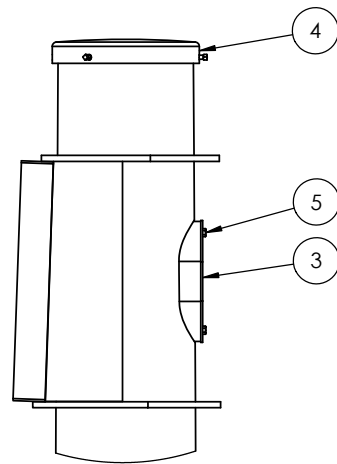
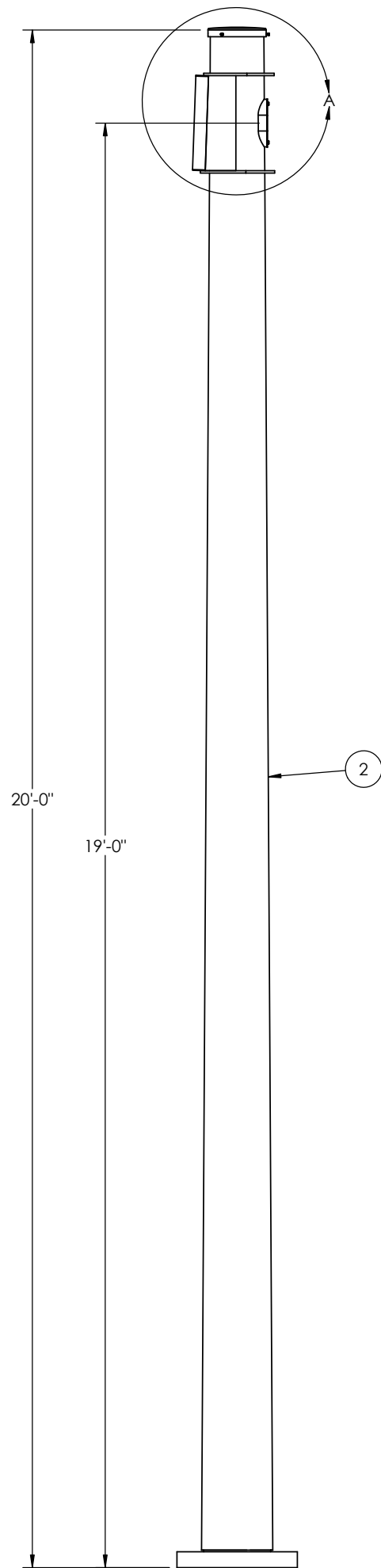
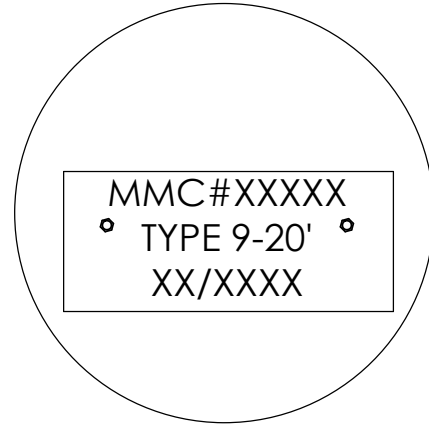
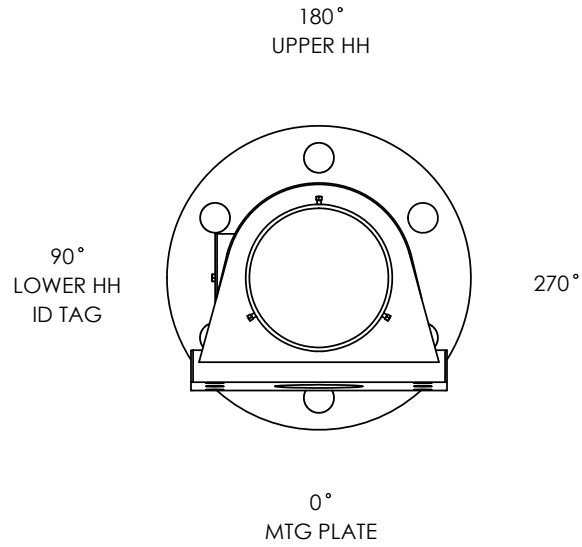




DETAIL A
SCALE 1 : 12



DETAIL B
ID TAG
SCALE 1 : 2



REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADDED ID TAG	9/14/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/29/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	pjf
D	ADDED TOP ORIENTATION	2/15/2023	PR

MATERIAL SPECIFICATIONS

POST: ASTM A572 GR 50	
BASE PLATE: ASTM A36	
MAST ARM:	
MOUNTING PLATE:	
LUMINAIRE ARM:	
HARDWARE FINISH: ASTM A153	
ANCHOR BOLTS: ASTM F1554 GR 55(FBO)	SIZE: 1 1/2

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL
SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND
TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III,
AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
 < 6MM [0.25 IN] MT
 ≥ 6MM [0.25 IN] UT
 A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT:	HOT DIP GALV PER ASTM A123
FINISH COAT:	
COLOR:	SEE CHART
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	844.283
WEIGHT W/GALV.&PAINT:	851.24
WEIGHT W/PAINT:	826.685
SURFACE AREA:	17184.1
GAL. OF PAINT:	0.660927



622 6TH ST. SO.
WINSTED, MN 55395

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WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE: WI	SHEET 1 OF 1
------------------	------	--------------	-----------------

DESCRIPTION:	SHIP POLE SIG RD 1/4X20'0/19'0
--------------	--------------------------------

EST. WEIGHT:	DRAWING NO:
818.5	1006384

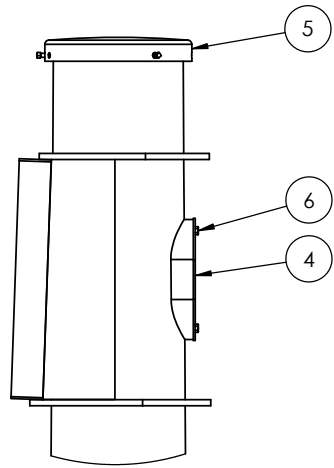
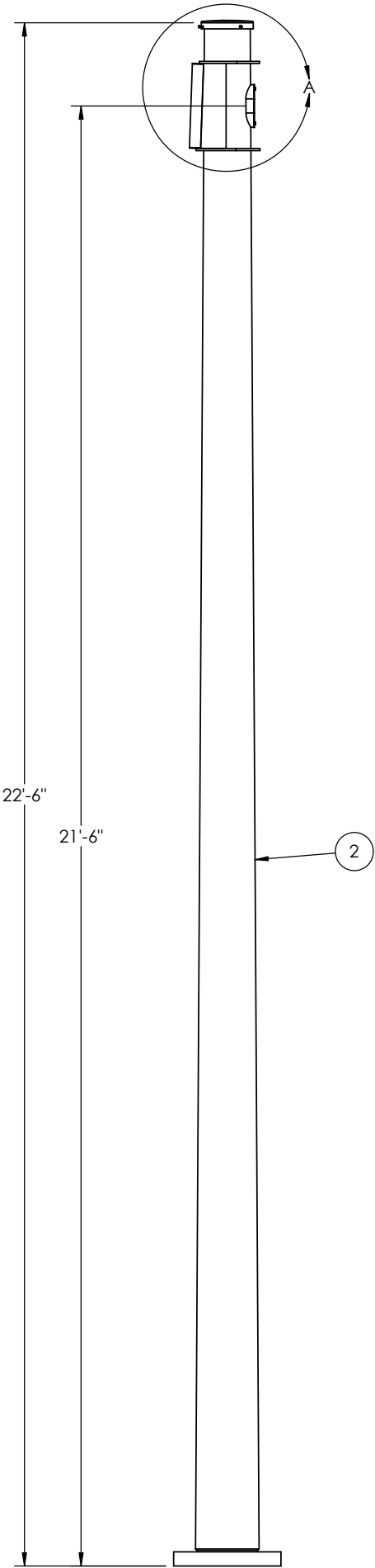
PROJECT NAME:	
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PROJECT LOCATION:

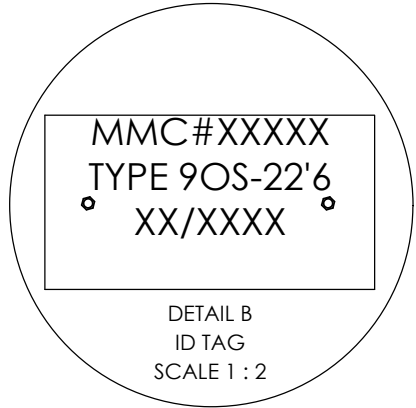
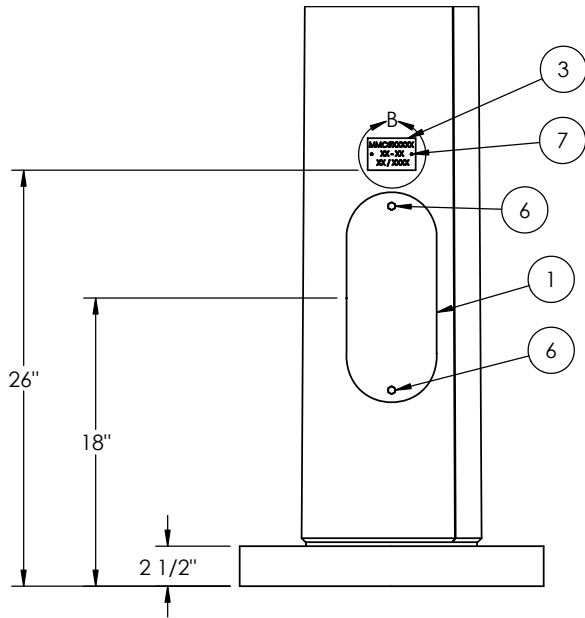
DWN BY: JEFF A.	DATE: 12-22-2015
CHK BY:	DATE:

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

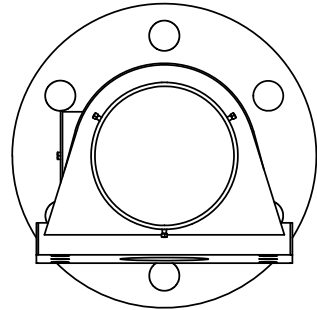
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1001963	COVER HH WI 4 1/2x12	1	X	X
2	1006385	WLDMT POLE SIG RD 1-4 X 20'-19' (1/4X11.25X8.45X20'0)	1		X
3	500b1045	HH CVR	1	X	X
4	7700001	TYPE 9 POLE WIS DOT HARDWARE BAG	1		
5	BOLTA1/4-20X1"A	BOLT HX HD 1/4-20NC X 1" F593C SS	4	X	
6	1055940	I.D. TAG - CW	1	X	
7	SCRWY#2X3/16ZC	U-DRIVE SCR 3/16(DRIVE IN TYPE)F1941M ZC	2	X	



DETAIL A
SCALE 1 : 12



90°
LOWER HH
ID TAG



180°
UPPER HH

0°
MTG PLATE

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1001963	COVER HH WI 4 1/2x12	1	X	X
2	1012133	WLDMT POLE SIG RD 1/4 X 22'6/21'6 (1/4X11.25X8.1X22'6)	1		X
3	1055940	I.D. TAG - WI	1	X	
4	500b1045	HH CVR	1	X	X
5	7700048	PARTS LIST WI/DOT (2017) TYPE 9 OS TRAFFIC SIGNAL 1016136	1		
6	BOLTA1/4-20X1"A	BOLT HX HD 1/4-20NC X 1" F593C SS	4	X	
7	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADDED ID TAG	9/13/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/29/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF
D	ADDED TOP ORIENTATION	2/15/2023	PR

MATERIAL SPECIFICATIONS
POST: ASTM A572 GR 50 BASE PLATE: ASTM A36 MAST ARM: MOUNTING PLATE: LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55(FBO) SIZE: 1 1/2

DESIGN CRITERIA
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION
THE POST AND MAST ARM TO BE A 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.

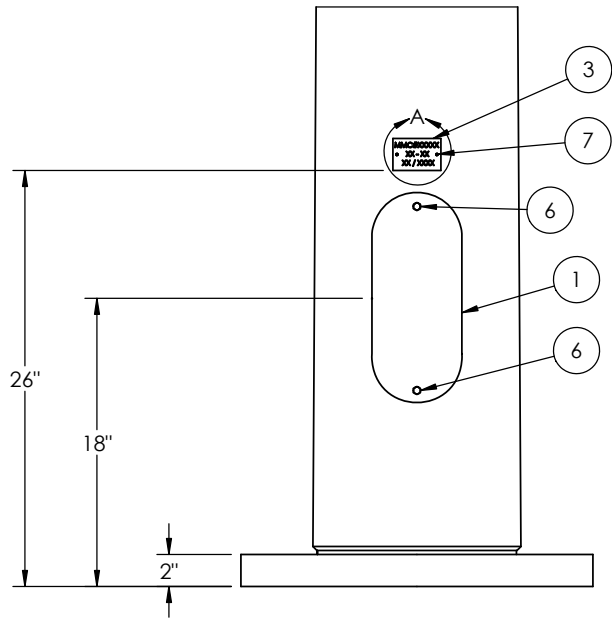
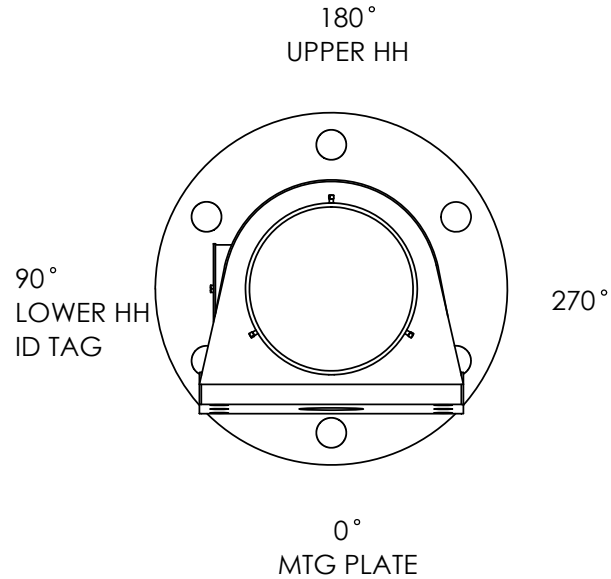
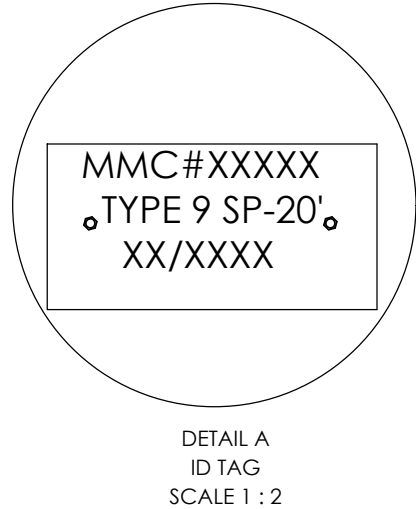
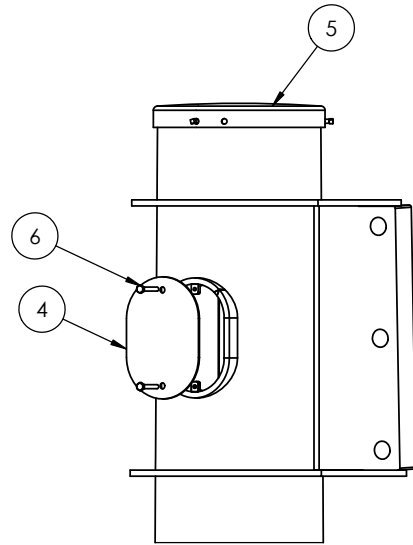
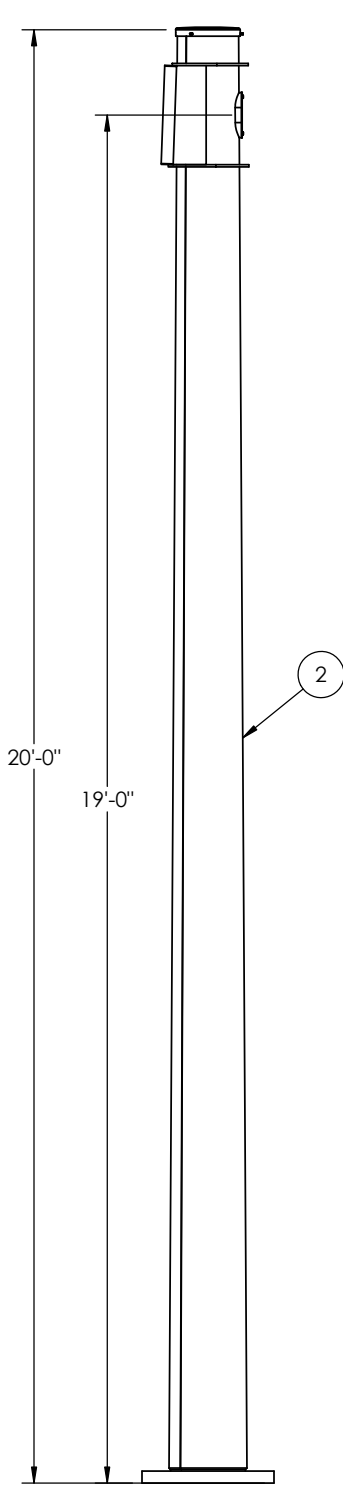
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 903.078 WEIGHT W/GALV.&PAINT: 910.52 WEIGHT W/PAINT: 884.255 SURFACE AREA: 18698.0 GAL. OF PAINT: 0.719154

 MILLERBERND	622 6TH ST. SO. WINSTED, MN 55395		
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SALES ORDER NO.:	QTY:	STATE: WI	SHEET 1 OF 1

DESCRIPTION: SHIP POLE SIG RD 1/4X22'6/21'6	
EST. WEIGHT: 875.5	DRAWING NO: 1016136

PROJECT NAME:	
PROJECT LOCATION:	
DWN BY: JEFF A.	DATE: 9/12/2016
CHK BY:	DATE:



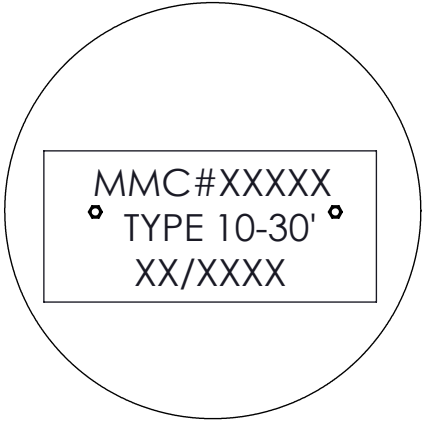
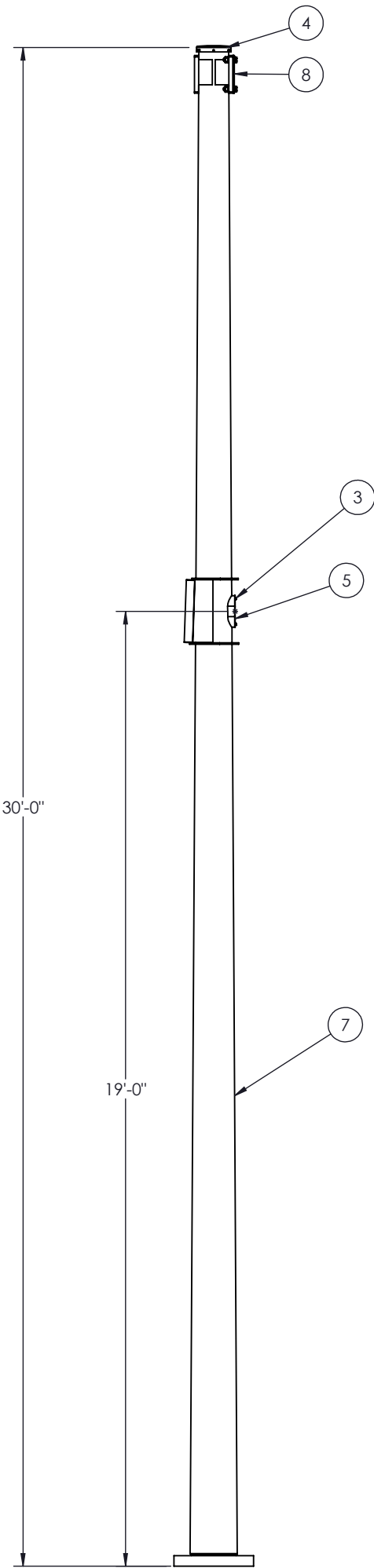
FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

Ⓐ

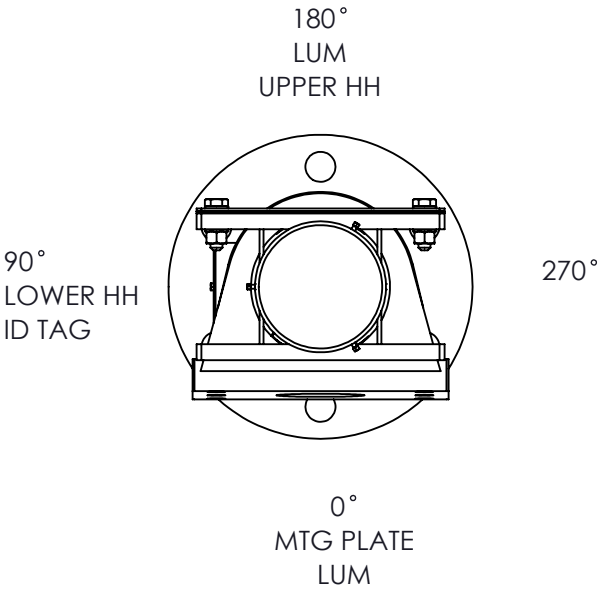
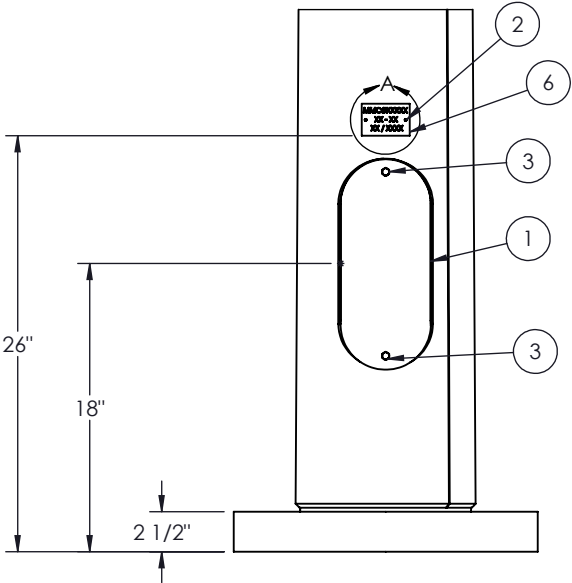
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1001963	COVER HH WI 4 1/2x12	1	X	X
2	1035261	WLDMT POLE SIG RD 1/4X20'0/19'0 (1/4X13.0X10.2X20'0)	1		X
3	1055940	I.D. TAG - WI	1	X	
4	500b1045	HH CVR	1	X	X
5	7700062	TYPE 9 SPECIAL POLE WIS DOT HARDWARE BAG	1		
6	BOLTA1/4-20X1"A	BOLT HX HD 1/4-20NC X 1" F593C SS	4	X	
7	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADDED ID TAG	9/14/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/28/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF
D	ADDED TOP ORIENTATION	2/15/2023	PR

MATERIAL SPECIFICATIONS			
POST: ASTM A572 GR 55 BASE PLATE: ASTM A709 GR 36 MAST ARM: MOUNTING PLATE: LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55(FBO) SIZE: 1 1/2			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 1015.31 WEIGHT W/GALV.&PAINT: 1023.67 WEIGHT W/PAINT: 994.143 SURFACE AREA: 20315.4 GAL. OF PAINT: 0.781362			
		622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1
DESCRIPTION: SHIP POLE SIG RD 1/4X20'0/19'0			
EST. WEIGHT: 984.3		DRAWING NO: 1035260	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: JEFF A.		DATE: 12-20-2018	
CHK BY:		DATE:	



DETAIL A
IDTAG
SCALE 1 : 2

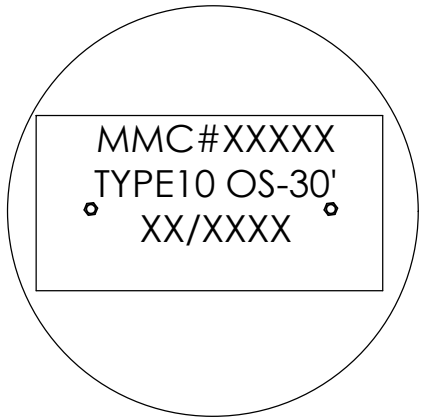
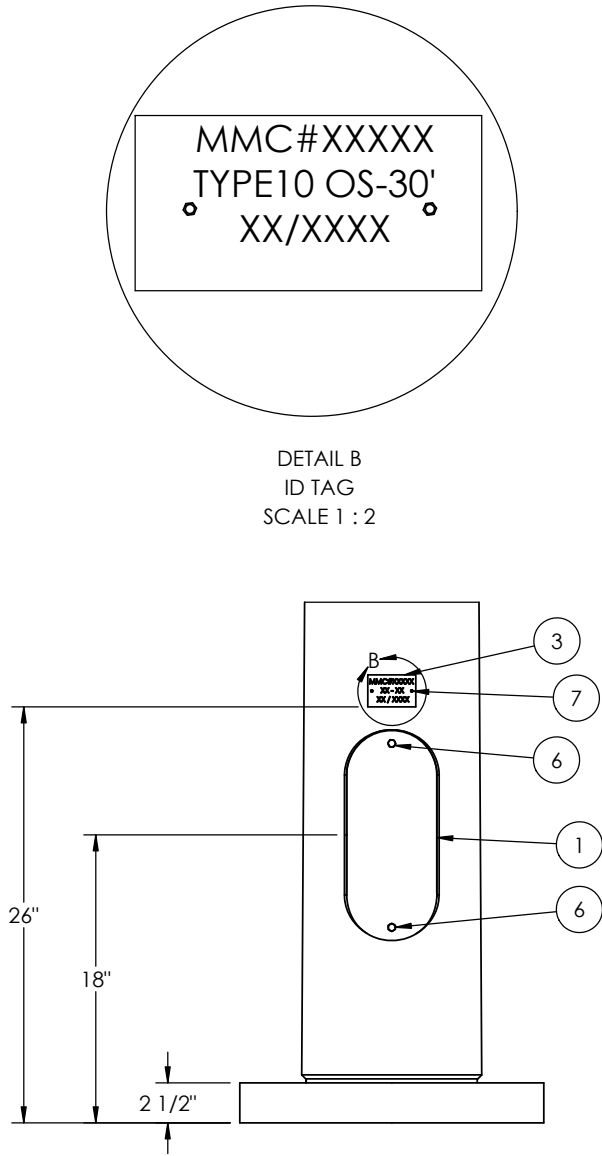
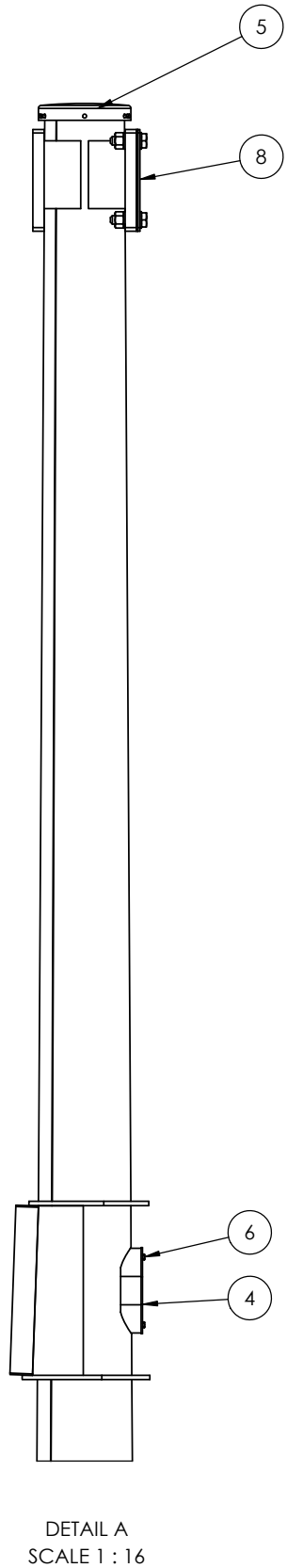
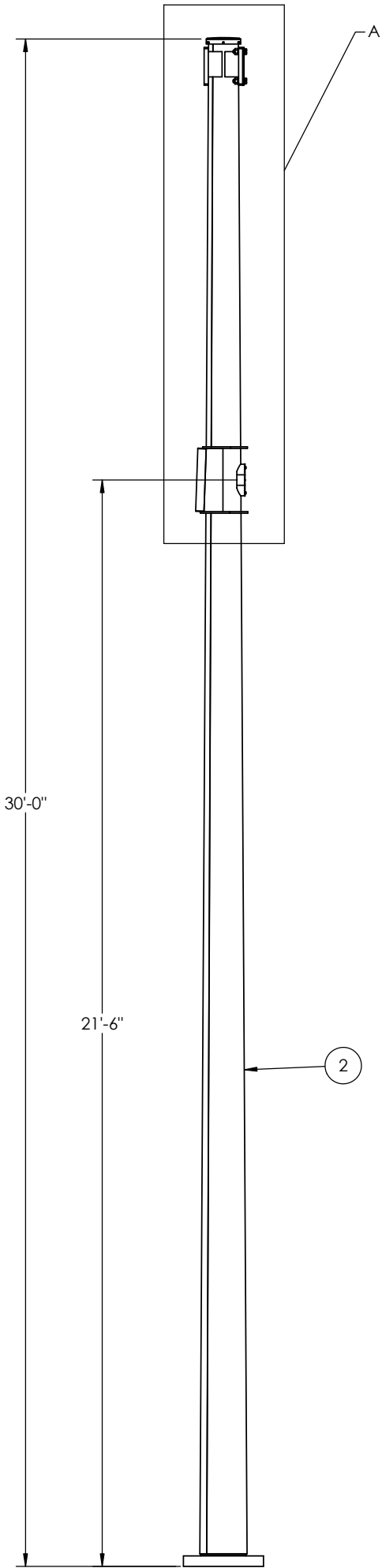


FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

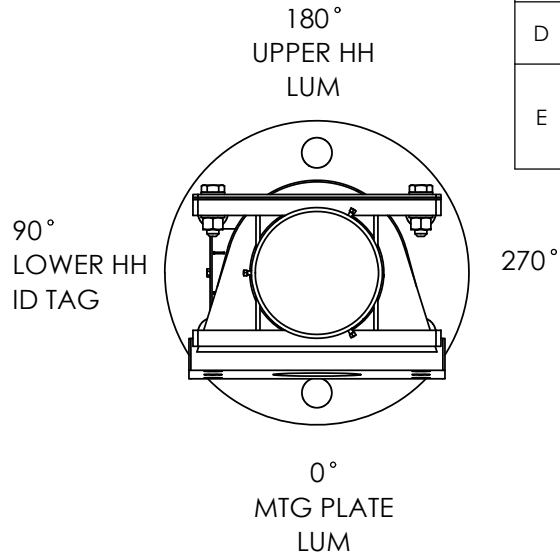
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1001963	COVER HH WI 4 1/2x12	1	X	X
2	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	
3	BOLTA1/4-20X1"A	BOLT HX HD 1/4-20NC X 1" F593C SS	4	X	
4	7700007	PARTS LIST WI/DOT (2016) TYPE 10 TRAFFIC SIGNAL 1006396	1		
5	500b1045	HH CVR	1	X	X
6	1055940	I.D. TAG - WI	1	X	
7	1015925	WLDMT POLE SIG RD 1/4 X 30'0/19'0 (1/4X11.25X7.05X30'0)	1		X
8	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1		

REVISIONS				
REV.	ECO	DESCRIPTION	DATE	DRFT
D		CHANGED TO SHIP TEMPLATE	6/28/2022	MS
E		UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	pjf
F		ADDED TOP ORIENTATION	2/15/2023	PR
G	ECO 000012	ADDED LUM ARM KIT 7700104	6/7/2024	RM

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR 50 BASE PLATE: ASTM A36 MAST ARM: MOUNTING PLATE: LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55(FBO) SIZE: 1 1/2	
DESIGN CRITERIA	
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.	
WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	
FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 1150.43 WEIGHT W/GALV.&PAINT: 1159.91 WEIGHT W/PAINT: 1126.45 SURFACE AREA: 24188.7 GAL. OF PAINT: 0.930335	
 622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY: STATE: SHEET
	WI 1 OF 1
DESCRIPTION:	
SHIP POLE SIG RD 1/4X30'0/19'0	
EST. WEIGHT:	DRAWING NO:
1115.3	1016133
PROJECT NAME:	
PROJECT LOCATION:	
DWN BY: JEFF A.	DATE: 01-25-2017
CHK BY:	DATE:



DETAIL B
ID TAG
SCALE 1 : 2

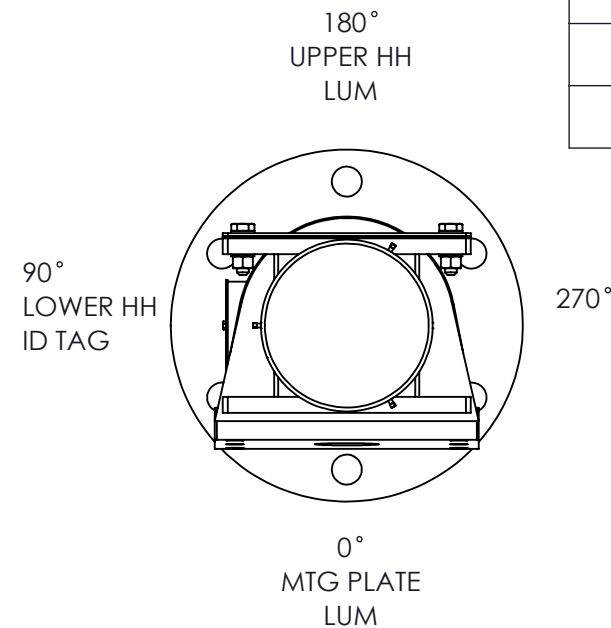
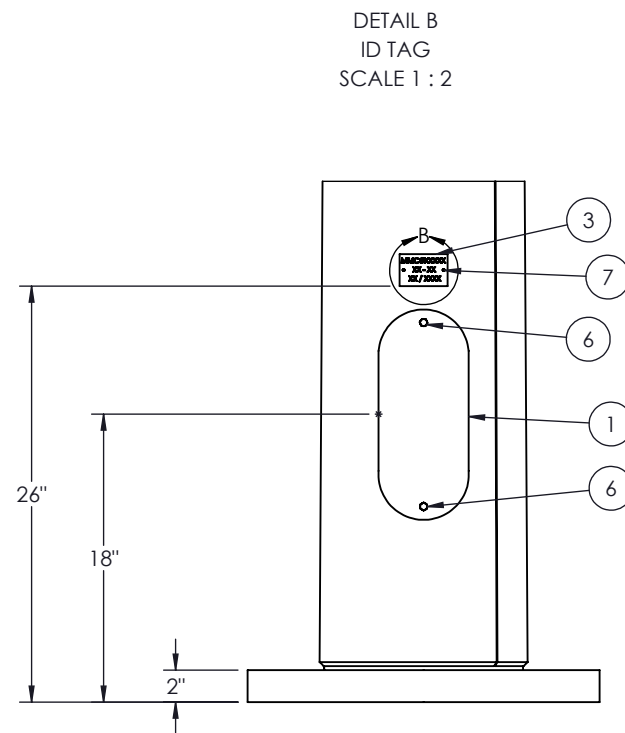
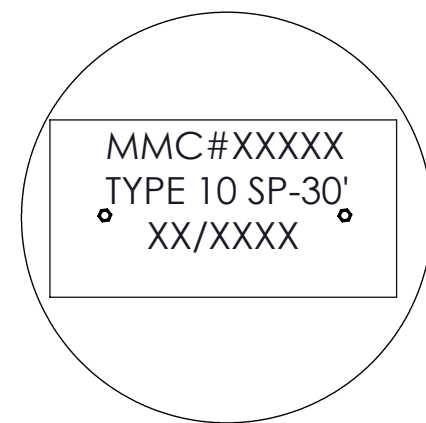
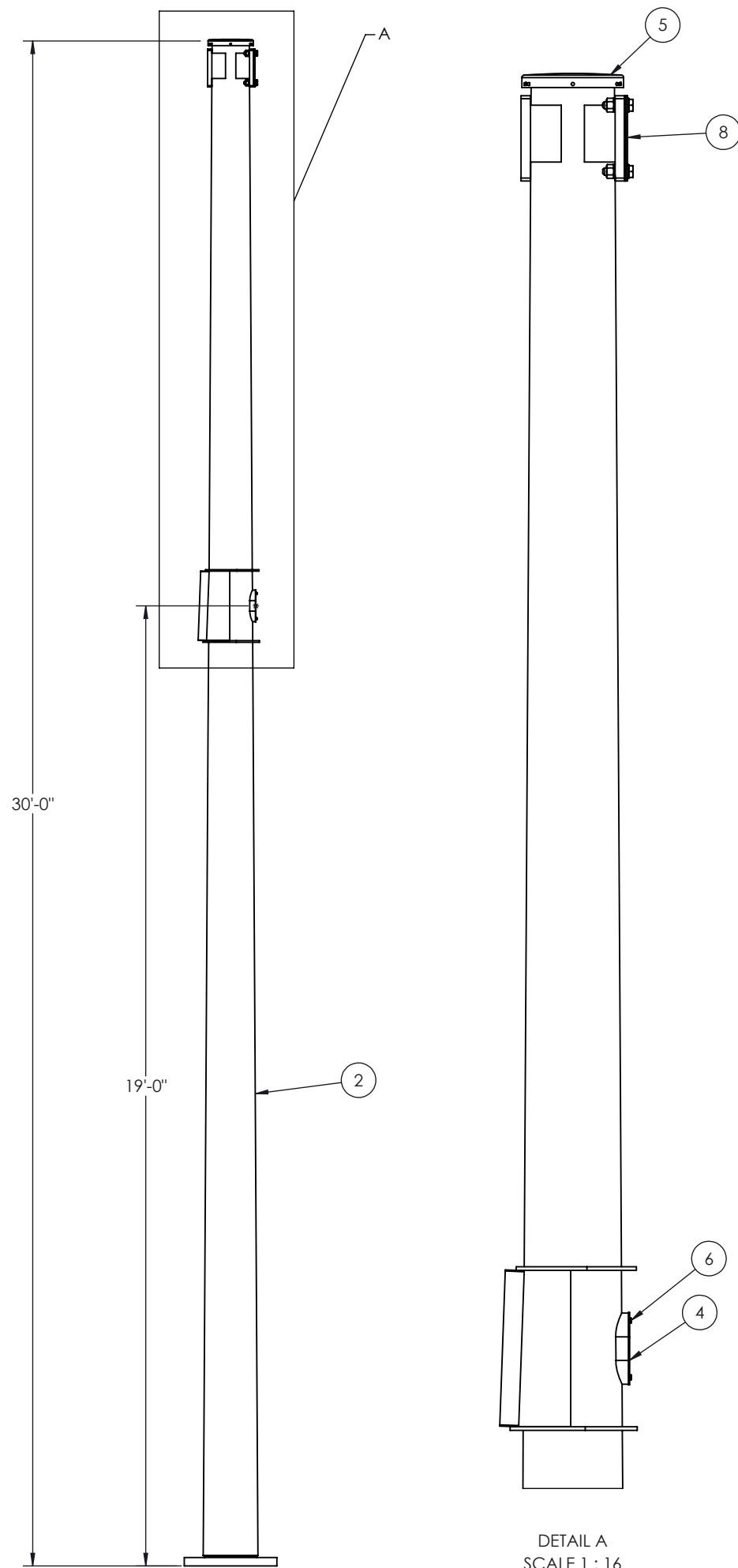


FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1001963	COVER HH WI 4 1/2x12	1	X	X
2	1012317	WLDMT POLE SIG RD 1/4X30'0/21'6 (1/4X11.25X7.05X30'0)	1		X
3	1055940	I.D. TAG - WI	1	X	
4	500b1045	HH CVR	1	X	X
5	7700007	PARTS LIST WI/DOT (2016) TYPE 10 TRAFFIC SIGNAL 1006396	1		
6	BOLTA1/4-20X2"A	BOLT HX HD 1-4-20NC X 2" F593C SS	4	X	
7	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	
8	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1		

REVISIONS				
REV.	ECO	DESCRIPTION	DATE	DRFT
B		CHANGED TO SHIP TEMPLATE	6/29/2022	MS
C		UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF
D		ADDED TOP ORIENTATION	2/15/2023	PR
E	ECO 000012	ADDED LUM ARM KIT 7700104	6/7/2024	RM

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR 50 BASE PLATE: ASTM A36 MAST ARM: MOUNTING PLATE: LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55(FBO) SIZE: 1 1/2	
DESIGN CRITERIA	
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.	
WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	
FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 1148.88 WEIGHT W/GALV.&PAINT: 1158.35 WEIGHT W/PAINT: 1124.94 SURFACE AREA: 24161.7 GAL. OF PAINT: 0.929296	
 622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY: STATE: WI SHEET 1 OF 1
DESCRIPTION: SHIP POLE SIG RD 1/4X30'0/21'6	
EST. WEIGHT: 1113.8	DRAWING NO: 1016137
PROJECT NAME:	
PROJECT LOCATION:	
DWN BY: JEFF A.	DATE: 09-13-2016
CHK BY:	DATE:

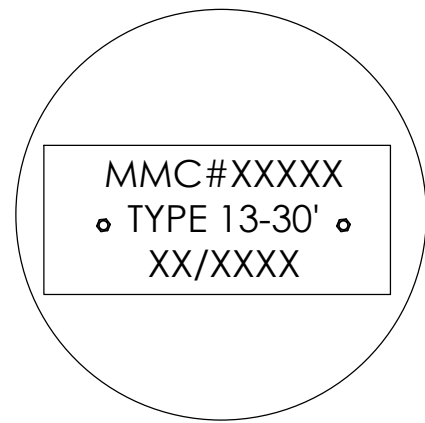
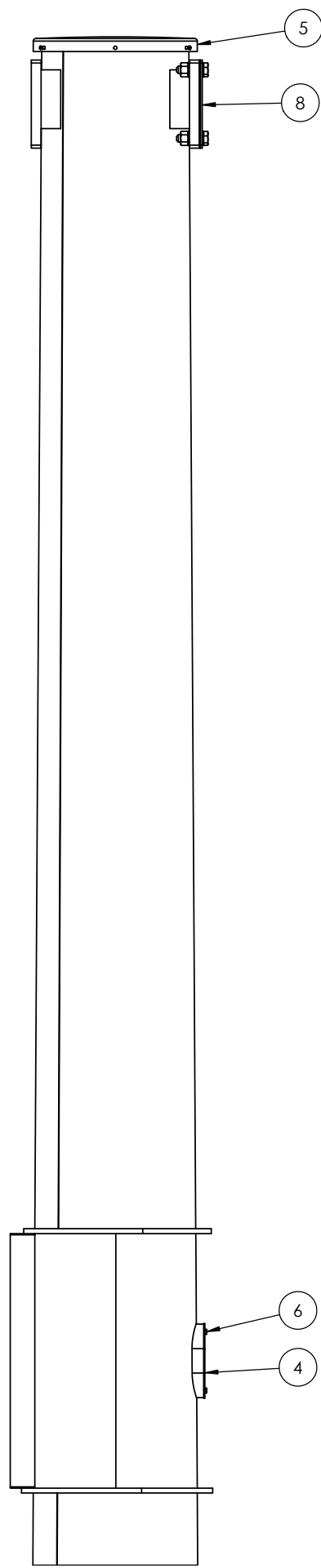


FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

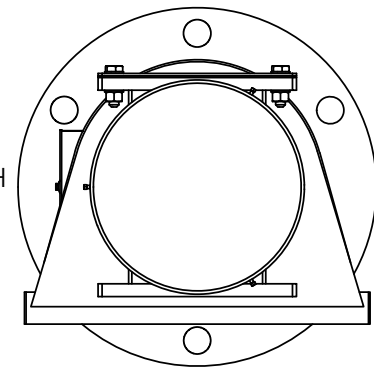
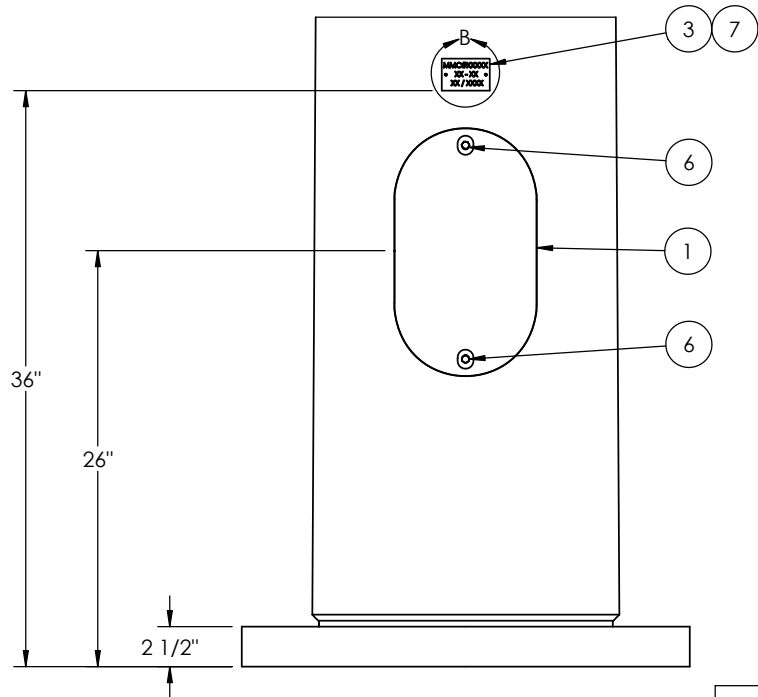
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1001963	COVER HH WI 4 1/2x12	1	X	X
2	1035269	WLDMT POLE SIG RD 1/4X30'0/19'0 (1/4X13.0X8.8X30'0)	1		X
3	1055940	I.D. TAG - WI	1	X	
4	500b1045	HH CVR	1	X	X
5	7700066	PARTS LIST WI/DOT (2017) TYPE 10 SPECIALTRAFFIC SIGNAL 1035268	1		
6	BOLTA1/4-20X1"A	BOLT HX HD 1/4-20NC X 1" F593C SS	4	X	
7	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	
8	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1		

REVISIONS				
REV.	ECO	DESCRIPTION	DATE	DRFT
B		CHANGED TO SHIP TEMPLATE	6/28/2022	MS
C		UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF
D		ADDED TOP ORIENTATION	2/15/2023	PR
E	ECO 000012	ADDED LUM ARM KIT 7700104	6/10/2024	RM

MATERIAL SPECIFICATIONS			
POST: ASTM A572 GR 55 BASE PLATE: ASTM A709 GR 36 MAST ARM: MOUNTING PLATE: LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55(FBO) SIZE: 1 1/2			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 1366.12 WEIGHT W/GALV.&PAINT: 1377.38 WEIGHT W/PAINT: 1337.64 SURFACE AREA: 28685.3 GAL. OF PAINT: 1.10328			
		MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1
DESCRIPTION: SHIP POLE SIG RD 1/4X30'0/19'0			
EST. WEIGHT: 1324.4		DRAWING NO: 1035268	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: JEFF A.		DATE: 12-20-2018	
CHK BY:		DATE:	



DETAIL B
ID TAG
SCALE 1 : 2



180°
UPPER HH
LUM

REVISIONS				
REV.	ECO	DESCRIPTION	DATE	DRFT
C		LUM BOLT LG CHGD FROM 2-1/2 TO 2-3/4 TO MATCH OTHERS	6/30/2022	MS
D		UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF
E		ADDED TOP ORIENTATION	2/15/2023	PR
F	ECO 000012	ADDED LUM ARM KIT 7700104	6/10/2024	RM

MATERIAL SPECIFICATIONS

POST: ASTM A572 GR 50	
BASE PLATE: ASTM A36	
MAST ARM:	
MOUNTING PLATE:	
LUMINAIRE ARM:	
HARDWARE FINISH: ASTM A153	
ANCHOR BOLTS: ASTM F1554 GR 55(FBO)	SIZE: 1 3/4

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL
SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND
TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II,
AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNESS MATING
MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT
PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC
PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT:	HOT DIP GALV PER ASTM A123
FINISH COAT:	
COLOR:	SEE CHART
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	3067.37
WEIGHT W/GALV. & PAINT:	3092.65
WEIGHT W/PAINT:	3003.44
SURFACE AREA:	45198.1
GAL. OF PAINT:	1.73839



622 6TH ST. SO.
WINSTED, MN 55395

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WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

DESCRIPTION:

SHIP POLE SIG RD 3/8X30'0/19'0

EST. WEIGHT:	DRAWING NO:
2973.7	1016135

PROJECT NAME:	
---------------	--

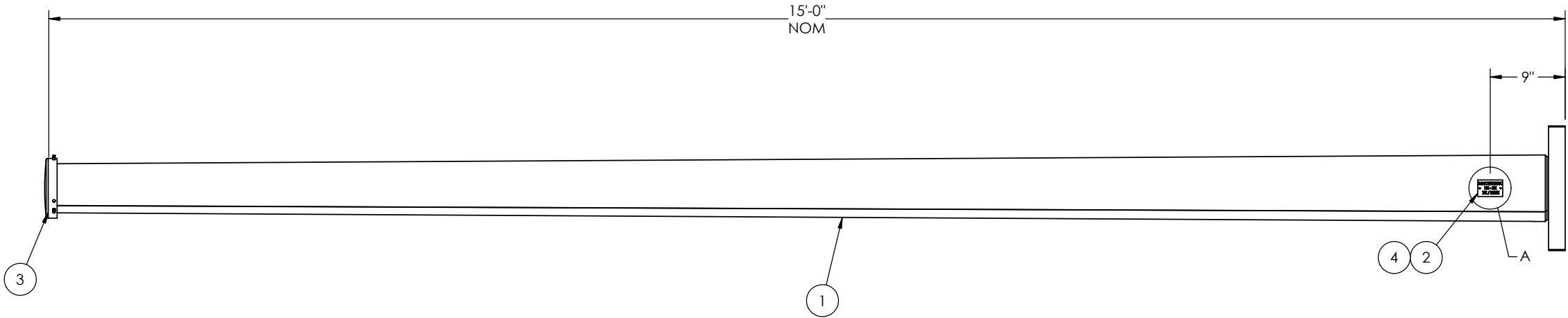
PROJECT LOCATION:

DWN BY: JEFF A.	DATE: 01-27-2017
CHK BY:	DATE:

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1001966	COVER INDENTED HH 7 1/2X14	1	X	X
2	1016109	WLDMT POLE SIG RD 3/8X30'0/19'0 (3/8X19.2X15X30'0)	1		X
3	1055940	I.D. TAG - WI	1	X	
4	500b1045	HH CVR	1	X	X
5	7700015	PARTS LIST WI/DOT (2016) TYPE 13 TRAFFIC SIGNAL 1006857	1		
6	BOLTA1/4-20X1"A	BOLT HX HD 1/4-20NC X 1" F593C SS	4	X	
7	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	
8	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1		

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADD ID TAG	9/14/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF



MMC#XXXXX
◦ 15 MA ◦
XX/XXXX

DETAIL A
ID TAG
SCALE 1 : 2

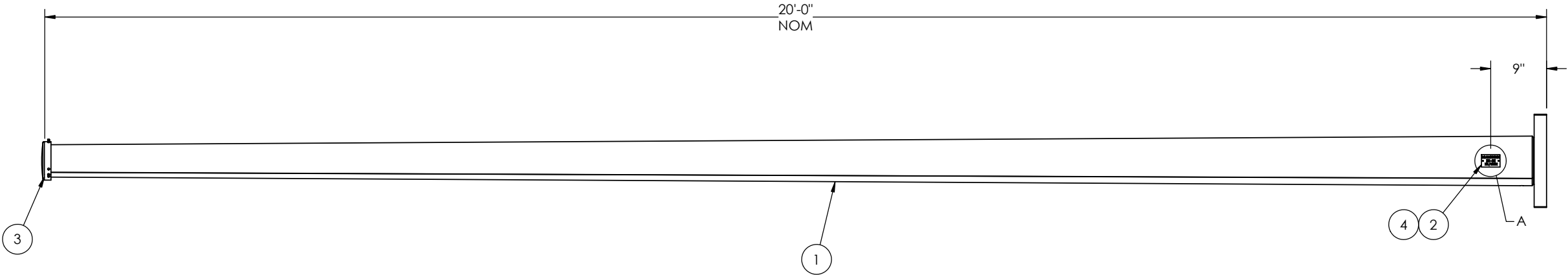
FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

	ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
Ⓐ	1	1007137	WLDMT ARM SIG RD 3/16 X 15'0 (3/16X8.0X5.9X15'0)	1		X
	2	1055940	I.D. TAG - WI	1	X	
Ⓒ	3	7700006	PARTS LIST WI/DOT (2016) TYPE 9/10 TRAFFIC ARM 15' 1006392	1		
	4	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

MATERIAL SPECIFICATIONS			
POST: BASE PLATE: MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A709 GR 36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: SIZE:			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 336.578 WEIGHT W/GALV.&PAINT: 339.352 WEIGHT W/PAINT: 329.563 SURFACE AREA: 8566.6 GAL. OF PAINT: 0.329485			
 MILLERBERND		622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

DESCRIPTION:		SHIP ARM SIG RD 3/16X15'0	
EST. WEIGHT:		DRAWING NO:	
326.3		1006392	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY:		DATE:	
JEFF A.		01-18-2016	
CHK BY:		DATE:	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADD ID TAG	9/14/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF



MMC#XXXXX
◦ 20 MA ◦
XX/XXXX

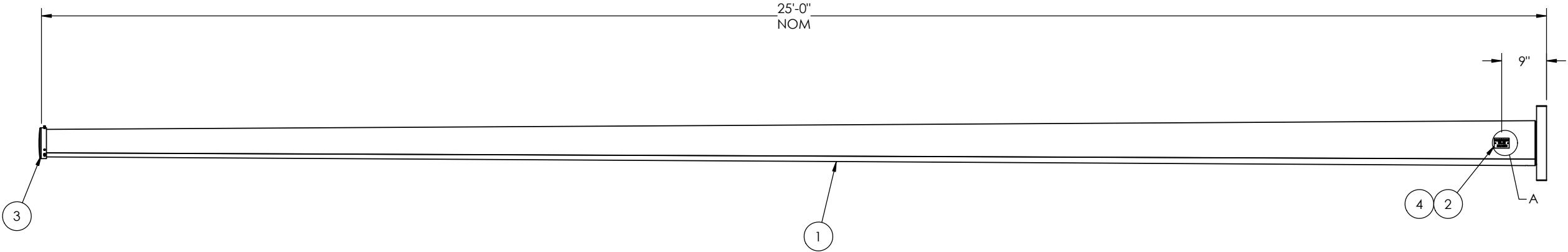
DETAIL A
ID TAG
SCALE 1 : 2

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1007136	WLDMT ARM SIG RD 3/16 X 20'0 (3/16X8.0X5.2X20'0)	1		X
2	1055940	I.D. TAG - WI	1	X	
3	7700005	PARTS LIST WI/DOT (2016) TYPE 9/10 TRAFFIC ARM 20' 1006391/1012310	1		
4	SCRWY#2X3/16ZC	U-DRIVE SCR W 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

MATERIAL SPECIFICATIONS			
POST: BASE PLATE: MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A709 GR 36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: SIZE:			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 391.661 WEIGHT W/GALV.&PAINT: 394.888 WEIGHT W/PAINT: 383.497 SURFACE AREA: 10581.1 GAL. OF PAINT: 0.406965			
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395			
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SALES ORDER NO.:	QTY:	STATE: WI	SHEET 1 OF 1
DESCRIPTION: SHIP ARM SIG RD 3/16X20'0			
EST. WEIGHT: 379.7		DRAWING NO: 1006391	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: JEFF A.		DATE: 01-18-2016	
CHK BY:		DATE:	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADD ID TAG	9/15/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF



MMC#XXXXX
• 25 MA •
XX/XXXX

DETAIL A
ID TAG
SCALE 1 : 2

MATERIAL SPECIFICATIONS

POST:
BASE PLATE:
MAST ARM: ASTM A572 GR 50
MOUNTING PLATE: ASTM A709 GR 36
LUMINAIRE ARM:
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: SIZE:

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT:
COLOR: SEE CHART
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.: 494.295
WEIGHT W/GALV.&PAINT: 498.368
WEIGHT W/PAINT: 483.992
SURFACE AREA: 14285.1
GAL. OF PAINT: 0.549427

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622 6TH ST. SO.
WINSTED, MN 55395

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

DESCRIPTION:
SHIP ARM SIG RD 3/16X25'0

EST. WEIGHT:	DRAWING NO:
479.2	1006390

PROJECT NAME:

PROJECT LOCATION:

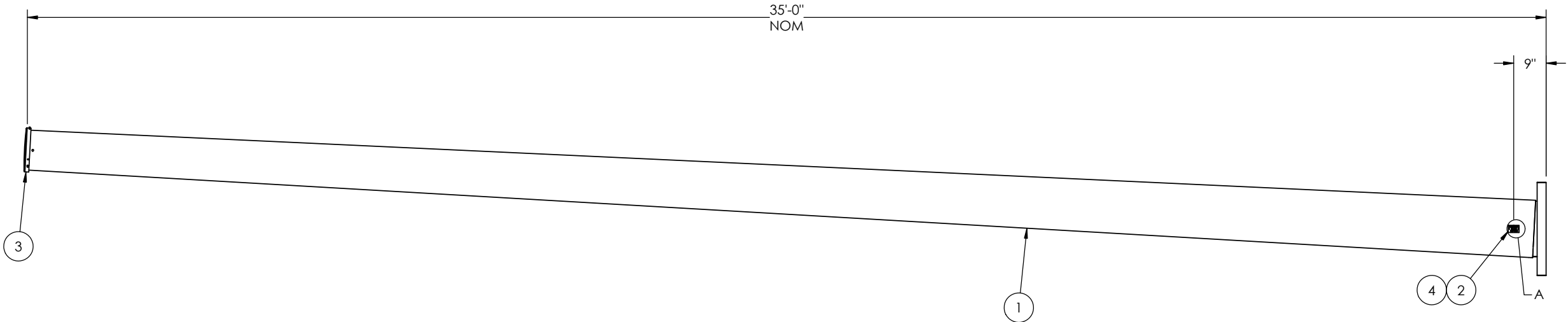
DWN BY:	DATE:
JEFF A.	1/18/2016
CHK BY:	DATE:

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1007135	WLDMT ARM SIG RD 3/16 X 25'0 (3/16X9.0X5.5X25'0)	1		X
2	1055940	I.D. TAG - WI	1	X	
3	7700004	PARTS LIST WI/DOT (2016) TYPE 9/10 TRAFFIC ARM 25' 1006390/1012312	1		
4	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

Ⓐ

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADD ID TAG	9/15/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF



MMC#XXXXXX
• 35 - MA •
XX/XXXX

DETAIL A
ID TAG
SCALE 1 : 2

MATERIAL SPECIFICATIONS
POST: BASE PLATE: MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: SIZE:
DESIGN CRITERIA
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.
WELD SPECIFICATION
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).
FINISH SPECIFICATION
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 1698.47 WEIGHT W/GALV.&PAINT: 1712.46 WEIGHT W/PAINT: 1663.07 SURFACE AREA: 37399.3 GAL. OF PAINT: 1.43843
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

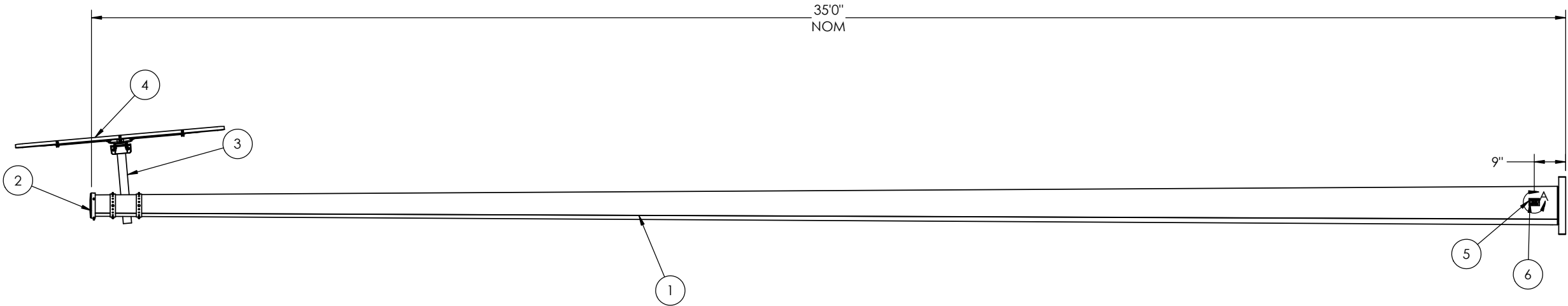
FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

DESCRIPTION:		SHIP ARM SIG RD 1/4X35'0	
EST. WEIGHT:		DRAWING NO:	
1646.6		1006856	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY:		DATE:	
JEFF A.		01-19-2016	
CHK BY:		DATE:	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1007149	WLDMT ARM SIG RD 1/4 X 35'0	1		X
2	1055940	I.D. TAG - WI	1	X	
3	7700014	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC ARM 35' 1006856	1		
4	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

Ⓐ

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADDED ITEMS 3 & 4 TO BOM	2/3/2020	JA
B	ADDED ID TAG	9/14/2021	PJF
C	CHANGED TO SHIP TEMPLATE	6/29/2022	MS
D	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF



MMC#XXXXX
• 35 SP-MA •
XX/XXXX

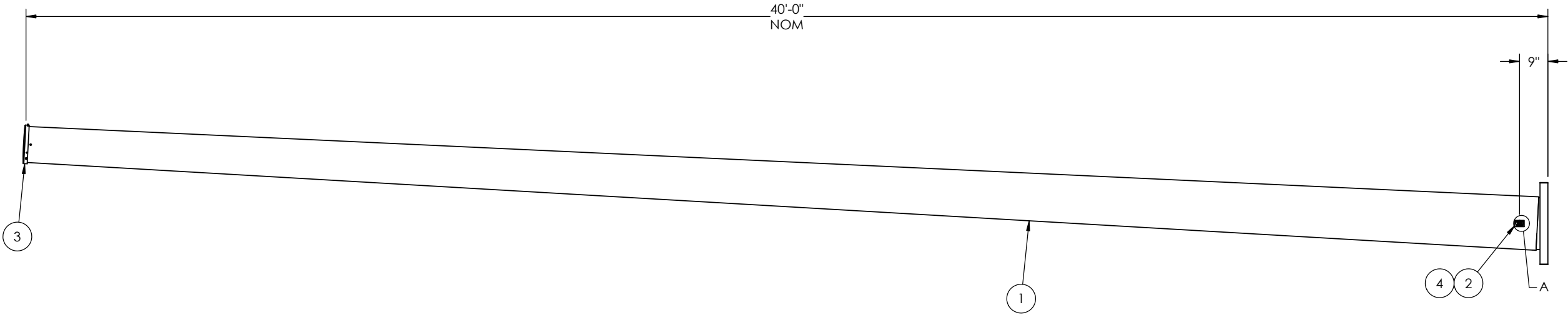
DETAIL A
ID TAG
SCALE 1 : 2

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1035263	WLDMT ARM SIG RD 3/16X35'0 (3/16X11.0X6.1X35'0)	1		X
2	7700063	PARTS LIST WI/DOT (2017) TYPE 9/10 SPECIAL TRAFFIC ARM 35' 1035262	1		
Ⓐ	3	FREY-63DM1CPF48ALDF40 FREY VIBRATION DAMPER	1		
	4	500A1921 ALUMINUM TOP PLATE FOR DAMPENER ASSY	1		
Ⓑ	5	1055940 I.D. TAG - WI	1	X	
	6	SCRWY#2X3/16ZC U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

MATERIAL SPECIFICATIONS			
POST: BASE PLATE: MAST ARM: ASTM A572 GR 55 MOUNTING PLATE: ASTM A709 GR 36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: SIZE:			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 774.553 WEIGHT W/GALV.&PAINT: 780.936 WEIGHT W/PAINT: 758.409 SURFACE AREA: 28344.8 GAL. OF PAINT: 1.09018			
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395 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			
SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1
DESCRIPTION:			
SHIP ARM SIG RD 3/16X35'0			
EST. WEIGHT:		DRAWING NO:	
750.9		1035262	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: JEFF A.		DATE: 12-20-2018	
CHK BY:		DATE:	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADD ID TAG	9/15/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF



MMC#XXXXX
◦ 40 - MA ◦
XX/XXXX

DETAIL A
ID TAG
SCALE 1 : 2

MATERIAL SPECIFICATIONS
POST: BASE PLATE: MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: SIZE:
DESIGN CRITERIA
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.
WELD SPECIFICATION
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).
FINISH SPECIFICATION
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 1953.76 WEIGHT W/GALV.&PAINT: 1969.86 WEIGHT W/PAINT: 1913.04 SURFACE AREA: 44412.2 GAL. OF PAINT: 1.70816
 622 6TH ST. SO. WINSTED, MN 55395

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

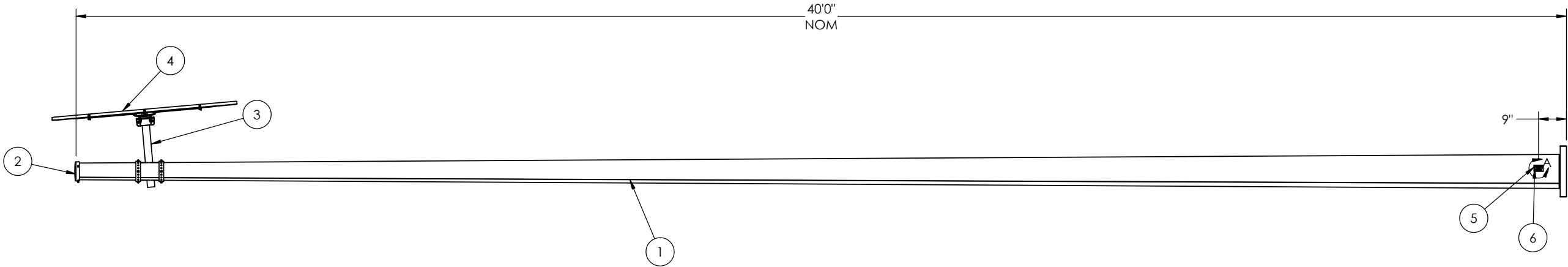
FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

DESCRIPTION:		SHIP ARM SIG RD 1/4X40'0	
EST. WEIGHT:		DRAWING NO:	
1894.1		1006855	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY:		DATE:	
JEFF A.		01-19-2016	
CHK BY:		DATE:	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1007148	WLDMT ARM SIG RD 1/4 X 40'0	1		X
2	1055940	I.D. TAG - WI	1	X	
3	7700013	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC ARM 40' 1006855	1		
4	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

Ⓐ

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADDED ITEMS 3 & 4 TO BOM	2/3/2020	JA
B	ADDED ID TAG	9/14/2021	PJF
C	CHANGED TO SHIP TEMPLATE	6/29/2022	MS
D	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF



MMC#XXXXX
◦ 40 SP - MA ◦
XX/XXXX

DETAIL A
ID TAG
SCALE 1 : 2

MATERIAL SPECIFICATIONS
<i>POST:</i> <i>BASE PLATE:</i> <i>MAST ARM:</i> ASTM A572 GR 55 <i>MOUNTING PLATE:</i> ASTM A709 GR 36 <i>LUMINAIRE ARM:</i> <i>HARDWARE FINISH:</i> ASTM A153 <i>ANCHOR BOLTS:</i> SIZE:
DESIGN CRITERIA
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.
WELD SPECIFICATION
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).
FINISH SPECIFICATION
<i>GALV. OR PRIME COAT:</i> HOT DIP GALV PER ASTM A123 <i>FINISH COAT:</i> <i>COLOR:</i> SEE CHART <i>FEDERAL OR RAL SPEC.:</i> <i>WEIGHT W/GALV.:</i> 831.595 <i>WEIGHT W/GALV.&PAINT:</i> 838.448 <i>WEIGHT W/PAINT:</i> 814.262 <i>SURFACE AREA:</i> 30428.1 <i>GAL. OF PAINT:</i> 1.17031



MILLERBERND

622 6TH ST. SO.
WINSTED, MN 55395

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

DESCRIPTION:		SHIP ARM SIG RD 3/16X40'0	
EST. WEIGHT:		DRAWING NO:	
806.2		1035264	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY:		DATE:	
JEFF A.		12-20-2018	
CHK BY:		DATE:	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1035265	WLDMT ARM SIG RD 3/16X40'0 (3/16X11.0X5.4X40'0)	1		X
2	7700064	PARTS LIST WI/DOT (2017) TYPE 9/10 SPECIAL TRAFFIC ARM 40' 1035264	1		
A	3	FREY-63DM1CPF48ALDF40	1		
	4	500A1921	1		
B	5	1055940	1	X	
	6	SCRWY#2X3/16ZC	2	X	
		U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC			

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADD ID TAG	9/15/2021	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS
C	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF

MATERIAL SPECIFICATIONS

POST:
BASE PLATE:
MAST ARM: ASTM A572 GR 50
MOUNTING PLATE: ASTM A36
LUMINAIRE ARM:
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: SIZE:

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT:
COLOR: SEE CHART
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.: 2515.11
WEIGHT W/GALV.&PAINT: 2535.83
WEIGHT W/PAINT: 2462.68
SURFACE AREA: 48369.5
GAL. OF PAINT: 1.86037

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

DESCRIPTION:
SHIP ARM SIG RD 5/16X45'0

EST. WEIGHT:	DRAWING NO:
2438.3	1006854

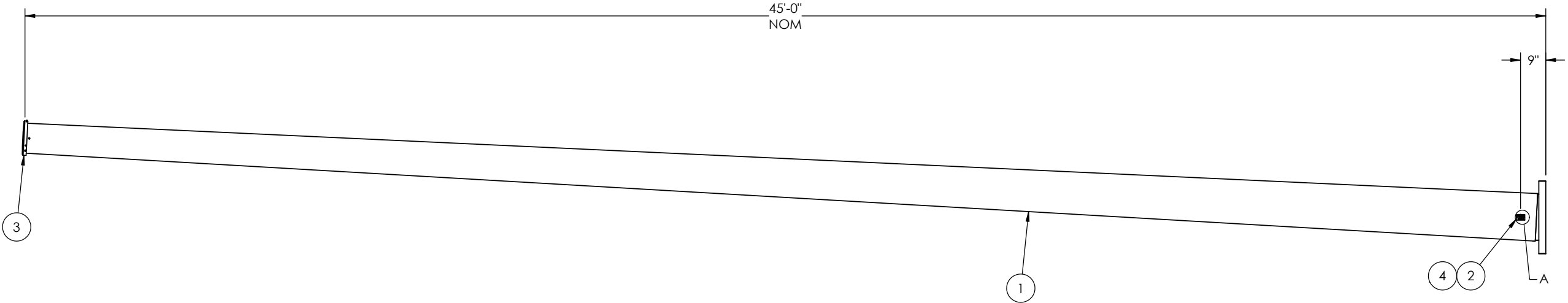
PROJECT NAME:

PROJECT LOCATION:

DWN BY:	DATE:
JEFF A.	01-19-2016
CHK BY:	DATE:

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1007147	WLDMT ARM SIG RD 5/16 X 45'	1		X
2	1055940	I.D. TAG - WI	1	X	
3	7700012	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC ARM 45' 1006854	1		
4	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	



MMC#XXXXX
◦ 45-MA ◦
XX/XXXX

DETAIL A
ID TAG
SCALE 1 : 2

Ⓐ

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADDED ITEMS 3 & 4 TO BOM	2/3/2020	JA
B	ADDED ID TAG	9/14/2021	PJF
C	CHANGED TO SHIP TEMPLATE	6/30/2022	MS
D	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF

MATERIAL SPECIFICATIONS

POST:
BASE PLATE:
MAST ARM: ASTM A572 GR 55
MOUNTING PLATE: ASTM A709 GR 36
LUMINAIRE ARM:
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: SIZE:

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT:
COLOR: SEE CHART
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.: 882.242
WEIGHT W/GALV.&PAINT: 889.512
WEIGHT W/PAINT: 863.853
SURFACE AREA: 32283.5
GAL. OF PAINT: 1.24167

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WINSTED, MN 55395

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

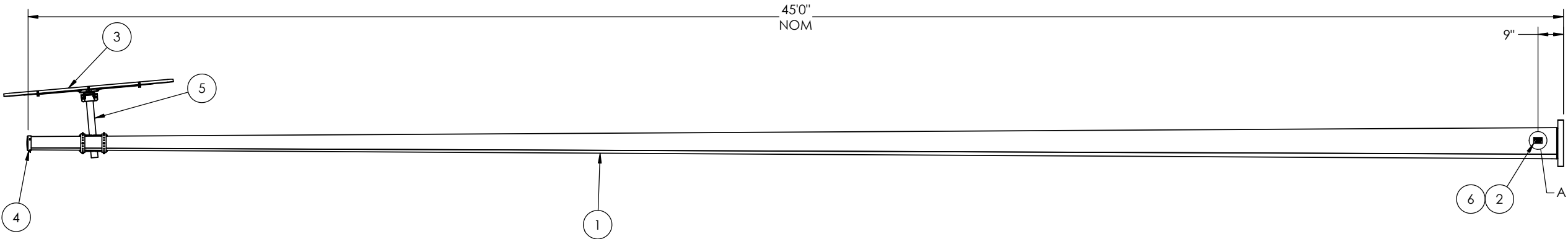
DESCRIPTION:
SHIP ARM SIG RD 3/16X45'0

EST. WEIGHT:	DRAWING NO:
855.3	1035266

PROJECT NAME:

PROJECT LOCATION:

DWN BY: JEFF A.	DATE: 12-20-2018
CHK BY:	DATE:

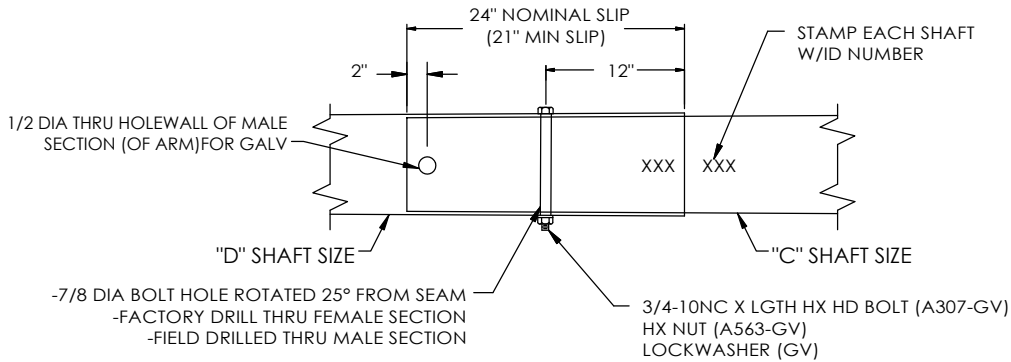


MMC#XXXXX
◦ 45 SP - MA ◦
XX/XXXX

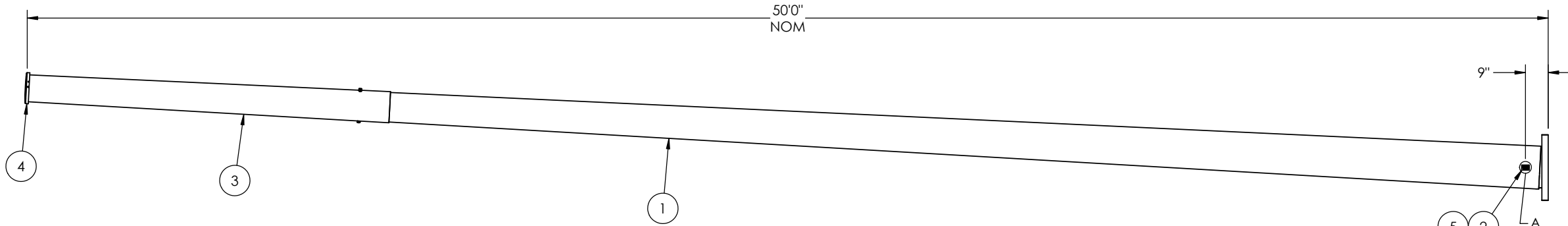
DETAIL A
ID TAG
SCALE 1 : 2

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
B	1	WLDMT ARM SIG RD 3/16X45'0 (3/16X11.0X4.7X45'0)	1		X
	2	I.D. TAG - WI	1	X	
	3	ALUMINUM TOP PLATE FOR DAMPENER ASSY	1		
	4	PARTS LIST WI/DOT (2017) TYPE 9/10 SPECIAL TRAFFIC ARM 45' 1035266	1		
A	5	FREY-63DM1CPF48ALDF40 FREY VIBRATION DAMPER	1		
	6	SCRWY#2X3/16ZC U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	



SLIP JOINT DETAIL FOR MASTARMS 50' AND GREATER



MMC#XXXXX
• 50 - MA •
XX/XXXX

DETAIL A
ID TAG
SCALE 1 : 2

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1007146	WLDMT ARM SIG RD S1 3/8 X 40'	1		X
2	1055940	I.D. TAG - WI	1	X	
3	1062374	WLDMT ARM SIG RD S2 3/16X12'0 (3/16X12.31X10.63X12'0)	1		X
4	7700011	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC ARM 50' 1006853	1		
5	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X	

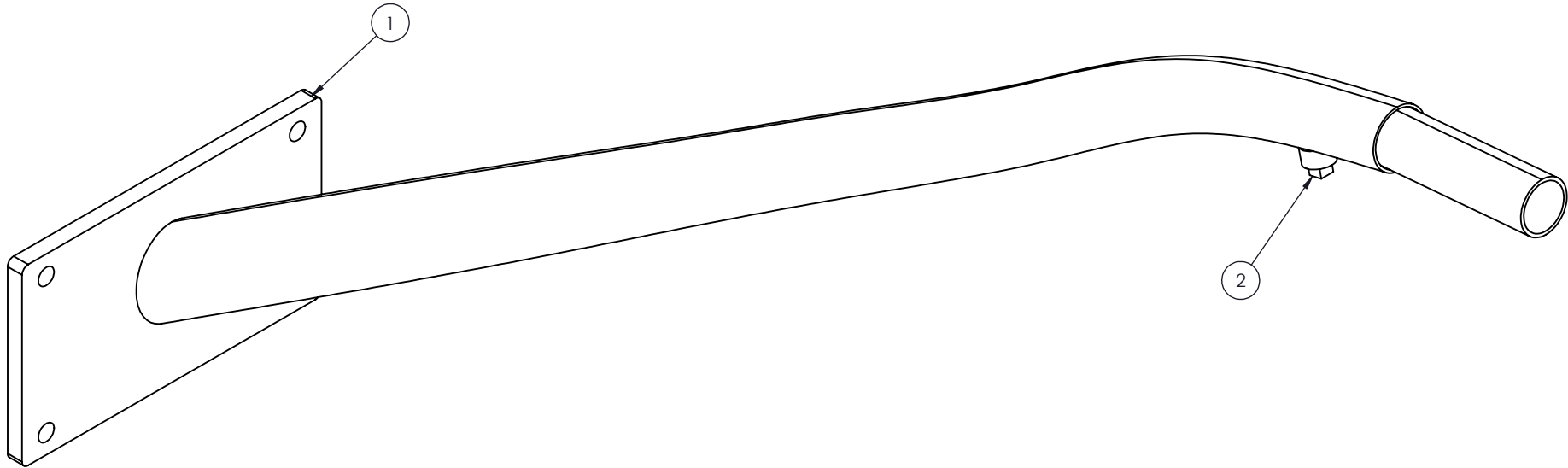
REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	ADDED ID TAG	9/15/2021	PJF
B	CHGD TO A SHIP TEMPLATE	12/17/2021	PJF
C	REPLACED S2 (1001843) WITH 1062374	8/23/2022	MS
D	UPDATED ID TAG REMOVED INDENTED BOM FOR KIT	9/14/2022	PJF

MATERIAL SPECIFICATIONS	
POST: BASE PLATE: MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS:	
SIZE:	
DESIGN CRITERIA	
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A,9K.	
WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	
FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: 2984.75 WEIGHT W/GALV.&PAINT: 3009.34 WEIGHT W/PAINT: SURFACE AREA: 54472.9 GAL. OF PAINT: 2.09511	
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:
STATE:	SHEET
WI	1 OF 1
DESCRIPTION:	
SHIP ARM SIG RD S1-3/8,S2-3/16X50'	
EST. WEIGHT:	DRAWING NO:
2893.6	1006853
PROJECT NAME:	
PROJECT LOCATION:	
DWN BY:	DATE:
JEFF A.	01-19-2016
CHK BY:	DATE:



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REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	REMOVED 7700039	1/30/2018	JA
B	ADDED 7700039	6/14/2019	JA
C	REMOVED 7700039	12/29/2020	PF
D	CHANGED TO SHIP TEMPLATE	6/30/2022	MS

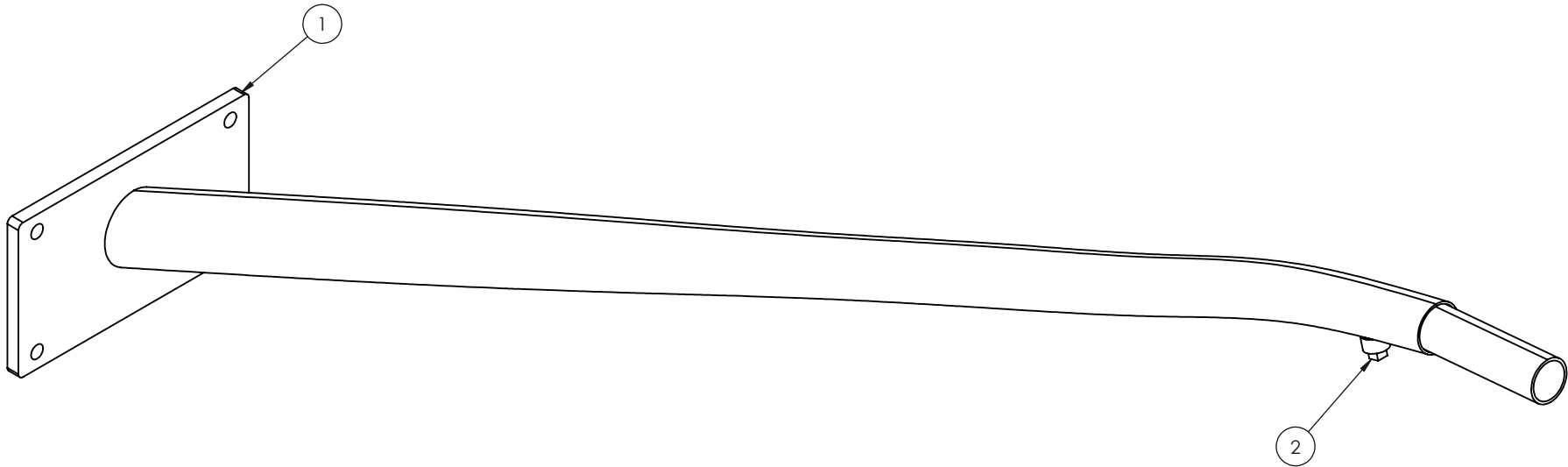


MATERIAL SPECIFICATIONS			
<i>POST:</i> <i>BASE PLATE:</i> <i>MAST ARM:</i> <i>MOUNTING PLATE:</i> ASTM A36 <i>LUMINAIRE ARM:</i> ASTM A572 GR 50 <i>HARDWARE FINISH:</i> ASTM A153 <i>ANCHOR BOLTS:</i>			
<i>SIZE:</i>			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
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WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
<i>GALV. OR PRIME COAT:</i> HOT DIP GALV PER ASTM A123 <i>FINISH COAT:</i> <i>COLOR:</i> SEE CHART <i>FEDERAL OR RAL SPEC.:</i> <i>WEIGHT W/GALV.:</i> 57.1451 <i>WEIGHT W/GALV.&PAINT:</i> 57.616 <i>WEIGHT W/PAINT:</i> 55.954 <i>SURFACE AREA:</i> 1895.7 <i>GAL. OF PAINT:</i> 0.0729115			
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395			
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1
DESCRIPTION:			
SHIP ARM LUM RD 11GAX6'0			
EST. WEIGHT:		DRAWING NO:	
55.4		1015935	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: JEFF A.		DATE: 01-25-2017	
CHK BY:		DATE:	

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1015939	WLDMT ARM LUM RD 11GAX6'0	1		X
2	PLUG-THD-PL-3/4	PLUG THREADED 3/4 PVC	1	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	REMOVED 7700039	12/29/2020	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS

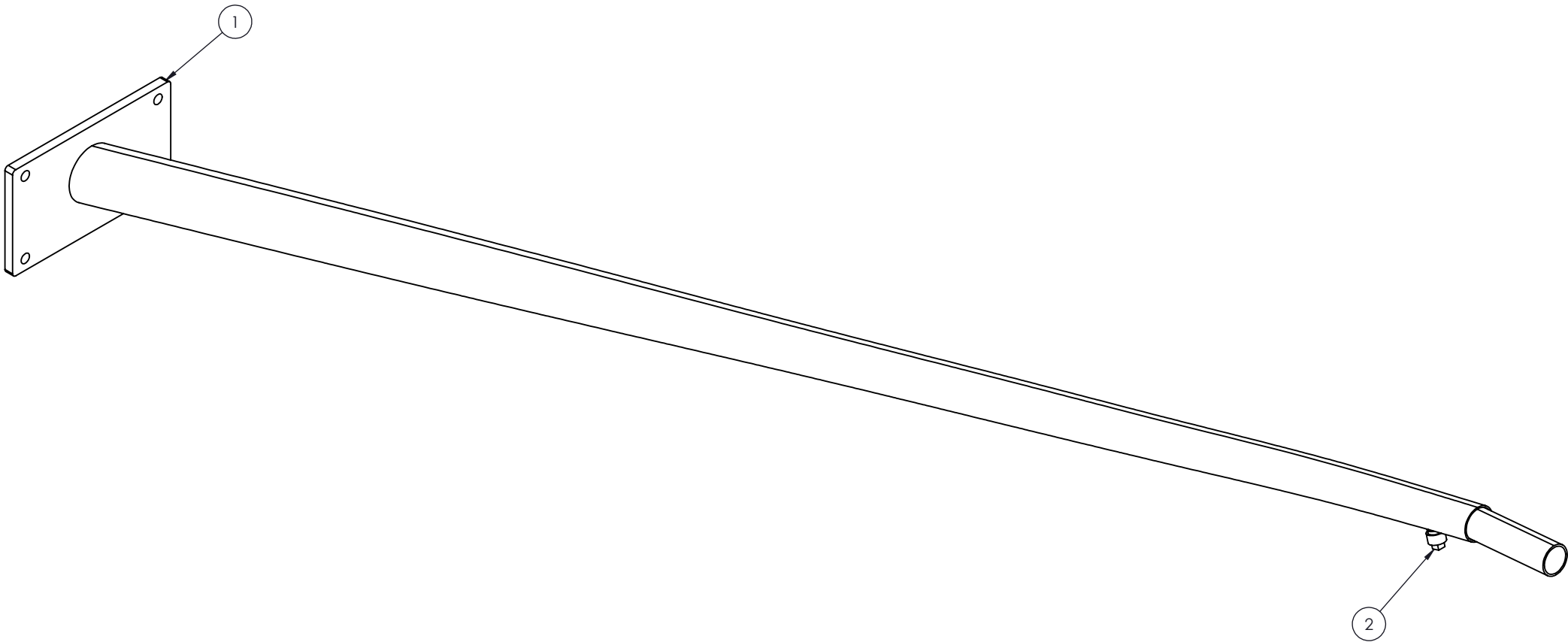


MATERIAL SPECIFICATIONS			
<i>POST:</i> <i>BASE PLATE:</i> <i>MAST ARM:</i> <i>MOUNTING PLATE:</i> ASTM A36 <i>LUMINAIRE ARM:</i> ASTM A572 GR 50 <i>HARDWARE FINISH:</i> ASTM A153 <i>ANCHOR BOLTS:</i> <i>SIZE:</i>			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
<i>GALV. OR PRIME COAT:</i> HOT DIP GALV PER ASTM A123 <i>FINISH COAT:</i> <i>COLOR:</i> SEE CHART <i>FEDERAL OR RAL SPEC.:</i> <i>WEIGHT W/GALV.:</i> 65.7066 <i>WEIGHT W/GALV.&PAINT:</i> 66.248 <i>WEIGHT W/PAINT:</i> 64.337 <i>SURFACE AREA:</i> 2383.5 <i>GAL. OF PAINT:</i> 0.0916731			
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395			
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1
DESCRIPTION: SHIP ARM LUM RD 11GAX8'0			
EST. WEIGHT: 63.7		DRAWING NO: 1015934	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: JEFF A.		DATE: 01-25-2017	
CHK BY:		DATE:	

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1015938	WLDMT ARM LUM RD 11GAX8'0	1		X
2	PLUG-THD-PL-3/4	PLUG THREADED 3/4 PVC	1	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	REMOVED 7700039	12/29/2020	PJF
B	CHANGED TO SHIP TEMPLATE	6/30/2022	MS



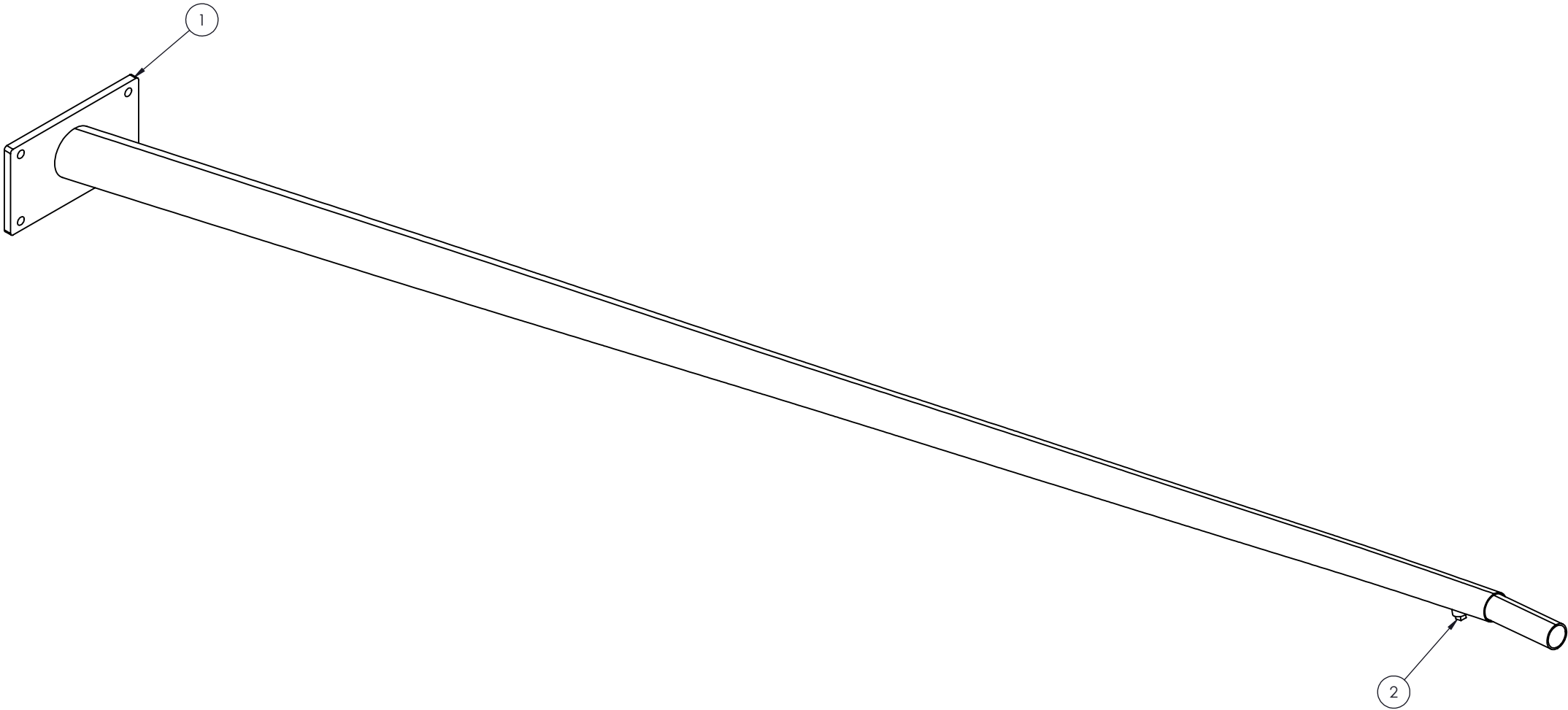
MATERIAL SPECIFICATIONS			
<i>POST:</i> <i>BASE PLATE:</i> <i>MAST ARM:</i> <i>MOUNTING PLATE:</i> ASTM A36 <i>LUMINAIRE ARM:</i> ASTM A572 GR 50 <i>HARDWARE FINISH:</i> ASTM A153 <i>ANCHOR BOLTS:</i> <i>SIZE:</i>			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
<i>GALV. OR PRIME COAT:</i> HOT DIP GALV PER ASTM A123 <i>FINISH COAT:</i> <i>COLOR:</i> SEE CHART <i>FEDERAL OR RAL SPEC.:</i> <i>WEIGHT W/GALV.:</i> 85.8208 <i>WEIGHT W/GALV.&PAINT:</i> 86.528 <i>WEIGHT W/PAINT:</i> 84.032 <i>SURFACE AREA:</i> 3530.3 <i>GAL. OF PAINT:</i> 0.135781			
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395			
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

DESCRIPTION:		SHIP ARM LUM RD 11GAX12'0	
EST. WEIGHT:		DRAWING NO:	
83.2		1015932	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY:		DATE:	
JEFF A.		01-25-2017	
CHK BY:		DATE:	

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1015936	WLDMT ARM LUM RD 11GAX12'0	1		X
2	PLUG-THD-PL-3/4	PLUG THREADED 3/4 PVC	1	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRAFTER
A	REMOVED 7700039	12/29/2020	PJF
B	CHANGED TO SHIP TEMPLATE	6/29/2022	MS



MATERIAL SPECIFICATIONS			
<i>POST:</i> <i>BASE PLATE:</i> <i>MAST ARM:</i> <i>MOUNTING PLATE:</i> ASTM A36 <i>LUMINAIRE ARM:</i> ASTM A572 GR 50 <i>HARDWARE FINISH:</i> ASTM A153 <i>ANCHOR BOLTS:</i> <i>SIZE:</i>			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
<i>GALV. OR PRIME COAT:</i> HOT DIP GALV PER ASTM A123 <i>FINISH COAT:</i> <i>COLOR:</i> SEE CHART <i>FEDERAL OR RAL SPEC.:</i> <i>WEIGHT W/GALV.:</i> 102.841 <i>WEIGHT W/GALV.&PAINT:</i> 103.688 <i>WEIGHT W/PAINT:</i> 100.697 <i>SURFACE AREA:</i> 4509.2 <i>GAL. OF PAINT:</i> 0.173431			
 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395			
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 1

DESCRIPTION:	
SHIP ARM LUM RD 11GAX15'0	
EST. WEIGHT:	DRAWING NO:
99.7	1015929

FINISH		
PAINT PART #	DESCRIPTION	QTY
		REF

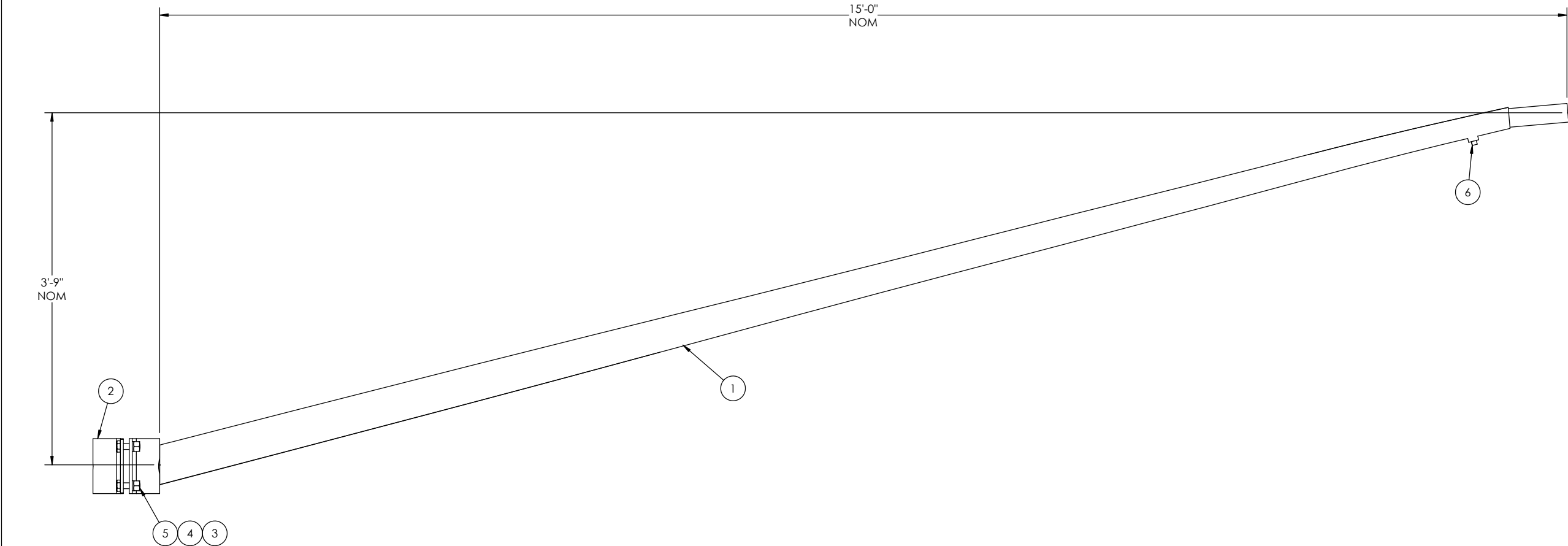
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1015930	WLDMT ARM LUM RD 11GAX15'0	1		X
2	PLUG-THD-PL-3/4	PLUG THREADED 3/4 PVC	1	X	

PROJECT NAME:	
PROJECT LOCATION:	
DWN BY: JEFF A.	DATE: 01-25-2017
CHK BY:	DATE:

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS			
POST: ASTM A1011 GR50 BASE PLATE: MAST ARM: MOUNTING PLATE: ASTM A36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: SIZE:			
DESIGN CRITERIA			
AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS. WINDS: MPH VORTEX SHED: N/A FATIGUE CAT: N/A GALLOPING: N/A NATURAL WIND GUST: N/A TRUCK GUST: N/A			
WELD SPECIFICATION			
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. ≤ 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: WEIGHT W/GALV.&PAINT: WEIGHT W/PAINT: SURFACE AREA: 4822.79 GAL. OF PAINT:			
 MILLERBERND		622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET 1 OF 1

DESCRIPTION:	
15' CLAMP ON LUM (TYPE 9-10)	
EST. WEIGHT: 98.90	DRAWING NO: 730a1652-15-775
PROJECT NAME:	
PROJECT LOCATION:	
DWN BY: PHILL R	DATE: 06-01-2023
CHK BY:	DATE:



ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	730A1652W15775	WLDMT 15' CLAMP ON LUM (11GA X 4.90 X 2.79 X 15'1)	1		X
2	520A36-7	CLAMP BK 3/8x7" 7 3/4ID 13/16 HOLE	1	X	X
3	BOLT B3/4-10X2-1/2B	BOLT HVYHXHD 3-4-10X 2-1-2 A325GV	4	X	
4	WASHLOCK3/4GV	WASHER LOCK 3/4 ANSI B18.21.1 GV	4	X	
5	NUTHVYHX3/4-10A563DHGV	NUT HVY HX 3-4-10NC ASTM A563GV(DH)	4	X	
6	PLUG-THD-PL-3/4	PLUG THREADED 3/4 PVC	1	X	

FINISH		
PAINT PART#	DESCRIPTION	QTY
		REF

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS
POST: ASTM A1011 GR50 BASE PLATE: MAST ARM: MOUNTING PLATE: ASTM A36 LUMINAIRE ARM: HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: SIZE:

DESIGN CRITERIA
AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS. WINDS: MPH FATIGUE CAT: N/A NATURAL WIND GUST: N/A VORTEX SHED: N/A GALLOPING: N/A TRUCK GUST: N/A

WELD SPECIFICATION
THE POST AND MAST ARM TO BE A 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: COLOR: SEE CHART FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: WEIGHT W/GALV.&PAINT: WEIGHT W/PAINT: SURFACE AREA: 5203.16 GAL. OF PAINT:

M MILLERBERND	622 6TH ST. SO. WINSTED, MN 55395
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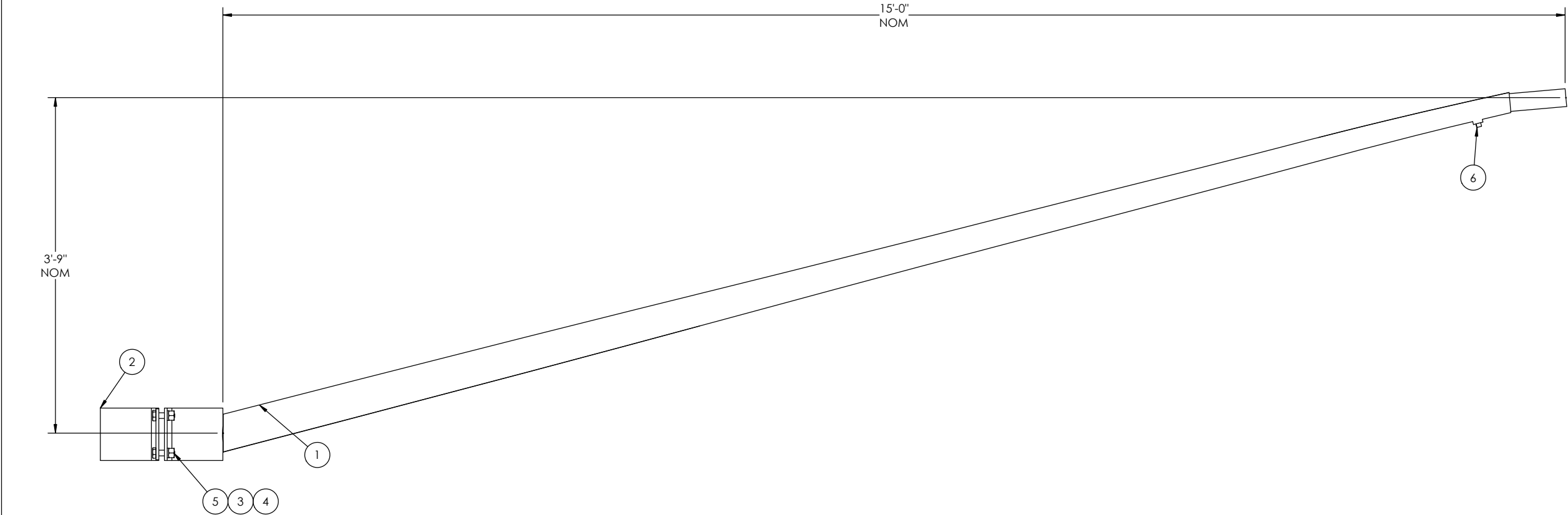
SALES ORDER NO.:	QTY:	STATE:	SHEET 1 OF 1
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DESCRIPTION: 15' CLAMP ON LUM (TYPE 12-13)	
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EST. WEIGHT: 117.23	DRAWING NO: 730a1652-15-1562
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PROJECT NAME:	
PROJECT LOCATION:	

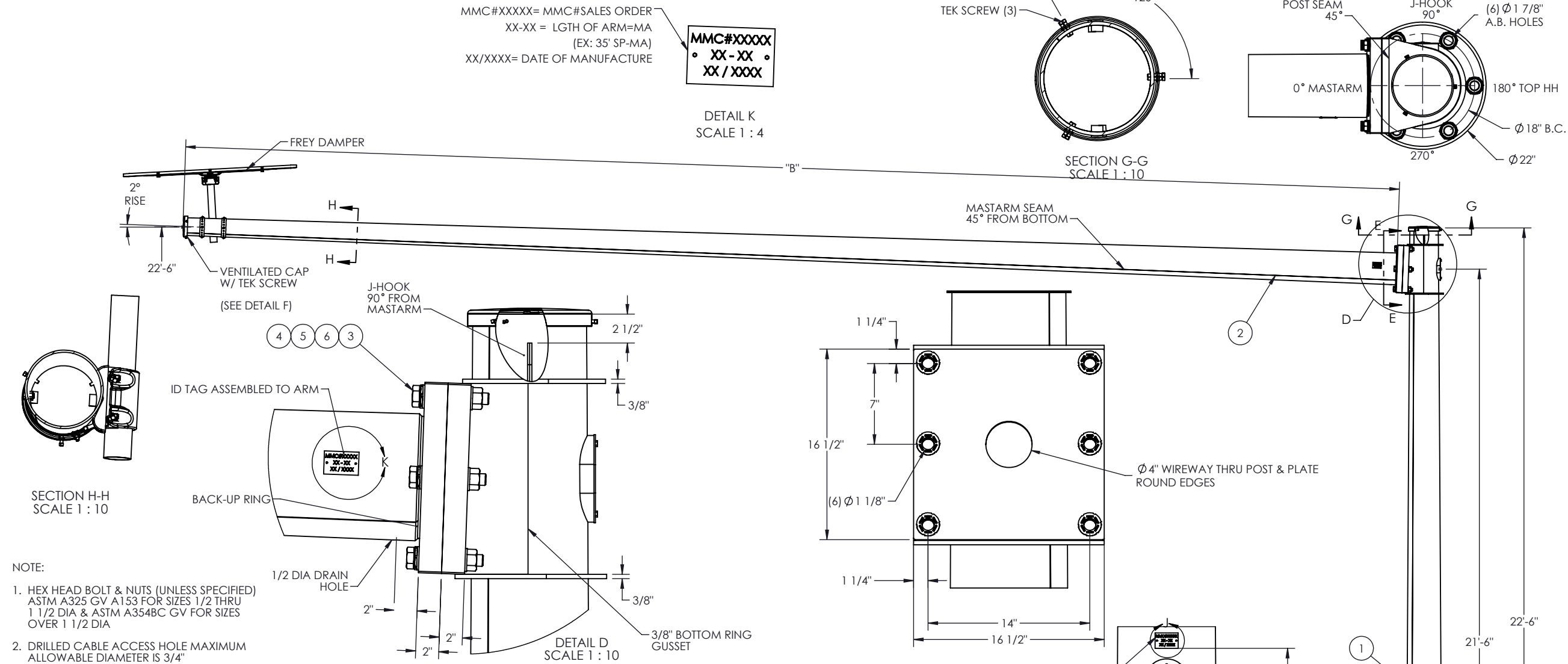
DWN BY: PHILL R	DATE: 06-01-2023
CHK BY:	DATE:



ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	730a1652w151562	WLDMT ARM LUM CLAMP RD 11GAX15'0	1		X
2	520A36-23	MASTARM BACK CLAMP HALF 3/8"	1	X	X
3	BOLT B3/4-10X2-1/2B	BOLT HVYHXHD 3-4-10X 2-1-2 A325GV	4	X	
4	WASHLOCK3/4GV	WASHER LOCK 3/4 ANSI B18.21.1 GV	4	X	
5	NUTHVYHX3/4-10A563DHGV	NUT HVY HX 3-4-10NC ASTM A563GV(DH)	4	X	
6	PLUG-THD-PL-3/4	PLUG THREADED 3/4 PVC	1	X	

FINISH		
PAINT PART#	DESCRIPTION	QTY
		REF

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT



MATERIAL SPECIFICATIONS
POST: ASTM A 572 GR 55 BASE PLATE: ASTM A36 MAST ARM: ASTM A 572 GR 55 MOUNTING PLATE: ASTM A36 HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)

DESIGN CRITERIA
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION
THE POST AND MAST ARM 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: N/A COLOR: N/A FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: WEIGHT W/GALV. & PAINT: SURFACE AREA: GAL. OF PAINT:

 MILLERBERND	622 6TH ST. SO. WINSTED, MN 55395
--	--------------------------------------

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SALES ORDER NO.:	QTY:	STATE:	SHEET 1 OF 1
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DESCRIPTION: 2025 WI DOT TYPE 9 OVER HEIGHT SPECIAL TRAFFIC SIGNAL-35', 40' & 45' MASTARMS	
---	--

EST. WEIGHT: 2287.2 - LBS	DRAWING NO: 2025 TYPE 9 OH SP WIDOT A
------------------------------	--

PROJECT NAME:

PROJECT LOCATION:

DWN BY: HECTOR E.	DATE: 01-28-2025
CHK BY:	DATE:

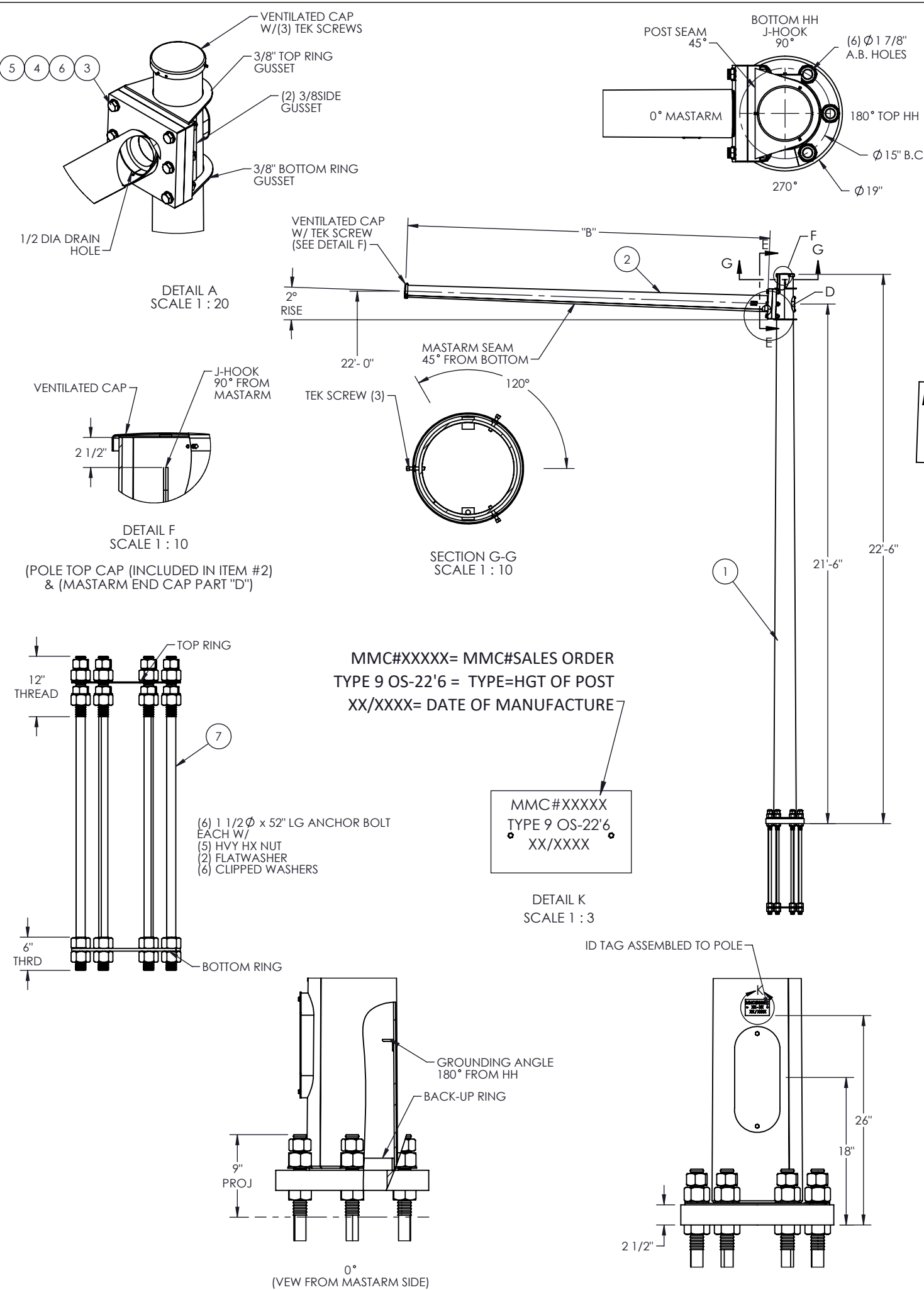
QTY	"A" ASSY PART #	"B" LENGTH	DESCRIPTION	MAST ARM SHAFT SIZE	"C" PARTS LIST/BAG #	"D" ARM END CAP PART #
	1035262	35'0	ASSY ARM SIG RD 3/16 X 35'0	3/16x11.0x6.1x35'-0"	7700063	9900204
	1035264	40'0	ASSY ARM SIG RD 3/16 X 40'0	3/16x11.0x5.4x40'-0"	7700064	9900203
	1035266	45'0	ASSY ARM SIG RD 3/16 X 45'0	3/16x11.0x4.7x45'-0"	7700065	9900202

MMC#XXXXX
TYPE 9 OHSP-22'6"
X/XXXX

MMC#XXXXX= MMC#SALES ORDER
TYPE 9 OHSP-22'6" = TYPE=HGT OF POST
XX/XXXX= DATE OF MANUFACTURE

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1072403	SHIP POLE SIG RD 5/16X22'6"/21'6" (5/16X13.0X9.85X22'6") TYPE 9 OH SP	1		X	X
	7700062	TYPE 9 SPECIAL POLE WIS DOT HARDWARE BAG	1			
	1055940	I.D. TAG - WI	1			
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2			
2	"A"	SHIP ARM SIG RD 3/16X"B"	1		X	X
	"C"	PARTS LIST WI/DOT (2017) TYPE 9/10 SPECIAL	1		POLE CAP	X
	FREY-63DM1CPF48ALDF40	FREY VIBRATION DAMPENER	1			X
	500A1921-ALUM	ALUMINUM TOP PLATE FOR DAMPENER ASSY	1			X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLT8"1"-8X6"B	BOLT HVYHXHD 1-8 X 6 A325GV	6	SUPPLIED BY OTHERS		
4	NUTHVYHX1"-8A563GV	NUT HVY HX 1"-8 A563 GV (DH)-RCP	6			
5	WASHFLAT1"GV	WASHFLAT1"GV ASTM F436	12			
6	WASHLOADIN1" GV	WASHER DTI 1" ASTM F959 TYPE 325	6			
7	460B735-11	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	1/28/2025	HE



MMC#XXXXX
• XX - XX •
XX / XXXX

DETAIL J
SCALE 1 : 3

MMC#XXXXX= MMC#SALES ORDER
XX-XX = LGTH OF ARM=MA
(EX: 15'-MA)
XX/XXXX= DATE OF MANUFACTURE

- NOTE:
- HEX HEAD BOLT & NUTS (UNLESS SPECIFIED)
ASTM A325 GV A153 FOR SIZES 1/2 THRU 1 1/2 DIA & ASTM A354BC GV FOR SIZES OVER 1 1/2 DIA
 - DRILLED CABLE ACCESS HOLE MAXIMUM ALLOWABLE DIAMETER IS 3/4"

QTY	"A" ASSY PART #	"B" LENGTH	DESCRIPTION	MAST ARM SHAFT SIZE	"C" PARTS LIST/BAG #	"D" ARM 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	9900204
	1006391	20'-0"	ASSY ARM SIG RD 3/16 X 20'	3/16 x 8.0 x 5.2 x 20'-0"	7700005	9900203
	1006390	25'-0"	ASSY ARM SIG RD 3/16 X 25'	3/16 x 9.0 x 5.5 x 25'-0"	7700004	9900203
	1006387	30'-0"	ASSY ARM SIG RD 1/4 X 30'	1/4 x 9.0 x 4.8 x 30'-0"	7700002	9900203

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR 50 BASE PLATE: ASTM A709 GR 36 MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A706 GR 36 HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)	

DESIGN CRITERIA
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

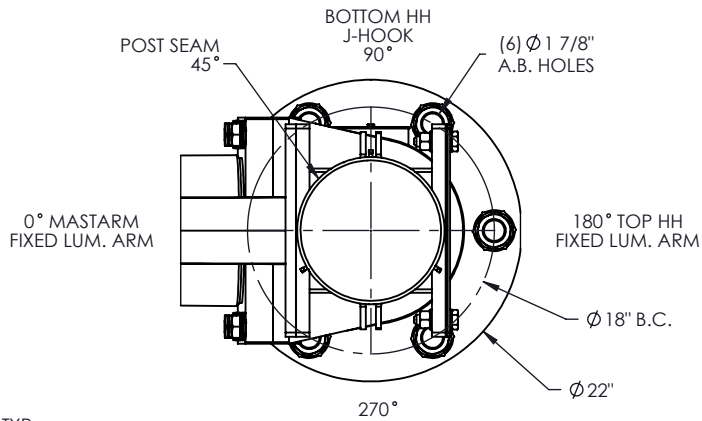
WELD SPECIFICATION
THE POST AND MAST ARM TO BE ROUND TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: N/A COLOR: N/A FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: WEIGHT W/GALV.&PAINT: SURFACE AREA: GAL. OF PAINT:

		622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET 1 OF 1
DESCRIPTION: 2025 WI DOT TYPE 9-OS TRAFFIC SIGNAL 15'-30' MASTARM LENGTHS			
EST. WEIGHT: N/A		DRAWING NO: 2025 type 9-OS wi dot a	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 01-28-2025	
CHK BY:		DATE:	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1016136	SHIP POLE SIG RD 1/4X22'6/21'6	1		X	X
	7700048	PARTS LIST WI/DOT (2017) TYPE 9 OS TRAFFIC SIGNAL 1016136	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
2	"A"	SHIP ARM SIG RD 3/16X "B"	1		X	X
	"C"	PARTS LIST WI/DOT (2016) TYPE 9/10 TRAFFIC	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLT B1"-8X6"B	BOLT HVYHXHD 1-8 X 6 A325GV	6	SUPPLIED BY OTHERS		
4	NUTHVYHX1"-8A563GV	NUT HVY HX 1"-8 A563 GV (DH)-RCP	6			
5	WASHFLAT1"GV	WASHFLAT1"GV ASTM F436	12			
6	WASHLOADIN1" GV	WASHER DTI 1" ASTM F959 TYPE 325	6			
7	460B735-5	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	1/28/2025	HE



MATERIAL SPECIFICATIONS

POST: ASTM A572 GR 55
BASE PLATE: ASTM A36
MAST ARM: ASTM A572 GR 55
MOUNTING PLATE: ASTM A36
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL
SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND
TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II,
AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM 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 (CJJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.

A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT: N/A
COLOR: N/A
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.:
WEIGHT W/GALV.&PAINT:
SURFACE AREA:
GAL. OF PAINT:



622 6TH ST. SO.
WINSTED, MN 55395

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WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE: WI	SHEET 1 OF 2
------------------	------	--------------	-----------------

DESCRIPTION:

2025 WI DOT TYPE 10 SPECIAL TRAFFIC SIGNAL 35', 40' & 45' MASTARM LENGTHS

EST. WEIGHT: 2604.2 - LBS	DRAWING NO: 2025 type 10 special wi dot a
------------------------------	--

PROJECT NAME:

PROJECT LOCATION:

DWN BY: HECTOR E.	DATE: 01-28-2025
CHK BY:	DATE:

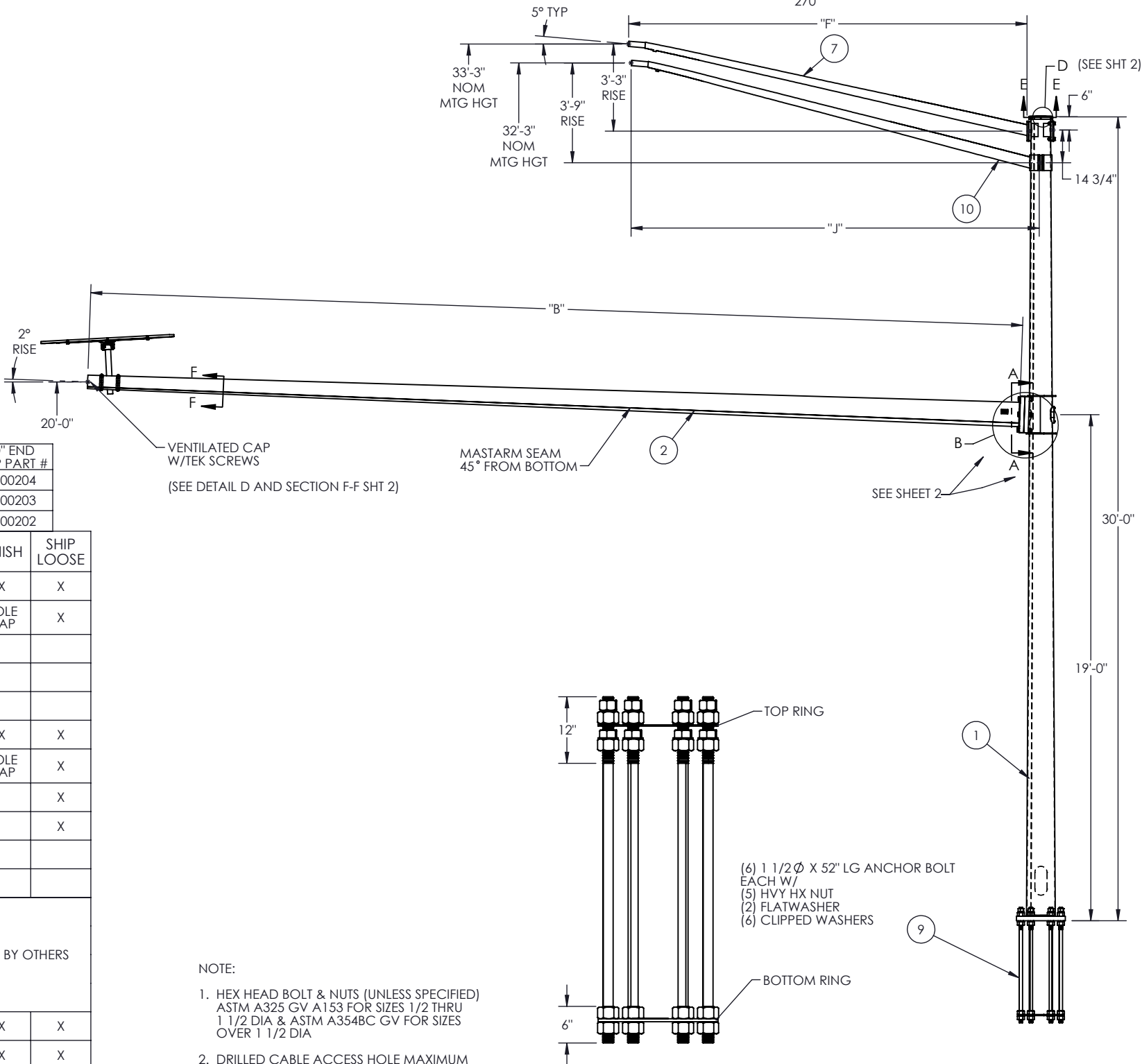
CLAMP ON LUMINAIRE ARM		
"K" QTY	"H" ARM PART #	"J" LENGTH
	730A1652-15-925	15'

FIXED LUMINAIRE ARM		
"G" QTY	"E" ARM PART #	"F" LENGTH
	1015935	6'
	1015934	8'
	1015933	10'
	1015932	12'
	1015929	15'

LUM. ARM COVER PLATE
"L" QTY

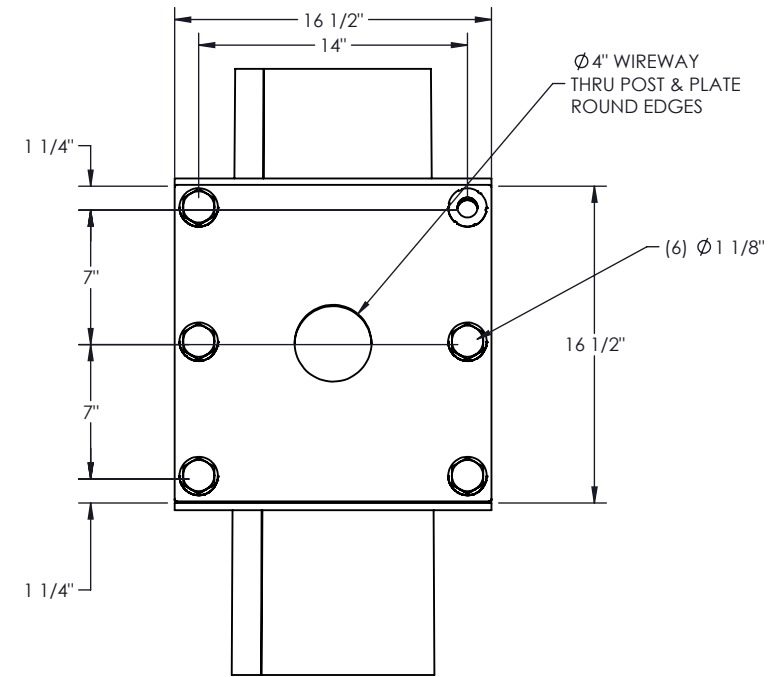
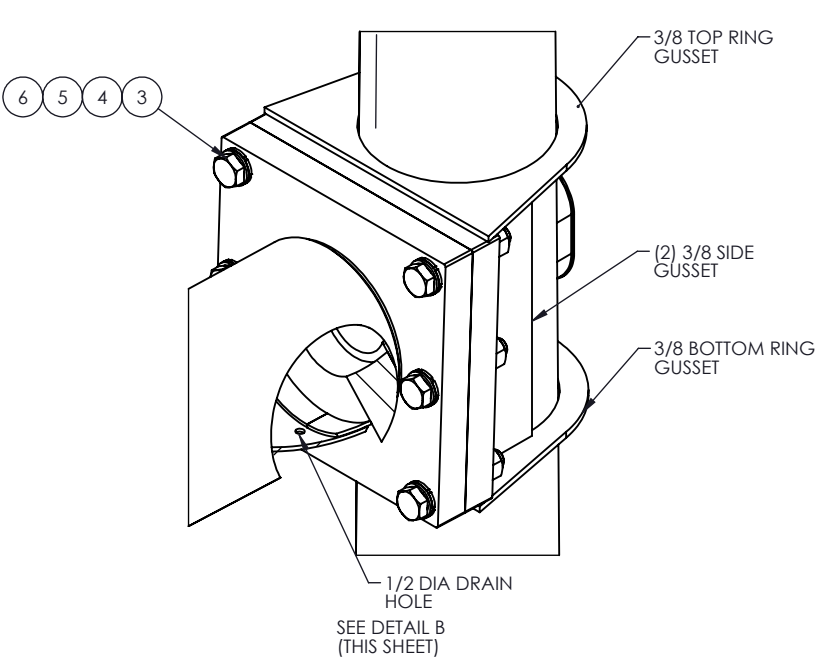
QTY	"A" ASSY PART #	"B" LENGTH	DESCRIPTION	MAST ARM SHAFT SIZE	"C" PARTS LIST/BAG #	"D" END CAP PART #
	1035262	35'0	ASSY ARM SIG RD 3/16 X 35'	3/16X11.0X6.1X35'0	7700063	9900204
	1035264	40'0	ASSY ARM SIG RD 3/16 X 40'	3/16X11.0X5.4X40'0	7700064	9900203
	1035266	45'0	ASSY ARM SIG RD 3/16 X 45'	3/16X11.0X4.7X45'0	7700065	9900202

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1035268	SHIP POLE SIG RD 1/4X30'0/19'0	1		X	X
	7700066	PARTS LIST WI/DOT (2017) TYPE 10 SPECIALTRAFFIC SIGNAL 1035268	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1			
2	"A"	SHIP ARM SIG RD 3/16X35'0	1		X	X
	"C"	PARTS LIST WI/DOT (2017) TYPE 9/10 SPECIAL	1		POLE CAP	X
	FREY-63DM1CPF48ALDF40	FREY VIBRATION DAMPENER	1			X
	500A1921-ALUM	ALUMINUM TOP PLATE FOR DAMPENER ASSY	1			X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLTBI"-8X6"B	BOLT HVYHXHD 1-8 X 6 A325GV	6	SUPPLIED BY OTHERS		
4	WASHFLATI"GV	WASHFLATI"GV ASTM F436	12			
5	NUTHVYHX1"-8A563GV	NUT HVY HX 1"-8 A563 GV (DH)-RCP	6			
6	WASHLOADIN1" GV	WASHER DTI 1" ASTM F959 TYPE 325	6			
7	"E"	WLDMT ARM LUM RD 11GAX"F	1		X	X
8	1015928	GASKETED COVER FOR 4 BOLT LUM ARM	1		X	X
9	460B735-11	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			X
10	"H"	WLDMT CLAMP ARM LUM RD 11GAX15'0	1			



NOTE:

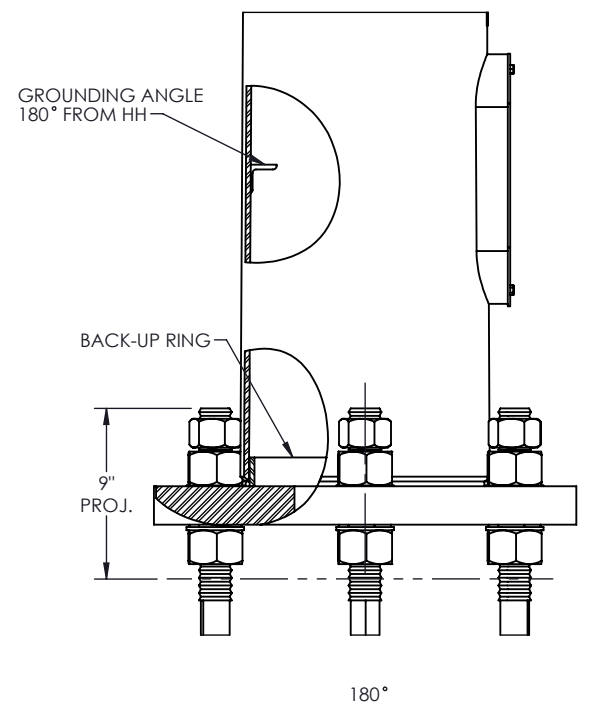
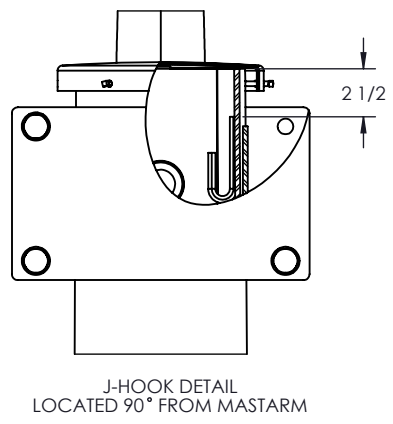
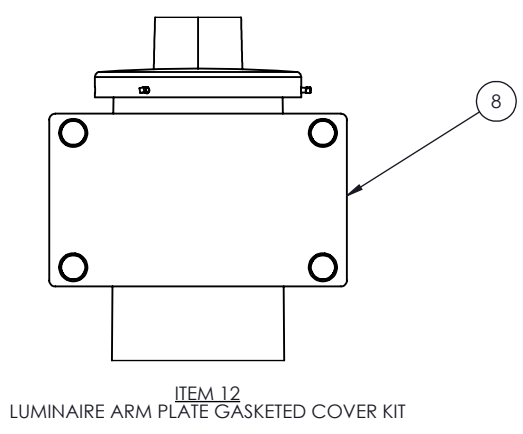
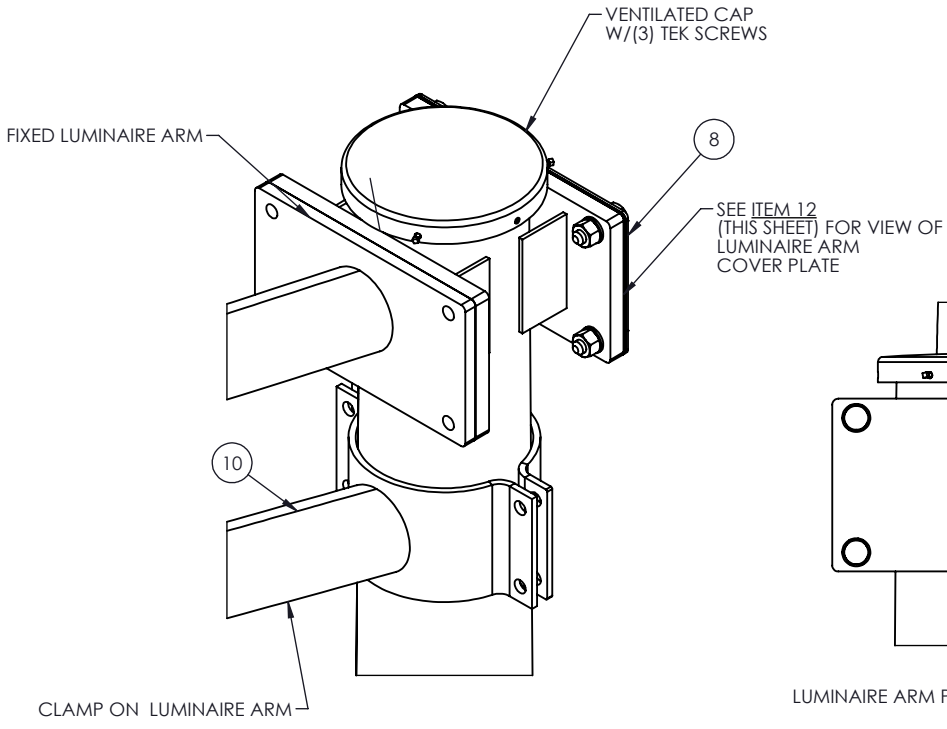
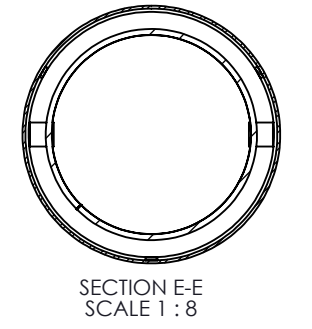
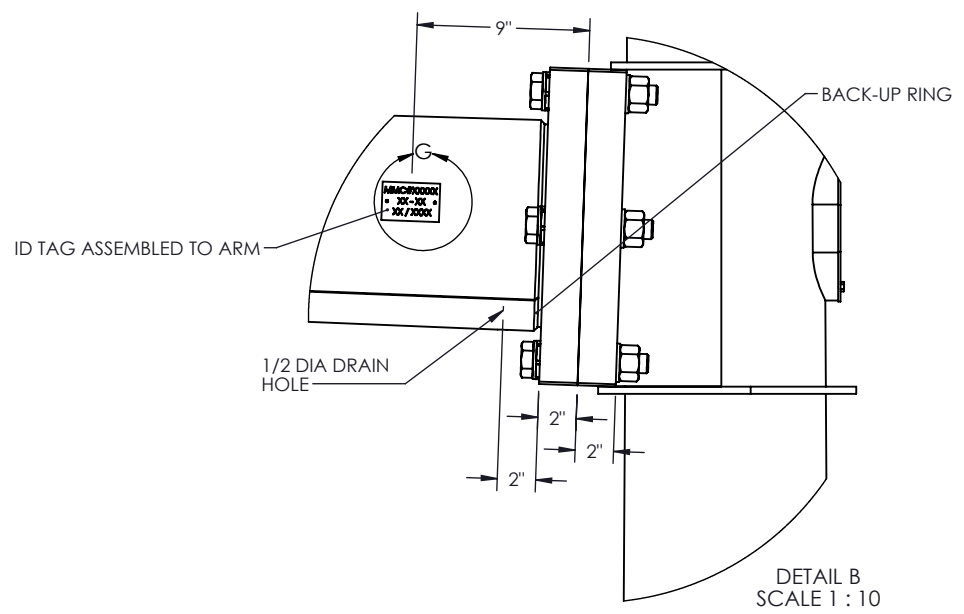
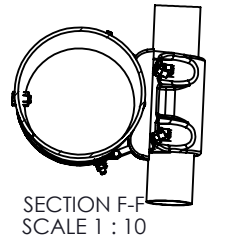
1. HEX HEAD BOLT & NUTS (UNLESS SPECIFIED)
ASTM A325 GV A153 FOR SIZES 1/2 THRU
1 1/2 DIA AND ASTM A354BC GV FOR SIZES
OVER 1 1/2 DIA
2. DRILLED CABLE ACCESS HOLE MAXIMUM
ALLOWABLE DIAMETER IS 3/4"



MMC#XXXXX
• XX-XX •
XX/XXXX

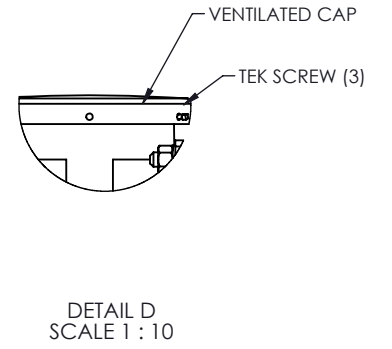
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XX-XX = LGTH OF ARM=MA
(EX: 40' SP-MA)
XX/XXXX= DATE OF MANUFACTURE

DETAIL H
SCALE 1 : 4

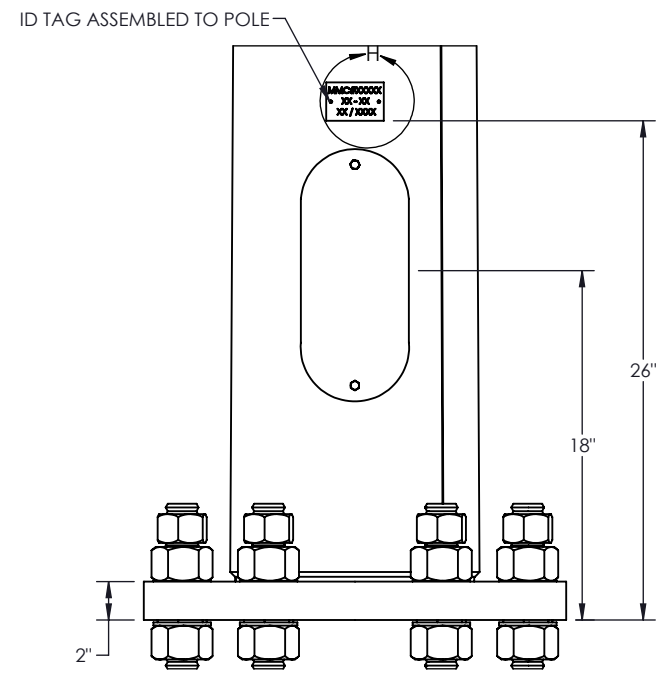


MMX#XXXXX
TYPE 10 SP-30'
XX/XXXX

MMC#XXXXX= MMC#SALES ORDER
TYPE 10 SP-30' = TYPE=HGT OF POST
XX/XXXX= DATE OF MANUFACTURE

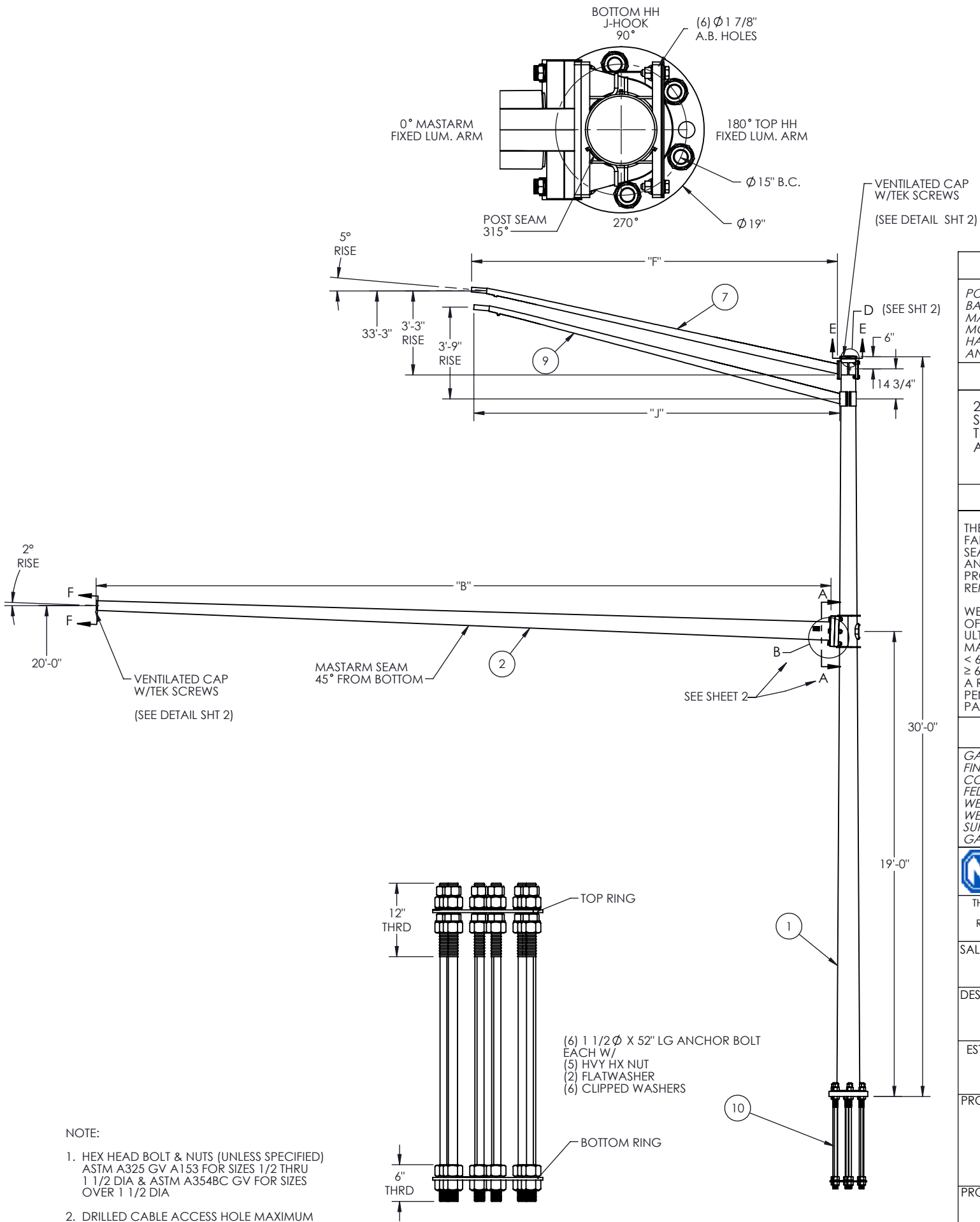


(POLE TOP CAP (INCLUDED IN ITEM #2)
& (MASTARM END CAP PART "D")



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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	2 OF 2
DESCRIPTION: 2025 WI DOT TYPE 10 SPECIAL TRAFFIC SIGNAL 35', 40' & 45' MASTARM LENGTHS			
EST. WEIGHT: 2604.2 - LBS		DRAWING NO: 2025 type 10 special wi dot a	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 01-28-2025	
CHK BY:		DATE:	

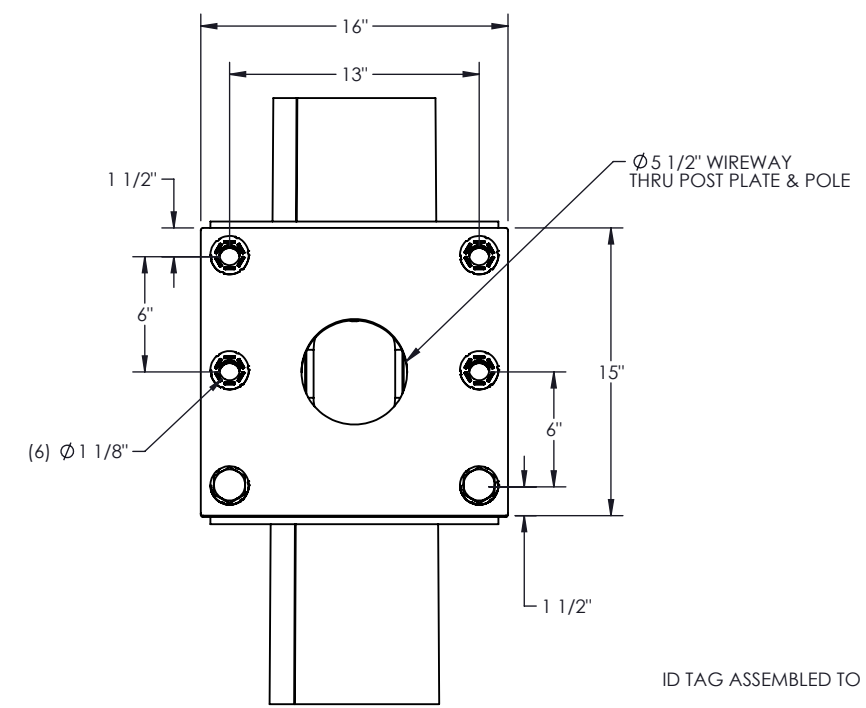
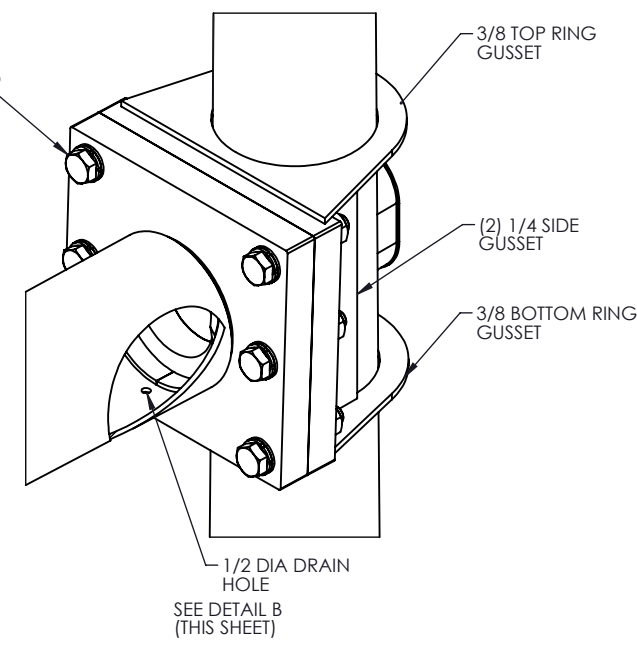
REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	2/5/2025	HE



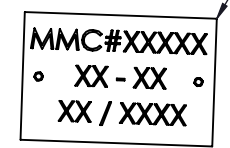
MATERIAL SPECIFICATIONS			
POST: ASTM A572 GR 50 BASE PLATE: ASTM A36 MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A36 HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT:		HOT DIP GALV PER ASTM A123	
FINISH COAT:		N/A	
COLOR:		N/A	
FEDERAL OR RAL SPEC.:			
WEIGHT W/GALV.:			
WEIGHT W/GALV.&PAINT:			
SURFACE AREA:			
GAL. OF PAINT:			
 MILLERBERND		622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	1 OF 2
DESCRIPTION: 2025 WI DOT TYPE 10 TRAFFIC SIGNAL 15'-30' MASTARM LENGTHS			
EST. WEIGHT:		DRAWING NO:	
2285.1 - LBS		2025 type 10 wi dot a	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 02-05-2025	
CHK BY:		DATE:	

FIXED LUMINAIRE ARM			CLAMP ON LUMINAIRE ARM						
"G" QTY	"E" ARM PART #	"F" LENGTH	"K" QTY	"H" ARM PART #	"J" LENGTH				
	1015935	6'		730A1652-6-775	6'	LUM. ARM COVER PLATE "L" QTY			
	1015934	8'		730A1652-8-775	8'				
	1015933	10'		730A1652-10-775	10'				
	1015932	12'		730A1652-12-775	12'				
	1015929	15'		730A1652-15-775	15'				
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	9900204		
	1006391	20'-0"	ASSY ARM SIG RD 3/16 X 20'		3/16 x 8.0 x 5.2 x 20'-0"	7700005	9900203		
	1006390	25'-0"	ASSY ARM SIG RD 3/16 X 25'		3/16 x 9.0 x 5.5 x 25'-0"	7700004	9900203		
	1006387	30'-0"	ASSY ARM SIG RD 1/4 X 30'		1/4 x 9.0 x 4.8 x 30'-0"	7700002	9900203		
ITEM NO.	PART NUMBER		DESCRIPTION			QTY PER	ASSY	FINISH	SHIP LOOSE
1	1016133		SHIP POLE SIG RD 1/4X30'0/19'0			1		X	X
	7700007		PARTS LIST WI/DOT (2016) TYPE 10 TRAFFIC SIGNAL 1006396			1		POLE CAP	X
	1055940		I.D. TAG - WI			1	X		
	SCRWY#2X3/16ZC		U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC			2	X		
	7700104		PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER			1			
2	"A"		SHIP ARM SIG RD 1/4 "B"			1		X	X
	"C"		PARTS LIST WI/DOT (2016) TYPE 9/10 TRAFFIC			1		POLE CAP	X
	1055940		I.D. TAG - WI			1	X		
	SCRWY#2X3/16ZC		U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC			2	X		
3	BOLTb1"-8X6"B		BOLT HVYHXHD 1-8 X 6 A325GV			6	SUPPLIED BY OTHERS		
4	NUTHVYHX1"-8A563GV		NUT HVY HX 1"-8 A563 GV (DH)-RCP			6			
5	WASHFLAT1"GV		WASHFLAT1"GV ASTM F436			12			
6	WASHLOADIN1" GV		WASHER DTI 1" ASTM F959 TYPE 325			6			
7	"E"		WLDMT ARM LUM RD 11GAXF"			"G"		X	X
8	1015928		GASKETED COVER FOR 4 BOLT LUM ARM			"L"		X	X
9	"H"		WLDMT ARM LUM CLAMP RD 11GA X "J"			"K"		X	X
	520A37-7		MASTARM FRT CLAMP			1			
	1068886		11GA X 4.90 X 2.79 X 15'1			1			
	500A381-8		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			
10	460B735-5		ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT			1			X

6 4 5 3

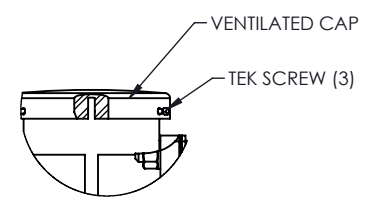
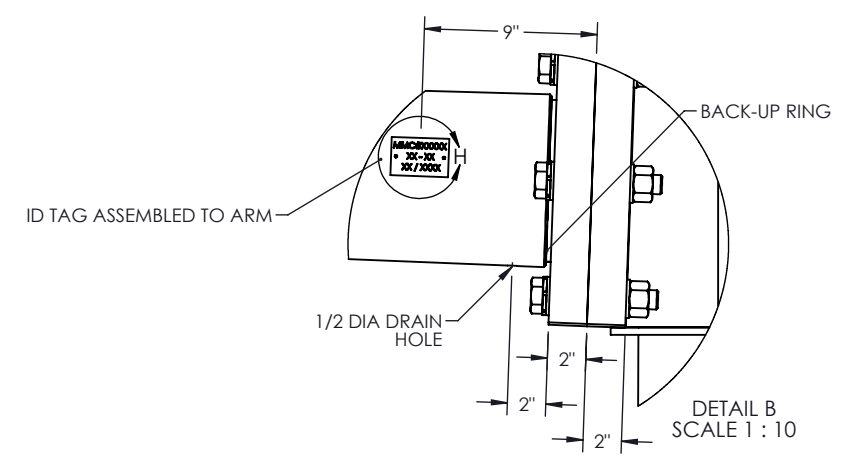
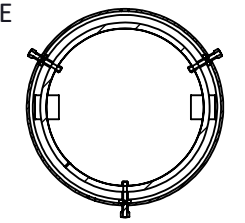
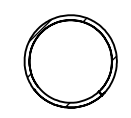


SECTION A-A
SCALE 1 : 10



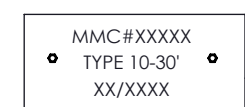
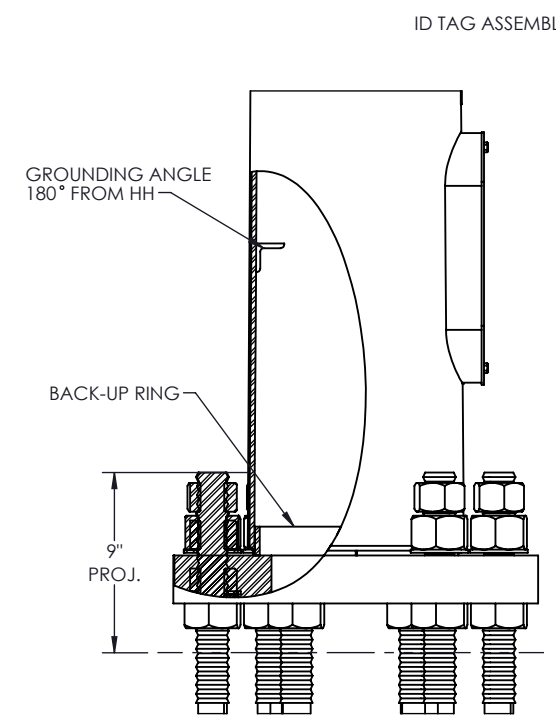
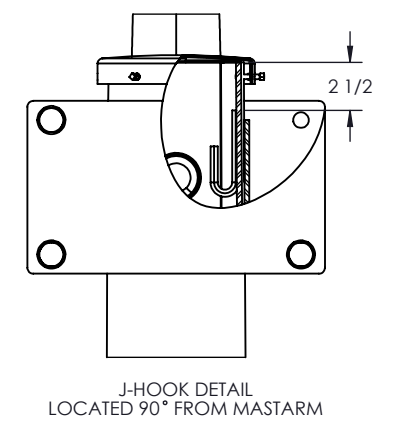
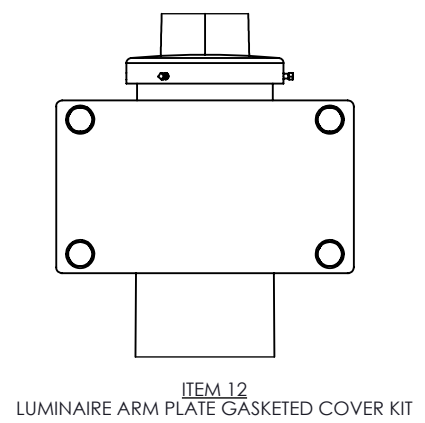
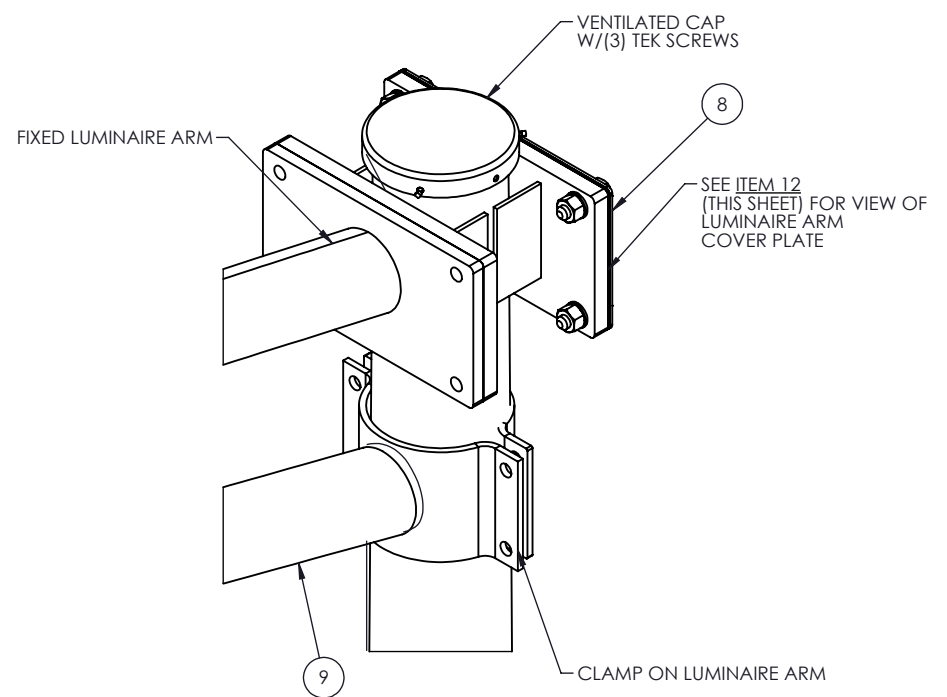
DETAIL H
SCALE 1 : 3

MMC#XXXXX= MMC#SALES ORDER
XX-XX = LGTH OF ARM=MA
(EX: 30'-MA)
XX/XXXX= DATE OF MANUFACTURE



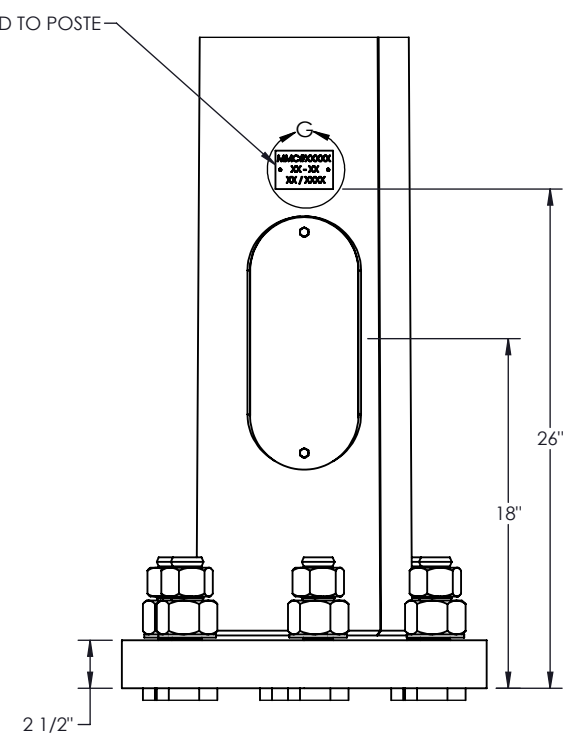
DETAIL D
SCALE 1 : 10

(POLE TOP CAP (INCLUDED IN ITEM #2)
& (MASTARM END CAP PART 'D')



DETAIL G
SCALE 1 : 3

MMC#XXXXX= MMC#SALES ORDER
TYPE 10-30' = TYPE=HGT OF POST
XX/XXXX= DATE OF MANUFACTURE



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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	2 OF 2
DESCRIPTION: 2025 WI DOT TYPE 10 TRAFFIC SIGNAL 15'-30' MASTARM LENGTHS			
EST. WEIGHT: 2285.1 - LBS		DRAWING NO: 2025 type 10 wi dot a	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 02-05-2025	
CHK BY:		DATE:	

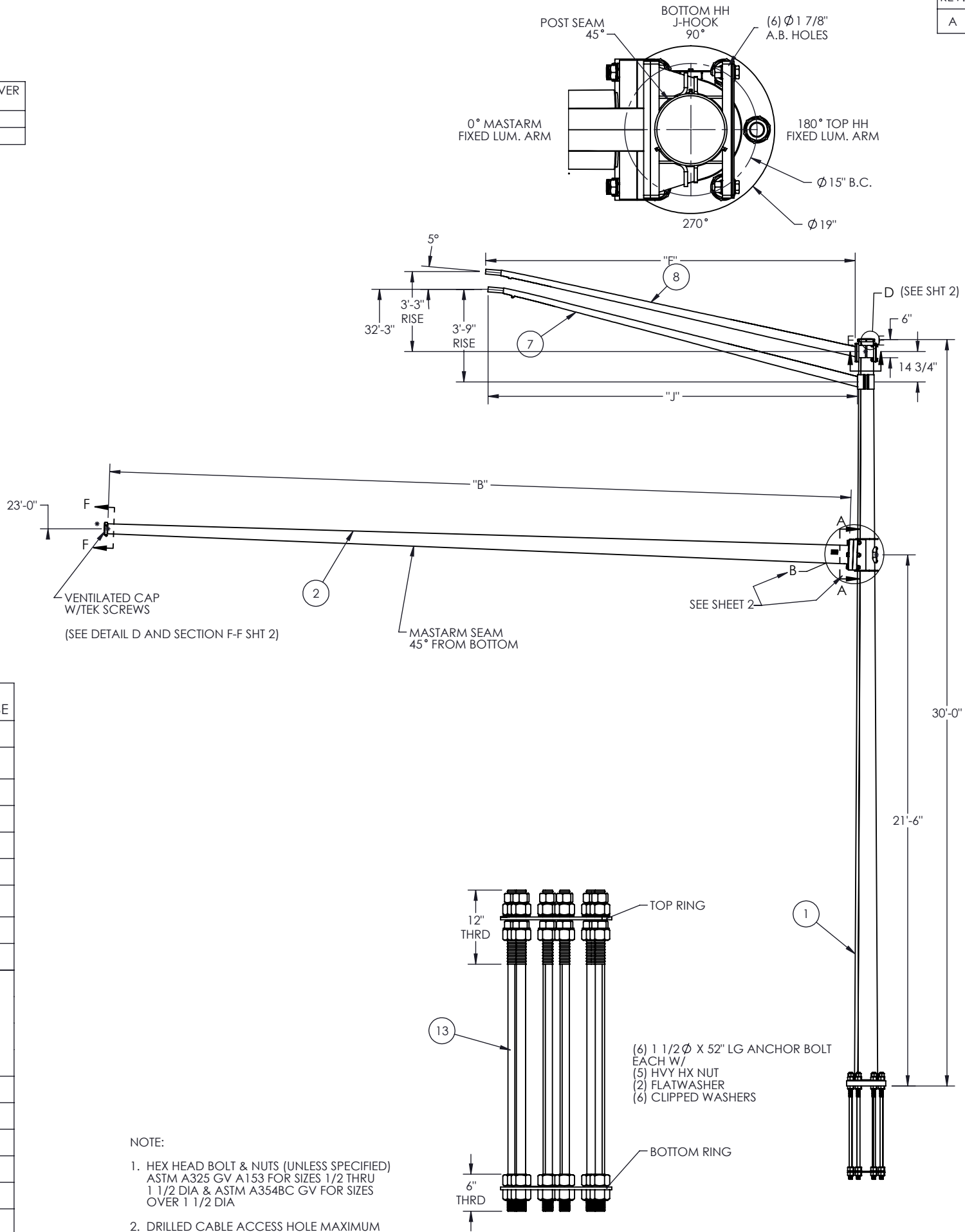
REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	2/5/2025	HE

FIXED LUMINAIRE ARM		
"G" QTY	"E" ARM PART #	"F" LENGTH
	1015935	6'
	1015934	8'
	1015933	10'
	1015932	12'
	1015929	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'

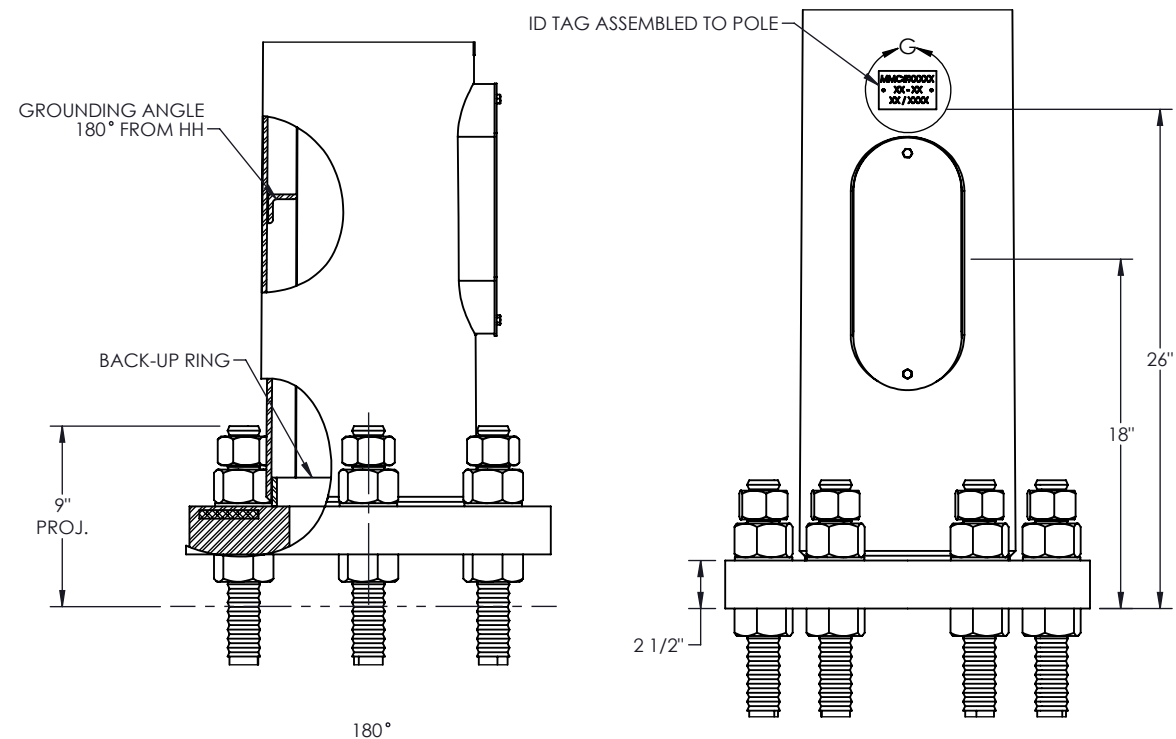
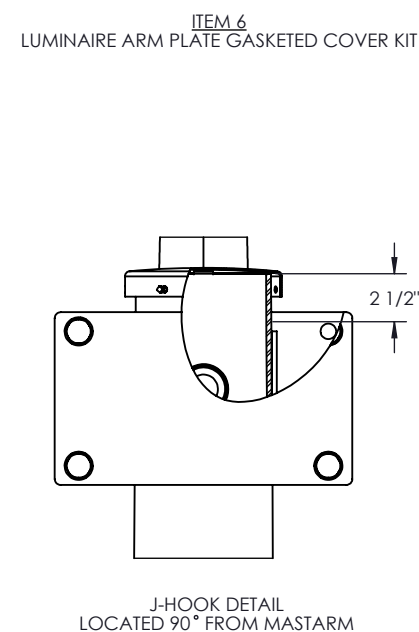
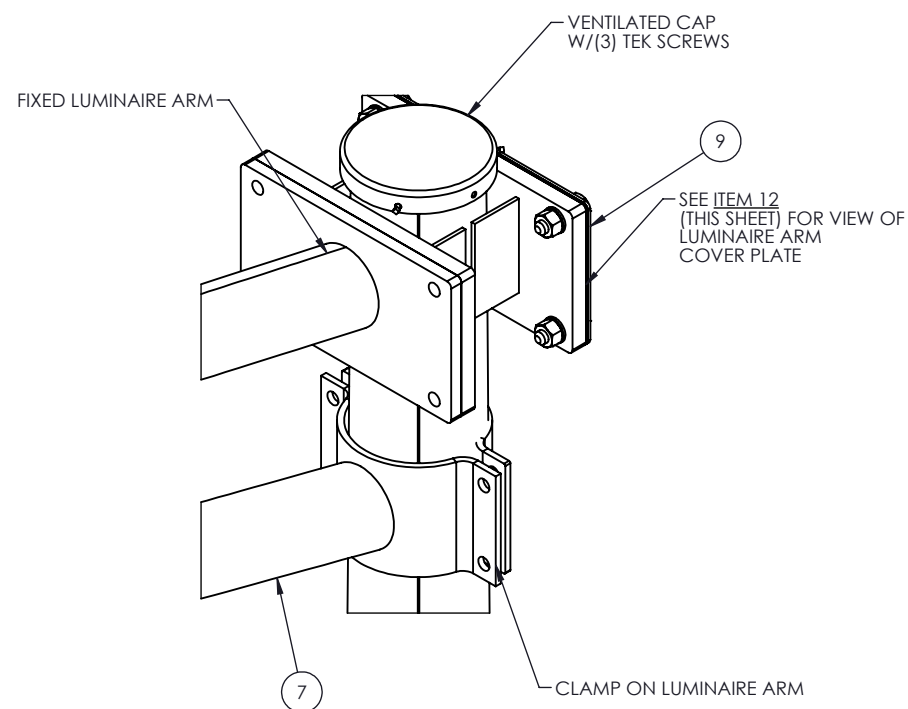
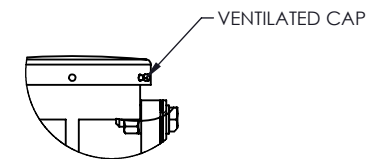
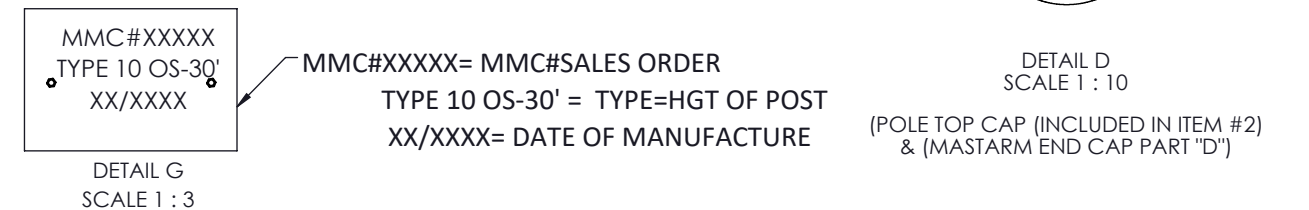
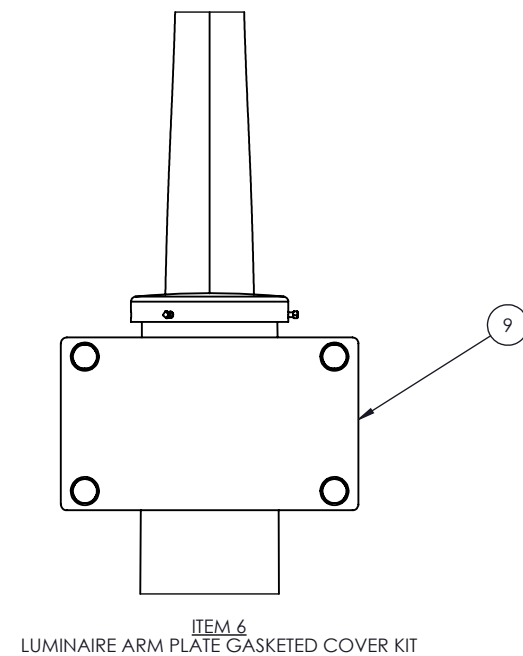
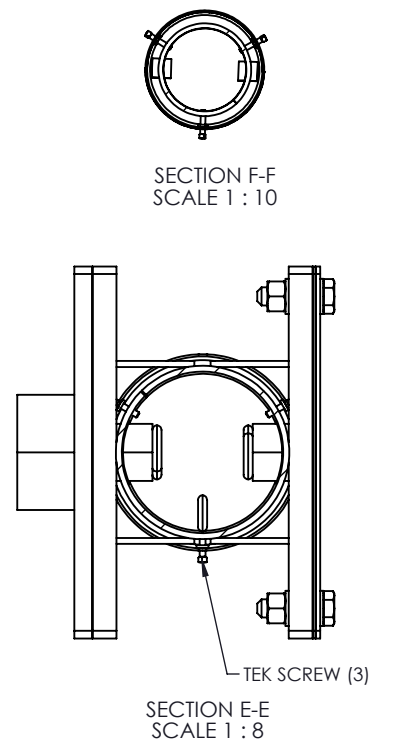
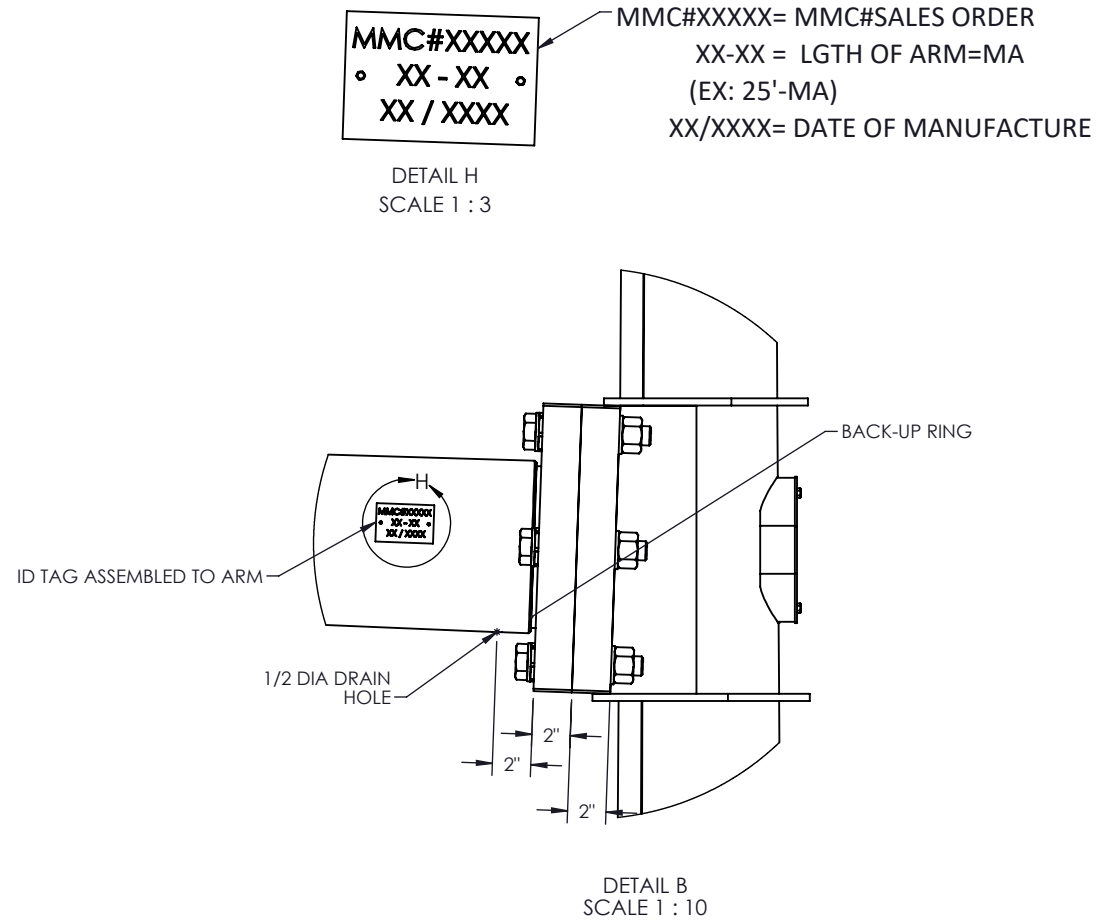
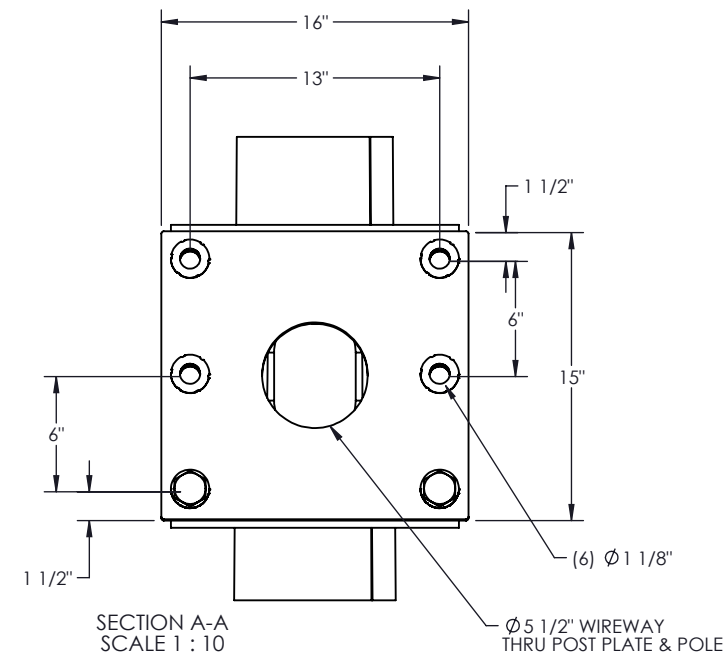
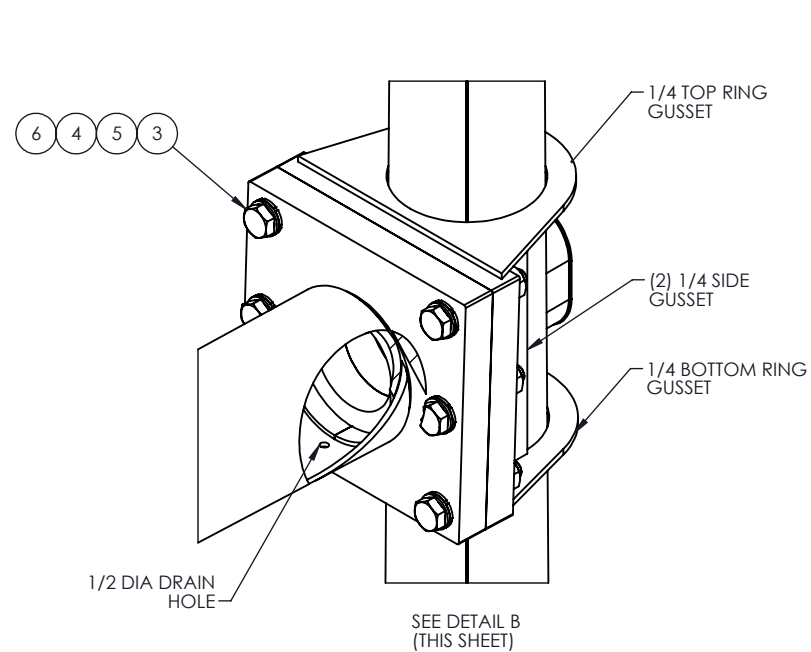
LUM. ARM COVER PLATE
"L" QTY

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	9900204
	1006391	20'-0"	ASSY ARM SIG RD 3/16 X 20'	3/16 x 8.0 x 5.2 x 20'-0"	7700005	9900203
	1006390	25'-0"	ASSY ARM SIG RD 3/16 X 25'	3/16 x 9.0 x 5.5 x 25'-0"	7700004	9900203
	1006387	30'-0"	ASSY ARM SIG RD 1/4 X 30'	1/4 x 9.0 x 4.8 x 30'-0"	7700002	9900203



ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1016137	SHIP POLE SIG RD 1/4X30'0/21'6	1		X	X
	7700007	PARTS LIST WI/DOT (2016) TYPE 10 TRAFFIC SIGNAL	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1			
2	"A"	SHIP ARM SIG RD 1/4X "B"	1		X	X
	"C"	PARTS LIST WI/DOT (2016) TYPE 9/10 TRAFFIC	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLT B1"-8X6"B	BOLT HVYHXHD 1-8 X 6 A325GV	6	SUPPLIED BY OTHERS		
4	NUTHVYHX1"-8A563GV	NUT HVY HX 1"-8 A563 GV (DH)-RCP	6			
5	WASHFLAT1"GV	WASHFLAT1"GV ASTM F436	12			
6	WASHLOADIN1" GV	WASHER DTI 1" ASTM F959 TYPE 325	6			
7	"H"	WLDMT ARM LUM CLAMP RD 11GAX "J"	"K"		X	X
	520A37-7	MASTARM FRT CLAMP	1			
	1068886	11GA X 4.90 X 2.79 X 15'1	1			
	500A381-8	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			
8	"E"	WLDMT ARM LUM RD 11GAX "F"	"G"		X	X
9	1015928	GASKETED COVER FOR 4 BOLT LUM ARM	"L"		X	X
10	460B735-5	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			X

MATERIAL SPECIFICATIONS			
POST: ASTM A572 GR 50 BASE PLATE: ASTM A709 GR36 MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A709 GR 36 HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)			
DESIGN CRITERIA			
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY III, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.			
WELD SPECIFICATION			
THE POST AND MAST ARM 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).			
FINISH SPECIFICATION			
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: N/A COLOR: N/A FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: WEIGHT W/GALV.&PAINT: SURFACE AREA: GAL. OF PAINT:			
		MILLERBERND	
		622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET 1 OF 2
DESCRIPTION: 2025 WI DOT TYPE 10-OS TRAFFIC SIGNAL 15'-30' MASTARM LENGTHS			
EST. WEIGHT: N/A		DRAWING NO: 2025 type 10-OS wi dot a	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 02-05-2025	
CHK BY:		DATE:	



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SALES ORDER NO.:	QTY:	STATE:	SHEET 2 OF 2
DESCRIPTION: 2025 WI DOT TYPE 10-OS TRAFFIC SIGNAL 15'-30' MASTARM LENGTHS			
EST. WEIGHT: N/A		DRAWING NO: 2025 type 10-OS wi dot a	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 02-05-2025	
CHK BY:		DATE:	

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	2/5/2025	HE

MATERIAL SPECIFICATIONS

POST: ASTM A572 GR 50
BASE PLATE: ASTM A36
MAST ARM: ASTM A572 GR 50
MOUNTING PLATE: ASTM A36
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT: N/A
COLOR: N/A
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.:
WEIGHT W/GALV.&PAINT:
SURFACE AREA:
GAL. OF PAINT:



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WINSTED, MN 55395

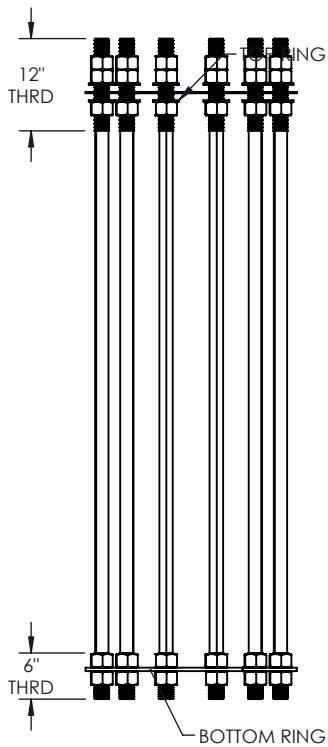
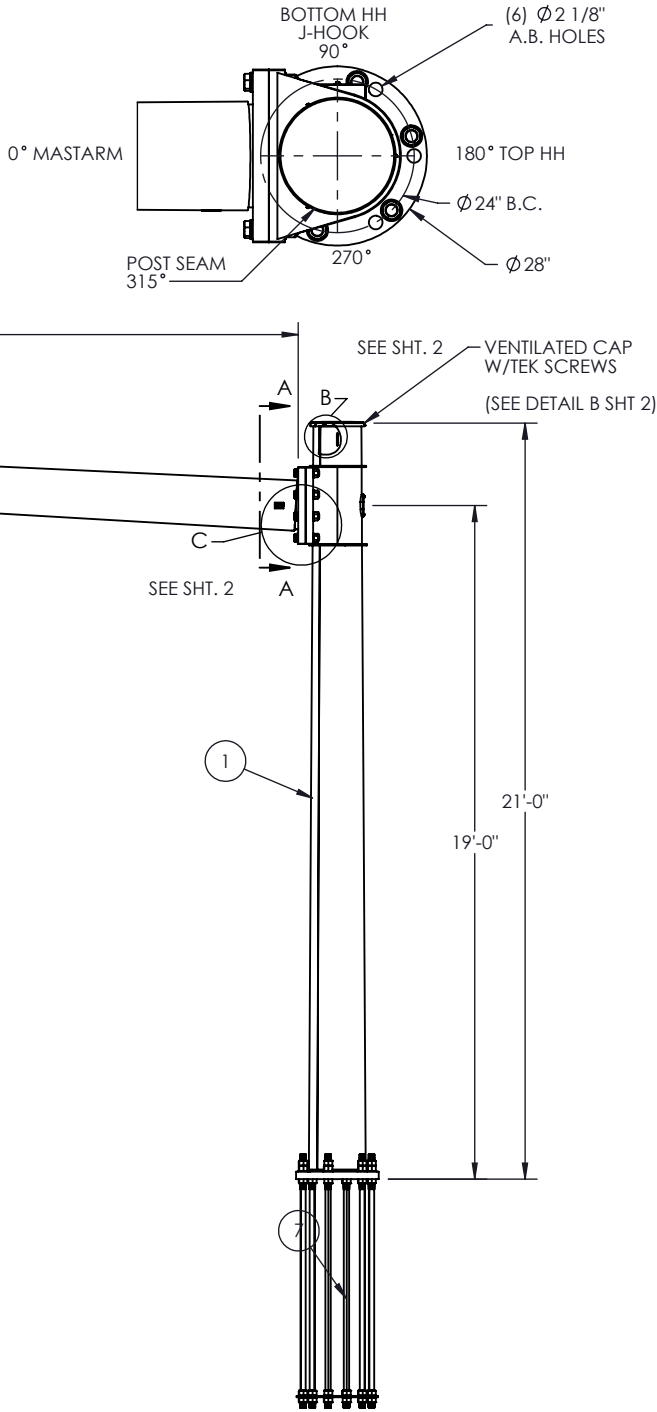
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SALES ORDER NO.:	QTY:	STATE:	SHEET 1 OF 2
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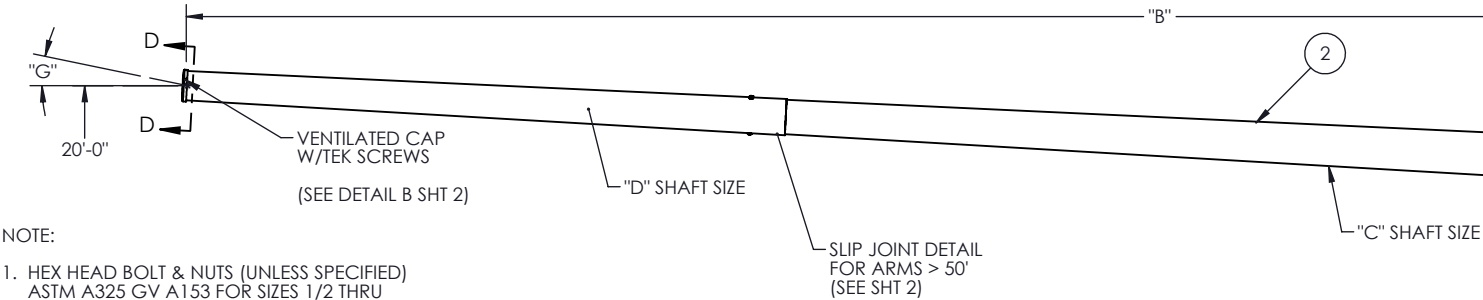
DESCRIPTION:
2025 WI DOT TYPE 12 TRAFFIC SIGNAL
35'-55' MASTARM LENGTHS

EST. WEIGHT: 6225.0 - LBS	DRAWING NO: 2025 type 12 wi dot a
------------------------------	--------------------------------------

PROJECT NAME:	
PROJECT LOCATION:	
DWN BY: HECTOR E.	DATE: 02-12-2025
CHK BY:	DATE:



(6) 1 3/4 X 86" LG ANCHOR BOLTS
EACH W/
(5) HVY HX NUT
(2) FLATWASHER
(6) CLIPPED WASHERS

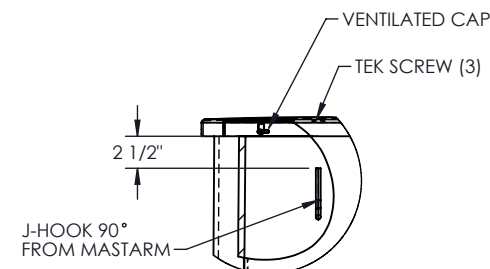
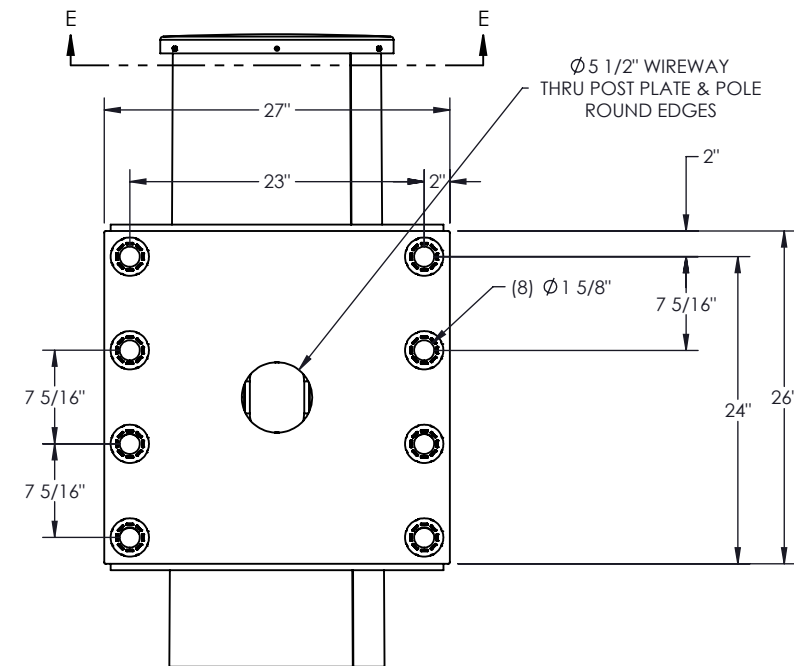
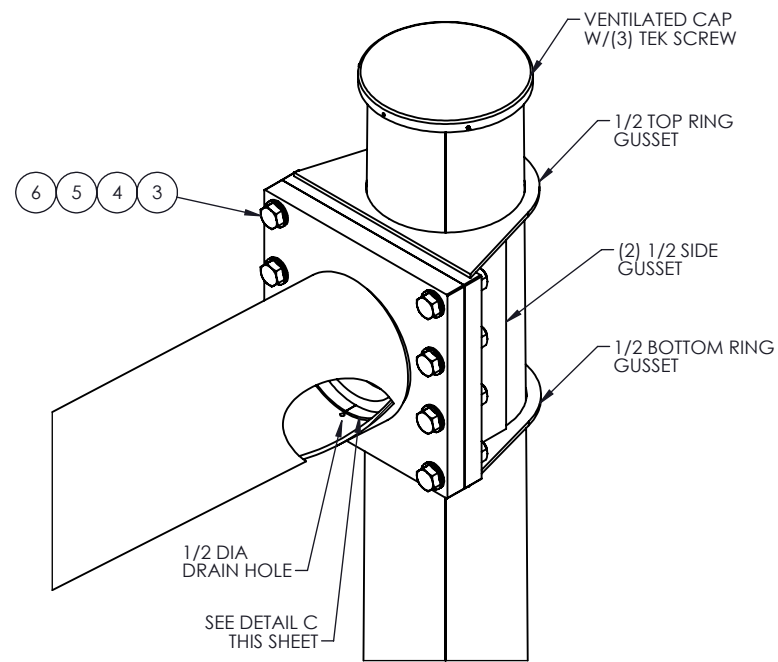


- NOTE:
- HEX HEAD BOLT & NUTS (UNLESS SPECIFIED)
ASTM A325 GV A153 FOR SIZES 1/2 THRU 1 1/2 DIA & ASTM A354BC GV FOR SIZES OVER 1 1/2 DIA
 - DRILLED CABLE ACCESS HOLE MAXIMUM ALLOWABLE DIAMETER IS 3/4"

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	9900208	2.5°
	1006855	40'	ASSY ARM SIG RD 1/4 X 40'	1/4 x 17.0 x 11.4 x 40'-0"	-	7700013	9900208	2.5°
	1006854	45'	ASSY ARM SIG RD 5/16 X 45'	5/16 x 17.0 x 10.7 x 45'-0"	-	7700012	9900208	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	9900208	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	9900207	3°

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

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1016134	SHIP POLE SIG RD 3/8X21'0/19'0	1		X	X
	7700009	PARTS LIST WI/DOT (2016) TYPE 12 TRAFFIC SIGNAL 1006847	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
2	"A"	SHIP ARM SIG RD S1 "B"	1		X	X
	"E"	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLT81-1/2-6X7-1/2"B	BOLT HVYHXHD 1-1-2-6 X 7-1-2 A325GV	8	SUPPLIED BY OTHERS		
4	WASHFLAT1-1/2GV	WASHER FLAT 1-1/2 SAE ASTM F436 GV	16			
5	NUTHVYHX1-1/2-6A563DHGV	NUT HVY HX 1-1-2-6NC ASTM A563 DH GV	8			
6	WASHLOADIN1-1/2-001-GV	WASHER DTI 1-1/2" ASTM F959 TYPE 325	8			
7	460B735-6	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			X

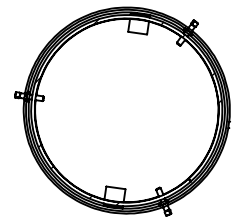
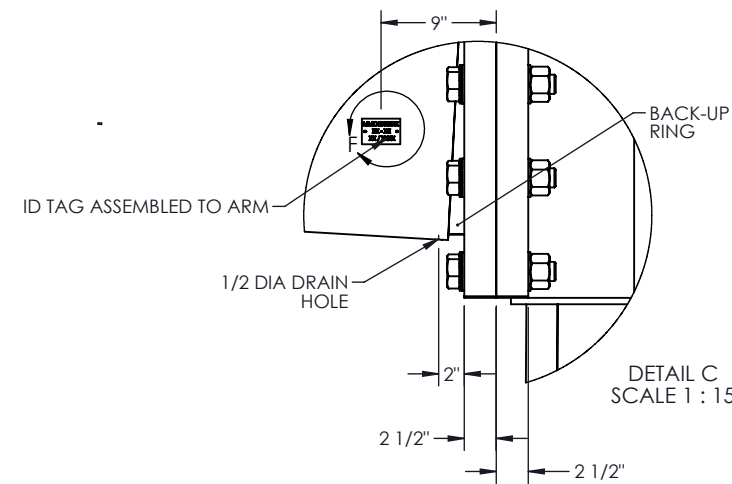


(POLE TOP CAP (INCLUDED IN ITEM #2)
& MASTARM END CAP PART "F")

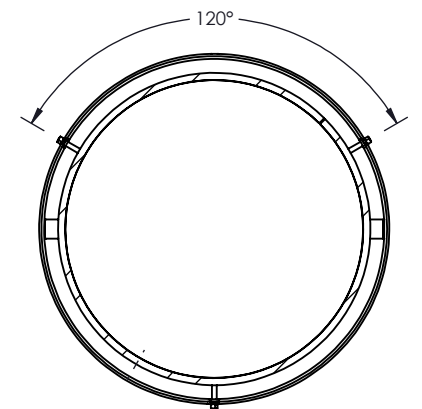
MMC#XXXXX
• XX - XX •
XX / XXXX

DETAIL F
SCALE 1 : 3

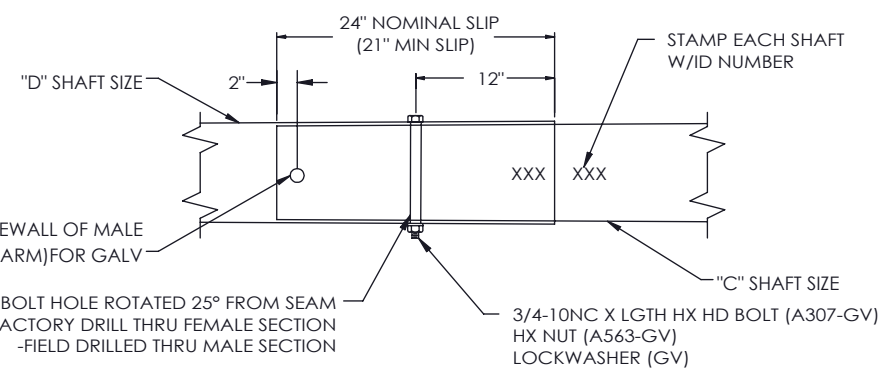
MMC#XXXXX= MMC#SALES ORDER
XX-XX = LGTH OF ARM=MA
(EX: 50'-MA)
XX/XXXX= DATE OF MANUFACTURE



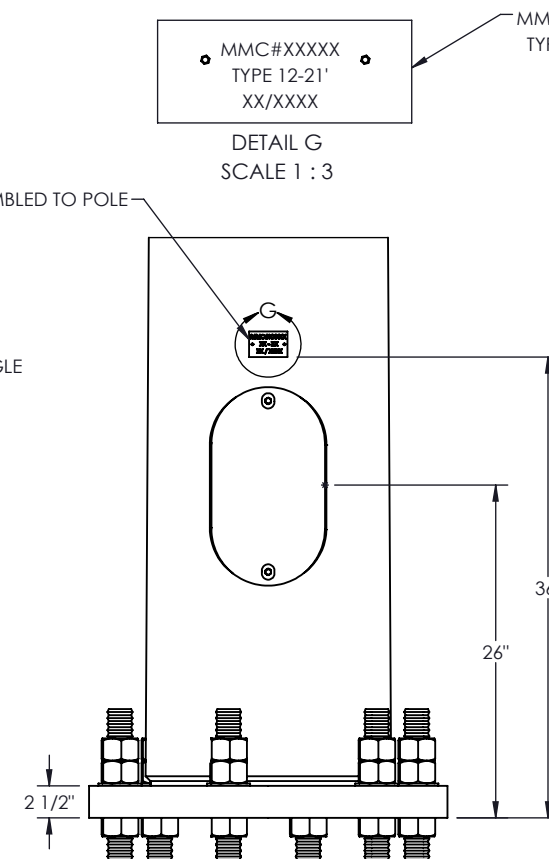
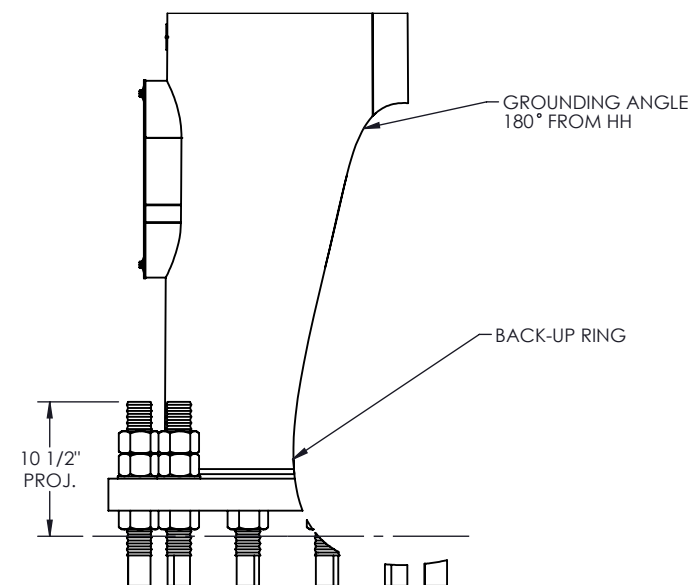
SECTION D-D
SCALE 1 : 10



SECTION E-E
SCALE 1 : 10



SLIP JOINT DETAIL FOR MASTARMS 50' AND GREATER



MMC#XXXXX= MMC#SALES ORDER
TYPE 12-21' = TYPE=HGT OF POST
XX/XXXX= DATE OF MANUFACTURE

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SALES ORDER NO.:		QTY:	STATE: SHEET 2 OF 2
DESCRIPTION: 2025 WI DOT TYPE 12 TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS			
EST. WEIGHT: 6225.0 - LBS		DRAWING NO: 2025 type 12 wi dot c	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 02-12-2025	
CHK BY:		DATE:	

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	2/12/2025	HE

MATERIAL SPECIFICATIONS

POST: ASTM A572 GR 50
BASE PLATE: ASTM A709 GR 36
MAST ARM: ASTM A572 GR 50
MOUNTING PLATE: ASTM A36
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLT-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT: N/A
COLOR: N/A
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.:
WEIGHT W/GALV.&PAINT:
SURFACE AREA:
GAL. OF PAINT:



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SALES ORDER NO.:	QTY:	STATE:	SHEET
			1 OF 2

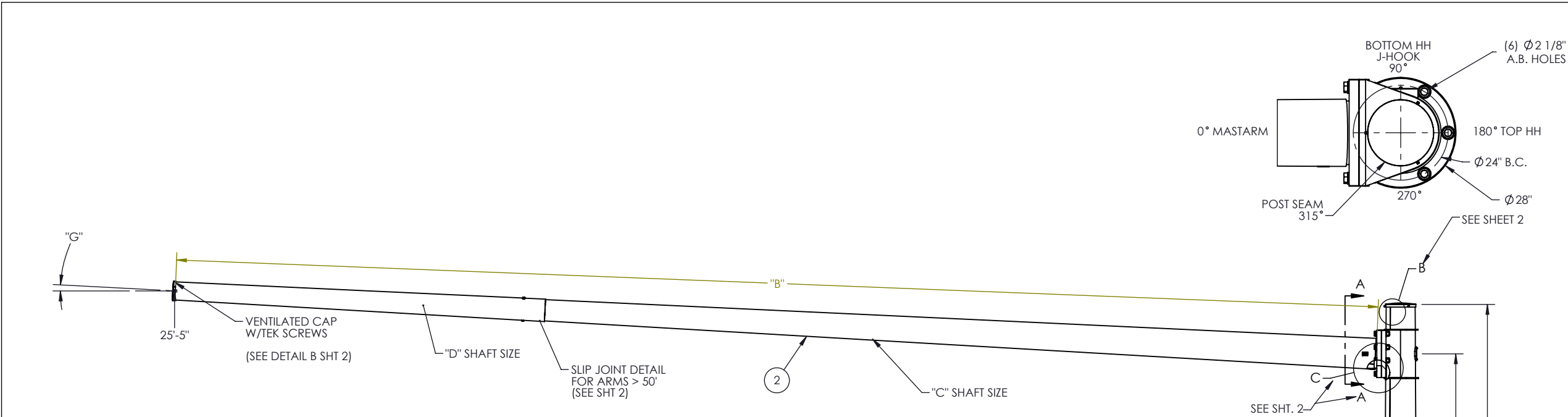
DESCRIPTION:
2025 WI DOT TYPE 12-OS TRAFFIC SIGNAL
35'-55' MASTARM LENGTHS

EST. WEIGHT:	DRAWING NO:
N/A	2025 type 12-OS wi dot a

PROJECT NAME:

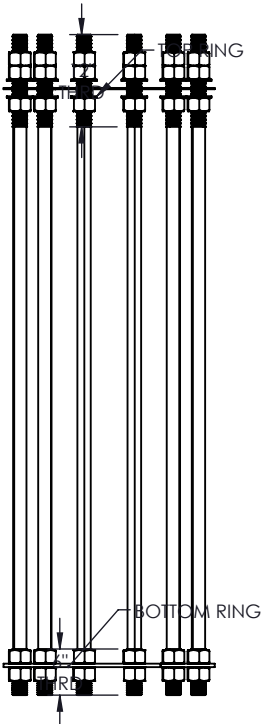
PROJECT LOCATION:

DWN BY: HECTOR E.	DATE: 02-12-2025
CHK BY:	DATE:



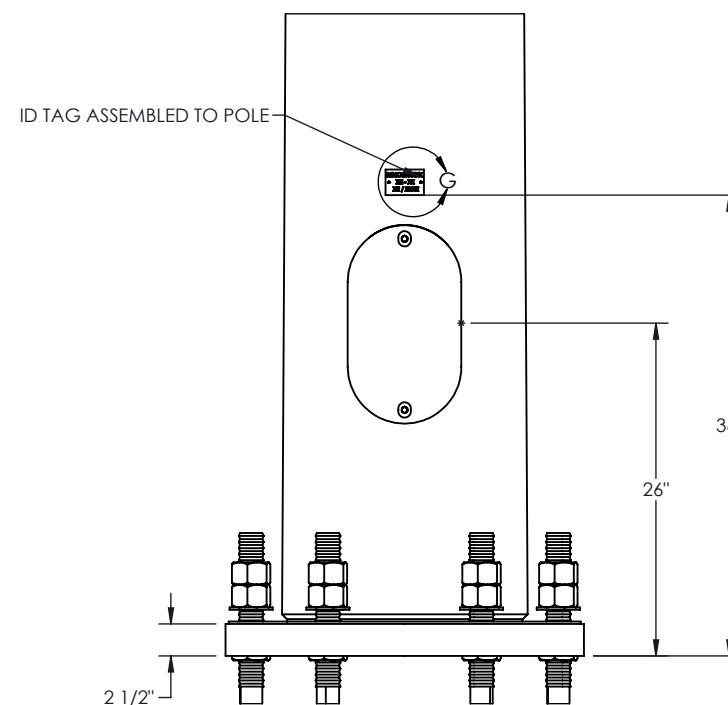
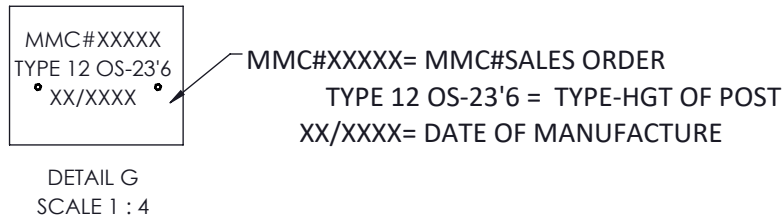
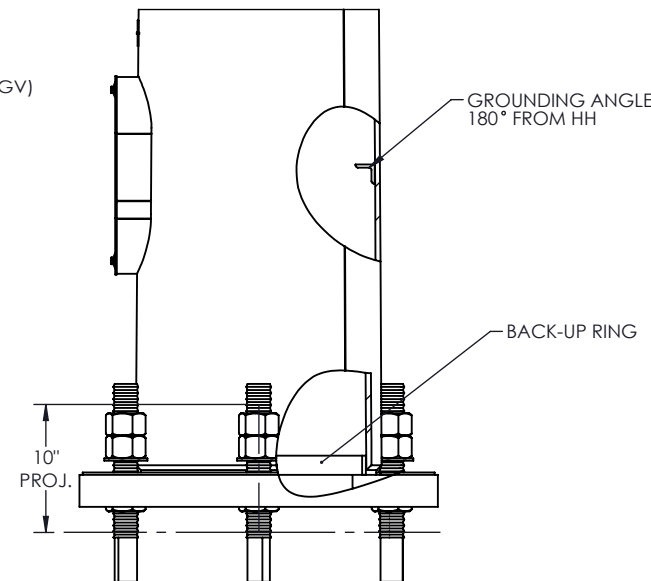
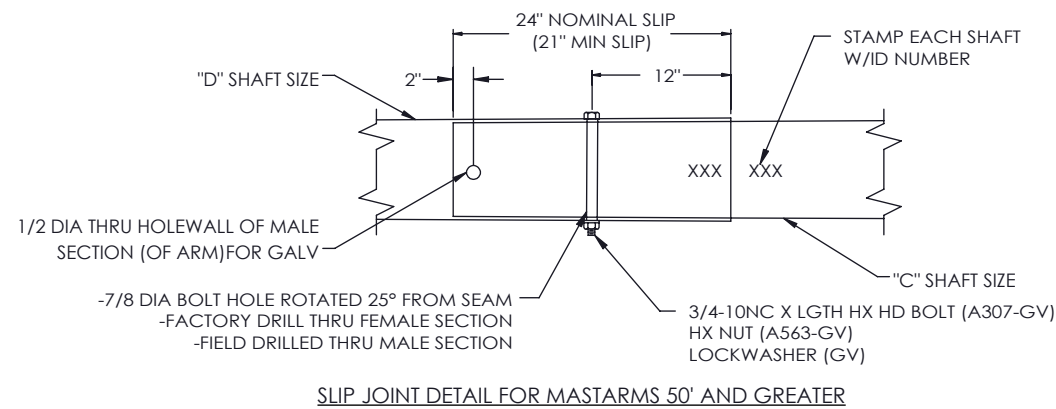
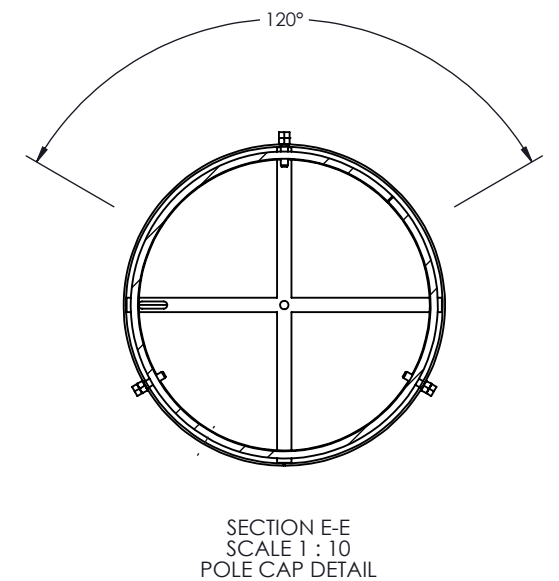
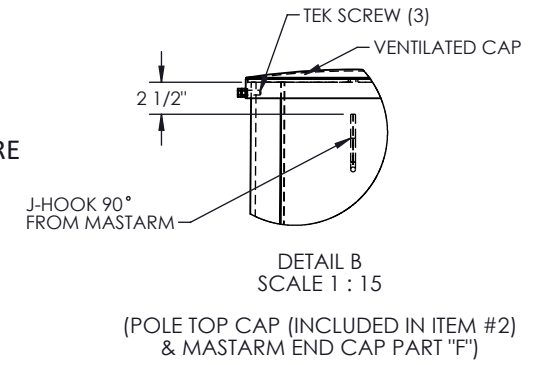
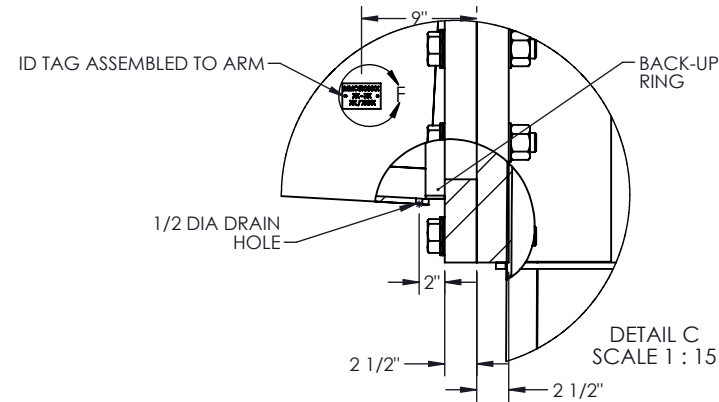
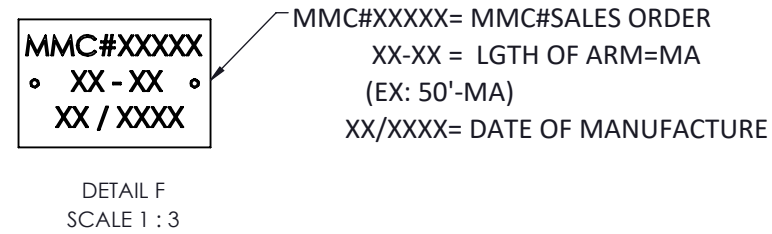
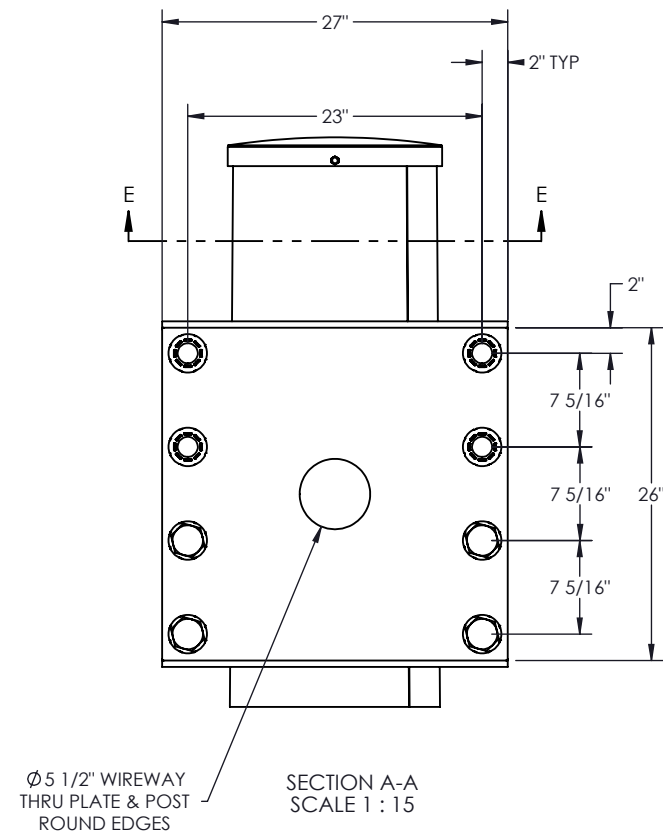
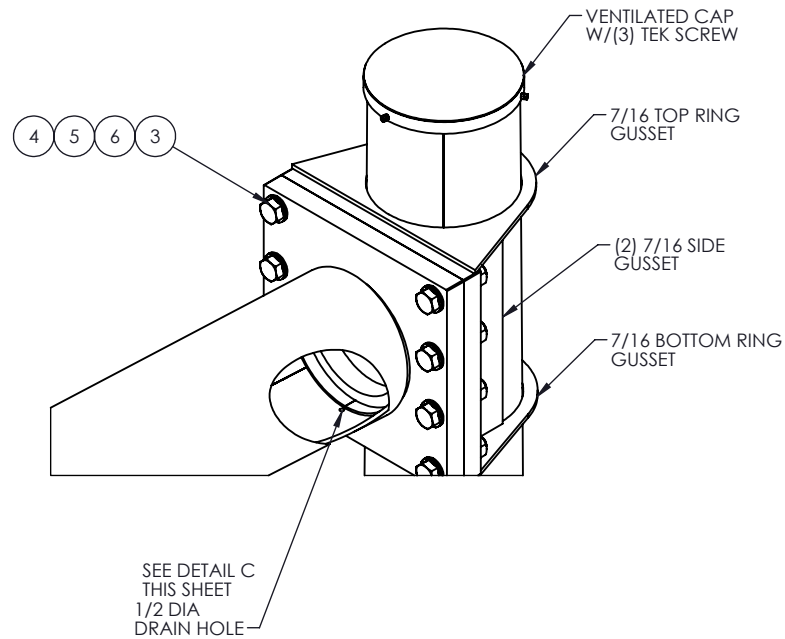
- NOTE:
- HEX HEAD BOLT & NUTS (UNLESS SPECIFIED) ASTM A325 GV A153 FOR SIZES 1/2 THRU 1 1/2 DIA & ASTM A354BC GV FOR SIZES OVER 1 1/2 DIA
 - DRILLED CABLE ACCESS HOLE MAXIMUM ALLOWABLE DIAMETER IS 3/4"

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



- (6) 1 3/4 X 86" LG ANCHOR BOLTS
EACH W/
(5) HVY HX NUT
(2) FLATWASHER
(6) CLIPPED WASHERS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1016138	SHIP POLE SIG RD 3/8X23'6/21'6	1		X	X
	7700047	PARTS LIST WI/DOT (2017) TYPE 12 OS TRAFFIC SIGNAL 1016138	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
2	"A"	SHIP ARM SIG RD S1-7/16,S2-3/16X "B"	1			X
	"E"	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC ARM	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLTb1-1/2-6X7-1/2"B	BOLT HVYHXHD 1-1-2-6 X 7-1-2 A325GV	8	SUPPLIED BY OTHERS		
4	NUTHVYHX1-1/2-6A563DHGV	NUT HVY HX 1-1-2-6NC ASTM A563 DH GV	8			
5	WASHFLAT1-1/2GV	WASHER FLAT 1-1/2 SAE ASTM F436 GV	16			
6	WASHLOADIN1-1/2-001-GV	WASHER DTI 1-1/2" ASTM F959 TYPE 325	8			
7	460B735-6	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			



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SALES ORDER NO.:		QTY:	STATE:	SHEET 2 OF 2
DESCRIPTION: 2025 WI DOT TYPE 12-OS TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS				
EST. WEIGHT: N/A			DRAWING NO: 2025 type 12-OS wi dot a	
PROJECT NAME:				
PROJECT LOCATION:				
DWN BY: HECTOR E.			DATE: 02-12-2025	
CHK BY:			DATE:	

CLAMP ON LUMINAIRE ARM		
"L" QTY	"K" ARM PART #	"M" LENGTH
	730A1652-6-1562	6'
	730A1652-8-1562	8'
	730A1652-10-1562	10'
	730A1652-12-1562	12'
	730A1652-15-1562	15'

FIXED LUMINAIRE ARM		
"J" QTY	"G" ARM PART #	"H" LENGTH
	1015935	6'
	1015934	8'
	1015933	10'
	1015932	12'
	1015929	15'

LUM. ARM COVER PLATE
"P" QTY

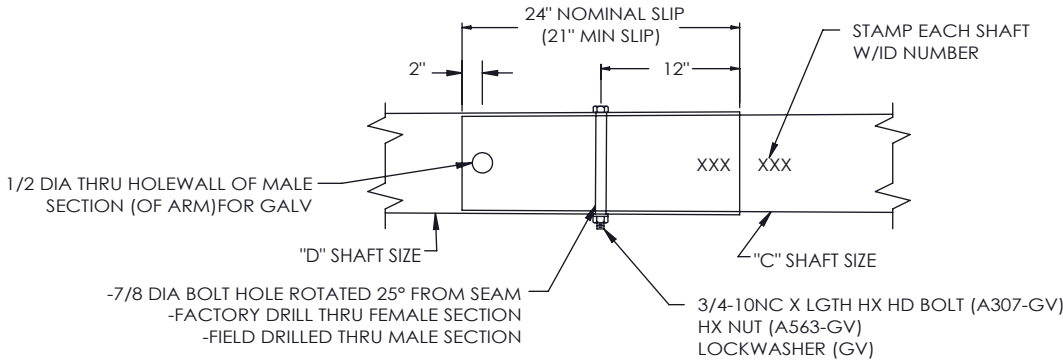
QTY	"A" ASSY PART #	"B" LENGTH	DESCRPTION	"C" MAST ARM SHAFT SIZE	"D" MASTARM SHAFT SIZE	"E" PARTS LIST/BAG	"F" ARM END CAP	"N" ARM RISE
	1006856	35'	ASSY ARM SIG RD 1/4 X 35'	1/4 x 16.0 x 11.1 x 35'-0"	-	7700014	9900208	2.5°
	1006855	40'	ASSY ARM SIG RD 1/4 X 40'	1/4 x 17.0 x 11.4 x 40'-0"	-	7700013	9900208	2.5°
	1006854	45'	ASSY ARM SIG RD 5/16 X 45'	5/16 x 17.0 x 10.7 x 45'-0"	-	7700012	9900208	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	9900208	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	9900207	3°

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

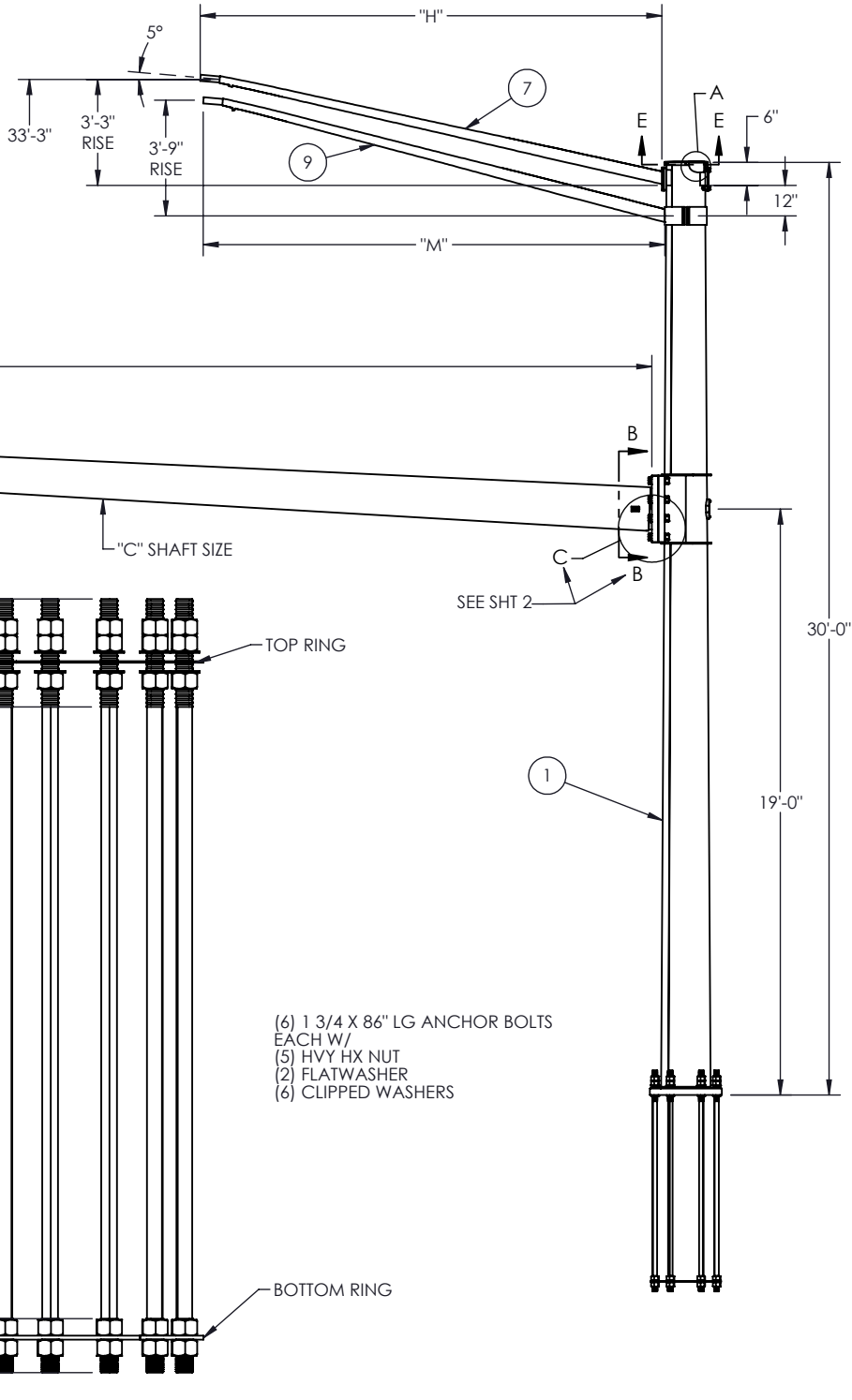
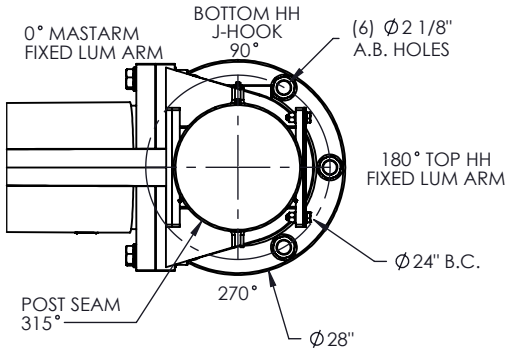
ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1016135	SHIP POLE SIG RD 3/8X30'0/19'0	1		X	X
	7700015	PARTS LIST WI/DOT (2016) TYPE 13 TRAFFIC SIGNAL 1006857	1		X	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCR W 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1			
2	"A"	SHIP ARM SIG RD S1 "B"	1		X	X
	"E"	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC	1		X	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCR W 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLT B1-1/2-6X7"B	BOLT HVYHXHD 1-1-2-6 X 7 A325GV	8	SUPPLIED BY OTHERS		
4	WASHFLAT1-1/2GV	WASHER FLAT 1-1/2 SAE ASTM F436 GV	16			
5	NUTHVYHX1-1/2-6A194GV	NUT HVY HX 1-1-2-6NC ASTM A194 GV(2H)	8			
6	WASHLOADIN1-1/2-001-GV	WASHER DTI 1-1/2" ASTM F959 TYPE 325	8			
7	"G"	WLDMT ARM LUM RD 11GAX "H"	"J"		X	X
8	1015928	GASKETED COVER FOR 4 BOLT LUM ARM	"P"		X	X
9	"K"	WLDMT ARM LUM CLAMP RD 11GAX "M"	"L"		X	X
10	460B735-6	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			X

NOTE:

- HEX HEAD BOLT & NUTS (UNLESS SPECIFIED) ASTM A325 GV A153 FOR SIZES 1/2 THRU 1 1/2 DIA & ASTM A354BC GV FOR SIZES OVER 1 1/2 DIA
- DRILLED CABLE ACCESS HOLE MAXIMUM ALLOWABLE DIAMETER IS 3/4"

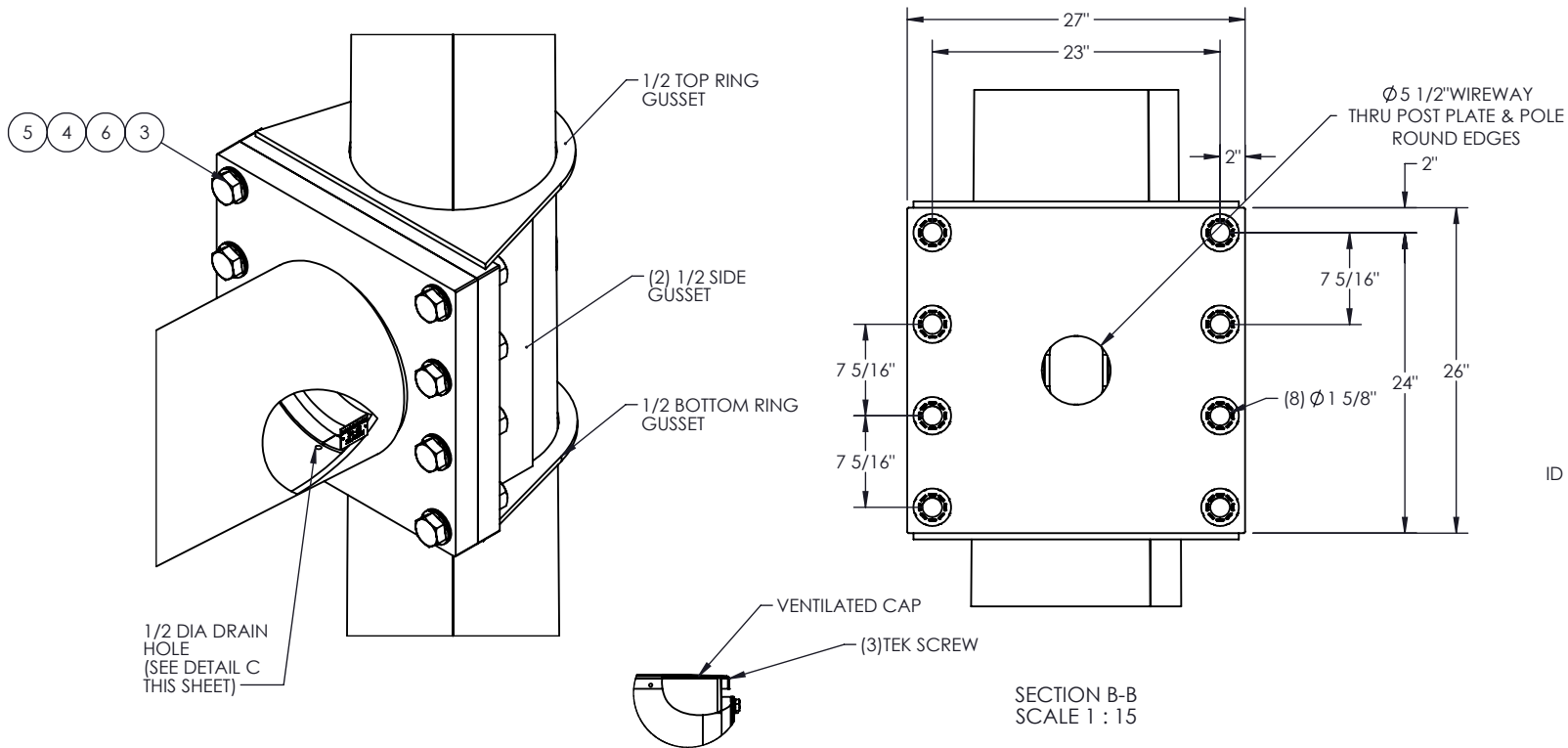


SLIP JOINT DETAIL FOR MASTARMS 50' AND GREATER



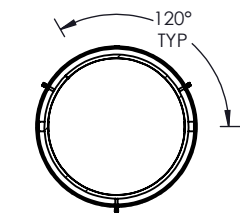
REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	2/12/2025	HE

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR 50 BASE PLATE: ASTM A36 MAST ARM: ASTM A572 GR 50 MOUNTING PLATE: ASTM A36 HARDWARE FINISH: ASTM A153 ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)	
DESIGN CRITERIA	
2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.	
WELD SPECIFICATION	
THE POST AND MAST ARM 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT ≥ 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	
FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123 FINISH COAT: N/A COLOR: N/A FEDERAL OR RAL SPEC.: WEIGHT W/GALV.: WEIGHT W/GALV.&PAINT: SURFACE AREA: GAL. OF PAINT:	
 622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:
STATE:	SHEET
WI	1 OF 2
DESCRIPTION: 2025 WI DOT TYPE 13 TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS	
EST. WEIGHT:	DRAWING NO: 2025 type 13 wi dot a
PROJECT NAME:	
PROJECT LOCATION:	
DWN BY: HECTOR E.	DATE: 02-12-2025
CHK BY:	DATE:

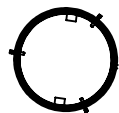


DETAIL A
SCALE 1 : 20

(POLE TOP CAP (INLCUDED IN ITEM #2)
& (MASTARM END CAP PART "F")



SECTION E-E
SCALE 1 : 20

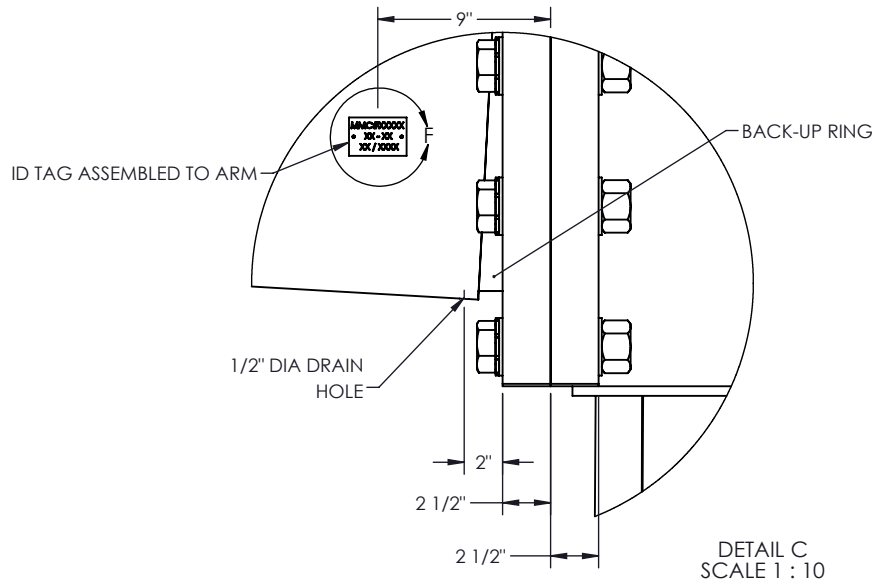


SECTION D-D
SCALE 1 : 20

MMC#XXXXX
• XX - XX •
XX / XXXX

DETAIL F
SCALE 1 : 3

MMC#XXXXX= MMC#SALES ORDER
XX-XX = LGTH OF ARM=MA
(EX: 55'-MA)
XX/XXXX= DATE OF MANUFACTURE

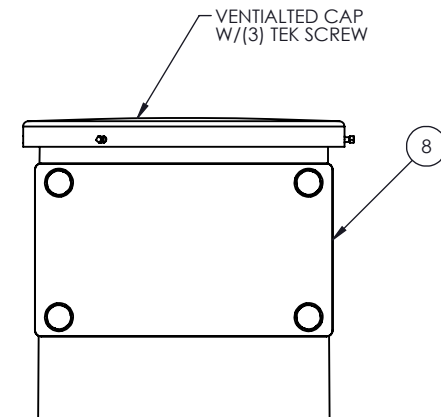


DETAIL C
SCALE 1 : 10

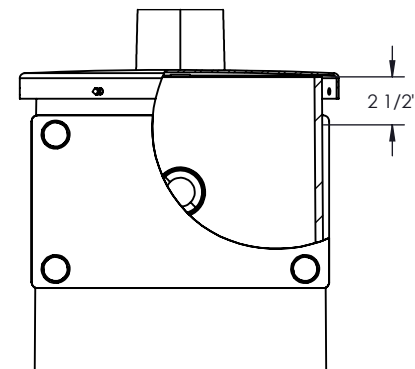
MMC#XXXXX
• TYPE 13 - 30' •
XX/XXXX

DETAIL G
SCALE 1 : 3

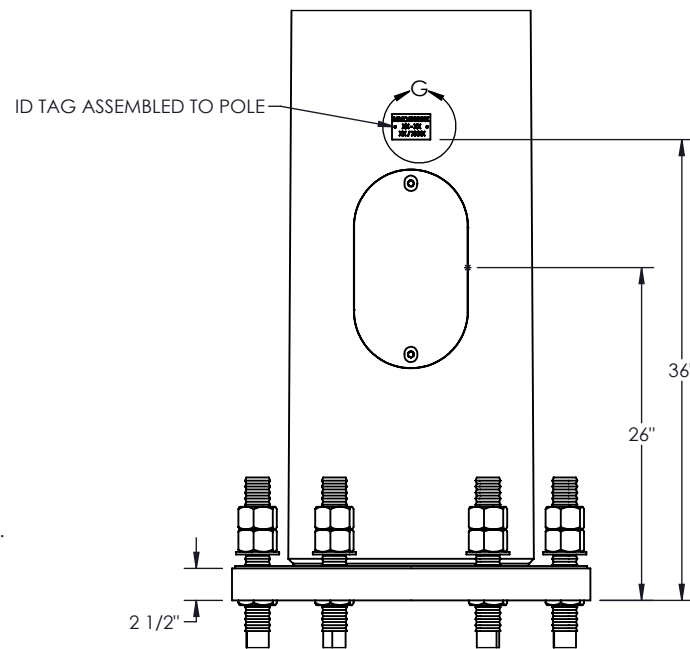
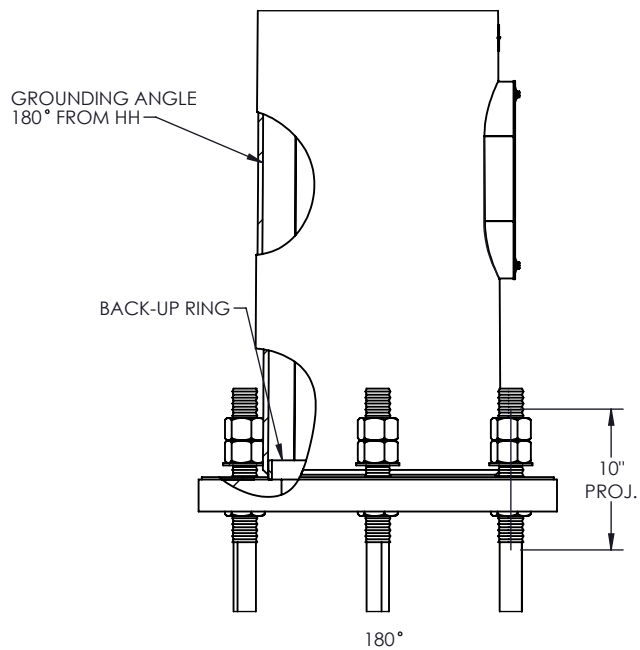
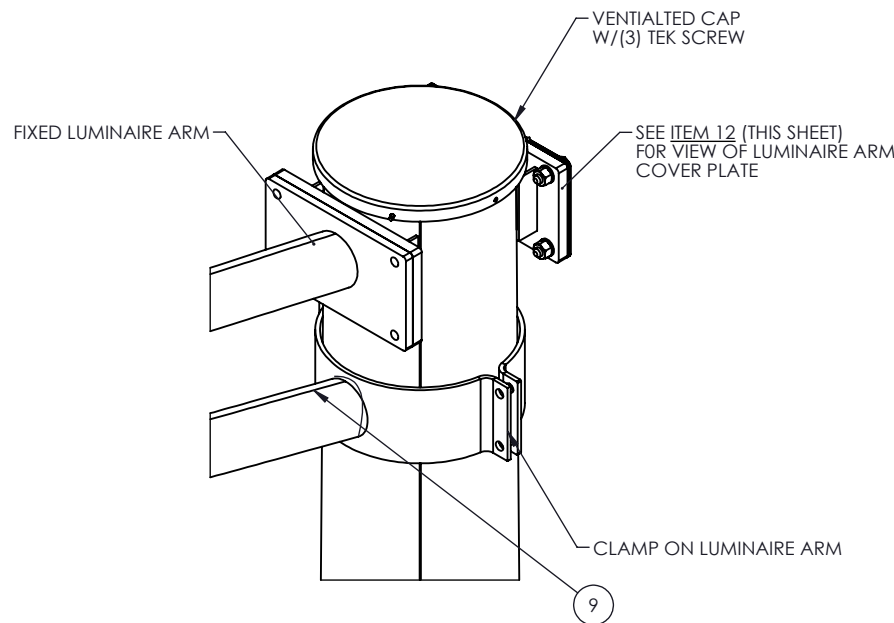
MMC#XXXXX= MMC#SALES ORDER
TYPE 13-30' = TYPE=HGT OF POST
XX/XXXX= DATE OF MANUFACTURE



ITEM 12
LUMINAIRE ARM PLATE GASKETED COVER KIT



J-HOOK DETAIL
90° FROM MASTARM



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SALES ORDER NO.:	QTY:	STATE:	SHEET
		WI	2 OF 2
DESCRIPTION: 2025 WI DOT TYPE 13 TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS			
EST. WEIGHT: 7081.6 - LBS		DRAWING NO: 2025 type 13 wi dot c	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 02-12-2025	
CHK BY:		DATE:	

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED NAME TO 2025	2/13/2025	HE

MATERIAL SPECIFICATIONS

POST: ASTM A572 GR 50
BASE PLATE: ASTM A709 GR 36
MAST ARM: ASTM A572 GR 50
MOUNTING PLATE: ASTM A36
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: ASTM F1554 GR 55 (FBO)

DESIGN CRITERIA

2015 AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS LRFDLTS-1, FATIGUE CATEGORY II, AND PER WISDOT STANDARD S.D.D 9 E 8-9A, 9K.

WELD SPECIFICATION

THE POST AND MAST ARM 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) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT: N/A
COLOR: N/A
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.:
WEIGHT W/GALV.&PAINT:
SURFACE AREA:
GAL. OF PAINT:



MILLERBERND

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WINSTED, MN 55395

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SALES ORDER NO.:	QTY:	STATE:	SHEET
			1 OF 2

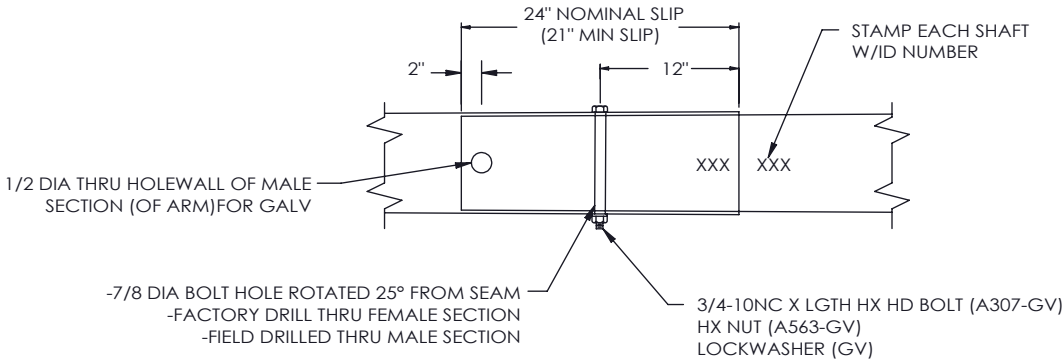
DESCRIPTION:
2025 WI DOT TYPE 13-OS TRAFFIC SIGNAL
35'-55' MASTARM LENGTHS

EST. WEIGHT:	DRAWING NO:
	2025 type 13-OS wi dot a

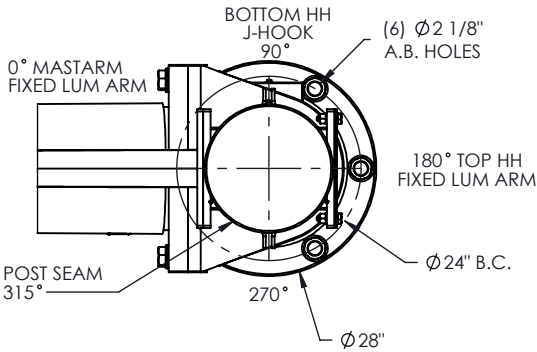
PROJECT NAME:

PROJECT LOCATION:

DWN BY: HECTOR E.	DATE: 02-13-2025
CHK BY:	DATE:



SLIP JOINT DETAIL FOR MASTARMS 50' AND GREATER

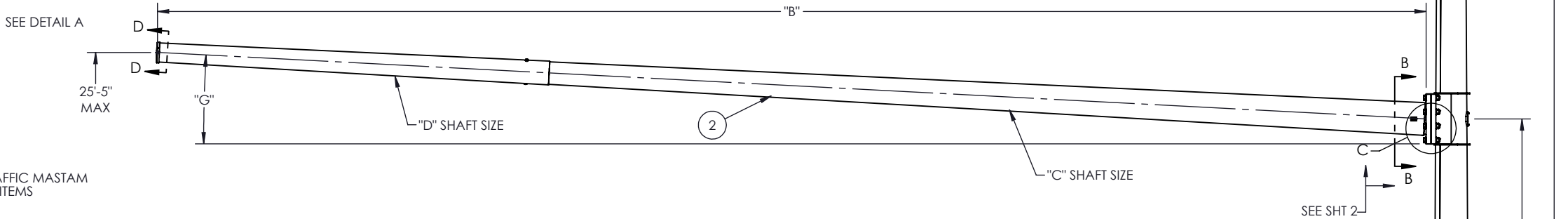


CLAMP ON LUMINAIRE ARM		
"L" QTY	"K" ARM PART #	"M" LENGTH
	730A1652-6-1562	6'
	730A1652-8-1562	8'
	730A1652-10-1562	10'
	730A1652-12-1562	12'
	730A1652-15-1562	15'

FIXED LUMINAIRE ARM		
"J" QTY	"G" ARM PART #	"H" LENGTH
	1015935	6'
	1015934	8'
	1015933	10'
	1015932	12'
	1015929	15'

LUM. ARM COVER PLATE
"P" QTY

QTY	"A" ASSY PART #	"B" LENGTH	DESCRPTION	"D" MASTARM SHAFT SIZE	"C" MAST ARM 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	9900208	2.5°
	1006855	40'	ASSY ARM SIG RD 1/4 X 40'	-	1/4 x 17.0 x 11.4 x 40'-0"	7700013	9900208	2.5°
	1006854	45'	ASSY ARM SIG RD 5/16 X 45'	-	5/16 x 17.0 x 10.7 x 45'-0"	7700012	9900208	2.5°
	1006853	50'	ASSY ARM SIG RD 3/8/3/16 X 50'	3/16 x 12.31 x 10.63 x 12'-0"	3/8 x 17.0 x 11.4 x 40'-0"	7700011	9900208	3°
	1006850	55'	ASSY ARM SIG RD 7/16/3/16 X 55'	3/16 x 12.31x 9.93 x 17'-0"	7/16 x 17.0 x 11.4 x 40'-0"	7700010	9900207	3°

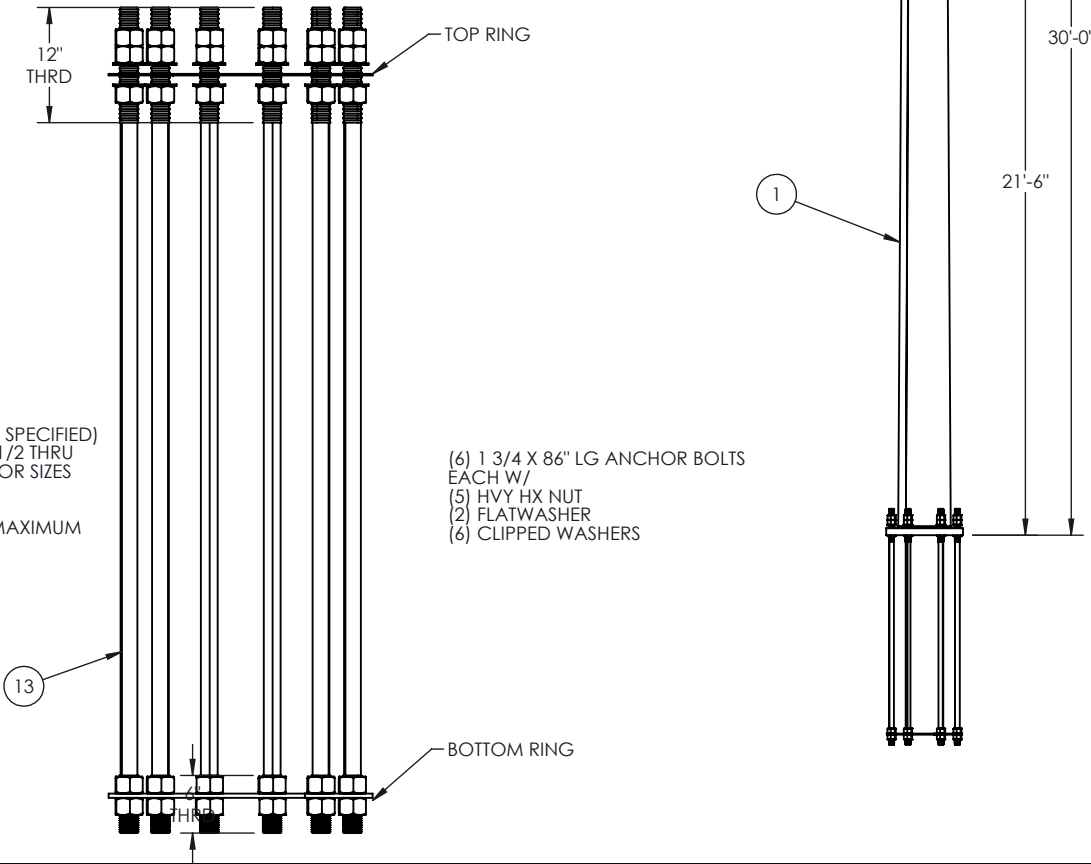


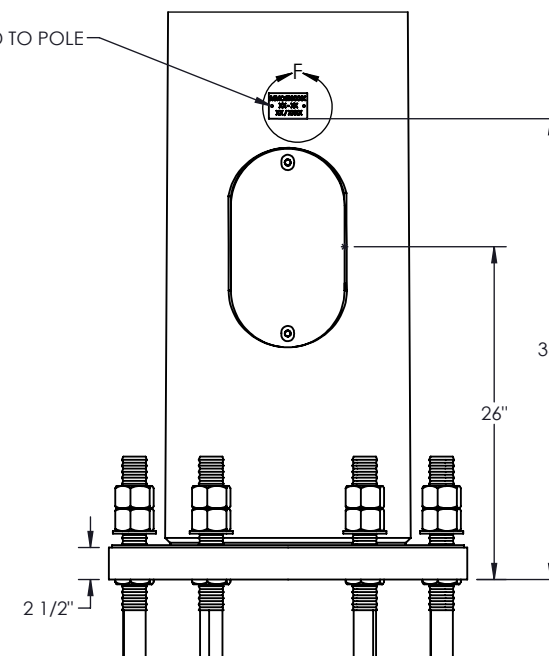
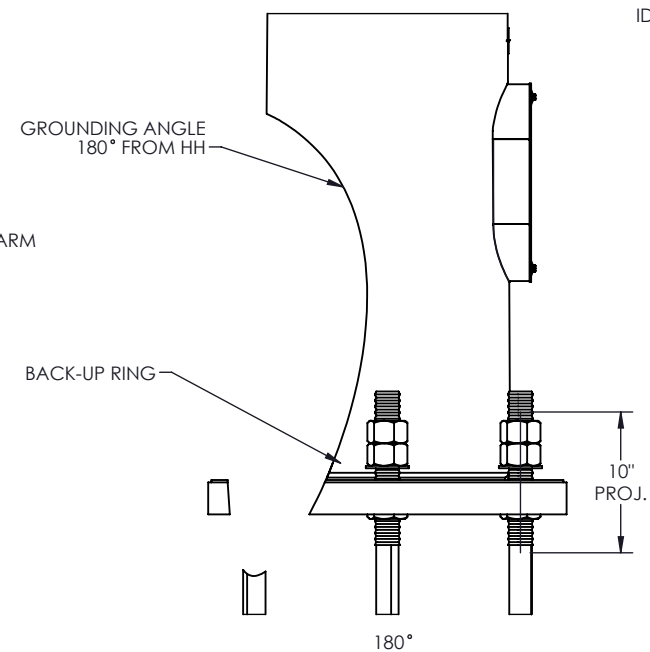
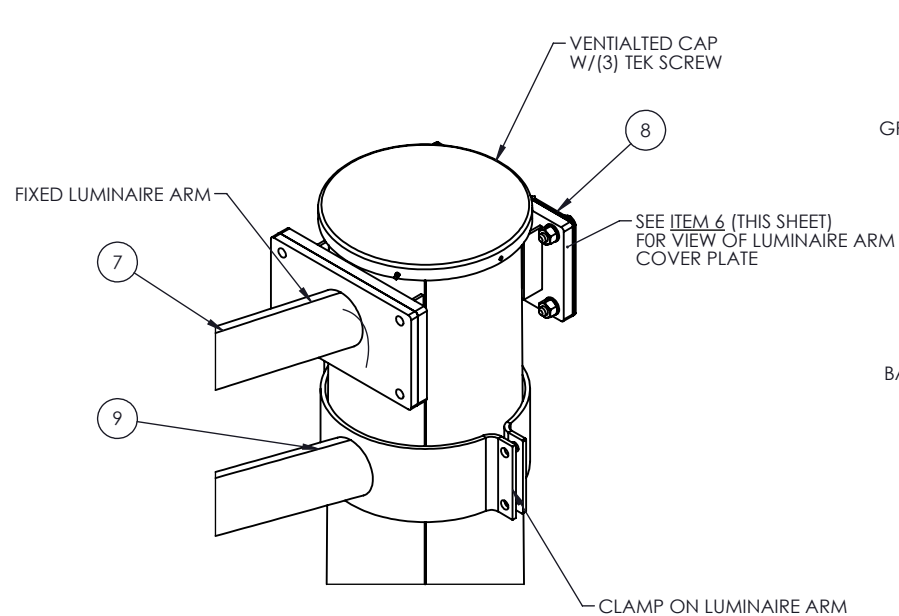
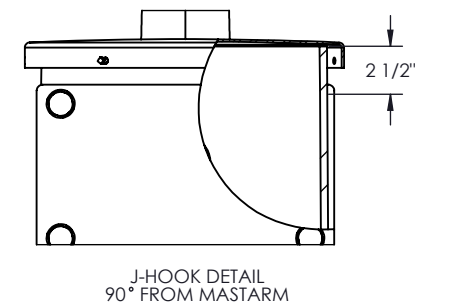
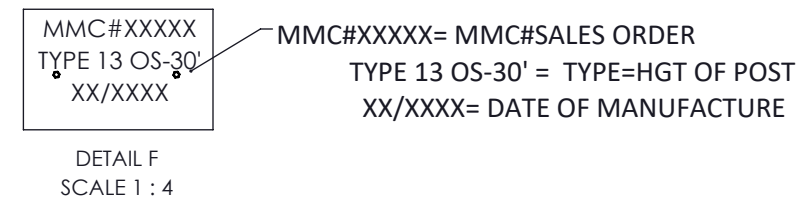
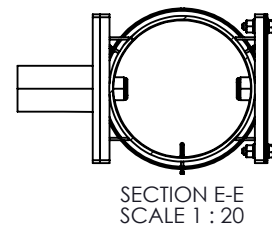
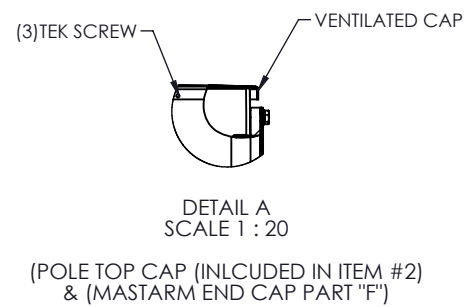
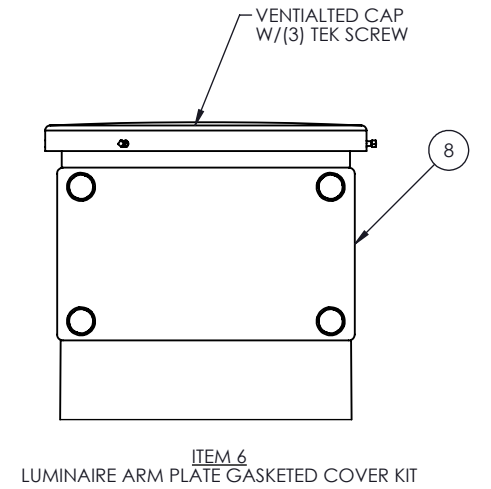
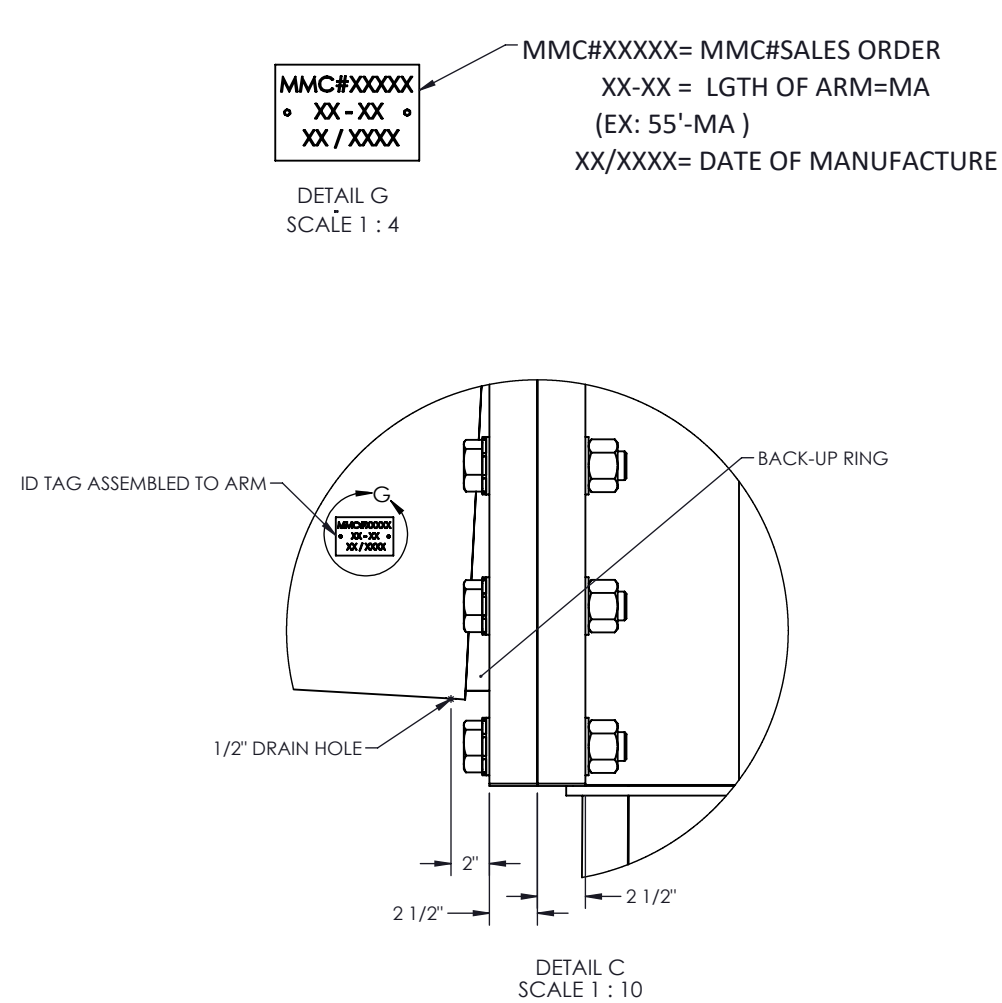
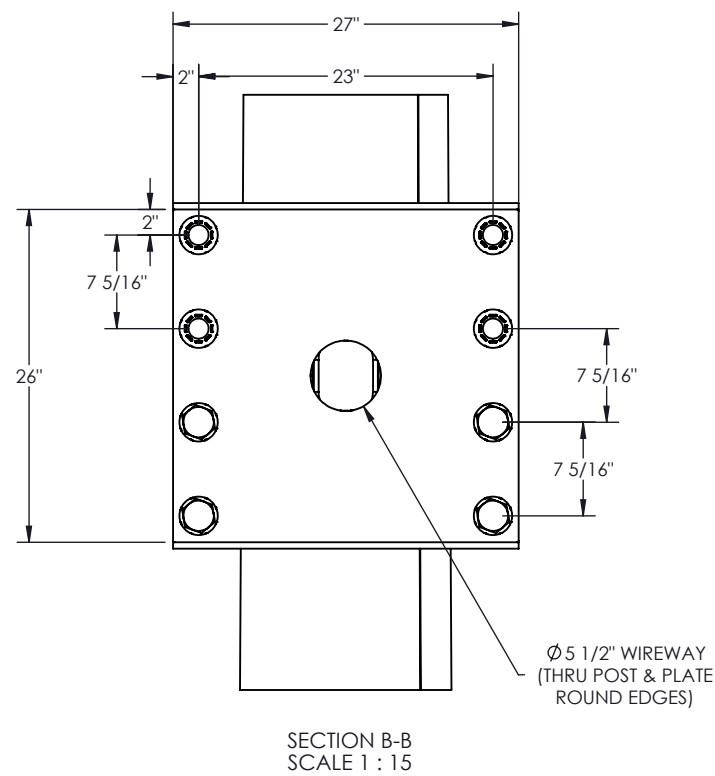
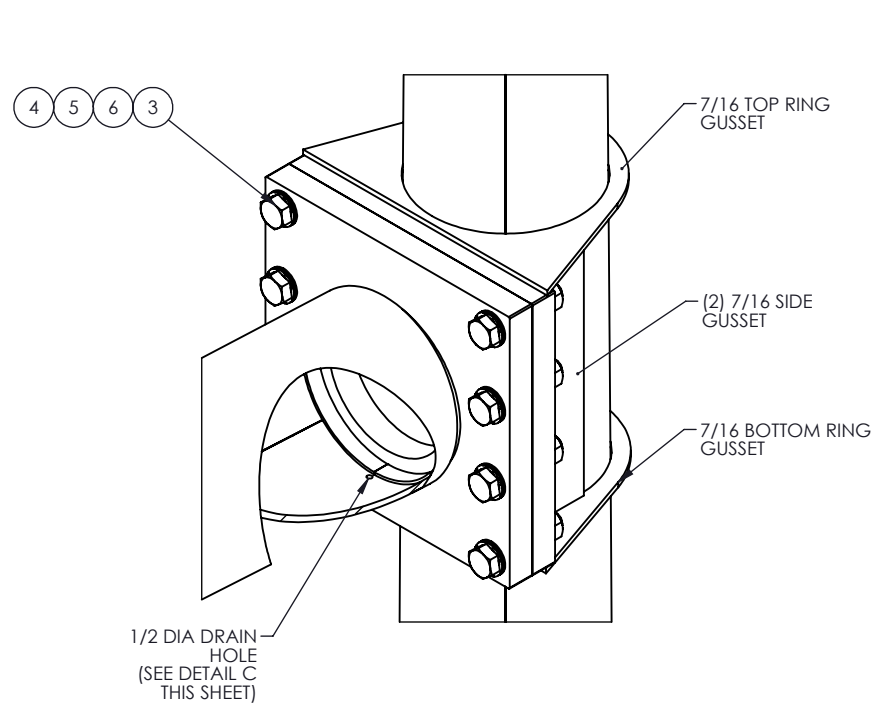
* - ITEMS AS REQUIRED - NOT ALL TRAFFIC MASTAM HARDWARE BAGS WILL HAVE THESE ITEMS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH	SHIP LOOSE
1	1016139	SHIP POLE SIG RD 3/8X30'0/21'6	1		X	X
	7700015	PARTS LIST WI/DOT (2016) TYPE 13 TRAFFIC SIGNAL 1006857	1		POE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCR W 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
	7700104	PARTS LIST WI/DOT TRAFFIC SIGNAL LUM ARM HARDWARE AND COVER	1			
2	"A"	SHIP ARM SIG RD S1-7/16,S2-3/16X"B"	1		X	X
	"E"	PARTS LIST WI/DOT (2016) TYPE 12/13 TRAFFIC ARM	1		POLE CAP	X
	1055940	I.D. TAG - WI	1	X		
	SCRWY#2X3/16ZC	U-DRIVE SCR W 3/16(DRIVE IN TYPE)F1941M ZC	2	X		
3	BOLT B1-1/2-6X7-1/2"B	BOLT HVYHXHD 1-1-2-6 X 7-1-2 A325GV	8	SUPPLIED BY OTHERS		
4	NUTHVYHX1-1/2-6A194GV	NUT HVY HX 1-1-2-6NC ASTM A194 GV(2H)	8			
5	WASHFLAT1-1/2GV	WASHER FLAT 1-1/2 SAE ASTM F436 GV	16			
6	WASHLOADIN1-1/2-001-GV	WASHER DTI 1-1/2" ASTM F959 TYPE 325	8			
7	"G"	WLDMT ARM LUM RD 11GAX"H"	"J"		X	X
8	1015928	GASKETED COVER FOR 4 BOLT LUM ARM	"P"		X	X
9	"K"	WLDMT ARM LUM CLAMP RD 11GA X M"	"L"		X	X
10	460B735-6	ANCHOR BOLT CLUSTER (6 BOLT) WISCONSIN DOT	1			X

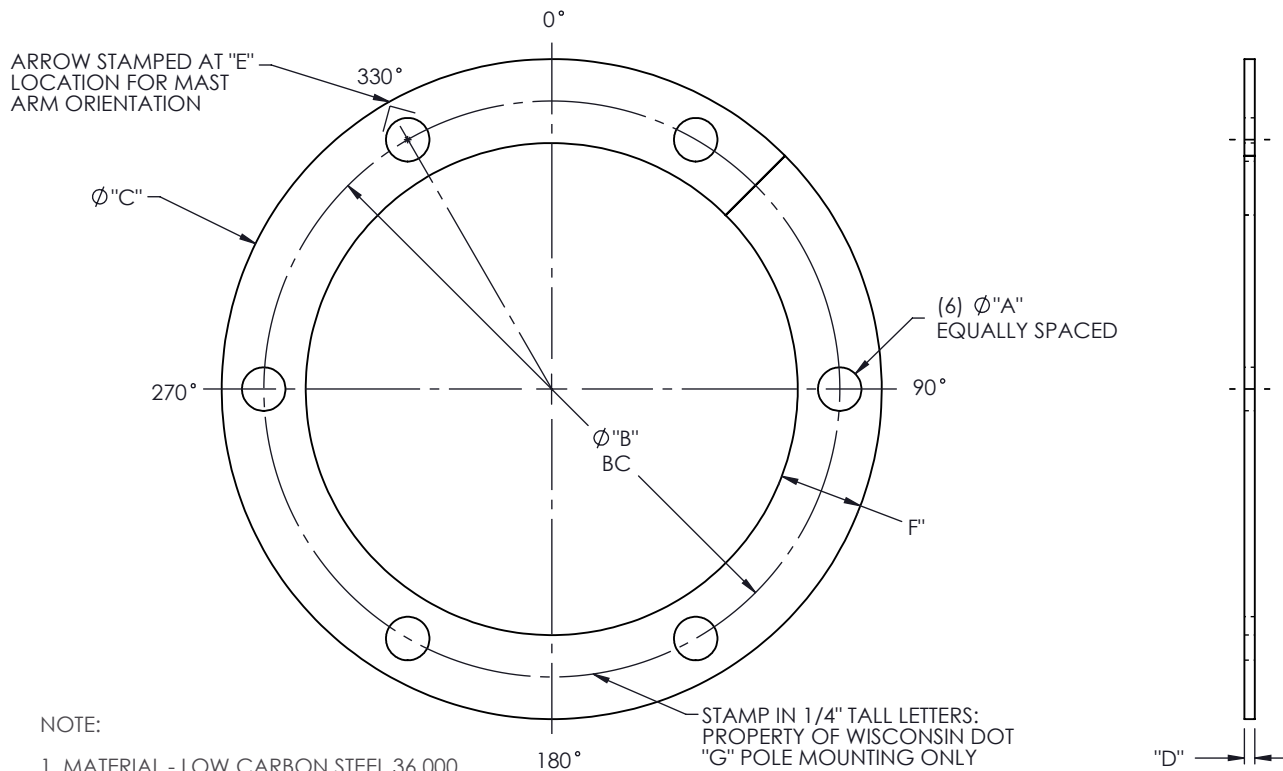
NOTE:

- HEX HEAD BOLT & NUTS (UNLESS SPECIFIED) ASTM A325 GV A153 FOR SIZES 1/2 THRU 1 1/2 DIA & ASTM A354BC GV FOR SIZES OVER 1 1/2 DIA
- DRILLED CABLE ACCESS HOLE MAXIMUM ALLOWABLE DIAMETER IS 3/4"





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SALES ORDER NO.:	QTY:	STATE:	SHEET 2 OF 2
DESCRIPTION: 2025 WI DOT TYPE 13-OS TRAFFIC SIGNAL 35'-55' MASTARM LENGTHS			
EST. WEIGHT: 7080.8 - LBS		DRAWING NO: 2025 type 13-OS wi dot a	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: HECTOR E.		DATE: 02-13-2025	
CHK BY:		DATE:	



DASH NO	"A" DIA	"B" BC	"C" OD	"D" TK	"E" MASTARM ORIENTATION	"F" RING WIDE	"G" TYPE STAMP
460A407-1	1 5/16	20"	23"	1/4	0°	3"	NONE
460A407-2	1 9/16	15"	18"	1/2	330°	3"	TYPE9/TYPE10
460A407-3	1 13/16	24"	27 1/2	1/2	330°	3 1/2	TYPE12/TYPE13
460A407-4	1 9/16	19"	22"	1/4	330°	3"	NONE
460A407-5	1 9/16	16"	19"	1/4	330°	3"	NONE
460A407-6	1 1/16	15"	18"	1/4	330°	3"	NONE
460A407-7	1 1/16	16"	19"	1/4	330°	3"	NONE
460A407-8	1 5/16	18 1/2	21 1/2	1/4	330°	3"	NONE
460A407-9	1 5/16	21"	24"	1/4	330°	3"	NONE
460A407-10	1 5/16	18"	21"	1/4	330°	3"	NONE
460A407-11	1 5/16	16"	19"	1/4	330°	3"	NONE
460A407-12	1 5/16	19 1/2	22 1/2	1/4	330°	3"	NONE
460A407-13	1 1/16	18"	21"	1/4	330°	3"	NONE
460A407-14	1 5/16	24"	27"	1/4	330°	3"	NONE
460A407-15	1 9/16	15"	18"	1/4	330°	3"	NONE
460A407-16	1 13/16	24"	27 1/2	1/2	330°	3 1/2	TYPE12/TYPE13
460A407-17	1 5/16	17"	20"	1/4	NONE	3"	NONE
460A407-18	1 9/16	24"	27"	1/4	330°	3"	NONE
460A407-19	1 5/16	17 1/2	20 1/2	1/4	330°	3"	NONE
460A407-20	1 9/16	16"	19"	1/2	330°	3"	TYPE9/TYPE10
460A407-21	1 9/16	16"	19"	1/4	330°	3"	NONE
460A407-22	1 13/16	21"	24"	1/2	330°	3 1/2	TYPE 12/TYPE13
460A407-23	1 13/16	22 1/2"	28 1/2"	1/4	NONE	3 1/2"	STRAIN POLE
460A407-24	1 13/16	22 1/2"	28 1/2"	1/2	NONE	3 1/2"	STRAIN POLE
460A407-25	1 13/16	21"	24"	1/4	330°	3 1/2"	NONE

REV 1/22/25 UPDATED COLUMN "G" TO SHOW 1/2" FOR ALL WISDOT TEMPLATES (HE)

REV 6/12/18 UPDATED LINES -22, -23, AND -24 AND ADDED -25 (AS)

REV 4-9-18 ADDED 460A407-24 (PR)

REV 5-30-18 UPDATED OD FOR -22, -23, AND -24

REV 11/17/15 ADDED 460A407-21 (JEFF A)

REV 4-24-15 REMOVE MADE FROM BAR MATERIAL

REV 1-18-10 - CET, ADD COL "D" TK, COL "E" WAS COL "D", COL "F" WAS COL "E", -2 AND

-3 WERE 1/4 TK

REV 9-17-08 - CET, ADD COL "E" AND TYPE

STAMP NOTE

REV 1/6/25 ADDED GALV NOTE

REV 1/6/25 UPDATED TO 1/2" TK ON -15,-16

DWN: DOUG F.

DATE: 2-19-08

CHK: FRF

SCALE: NTS

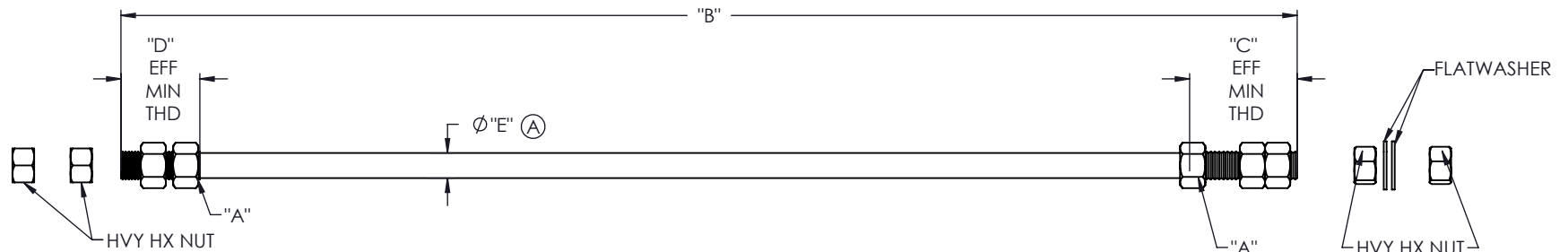
ANCHOR BOLT CLUSTER ROLLED RING
(6) BOLTS (WI/DOT)

Millerbernd

MANUFACTURING CO.
WINSTED, MN

460A407

REVISIONS				
REV.	ECO	DESCRIPTION	DATE	DRFT
A	000172	UPDATED THREAD SIZE TO MATCH WISDOT SPEC. UPDATED "E" TO NOMINAL DIAMETER. ADDED NOT TO REFER TO WISDOT 531.2.2	1/15/2025	HE



PART NO BOLT (ONLY)	QTY	PART NO BOLT W/4 NUTS AND (2) WASHER	PART NO BOLT W/5 NUTS AND (2) WASHER	"A" THREAD DIA	"B" BOLT LENGTH	"C" EFF MIN THD LG	"D" EFF MIN THD LG	"E" NOMINAL DIAMETER	COLOR CODE
460A493-1		460A493-1QNW	460A493-1CNW	1 1/2 - 6	48	6 1/2	5 1/2	1.5"	YELLOW
460A493-2		460A493-2QNW	460A493-2CNW	1 3/4 - 5	82	7 1/2	5 1/2	1.75"	YELLOW
460A493-3		460A493-3QNW	460A493-3CNW	1 1/2 - 6	50	8	5 1/2	1.5"	YELLOW
460A493-4		460A493-4QNW	460A493-4CNW	1 3/4 - 5	84	9	5 1/2	1.75"	YELLOW
460A493-5		460A493-5QNW	460A493-5CNW	1 1/2 - 6	52	12	6	1.5"	YELLOW
460A493-6		460A493-6QNW	460A493-6CNW	1 3/4 - 5	86	12	6	1.75"	YELLOW

NOTES:

- ANCHOR BOLT PER ASTM F1554 GR 55 F1554 GRADE
MATERIAL - 55,000 PSI MIN YIELD AND
75,000 - 95,000 PSI TENSILE STRENGTH WITH SUPPLEMENTARY SPECIFICATION S4
- FULLY HOT DIP GALVANIZE PER ASTM A153 (AASHTO F2329). (A)
- THREAD TO BE CLASS 2A PER AMERICAN
STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
- ALL BOLTS ROLLED THREAD
- GALVANIZED HVY HEX NUTS (A563GV) PER ASTM
A563 GR DH (.030 OVER SIZE) OR (A194 2H EQUIVALENT)
(AASHTO M232).
- NO WELDING IS ALLOWED ON ANCHOR BOLTS
- GALVANIZED FLAT WASHERS PER ASTM F436 (AASHTO M232).
- THE END OF ANCHOR BOLT TO PROJECT FROM
THE CONCRETE PAINTED PER COLOR CODE
- WI SPEC. 531.2.2 (A)

DWN: CET	ANCHOR BOLTS WI/DOT TRAFFIC SIGNALS		
DATE: 1-15-10			
CHK: FRF	Millerbernd MANUFACTURING CO. WINSTED, MN		
SCALE: 1:12			
			460A493