

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS

POST/MASTARM PER: ASTM A 572 GR 50
MOUNTING PLATE PER: ASTM A36
HARDWARE FINISH PER: GALV A153
ANCHOR BOLTS PER: ASTM F1554 GR 55 (FBO)

DESIGN CRITERIA

AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. 6TH EDITION, FATIGUE CATEGORY III AND PER WISDOT STANDARD S.D.D 9 E 8-7A, 7E.

FINISH SPECIFICATION

BASE COAT: HOT DIP GALVANIZED PER ASTM A123
PRIME COAT: N/A
FINISH COAT: N/A
COLOR: N/A
FEDERAL SPEC.: N/A

WELD SPECIFICATION

THE POST AND MASTARM TO BE ROUND TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.

WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT). A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).



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622 6TH ST. SO. WINSTED, MN 55395	SALES ORDER NO.:	QTY:	REV A	SHEET 1 OF 1
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DESCRIPTION:
2016 WI DOT TYPE 9 TRAFFIC SIGNAL
15'-30' MASTARM LENGTHS

EST. WEIGHT: DRAWING NO.:
2016 TYPE 9 WI DOT

PROJECT NAME:

PROJECT NO.:

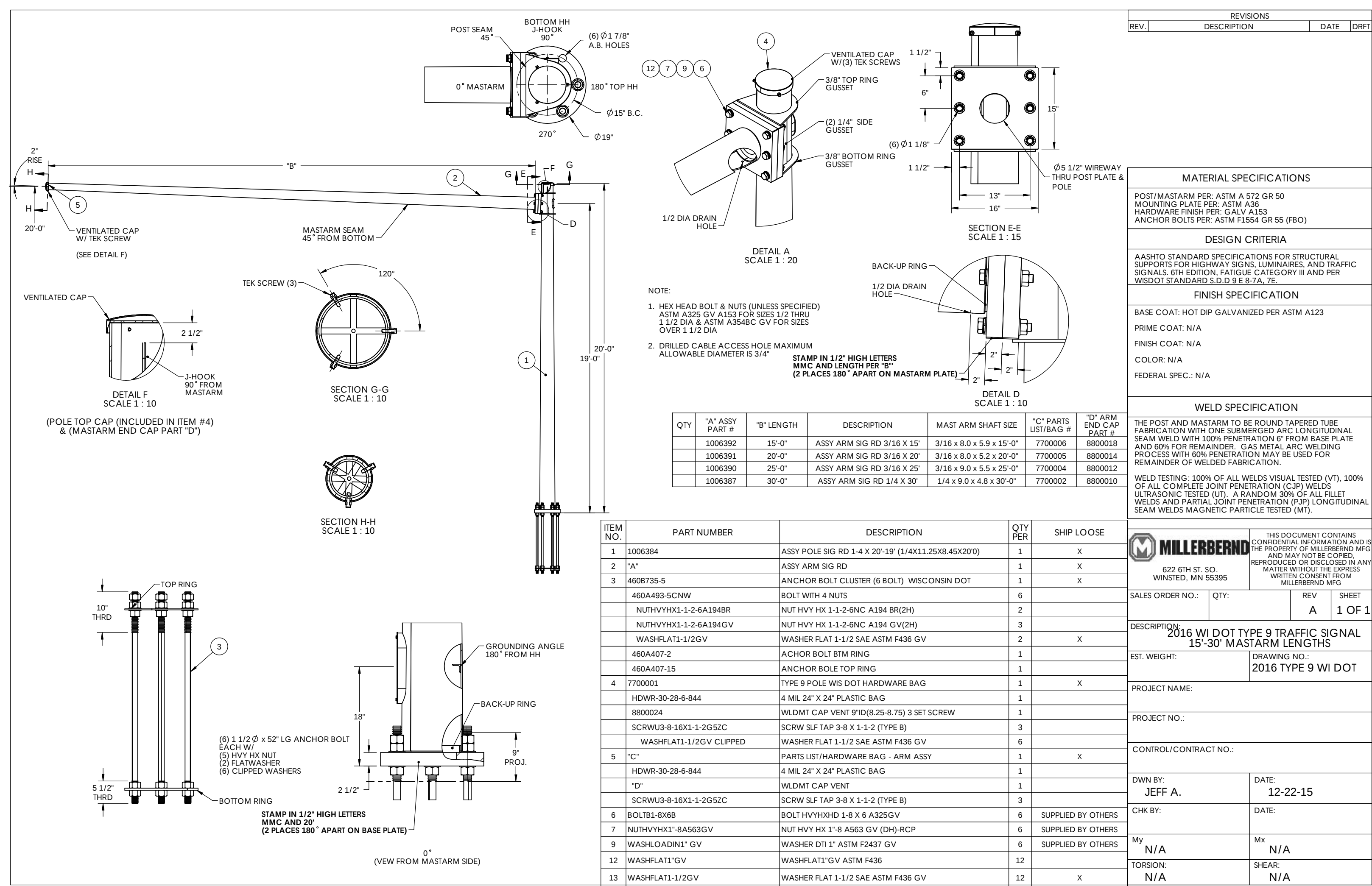
CONTROL/CONTRACT NO.:

DWN BY: JEFF A. DATE: 12-22-15

CHK BY: DATE:

My N/A Mx N/A

TORSION: N/A SHEAR: N/A



REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

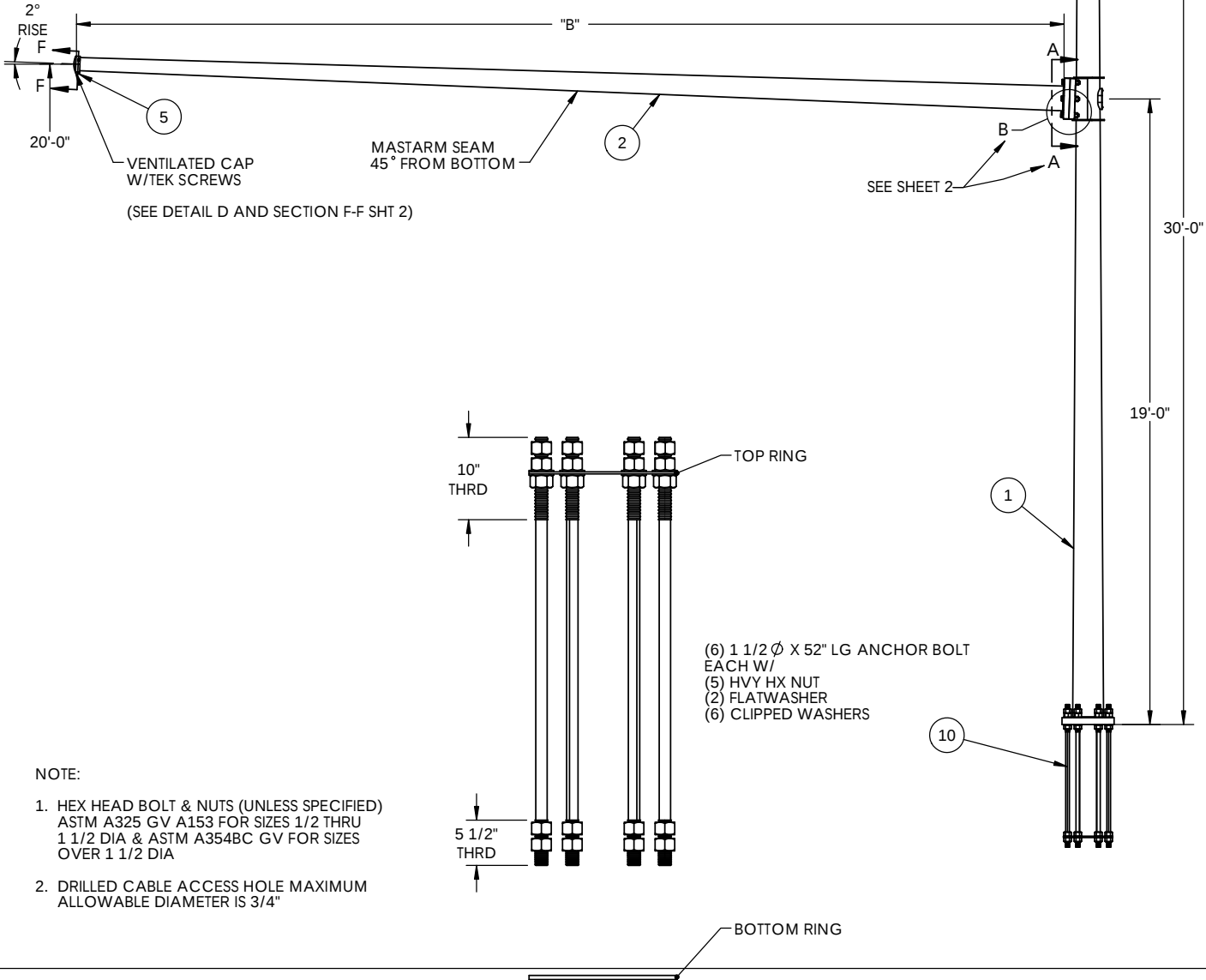
FIXED LUMINAIRE ARM		
"G" QTY	"E" ARM PART #	"F" LENGTH
	1006846	6'
	1006845	8'
	1006404	10'
	1006403	12'
	1006402	15'

CLAMP ON LUMINAIRE ARM		
"K" QTY	"H" ARM PART #	"J" LENGTH
	730A1652-6-775	6'
	730A1652-8-775	8'
	730A1652-10-775	10'
	730A1652-12-775	12'
	730A1652-15-775	15'

LUM. ARM COVER PLATE
"L" QTY

QTY	"A" ASSY PART #	"B" LENGTH	DESCRIPTION	MAST ARM SHAFT SIZE	"C" PARTS LIST/BAG #	"D" END CAP PART #
	1006392	15'-0"	ASSY ARM SIG RD 3/16 X 15'	3/16 x 8.0 x 5.9 x 15'-0"	7700006	8800018
	1006391	20'-0"	ASSY ARM SIG RD 3/16 X 20'	3/16 x 8.0 x 5.2 x 20'-0"	7700005	8800014
	1006390	25'-0"	ASSY ARM SIG RD 3/16 X 25'	3/16 x 9.0 x 5.5 x 25'-0"	7700004	8800012
	1006387	30'-0"	ASSY ARM SIG RD 1/4 X 30'	1/4 x 9.0 x 4.8 x 30'-0"	7700002	8800010

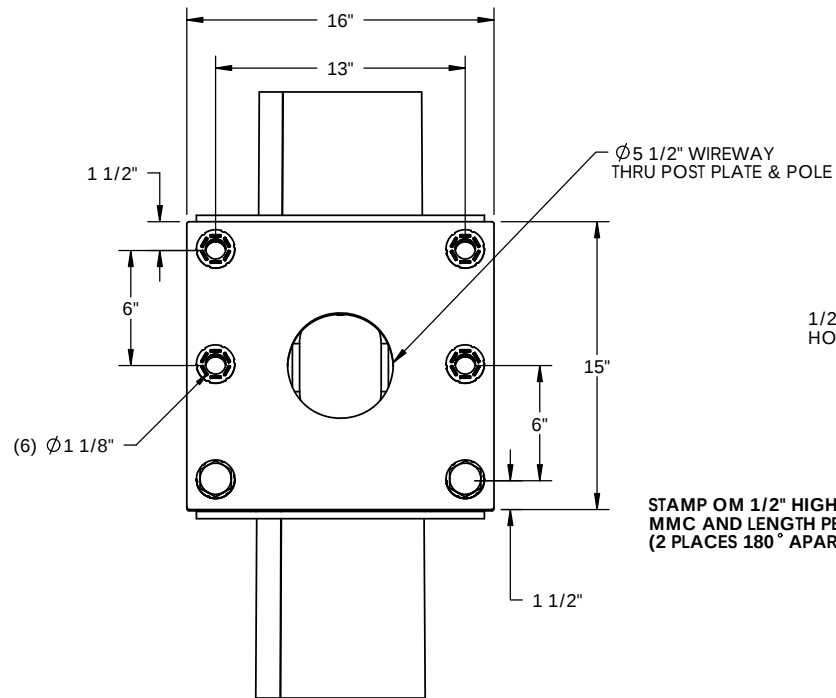
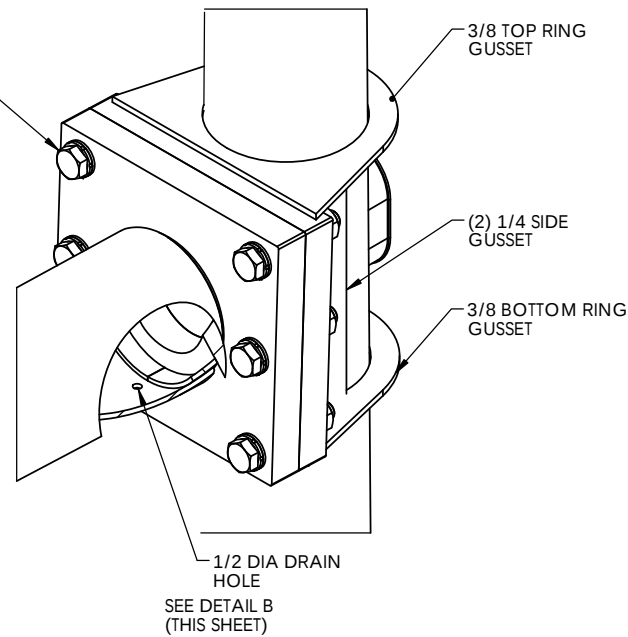
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	SHIP LOOSE
1	1006396	ASSY POLE SIG RD 1/4 30'/19' (1/4X11.25X7.05X30'0)	1	X
2	"A"	ASSY ARM SIG RD	1	X
3	"E"	ASSY ARM LUM RD 11GAX"F"	"G"	X
	1006398	WLDMT,ARM,LUM,RD,11GAX15'0	1	
	1006399	MTG PL LUM ARM	1	
	1006400	SHAFT RD 11GA X 15'1 (11GAX4.81X2.70X15'1)	1	
	1006401	PIPE A500-B-001-NV (2" SCH 40) 8" LONG	1	
	PF-A-3/4-CS-BL	PF HALF CPLG 3/4 MI BL	1	
	PLUG-THD-PL-3/4	PLUG THREADED 3/4 PVC	1	
	7700008	WIS DOT LUM ARM HDWR BAG	1	
	HDWR-30-28-6-844	4 MIL 24" X 24" PLASTIC BAG	1	
	BOLTB3-4-10X3-1-4B	BOLT HVYHXHD 3-4-10X 3-1-4 A325GV	4	
	WASHFLAT3/4GV	WASHER WIDE FLAT 3/4 GV (2" OD)	8	
	NUTHVYHX3-4-10A563DHGV	NUT HVY HX 3-4-10NC A563 GV(DH)	4	
4	7700007	PARTS LIST W/IDOT (2016) TYPE 10 TRAFFIC SIGNAL 1006396	1	X
	HDWR-30-28-6-844	4 MIL 24" X 24" PLASTIC BAG	1	
	8800018	WLDMT CAP VENT 7.5"ID(6.75-7.25) 3 SET SCREW	1	
	SCRWU3-8-16X1-1-2G5ZC	SCRW SLF TAP 3-8 X 1-1-2 (TYPE B)	3	
	WASHFLAT1-1/2GV CLIPPED	WASHER FLAT 1-1/2 SAE ASTM F436 GV	6	
5	"C"	PARTS LIST/HARDWARE BAG - ARM ASSY	1	X
	HDWR-30-28-6-844	4 MIL 24" X 24" PLASTIC BAG	1	
	"D"	WLDMT CAP VENT 5.5"ID(4.75-5.25) 3 SET SCREW	1	
	SCRWU3-8-16X1-1-2G5ZC	SCRW SLF TAP 3-8 X 1-1-2 (TYPE B)	3	
6	7700008	WIS DOT LUM ARM HDWR BAG	1	SUPPLIED BY OTHERS
	HDWR-30-28-6-844	4 MIL 24" X 24" PLASTIC BAG	1	
	WASHFLAT3/4GV	WASHER WIDE FLAT 3/4 GV (2" OD)	8	
	BOLTB3-4-10X3-1-4B	BOLT HVYHXHD 3-4-10X 3-1-4 A325GV	4	
	NUTHVYHX3-4-10A563DHGV	NUT HVY HX 3-4-10NC A563 GV(DH)	4	
7	BOLTB1-8X6B	BOLT HVYHXHD 1-8 X 6 A325GV	6	SUPPLIED BY OTHERS
8	WASHFLAT1"GV	WASHFLAT1"GV ASTM F436	12	SUPPLIED BY OTHERS
9	NUTHVYHX1"-8A563GV	NUT HVY HX 1"-8 A563 GV (DH)-RCP	6	SUPPLIED BY OTHERS
10	460B735-5	ANCHOR BOLT CLUSTER (6) BOLT WISCONSON DOT	6	X
	460A493-5CNW	1 1/2-6NC X 52" LG BOLT W/5 HVYHX NUT, 2 FLATWASHERS	6	
	460A407-15	ANCHOR BOLT TOP RING	1	
	460A407-2	ANCHOR BOLT BTM RING	1	
16	WASHLOADIN1" GV	WASHER DTI 1" ASTM F2437 GV	6	SUPPLIED BY OTHERS
17	1006397	GASKETED COVER FOR 4 BOLT LUM ARM	"L"	X
18	"H"	CLAMP ON LUMINAIRE ARM	"K"	X



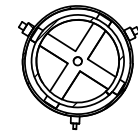
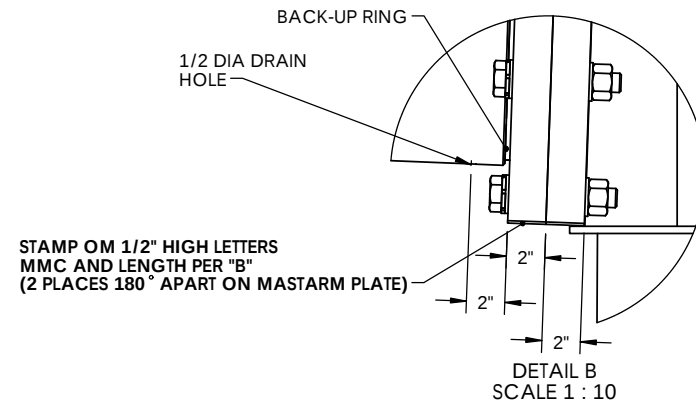
MATERIAL SPECIFICATIONS
POST/MASTARM PER: ASTM A572 GR 50 MOUNTING PLATE PER: ASTM A36 HARDWARE FINISH PER: GALV PER A153 ANCHOR BOLTS PER: ASTM F1554 GR 55 (FBO)
DESIGN CRITERIA
AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. 6TH EDITION FATIGUE CATEGORY III AND PER WISDOT STANDARD S.D.D. 9 E 8-7B, 7E
FINISH SPECIFICATION
BASE COAT: HOT DIP GALVANIZED PER ASTM A123 PRIME COAT: N/A FINISH COAT: N/A COLOR: N/A FEDERAL SPEC.: N/A
WELD SPECIFICATION
THE POST AND MASTARM TO BE ROUND TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION. WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT). A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

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622 6TH ST. SO. WINSTED, MN 55395			
SALES ORDER NO.:	QTY:	REV D	SHEET 1 OF 2
DESCRIPTION: 2016 WI DOT TYPE 10 TRAFFIC SIGNAL 15'-30' MASTARM LENGTHS			
EST. WEIGHT:		DRAWING NO.: 2016 TYPE 10 WI DOT	
PROJECT NAME:			
PROJECT NO.:			
CONTROL/CONTRACT NO.:			
DWN BY: JEFF A.		DATE: 12-23-15	
CHK BY:		DATE:	
My N/A		Mx N/A	
TORSION: N/A		SHEAR: N/A	

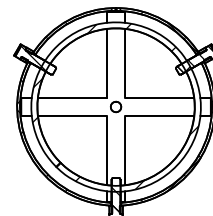
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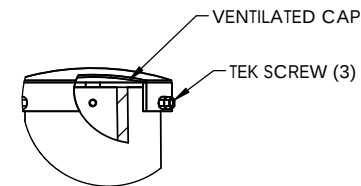
SECTION A-A
SCALE 1 : 10



SECTION F-F
SCALE 1 : 10

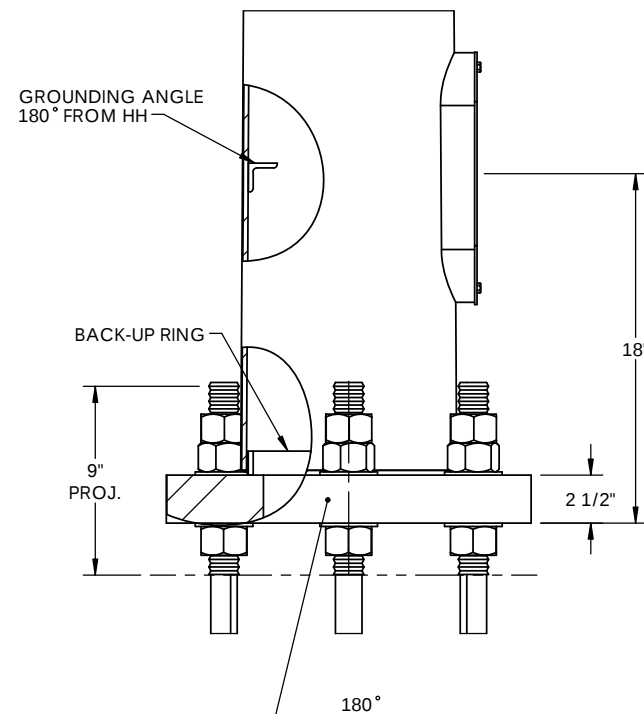
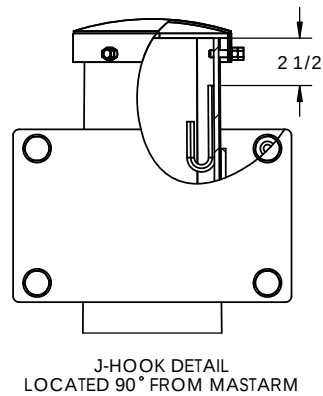
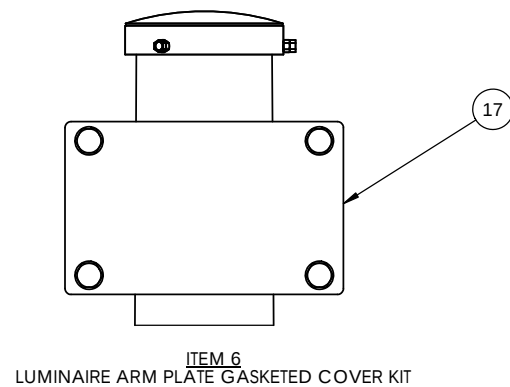
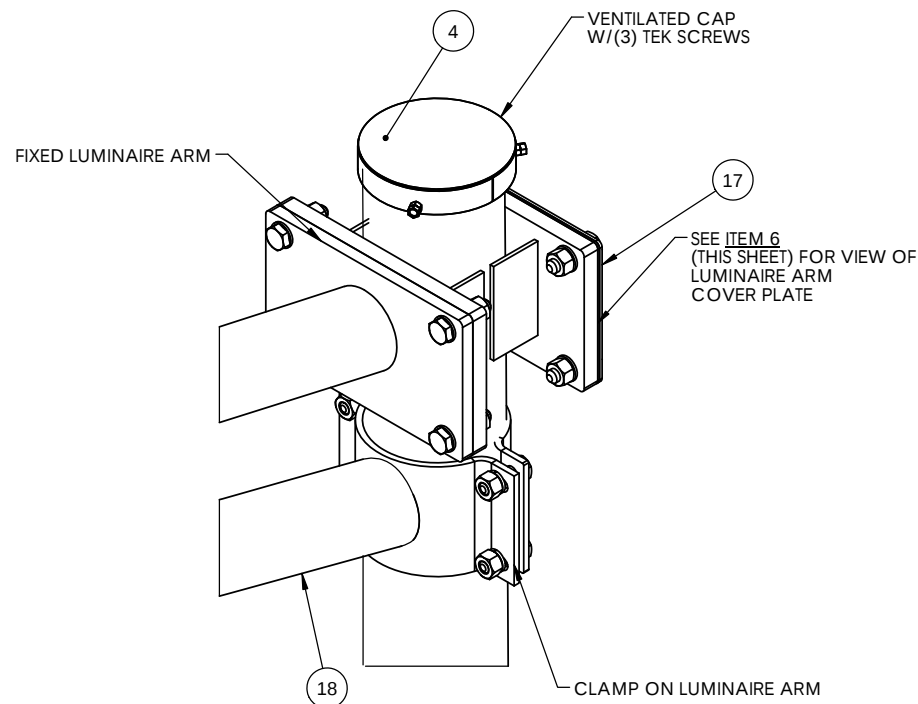


SECTION E-E
SCALE 1 : 8



DETAIL D
SCALE 1 : 10

(POLE TOP CAP (INCLUDED IN ITEM #6)
& (MASTARM END CAP PART "D")



STAMP IN 1/2" HIGH LETTERS
MMC AND 30"
(2 PLACES 180° APART ON BASE PLATE)

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622 6TH ST. SO. WINSTED, MN 55395			
DRWG NO.: 2016 TYPE 10 WI DOT	EST. WEIGHT:	REV D	SHEET 2 OF 2
DESCRIPTION: 2016 WI DOT TYPE 10 TRAFFIC SIGNAL 15'-30' MASTARM LENGTHS			
ORDER NO.:			
PROJECT NAME:			
PROJECT NO.:			
CONTROL/CONTRACT NO.:			
DWN BY: JEFF A.		DATE: 12-23-15	
CHK BY:		DATE:	
My N/A		Mx N/A	
TORSION: N/A		SHEAR: N/A	

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS

POST/MASTARM PER: ASTM A572 GR 50
MOUNTING PLATE PER: ASTM A36
HARDWARE FINISH PER: GALV A153
ANCHOR BOLTS PER: ASTM F1554 GR 55 (FBO)

DESIGN CRITERIA

AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. 6TH EDITION, FATIGUE CATEGORY II AND PER WISDOT STANDARD S.D.D. 9 E 8-7C, 7E.

FINISH SPECIFICATION

BASE COAT: HOT DIP GALVANIZED PER ASTM A123
PRIME COAT: N/A
FINISH COAT: N/A
COLOR: N/A
FEDERAL SPEC.: N/A

WELD SPECIFICATION

THE POST AND MASTARM TO BE ROUND TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.

WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT). A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).



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622 6TH ST. SO.
WINSTED, MN 55395

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SALES ORDER NO.:	QTY:	REV E	SHEET 1 OF 2
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DESCRIPTION:
2016 WI DOT TYPE 12 TRAFFIC SIGNAL
35'-55' MASTARM LENGTHS

EST. WEIGHT:	DRAWING NO.: 2016 WI DOT TYPE 12 TRAFFIC SIGNAL
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PROJECT NAME:

PROJECT NO.:

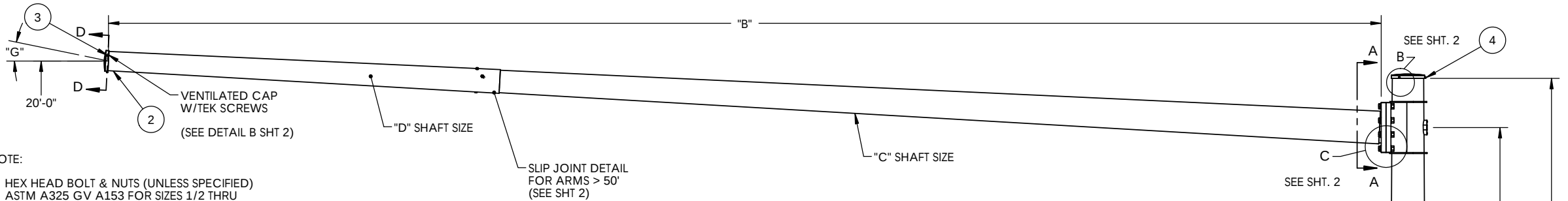
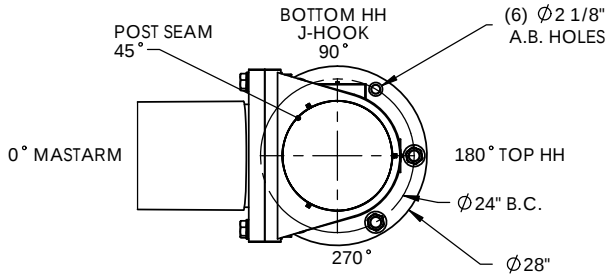
CONTROL/CONTRACT NO.:

DWN BY: JEFF A.	DATE: 12-23-15
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CHK BY:	DATE:
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My N/A	Mx N/A
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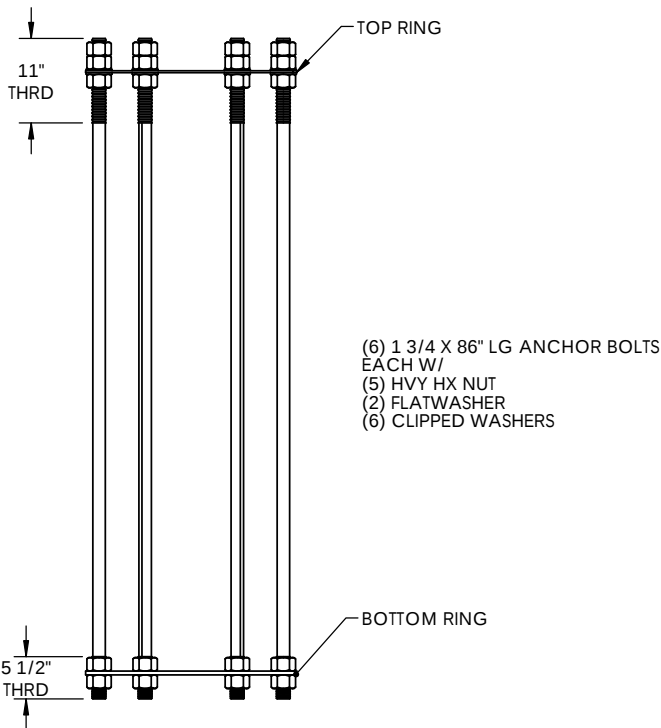
TORSION: N/A	SHEAR: N/A
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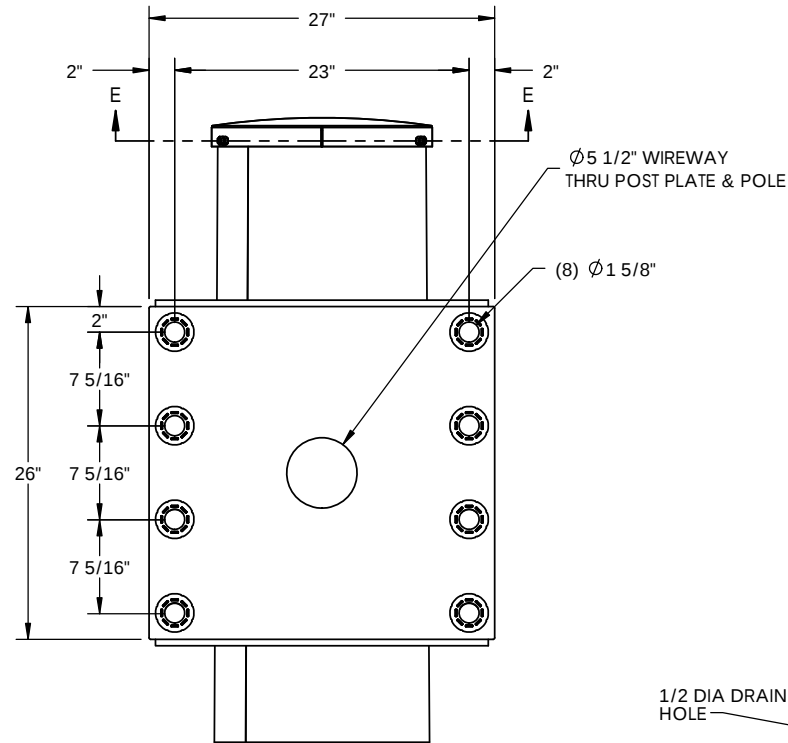
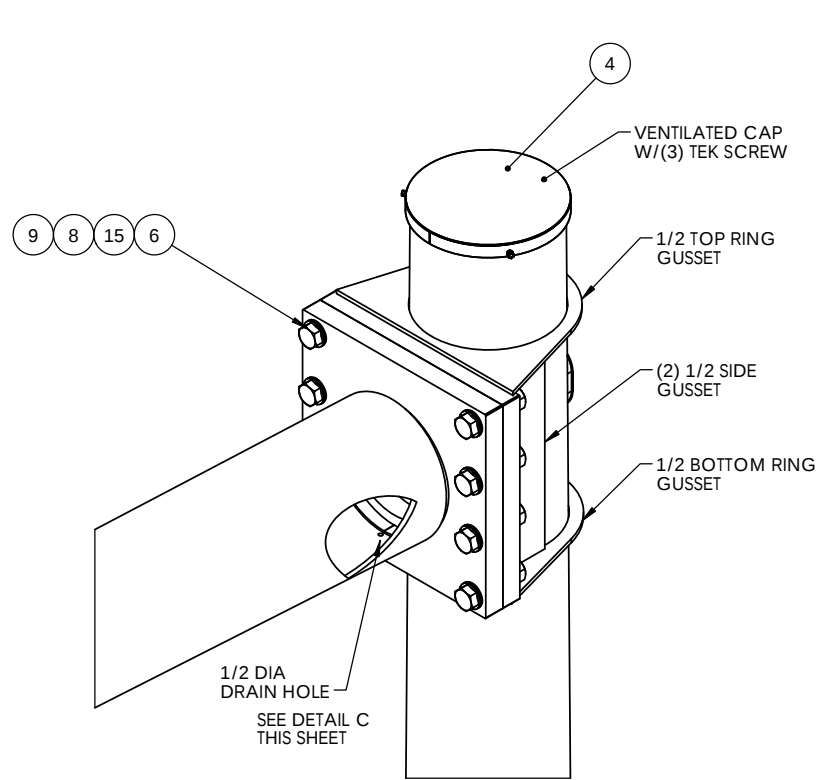


QTY	"A" ASSY PART #	"B" LENGTH	DESCRPTION	"C" MAST ARM SHAFT SIZE	"D" MASTARM SHAFT SIZE	"E" PARTS LIST/BAG	"F" ARM END CAP #	"G" ARM RISE
	1006856	35'	ASSY ARM SIG RD 1/4 X 35'	1/4 x 16.0 x 11.1 x 35'-0"	-	7700014	8800034	2.5°
	1006855	40'	ASSY ARM SIG RD 1/4 X 40'	1/4 x 17.0 x 11.4 x 40'-0"	-	7700013	8800036	2.5°
	1006854	45'	ASSY ARM SIG RD 5/16 X 45'	5/16 x 17.0 x 10.7 x 45'-0"	-	7700012	8800032	2.5°
	1006853	50'	ASSY ARM SIG RD 3/8,3/16 X 50'	3/8 x 17.0 x 11.4 x 40'-0"	3/16 x 12.31 x 10.63 x 12'-0"	7700011	8800032	3°
	1006850	55'	ASSY ARM SIG RD 7/16,3/16 X 55'	7/16 x 17.0 x 11.4 x 40'-0"	3/16 x 12.31x 9.93 x 17'-0"	7700010	8800030	3°

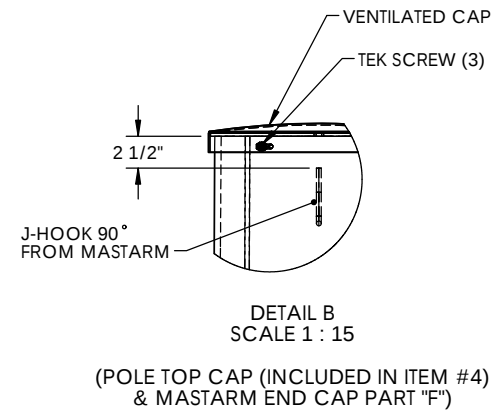
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	SHIP LOOSE
1	1006847	ASSY POLE SIG RD 1/2 21'/19'	1	X
2	"A"	ASSY ARM SIG RD	1	X
3	"E"	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC ARM	1	X
	HDWR-30-28-6-844	4 MIL 24" X 24" PLASTIC BAG	1	
	"F"	WLDMT CAP VENT 10.5"ID(9.75-10.25) 3 SET SCREW	1	
	SCRWU3-8-16X1-1-2G5ZC	SCRW SLF TAP 3-8 X 1-1-2 (TYPE B)	3	
	BOLTA3-4-10X13"L	BOLT HX HD 3-4-10NC X 13" A307GV	1	
	WASHLOCK3/4GV	WASHER LOCK 3/4 GV	1	
	NUTHX3-4-10A563GV	NUT HX 3-4-10NC A563 GV	1	
4	7700009	PARTS LIST WI/DOT (2016) TYPE 12 TRAFFIC SIGNAL 1006847	1	X
	HDWR-30-28-6-844	4 MIL 24" X 24" PLASTIC BAG	1	
	SCRWU3-8-16X1-1-2G5ZC	SCRW SLF TAP 3-8 X 1-1-2 (TYPE B)	3	
	8800056	WLDMT CAP VENT 17"ID(16.25-16.75) 3 SET SCREW	1	
	WASHFLAT1-3/4GV CLIPPED	WASHER FLAT 1-3/4 SAE ASTM F436 GV	6	
6	BOLTB1-1-2-6X7B	BOLT HVYHXHD 1-1-2-6 X 7 A325GV	8	SUPPLIED BY OTHERS
8	WASHFLAT1-1/2GV	WASHER FLAT 1-1/2 SAE ASTM F436 GV	16	SUPPLIED BY OTHERS
9	NUTHVYHX1-1-2-6A563DHGV	NUT HVY HX 1-1-2-6NC A563 DH GV	8	SUPPLIED BY OTHERS
10	460A735-6	ANCHOR BOLT	6	X
	460A493-6CNW	1 3/4-7NC X 86" LG BOLT W/5 HVYHX NUTS, 2 FLATWASHERS	1	
	460A07-16	ANCHORBOLT TOP RING	1	
	460A407-3	ANCHORBOLT BTM RING	1	
14	NUTHVYHX1-1-2-6A563DHMGV	NUT HVY HX 1-1-2-6NC A563 A695 DH	16	SUPPLIED BY OTHERS
15	WASHLOADIN1-1/2GV	WASHER DTI 1 1/2 ASTM F2437 GV	8	SUPPLIED BY OTHERS

* - ITEMS AS REQUIRED - NOT ALL TRAFFIC MASTARM HARDWARE BAGS WILL HAVE THESE ITEMS

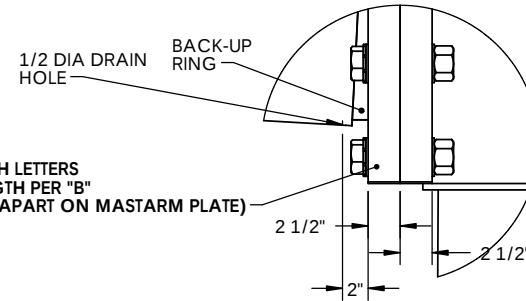




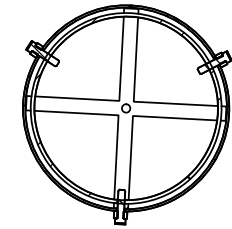
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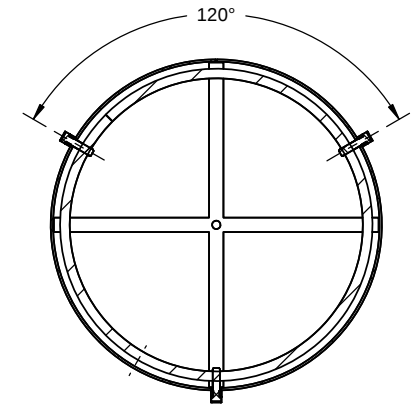
DETAIL B
SCALE 1 : 15



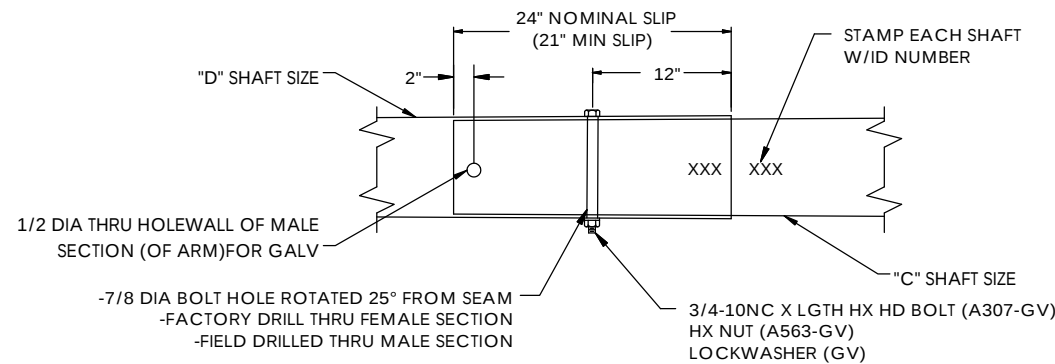
DETAIL C
SCALE 1 : 15



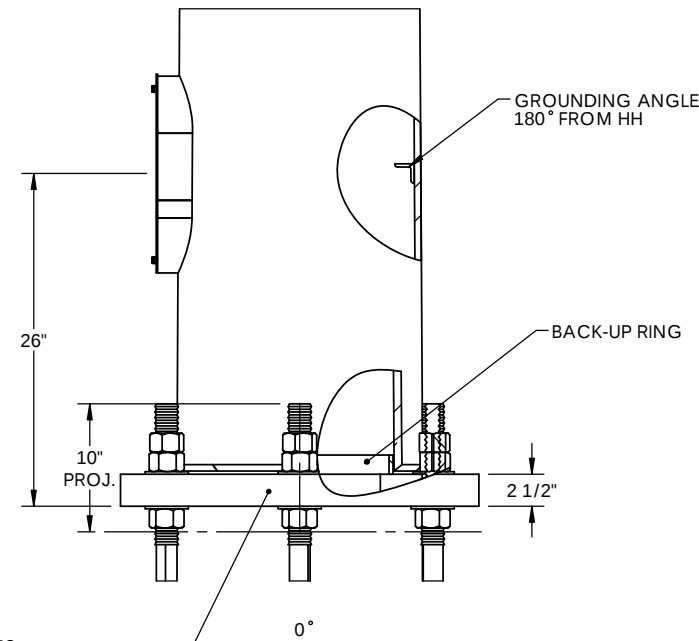
SECTION D-D
SCALE 1 : 10



SECTION E-E
SCALE 1 : 10



SLIP JOINT DETAIL FOR MASTARMS 50' AND GREATER

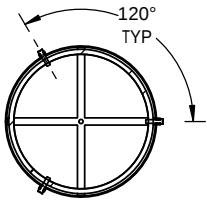


STAMP IN 1/2" HIGH LETTERS
MMC AND 21'
(2 PLACES AND 180° APART ON BASE PLATE)

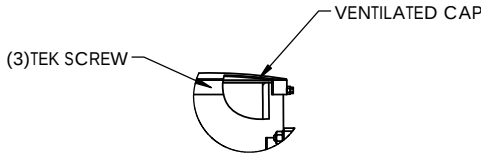
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622 6TH ST. SO. WINSTED, MN 55395			
DRWG NO.:	EST. WEIGHT:	REV E	SHEET 2 OF 2
DESCRIPTION: 2016 WI DOT TYPE 12 TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS			
ORDER NO.:			
PROJECT NAME:			
PROJECT NO.:			
CONTROL/CONTRACT NO.:			
DWN BY: JEFF A.		DATE: 12-23-15	
CHK BY:		DATE:	
My N/A		Mx N/A	
TORSION: N/A		SHEAR: N/A	



SECTION D-D
SCALE 1 : 20

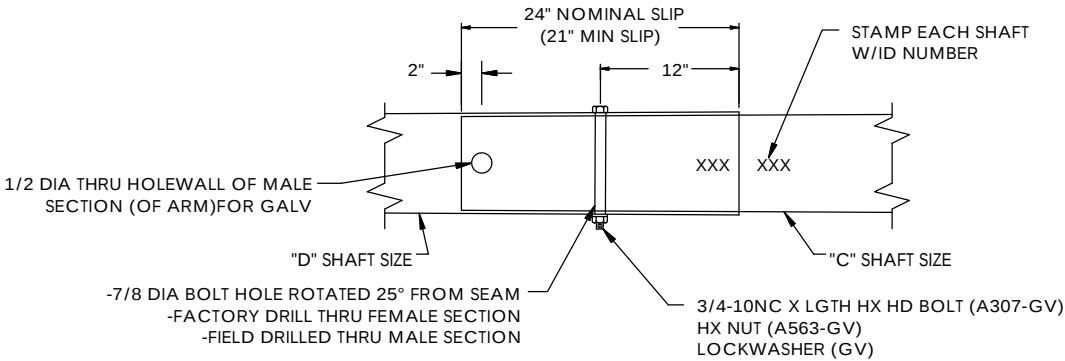
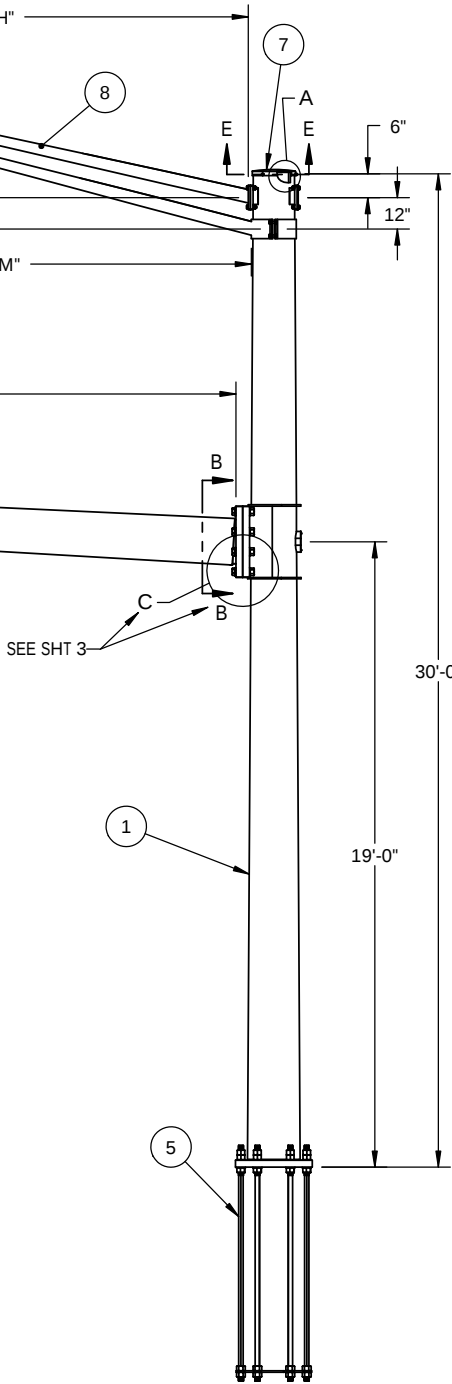
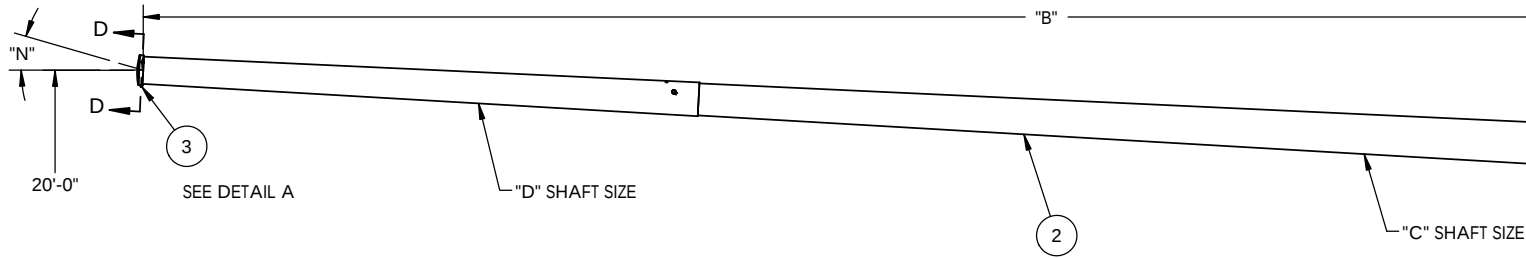
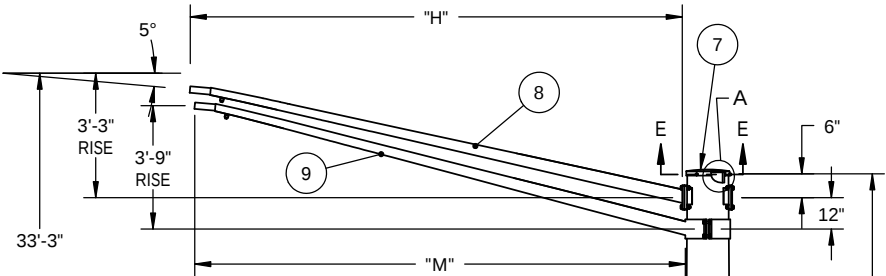
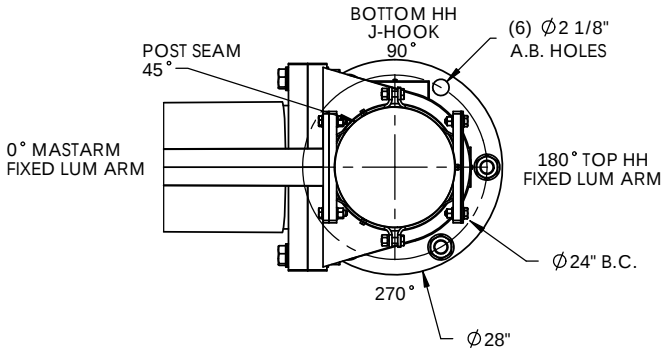


SECTION E-E
SCALE 1 : 20



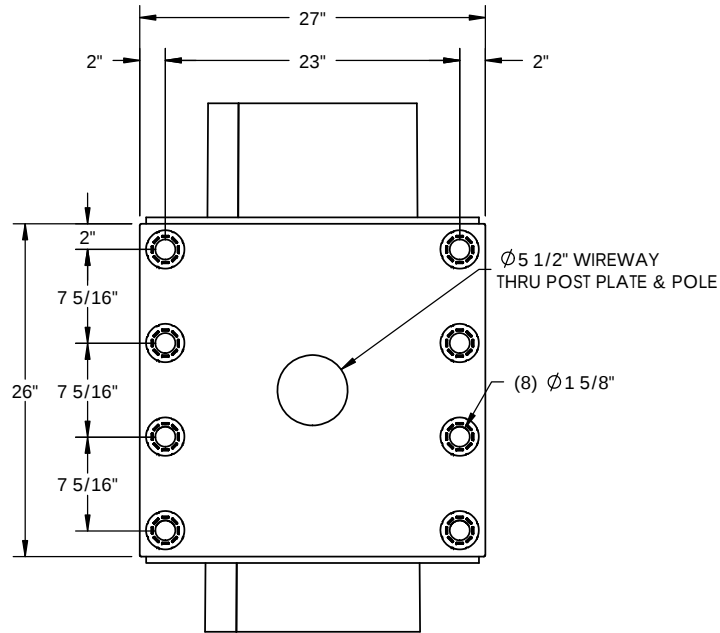
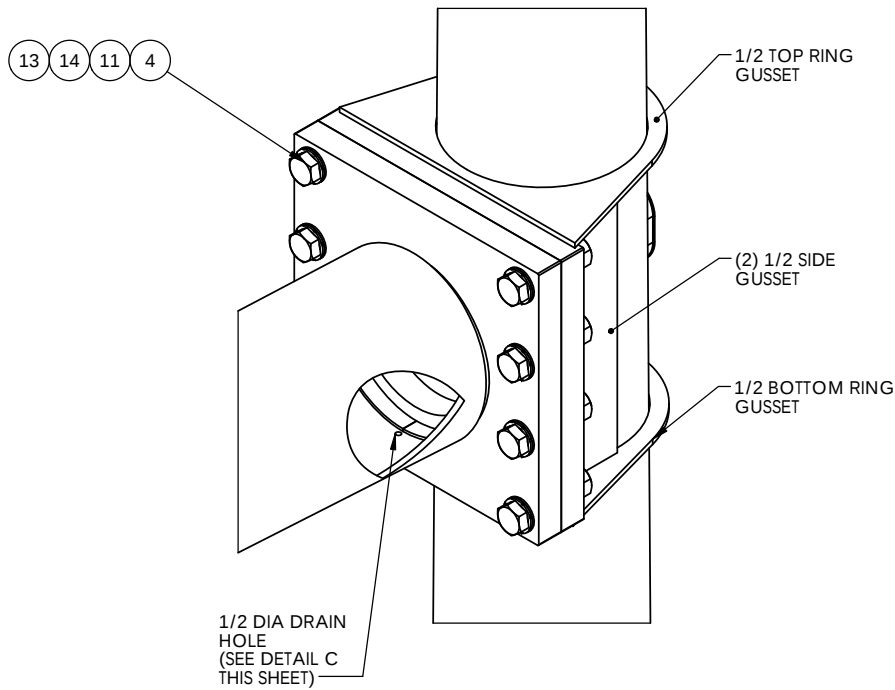
DETAIL A
SCALE 1 : 20

(POLE TOP CAP (INLCUDED IN ITEM #7)
& (MASTARM END CAP PART "F")

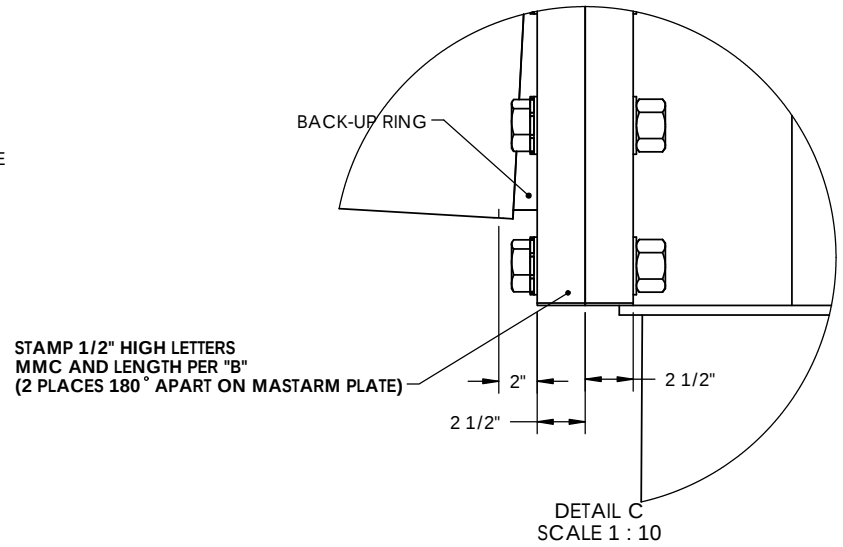


SLIP JOINT DETAIL FOR MASTARMS 50' AND GREATER

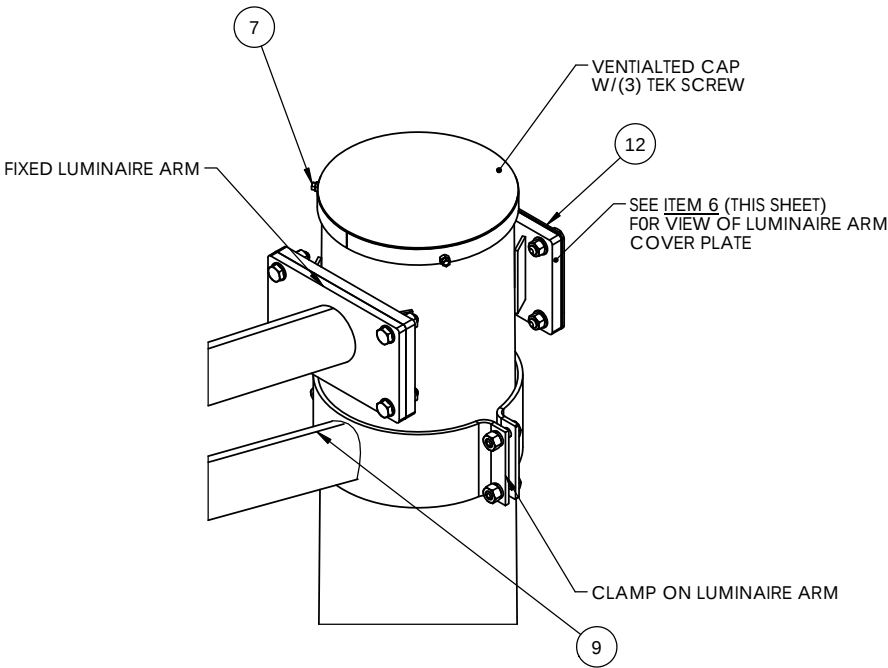
		THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MATTER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG	
622 6TH ST. SO. WINSTED, MN 55395			
DRWG NO.: 2016 TYPE 13 WI DOT	EST. WEIGHT:	REV A	SHEET 2 OF 3
DESCRIPTION: 2016 WI DOT TYPE 13 TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS			
ORDER NO.:			
PROJECT NAME:			
PROJECT NO.:			
CONTROL/CONTRACT NO.:			
DWN BY: JEFF A.		DATE: 12-24-15	
CHK BY:		DATE:	
My N/A		Mx N/A	
TORSION: N/A		SHEAR: N/A	



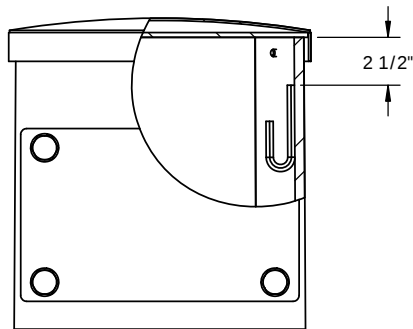
SECTION B-B
SCALE 1 : 15



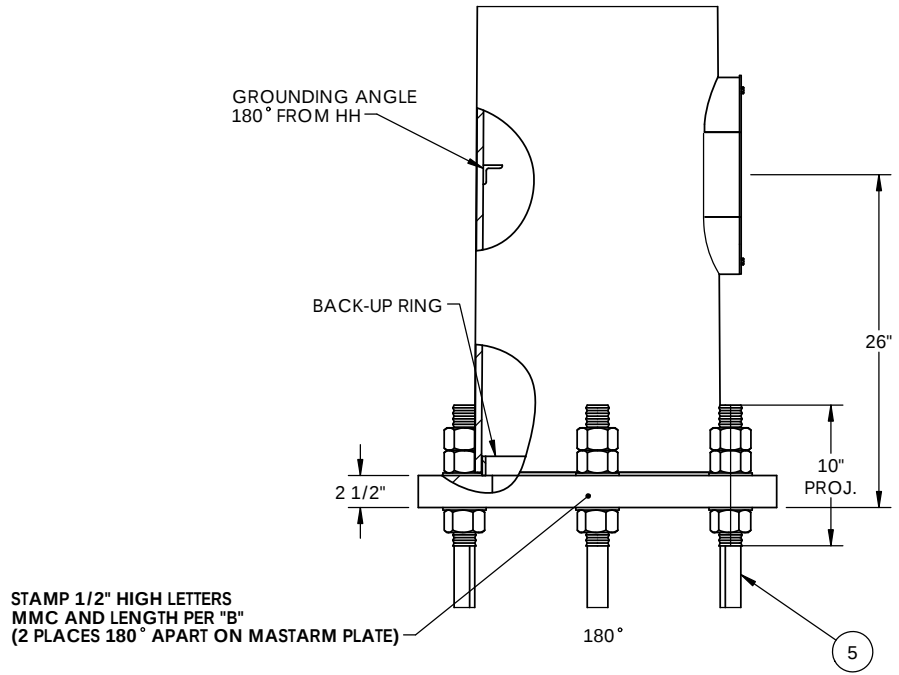
STAMP 1/2" HIGH LETTERS
MMC AND LENGTH PER "B"
(2 PLACES 180° APART ON MASTARM PLATE)



ITEM 6
LUMINAIRE ARM PLATE GASKETED COVER KIT



J-HOOK DETAIL
90° FROM MASTARM



STAMP 1/2" HIGH LETTERS
MMC AND LENGTH PER "B"
(2 PLACES 180° APART ON MASTARM PLATE)

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622 6TH ST. SO. WINSTED, MN 55395			
DRWG NO.: 2016 TYPE 13 WI DOT	EST. WEIGHT:	REV A	SHEET 3 OF 3
DESCRIPTION: 2016 WI DOT TYPE 13 TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS			
ORDER NO.:			
PROJECT NAME:			
PROJECT NO.:			
CONTROL/CONTRACT NO.:			
DWN BY: JEFF A.		DATE: 12-24-15	
CHK BY:		DATE:	
My N/A		Mx N/A	
TORSION: N/A		SHEAR: N/A	