

ATS-Sales, LLC
14522-K Lee Rd, Chantilly VA 20151-1639

703.631.6661(O)
703.631.6694(F)

October 2, 2019

Re: Mast Arm Poles
MP-3 Standard Loads – 70 MPH Wind
Virginia
ATS# 16362-1

This is to certify that the traffic poles for the above referenced intersection were designed in accordance with:

- **The project plans and specifications**
- **VDOT 2016 Road and Bridge Specifications**
- **The 2013 AASHTO Specification (LTS-6), Using:**
 - **70 mph wind velocity with Appendix C**
 - **25 Year Recurrence**
 - **Fatigue Category II (No fatigue loads for mast arms smaller than 50')**
 - **Natural Wind Gusts (11.2 MPH)**
 - **No Galloping Loads**
 - **No truck-induced Gust**
 - **Maximum Standard Loading (MP-3)**

The following identifies this submittal's documents:

ATS Drawings: 16362-1(A) Rev. B, 16362-1(B) Rev. B & 16362-1(C) Rev. B
Calculations Dated: September 11, 2019, Consisting of 370 pages

In accordance with the Virginia Department of Transportation Road and Bridge Specification, I am a registered Professional Engineer holding a valid license in the Commonwealth of Virginia.

Sincerely,

Armand A Damiano, P.E.

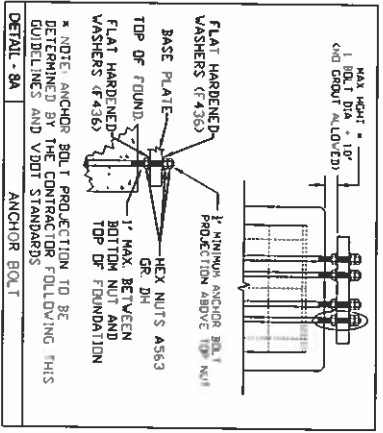
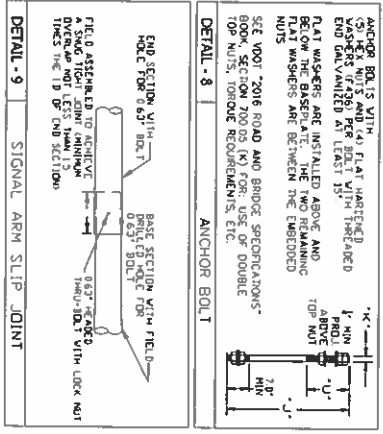
VIRGINIA DEPARTMENT OF TRANSPORTATION C.O. STRUCTURE AND BRIDGE REVIEW OF WORKING DRAWINGS	
Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.	
<input checked="" type="checkbox"/> Reviewed	<input type="checkbox"/> Revise and Resubmit
<input type="checkbox"/> Reviewed as Noted	
Reviewed by: Karl Larson 10/09/2019	

Armand A Damiano
2019.10.02 16:29:47 -05'00'



POLE TYPE	QTY.	SHAFT					BASE PLATE					ANCHOR BOLT					ARM MAX. ARM SPAN (FT)	LUM. ARM MAX. LUM. SPAN (FT)
		BASE DIA. (IN)	TOP DIA. (IN)	LGTH. (FT)	WALL THICK (IN)	ARM ATTACH ELEV. (FT)	ARM DIA. (IN)	BOLT CIRCLE DIA. (IN)	CENTER HOLE DIA. (IN)	THK. (IN)	HOLE (IN)	QTY.	DIA. (IN)	LGTH. (IN)	THREAD LENGTH (IN)	MAX. ARM SPAN (FT)		
A	-	15.00	12.27	19.5	0.250	18.0	30.0	24.0	10.50	2.00	2.25	6	2.00	60.0	14.0	49	NA	
B1	-	19.50	16.77	19.5	0.313	18.0	32.0	26.0	14.75	2.00	2.25	8	2.00	60.0	14.0	75 Case 1	NA	
B2	-	20.50	17.77	19.5	0.313	18.0	32.0	26.0	15.75	2.00	2.25	8	2.00	60.0	14.0	75 Case 2	NA	
C	-	19.00	16.27	19.5	0.313	18.0	32.0	26.0	14.25	2.00	2.25	8	2.00	60.0	14.0	70/60	NA	
D	-	15.00	11.50	25.0	0.250	18.0	30.0	24.0	10.50	2.00	2.25	6	2.00	60.0	14.0	49	24.0	
E1	-	19.50	16.00	25.0	0.313	18.0	32.0	26.0	14.75	2.00	2.25	8	2.00	60.0	14.0	75 Case 1	24.0	
E2	-	20.50	17.00	25.0	0.313	18.0	32.0	26.0	15.75	2.00	2.25	8	2.00	60.0	14.0	75 Case 2	24.0	
F	-	19.00	15.50	25.0	0.313	18.0	32.0	26.0	14.25	2.00	2.25	8	2.00	60.0	14.0	70/60	24.0	

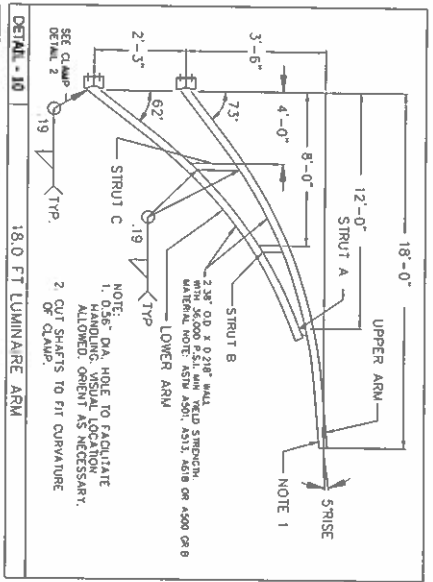
ARM SPAN (FT)	QTY.	SIGNAL ARM TUBE					SEC. LGTH. (FT)	CENTER HOLE (IN)
		FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THK (IN)	LGTH. (FT)	HOLE (IN)		
30.0	-	10.00	5.80	0.179	30.00	5.50		
30.0 Double	-	13.00	8.80	0.179	30.00	4.00		
40.0	-	11.00	5.40	0.179	40.00	5.00		
40.0 Double	-	13.00	7.40	0.179	40.00	4.00		
48.0	-	13.00	6.14	0.179	48.00	5.00		
50.0	-	13.00	6.00	0.179	50.00	5.00		
60.0	-	15.58	12.27	0.250	23.69	8.00		
60.0	-	13.00	7.54	0.179	39.00	8.00		
65.0	-	16.28	12.27	0.250	28.69	8.00		
70.0	-	13.00	7.54	0.179	39.00	8.00		
75.0 Case 1	-	17.50	14.00	0.250	25.00	9.00		
75.0 Case 1	-	18.00	14.08	0.250	28.00	9.50		
75.0 Case 2	-	14.87	7.88	0.188	49.93	9.50		
75.0 Case 2	-	19.00	14.80	0.313	30.00	9.50		
75.0 Case 2	-	15.66	8.94	0.188	48.02	6.50		



VIRGINIA DEPARTMENT OF TRANSPORTATION
 REVIEW OF NOTING DEMANDS
 REVERSE OF NOTING DEMANDS
 Noting actions have been reviewed in accordance with Section 105.10 of the Specifications with the following comments:
 * Rechecked
 O Rechecked as noted
 C Recheck and reinspect
 Reviewed by Kathleen Tompkins

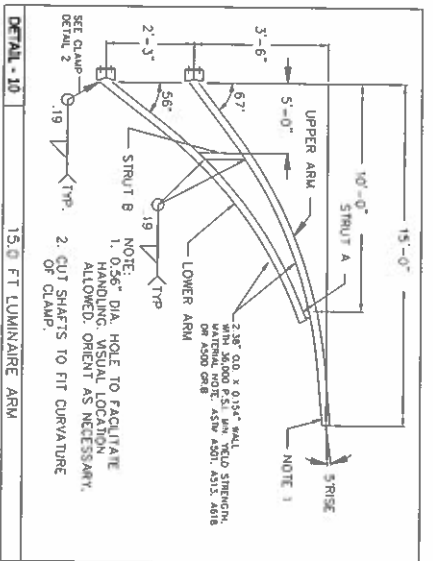


REV DATE	REVISION	DATE	REV
08/19/2010	VOI REVIEW COMMENTS	04/04/19	REV
02/19/2010	VOI REVIEW COMMENTS		
CUSTOMER		VALMONT	
MAST ARM POLE DETAILS		Voluntary 85854	
70 MPH - MP-3 STANDARDS		4487 397-9201	
VIRGINIA		16362-1(B)	



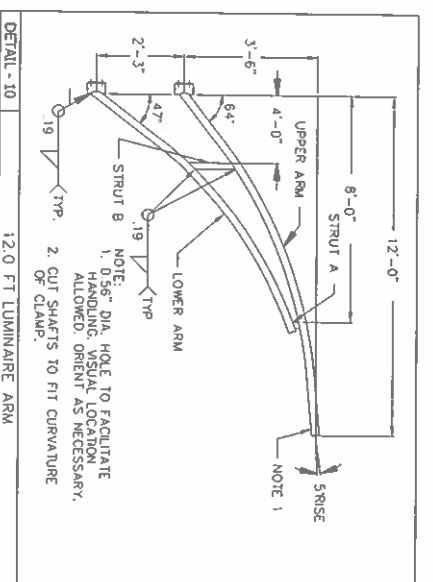
DETAIL - 10 18.0 FT LUMINAIRE ARM

STRUT DATA			ARM DATA			
STRUT	THK	WIDTH	ARM	O.D.	WALL	LENGTH
A	0.38"	2.00"	UPPER	2.38"	0.218"	18' - 4.81"
B	0.38"	2.00"	LOWER	2.38"	0.218"	11.33'
C	0.38"	2.00"				35,000 PSI MIN. YIELD STRENGTH
TOTAL A56 MATERIAL =			2' - 4.78'			



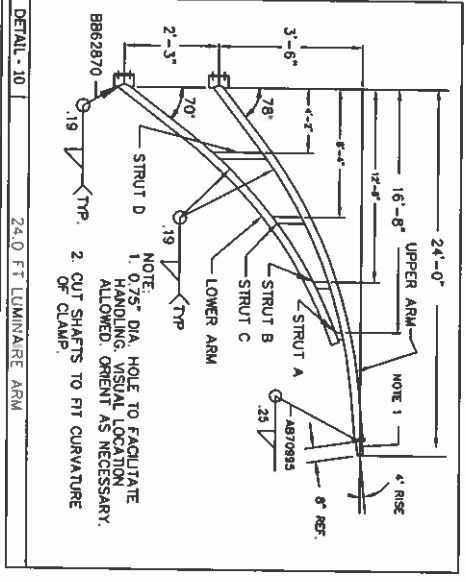
DETAIL - 10 15.0 FT LUMINAIRE ARM

STRUT DATA			ARM DATA			
STRUT	THK	WIDTH	ARM	O.D.	WALL	LENGTH
A	0.38"	2.00"	UPPER	2.38"	0.154"	15' - 6.63"
B	0.38"	2.00"	LOWER	2.38"	0.154"	11.13'
TOTAL A56 MATERIAL =			27' - 1.75'			



DETAIL - 10 12.0 FT LUMINAIRE ARM

STRUT DATA			ARM DATA			
STRUT	THK	WIDTH	ARM	O.D.	WALL	LENGTH
A	0.38"	2.00"	UPPER	2.38"	0.154"	12' - 6.00"
B	0.38"	2.00"	LOWER	2.38"	0.154"	9 - 11.81"
TOTAL A56 MATERIAL =			22' - 7.81"			



DETAIL - 10 24.0 FT LUMINAIRE ARM

STRUT DATA			ARM DATA			
STRUT	THK	"X"	ARM	O.D.	WALL	LENGTH
A	0.50"	0.28"	UPPER	2.88"	0.28"	24' - 7.42"
B	0.50"	0.28"	LOWER	2.88"	0.28"	17' - 8.36"
C	0.50"	0.28"				
D	0.50"	0.28"				
TOTAL S-70 MATERIAL =			3 - 3.31'			
TOTAL S109 MATERIAL =			42' - 3.60'			

VIRGINIA DEPARTMENT OF TRANSPORTATION
REVISIONS
REVISION NO. DATE
1. 08/08/19 VDOT REV'ED COMMENTS
2. 10/02/2019 VDOT REV'ED COMMENTS

Revised by: Kari Lukan 10/02/2019

Reviewed by: Kari Lukan 10/02/2019

0 Revis and Reason



REV#	DATE	REVISION
A	08/08/19	VDOT REV'ED COMMENTS
B	10/02/19	VDOT REV'ED COMMENTS

CUSTOMER: MAST ARM POLE DETAILS
70 MPH - MP-3 STANDARDS
VIRGINIA

Valmont®
Vollmer, Inc. 68854
P.O. Box 100
04/04/19
16362-1(C) B