valmont
STRUCTURES

3.4.26

Mr. Steve Gault
Chief, TSMO Arterials & Planning Section
Pennsylvania Department of Transportation
Bureau of Operations
400 North Street
Harrisburg, PA 17120

Subject: Valmont Penn DOT Approved Shop Drawing DB00894 Rev J

Mr. Gault,

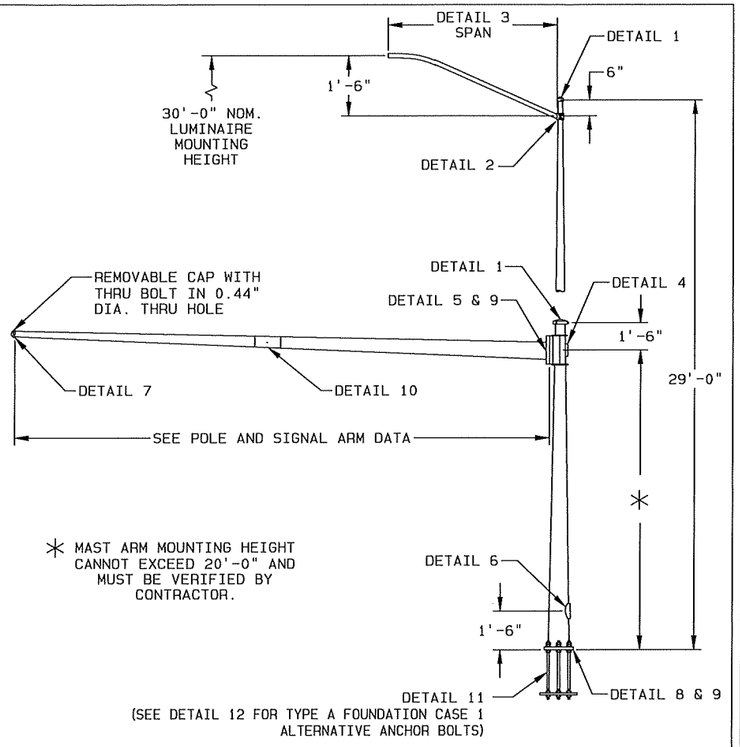
Valmont is requesting approval fo the following revisions to the current approved shop drawing DB00894 Rev J dated Nivember 7, 2025
Added couplings and tenons material call out A53 or A500 Grade B.

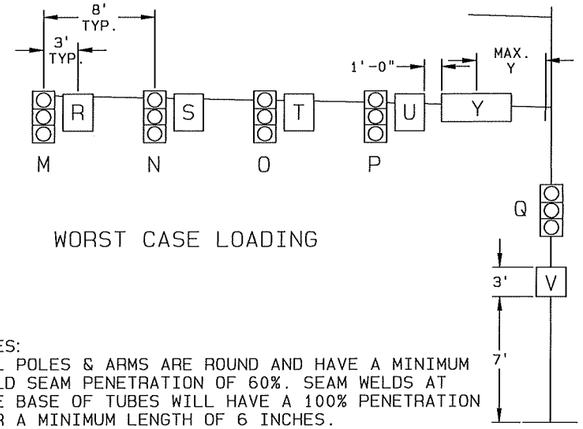
These changes conform with:
Penn DOT publication 148 Traffic Standards, signals dated January 2025.
Penn DOT publication 149 Traffic Signal Design Handbook dated May 2013.
Penn DOT publication 408/2020 Highway Specifications dated October 2025.

Please update Valmont's approved fabricator status under section 951.2 (c) of Penn DOT Publicaiton 35, Approved Construction Materials (Bulletin 15) for mast arms, strain poles and pedestal poles per attached shop drawing DB00894 Rev J.

If you have any questions or require additional information please contact me.

Troy Casaceli | Regional Sales Manager
Valmont Industries, Inc. | 15000 Valmont Plaza | Omaha, NE 68154 USA





WORST CASE LOADING

NOTES:
ALL POLES & ARMS ARE ROUND AND HAVE A MINIMUM WELD SEAM PENETRATION OF 60%. SEAM WELDS AT THE BASE OF TUBES WILL HAVE A 100% PENETRATION FOR A MINIMUM LENGTH OF 6 INCHES.

ALL WELD INSPECTION SHALL BE IN ACCORDANCE WITH AWS D1.1.

WELD INSPECTION:
COMPLETE JOINT PENETRATION SHAFT SEAM WELDS REQUIRING INSPECTION WILL UTILIZE THE FOLLOWING METHOD DEPENDING ON MATERIAL THICKNESS:

SHAFT THICKNESS 0.25" AND GREATER: UT
SHAFT THICKNESS LESS THAN 0.25": X-RAY

UT INSPECTIONS ON 0.25" SHAFTS WILL BE PERFORMED TO VALMONT WI-10.1.1, APPROVED ON 09/12/2016

MAST ARM LENGTH		SIGNALS					SIGNS						
		M	N	O	P	Q	R	S	T	U	V	Y	MAX. Y (FT)
0'-10'	W	70				123					39	87	5.2
	A	8.76				8.82					7.48	10.50	
11'-15'	W	70				123	39				39	106	6.6
	A	8.76				8.82	7.48				7.48	21.33	
16'-20'	W	97	70			123	39				39	106	6.6
	A	13.89	8.76			8.82	7.48				7.48	21.33	
21'-25'	W	97	70			123	39	39			39	106	8.5
	A	13.89	8.76			8.82	7.48	7.48			7.48	21.33	
26'-30'	W	97	70	97		123	39	39			39	106	8.5
	A	13.89	8.76	13.89		8.82	7.48	7.48			7.48	21.33	
31'-35'	W	97	70	97		123	39	39	39		39	106	10.8
	A	13.89	8.76	13.89		8.82	7.48	7.48	7.48		7.48	21.33	
36'-40'	W	97	70	97		123	39	39	39		39	106	15.7
	A	13.89	8.76	13.89		8.82	7.48	7.48	7.48		7.48	21.33	
41'-45'	W	97	70	97		123	39	39	39		39	106	20.7
	A	13.89	8.76	13.89		8.82	7.48	7.48	7.48		7.48	21.33	
46'-50'	W	97	70	70	97	123	39	39		39	39	106	17.7
	A	13.89	8.76	8.76	13.89	8.82	7.48	7.48		7.48	7.48	21.33	
51'-60'	W	97	70	70	97	123	39	39		39	39	106	27.9
	A	13.89	8.76	8.76	13.89	8.82	7.48	7.48		7.48	7.48	21.33	

POLES COMPLY WITH PennDOT PUBLICATION 408 AND BULLETIN 15

LOADING INFORMATION

PA-CB-50-N/A-17.5-15

- PENNSYLVANIA POLE SERIES
- POLE TYPE (SM, CB, SM-DBL, OR CB-DBL)
- 1ST - MAST ARM LENGTH
- 2ND - MAST ARM LENGTH (N/A) IF NOT REQUIRED
- MAST ARM MOUNTING HEIGHT
- LUMINAIRE ARM SPAN - (6,8,10,12,14 & 15)

DESIGNATION EXAMPLE

THESE TRAFFIC SIGNAL SUPPORT STRUCTURES ARE DESIGNED IN ACCORDANCE WITH LOADING AND ALLOWABLE STRESS REQUIREMENTS OF 2001 AASHTO "STANDARDS SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", FOURTH EDITION. WIND LOADS ARE BASED ON A BASIC WIND SPEED OF 80 MPH (PER APPENDIX C) WITH A RECURRENCE INTERVAL OF 50 YEARS, AND A FATIGUE CATEGORY OF 2. FATIGUE LOADS ARE BASED ON THE REQUIREMENTS OF SECTION 11.7 AND THE FOLLOWING DESIGN LOADS:

VORTEX SHEDDING: NOT APPLICABLE FOR STRUCTURES WITH A TAPER OF AT LEAST 0.14 IN/FT, PER AASHTO.

NATURAL WIND GUSTS: THE YEARLY MEAN WIND SPEED FOR NATURAL WIND GUSTS WILL BE ASSUMED TO BE 11.2 MPH.

GALLOPING: STRUCTURES ARE NOT DESIGNED TO RESIST PERIODIC GALLOPING FORCES.

TRUCK-INDUCED GUST: STRUCTURES ARE NOT DESIGNED TO INCLUDE TRUCK-INDUCED GUSTS.

AASHTO 2001 SPECIFICATIONS

ORDER INFORMATION

QTY.	ITEM NO.	POLE TYPE	1ST MAST ARM LENGTH	2ND MAST ARM LENGTH	MAST ARM MOUNTING HEIGHT	2ND ARM ORIENTATION	LUMINAIRE ARM SPAN

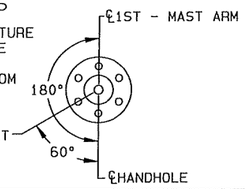
MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
TAPERED TUBES	A595 GR. A OR A572	55	POLE BASE (CVN REQ'D)	A36	36
			ARM ATTACHMENT	A36	36
GALVANIZING-STRUCTURE	A123		MAST ARM CONN. BOLTS	A325**	
GALV. DETAIL 6 HARDWARE	B695		LUM. ARM CONN. BOLTS	A325**	
NUTS	A194 GR.2H		ANCHOR BOLTS	F1554 GR.55	55
HANDHOLE RIM	A572	55	ANCHOR BOLT NUTS	A563	
WASHERS	F436		COUPLINGS / TENONS	A53 OR A500 GR. B	

** LUBRICATE IN FIELD IF NECESSARY.

DOUBLE MAST ARMS

IF A DOUBLE ARM STRUCTURE IS REQUIRED, THE ANGLE BETWEEN MAST ARMS IS MEASURED CLOCKWISE FROM FIRST MAST ARM.



ALL ANGLES MEASURED FROM SMALL END OF POLE

RADIAL INDEX

Barry N. Sladek

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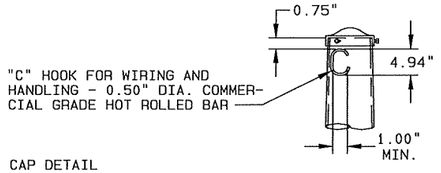
DN: cn=Barry N. Sladek, gn=Barry N.
Sladek, c=United States, l=US
Reason: I am the author of this document
Location:
Date: 2025-07-11 14:37-05:00

REV	DRAWN BY-DATE	CHECK BY-DATE	DESCRIPTION
J	JEM 06/25/25	JEM 06/25/25	MATERIAL DATA ADDED FOR COUPLINGS.
H	JEM 08/31/16	JEM 08/31/16	UPPER HH / ADDITIONAL MAST ARM AND LIGHT ARM SIZES
G	JEM 01/15/14	JEM 01/15/14	MAST ARM DESIGNS 45' & 50' WERE 2 PIECE
—	NKL 01/11/10	PAR 01/15/10	— — — — — — — — — — — — — — — — — — — —

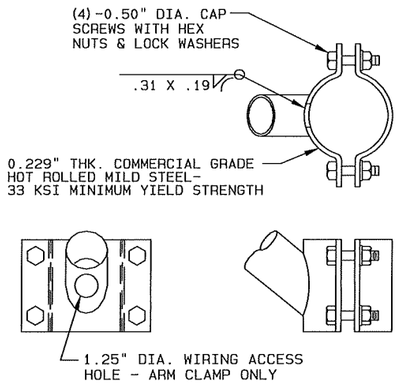
TITLE
PENNSYLVANIA DOT
TRAFFIC SIGNAL STRUCTURES
AASHTO 2001

valmont
Valley,NE 68064
(402) 359-2201

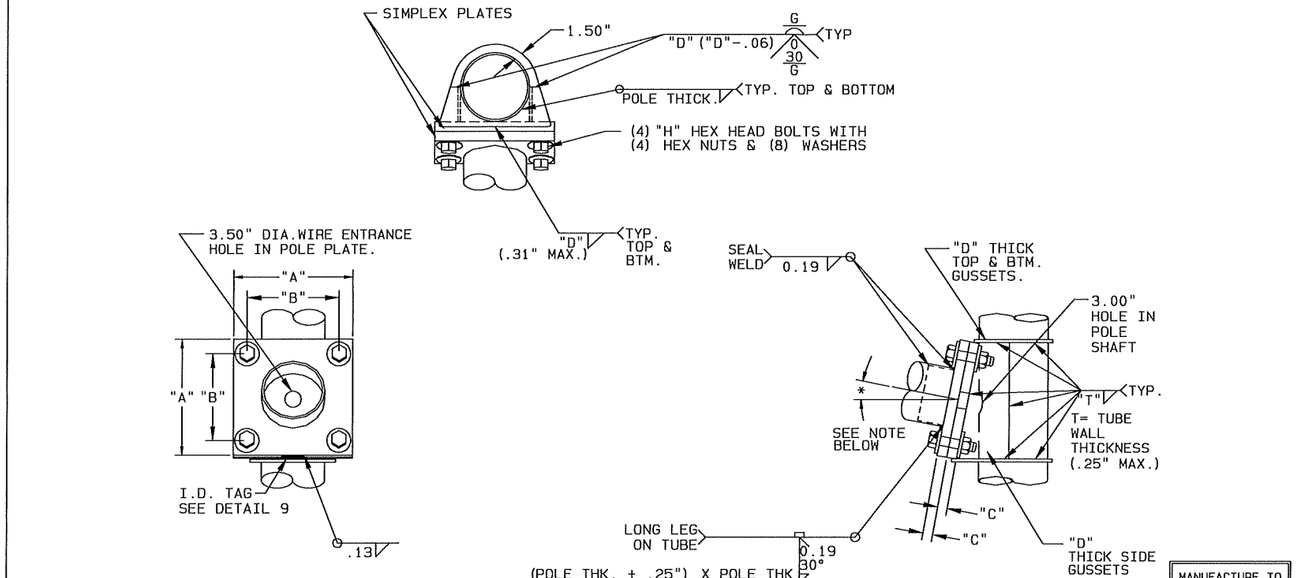
PAGE NUMBER: 1 OF 9
DRAWING NUMBER: DB00894
REV: J



DETAIL 1 | POLE TOP

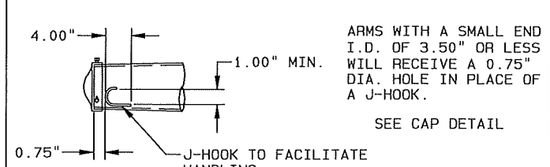


DETAIL 2 | LUMINAIRE ARM ATTACHMENT

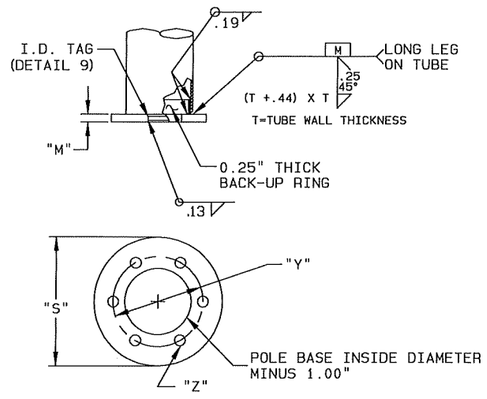


*RISE IN SIMPLEX PLATES VARIES PER POLE BASE DIAMETER AND LOADS ON MAST ARMS

DETAIL 5 | SIGNAL ARM ATTACHMENT

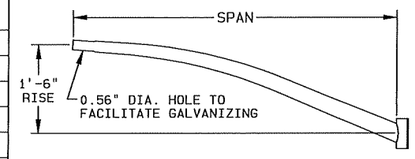


DETAIL 7 | SIGNAL ARM END



DETAIL 8 | BASE PLATE

SPAN (FT)	FIXED END DIA.
6	3.28"
8	3.58"
10	3.81"
12	4.11"
14	4.43"
15	4.53"
20	5.22"
25	5.92"

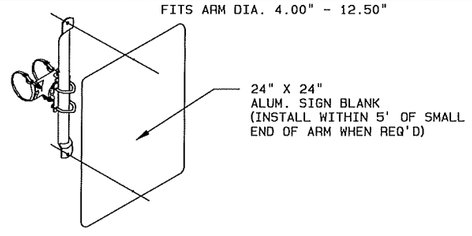


ARMS MADE FROM 11 GA. WITH 2.38" REFORMED FREE END.

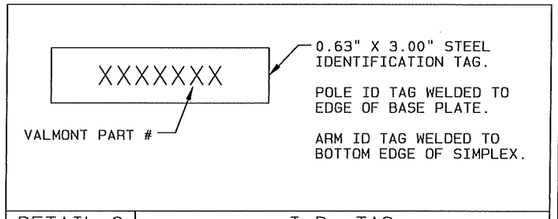
DETAIL 3 | LUMINAIRE ARM DATA

SINGLE ARM ATTACHMENT DATA

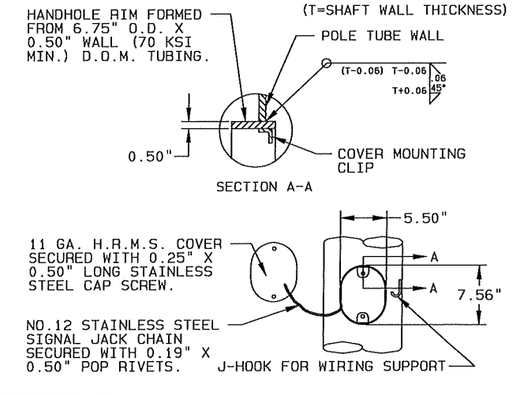
ARM SPAN	"A"	"B"	"C"	"D"	"H"
0'-10'	14.50"	12.00"	2.00"	0.250"	1.00" X 5.75"
11'-20'	17.25"	14.00"	2.00"	0.250"	1.25" X 6.00"
21'-25'	17.75"	14.50"	2.00"	0.313"	1.25" X 6.00"
26'-30'	18.75"	15.50"	2.50"	0.375"	1.25" X 7.00"
31'-35'	20.25"	17.00"	2.50"	0.375"	1.25" X 7.00"
36'-40'	20.75"	17.50"	2.50"	0.500"	1.25" X 7.00"
41'-45'	21.75"	18.50"	2.50"	0.500"	1.25" X 7.00"
46'-50'	22.25"	18.50"	2.50"	0.625"	1.50" X 7.25"
51'-60'	23.75"	20.00"	2.50"	0.625"	1.50" X 7.25"



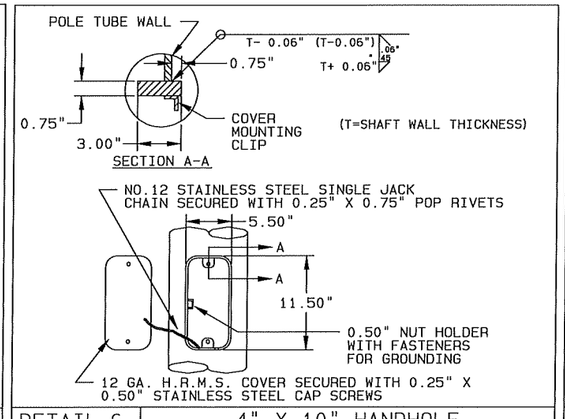
MAST ARM DAMPNER OPTION



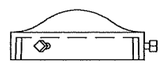
DETAIL 9 | I.D. TAG



DETAIL 4 | MAST ARM HANDHOLE (COMBO POLES ONLY)



DETAIL 6 | 4" X 10" HANDHOLE

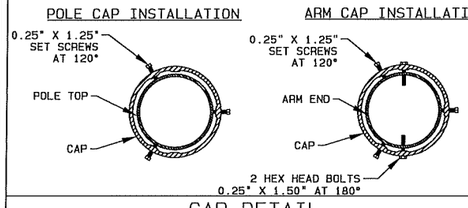


CAP MATERIAL:
ALUMINUM ALLOY A380

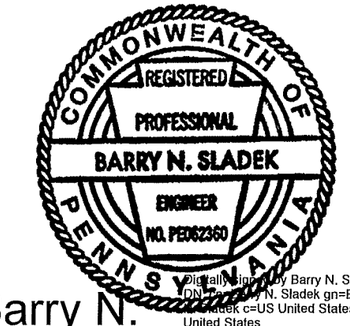
SET SCREW MATERIAL SHALL CONFORM TO ASTM DESIGNATION F593-ALLOY GROUP 1 DOMESTIC MATERIAL.

HEX HEAD THRU-BOLTS SHALL CONFORM TO ASTM A276 STAINLESS STEEL DOMESTIC MATERIAL.

PROCESS:
DIE CAST PER ASTM B85



CAP DETAIL



Barry N. Sladek

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DN: cn=Barry N. Sladek gn=Barry Sladek c=US United States l=US United States
Reason: I am the author of this document
Location:
Date: 2025-07-11 14:37-05:00

TITLE
PENNSYLVANIA DOT
TRAFFIC SIGNAL STRUCTURES
AASHTO 2001

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont
Valley,NE 68064
(402) 359-2201

PAGE NUMBER: 2 OF 9

DRAWING NUMBER	REV
DB00894	J

SM & CB - POLE AND MAST ARM SCHEDULE

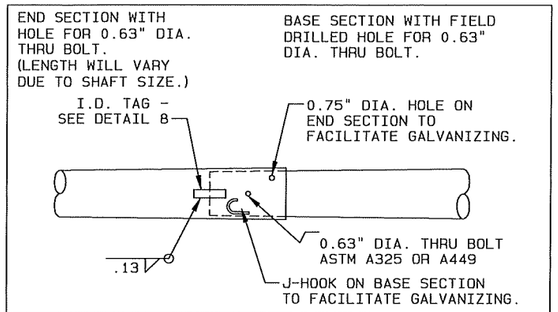
DESIGNATION KEY				POLE DATA				BASE PLATE DATA				ANCHOR BOLT DATA (TYPE A)				ANCHOR BOLT DATA (TYPE B)				SIGNAL ARM DATA			
POLE SERIES	POLE TYPE	SIGNAL ARM SPAN 1ST ARM (FT)	LUMINAIRE MAST ARM SPAN (FT)	BASE DIA. (IN)	TOP DIA. (IN)	MAX ** LENGTH (FT)	GAUGE OR THICK (IN)	ROUND "S" (IN)	BOLT CIRCLE "Y" (IN)	THICK "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)	DIA. "K" (IN)	Y (TC-8801) LENGTH "J" (IN)	Z (TC-8801) LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)	FIXED END DIA (IN)	FREE END DIA (IN)	GAUGE OR WALL THK (IN)	SPAN MAX (FT)
PA	SM	0 - 10		11.00	7.99	21.50	7	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	66.00	22.00	12.00	6.00	4.60	7	10.00
PA	SM	11 - 15		12.50	9.49	21.50	5	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	66.00	22.00	12.00	7.00	4.90	7	15.00
PA	SM	16 - 20		12.50	9.49	21.50	3	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	72.00	22.00	12.00	9.00	6.20	7	20.00
PA	SM	21 - 25		13.00	9.99	21.50	3	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	78.00	22.00	12.00	11.00	7.50	7	25.00
PA	SM	26 - 30		14.00	10.99	21.50	0.250	26.00	21.00	2.50	2.00	1.75	49.00	25.00	14.00	1.75	60.00	84.00	25.00	12.00	12.00	7.80	5	30.00
PA	SM	31 - 35	N/A	15.00	11.99	21.50	0.250	26.00	21.00	2.50	2.00	1.75	49.00	25.00	14.00	1.75	60.00	90.00	25.00	12.00	13.00	8.10	3	35.00
PA	SM	36 - 40		15.50	12.49	21.50	0.250	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	67.00	91.00	28.00	12.00	14.00	8.40	0.250	40.00
PA	SM	41 - 45		16.50	13.49	21.50	0.250	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	67.00	97.00	28.00	12.00	14.00	7.70	0.313	45.00
PA	SM	46 - 50		16.00	12.99	21.50	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	14.00	7.00	0.375	50.00
PA	SM	51 - 55		17.00	13.99	21.50	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	15.00	7.65	DTL.10	55.00
PA	SM	56 - 60		17.50	14.49	21.50	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	16.00	7.96	DTL.10	60.00
PA	CB	0 - 10		12.00	7.94	29.00	7	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	66.00	22.00	12.00	6.00	4.60	7	10.00
PA	CB	11 - 15		12.50	8.44	29.00	5	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	66.00	22.00	12.00	7.00	4.90	7	15.00
PA	CB	16 - 20		12.50	8.44	29.00	3	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	72.00	22.00	12.00	9.00	6.20	7	20.00
PA	CB	21 - 25		13.00	8.94	29.00	0.250	23.00	18.00	2.00	2.00	1.75	49.00	22.00	14.00	1.75	54.00	78.00	22.00	12.00	11.00	7.50	7	25.00
PA	CB	26 - 30		14.00	9.94	29.00	0.250	26.00	21.00	2.50	2.00	1.75	49.00	25.00	14.00	1.75	60.00	84.00	25.00	12.00	12.00	7.80	5	30.00
PA	CB	31 - 35	6 - 25	15.00	10.94	29.00	0.250	26.00	21.00	2.50	2.00	1.75	49.00	25.00	14.00	1.75	60.00	90.00	25.00	12.00	13.00	8.10	3	35.00
PA	CB	36 - 40		15.50	11.44	29.00	0.250	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	67.00	91.00	28.00	12.00	14.00	8.40	0.250	40.00
PA	CB	41 - 45		16.50	12.44	29.00	0.250	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	67.00	97.00	28.00	12.00	14.00	7.70	0.313	45.00
PA	CB	46 - 50		16.00	11.94	29.00	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	14.00	7.00	0.375	50.00
PA	CB	51 - 55		17.00	12.94	29.00	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	15.00	7.65	DTL.10	55.00
PA	CB	56 - 60		17.50	13.44	29.00	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	16.00	7.96	DTL.10	60.00

SM-DBL & CB-DBL POLE AND MAST ARM SCHEDULE

DESIGNATION KEY					POLE DATA				BASE PLATE DATA				ANCHOR BOLT DATA (TYPE A)				ANCHOR BOLT DATA (TYPE B)					SIGNAL ARM DATA			
POLE SERIES	POLE TYPE	SIGNAL ARM SPAN 1ST ARM (FT)	SIGNAL ARM SPAN 2ND ARM (FT)	LUMINAIRE MAST ARM SPAN (FT)	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	ROUND "S" (IN)	BOLT CIRCLE "Y" (IN)	THICK "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)	DIA. "K" (IN)	Y (TC-8801) LENGTH "J" (IN)	Z (TC-8801) LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)	FIXED END DIA (IN)	FREE END DIA (IN)	GAUGE OR WALL THK (IN)	SPAN MAX (FT)
PA	DBL-SM	30	30		14.00	10.99	21.50	0.313	26.00	21.00	2.50	2.00	1.75	49.00	25.00	14.00	1.75	60.00	84.00	25.00	12.00	12.00	7.80	5	30.00
																						12.00	7.80	5	30.00
PA	DBL-SM	40	40		15.50	12.49	21.50	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	67.00	91.00	28.00	12.00	14.00	8.40	0.250	40.00
																						14.00	8.40	0.250	40.00
PA	DBL-SM	50	50		15.50	12.49	21.50	0.375	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	14.00	7.00	0.375	50.00
																						14.00	7.00	0.375	50.00
PA	DBL-SM	60	60		17.50	14.49	21.50	0.375	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	16.00	7.96	DTL.9	60.00
																						16.00	7.96	DTL.9	60.00
PA	DBL-CB	30	30		14.00	9.94	29.00	0.313	26.00	21.00	2.50	2.00	1.75	49.00	25.00	14.00	1.75	60.00	84.00	25.00	12.00	12.00	7.80	5	30.00
																						12.00	7.80	5	30.00
PA	DBL-CB	40	40		15.50	11.44	29.00	0.313	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	67.00	91.00	28.00	12.00	14.00	8.40	0.250	40.00
																						14.00	8.40	0.250	40.00
PA	DBL-CB	50	50		15.50	11.44	29.00	0.375	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	14.00	7.00	0.375	50.00
																						14.00	7.00	0.375	50.00
PA	DBL-CB	60	60		17.50	13.44	29.00	0.375	30.00	24.00	2.50	2.25	2.00	54.00	28.00	14.00	2.00	73.00	103.00	28.00	12.00	16.00	7.96	DTL.9	60.00
																						16.00	7.96	DTL.9	60.00

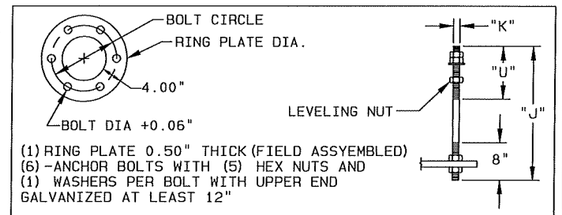
NOTES:

1. SHAFT LENGTH FOR TYPE SM POLES WILL VARY DEPENDING ON THE MOUNTING HEIGHT. MAX LENGTH WILL BE 21'-6".
2. ANCHOR BOLTS AND BOLT CIRCLE SIZES SPECIFIED BY PENN DOT.
3. MINIMUM SIGN AND SIGNAL CLEARANCES MUST BE MAINTAINED ON TWIN MAST ARM STRUCTURES WITH OFFSET ARMS.
4. THE VERTICAL OFFSET OF TWIN MAST ARMS WILL VARY BETWEEN 2' AND 2.5' DEPENDING ON THE SIZE OF THE SIMPLEX PLATE FOR THE MAST ARM.



ARM SPAN	BASE SECTION LENGTH	BASE SECTION WALL	END SECTION LENGTH	END SECTION GAUGE	MAXIMUM ARM SLIP LENGTH
51'-0"	19.54'	0.375"	34.15'	7	3'-2.33"
52'-0"	19.54'	0.375"	35.15'	7	3'-2.33"
53'-0"	19.54'	0.375"	36.15'	7	3'-2.33"
54'-0"	19.54'	0.375"	37.15'	7	3'-2.33"
55'-0"	19.54'	0.375"	38.15'	7	3'-2.33"
56'-0"	26.68'	0.375"	32.00'	7	3'-2.33"
57'-0"	26.68'	0.375"	33.00'	7	3'-2.33"
58'-0"	26.68'	0.375"	34.00'	7	3'-2.33"
59'-0"	26.68'	0.375"	35.00'	7	3'-2.33"
60'-0"	26.68'	0.375"	36.01'	7	3'-2.33"

DETAIL 10 SIGNAL ARM SLIP JOINT



(1) RING PLATE 0.50" THICK (FIELD ASSYEMBLED)
(6) -ANCHOR BOLTS WITH (5) HEX NUTS AND
(1) WASHERS PER BOLT WITH UPPER END GALVANIZED AT LEAST 12"

**NUTS AND WASHERS GALVANIZED TO ASTM A153

DETAIL 11 ANCHOR BOLT

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
BARRY N. SLADEK
ENGINEER
NO. PE062360

Barry N. Sladek

Digitally signed by Barry N. Sladek
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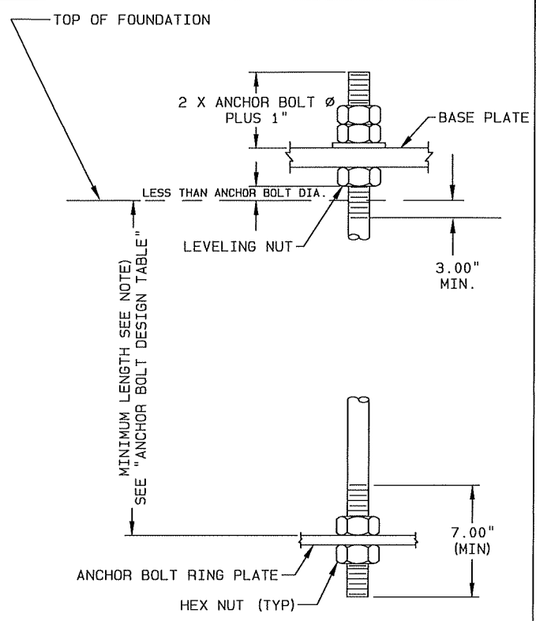
Sladek c=US United States
l=US United States
Reason: I am the author of this document
Location:
Date: 2025-07-11 14:37-05:00

TITLE
PENNSYLVANIA DOT
TRAFFIC SIGNAL STRUCTURES
AASHTO 2001

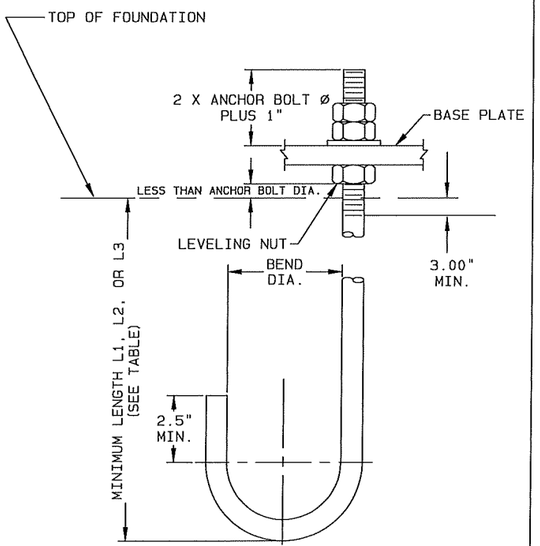
valmont
Valley,NE 68064
(402) 359-2201

DRAWING NUMBER DB00894 REV J



NOTE: LONGER ANCHOR BOLTS MAY BE REQ'D TO AVOID CONFLICTS WITH TOP LAYER OF REINFORCEMENT IN FOUNDATION TYPE B.

DETAIL 11 | ANCHOR BOLT



DETAIL 12 ALTERNATIVE "J" ANCHOR BOLT

MAST ARM POLES

ANCHOR BOLT DESIGN, ONE MAST ARM

ARM SPAN	QTY.	BOLT DIA.	LENGTH	BOLT CIRCLE	BOLT HOLE "Z"
0'-10'	6	1.75"	35.00"	18.00"	2.00"
>10'-15'	6	1.75"	35.00"	18.00"	2.00"
>15'-20'	6	1.75"	35.00"	18.00"	2.00"
>20'-25'	6	1.75"	35.00"	18.00"	2.00"
>25'-30'	6	1.75"	35.00"	21.00"	2.00"
>30'-35'	6	1.75"	35.00"	21.00"	2.00"
>35'-40'	6	2.00"	40.00"	24.00"	2.25"
>40'-45'	6	2.00"	40.00"	24.00"	2.25"
>45'-50'	6	2.00"	40.00"	24.00"	2.25"
>50'-60'	6	2.00"	40.00"	24.00"	2.25"

ANCHOR BOLT DESIGN, TWO MAST ARMS *

ARM SPAN	QTY.	BOLT DIA.	LENGTH	BOLT CIRCLE	BOLT HOLE "Z"
0'-10'	6	1.75"	35.00"	18.00"	2.00"
>10'-15'	6	1.75"	35.00"	18.00"	2.00"
>15'-20'	6	1.75"	35.00"	18.00"	2.00"
>20'-25'	6	1.75"	35.00"	18.00"	2.00"
>25'-30'	6	1.75"	35.00"	21.00"	2.00"
>30'-35'	6	1.75"	35.00"	21.00"	2.00"
>35'-40'	6	2.00"	40.00"	24.00"	2.25"
>40'-45'	6	2.00"	40.00"	24.00"	2.25"
>45'-50'	6	2.00"	40.00"	24.00"	2.25"
>50'-60'	6	2.00"	40.00"	24.00"	2.25"

STRAIN POLES

SHAFT LENGTH 20'- 24'

DESIGN TENSION (LBS)	QTY.	BOLT DIA.	LENGTH	BOLT CIRCLE	BOLT HOLE "Z"
1000	6	1.75"	35.00"	18.00"	2.00"
2000	6	1.75"	35.00"	18.00"	2.00"
3000	6	1.75"	35.00"	18.00"	2.00"
4000	6	1.75"	35.00"	18.00"	2.00"
5000	6	1.75"	35.00"	18.00"	2.00"
6000	6	2.25"	45.00"	18.00"	2.50"
7000	6	2.25"	45.00"	18.00"	2.50"
8000	6	2.25"	45.00"	18.00"	2.50"
9000	6	2.25"	45.00"	18.00"	2.50"
10,000	6	2.25"	45.00"	18.00"	2.50"

SHAFT LENGTH 26'- 30'

DESIGN TENSION (LBS)	QTY.	BOLT DIA.	LENGTH	BOLT CIRCLE	BOLT HOLE "Z"
1000	6	2.00"	40.00"	18.00"	2.25"
2000	6	2.00"	40.00"	18.00"	2.25"
3000	6	2.00"	40.00"	18.00"	2.25"
4000	6	2.00"	40.00"	18.00"	2.25"
5000	6	2.00"	40.00"	18.00"	2.25"
6000	6	2.25"	45.00"	21.00"	2.50"
7000	6	2.25"	45.00"	21.00"	2.50"
8000	6	2.25"	45.00"	21.00"	2.50"
9000	6	2.25"	45.00"	21.00"	2.50"
10,000	6	2.25"	45.00"	21.00"	2.50"

SHAFT LENGTH32'- 34'

DESIGN TENSION (LBS)	QTY.	BOLT DIA.	LENGTH	BOLT CIRCLE	BOLT HOLE "Z"
1000	6	2.00"	40.00"	18.00"	2.25"
2000	6	2.00"	40.00"	18.00"	2.25"
3000	6	2.00"	40.00"	18.00"	2.25"
4000	6	2.00"	40.00"	18.00"	2.25"
5000	6	2.00"	40.00"	18.00"	2.25"
6000	6	2.25"	45.00"	21.00"	2.50"
7000	6	2.25"	45.00"	21.00"	2.50"
8000	6	2.25"	45.00"	21.00"	2.50"
9000	6	2.50"	45.00"	21.00"	2.75"
10,000	6	2.50"	45.00"	21.00"	2.75"

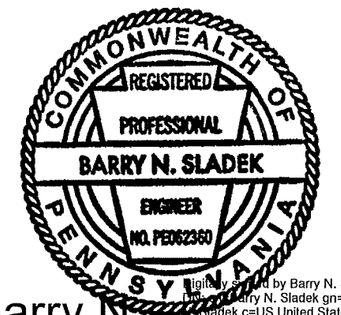
ALTERNATIVE "J" ANCHOR BOLT DESIGN *

ARM SPAN	QTY.	BOLT DIA.	BEND DIA.	L1 (IN)	L2 (IN)	L3 (IN)	BOLT CIRCLE	BOLT HOLE "Z"
0'-10'	6	1.75"	17.50"	42	48	54	18.00"	2.00"
>10'-15'	6	1.75"	17.50"	42	48	54	18.00"	2.00"
>15'-20'	6	1.75"	17.50"	42	48	54	18.00"	2.00"
>20'-25'	6	1.75"	17.50"	42	48	54	18.00"	2.00"
>25'-30'	6	1.75"	17.50"	42	48	54	21.00"	2.00"
>30'-35'	6	1.75"	17.50"	42	48	54	21.00"	2.00"
>35'-40'	6	2.00"	22.00"	48	60	72	24.00"	2.25"
>40'-45'	6	2.00"	22.00"	48	60	72	24.00"	2.25"
>45'-50'	6	2.00"	22.00"	48	60	72	24.00"	2.25"
>50'-60'	6	2.00"	22.00"	48	60	72	24.00"	2.25"

PEDESTAL POLES

SHAFT LENGTH	QTY.	BOLT DIA.	BOLT CIRCLE	BOLT LENGTH
7'- 10'	4	0.75"	8.50"	24.00"
11'- 14'	4	0.75"	8.50"	24.00"

*ADDITIONAL STRUCTURAL ANALYSIS REQ'D FOR TWIN MAST ARMS THAT ARE OTHER THAN PERPENDICULAR TO EACH OTHER.



Barry N. Sladek

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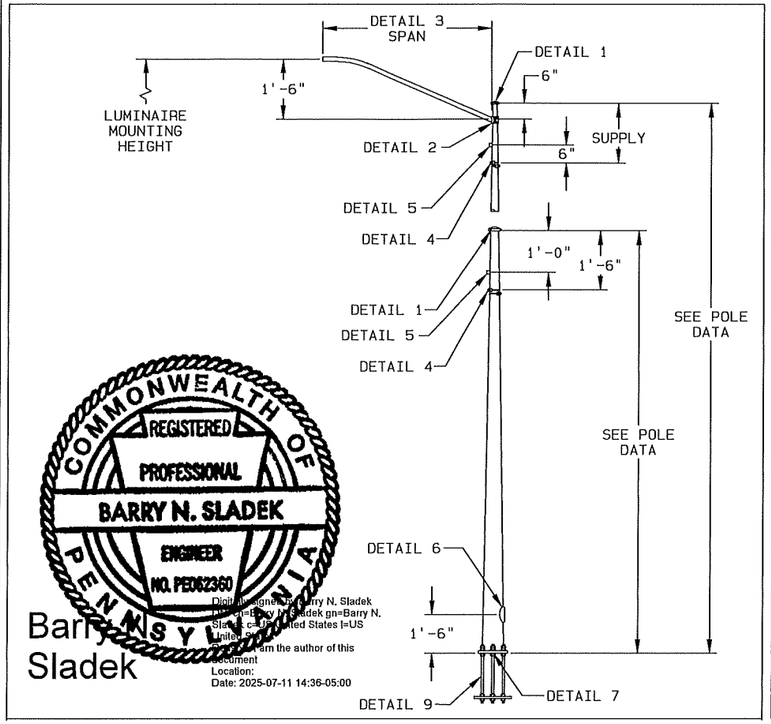
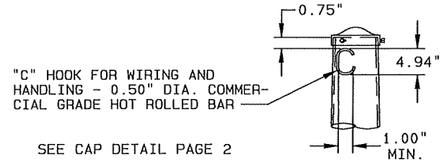
N. Sladek c=US United States l=US
United States
Reason: I am the author of this
document
Location:
Date: 2025-07-11 14:36-05:00

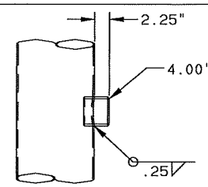
TITLE
PENNSYLVANIA DOT
TRAFFIC SIGNAL STRUCTURES
AASHTO 2001

valmont
Valley,NE 68064
(402) 359-2201

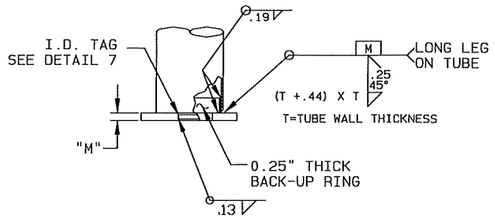


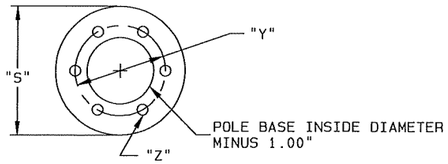


DETAIL 1 | POLE TOP

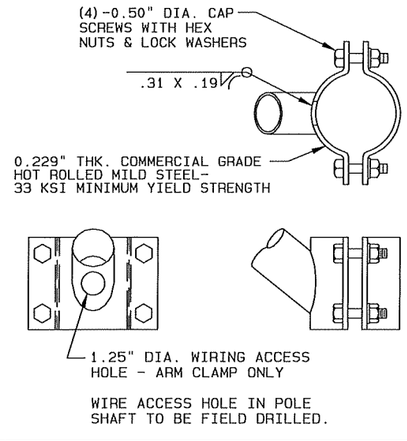


DETAIL 5 | POLE COUPLING

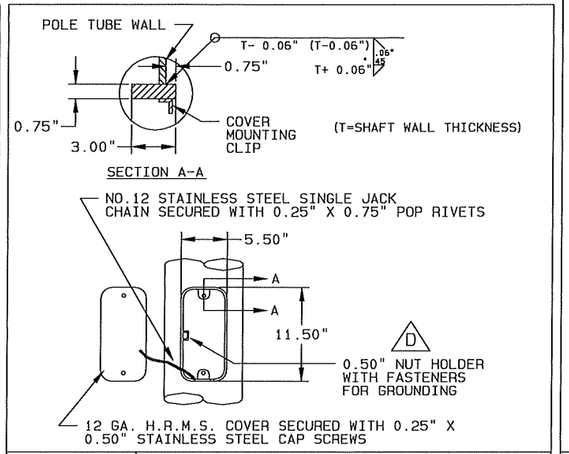




DETAIL 8 | POLE BASE



DETAIL 2 | LUMINAIRE ARM ATTACHMENT



DETAIL 6 | 4" X 10" HANDHOLE

MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
TAPERED TUBES	A595 GR. A OR A572	55
TAPERED TUBES	A572 GR. 65	65
GALVANIZING	A123 & A153	
NUTS	A194 GR.2H	
WASHERS	F436	

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE BASE (CVN REQ'D)	A36	36
ARM ATTACHMENT	A36	36
LUM. ARM CONN. BOLTS	A325	
ANCHOR BOLTS	F1554 GR.55	55
ANCHOR BOLT NUTS	A563	
HANDHOLE RIM	A572	65
COUPLINGS / TENONS	A53 OR A500 GR. B	

NOTE:
ALL POLES & ARMS ARE ROUND AND HAVE A MINIMUM WELD SEAM PENETRATION OF 60%. SEAM WELDS AT THE BASE OF TUBES WILL HAVE A 100% PENETRATION FOR A MINIMUM LENGTH OF 6 INCHES.

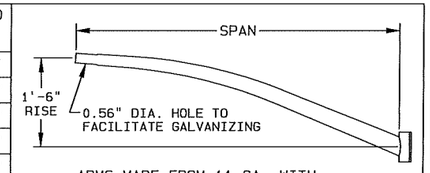
ALL WELD INSPECTION SHALL BE IN ACCORDANCE WITH AWS D1.1.

POLES COMPLY WITH PennDOT PUBLICATION 408 AND BULLETIN 15

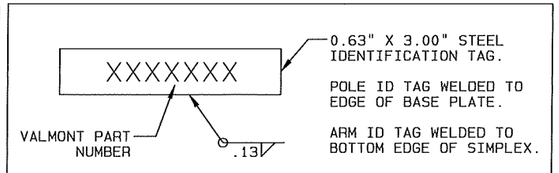
THESE STRAIN POLE STRUCTURES ARE DESIGNED IN ACCORDANCE WITH LOADING AND ALLOWABLE STRESS REQUIREMENTS OF 2001 AASHTO "STANDARDS SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", FOURTH EDITION. WIND LOADS ARE BASED ON A BASIC WIND SPEED OF 80 MPH (PER APPENDIX C) WITH A RECURRENCE INTERVAL OF 50 YEARS. FATIGUE WAS NOT INCLUDED WITH THIS DESIGN. GALLOPING LOADS AND TRUCK-INDUCED GUSTS DO NOT APPLY TO THESE TYPES OF STRUCTURES.

DESIGN CRITERIA

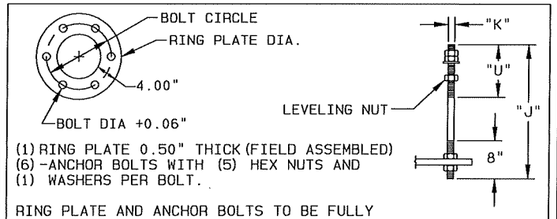
SPAN (FT)	FIXED END DIA.
6	3.28"
8	3.58"
10	3.81"
12	4.11"
14	4.43"
15	4.53"



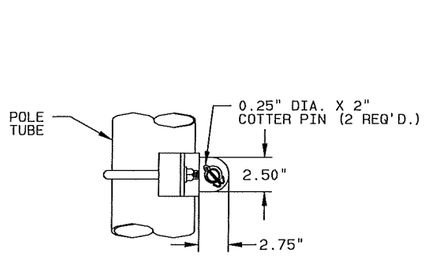
DETAIL 3 | LUMINAIRE ARM DATA

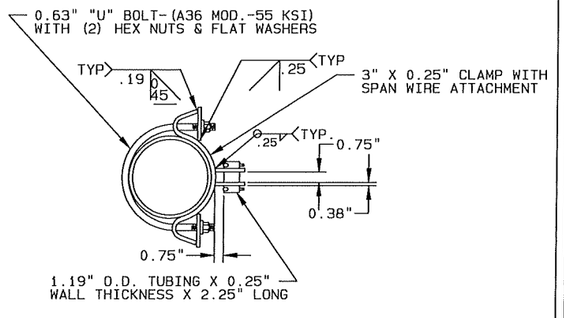


DETAIL 7 | I.D. TAG



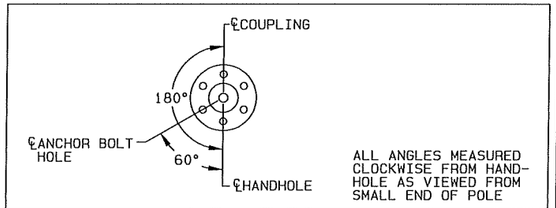
DETAIL 9 | ANCHOR BOLT





QTY. 2 PER POLE

DETAIL 4 | SPAN WIRE CLAMP



6 BOLT - RADIAL INDEX

TITLE
PENNSYLVANIA DOT
STRAIN POLES
AASHTO 2001

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont
Valley,NE 68064
(402) 359-2201

DRAWING NUMBER: DB00894 | REV: J

20' - 24' STRAIN POLE DATA

DESIGN TENSION (LBS)	LUMINAIRE MAST ARM SPAN (FT)	LUMINAIRE MOUNTING HEIGHT (FT)	POLE DATA					BASE PLATE DATA					ANCHOR BOLT DATA (TYPE A)				ANCHOR BOLT DATA (TYPE B)				
			BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	MIN YIELD (KSI)	ROUND "S" (IN)	BOLT CIRCLE "Y" (IN)	THICK "M" (IN)	NO. BOLT REQ'D	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)	DIA. "K" (IN)	Y (TC-8801) LENGTH "J" (IN)	Z (TC-8801) LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)
1000	N/A	N/A	9.00	VARIES	20 - 24	7	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	54.00	22.00	12.00
2000			11.00			7	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	54.00	22.00	12.00
3000			12.00			7	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	54.00	22.00	12.00
4000			12.00			3	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	60.00	22.00	12.00
5000			12.00			0.313	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	60.00	78.00	22.00	12.00
6000			12.00			0.375	55	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	68.00	86.00	22.00	14.00
7000			12.00			0.375	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	68.00	92.00	22.00	14.00
8000			12.00			0.438	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	74.00	98.00	22.00	14.00
9000			12.00			0.438	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	80.00	104.00	22.00	14.00
10000			12.00			0.500	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	86.00	110.00	22.00	14.00
1000	6 - 15	30.00	9.00	4.94	29.00	7	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	54.00	22.00	12.00
2000			11.00	6.94	29.00	7	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	54.00	22.00	12.00
3000			12.00	7.94	29.00	7	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	54.00	22.00	12.00
4000			12.00	7.94	29.00	3	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	54.00	60.00	22.00	12.00
5000			12.00	7.94	29.00	0.313	55	23.00	18.00	2.00	6	2.00	1.75	49.00	22.00	14.00	1.75	60.00	78.00	22.00	12.00
6000			12.00	7.94	29.00	0.375	55	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	68.00	86.00	22.00	14.00
7000			12.00	7.94	29.00	0.375	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	68.00	92.00	22.00	14.00
8000			12.00	7.94	29.00	0.438	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	74.00	98.00	22.00	14.00
9000			12.00	7.94	29.00	0.438	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	80.00	104.00	22.00	14.00
10000			12.00	7.94	29.00	0.500	65	24.00	18.00	2.00	6	2.50	2.25	60.00	22.00	15.00	2.25	86.00	110.00	22.00	14.00

26' - 30' STRAIN POLE DATA

DESIGN TENSION (LBS)	LUMINAIRE MAST ARM SPAN (FT)	LUMINAIRE MOUNTING HEIGHT (FT)	POLE DATA					BASE PLATE DATA					ANCHOR BOLT DATA (TYPE A)				ANCHOR BOLT DATA (TYPE B)				
			BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	MIN YIELD (KSI)	ROUND "S" (IN)	BOLT CIRCLE "Y" (IN)	THICK "M" (IN)	NO. BOLT REQ'D	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)	DIA. "K" (IN)	Y (TC-8801) LENGTH "J" (IN)	Z (TC-8801) LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)
1000	N/A	N/A	10.00	VARIES	26 - 30	7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
2000			12.00			7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
3000			12.50			5	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	67.00	22.00	12.00
4000			13.00			0.250	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	61.00	79.00	22.00	12.00
5000			13.00			0.313	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	67.00	85.00	22.00	12.00
6000			14.50			0.313	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	73.00	92.00	25.00	14.00
7000			14.00			0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	80.00	104.00	25.00	14.00
8000			15.00			0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	86.00	110.00	25.00	14.00
9000			14.50			0.375	65	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	92.00	116.00	25.00	14.00
10000			14.50			0.438	65	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	98.00	128.00	25.00	14.00
1000	6 - 15	35.00	10.00	5.24	34.00	7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
2000			12.00	7.24	34.00	7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
3000			12.50	7.74	34.00	5	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	67.00	22.00	12.00
4000			13.00	8.24	34.00	0.250	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	61.00	79.00	22.00	12.00
5000			13.00	8.24	34.00	0.313	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	67.00	85.00	22.00	12.00
6000			14.50	9.74	34.00	0.313	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	73.00	92.00	25.00	14.00
7000			14.00	9.24	34.00	0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	80.00	104.00	25.00	14.00
8000			15.00	10.24	34.00	0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	86.00	110.00	25.00	14.00
9000			14.50	9.74	34.00	0.375	65	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	92.00	116.00	25.00	14.00
10000			14.50	9.74	34.00	0.438	65	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	98.00	128.00	25.00	14.00

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
BARRY N. SLADEK
ENGINEER
NO. PE062360

Barry N. Sladek

Digitally signed by Barry N. Sladek
DN: cn=Barry N. Sladek gn=Barry
Sladek c=US United States
l=US United States
Reason: I am the author of this document
Location:
Date: 2025-07-11 14:36-05:00

TITLE
PENNSYLVANIA DOT
STRAIN POLES
AASHTO 2001

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont
Valley,NE 68064
(402) 359-2201

DRAWING NUMBER: DB00894
REV: J

32' - 34' STRAIN POLE DATA

DESIGN TENSION (LBS)	LUMINAIRE MAST ARM SPAN (FT)	LUMINAIRE MOUNTING HEIGHT (FT)	POLE DATA					BASE PLATE DATA					ANCHOR BOLT DATA (TYPE A)				ANCHOR BOLT DATA (TYPE B)				
			BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	MIN YIELD (KSI)	ROUND "S" (IN)	BOLT CIRCLE "Y" (IN)	THICK "M" (IN)	NO. BOLT REQ'D	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)	DIA. "K" (IN)	Y (TC-8801) LENGTH "J" (IN)	Z (TC-8801) LENGTH "J" (IN)	RING PLATE DIA. (IN)	THREAD LENGTH "U" (IN)
1000	N/A	N/A	10.00	VARIES	32 - 34	7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
2000			13.00			7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
3000			13.00			3	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	67.00	22.00	12.00
4000			13.00			0.313	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	61.00	79.00	22.00	12.00
5000			13.00			0.375	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	67.00	85.00	22.00	12.00
6000			14.00			0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	74.00	92.00	25.00	14.00
7000			15.00			0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	80.00	104.00	25.00	14.00
8000			15.00			0.375	65	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	86.00	110.00	25.00	14.00
9000			15.00			0.438	65	28.00	21.00	2.50	6	2.75	2.50	61.00	25.00	15.50	2.50	94.00	118.00	25.00	14.00
10000			15.00			0.500	65	28.00	21.00	2.50	6	2.75	2.50	61.00	25.00	15.50	2.50	100.00	130.00	25.00	14.00
1000	6 - 15	40.00	10.00	4.54	39.00	7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
2000			13.00	7.54	39.00	7	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	55.00	22.00	12.00
3000			13.00	7.54	39.00	3	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	55.00	67.00	22.00	12.00
4000			13.00	7.54	39.00	0.313	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	61.00	79.00	22.00	12.00
5000			13.00	7.54	39.00	0.375	55	24.00	18.00	2.00	6	2.25	2.00	54.00	22.00	14.00	2.00	67.00	85.00	22.00	12.00
6000			14.00	8.54	39.00	0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	74.00	92.00	25.00	14.00
7000			15.00	9.54	39.00	0.375	55	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	80.00	104.00	25.00	14.00
8000			15.00	9.54	39.00	0.375	65	27.00	21.00	2.50	6	2.50	2.25	60.00	25.00	15.00	2.25	86.00	110.00	25.00	14.00
9000			15.00	9.54	39.00	0.438	65	28.00	21.00	2.50	6	2.75	2.50	61.00	25.00	15.50	2.50	94.00	118.00	25.00	14.00
10000			15.00	9.54	39.00	0.500	65	28.00	21.00	2.50	6	2.75	2.50	61.00	25.00	15.50	2.50	100.00	130.00	25.00	14.00

NOTES:
1. THE STRINGING TENSION SHALL NOT EXCEEDE 75% OF THE DESIGN TENSION.
2. ANCHOR BOLTS AND BOLT CIRCLE SIZES SPECIFIED BY PENN DOT.
3. TAPER RATE OF POLES TO BE 0.14"

ORDER INFORMATION

QTY.	DESIGN TENSION (LBS)	POLE LENGTH	LUMINAIRE ARM SPAN	SPAN WIRE CLAMP LOCATION (DETAIL 4)

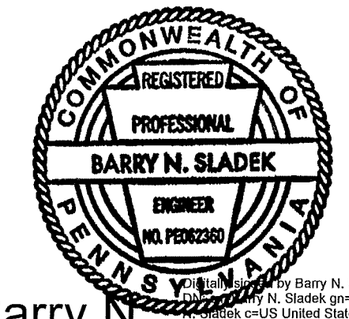
PA-1000-34-15-32

- PENNSYLVANIA POLE SERIES
- DESIGN TENSION (LBS)
- POLE LENGTH
- LUMINAIRE ARM SPAN -(6,8,10,12,14 & 15)
- SPAN WIRE LOCATION

DESIGNATION EXAMPLE

*ANCHOR BOLTS AND BOLT CIRCLE SIZES SPECIFIED BY PENN DOT.

TAPER RATE OF POLES TO BE 0.14"



Barry N. Sladek

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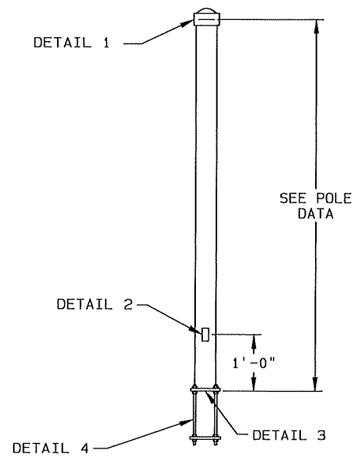
DN: cn=Barry N. Sladek gn=Barry N. Sladek c=US United States l=US United States
Reason: I am the author of this document
Location:
Date: 2025-07-11 14:36-05:00

TITLE
PENNSYLVANIA DOT
STRAIN POLES
AASHTO 2001

valmont
Valley,NE 68064
(402) 359-2201

DRAWING NUMBER: DB00894

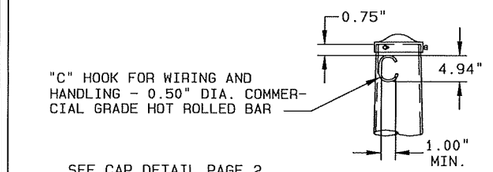
REV: J



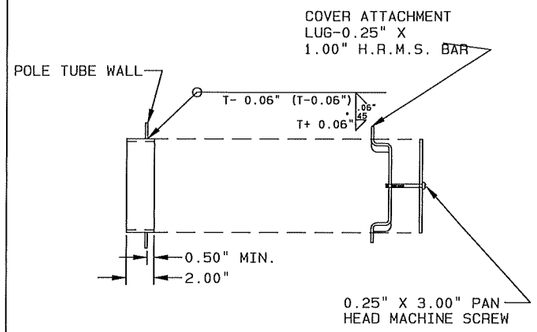
POLES COMPLY WITH PennDOT PUBLICATION 408 AND BULLETIN 15

MATERIAL DATA

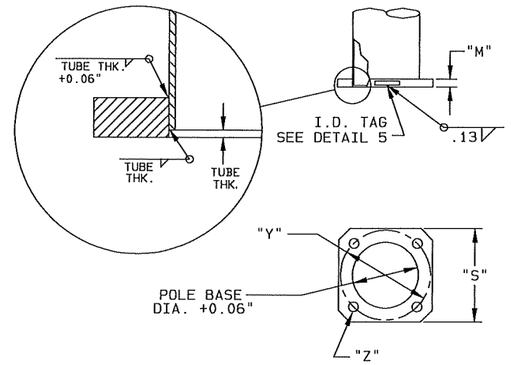
COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE TUBE-4.5"OD PIPE	A53 TYPE F		POLE BASE (CVN REQ'D)	A36	36
GALVANIZING	A123 & A153		ANCHOR BOLTS	F1554 GR.55	55
NUTS	A194 GR.2H		ANCHOR BOLT NUTS	A563	
HANDHOLE RIM	A36	36			
WASHERS	F436				



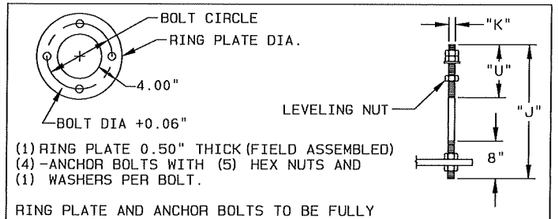
DETAIL 1 | POLE TOP



DETAIL 2 | HANDHOLE



DETAIL 3 | POLE BASE

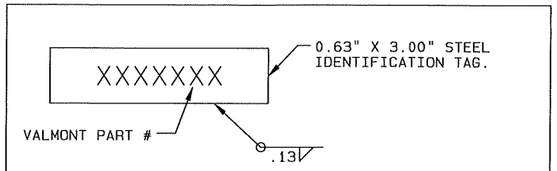


(1) RING PLATE 0.50" THICK (FIELD ASSEMBLED)
(4) -ANCHOR BOLTS WITH (5) HEX NUTS AND
(1) WASHERS PER BOLT.

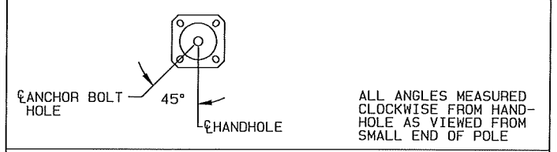
RING PLATE AND ANCHOR BOLTS TO BE FULLY GALVANIZED.

**NUTS AND WASHERS GALVANIZED TO ASTM A153

DETAIL 4 | ANCHOR BOLT



DETAIL 5 | I.D. TAG



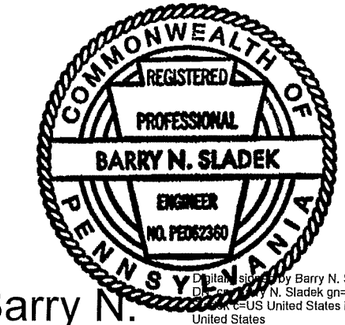
RADIAL INDEX

THESE PED POLE STRUCTURES ARE DESIGNED IN ACCORDANCE WITH LOADING AND ALLOWABLE STRESS REQUIREMENTS OF 2001 AASHTO "STANDARDS SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", FOURTH EDITION. WIND LOADS ARE BASED ON A BASIC WIND SPEED OF 80 MPH (PER APPENDIX C) WITH A RECURRENCE INTERVAL OF 50 YEARS. FATIGUE WAS NOT INCLUDED WITH THIS DESIGN. GALLOPING LOADS AND TRUCK-INDUCED GUSTS DO NOT APPLY TO THESE TYPES OF STRUCTURES.

DESIGN CRITERIA

PED POLE DATA

PED POLE DESIGN	QTY.	POLE TUBE				POLE BASE				ANCHOR BOLT (D)		
		BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THICK (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	THREAD LENGTH "U" (IN)
10.00		4.50	4.50	10.00	0.237	9.00	8.50	1.00	1.00	0.75	35.00	8.00
12.00		4.50	4.50	12.00	0.237	9.00	8.50	1.00	1.00	0.75	35.00	8.00
14.00		4.50	4.50	14.00	0.237	9.00	8.50	1.00	1.00	0.75	35.00	8.00



Barry N. Sladek

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DN: cn=Barry N. Sladek gn=Barry N. c=US United States l=US United States
Reason: I am the author of this document
Location:
Date: 2025-07-11 14:35-05:00

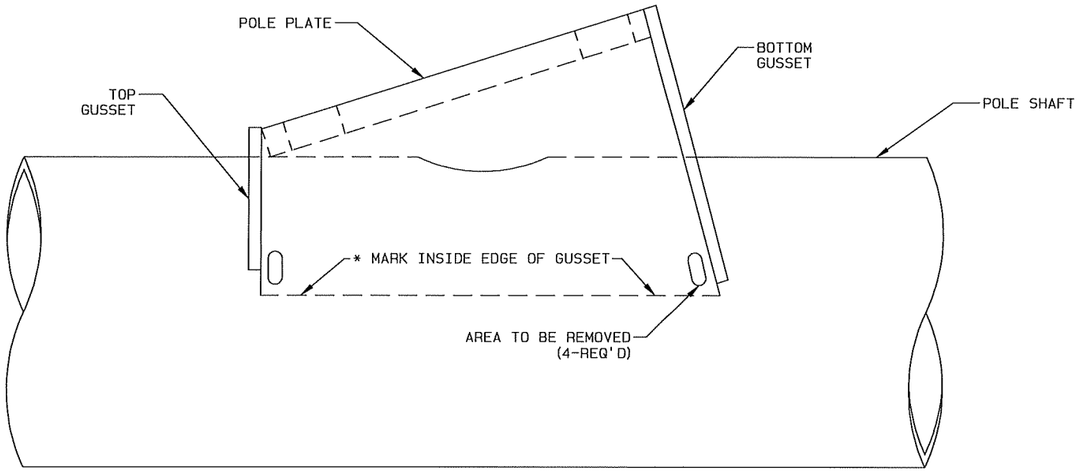
TITLE PENNSYLVANIA DOT
PED POLES
AASHTO 2001

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont
Valley,NE 68064
(402) 359-2201

PAGE NUMBER: 8 OF 9
DRAWING NUMBER DB00894
REV J

LISTED BELOW IS THE STEP BY STEP PROCEDURE FOR VENTING ARM PLATE ATTACHMENTS.

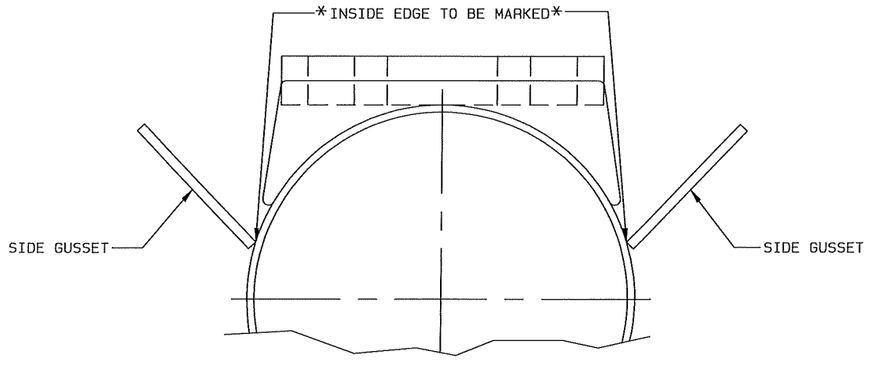


1. ESTABLISH THE PROPER ORIENTATION OF THE POLE PLATE, ON THE POLE SHAFT, AS DETAILED ON THE PARTICULR PRODUCTION DRAWING.

2. TACK WELD IN PLACE THE TOP AND BOTTOM GUSSETS, AS DETAILED ON THE PRODUCTION DRAWING.

3. PLACE THE INDIVIDUAL SIDE GUSSETS ON THE POLE PLATE ATTACHMENT AS DETAILED ON THE PRODUCTION DRAWING. (DO NOT TACK WELD SIDE GUSSET AT THIS TIME.)

4. MARK BOTH INSIDE POLE SHAFT SURFACES WHERE THE SIDE GUSSETS CONTACT THE POLE SHAFT - NOTE BOTH DETAILS.



5. REMOVE THE INDIVIUAL SIDE GUSSETS.

6. REMOVE A SLOT (IN POLE SHAFT) APPROXIMATELY EQUAL TO 0.50" X 1.50". THE REMOVED AREA SHOULD BE WITHIN 0.25" OF THE SIDE AND TOP (OR BOTTOM) GUSSETS AND BE ORIENTED AS SHOWN ABOVE. SLOTS MUST BE DEBURRED.

CRITICAL

(NOTE: AREA WHICH IS TO BE REMOVED WILL BE POLE SHAFT MATERIAL.)

7. REPLACE THE SIDE GUSSETS, AND TACK WELD TO THE PROPER ORIENTATION.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
BARRY N. SLADEK
ENGINEER
NO. PE062360

Barry N. Sladek

Digitally signed by Barry N. Sladek
DN: cn=Barry N. Sladek gn=Barry N. Sladek c=US United States I=US United States
Reason: I am the author of this document
Location:
Date: 2025-07-11 14:35-05:00

TITLE PENNSYLVANIA DOT VALMONT VENTING STANDARDS (M20 SPECIFICATION)	VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.	valmont Valley,NE 68064 (402) 359-2201	PAGE NUMBER: 9 OF 9 DRAWING NUMBER DB00894 REV J