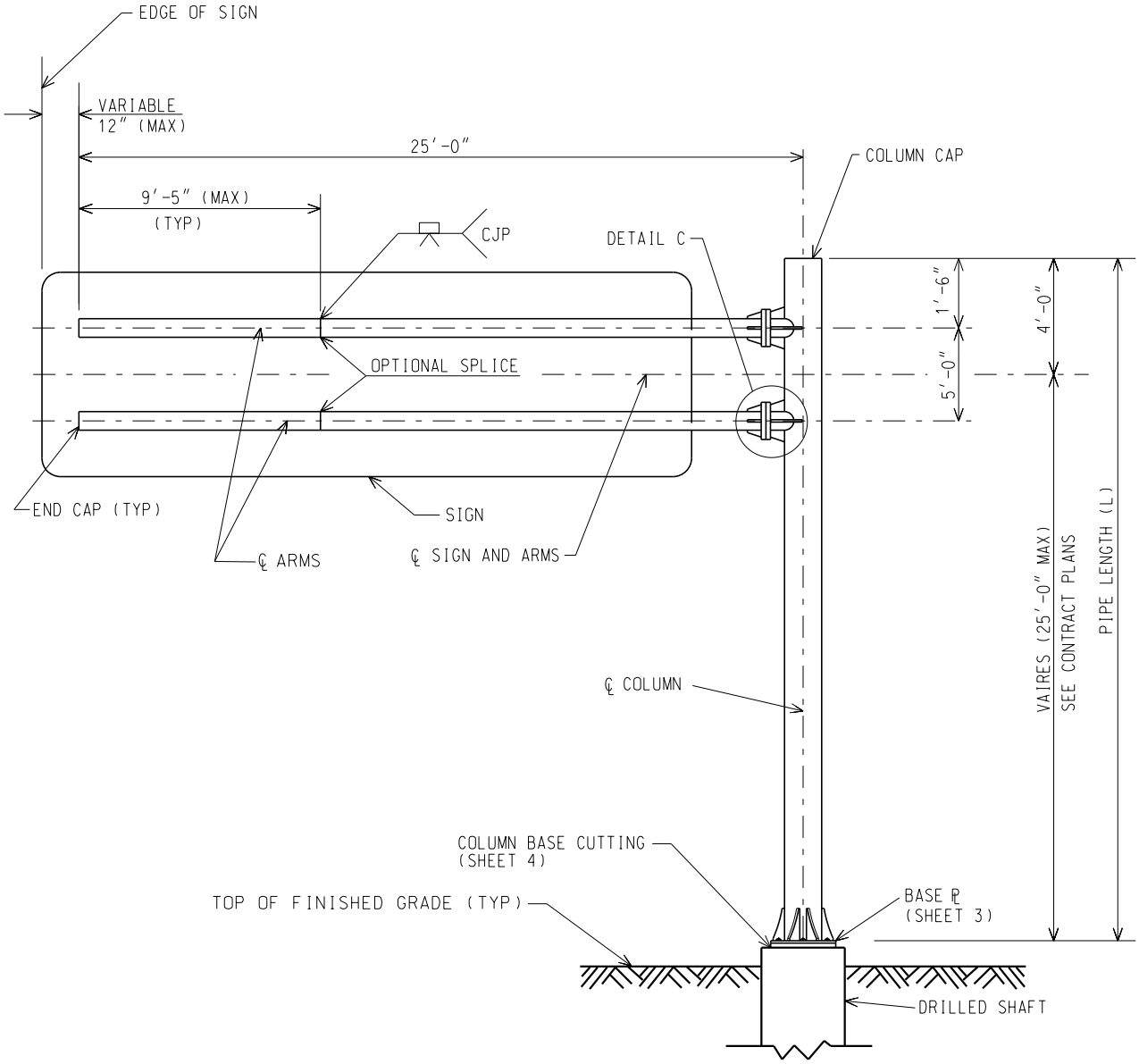


NOTE:

CENTER SIGN VERTICALLY ON CANTILEVER ARMS

MDOT Michigan Department of Transportation PREPARED BY ANCILLARY STRUCTURES DRAWN BY: HNTB CHECKED BY: MLO	DEPARTMENT DIRECTOR Bradley C. Wieferich, P.E. APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION STEEL CANTILEVER TYPE E	(SPECIAL DETAIL) F.H.W.A. APPROVAL	05/02/25 PLAN DATE	SIGN-300-D	SHEET 1 OF 6

NOTES:

1. THE DESIGN OF THIS STRUCTURE IS BASED ON THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1ST EDITION, WITH INTERIM REVISIONS THROUGH 2022.

2. WELDING MUST BE IN ACCORDANCE WITH AWS D1.1 AS SPECIFIED IN 20SP-707A, STRUCTURAL STEEL AND ALUMINUM CONSTRUCTION.

3. MAXIMUM SIGN AREA IS 240 SQUARE FEET FOR ONE SIGN. MINIMUM SIGN HEIGHT WITH ALUMINUM BEAM IS 6.5 FEET.

4. GALVANIZING OF BOLT ASSEMBLIES SHALL BE IN ACCORDANCE WITH SUBSECTIONS 919.07.I AND 906.07 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

5. PROVIDE $1\frac{1}{16}$" Ø HOLES FOR 1" Ø HIGH STRENGTH (HS) BOLTS FOR ALL CONNECTIONS UNLESS OTHERWISE STATED. PROVIDE HIGH STRENGTH BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH SUBSECTION 906.07 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

6. TIGHTEN ALL HIGH STRENGTH BOLTS BY THE TURN OF NUT METHOD PER SUBSECTION 707.03.E OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

7. ALL WELDS MUST BE INSPECTED IN ACCORDANCE WITH SUBSECTION 707.03.D.12 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, EXCEPT MINIMUM MT INSPECTION FREQUENCY IS INCREASED TO 25 PERCENT.

8. SEE CURRENT MDOT SIGN SUPPORT TYPICAL PLAN SIGN-340-SERIES FOR SIGN FOUNDATION.

9. SEE CURRENT MDOT SIGN SUPPORT TYPICAL PLAN SIGN-700-SERIES FOR SIGN CONNECTION.

10. COLUMN SECTIONS AND ARM SECTIONS MATERIALS MUST BE PROVIDED IN ACCORDANCE WITH SUBSECTION 919.07 OF THE MDOT STANDARD OF SPECIFICATIONS FOR CONSTRUCTION.

11. THE FLANGE PLATES MUST BE WELDED TO ASSURE OBTAINING FULL CONTACT IN THE RELAXED POSITION PRIOR TO SNUGGING UP FLANGE BOLTS. THE FLANGE BOLTS MUST NOT BE TORQUED IN AN ATTEMPT TO CLOSE.

12. BASE PLATE (PL) WARPAGE MUST NOT EXCEED $\frac{1}{16}$ INCH PER FOOT.

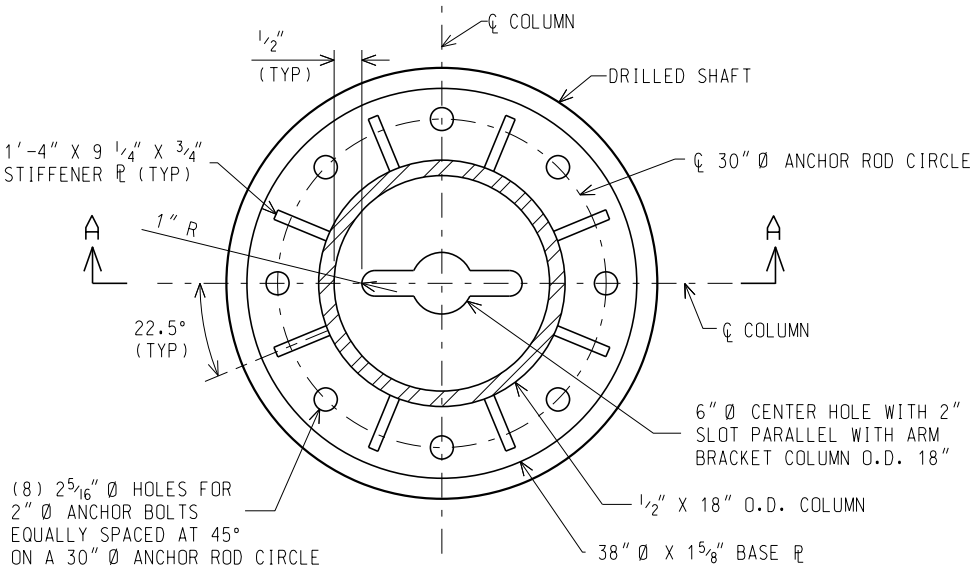
13. CJP WELDS ON OPTIONAL ARM SPLICES SHALL BE GROUND SMOOTH. ANY GRINDING OF WELDS IS TO BE DONE PRIOR TO GALVANIZATION. WELDING SHALL BE IN ACCORDANCE WITH SECTION 707 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

14. SELECT SEALANT FOR PERIMETER OF BACKING BAR PLATE FROM THE QUALIFIED PRODUCTS LIST. PROVIDE SEALANT IN CAULKING TUBES.

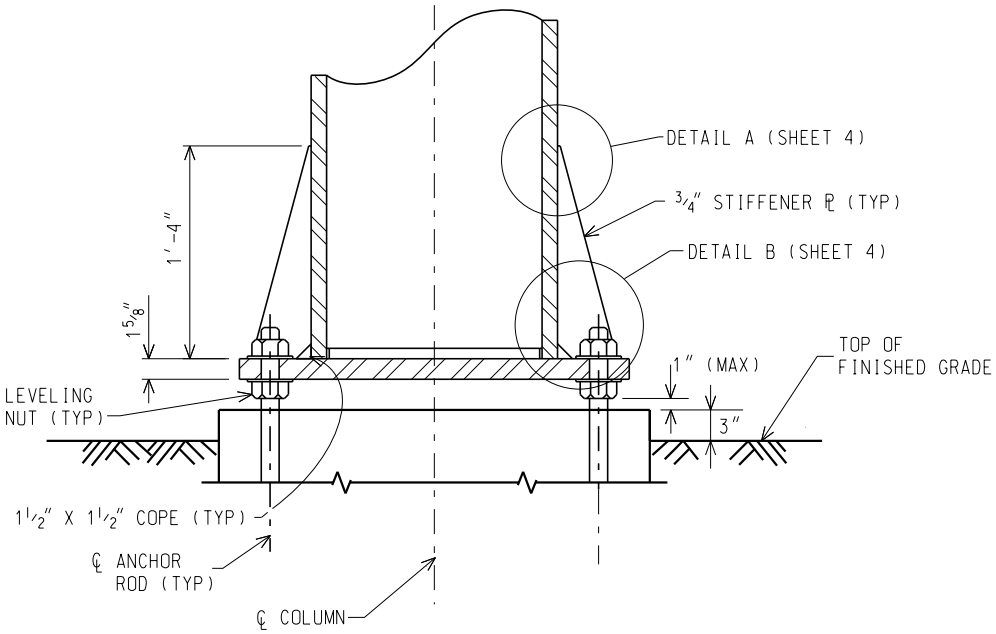
15. CHARPY V-NOTCH TESTING IS REQUIRED FOR THE COLUMN UPRIGHT IN ACCORDANCE WITH THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION, WITH INTERIM REVISIONS THROUGH 2022.

DESIGN MAXIMUM LOADS AT THE TOP OF THE FOUNDATION				
COMBINATION	AXIAL LOAD (LBS)	MOMENT (IN-LBS)	SHEAR (LBS)	TORQUE (IN-LBS)
SERVICE	5,100	1,114,600	4,200	853,300
STRENGTH	6,300	530,500	-	-
EXTREME	5,600	2,695,400	10,800	2,169,300

NOT TO SCALE



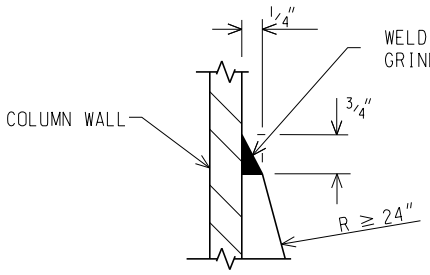
PLAN VIEW 38" BASE PLATE DETAIL



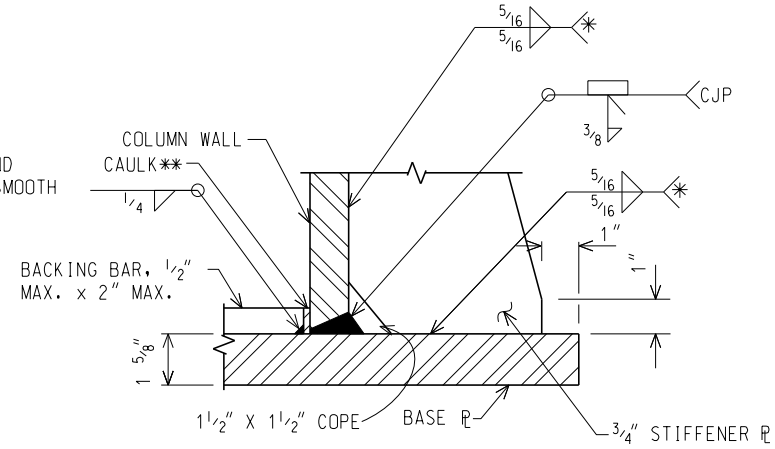
SECTION A-A

SEE SHEET 4 COLUMN BASE CUTTING DETAIL

NOT TO SCALE



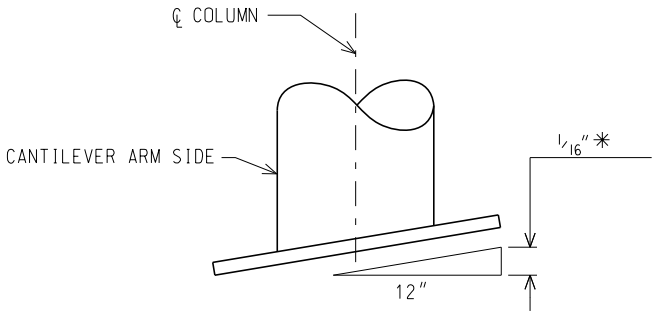
DETAIL A



DETAIL B

* WRAP WELD AROUND OUTSIDE EDGE
STOP 1/4" SHORT OF CORNER CLIP

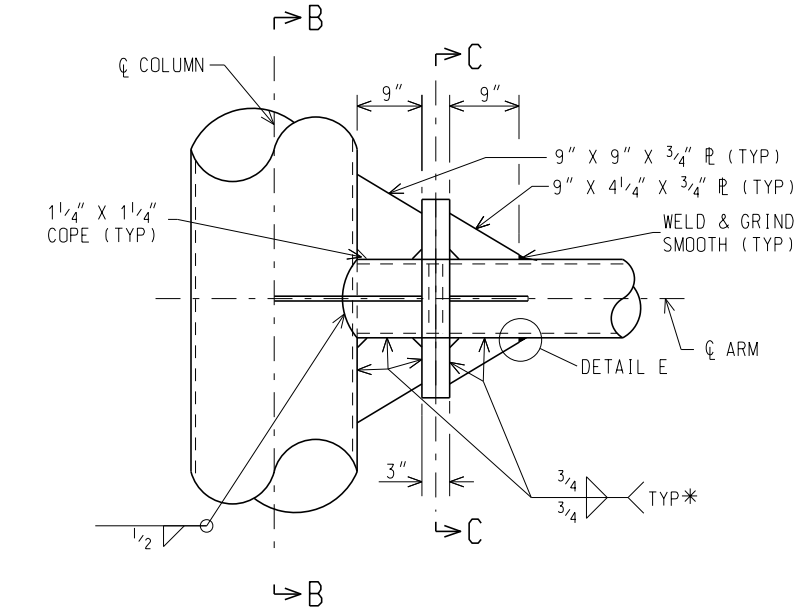
** CAULK TOP OF UNWELDED JOINT
BETWEEN BACKING BAR AND
COLUMN WALL AFTER HDG



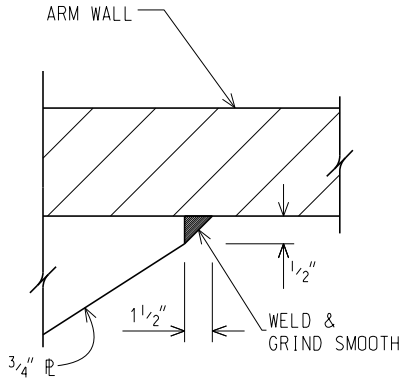
COLUMN BASE CUTTING DETAIL

*CUT PIPE BOTTOM TO PROVIDE FOR COLUMN RAKING

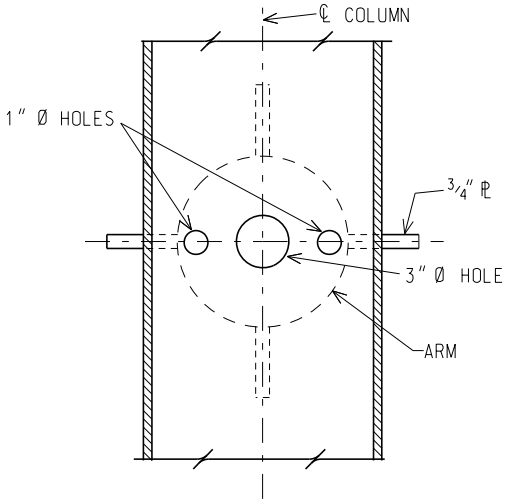
NOT TO SCALE



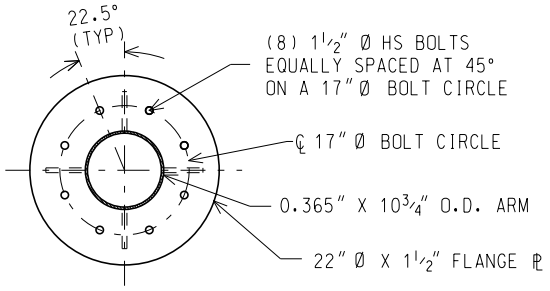
DETAIL C - FRONT



DETAIL E

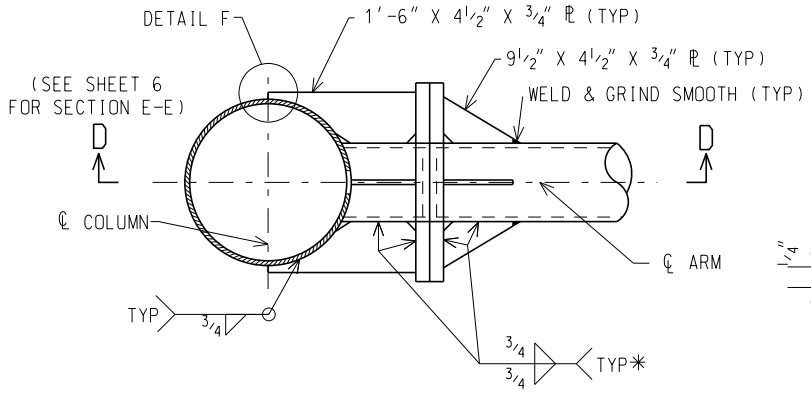


SECTION B-B

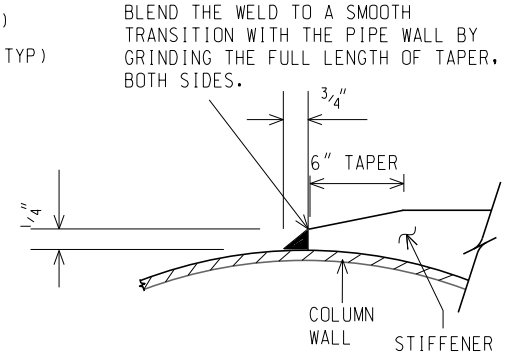


SECTION C-C

SEE SHEET 6 FOR ADDITIONAL FLANGE INFORMATION AND WASHER PLACEMENT



DETAIL C - TOP

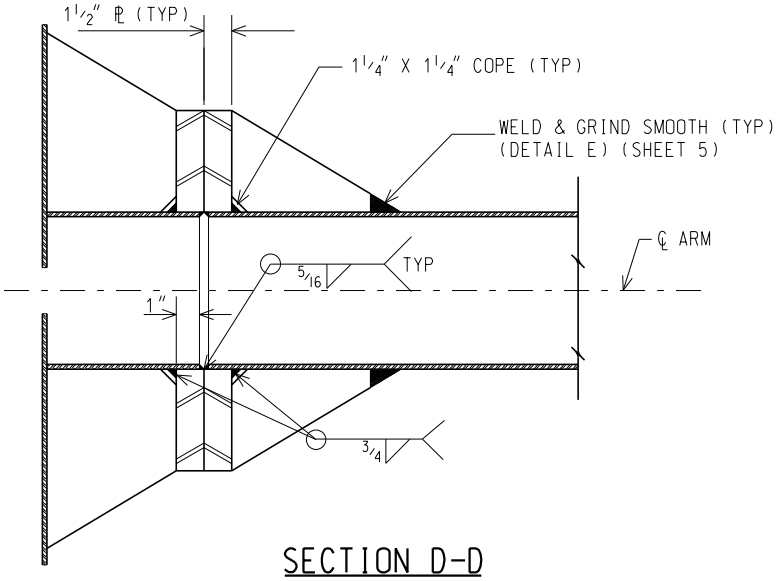


DETAIL F

ARM CONNECTION

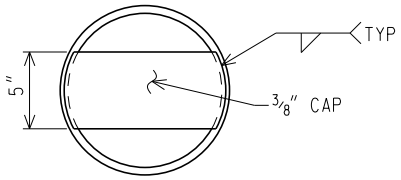
*WRAP WELD AROUND OUTSIDE EDGE, STOP 1/4" SHORT OF CORNER CLIP

NOT TO SCALE



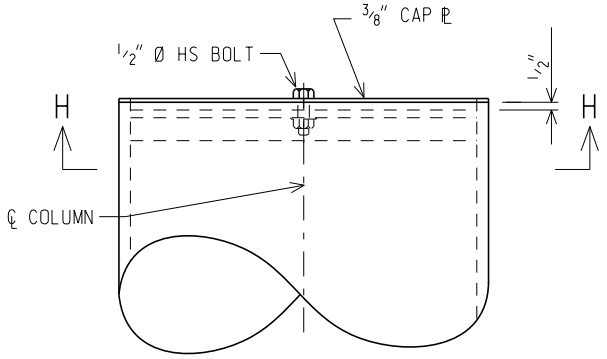
SECTION D-D

ARM CONNECTION

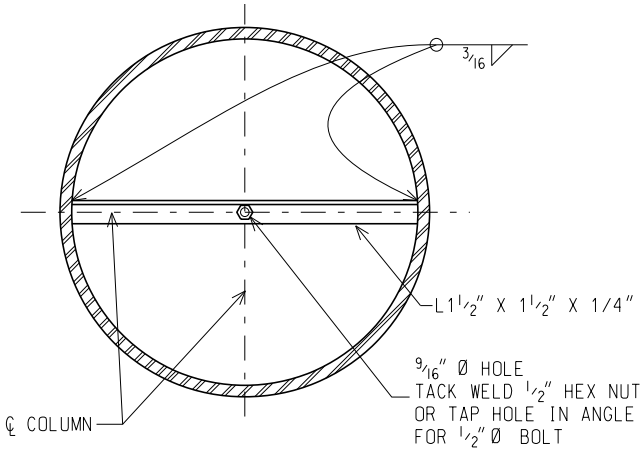


END CAP DETAIL

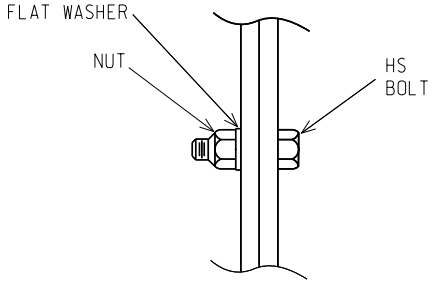
(USE AT THE END OF EACH ARM)



COLUMN CAP DETAIL



SECTION H-H



DETAIL OF WASHER PLACEMENT

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION	(SPECIAL DETAIL) F.H.W.A. APPROVAL	05/02/25 PLAN DATE	SIGN-300-D	SHEET 6 OF 6