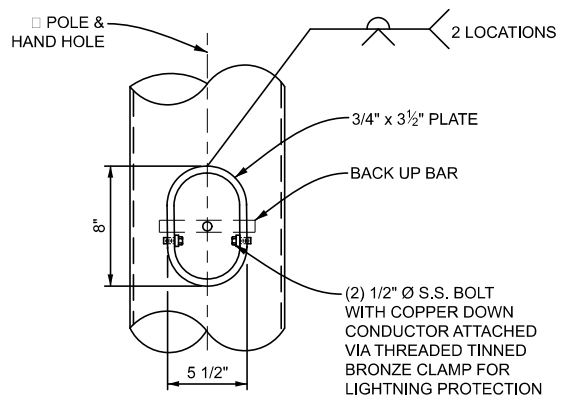


13 DETAIL - 6" X 10" BAR BOTTOM HAND HOLE
VIEW ROTATED 90 DEGREES



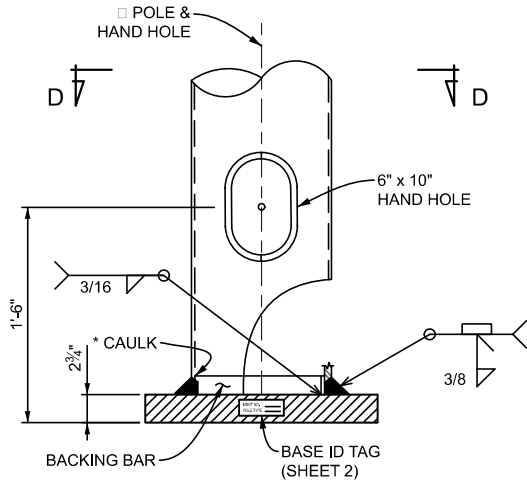
*S (WELD SIZE) = 0.9 x POLE WALL THICKNESS

14 DETAIL - 5 1/2" X 8" BAR TOP HAND HOLE



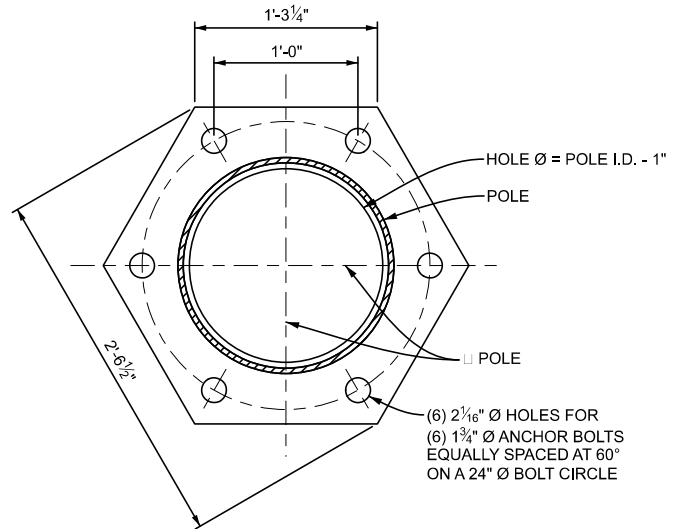
15 DETAIL - 5 1/2" X 8" BAR TOP HAND HOLE
VIEW ROTATED 90 DEGREES

<p>DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE</p>	STANDARD PLAN FOR HAND HOLE DETAILS		<p>SIG-033-A</p>	<p>SHEET 5 OF 6</p>
	(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE		

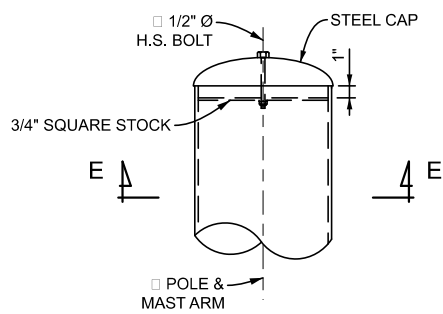


*SEAL JOINT WITH CAULK AFTER GALVANIZING

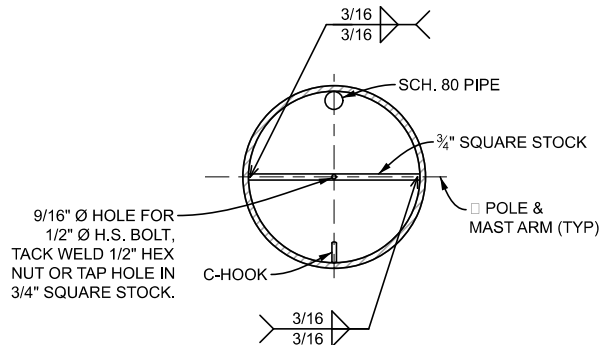
16 DETAIL - BASE PLATE WELD
VIEW ROTATED 90 DEGREES



D SECTION - BASE PLATE



17 DETAIL - POLE AND MAST ARM CAP



E SECTION - POLE AND MAST ARM CAP



DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BASE PLATE, MAST ARM POLE CAP, AND
MAST ARM CAP DETAILS

(SPECIAL DETAIL)
FHWA APPROVAL

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