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MDOT
Michigan Department of Transportation

PREPARED BY
TRAFFIC AND SAFETY

DRAWN BY:

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

**TRAFFIC SIGNAL MAST ARM POLE AND
MAST ARM DETAILS - CATEGORY III**

SIG-032-B

PLAN DATE

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ROUND 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"-9.00" x 4.10" x 35'-0"
40'-0"	0.2500"-11.00" x 5.40" x 40'-0"
45'-0"	0.3125"-11.0" x 8.66" x 16'-9"
	0.1793"- ** x 5.10" x **
50'-0"	0.3125"-11.0" x 8.66" x 16'-9"
	0.1793"-9.30" x 4.40" x 35'-0"

ROUND TAPERED STEEL MAST ARM POLE	
* POLE DIMENSIONS	LUMINAIRE ARM SPAN
0.3125"-14.00" x 11.06" x 21'-0"	6'-0"
0.3125"-14.00" x 9.80" x 30'-0"	8'-0"
0.3125"-14.00" x 8.96" x 36'-0"	10'-0"
0.3125"-14.00" x 8.40" x 40'-0"	24'-0"

POLE TUBE TAPER IS 0.140 IN/FT

* DIAMETERS GIVEN ARE O.D.

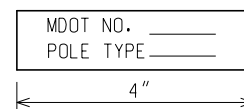
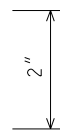
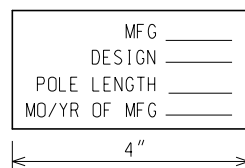
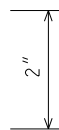
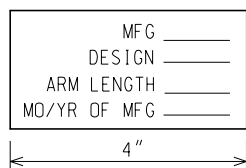
MAST ARM TUBE TAPER IS 0.140 IN/FT

* DIAMETERS GIVEN ARE O.D.

** TO BE DETERMINED BY CONTRACTOR BASED ON REQUIRED MAST ARM LENGTH AND TELESCOPIC SPLICE LENGTH.

NOTES:

1. THE DESIGN OF THIS STRUCTURE IS BASED ON THE 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS FOR 90 MPH WIND LOAD AND CATEGORY III WITH GALLOPING, NATURAL WIND GUSTS, AND TRUCK INDUCED FATIGUE LOADS.
2. WELD THE LONGITUDINAL ARM SEAM ON THE INBOARD AND OUTBOARD SECTIONS OF THE TELESCOPIC FIELD SPLICE WITH A COMPLETE JOINT PENETRATION (CJP) WELD A MINIMUM OF 36 INCHES LONG. IN ADDITION, LONGITUDINAL SEAM WELDS MUST BE CJP FOR A MINIMUM OF 6 INCHES FROM TUBE TO PLATE CJP WELDS.
3. SEAM WELDS MUST BE 90° ± FROM HAND HOLE AT BASE.
4. LUMINAIRE ARM IS 11 GAUGE ROUND STEEL WITH 0.140 INCH PER FOOT TAPER.
5. BACKING BAR FOR PIPE TO BASE PLATE (P) AND MAST ARM TO MAST ARM PLATE MUST BE MINIMUM 5/16 INCH X 2 INCH PLATE.
6. 1/2 INCH DIAMETER (Ø) ROUND STOCK C-HOOK ATTACHED TO ALL POLE SIZES. 3/4 INCH SCHEDULE (SCH.) 40 PIPE ATTACHED TO ALL POLE SIZES AND INBOARD AND OUTBOARD ARM.
7. S.S. DENOTES STAINLESS STEEL. GA. DENOTES GAUGE. O.D. DENOTES OUTSIDE DIAMETER. I.D. DENOTES INSIDE DIAMETER. H.S. DENOTES HIGH STRENGTH.



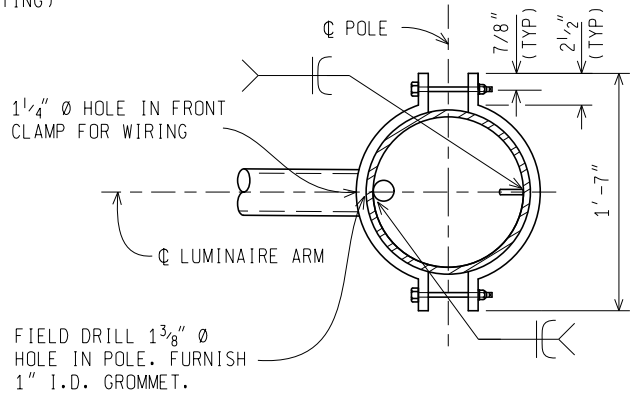
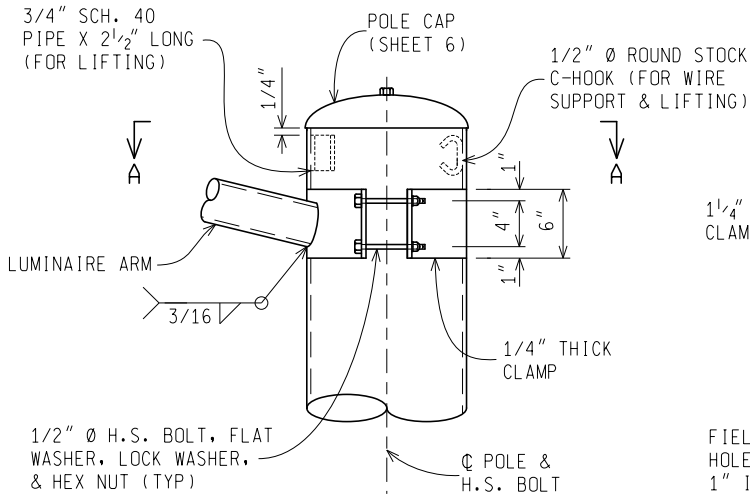
ARM/POLE S.S. ID TAG DETAIL

TO BE ATTACHED 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)

BASE S.S. ID TAG DETAIL

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

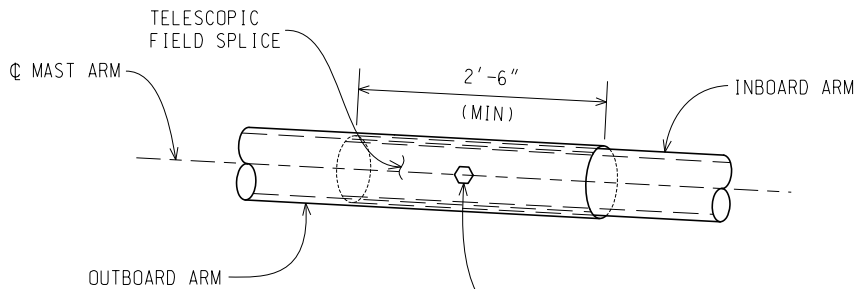
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DETAIL A

ORIENTATION OF SCH. 40 PIPE 180° FROM HAND HOLE AT BASE & C-HOOK 180° FROM SCH. 40 PIPE

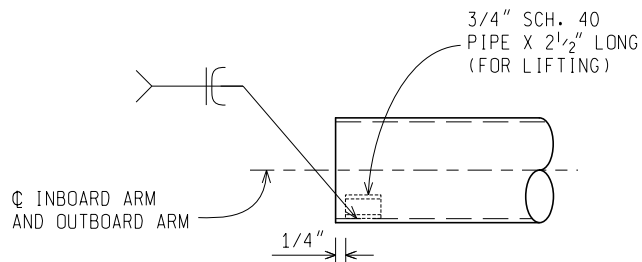
SECTION A-A



5/8" Ø BOLT WITH "ANCO" LOCK NUTS, 3/4" Ø HOLE FACTORY DRILLED IN OUTBOARD TUBE, FIELD DRILL INBOARD TUBE. (ORIENTATION MUST BE HORIZONTAL)

DETAIL B

(45'-0" ARMS AND GREATER)



INBOARD/OUTBOARD ARM LIFTING DEVICE

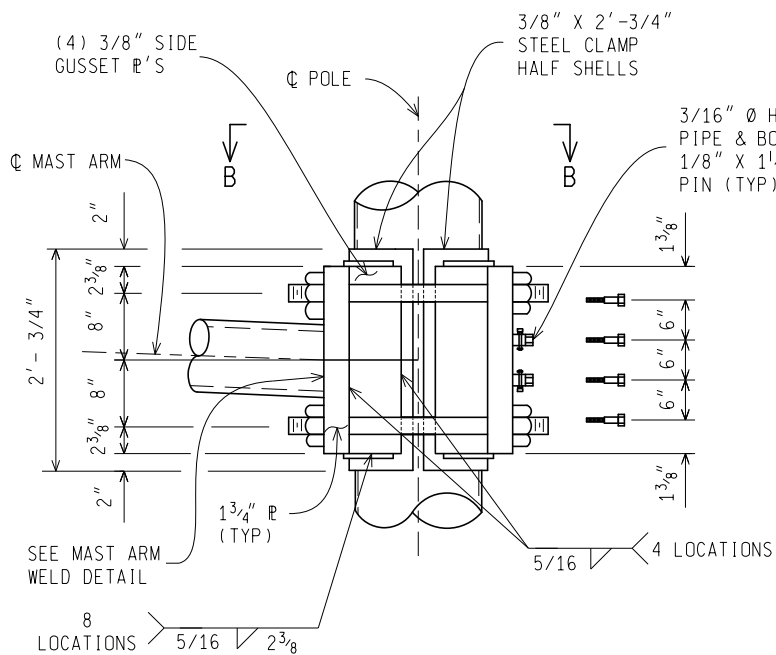
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BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

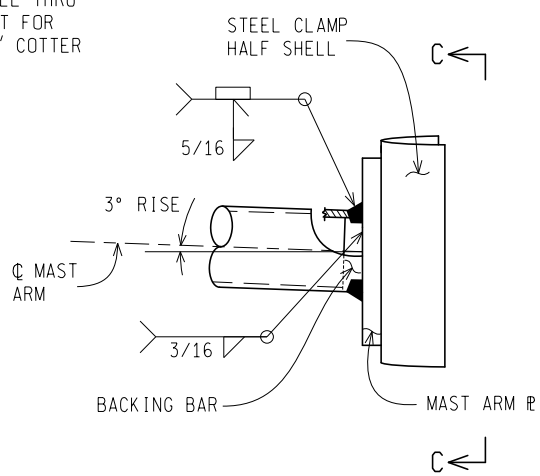
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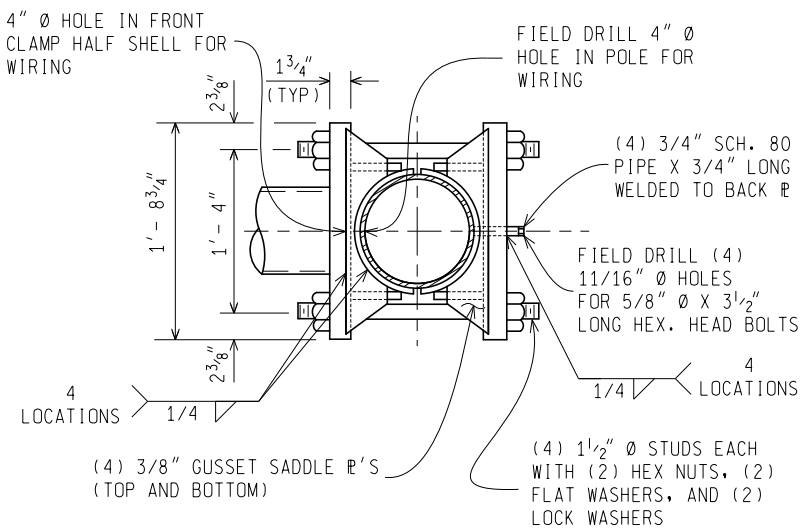


DETAIL C

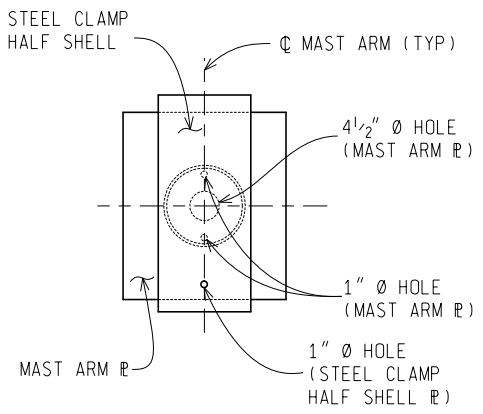


MAST ARM WELD DETAIL

SIDE GUSSET R'S AND SADDLE R'S NOT SHOWN FOR CLARITY



SECTION B-B

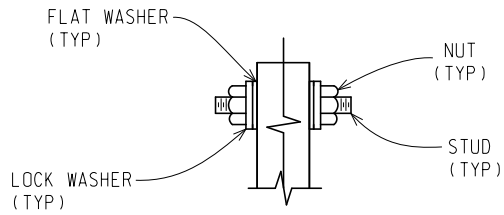


SECTION C-C

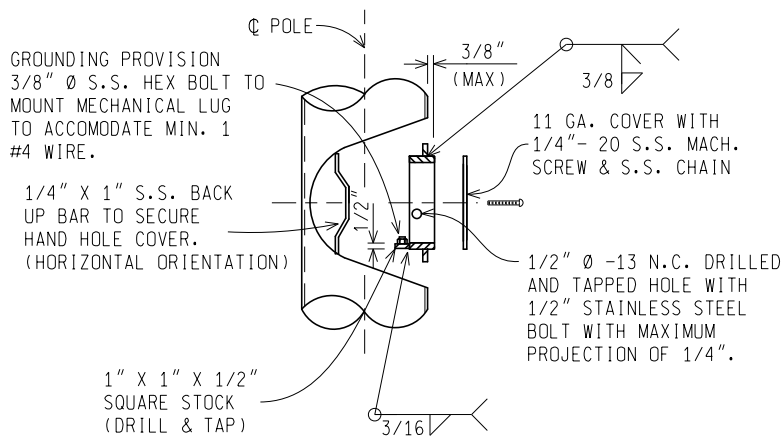
SIDE GUSSET R'S AND SADDLE R'S NOT SHOWN FOR CLARITY

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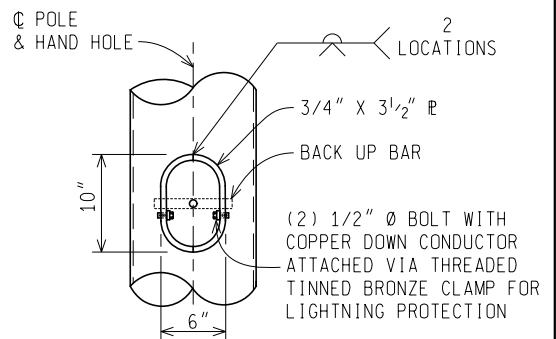
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MAST ARM CLAMP WASHER PLACEMENT

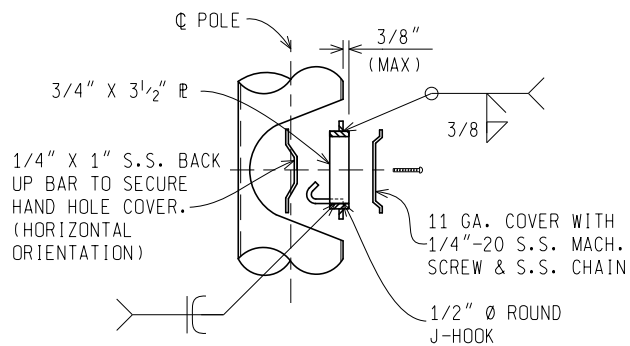


6" X 10" BAR BOTTOM HAND HOLE

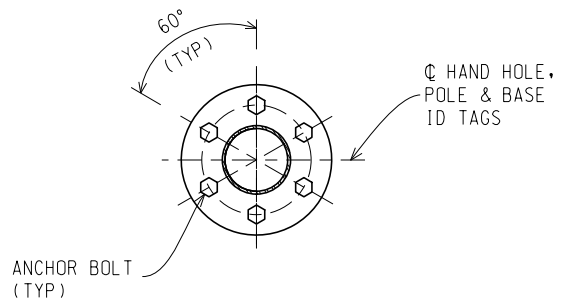


6" X 10" BAR BOTTOM HAND HOLE

(VIEW ROTATED 90 DEGREES)



4" X 6 1/2" BAR TOP HAND HOLE



ORIENTATION OF HAND HOLE

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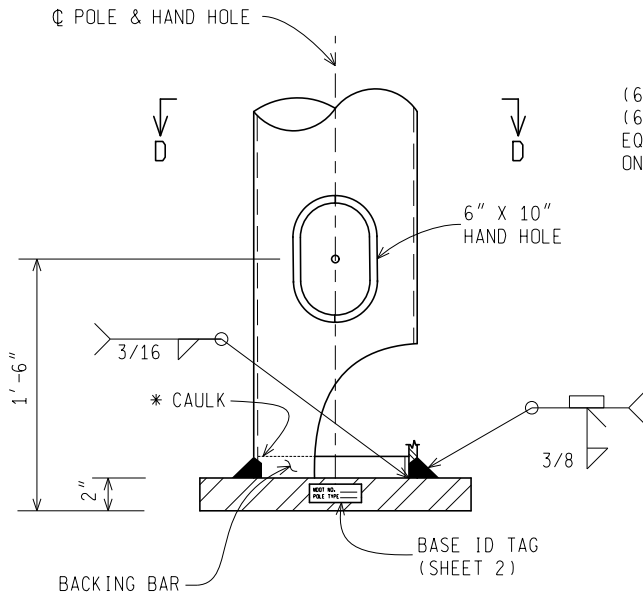
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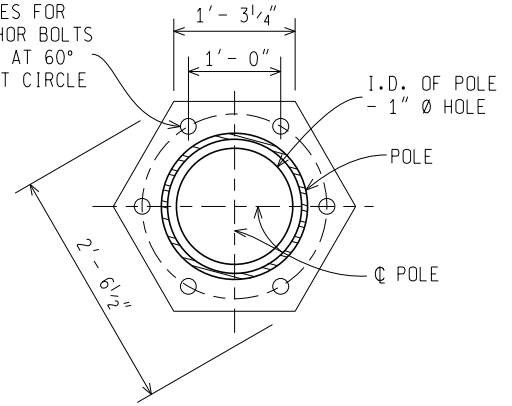


DETAIL D

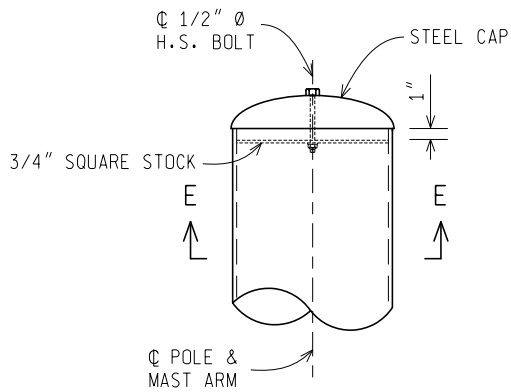
(VIEW ROTATED 90 DEGREES)

* SEAL JOINT WITH CAULK AFTER GALVANIZING

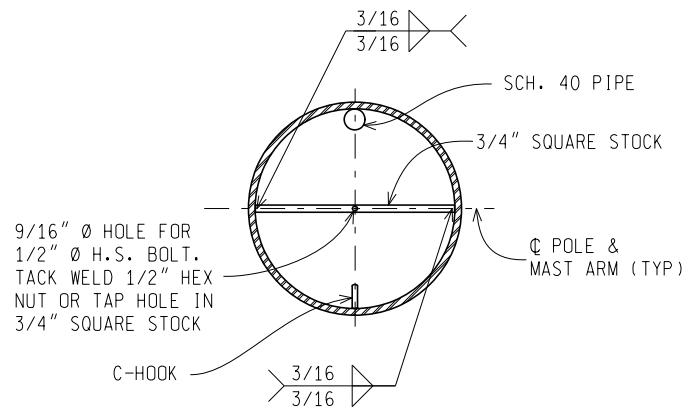
(6) 2 1/16" Ø HOLES FOR
 (6) 1 3/4" Ø ANCHOR BOLTS
 EQUALLY SPACED AT 60°
 ON A 24" Ø BOLT CIRCLE



SECTION D-D



POLE AND MAST ARM CAP DETAIL



SECTION E-E

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