

**BILL OF MATERIALS**



MOTOROLA INC

N/A

SITE: 50POL  
ORDER NO: 324370-2-1

Printed: 12/13/2016  
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\* The weights listed are theoretical. The actual weights will vary. All weights should be confirmed in the field prior to erection.

ORDER QTY	UOM	QTY PER ASSY	PART NO	DESCRIPTION	*UNIT WT	*WT. PER ASSY
1.00	0	1.00	POL	V-19 X 180' SST	0.00	0.00
1.00	0	1.00	SS401132-009	SECTION V-5.0 (140' - 160' ELEVATION)	1,235.25	1,235.25
9.00	0	9.00	SS116467	SPACER 1/4" THICK 11/16" DIA HOLE	0.25	2.25
1.00	0	1.00	SS226184	PIPE LEG SECTION 20'-0" (CLIMBING) 4" SCH. 40 V-	302.08	302.08
2.00	0	2.00	SS226185	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 4" SCH. 40	284.67	569.34
18.00	0	18.00	SS227113	ANGLE V-5 STR 89 17/32"	19.11	343.98
16.00	0	16.00	SS228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER	1.10	17.60
1.00	0	1.00	SS401132-010	SECTION V-5.0 (160' - 180' ELEVATION)	882.25	882.25
12.00	0	12.00	SS116467	SPACER 1/4" THICK 11/16" DIA HOLE	0.25	3.00
1.00	0	1.00	SS226160	PIPE LEG SECTION 20'-0" (CLIMBING) 2 1/2" SCH. 40 V-	194.38	194.38
2.00	0	2.00	SS226161	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 2 1/2" SCH.	189.17	378.34
24.00	0	24.00	SS227077	ANGLE V-5 STR 74 7/32" - 2" X 2" X 1/8" ANGLE (A36)	10.71	257.04
3.00	0	3.00	SS227584	UPPER HORIZONTAL BRACE ANGLE FOR V-SERIES	10.63	31.89
16.00	0	16.00	SS228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER	1.10	17.60
1.00	0	1.00	SS401132-011	LEG MOUNTED LIGHTNING ROD ASSEMBLY (	12.62	12.62
1.00	0	1.00	SS100064	CLAMP(S) (4" V-CLAMP) GALVANIZED	0.90	0.90
1.00	0	1.00	SS101620	1/2" X 4' LIGHTNING ROD (ADD HARDWARE TO	2.92	2.92
1.00	0	1.00	SS116839	LIGHTNING ROD HOLDER	8.80	8.80
1.00	0	1.00	SS401132-012	PIPE LEG CAP V-SERIES 2-1/2" THRU 4" LEG	14.82	14.82
3.00	0	3.00	SS227514	CAP PLATE (GALVANIZED) FOR V-SERIES TOWER	4.94	14.82
1.00	0	1.00	SS401132-013	TIA REV G GROUNDING MATERIALS	121.14	121.14
6.00	0	6.00	SS101628	CLAMP - GROUND ROD TO COPPER WIRE HARGER	0.47	2.82
6.00	0	6.00	SS123074	CYTOLOK WIRE CLAMP FOR #1/0 OR #2/0 GROUND	0.12	0.72
120.00	0	120.00	SS198894	#1/0 BARE COPPER WIRE (19 STRAND)	0.33	39.60
6.00	0	6.00	SS330102	5/8" x 10' COPPERCLAD GROUND ROD	13.00	78.00

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ORDER QTY	UOM	QTY PER ASSY	PART NO	DESCRIPTION	*UNIT WT	*WT. PER ASSY
1.00	0	1.00	SS401132-014	FINISH TOUCH-UP MATERIALS	7.82	7.82
1.00	0	1.00	SS116165	CLAMP (3" V-CLAMP)	0.75	0.75
1.00	0	1.00	SS191168	STRUCTURE IDENTIFICATION PLATE WITH VALMONT	0.01	0.01
1.00	0	1.00	SS191326	NAME PLATE BRACKET (BOLT-ON STYLE) 3" MOUNTING	1.86	1.86
1.00	0	1.00	SS248636	ENGINEERING BOOK	1.00	1.00
3.00	0	3.00	SS320632	COLD GALVANIZING SPRAY	1.40	4.20
1.00	0	1.00	SS401132-015	(802679) UNIV. HARDWARE KIT FOR VERT.	2.88	2.88
2.00	0	2.00	SS162821	DIAGONAL CONNECTION PLATE FOR TRANSMISSION	1.44	2.88
1.00	0	1.00	SS401132-016	T-LINE LADDER ASSEMBLY - 12 LINES - 20' L	774.54	774.54
36.00	0	36.00	SS162821	DIAGONAL CONNECTION PLATE FOR TRANSMISSION	1.44	51.84
18.00	0	18.00	SS163940	CONNECTION PLATE FOR WELDED T-LINE LADDER	1.03	18.54
18.00	0	18.00	SS168059	20' TRANSMISSION LINE LADDER CONNECTION ANGLE	31.29	563.22
54.00	0	54.00	SS237487	TRANSMISSION LINE LADDER BRACKET CHANNEL (12	2.61	140.94
1.00	0	1.00	SS401132-017	(803119) ANTI-CLIMB FOR DIAGONALS 20'-	692.40	692.40
60.00	0	60.00	SS123194	10" PVC PIPE 18' LENGTHS	11.54	692.40
1.00	0	1.00	SS401132-018	(803120) 8' ANTI-CLIMB FOR 12" BD LEGS (	103.00	103.00
9.00	0	9.00	SS101247	ANTI-CLIMB GUARD (12" WIDE X 8' LONG)	11.00	99.00
1.00	0	1.00	SS340024	BOX WRAP-LOCK (HANCOI)	4.00	4.00
1.00	0	1.00	SS401132-019	6' SIDE ARM PIVOT ASSEMBLY	139.39	139.39
2.00	0	2.00	SS100064	CLAMP(S) (4" V-CLAMP) GALVANIZED	0.90	1.80
2.00	0	2.00	SS116165	CLAMP (3" V-CLAMP)	0.75	1.50
1.00	0	1.00	SS123614	FLAT DISK CLAMP PLATE 3" CENTERS (GALVANIZED)	1.50	1.50
1.00	0	1.00	SS127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALVANIZED)	2.50	2.50
1.00	0	1.00	SS139395	1 1/4" SCH. 40 PIPE 10'-6" LONG FOR TIE-BACK	25.00	25.00
2.00	0	2.00	SS159999	BACKING PLATE FOR R5 UNIVERSAL PIPEMOUNT	6.52	13.04
1.00	0	1.00	SS192043	UPPER MOUNTING BRACKET FOR V-FRAME	8.74	8.74

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ORDER QTY	UOM	QTY PER ASSY	PART NO	DESCRIPTION	*UNIT WT	*WT. PER ASSY
1.00	0	1.00	SS192044	LOWER MOUNTING BRACKET FOR V-FRAME	8.74	8.74
1.00	0	1.00	SS195646	6' STANDOFF PIVOT ARM	68.04	68.04
1.00	0	1.00	SAM-U	UNIVERSAL STIFF ARM BRKT - ATTACHES TO ROUND	8.53	8.53
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-020</b>	<b>(807003) 6' UNIVERSAL SIDARM (3 3/4"-5</b>	<b>730.11</b>	<b>730.11</b>
6.00	0	6.00	SS100064	CLAMP(S) (4" V-CLAMP) GALVANIZED	0.90	5.40
6.00	0	6.00	SS108673	2" (2-3/8" OD) X 10'-6" PIPE	40.20	241.20
3.00	0	3.00	SS111436	2" (2-3/8" OD) X 84" PIPE (MICRO # 35-B1461)	26.80	80.40
18.00	0	18.00	SS116165	CLAMP (3" V-CLAMP)	0.75	13.50
6.00	0	6.00	SS121983	PLATE DOUBLE 4" OR 6-5/8" CLAMP GALVANIZED	4.30	25.80
3.00	0	3.00	SS122831	6' SIDE ARM 2" PIPE FIXED LENGTH	94.03	282.09
12.00	0	12.00	SS123614	FLAT DISK CLAMP PLATE 3" CENTERS (GALVANIZED)	1.50	18.00
6.00	0	6.00	SS139928	BACKING BAR FOR TRANS LINE BRACKET	4.68	28.08
6.00	0	6.00	SS140277	TIE-BACK MOUNT	5.94	35.64
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-021</b>	<b>DBI SAFETY CLIMB SYSTEM</b>	<b>0.00</b>	<b>0.00</b>
1.00	0	1.00	SS268759	DBI/CAPITAL SAFETY QUOTE# 185015 - CUSTOM	0.00	0.00
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-022</b>	<b>HARDWARE KIT</b>	<b>649.40</b>	<b>649.40</b>
1.00	0	1.00	SSHARDWAREKIT-A-	HARDWARE KIT CREATED FOR A-A-324370	649.40	649.40
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-002</b>	<b>SECTION U-19-0 (0' - 20' ELEVATION)</b>	<b>3,722.67</b>	<b>3,722.67</b>
6.00	0	6.00	SS104291	SPACER 1/2" THICK 13/16" HOLE	0.07	0.42
6.00	0	6.00	SS127612	DIAG BRACE 5/16" X 3" X 3" 18'- 6-3/16" LONG (A-36)	118.59	711.54
3.00	0	3.00	SS195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOLT	746.71	2,240.13
6.00	0	6.00	SS198340	DIAG BRACE 5/16" X 3" X 3" 19' 4 41/64" LONG (A36)	128.00	768.00
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-003</b>	<b>SECTION U-17-0 (20' - 40' ELEVATION)</b>	<b>3,547.65</b>	<b>3,547.65</b>
6.00	0	6.00	SS104291	SPACER 1/2" THICK 13/16" HOLE	0.07	0.42
6.00	0	6.00	SS105588	DIAG BRACE 5/16" X 3" X 3" 16'- 9-27/32" LONG (A-	107.73	646.38
6.00	0	6.00	SS127611	DIAG BRACE 5/16" X 3" X 3" 17'- 7-29/32" LONG (A-	113.10	678.60

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valmont  
STRUCTURES

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ORDER QTY	UOM	QTY PER ASSY	PART NO DRW NO	DESCRIPTION	*UNIT WT	*WT. PER ASSY
3.00	0	3.00	SS195213	#12 LEG SECT - 1-3/4" TO 1-1/2" TRANS LEG - 1/2"	739.89	2,219.67
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-004</b>	<b>SECTION U-15.0 (40' - 60' ELEVATION)</b>	<b>2,538.63</b>	<b>2,538.63</b>
6.00	0	6.00	SS104291	SPACER 1/2" THICK 13/16" HOLE	0.07	0.42
6.00	0	6.00	SS105579	DIAG BRACE 3/16" X 3" X 3" 15'-2-3/8" LONG (A-36)	59.04	354.24
6.00	0	6.00	SS105582	DIAG BRACE 3/16" X 3" X 3" 15'-11-31/32" LONG (A-	62.15	372.90
3.00	0	3.00	SS194651	#12 LEG SECTION - 1-1/2" LEG - 1/2" BRACE - 1" BOLT	602.83	1,808.49
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-005</b>	<b>SECTION V-13.0 (60' - 80' ELEVATION)</b>	<b>2,410.35</b>	<b>2,410.35</b>
9.00	0	9.00	SS124838	MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.45	4.05
6.00	0	6.00	SS226209	ANGLE V-13 MID 152 15/16"	41.08	246.48
6.00	0	6.00	SS227341	ANGLE V-13 UP 145 15/16"	39.20	235.20
48.00	0	48.00	SS228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER	1.10	52.80
3.00	0	3.00	SS229377	PIPE LEG SECTION 20'-0" (CLIMBING) 6" SCH. 40 V-	537.94	1,613.82
6.00	0	6.00	SS231349	ANGLE V-13 LOW 160 1/16"(W/45 CLIPPED)	43.00	258.00
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-006</b>	<b>SECTION V-11.0 (80' - 100' ELEVATION)</b>	<b>2,127.45</b>	<b>2,127.45</b>
9.00	0	9.00	SS124838	MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.45	4.05
6.00	0	6.00	SS225037	ANGLE V-11 MID 132 1/4"	35.52	213.12
6.00	0	6.00	SS225038	ANGLE V-11 UP 125 5/8"	33.74	202.44
3.00	0	3.00	SS226206	PIPE LEG SECTION 20' - 0" (CLIMBING) 6" SCH. 40 PIPE	476.98	1,430.94
48.00	0	48.00	SS228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER	1.10	52.80
6.00	0	6.00	SS231347	ANGLE V-11 LOW 139 1/32" (W/45 CLIPPED)	37.35	224.10
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-007</b>	<b>SECTION V-9.0 (100' - 120' ELEVATION)</b>	<b>1,679.52</b>	<b>1,679.52</b>
9.00	0	9.00	SS124838	MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.45	4.05
3.00	0	3.00	SS226192	PIPE LEG SECTION 20'-0" (CLIMBING) 5" SCH. 40 V-	396.13	1,188.39
6.00	0	6.00	SS226195	ANGLE V-9 MID 112 29/32"	24.11	144.66
6.00	0	6.00	SS226196	ANGLE V-9 UP 106 29/32"	22.83	136.98
48.00	0	48.00	SS228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER	1.10	52.80

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ORDER QTY	UOM	QTY PER ASSY	PART NO	DRW NO	DESCRIPTION	*UNIT WT	*WT. PER ASSY
6.00	0	6.00	SS231344		ANGLE V-9 LOW 119 5/32" (W/45 CLIPPED)	25.44	152.64
<b>1.00</b>	<b>0</b>	<b>1.00</b>	<b>SS401132-008</b>		<b>SECTION V-7.0 (120' - 140' ELEVATION)</b>	<b>1,552.46</b>	<b>1,552.46</b>
9.00	0	9.00	SS124838		MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.45	4.05
6.00	0	6.00	SS226189		ANGLE V-7 MID 95 13/16"	20.46	122.76
6.00	0	6.00	SS226190		ANGLE V-7 UP 90 27/32"	19.39	116.34
1.00	0	1.00	SS226200		PIPE LEG SECTION 20'-0" (CLIMBING) 5" SCH. 40 V-	389.61	389.61
2.00	0	2.00	SS226201		PIPE LEG SECTION 20'-0" (NON-CLIMBING) 5" SCH. 40	386.25	772.50
16.00	0	16.00	SS228189		STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER	1.10	17.60
6.00	0	6.00	SS231342		ANGLE V-7 LOW 101 3/16" (W/45 CLIPPED)	21.60	129.60
<b>Total:</b>						<b>45,880.96</b>	

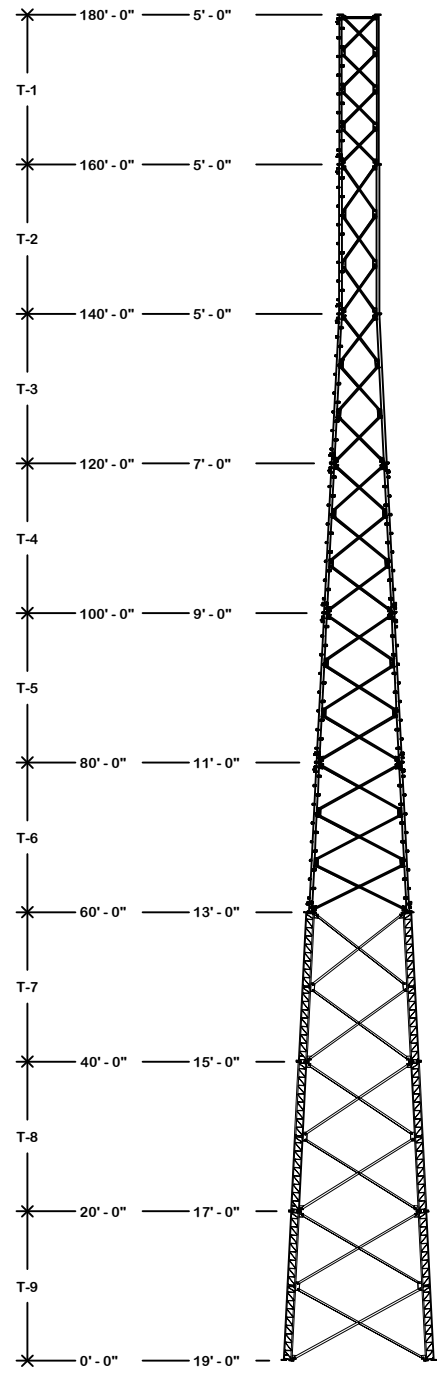
**SHIP DOCS**

1.00	0	1.00	POL		SHIP DOCS	0.00	0.00
1.00	0	1.00	SS247261		SHIPPING DOCUMENTATION	0.00	0.00
<b>Total:</b>						<b>0.00</b>	<b>0.00</b>

**Grand Total: 45880.96**

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SEE PAGE 2 FOR APPURTENANCES

BUILDING\_CODE(S):2009 International Building Code

Design Standard: TIA-222-G

TOWER DESIGN CRITERIA

Basic Wind Speed: 98 mph (no ice)  
40 mph(1.00" ice)  
60 mph (deflection only)

Structure Class: III  
Exposure: C  
Topographic Category: 1  
Crest Height: 0 ft.

MATERIAL STRENGTHS  
Solid Rod A36 (rod dia. <3/4")  
A572 Gr.50 (3/4" thru 1" dia.)  
A572 Gr.58 (>1" dia. T10 - T12 )  
Pipe A500 Gr.B (antenna pipes)  
A572 Gr.B/C (tower legs min. Fy 50 ksi)

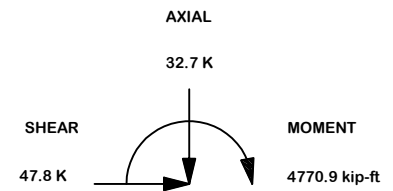
Angle A36 Gr.36  
Plate A572 Gr.50  
Bolts A-325/A-449 (leg & angle)

Anchor Bolts: F1554 grade 105 or A687

Finish: Tower & Hardware are hot dip galvanized

TOWER COLUMN										
SECTION	ELEVATION	FACE WIDTH	PANELS	LEG SIZE	LEG STYLE	LEG BOLT QTY & DIA	DIAGONAL BRACING SIZE	HORIZONTAL BRACING SIZE	BRACING BOLT QTY & DIA	SECTION WEIGHT
T1	160' - 180'	5.0'	4	2.50"	V	4 x 3/4"	1/8" x 2" x 2"	3/16" x 2" x 2"	1 x 3/4 "	932.41
T2	140' - 160'	5.0'	3	4.00"	V	6 x 3/4"	3/16" x 2" x 2"		1 x 3/4 "	1280.43
T3	120' - 140'	7.0'	3	5.00"	V	8 x 3/4"	3/16" x 2" x 2"		1 x 3/4 "	1602.68
T4	100' - 120'	9.0'	3	5.00"	V	8 x 3/4"	3/16" x 2" x 2"		1 x 3/4 "	1729.74
T5	80' - 100'	11.0'	3	6.00"	V	8 x 3/4"	3/16" x 2-1/2" x 2-1/2"		1 x 3/4 "	2177.67
T6	60' - 80'	13.0'	3	6.00"	V	6 x 1"	3/16" x 2-1/2" x 2-1/2"		1 x 3/4 "	2476.95
T7	40' - 60'	15.0'	2	1.50"	12BDFH	6 x 1"	3/16" x 3" x 3"		1 x 1 "	2611.71
T8	20' - 40'	17.0'	2	1.75"	12BDFH	6 x 1 1/4"	5/16" x 3" x 3"		1 x 1 "	3650.25
T9	0' - 20'	19.0'	2	1.75"	12BDFH	6 x 1 1/4"	5/16" x 3" x 3"		1 x 1 "	3759.21

Reactions - No Ice

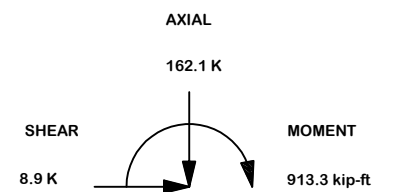


MAX. CORNER REACTIONS AT BASE:

DOWN: 296.6 K  
UPLIFT: -266.1 K  
SHEAR: 30.8 K

TORQUE 10.4 kip-ft  
REACTIONS 98.0 mph WIND (no ice)

Reactions - Ice



MAX. CORNER REACTIONS AT BASE:

DOWN: 296.6 K  
UPLIFT: -266.1 K  
SHEAR: 30.8 K

TORQUE 0.9 kip-ft  
REACTIONS 40.0 mph WIND (1.00" ice)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	<ACBATCH>		SKK	8/10/2016
REVISION HISTORY				

SITE

**CITY OF PORTLAND FD, ME  
MOTOROLA SOLUTIONS  
U 19 X 180'**

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PROPRIETARY NOTE:  
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DESCRIPTION

Tower View Page 1

STRUCTURE APPROVAL  
**SKK** 8/10/2016

FOUNDATION APPROVAL

**valmont**   
**STRUCTURES**


1-877-467-4763 Plymouth, IN  
1-800-547-2151 Salem, OR

ENG. FILE NO. **324370**

DWG. NO. **268614T**

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DESIGNED APPURTENANCE LOADING	
TYPE	ELEVATION
(1) 1/2" X 4' LIGHTNING ROD	180'
(1) 6' PIVOT SIDE ARM (50" PIPE)	160'
(6) 6' UNIVERSAL SIDE ARM (84" PIPE)	160'
(6) SC479-HF1LDF	160'
(1) TMA (12"X12"X8")	160'
(3) 12' V FRAME	155'
(12) 2" X 96" SCH. 40	155'
(12) PANEL (8' X 1' X 4")	155'
(3) 12' V FRAME	145'
(12) 2" X 96" SCH. 40	145'
(12) PANEL (8' X 1' X 4")	145'
(9) 8' ANTI-CLIMB	4'

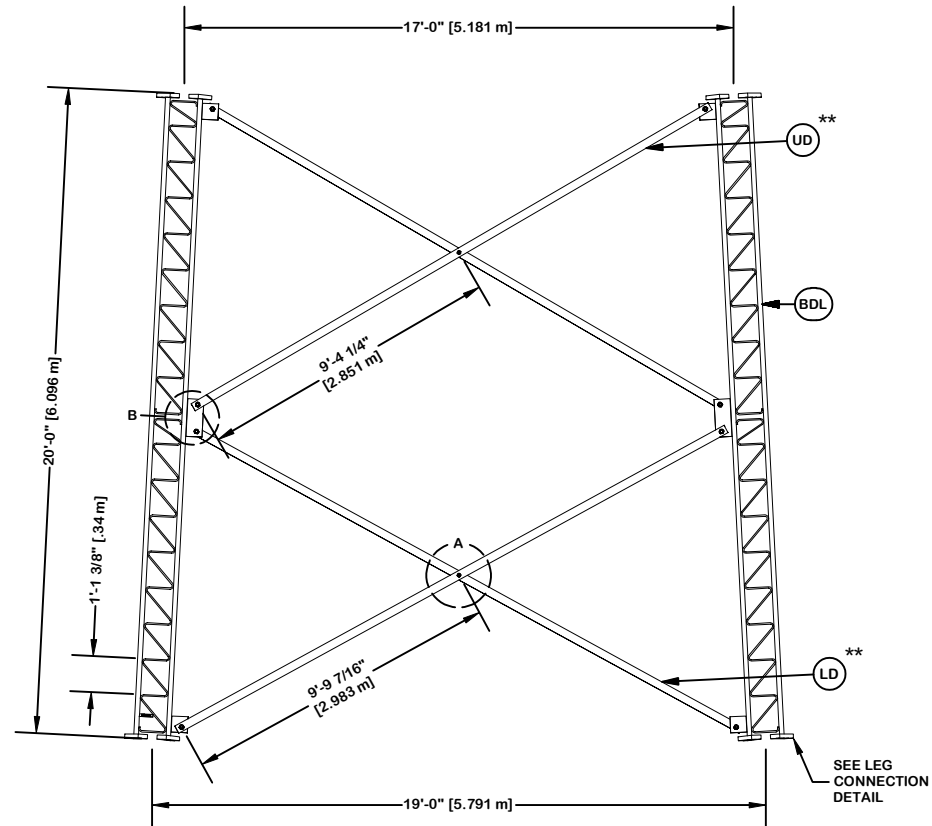
				SITE <b>CITY OF PORTLAND FD, ME          MOTOROLA SOLUTIONS          U 19 X 180'</b>		DESCRIPTION Tower View Page 2			
				COPYRIGHT 2013				ENG. FILE NO. <b>324370</b>	
				PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.		STRUCTURE APPROVAL <b>SKK 8/10/2016</b>		FOUNDATION APPROVAL	
@A <ACBATCH>				SKK 8/10/2016				DWG. NO. <b>268614T</b>	
REVISION HISTORY				CPD BY DATE				PAGE <b>2 OF 11</b>	



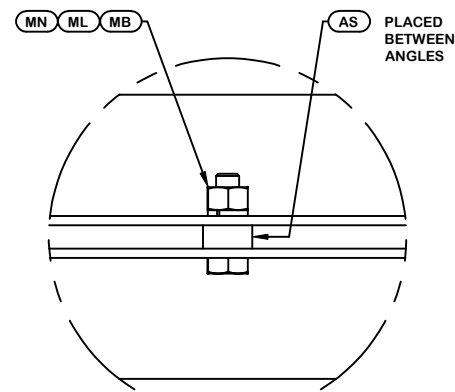
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TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

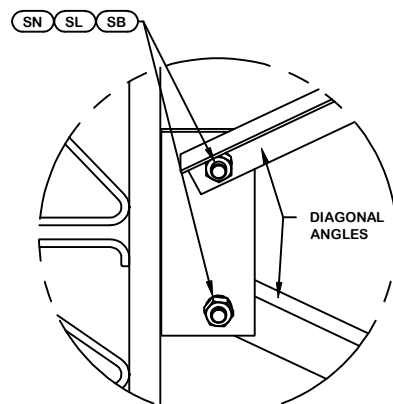
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP.  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



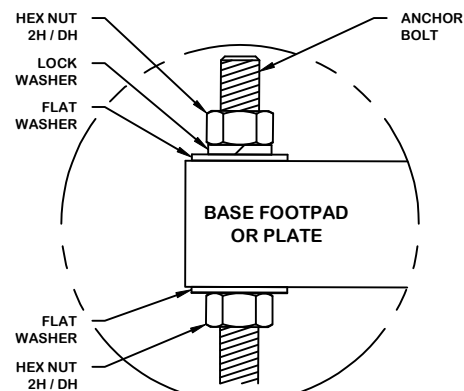
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195217	#12 LEG SECTION - 1-3/4" LEG - 1/2" BRACE - 1" BOL	746.710	2240.130
LD	6	198340	DIAG BRACE 5/16" X 3" X 3" 19' 4 1/64" LONG (A36)	128.000	768.000
AS	6	104291	SPACER 1/2" THICK 13/16" HOLE	0.500	3.000
MN	6	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.180
MB	6	160427	3/4"-10 X 3" A-325T BOLT WITH FULL THREAD	0.470	2.820
SL	24	312223	1" GALVANIZED LOCKWASHER	0.080	1.920
SN	24	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	10.320
SB	24	172265	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	127612	DIAG BRACE 5/16" X 3" X 3" 18'-6-3/16" LONG (A-3)	118.590	711.540
Total Wt				3759.21 lb [1706.71 kg]	



DETAIL A  
ANGLE INTERSECTION CONNECTION



DETAIL B  
MID SIDE PLATE ANGLE CONNECTION



ANCHOR BOLT ASSY. (TYP)  
SEE FOUNDATION DRAWING FOR DETAILS

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	<ACBATCH>		SKK	8/10/2016
REVISION HISTORY				

SITE	CITY OF PORTLAND FD, ME MOTOROLA SOLUTIONS U 19 X 180'
COPYRIGHT 2013	
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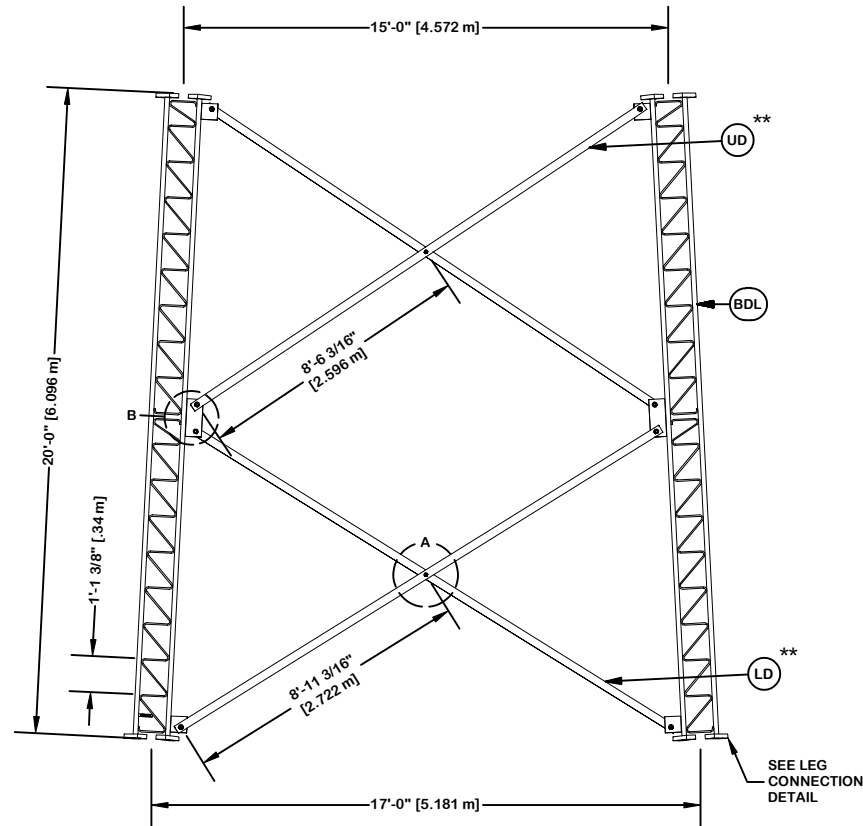
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STRUCTURE APPROVAL	SKK 8/10/2016
FOUNDATION APPROVAL	

<b>valmont</b>	
1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	
ENG. FILE NO.	324370
DWG. NO.	268614T
PAGE 3 OF 11	

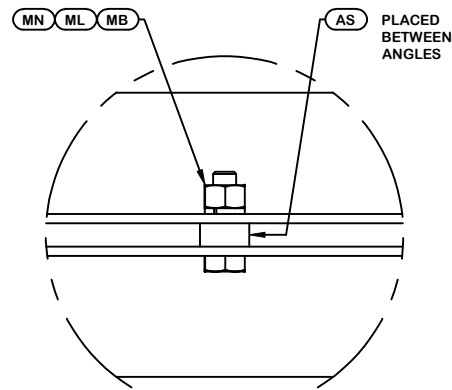
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TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

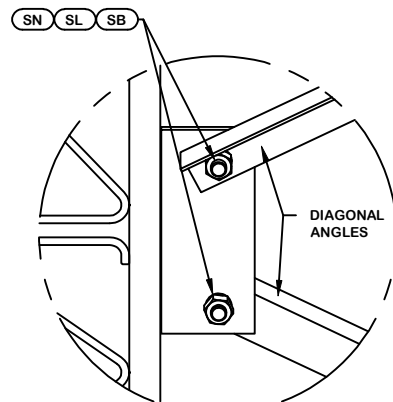
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP,  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



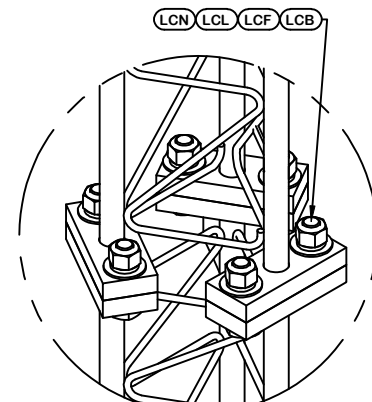
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	195213	#12 LEG SECT - 1-3/4" TO 1-1/2" TRANS LEG - 1/2" B	739.890	2219.670
LD	6	127611	DIAG BRACE 5/16" X 3" X 3" 17'-7-29/32" LONG (A)	113.100	678.600
AS	6	104291	SPACER 1/2" THICK 13/16" HOLE	0.500	3.000
MN	6	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.180
MB	6	160427	3/4"-10 X 3" A-325T BOLT WITH FULL THREAD	0.470	2.820
SL	24	312223	1" GALVANIZED LOCKWASHER	0.080	1.920
SN	24	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	10.320
SB	24	172265	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	105588	DIAG BRACE 5/16" X 3" X 3" 16'-9-27/32" LONG (A-	107.730	646.380
LCB	18	222022	1-1/4"-7 X 5-1/2" A-325 BOLT WITH 2" THREAD	2.530	45.540
LCF	36	312282	1-1/4" GALVANIZED FLAT WASHER (F436)	0.130	4.680
LCL	18	312283	1-1/4" GALVANIZED LOCKWASHER	0.150	2.700
LCN	18	312507	1-1/4"-7 HOT DIPPED GALVANIZED NUT	0.730	13.140
Total Wt				3650.25 lb [1657.25 kg]	



DETAIL A  
ANGLE INTERSECTION CONNECTION



DETAIL B  
MID SIDE PLATE ANGLE CONNECTION



LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	<ACBATCH>		SKK	8/10/2016
REVISION HISTORY				

SITE	CITY OF PORTLAND FD, ME MOTOROLA SOLUTIONS U 19 X 180'
COPYRIGHT 2013	
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DESCRIPTION	SECTION U-17.0 (20' - 40' ELEVATION)
STRUCTURE APPROVAL	FOUNDATION APPROVAL
SKK	8/10/2016

**valmont**

1-877-467-4763 Plymouth, IN  
1-800-547-2151 Salem, OR

**STRUCTURES**

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ENG. FILE NO. **324370**

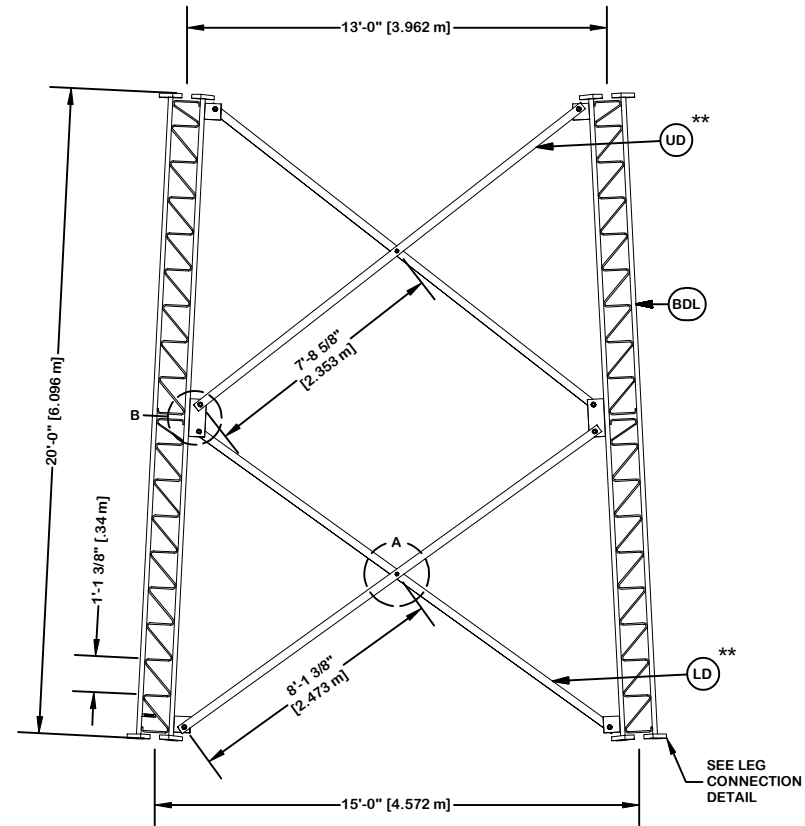
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DWG. NO. **268614T**

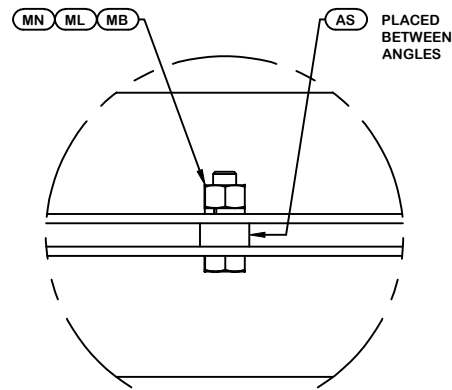
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TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

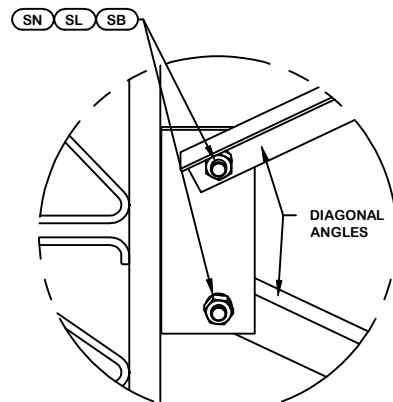
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP.  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



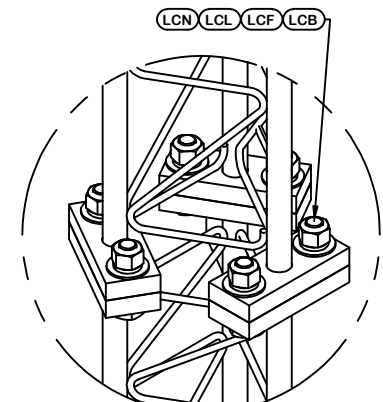
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
BDL	3	194651	#12 LEG SECTION - 1-1/2" LEG - 1/2" BRACE - 1" BOL	602.830	1808.490
LD	6	105582	DIAG BRACE 3/16" X 3" X 3" 15'- 11-31/32" LONG (A)	62.150	372.900
AS	6	104291	SPACER 1/2" THICK 13/16" HOLE	0.500	3.000
MN	6	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	1.140
ML	6	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.180
MB	6	160427	3/4"-10 X 3" A-325T BOLT WITH FULL THREAD	0.470	2.820
SL	24	312223	1" GALVANIZED LOCKWASHER	0.080	1.920
SN	24	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	10.320
SB	24	172265	1"-8 X 2-1/4" A-325 BOLT WITH 1-3/4" THREAD	0.840	20.160
UD	6	105579	DIAG BRACE 3/16" X 3" X 3" 15'- 2-3/8" LONG (A-36)	59.040	354.240
LCB	18	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	24.840
LCF	18	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	2.520
LCL	18	312223	1" GALVANIZED LOCKWASHER	0.080	1.440
LCN	18	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	7.740
Total Wt				2611.71 lb [1185.74 kg]	



DETAIL A  
ANGLE INTERSECTION CONNECTION



DETAIL B  
MID SIDE PLATE ANGLE CONNECTION



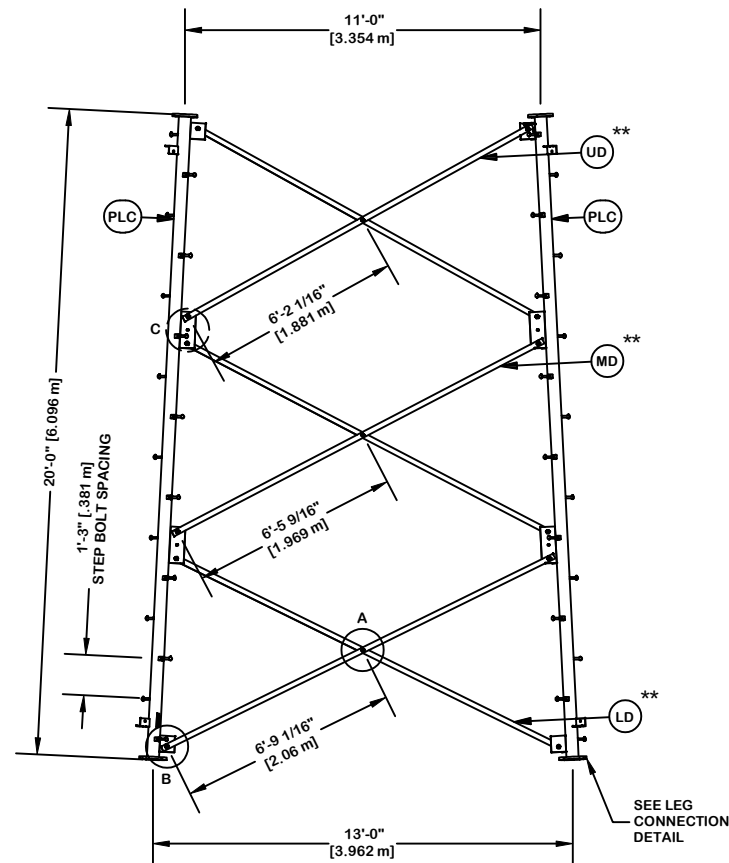
LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

@A <ACBATCH> REV DESCRIPTION OF REVISIONS CPD BY DATE REVISION HISTORY				SITE <b>CITY OF PORTLAND FD, ME</b> <b>MOTOROLA SOLUTIONS</b> <b>U 19 X 180'</b> COPYRIGHT 2013		DESCRIPTION <b>SECTION U-15.0 (40' - 60' ELEVATION)</b>		 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	
				PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.		STRUCTURE APPROVAL <b>SKK 8/10/2016</b>			
						ENG. FILE NO. <b>324370</b>		DWG. NO. <b>268614T</b> PAGE 5 OF 11	

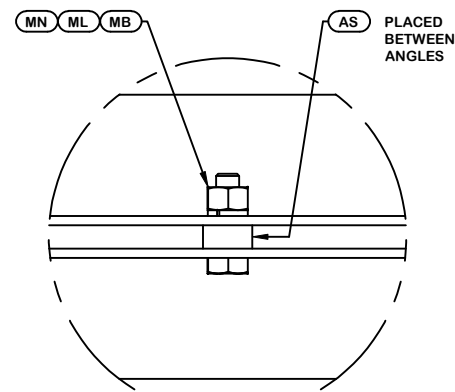
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TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

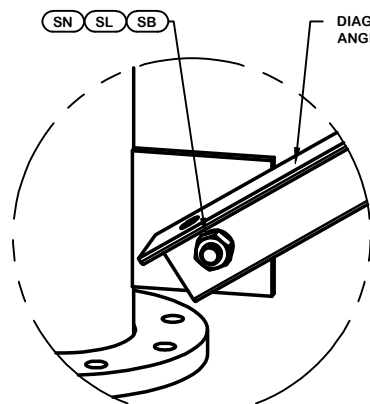
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP. ↑  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



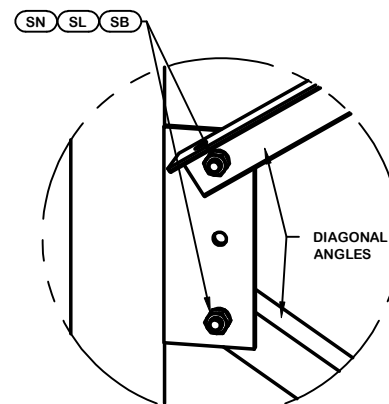
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	3	229377	PIPE LEG SECTION 20'-0" (CLIMBING) 6" SCH. 40 V-SE	537.940	1613.820
STP	48	228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	52.800
LD	6	231349	ANGLE V-13 LOW 160 1/16"(W/45 CLIPPED)	43.000	258.000
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	5.760
AS	9	124838	MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.450	4.050
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	6.840
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	15.120
MD	6	226209	ANGLE V-13 MID 152 15/16"	41.080	246.480
UD	6	227341	ANGLE V-13 UP 145 15/16"	39.200	235.200
LCB	18	222016	1"-8 X 4-3/4" A-325 BOLT WITH 1-3/4" THREAD	1.380	24.840
LCF	18	312222	1" GALVANIZED FLAT WASHER (F436)	0.140	2.520
LCL	18	312223	1" GALVANIZED LOCKWASHER	0.080	1.440
LCN	18	312504	1"-8 HOT DIPPED GALVANIZED NUT	0.430	7.740
Total Wt				2476.95 lb [1124.56 kg]	



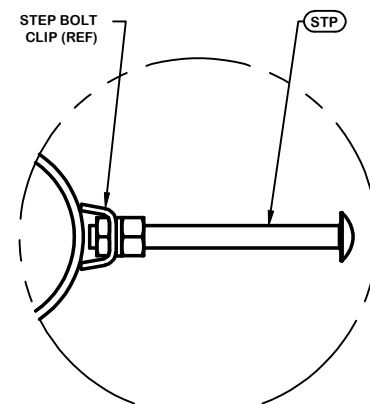
DETAIL A  
ANGLE INTERSECTION CONNECTION



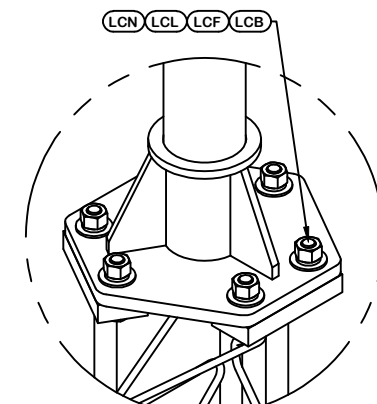
DETAIL B  
END SIDE PLATE ANGLE CONNECTION



DETAIL C  
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	<ACBATCH>		SKK	8/10/2016
REVISION HISTORY				

SITE	CITY OF PORTLAND FD, ME MOTOROLA SOLUTIONS U 19 X 180'
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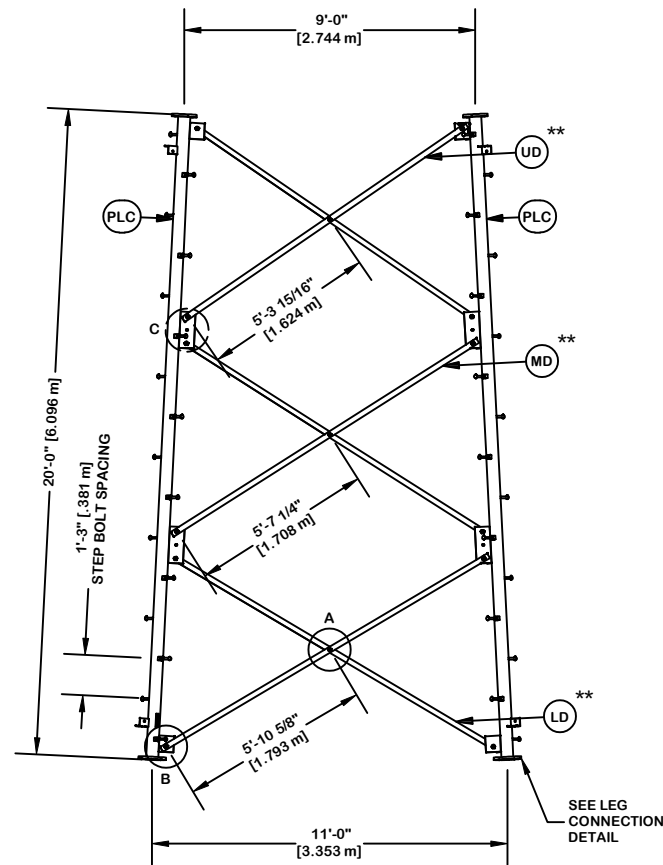
DESCRIPTION	SECTION V-13.0 (60' - 80' ELEVATION)
STRUCTURE APPROVAL	SKK 8/10/2016
FOUNDATION APPROVAL	

<b>valmont</b>	
1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	
ENG. FILE NO.	324370
DWG. NO.	268614T
PAGE 6 OF 11	

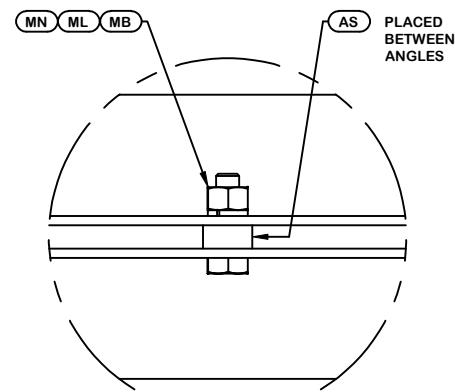
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TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

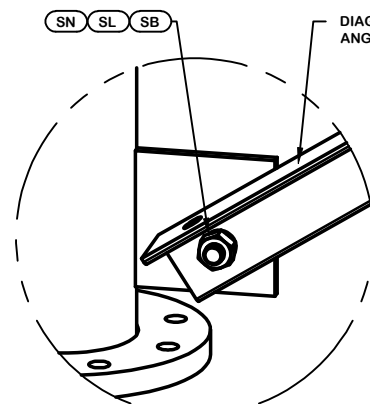
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP. ↑ ↓  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



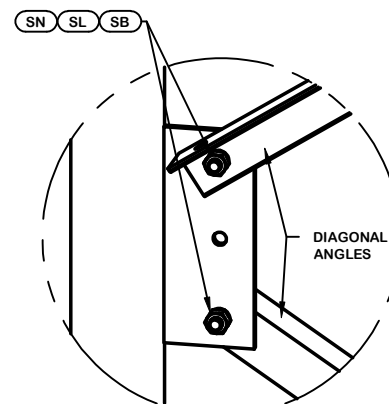
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	3	226206	PIPE LEG SECTION 20' - 0" (CLIMBING) 6" SCH. 40 PI	476.980	1430.940
STP	48	228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	52.800
LD	6	231347	ANGLE V-11 LOW 139 1/32" (W/45 CLIPPED)	37.350	224.100
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	5.760
AS	9	124838	MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.450	4.050
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	6.840
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	15.120
MD	6	225037	ANGLE V-11 MID 132 1/4"	35.520	213.120
UD	6	225038	ANGLE V-11 UP 125 5/8"	33.740	202.440
LCB	24	227668	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	12.960
LCF	24	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	1.920
LCL	24	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.720
LCN	24	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	4.560
Total Wt				2177.67 lb [988.68 kg]	



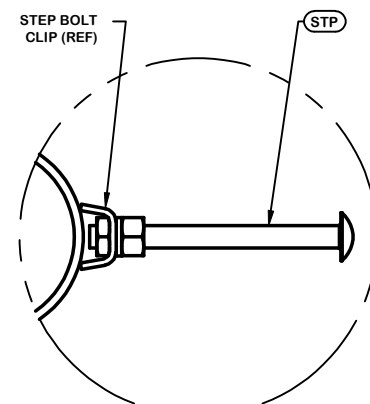
DETAIL A  
ANGLE INTERSECTION CONNECTION



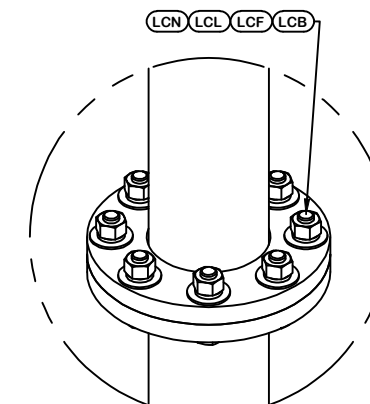
DETAIL B  
END SIDE PLATE ANGLE CONNECTION



DETAIL C  
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	<ACBATCH>		SKK	8/10/2016
REVISION HISTORY				

SITE	CITY OF PORTLAND FD, ME MOTOROLA SOLUTIONS U 19 X 180'
COPYRIGHT 2013	
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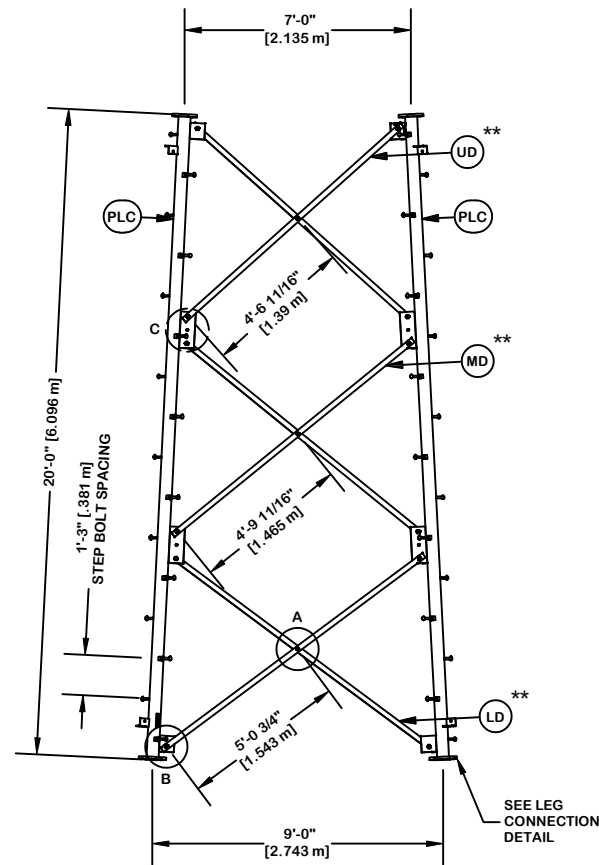
DESCRIPTION	SECTION V-11.0 (80' - 100' ELEVATION)
STRUCTURE APPROVAL	SKK 8/10/2016
FOUNDATION APPROVAL	

<b>valmont</b> <b>STRUCTURES</b>	
1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	
ENG. FILE NO.	324370
DWG. NO.	268614T

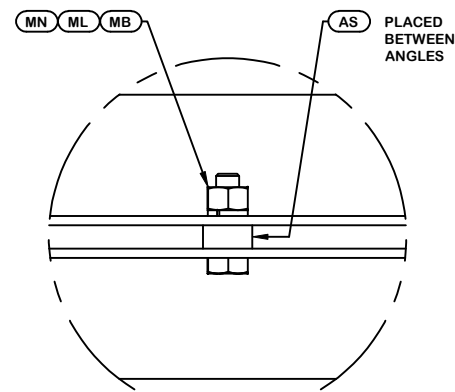
ORIENT LEGS WITH P/N STAMP  
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

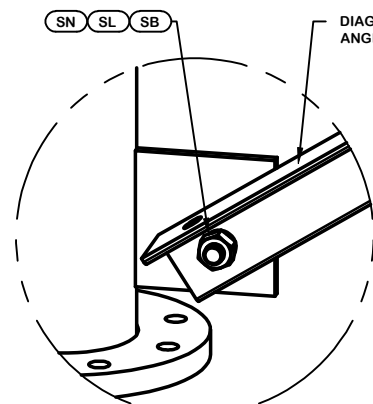
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP, ↑↑  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



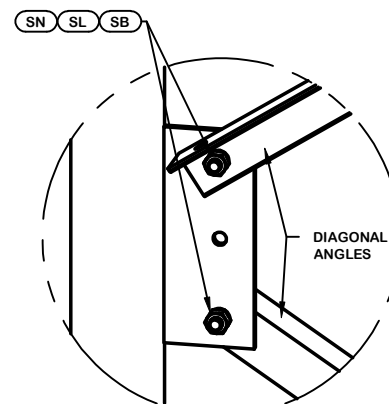
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	3	226192	PIPE LEG SECTION 20'-0" (CLIMBING) 5" SCH. 40 V-SE	396.130	1188.390
STP	48	228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	52.800
LD	6	231344	ANGLE V-9 LOW 119 5/32" (W/45 CLIPPED)	25.440	152.640
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	5.760
AS	9	124838	MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.450	4.050
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	6.840
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	15.120
MD	6	226195	ANGLE V-9 MID 112 29/32"	24.110	144.660
UD	6	226196	ANGLE V-9 UP 106 29/32"	22.830	136.980
LCB	24	227668	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	12.960
LCF	24	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	1.920
LCL	24	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.720
LCN	24	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	4.560
Total Wt				1729.74 lb [785.32 kg]	



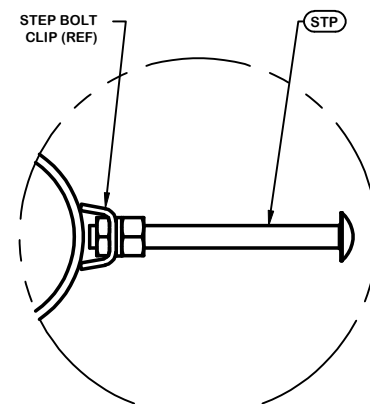
DETAIL A  
ANGLE INTERSECTION CONNECTION



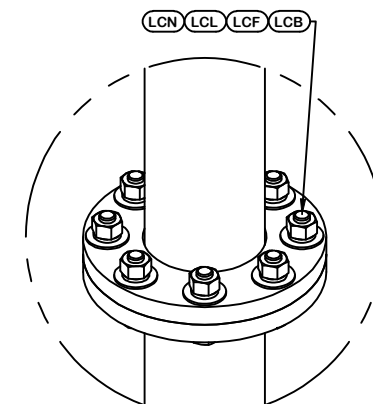
DETAIL B  
END SIDE PLATE ANGLE CONNECTION



DETAIL C  
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



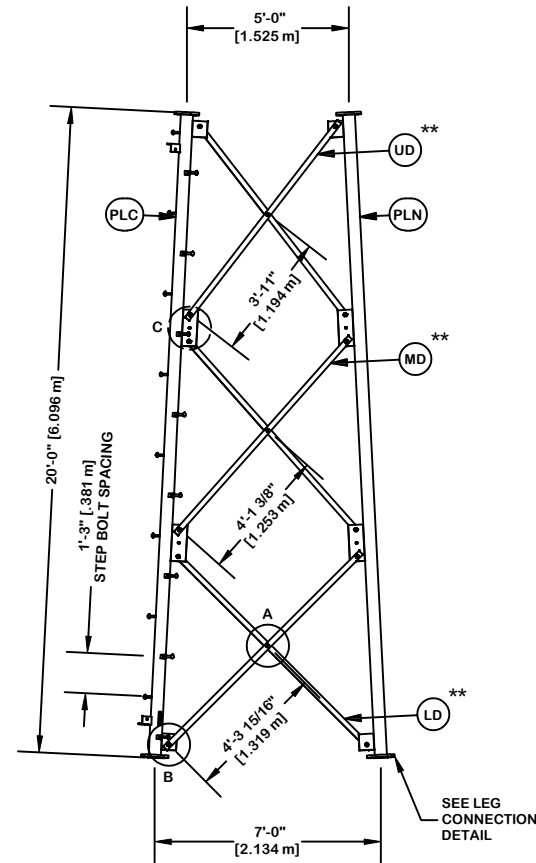
LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

@A <ACBATCH>			SSK 8/10/2016			SITE <b>CITY OF PORTLAND FD, ME</b> <b>MOTOROLA SOLUTIONS</b> <b>U 19 X 180'</b> COPYRIGHT 2013		DESCRIPTION <b>SECTION V-9.0 (100' - 120' ELEVATION)</b>		 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	
PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.			STRUCTURE APPROVAL <b>SSK 8/10/2016</b>		FOUNDATION APPROVAL		ENG. FILE NO. <b>324370</b>		DWG. NO. <b>268614T</b>		
REVISION HISTORY			CPD BY DATE							PAGE <b>8 OF 11</b>	

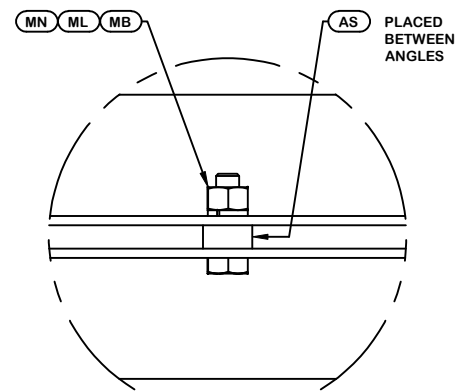
ORIENT LEGS WITH P/N STAMP  
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

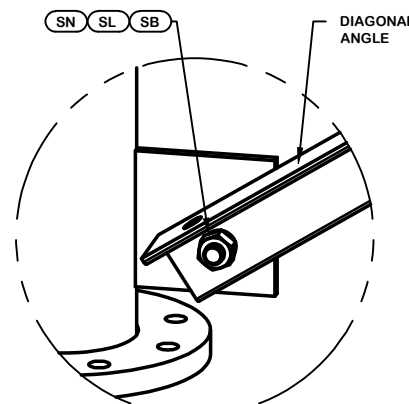
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP, ↑↑  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



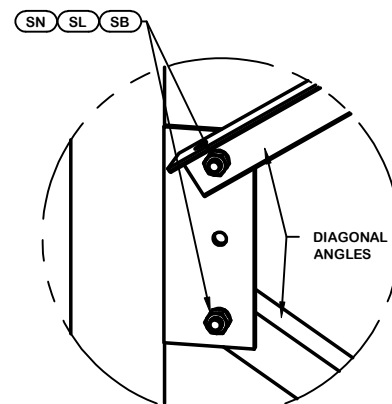
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	226200	PIPE LEG SECTION 20'-0" (CLIMBING) 5" SCH. 40 V-SE	389.610	389.610
PLN	2	226201	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 5" SCH. 40	386.250	772.500
STP	16	228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	17.600
LD	6	231342	ANGLE V-7 LOW 101 3/16" (W/45 CLIPPED)	21.600	129.600
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	5.760
AS	9	124838	MID-DIAGONAL SPACER 11/16" HOLE 3/8" THICK	0.450	4.050
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	6.840
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	15.120
MD	6	226189	ANGLE V-7 MID 95 13/16"	20.460	122.760
UD	6	226190	ANGLE V-7 UP 90 27/32"	19.390	116.340
LCB	24	227668	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	12.960
LCF	24	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	1.920
LCL	24	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.720
LCN	24	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	4.560
Total Wt				1602.68 lb [727.63 kg]	



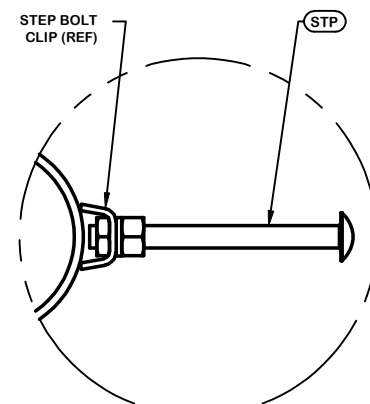
DETAIL A  
ANGLE INTERSECTION CONNECTION



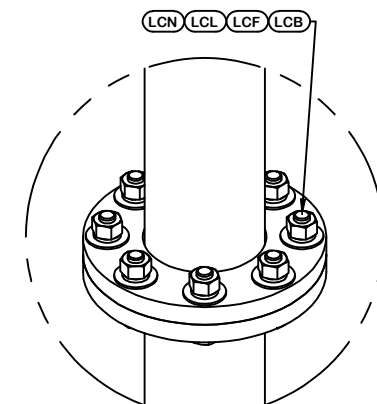
DETAIL B  
END SIDE PLATE ANGLE CONNECTION



DETAIL C  
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



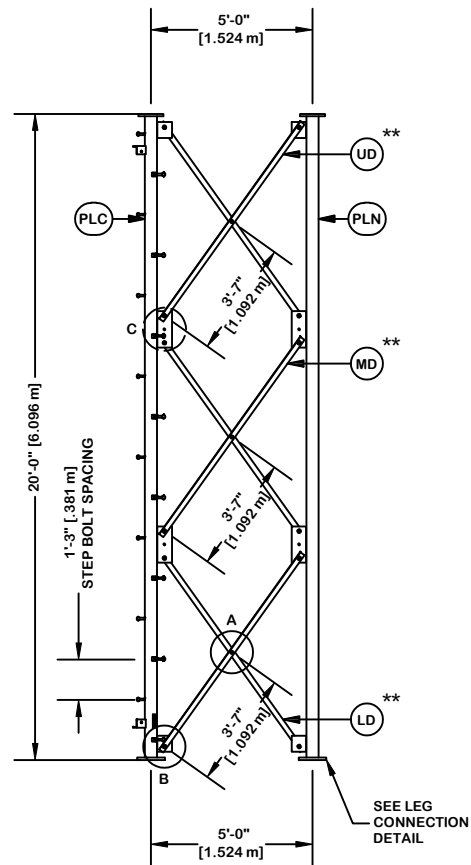
LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

@A <ACBATCH>		SITE	DESCRIPTION	 1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	
REV	DESCRIPTION OF REVISIONS	CITY OF PORTLAND FD, ME MOTOROLA SOLUTIONS U 19 X 180'	SECTION V-7.0 (120' - 140' ELEVATION)		
CPD	REVISION HISTORY	COPYRIGHT 2013	ENG. FILE NO.	324370	9 OF 11 PAGE
BY	DATE	PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.	STRUCTURE APPROVAL	FOUNDATION APPROVAL	
			SKK	8/10/2016	268614T

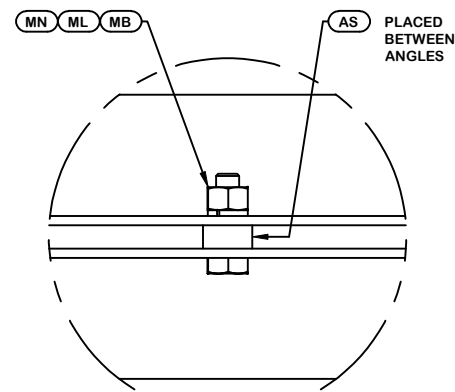
ORIENT LEGS WITH P/N STAMP  
TOWARD BOTTOM OF SECTION

ORIENT ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

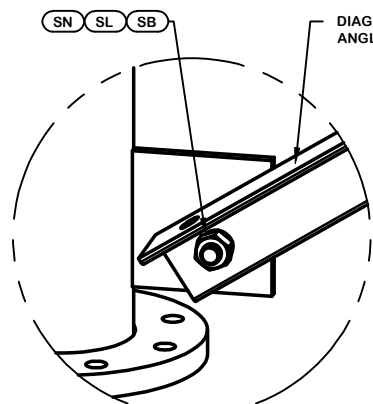
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP. ↑  
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



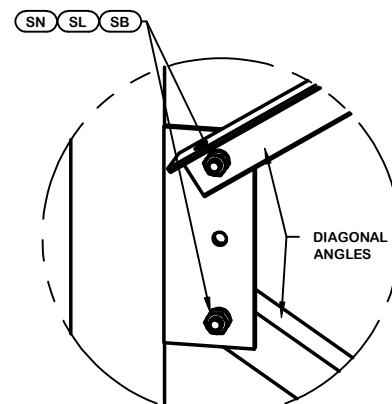
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	226184	PIPE LEG SECTION 20'-0" (CLIMBING) 4" SCH. 40 V-SE	302.080	302.080
PLN	2	226185	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 4" SCH. 40	284.670	569.340
STP	16	228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	17.600
UD, MD, AND LD	18	227113	ANGLE V-5 STR 89 17/32"	19.110	343.980
ML	9	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.180
AS	9	116467	SPACER 1/4" THICK 11/16" DIA HOLE	0.250	2.250
MB	9	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	5.760
MN	9	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.080
SL	36	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.080
SN	36	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	6.840
SB	36	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	15.120
LCB	18	227668	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	9.720
LCF	18	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	1.440
LCL	18	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.540
LCN	18	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	3.420
Total Wt				1280.43 lb [581.33 kg]	



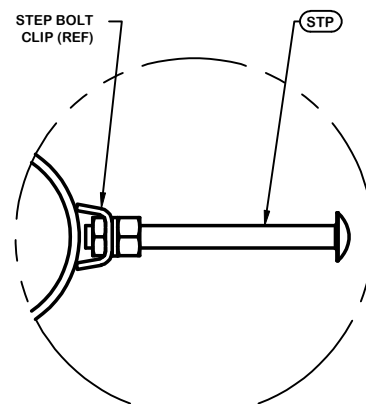
DETAIL A  
ANGLE INTERSECTION CONNECTION



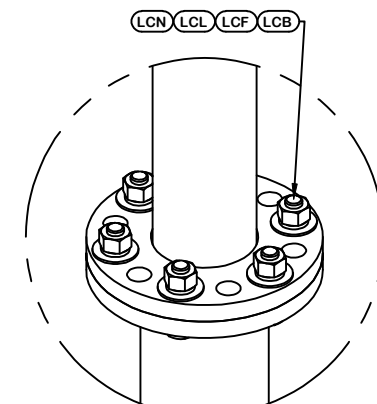
DETAIL B  
END SIDE PLATE ANGLE CONNECTION



DETAIL C  
MID SIDE PLATE ANGLE CONNECTION



STEP BOLT INSTALLATION



LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

@A	<ACBATCH>	SKK	8/10/2016
REV	DESCRIPTION OF REVISIONS	CPD	BY DATE
REVISION HISTORY			

SITE	CITY OF PORTLAND FD, ME MOTOROLA SOLUTIONS U 19 X 180'
COPYRIGHT 2013	
PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.	


DESCRIPTION	SECTION V-5.0 (140' - 160' ELEVATION)
STRUCTURE APPROVAL	SKK 8/10/2016
FOUNDATION APPROVAL	

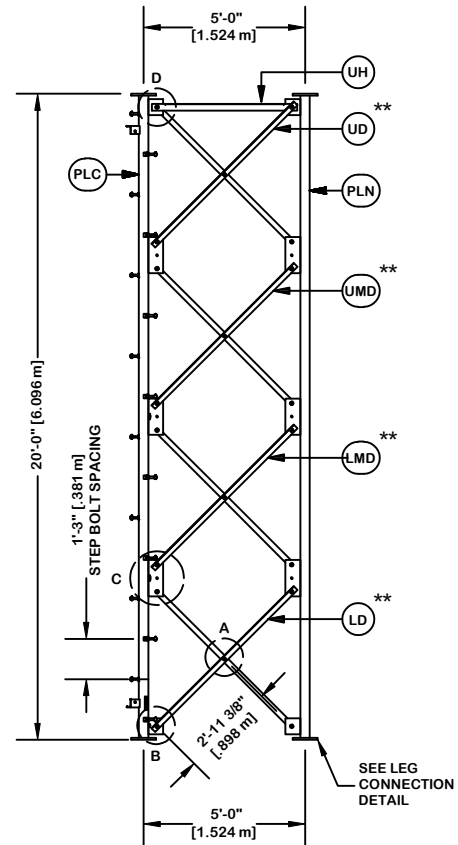
<b>valmont</b>	
1-877-467-4763 Plymouth, IN 1-800-547-2151 Salem, OR	
ENG. FILE NO.	324370
DWG. NO.	268614T



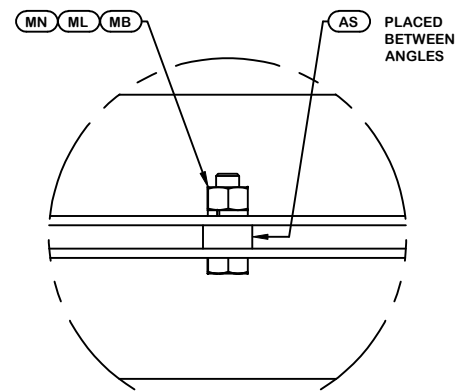
ORIENT LEGS WITH P/N STAMP  
TOWARD BOTTOM OF SECTION

INSTALL ANGLES WITH STAMPED  
END TOWARD TOP OF SECTION

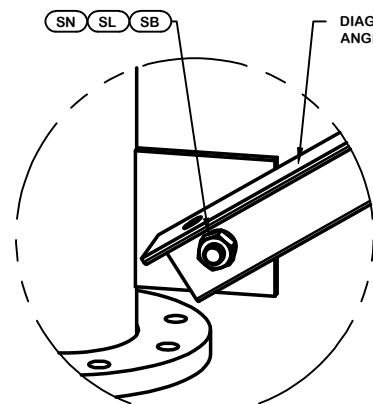
\*\* DIAGONAL ANGLES MUST BE INSTALLED  
WITH THE NON-BOLTED FACE UP,   
THIS MAY BE ON THE OPPOSITE SIDE OF THE  
SIDE PLATE THAN WHAT IS SHOWN IN THE DETAIL.



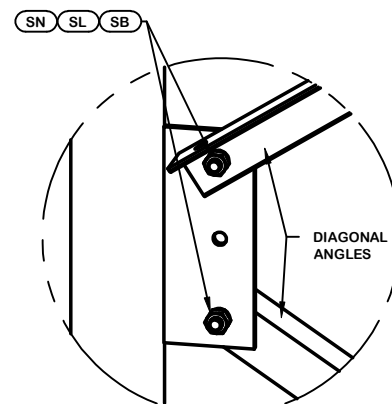
PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT WT.	NET WT.
PLC	1	226160	PIPE LEG SECTION 20'-0" (CLIMBING) 2 1/2" SCH. 40	194.380	194.380
PLN	2	226161	PIPE LEG SECTION 20'-0" (NON-CLIMBING) 2 1/2" SCH.	189.170	378.340
STP	16	228189	STEP BOLT ASSY 5/8"-11 X 7" W/ LOCK WASHER HEAVY	1.100	17.600
UD, UMD, LMD, AND LD	24	227077	ANGLE V-5 STR 74 7/32" - 2" X 2" X 1/8" ANGLE (A36)	10.710	257.040
ML	12	312123	5/8" GALVANIZED LOCKWASHER (53-22230)	0.020	0.240
AS	12	116467	SPACER 1/4" THICK 11/16" DIA HOLE	0.250	3.000
MB	12	227580	5/8"-11 X 2-1/4" A325T HOT DIPPED GALV. BOLT (FULL	0.640	7.680
MN	12	312501	5/8"-11 HOT DIPPED GALVANIZED NUT	0.120	1.440
SL	48	312153	3/4" GALVANIZED LOCKWASHER	0.030	1.440
SN	48	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	9.120
SB	48	227579	3/4"-10 X 2-1/4" A-325T BOLT WITH FULL THREAD	0.420	20.160
UH	3	227584	UPPER HORIZONTAL BRACE ANGLE FOR V-SERIES TOWER (2	10.630	31.890
LCB	12	227668	3/4"-10 X 3-1/2" A-325T BOLT WITH FULL THREAD	0.540	6.480
LCF	12	312152	3/4" GALVANIZED FLAT WASHER (F436)	0.080	0.960
LCL	12	312153	3/4" GALVANIZED LOCKWASHER	0.030	0.360
LCN	12	312502	3/4"-10 HOT DIPPED GALVANIZED NUT	0.190	2.280
Total Wt				932.41 lb [423.32 kg]	



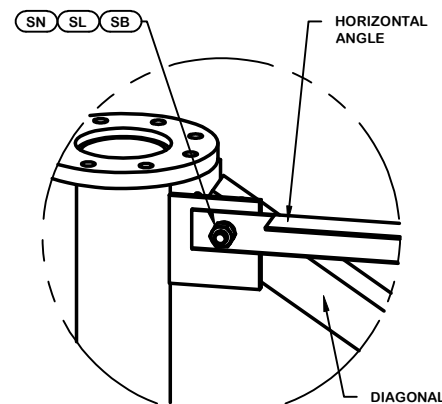
DETAIL A  
ANGLE INTERSECTION CONNECTION



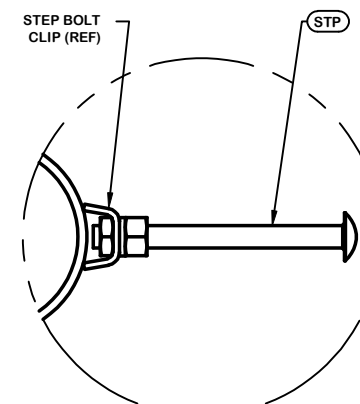
DETAIL B  
END SIDE PLATE ANGLE CONNECTION



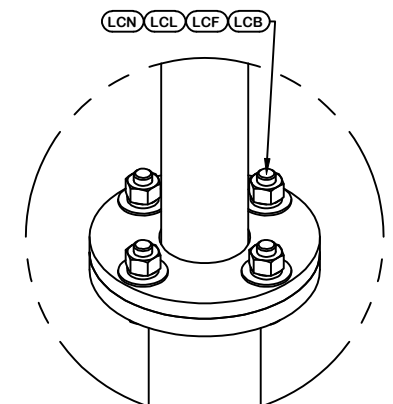
DETAIL C  
MID SIDE PLATE ANGLE CONNECTION



DETAIL D  
UPPER HORIZONTAL ANGLE CONNECTION



STEP BOLT INSTALLATION




LEG TO LEG CONNECTION  
(SIDE PLATES NOT SHOWN FOR CLARITY)

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@A	<ACBATCH>		SKK	8/10/2016
REVISION HISTORY				

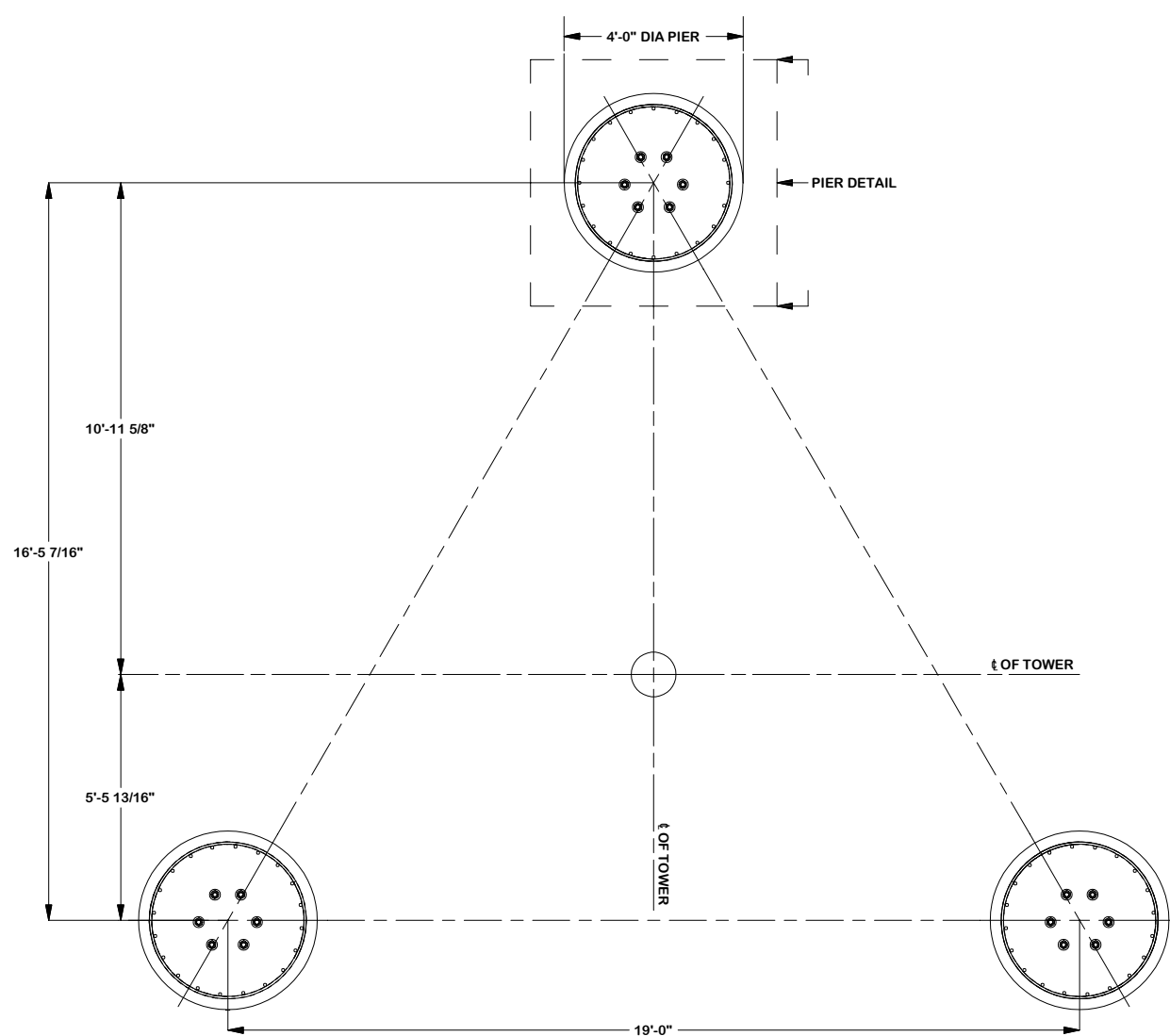
SITE	CITY OF PORTLAND FD, ME MOTOROLA SOLUTIONS U 19 X 180'
COPYRIGHT 2013	
PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.	

DESCRIPTION	SECTION V-5.0 (160' - 180' ELEVATION)
STRUCTURE APPROVAL	SKK 8/10/2016
FOUNDATION APPROVAL	



1-877-467-4763 Plymouth, IN  
1-800-547-2151 Salem, OR

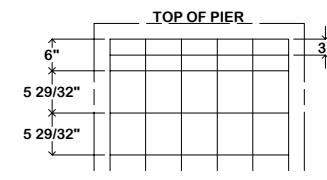
ENG. FILE NO.	324370
DWG. NO.	268614T



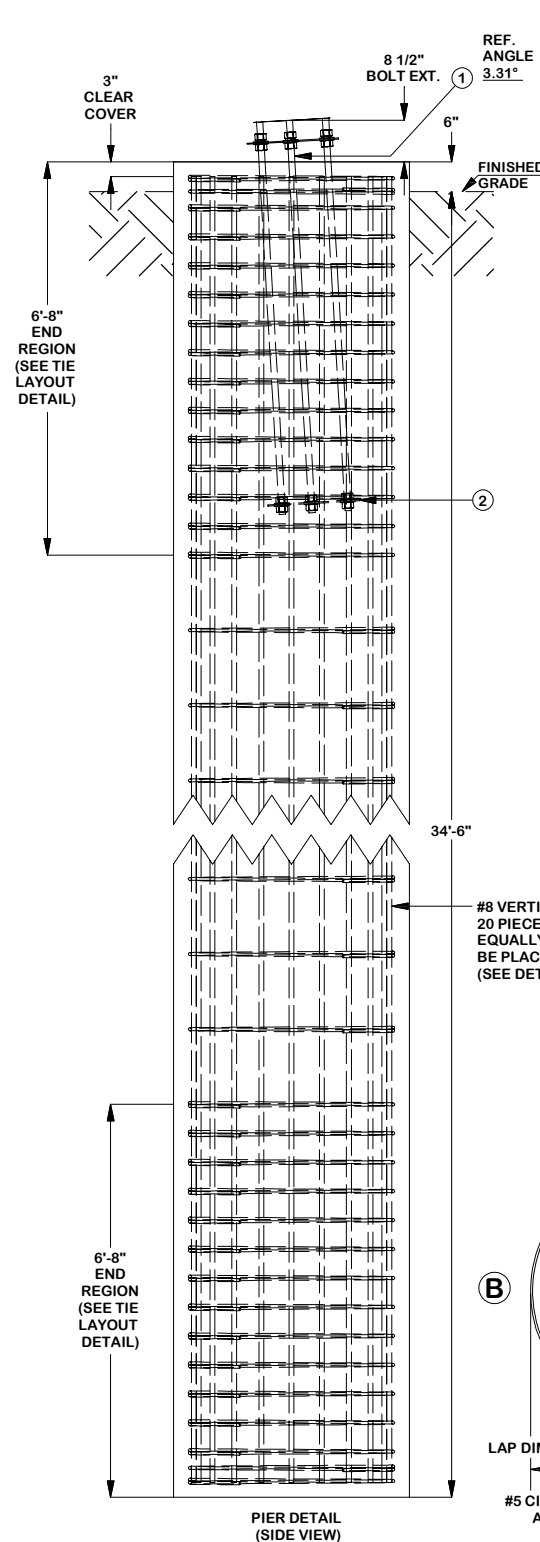
PACK NON-SHRINK STRUCTURAL GROUT UNDER FLANGE AFTER LEVELING TOWER  
 NON-SHRINK GROUT TO HAVE COMPRESSIVE STRENGTH OF 5000 PSI @28 DAYS  
 CONCRETE NOTES: 16.3 CUBIC YARDS OF CONCRETE PER PIER REQUIRED ( 48.9 TOTAL).  
 CONCRETE TO HAVE MIN COMPRESSIVE STRENGTH OF 4500 PSI @ 28 DAYS.

**ATTENTION CONTRACTOR INSTALLING ANCHOR BOLT!**  
 1 1/4" DIA. ANCHOR BOLTS REQUIRED.  
 VERIFY THE PART NUMBER AND SIZES FOR ALL COMPONENTS ON THIS PAGE.  
 IF THERE ARE ANY DISCREPANCIES, PLEASE NOTIFY VALMONT/PIROD, INC  
 PRIOR TO INSTALLATION!

- TEMPLATE INSTALLATION NOTES:**
1. TEMPLATE PLACEMENT MUST BE +/- 3".
  2. TEMPLATE ASSEMBLY MUST BE LEVEL +/- 1".
  3. BASE LEG REFERENCE ANGLE 3.31°.
  4. INSTALLED TEMPLATE CLEARANCE: 2" MIN - 4" MAX
  5. MUST USE TEMPLATE ASSEMBLY #213280



**CIRCULAR TIE LAYOUT**  
 (NOT TO SCALE)  
 PLACE ONE TIE 3" FROM THE END TIE  
 AT THE TOP AND BOTTOM OF PIER.  
 PLACE REMAINING TIES @ 5 29/32"  
 NOMINAL SPACING WITHIN END REGIONS  
 & 15 9/32" NOMINAL SPACING  
 IN THE REMAINDER OF PIER.  
 PLACE CIRCULAR TIES SO  
 LAPS ON ADJACENT TIES  
 ARE 180 DEGREES APART.

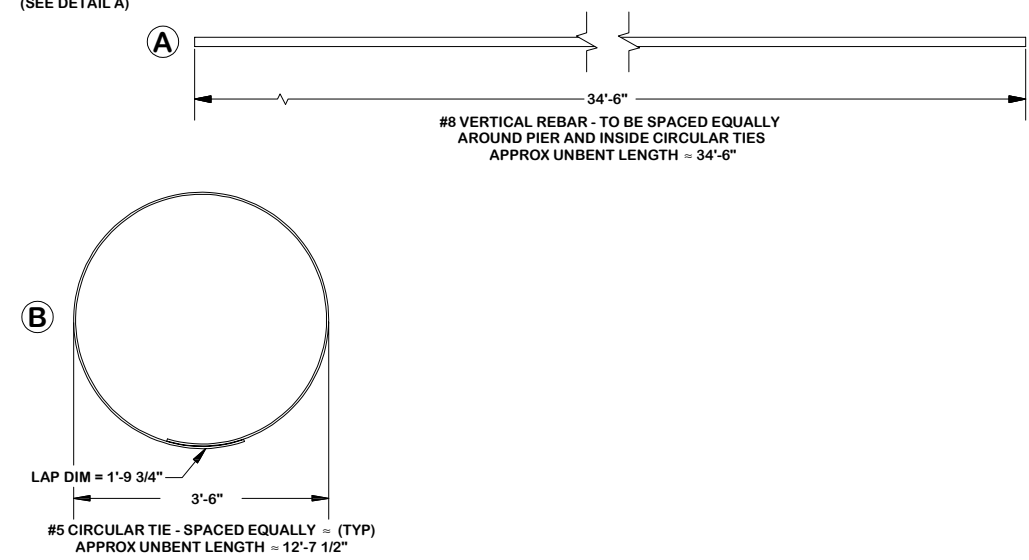


REBAR/ANCHOR STEEL TABLE				
ITEM	QTY	PART DESCRIPTION	UNIT WT.	NET WT.
1	18	1 1/4" DIA. x 80" LONG ANCHOR BOLT - 109881	27.88	501.80
2	3	EMBEDMENT PLATE - 217970	19.39	58.17
A	60	VERTICAL REBAR (#8 REBAR)	92.33	5539.87
B	138	CIRCULAR TIE (#5 REBAR)	13.20	1820.99
APPROX TOTAL WT #				7920.83

REBAR NOTES: ALL REINFORCING BARS MUST CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS

**FOUNDATION NOTES:**

1. SOIL AS PER REPORT BY TERRACON, PROJECT# J3165017, DATED 10/24/16, BORING B-2A, B-2B, B-2C
2. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 (2008) BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR NOT PERMITTED.
3. A COLD JOINT IS PERMISSIBLE UPON CONSULTATION WITH PIROD. ALL COLD JOINTS SHALL BE COATED WITH BONDING AGENTS PRIOR TO SECOND POUR.
4. ALL REINFORCING STEEL TO BE FORMED INTO A CAGE PRIOR TO SETTING INTO POSITION IN THE EXCAVATED PIER.
5. PERMANENT STEEL CASING SHALL NOT BE USED WITHOUT CONSENT FROM FOUNDATION DESIGNERS.
6. BENDING, STRAIGHTENING OR REALIGNING (HOT OR COLD) OF THE ANCHOR BOLTS BY ANY METHOD IS PROHIBITED.
7. CROWN TOP OF FOUNDATION FOR PROPER DRAINAGE.
8. FOUNDATION IS TO BEAR ON INSITU GNEISS BEDROCK AT APPROXIMATELY 34.5' BELOW GRADE. THE BEARING SURFACE IS TO BE FREE OF ANY LOOSE MATERIAL & SUBSEQUENTLY INSPECTED BY A QUALIFIED ON-SITE GEOTECHNICAL ENGINEER.
9. A TEMPORARY, FULL LENGTH STEEL CASING MAY BE REQUIRED DURING INSTALLATION.
10. DRILLING SLURRY AND TREMIE METHODS OF CONCRETE PLACEMENT MAY BE REQUIRED DURING INSTALLATION.
11. DIFFICULT DRILLING AND/OR ROCK CORING IS TO BE EXPECTED BELOW A DEPTH OF 30.5 FT. THE DRILLING CONTRACTOR SHOULD BE PREPARED TO REMOVE ROCK AND/OR ROCK CORES FROM THE EXCAVATION.
12. THE CAISSON MUST PENETRATE A MINIMUM OF 4' INTO THE GNEISS BEDROCK LAYER.
13. IF GNEISS BEDROCK LAYER IS ENCOUNTERED AT SHALLOWER DEPTHS OR NOT ENCOUNTERED AT ALL, VALMONT INDUSTRIES MUST BE CONTACTED FOR RE-EVALUATION. THE FINAL DESIGN MIGHT CHANGE BASED ON THE DEPTH OF BEDROCK.



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@B	REVISED FOUNDATIONS FOR BORINGS B-2A, B-2B & B-2C		MS13	11/15/2016
@A	UPDATED FOUNDATION DESIGN PER REVISED SOIL REPORT		MS13	10/27/2016
REVISION HISTORY				

SITE  
**CITY OF PORTLAND FD, ME**  
**MOTOROLA SOLUTIONS**  
**U 19 X 180'**

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PROPRIETARY NOTE:  
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DESCRIPTION  
**DRILLED PIERS**  
**TOWER FOUNDATION #1**

STRUCTURE APPROVAL  
 FOUNDATION APPROVAL  
**MS13 11/15/2016**

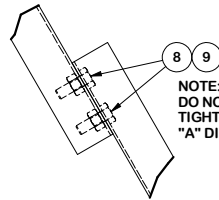
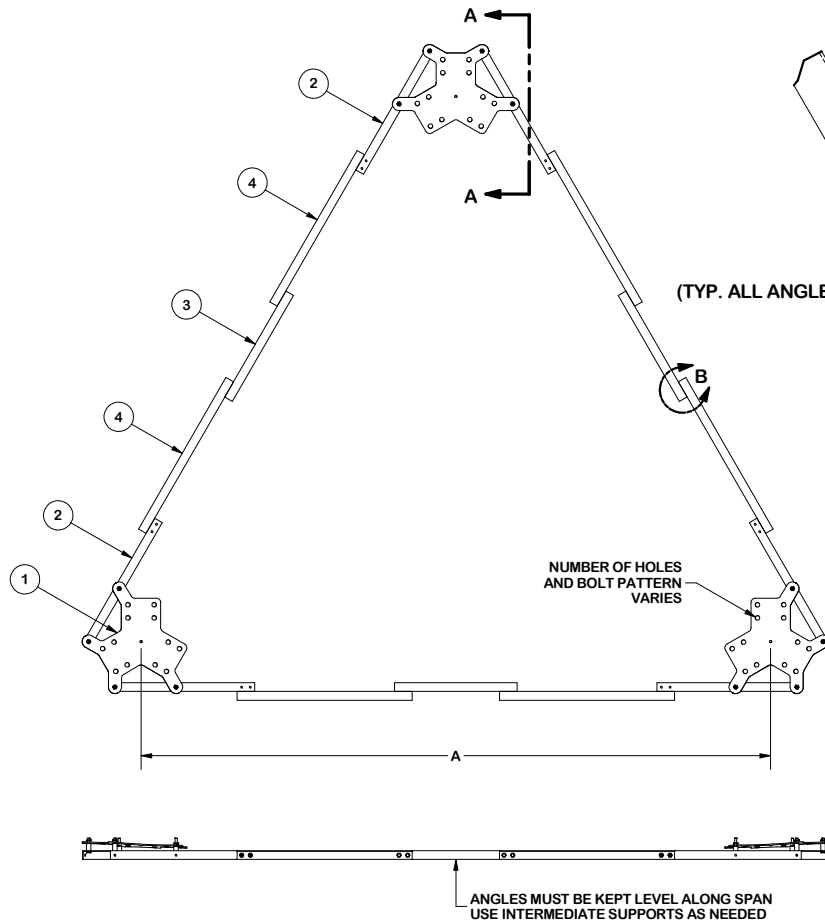
**valmont** STRUCTURES

1-877-467-4763 Plymouth, IN  
 1-800-547-2151 Salem, OR

ENG. FILE NO.  
**324370**

DWG. NO.  
**268614F**

PAGE  
**1 OF 1**

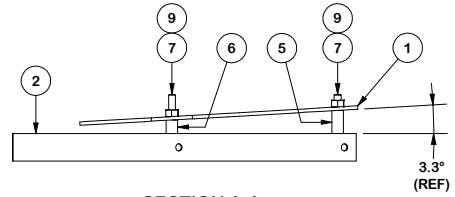


NOTE:  
DO NOT FULLY  
TIGHTEN UNTIL  
"A" DIMENSION IS SET

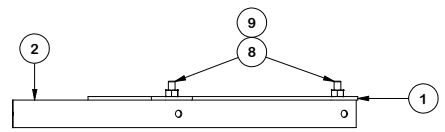
DETAIL B  
(TYP. ALL ANGLE TO ANGLE CONNECTIONS)

PARTS LIST				
ITEM	QTY	PART NO.	DESCRIPTION	LENGTH
1	3	SEE "B"	CORNER TEMPLATE PLATE	
2	6	SEE "C"	CORNER ANGLE	
3	SEE "D"	SEE "D"	SPACER ANGLE	
4	SEE "E"	SEE "E"	SPACER ANGLE	
5	6	191700	SPACER TUBE (LONG)	1 23/32 in
6	6	246856	SPACER TUBE (SHORT)	1 1/32 in
7	12	141068	1/2" UNC HEX BOLT (GRADE 5)	3 in
8	SEE "F"	141062	1/2" UNC HEX BOLT (GRADE 5)	1 1/2 in
9	SEE "G"	312500	1/2" UNC HEX NUT (A563)	

**INSTALLER NOTE:**  
SPACER TUBES, ITEMS 5 & 6  
ARE NOT USED ON STRAIGHT SECTIONS  
(SEE DETAILS BELOW)



SECTION A-A  
(FOR 2' IN 20' TAPERED SECTIONS)



SECTION A-A  
(FOR STRAIGHT SECTIONS)


REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013

REVISION HISTORY

**TOLERANCE NOTES**  
**TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:**  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060"$ )

**PROPRIETARY NOTE:**  
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION			
ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4' THRU 50' BASE WIDTHS			
CPD NO.	DRAWN BY	ENG. APPROVAL	
5182	SAN 3/23/2012	WRH	8/15/2013
CLASS	SUB	DRAWING USAGE	CHECKED BY
01	01	SHOP	MVC 8/15/2013

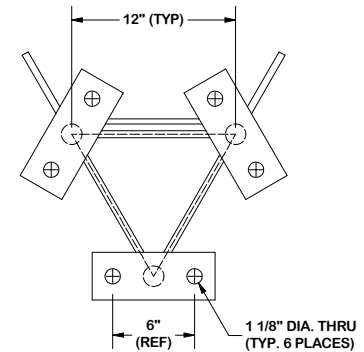


1-877-467-4763 Plymouth, IN  
1-888-880-9191 Salem, OR

PART NO.	SEE TABLE
DWG. NO.	178688

NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

ASSEMBLY CHART FOR #12 B/D LEGS - (6) 1" ANCHOR BOLTS - 6" CENTERS									
ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
178688	4'-0"	194071	194069	191684	1	N/A	0	24	24
178689	5'-0"	194071	194070	191684	1	N/A	0	24	24
178690	6'-0"	194071	194069	191688	1	N/A	0	24	24
178691	7'-0"	194071	194070	191688	1	N/A	0	24	24
178692	8'-0"	194071	194069	191692	1	N/A	0	24	24
178693	9'-0"	194071	194070	191692	1	N/A	0	24	24
178694	10'-0"	194071	194070	191694	1	N/A	0	24	24
196301	11'-0"	194071	194069	191686	1	191688	2	36	36
196302	12'-0"	194071	194070	191686	1	191688	2	36	36
196316	13'-0"	194071	194069	191688	1	191689	2	36	36
196963	14'-0"	194071	194070	191688	1	191689	2	36	36
198133	15'-0"	194071	194069	191690	1	191690	2	36	36
198469	16'-0"	194071	194070	191690	1	191690	2	36	36
198470	17'-0"	194071	194069	191690	1	191692	2	36	36
198687	18'-0"	194071	194070	191690	1	191692	2	36	36
198688	19'-0"	194071	194069	191692	1	191693	2	36	36
198689	20'-0"	194071	194070	191692	1	191693	2	36	36
198690	21'-0"	194071	194069	191694	1	191694	2	36	36
199775	22'-0"	194071	194070	191694	1	191694	2	36	36
199776	23'-0"	194071	194069	191690	1	191690	4	48	48
199897	24'-0"	194071	194070	191690	1	191690	4	48	48
199898	25'-0"	194071	194069	191690	1	191691	4	48	48
206553	26'-0"	194071	194070	191690	1	191691	4	48	48
206633	27'-0"	194071	194069	191690	1	191692	4	48	48
206634	28'-0"	194071	194070	191690	1	191692	4	48	48
206635	29'-0"	194071	194069	191690	1	191693	4	48	48
206636	30'-0"	194071	194070	191690	1	191693	4	48	48
207404	31'-0"	194071	194069	191690	1	191694	4	48	48
207405	32'-0"	194071	194070	191690	1	191694	4	48	48

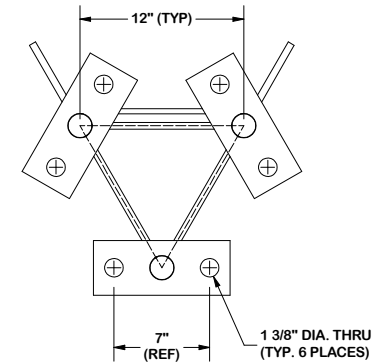


				<b>TOLERANCE NOTES</b> TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ ) DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES BENDS ARE $\pm 1/2$ DEGREE ALL OTHER MACHINING ( $\pm 0.030"$ ) ALL OTHER ASSEMBLY ( $\pm 0.080"$ )				DESCRIPTION ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4" THRU 50" BASE WIDTHS				 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR				
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013	CPD NO.	5182	DRAWN BY	SAN	3/23/2012	ENG. APPROVAL	WRH	8/15/2013	PART NO.	SEE TABLE	PAGE 2 OF 11	
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013	CLASS	01	SUB	01	DRAWING USAGE	SHOP	CHECKED BY	MVC	8/15/2013	DWG. NO.		178688
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013												
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE	PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.											

NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

**ASSEMBLY CHART FOR #12 B/D LEGS - (6) 1 1/4" ANCHOR BOLTS - 7" CENTERS**

ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
212394	4'-0"	211149	194069	191684	1	N/A	0	24	24
212395	5'-0"	211149	194070	191684	1	N/A	0	24	24
212396	6'-0"	211149	194069	191688	1	N/A	0	24	24
212397	7'-0"	211149	194070	191688	1	N/A	0	24	24
212400	8'-0"	211149	194069	191692	1	N/A	0	24	24
212401	9'-0"	211149	194070	191692	1	N/A	0	24	24
212402	10'-0"	211149	194070	191694	1	N/A	0	24	24
212403	11'-0"	211149	194069	191686	1	191688	2	36	36
212447	12'-0"	211149	194070	191686	1	191688	2	36	36
212448	13'-0"	211149	194069	191688	1	191689	2	36	36
212449	14'-0"	211149	194070	191688	1	191689	2	36	36
213273	15'-0"	211149	194069	191690	1	191690	2	36	36
213274	16'-0"	211149	194070	191690	1	191690	2	36	36
213278	17'-0"	211149	194069	191690	1	191692	2	36	36
213279	18'-0"	211149	194070	191690	1	191692	2	36	36
213280	19'-0"	211149	194069	191692	1	191693	2	36	36
213281	20'-0"	211149	194070	191692	1	191693	2	36	36
213283	21'-0"	211149	194069	191694	1	191694	2	36	36
213286	22'-0"	211149	194070	191694	1	191694	2	36	36
213305	23'-0"	211149	194069	191690	1	191690	4	48	48
213306	24'-0"	211149	194070	191690	1	191690	4	48	48
213307	25'-0"	211149	194069	191690	1	191691	4	48	48
213308	26'-0"	211149	194070	191690	1	191691	4	48	48
213309	27'-0"	211149	194069	191690	1	191692	4	48	48
213310	28'-0"	211149	194070	191690	1	191692	4	48	48
213311	29'-0"	211149	194069	191690	1	191693	4	48	48
213312	30'-0"	211149	194070	191690	1	191693	4	48	48
213329	31'-0"	211149	194069	191690	1	191694	4	48	48
213330	32'-0"	211149	194070	191690	1	191694	4	48	48



**TOLERANCE NOTES**

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060"$ )

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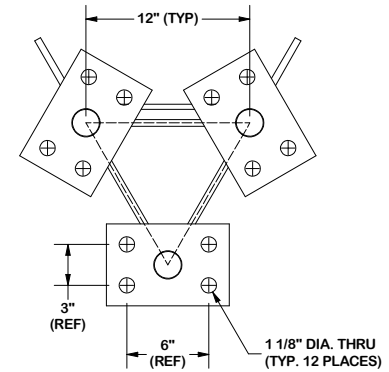
DESCRIPTION ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4" THRU 50' BASE WIDTHS		<p>1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR</p>	
CPD NO. 5182	DRAWN BY SAN 3/23/2012	ENG. APPROVAL WRH 8/15/2013	PART NO. SEE TABLE
CLASS 01	SUB 01	DRAWING USAGE SHOP	CHECKED BY MVC 8/15/2013
		DWG. NO. 178688	PAGE 3 OF 11

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			

NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

**ASSEMBLY CHART FOR #12 B/D LEGS - (12) 1" ANCHOR BOLTS - 6" CENTERS**

ASSEMBLY NO.	"A" DIM	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
217611	12'-0"	194072	194070	191686	1	191688	2	36	36
217612	13'-0"	194072	194069	191688	1	191689	2	36	36
217613	14'-0"	194072	194070	191688	1	191689	2	36	36
217614	15'-0"	194072	194069	191690	1	191690	2	36	36
217615	16'-0"	194072	194070	191690	1	191690	2	36	36
217616	17'-0"	194072	194069	191690	1	191692	2	36	36
217617	18'-0"	194072	194070	191690	1	191692	2	36	36
217618	19'-0"	194072	194069	191692	1	191693	2	36	36
217619	20'-0"	194072	194070	191692	1	191693	2	36	36
217620	21'-0"	194072	194069	191694	1	191694	2	36	36
217621	22'-0"	194072	194070	191694	1	191694	2	36	36
217622	23'-0"	194072	194069	191690	1	191690	4	48	48
217623	24'-0"	194072	194070	191690	1	191690	4	48	48
217624	25'-0"	194072	194069	191690	1	191691	4	48	48
217625	26'-0"	194072	194070	191690	1	191691	4	48	48
217626	27'-0"	194072	194069	191690	1	191692	4	48	48
217627	28'-0"	194072	194070	191690	1	191692	4	48	48
217628	29'-0"	194072	194069	191690	1	191693	4	48	48
217932	30'-0"	194072	194070	191690	1	191693	4	48	48
217933	31'-0"	194072	194069	191690	1	191694	4	48	48
217934	32'-0"	194072	194070	191690	1	191694	4	48	48
207407	33'-0"	194072	194069	191694	1	191694	4	48	48
207408	34'-0"	194072	194070	191694	1	191694	4	48	48
207412	35'-0"	194072	194069	191686	1	191692	6	60	60
207413	36'-0"	194072	194070	191686	1	191692	6	60	60
207660	37'-0"	194072	194069	191690	1	191692	6	60	60
211417	38'-0"	194072	194070	191690	1	191692	6	60	60
159601	39'-0"	194072	194069	191688	1	191693	6	60	60
159602	40'-0"	194072	194070	191688	1	191693	6	60	60
249790	41'-0"	194072	194069	191692	1	191693	6	60	60



**TOLERANCE NOTES**  
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 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
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 ALL OTHER ASSEMBLY ( $\pm 0.080"$ )

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**DESCRIPTION**  
 ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4" THRU 50" BASE WIDTHS

CPD NO.	DRAWN BY	ENG. APPROVAL
5182	SAN 3/23/2012	WRH 8/15/2013
CLASS	DRAWING USAGE	CHECKED BY
01	01 SHOP	MVC 8/15/2013

**valmont**   
 1-877-467-4763 Plymouth, IN  
 1-888-880-9191 Salem, OR  
**STRUCTURES**

PART NO.	SEE TABLE
DWG. NO.	178688

PAGE 4 OF 11

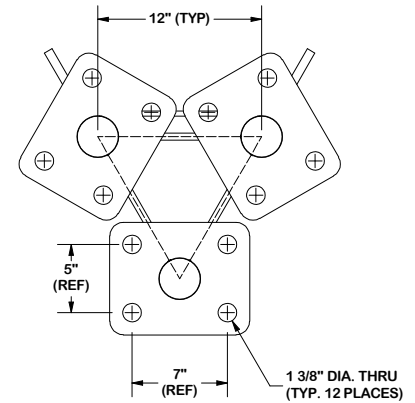
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013

REVISION HISTORY

NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

**ASSEMBLY CHART FOR #12 B/D LEGS - (12) 1 1/4" ANCHOR BOLTS - 7" CENTERS**

ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
213356	12'-0"	211159	194070	191686	1	191688	2	36	36
213357	13'-0"	211159	194069	191688	1	191689	2	36	36
213358	14'-0"	211159	194070	191688	1	191689	2	36	36
213359	15'-0"	211159	194069	191690	1	191690	2	36	36
213360	16'-0"	211159	194070	191690	1	191690	2	36	36
213361	17'-0"	211159	194069	191690	1	191692	2	36	36
213362	18'-0"	211159	194070	191690	1	191692	2	36	36
213363	19'-0"	211159	194069	191692	1	191693	2	36	36
213364	20'-0"	211159	194070	191692	1	191693	2	36	36
213365	21'-0"	211159	194069	191694	1	191694	2	36	36
213366	22'-0"	211159	194070	191694	1	191694	2	36	36
213367	23'-0"	211159	194069	191690	1	191690	4	48	48
213368	24'-0"	211159	194070	191690	1	191690	4	48	48
213369	25'-0"	211159	194069	191690	1	191691	4	48	48
213370	26'-0"	211159	194070	191690	1	191691	4	48	48
213371	27'-0"	211159	194069	191690	1	191692	4	48	48
213372	28'-0"	211159	194070	191690	1	191692	4	48	48
213373	29'-0"	211159	194069	191690	1	191693	4	48	48
213374	30'-0"	211159	194070	191690	1	191693	4	48	48
213375	31'-0"	211159	194069	191690	1	191694	4	48	48
213376	32'-0"	211159	194070	191690	1	191694	4	48	48
213377	33'-0"	211159	194069	191694	1	191694	4	48	48
213378	34'-0"	211159	194070	191694	1	191694	4	48	48
213379	35'-0"	211159	194069	191686	1	191692	6	60	60
213470	36'-0"	211159	194070	191686	1	191692	6	60	60
213480	37'-0"	211159	194069	191690	1	191692	6	60	60
213815	38'-0"	211159	194070	191690	1	191692	6	60	60
213816	39'-0"	211159	194069	191688	1	191693	6	60	60
213817	40'-0"	211159	194070	191688	1	191693	6	60	60
213818	41'-0"	211159	194069	191692	1	191693	6	60	60
214163	42'-0"	211159	194070	191692	1	191693	6	60	60
183827	43'-0"	211159	194069	191690	1	191694	6	60	60
183828	44'-0"	211159	194070	191690	1	191694	6	60	60
184036	45'-0"	211159	194069	191694	1	191694	6	60	60
184037	46'-0"	211159	194070	191694	1	191694	6	60	60



**TOLERANCE NOTES**

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 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
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PROPRIETARY NOTE:  
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DESCRIPTION  
 ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4" THRU 50" BASE WIDTHS

**valmont**   
 1-877-467-4763 Plymouth, IN  
 1-888-880-9191 Salem, OR  
**STRUCTURES**

CPD NO. 5182	DRAWN BY SAN	ENG. APPROVAL WRH
CLASS 01	SUB 01	DRAWING USAGE SHOP

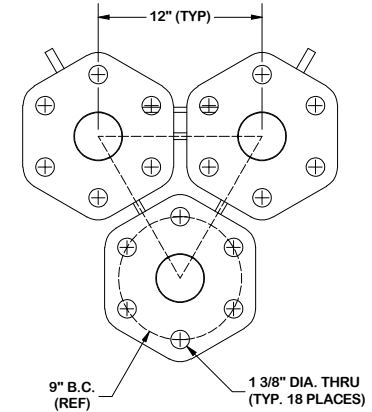
PART NO. SEE TABLE	DWG. NO. 178688
CHECKED BY MVC	

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013

NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

**ASSEMBLY CHART FOR #12 B/D LEGS - (18) 1 1/4" ANCHOR BOLTS - 9" B.C.**

ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
246901	20'-0"	246890	194070	191692	1	191693	2	36	36
246902	21'-0"	246890	194069	191694	1	191694	2	36	36
246903	22'-0"	246890	194070	191694	1	191694	2	36	36
246904	23'-0"	246890	194069	191690	1	191690	4	48	48
246905	24'-0"	246890	194070	191690	1	191690	4	48	48
246906	25'-0"	246890	194069	191690	1	191691	4	48	48
246907	26'-0"	246890	194070	191690	1	191691	4	48	48
246908	27'-0"	246890	194069	191690	1	191692	4	48	48
246909	28'-0"	246890	194070	191690	1	191692	4	48	48
246910	29'-0"	246890	194069	191690	1	191693	4	48	48
246911	30'-0"	246890	194070	191690	1	191693	4	48	48
246912	31'-0"	246890	194069	191690	1	191694	4	48	48
246913	32'-0"	246890	194070	191690	1	191694	4	48	48
246914	33'-0"	246890	194069	191694	1	191694	4	48	48
246915	34'-0"	246890	194070	191694	1	191694	4	48	48
246916	35'-0"	246890	194069	191686	1	191692	6	60	60
246917	36'-0"	246890	194070	191686	1	191692	6	60	60
246918	37'-0"	246890	194069	191690	1	191692	6	60	60
246919	38'-0"	246890	194070	191690	1	191692	6	60	60
246920	39'-0"	246890	194069	191688	1	191693	6	60	60
246921	40'-0"	246890	194070	191688	1	191693	6	60	60
246922	41'-0"	246890	194069	191692	1	191693	6	60	60
246923	42'-0"	246890	194070	191692	1	191693	6	60	60
246924	43'-0"	246890	194069	191690	1	191694	6	60	60
246925	44'-0"	246890	194070	191690	1	191694	6	60	60
246926	45'-0"	246890	194069	191694	1	191694	6	60	60
246927	46'-0"	246890	194070	191694	1	191694	6	60	60
246928	47'-0"	246890	194069	191690	1	191692	8	72	72
246929	48'-0"	246890	194070	191690	1	191692	8	72	72
246930	49'-0"	246890	194069	191686	1	191693	8	72	72
246931	50'-0"	246890	194070	191686	1	191693	8	72	72



**TOLERANCE NOTES**

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060"$ )

PROPRIETARY NOTE:  
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION  
 ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4' THRU 50' BASE WIDTHS

**valmont**   
 1-877-467-4763 Plymouth, IN  
 1-888-880-9191 Salem, OR  
**STRUCTURES**

CPD NO. 5182	DRAWN BY SAN 3/23/2012	ENG. APPROVAL WRH 8/15/2013
CLASS 01	SUB 01	DRAWING USAGE SHOP
CHECKED BY MVC 8/15/2013		

PART NO. <b>SEE TABLE</b>	PAGE 6 OF 11
DWG. NO. 178688	

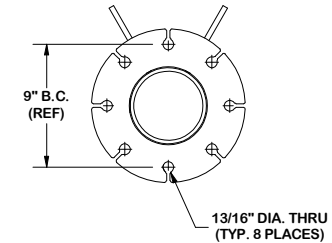
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013



NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

**ASSEMBLY CHART FOR 5" & 6" PIPE LEGS - (8) 3/4" ANCHOR BOLTS (9" B.C.)**

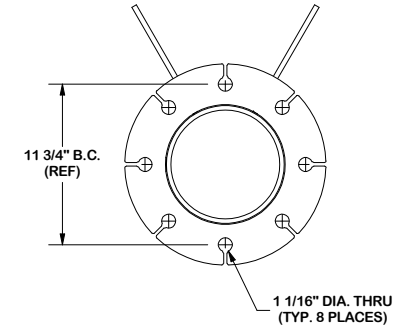
ASSEMBLY NO.	"A" DIM	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
199595	7'-0"	191695	194070	191688	1	N/A	0	24	24
199596	9'-0"	191695	194070	191692	1	N/A	0	24	24
199597	11'-0"	191695	194069	191686	1	191688	2	36	36
199598	13'-0"	191695	194069	191688	1	191689	2	36	36
199599	15'-0"	191695	194069	191690	1	191690	2	36	36
199600	17'-0"	191695	194069	191690	1	191692	2	36	36
199766	19'-0"	191695	194069	191692	1	191693	2	36	36
206637	21'-0"	191695	194069	191694	1	191694	2	36	36




NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

**ASSEMBLY CHART FOR 8" PIPE LEGS - (8) 1" ANCHOR BOLTS (11 3/4" B.C.)**

ASSEMBLY NO.	"A" DIM	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
206638	11'-0"	191696	194069	191686	1	191688	2	36	36
207429	13'-0"	191696	194069	191688	1	191689	2	36	36
207653	15'-0"	191696	194069	191690	1	191690	2	36	36
207661	17'-0"	191696	194069	191690	1	191692	2	36	36
207673	19'-0"	191696	194069	191692	1	191693	2	36	36
207674	21'-0"	191696	194069	191694	1	191694	2	36	36
207774	23'-0"	191696	194069	191690	1	191690	4	48	48
207775	25'-0"	191696	194069	191690	1	191691	4	48	48
207776	27'-0"	191696	194069	191690	1	191692	4	48	48
207777	29'-0"	191696	194069	191690	1	191693	4	48	48
207778	31'-0"	191696	194069	191690	1	191694	4	48	48
207779	33'-0"	191696	194069	191694	1	191694	4	48	48

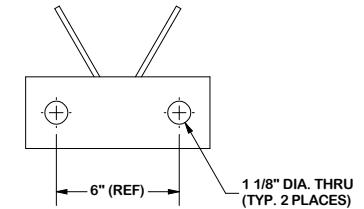


				<p><b>TOLERANCE NOTES</b></p> <p>TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:          SAWED, SHEARED AND GAS CUT EDGES (<math>\pm 0.030"</math>)          DRILLED AND GAS CUT HOLES (<math>\pm 0.030"</math>) - NO CONING OF HOLES          LASER CUT EDGES AND HOLES (<math>\pm 0.010"</math>) - NO CONING OF HOLES          BENDS ARE <math>\pm 1/2</math> DEGREE          ALL OTHER MACHINING (<math>\pm 0.030"</math>)          ALL OTHER ASSEMBLY (<math>\pm 0.080"</math>)</p>				<p>DESCRIPTION</p> <p>ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG &amp; SOLID ROD LEG SECTIONS 4" THRU 50' BASE WIDTHS</p>				<p><b>valmont</b> </p> <p>1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR</p> <p><b>STRUCTURES</b></p>						
<p>@C ADDED 39 THRU 41 TEMPLATES ON PAGE 4</p>				10087	SAN	8/13/2013	<p>CPD NO. 5182</p>				<p>ENG. APPROVAL</p> <p>SAN 3/23/2012 WRH 8/15/2013</p>				<p>PART NO. SEE TABLE</p>			
<p>@B ADDED ADDITIONAL SOLID ROD TEMPLATES</p>				5182	SAN	6/18/2013	<p>CLASS SUB</p>				<p>DRAWING USAGE</p>				<p>DWG. NO. 178688</p>			
<p>@A ADDED 43 THRU 46 TEMPLATES ON PAGE 5</p>				5182	SAN	5/7/2013	<p>01 01</p>				<p>SHOP</p>				<p>CHECKED BY</p> <p>MVC 8/15/2013</p>			
<p>REV DESCRIPTION OF REVISIONS</p>				CPD	BY	DATE	<p>PROPRIETARY NOTE:</p> <p>THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.</p>											
<p>REVISION HISTORY</p>																		



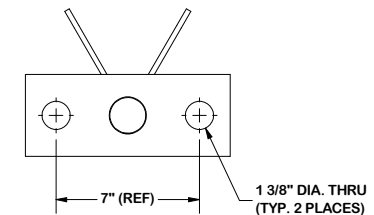
NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

ASSEMBLY CHART FOR SOLID V SERIES LEGS - (2) 1" ANCHOR BOLTS - 6" CENTERS									
ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
246933	4'-0"	246884	194069	191684	1	N/A	0	24	24
246934	5'-0"	246884	194070	191684	1	N/A	0	24	24
246935	6'-0"	246884	194069	191688	1	N/A	0	24	24
246936	7'-0"	246884	194070	191688	1	N/A	0	24	24
246937	8'-0"	246884	194069	191692	1	N/A	0	24	24
246938	9'-0"	246884	194070	191692	1	N/A	0	24	24



NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

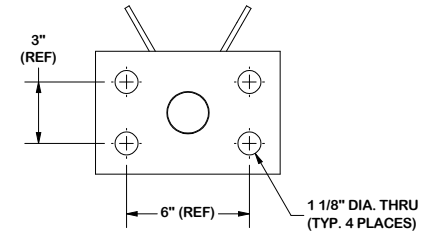
ASSEMBLY CHART FOR SOLID V SERIES LEGS - (2) 1 1/4" ANCHOR BOLTS - 7" CENTERS									
ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
246939	4'-0"	246885	194069	191684	1	N/A	0	24	24
246940	5'-0"	246885	194070	191684	1	N/A	0	24	24
246941	6'-0"	246885	194069	191688	1	N/A	0	24	24
246942	7'-0"	246885	194070	191688	1	N/A	0	24	24
246943	8'-0"	246885	194069	191692	1	N/A	0	24	24
246944	9'-0"	246885	194070	191692	1	N/A	0	24	24



				<b>TOLERANCE NOTES</b> TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ ) DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES BENDS ARE $\pm 1/2$ DEGREE ALL OTHER MACHINING ( $\pm 0.030"$ ) ALL OTHER ASSEMBLY ( $\pm 0.060"$ )				DESCRIPTION ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4" THRU 50' BASE WIDTHS				 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR			
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013	CPD NO.	5182	DRAWN BY	SAN	3/23/2012	ENG. APPROVAL	WRH	8/15/2013	PART NO.	SEE TABLE	PAGE 9 OF 11
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013	CLASS	01	SUB	01	DRAWING USAGE	CHECKED BY	MVC	8/15/2013	DWG. NO.	178688	
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013											
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE	PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.										
REVISION HISTORY															

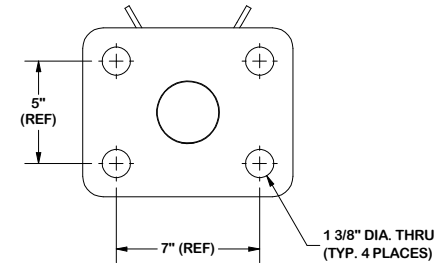
NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!


ASSEMBLY CHART FOR SOLID V SERIES LEGS - (4) 1" ANCHOR BOLTS - 6" CENTERS									
ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
246945	4'-0"	246886	194069	191684	1	N/A	0	24	24
246946	5'-0"	246886	194070	191684	1	N/A	0	24	24
246947	6'-0"	246886	194069	191688	1	N/A	0	24	24
246948	7'-0"	246886	194070	191688	1	N/A	0	24	24
246949	8'-0"	246886	194069	191692	1	N/A	0	24	24
246950	9'-0"	246886	194070	191692	1	N/A	0	24	24
246951	10'-0"	246886	194070	191694	1	N/A	0	24	24
246952	11'-0"	246886	194069	191686	1	191688	2	36	36



NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

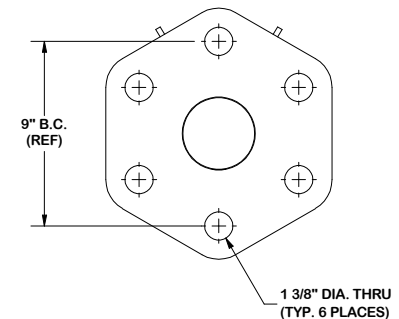
ASSEMBLY CHART FOR SOLID V SERIES LEGS - (4) 1 1/4" ANCHOR BOLTS - 7" CENTERS									
ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
246953	4'-0"	246887	194069	191684	1	N/A	0	24	24
246954	5'-0"	246887	194070	191684	1	N/A	0	24	24
246955	6'-0"	246887	194069	191688	1	N/A	0	24	24
246956	7'-0"	246887	194070	191688	1	N/A	0	24	24
246957	8'-0"	246887	194069	191692	1	N/A	0	24	24
246958	9'-0"	246887	194070	191692	1	N/A	0	24	24
246959	10'-0"	246887	194070	191694	1	N/A	0	24	24
246960	11'-0"	246887	194069	191686	1	191688	2	36	36
246961	12'-0"	246887	194070	191686	1	191688	2	36	36
246962	13'-0"	246887	194069	191688	1	191689	2	36	36
187000	14'-0"	246887	194070	191688	1	191689	2	36	36
187001	15'-0"	246887	194069	191690	1	191690	2	36	36
187523	16'-0"	246887	194070	191690	1	191690	2	36	36
187524	17'-0"	246887	194069	191690	1	191692	2	36	36
187525	18'-0"	246887	194070	191690	1	191692	2	36	36
187526	19'-0"	246887	194069	191692	1	191693	2	36	36
187527	20'-0"	246887	194070	191692	1	191693	2	36	36




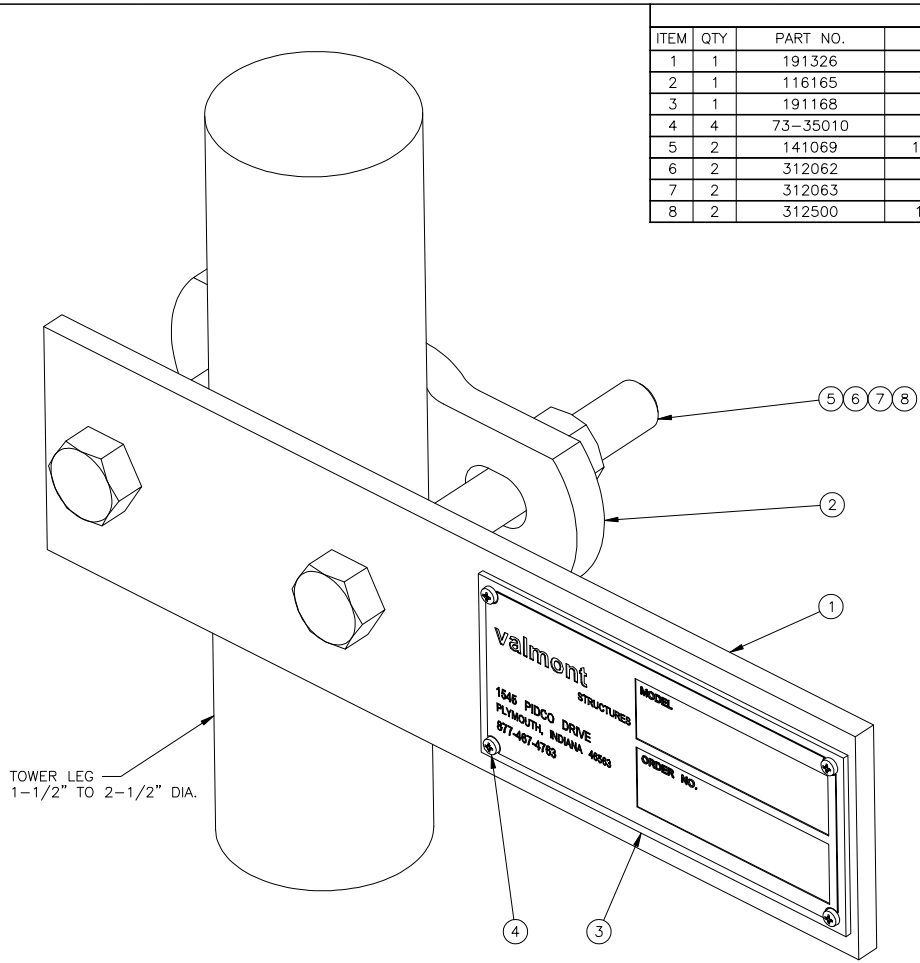
<table border="1"> <thead> <tr> <th>CPD</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>10087</td> <td>SAN</td> <td>8/13/2013</td> </tr> <tr> <td>5182</td> <td>SAN</td> <td>6/18/2013</td> </tr> <tr> <td>5182</td> <td>SAN</td> <td>5/7/2013</td> </tr> </tbody> </table>				CPD	BY	DATE	10087	SAN	8/13/2013	5182	SAN	6/18/2013	5182	SAN	5/7/2013	<b>TOLERANCE NOTES</b> TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ ) DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES BENDS ARE $\pm 1/2$ DEGREE ALL OTHER MACHINING ( $\pm 0.030"$ ) ALL OTHER ASSEMBLY ( $\pm 0.080"$ )				DESCRIPTION ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4" THRU 50' BASE WIDTHS				 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR	
				CPD	BY	DATE																			
10087	SAN	8/13/2013																							
5182	SAN	6/18/2013																							
5182	SAN	5/7/2013																							
@C ADDED 39 THRU 41 TEMPLATES ON PAGE 4 @B ADDED ADDITIONAL SOLID ROD TEMPLATES @A ADDED 43 THRU 46 TEMPLATES ON PAGE 5 REV DESCRIPTION OF REVISIONS REVISION HISTORY				CPD NO. 5182 CLASS SUB 01 01 DRAWN BY SAN 3/23/2012 DRAWING USAGE SHOP				ENG. APPROVAL WRH 8/15/2013 CHECKED BY MVC 8/15/2013		PART NO. SEE TABLE DWG. NO. 178688		PAGE 10 OF 11													

NOTE: QUANTITIES SHOWN IN COLUMNS "D QTY" AND "E QTY" ARE FOR ONE FACE OF THE TOWER TEMPLATE ONLY!

ASSEMBLY CHART FOR SOLID V SERIES LEGS - (6) 1 1/4" ANCHOR BOLTS - 9" B.C.									
ASSEMBLY NO.	"A" DIM.	"B" P/N	"C" P/N	"D" P/N	"D" QTY	"E" P/N	"E" QTY	"F" QTY	"G" QTY
246963	4'-0"	246888	194069	191684	1	N/A	0	24	24
246964	5'-0"	246888	194070	191684	1	N/A	0	24	24
246965	6'-0"	246888	194069	191688	1	N/A	0	24	24
246966	7'-0"	246888	194070	191688	1	N/A	0	24	24
246967	8'-0"	246888	194069	191692	1	N/A	0	24	24
246968	9'-0"	246888	194070	191692	1	N/A	0	24	24
246969	10'-0"	246888	194070	191694	1	N/A	0	24	24
246970	11'-0"	246888	194069	191686	1	191688	2	36	36
246971	12'-0"	246888	194070	191686	1	191688	2	36	36
246972	13'-0"	246888	194069	191688	1	191689	2	36	36
187528	14'-0"	246888	194070	191688	1	191689	2	36	36
187529	15'-0"	246888	194069	191690	1	191690	2	36	36
187530	16'-0"	246888	194070	191690	1	191690	2	36	36
187531	17'-0"	246888	194069	191690	1	191692	2	36	36
187532	18'-0"	246888	194070	191690	1	191692	2	36	36
187533	19'-0"	246888	194069	191692	1	191693	2	36	36
187534	20'-0"	246888	194070	191692	1	191693	2	36	36



				<b>TOLERANCE NOTES</b> TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ ) DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES BENDS ARE $\pm 1/2$ DEGREE ALL OTHER MACHINING ( $\pm 0.030"$ ) ALL OTHER ASSEMBLY ( $\pm 0.060"$ )				DESCRIPTION ANCHOR TEMPLATE ASSEMBLY FOR #12 B/D LEG, V-SERIES LEG & SOLID ROD LEG SECTIONS 4" THRU 50' BASE WIDTHS				 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR			
@C	ADDED 39 THRU 41 TEMPLATES ON PAGE 4	10087	SAN	8/13/2013	CPD NO.	5182	DRAWN BY	SAN	3/23/2012	ENG. APPROVAL	WRH	8/15/2013	PART NO.	SEE TABLE	PAGE 11 OF 11
@B	ADDED ADDITIONAL SOLID ROD TEMPLATES	5182	SAN	6/18/2013	CLASS	01	SUB	01	DRAWING USAGE	CHECKED BY	MVC	8/15/2013	DWG. NO.	178688	
@A	ADDED 43 THRU 46 TEMPLATES ON PAGE 5	5182	SAN	5/7/2013											
REV	DESCRIPTION OF REVISIONS REVISION HISTORY	CPD	BY	DATE	PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.										



Parts List					
ITEM	QTY	PART NO.	DESCRIPTION	LENGTH	WEIGHT EACH
1	1	191326	NAME PLATE BRACKET		1.86#
2	1	116165	V-CLAMP WITH 3" HOLE CENTERS		0.75#
3	1	191168	IDENTIFICATION PLATE		0.02#
4	4	73-35010	#2 S.S. DRIVE SCREW	1/4"	0.01#
5	2	141069	1/2" GRADE 5 BOLT HOT DIP GALV	4"	0.25#
6	2	312062	1/2" GALV FLAT WASHER (F436)		0.01#
7	2	312063	1/2" GALV LOCK WASHER		0.01#
8	2	312500	1/2" REG HEX NUT HOT DIP GALV		0.05#
TOTAL WEIGHT					3.25#

TOWER LEG  
1-1/2" TO 2-1/2" DIA.

**PROPRIETARY NOTE:**  
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**TOLERANCE NOTE:**  
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.

**DESCRIPTION**  
ASSEMBLY  
NAME PLATE MOUNTING  
1-1/2" TO 2-1/2" DIA. TOWER LEGS

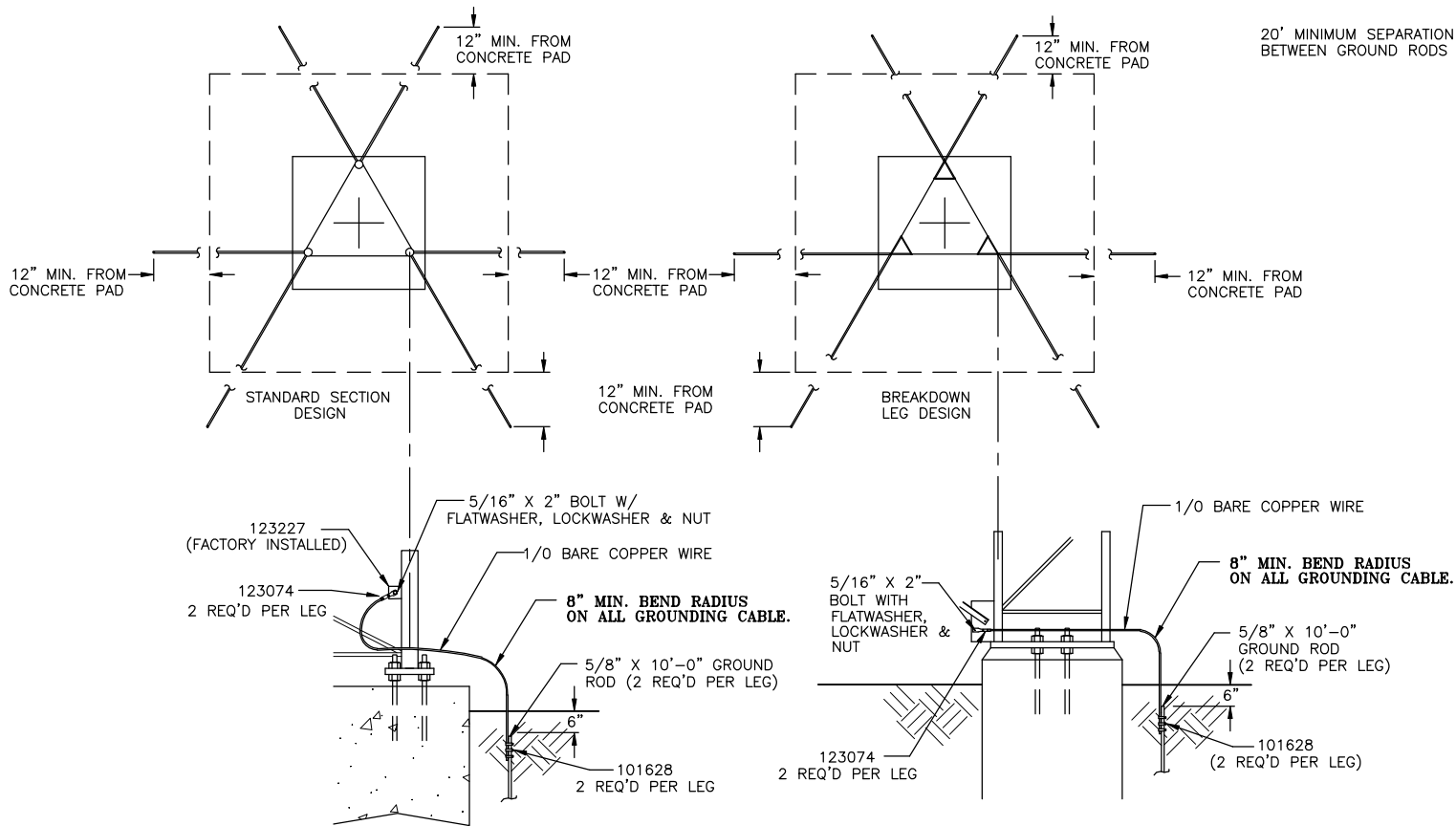
1-877-467-4763 Plymouth, IN  
1-888-880-9191 Salem, OR

DR BY TNS 03/16/2005	CPD NO. 3738	DRAWING USAGE SHOP
ENG. APPROVAL WBR 04/13/2005	CHECKED BY MVC 04/14/2005	

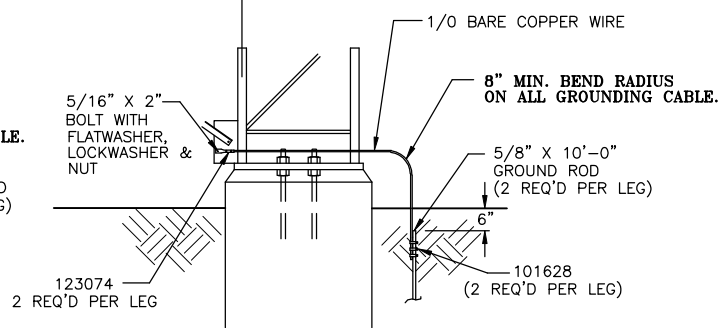
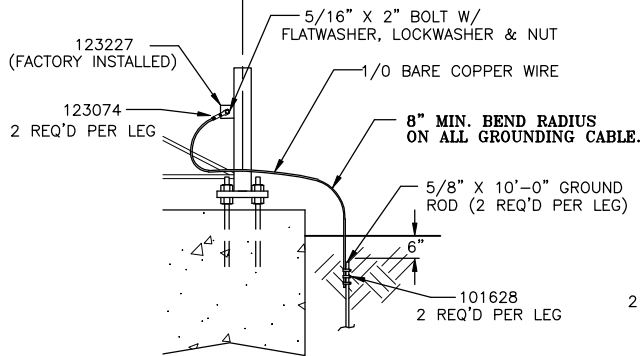
PART NO.	191352
DWG. NO.	191352

REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE

REV. 1



20' MINIMUM SEPARATION  
BETWEEN GROUND RODS



**PROPRIETARY NOTE:**  
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DESCRIPTION  
**E.I.A. GROUNDING SYSTEM  
FOR SELF SUPPORTING TOWERS  
(REV. G COMPLIANT)**



**TOLERANCE NOTE:**  
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
BENDS ARE (+ OR -) 1/2 DEGREE.

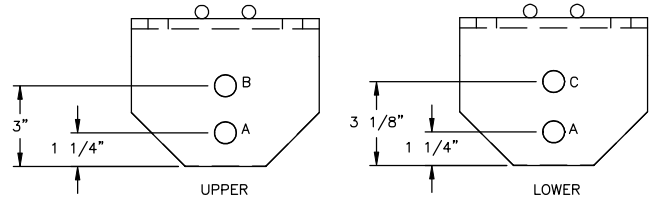
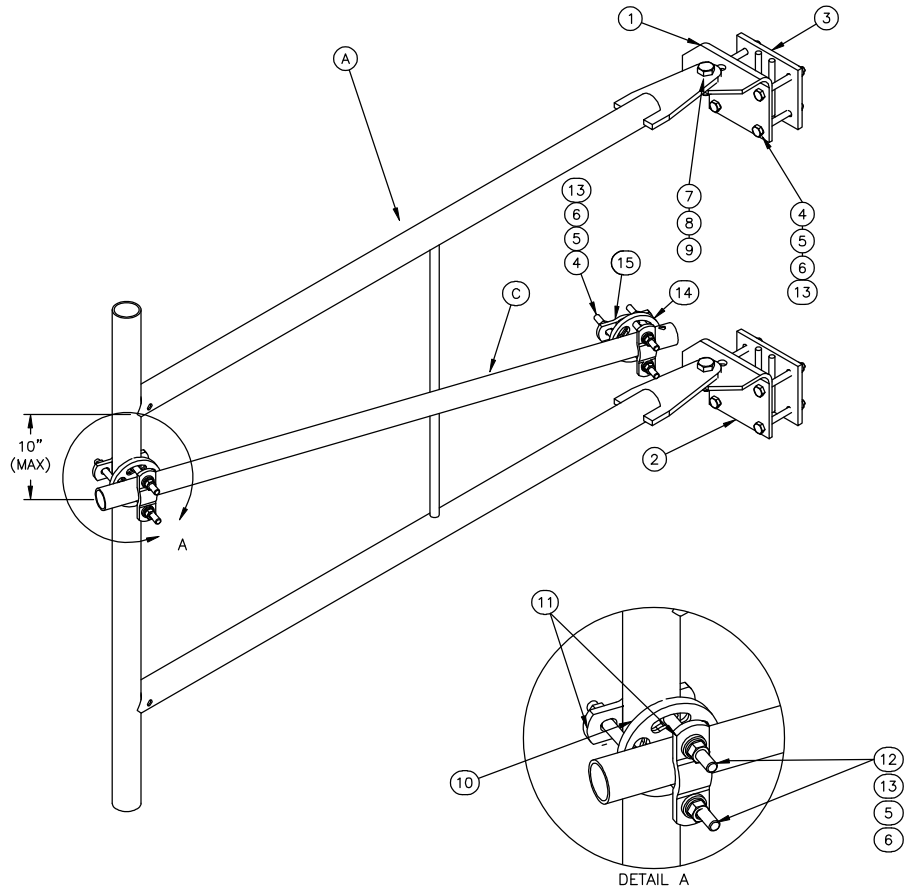
DR BY SAN 02/07/2007	CPD NO. 3892	DRAWING USAGE CUSTOMER	PART NO.
ENG. APPROVAL MVC 12/10/2010	CHECKED BY MVC 12/10/2010	DWG. NO. 209549	

DR BY SAN 02/07/2007	CPD NO. 3892	DRAWING USAGE CUSTOMER	PART NO.
ENG. APPROVAL MVC 12/10/2010	CHECKED BY MVC 12/10/2010	DWG. NO. 209549	

REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE
0/A	MISC. TEXT REVISIONS	4681	JDE	12/10/2010

ASSEMBLY - 195649					
ASSEMBLY NO.	DESCRIPTION	A (FRAME NO.)	B (HARDWARE)	C (TIE-BACK)	TOTAL WEIGHT
195649	6' STANDOFF ARM	195646	192991	139395	128.76

HARDWARE KIT LIST - P/N 192991					
ITEM	QTY	PART NO.	DESCRIPTION	LENGTH	WEIGHT
1	1	192043	UPPER MOUNTING BRACKET		8.74
2	1	192044	LOWER MOUNTING BRACKET		8.74
3	2	159999	BACKING PLATE		6.83
4	10	141074	1/2" x 6-1/2" (GR5) BOLT		.33
5	16	312063	1/2" LOCK WASHER		.01
6	16	312500	1/2" HEX NUT		.05
7	2	175411	3/4" x 2-1/4" (A572) BOLT		.48
8	2	312153	3/4" LOCK WASHER		.03
9	2	312502	3/4" HEX NUT		.17
10	1	123614	3" DISK CLAMP		1.50
11	2	116165	3" V-CLAMP		.75
12	6	141069	1/2" x 4" (GR-5) BOLT		.29
13	16	312062	1/2" FLAT WASHER		.01
14	1	127594	FLAT DISK CLAMP 4" CENTERS		.29
15	2	100064	CLAMP (4" V-CLAMP) GALVANIZED		.01
				TOTAL WT.	44.50

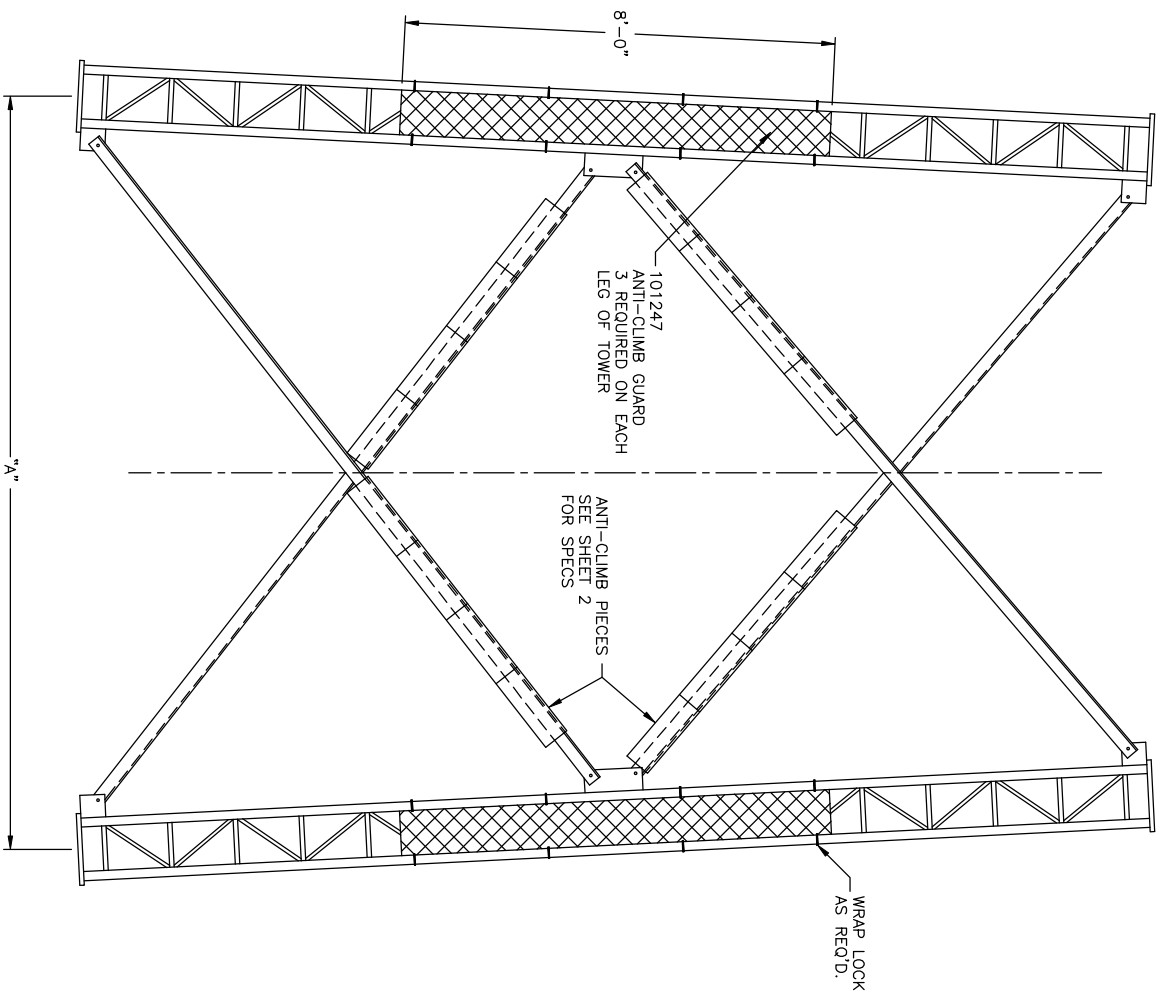


- NOTES:
1. USE HOLE A IN UPPER AND LOWER BRACKET FOR STRAIGHT LEGS.
  2. USE HOLE A IN UPPER BRACKET AND HOLE C IN LOWER BRACKET FOR 2' IN 20' TAPER LEGS. = 3.304 DEG. APEX LEG SLOPE
  3. USE HOLE B IN UPPER BRACKET AND HOLE C IN LOWER BRACKET FOR 6" IN 20' TAPER LEGS. = .827 DEG. APEX LEG SLOPE

				<b>PROPRIETARY NOTE:</b> THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.			DESCRIPTION 6' SIDE ARM PIVOT ASSEMBLY		 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR		
©B	REVISED PARTS LIST	10049	JDE	05/22/2013	<b>TOLERANCE NOTE:</b> TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.			DR BY	CPD NO.	DRAWING USAGE	PART NO.
©A	REVISED PARTS LIST	5301	JDE	04/15/2013	BMC	9/7/2005	3844	SHOP			195649
REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE	ENG. APPROVAL			CHECKED BY			DWG. NO.
					MVC	05/22/2013		MVC	05/22/2013		195649

1 OF 1





VIEW OF ONE FACE  
OF BOTTOM SECTION OF TOWER

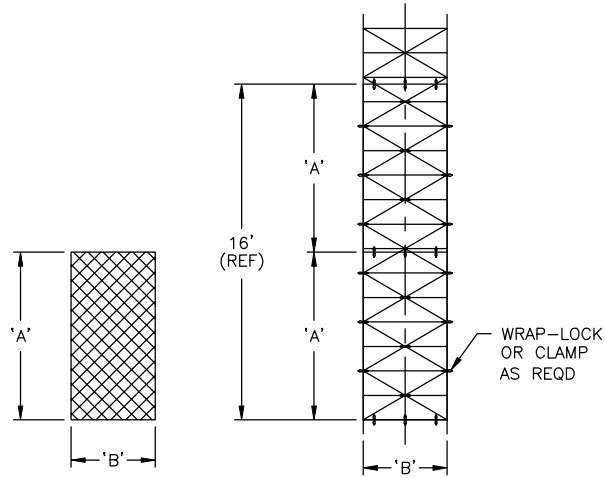
PART NO.

NAME		INSTALLATION		PIROD INC.	
ANTI-CLIMB MATERIAL		ANTI-CLIMB MATERIAL		PLYMOUTH, INDIANA 46563	
APPROVED BY	DR BY	DATE	DATE	DWG. NO.	
MVC 01/04/16	TNS	12/17/93		123056-B	
REG. ENGINEER	SCALE			SHEET	1 OF 2
REG. NO.	1/2" = 12"				
ADDED WRAP LOCK LOCATIONS		SANJ	1/4/16		
REVISED/ADDED SHEET 2		HDS	2/9/94		
DESCRIPTION OF REVISIONS		BY	DATE		
②B					
①A					
①B					

ASSY. #	"A" DIM	BRACE #	ANTI-CLIMB PIECE PART #	QTY READ TO COVER 1 ANGLE	TOTAL QTY READ FOR STD 3-SIDED TOWER
262887	6'	U-5	123192	3	30
		U-6	123192	2	
262888	8'	U-7	123192	3	30
		U-8	123192	2	
262890	10'	U-9	123192	3	36
		U-10	123192	3	
262891	12'	U-11	123192	3	36
		U-12	123192	3	
262884	14'	U-13	123192	4	48
		U-14	123192	4	
262892	16'	U-15	123192	5	54
		U-16	123192	4	
262893	18'	U-17	123192	5	60
		U-18	123192	5	
262894	20'	U-19	123194	5	60
		U-20	123194	5	
262895	22'	U-21	123194	6	72
		U-22	123194	6	
262896	24'	U-23	123194	7	84
		U-24	123194	7	
262897	26'	U-25	123194	7	84
		U-26	123194	7	
262898	28'	U-27	123194	8	96
		U-28	123194	8	
262899	30'	U-29	123194	8	96
		U-30	123194	8	

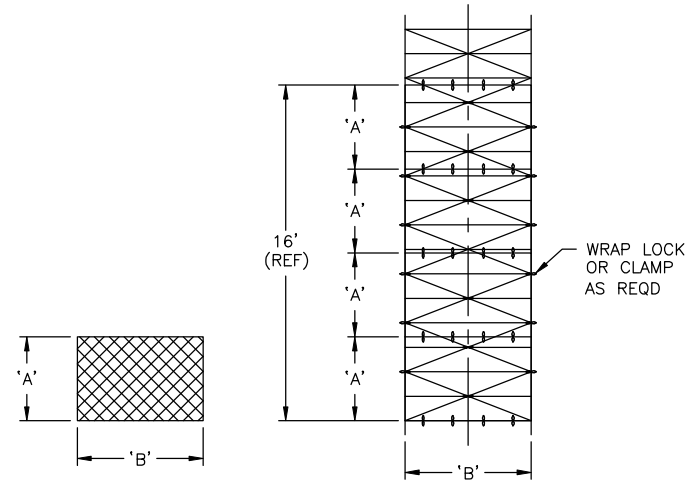
NOTE: PART #123192 IS 6" DIA X 18 LONG PVC  
PART #123194 IS 10" DIA X 18 LONG PVC

PART NO.		NAME		REG. NO.		DWG. NO.	
		INSTALLATION ANTI-CLIMB MATERIAL		APPROVED BY		PIROD INC.	
		SAN 1/4/16		MVC 01/04/16		PLYMOUTH, INDIANA 46563	
		HDS 2/9/94		HDS 2/9/94		123056-B	
DESCRIPTION OF REVISIONS		BY DATE		SCALE		SHEET 2 OF 2	
ADDED WRAP LOCK LOCATIONS				NO SCALE			
REVISED/ADDED SHEET 2							
REG. NO.							



MATERIAL: 1/2" X 13-15 EXPANDED STEEL MESH FLATTENED

PART #	BLACK P/N	DIM 'A'	DIM 'B'	WEIGHT
140538	194034	2'	12"	2.8#
140420	194035	4'	12"	5.5#
140421	194036	4'	18"	8.25#
101247	195226	8'	12"	11#
269853	269852	8'	15-11/16"	13.75#
110232	195225	8'	18"	16.5#
125518	194622	8'	24"	22#
111062	194617	8'	30"	28#
125519	194618	8'	36"	33#
125520	194615	8'	42"	38.5#
125521	194616	8'	45"	41.3#
125522	194614	8'	48"	44#

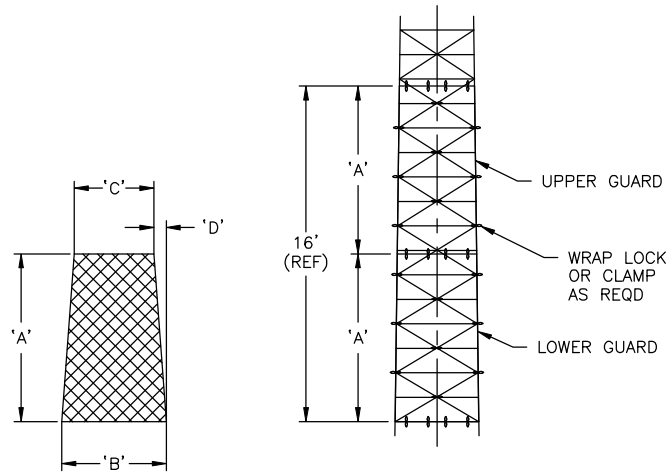


MATERIAL: 1/2" X 13-15 EXPANDED STEEL MESH FLATTENED

PART #	BLACK P/N	DIM 'A'	DIM 'B'	WEIGHT
125523	194612	4'	52"	23.8#
125524	194613	4'	60"	27.5#
216059	216058	4'	72"	33.0#

FINISH:  
HOT DIPPED GALVANIZED.

©I ADDED P/N's 269852 & 269853 ©H ADDED P/N's 213288 & 216059 ©G CLARIFIED WITH EXAGGERATION DETAIL VIEWS ©F ADDED U-7.0 TO PAGE 3 ©E ADDED P/N'S FOR BLACK PURCHASED PARTS ©D ADDED NEW BORDER ©C ADDED P/N 140538 ©B ADDED 4 ' PART NUMBERS REV. DESCRIPTION OF REVISIONS	JDE 10/06/2016 4253 SAN 01/07/2008 4023 BTJ 12/06/2007 4118 BTJ 05/18/2007 3795 BTJ 08/12/2005 3655 TNS 10/06/2004 DMF 12/20/1999 CJD 11/30/1999 CPD BY DATE	<b>PROPRIETARY NOTE:</b> THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.  <b>TOLERANCE NOTE:</b> TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.	DESCRIPTION ANTI-CLIMB GUARD ASSEMBLY	DR BY HDS 01/12/1995 ENG. APPROVAL WRH 10/06/2016	CPD NO. DRAWING USAGE SHOP	PART NO. DWG. NO. 125517	 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR	1 OF 1 PART 1
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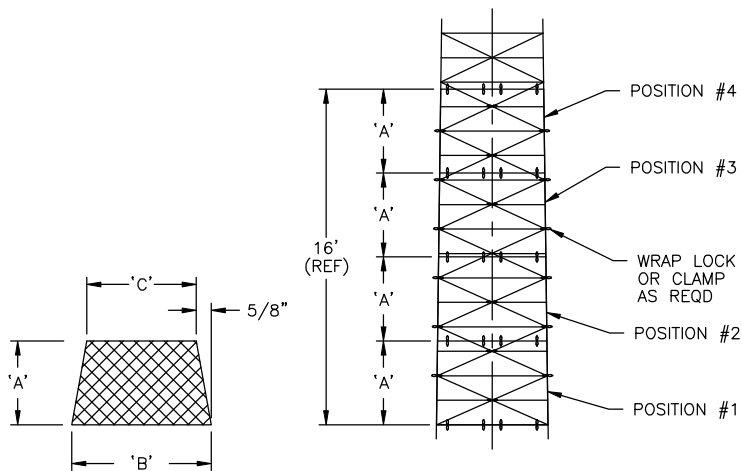


FINISH:  
HOT DIPPED GALVANIZED.

MATERIAL: 1/2" X 13-15 EXPANDED STEEL MESH FLATTENED

TOWER	POSITION	PART #	BLACK P/N	DIM 'A'	DIM 'B'	DIM 'C'	DIM 'D'	WEIGHT
U-1.5 (18")	UPPER	125525	194611	8'	16 3/4"	15 1/2"	5/8"	14.8#
	LOWER	125526	194607	8'	18"	16 3/4"	5/8"	15.9#
U-2.0 (24")	UPPER	125527	194608	8'	21 1/2"	19"	1 1/4"	18.6#
	LOWER	101890	194609	8'	24"	21 1/2"	1 1/4"	21.2#
U-2.5 (30")	UPPER	125528	194610	8'	27 1/2"	25"	1 1/4"	24.1#
	LOWER	101894	194356	8'	30"	27 1/2"	1 1/4"	26.8#
U-3.0 (36")	UPPER	125529	194357	8'	33 1/2"	31"	1 1/4"	29.6#
	LOWER	101251	194358	8'	36"	33 1/2"	1 1/4"	32.4#
U-3.5 (42")	UPPER	125530	194359	8'	39 1/2"	37"	1 1/4"	35.1#
	LOWER	100291	194360	8'	42"	39 1/2"	1 1/4"	37.4#
U-4.0 (48")	UPPER	125531	194361	8'	45 1/2"	43"	1 1/4"	40.6#
	LOWER	100662	194362	8'	48"	45 1/2"	1 1/4"	43.6#
U-5.0 BASE	LOWER	213288	213289	4'	59 1/4"	24 5/8"	17 5/16"	16.7#

©I ADDED P/N's 269852 & 269853 ©H ADDED P/N's 213288 & 216059 ©G CLARIFIED WITH EXAGGERATION DETAIL VIEWS ©F ADDED U-7.0 TO PAGE 3 ©E ADDED P/N'S FOR BLACK PURCHASED PARTS ©D ADDED NEW BORDER ©C ADDED P/N 140538 ©B ADDED 4 ' PART NUMBERS REV. DESCRIPTION OF REVISIONS	JDE 10/06/2016 4253 SAN 01/07/2008 4023 BTJ 12/06/2007 4118 BTJ 05/18/2007 3795 BTJ 08/12/2005 3655 TNS 10/06/2004 DMF 12/20/1999 CJD 11/30/1999 CPD BY DATE	<b>PROPRIETARY NOTE:</b> THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.  <b>TOLERANCE NOTE:</b> TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.	DESCRIPTION ANTI-CLIMB GUARD ASSEMBLY	DR BY HDS 01/12/1995 ENG. APPROVAL WRH 10/06/2106	CPD NO. DRAWING USAGE SHOP	PART NO. DWG. NO. 125517	1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR <b>valmont</b> <b>STRUCTURES</b>	13 0 11 17
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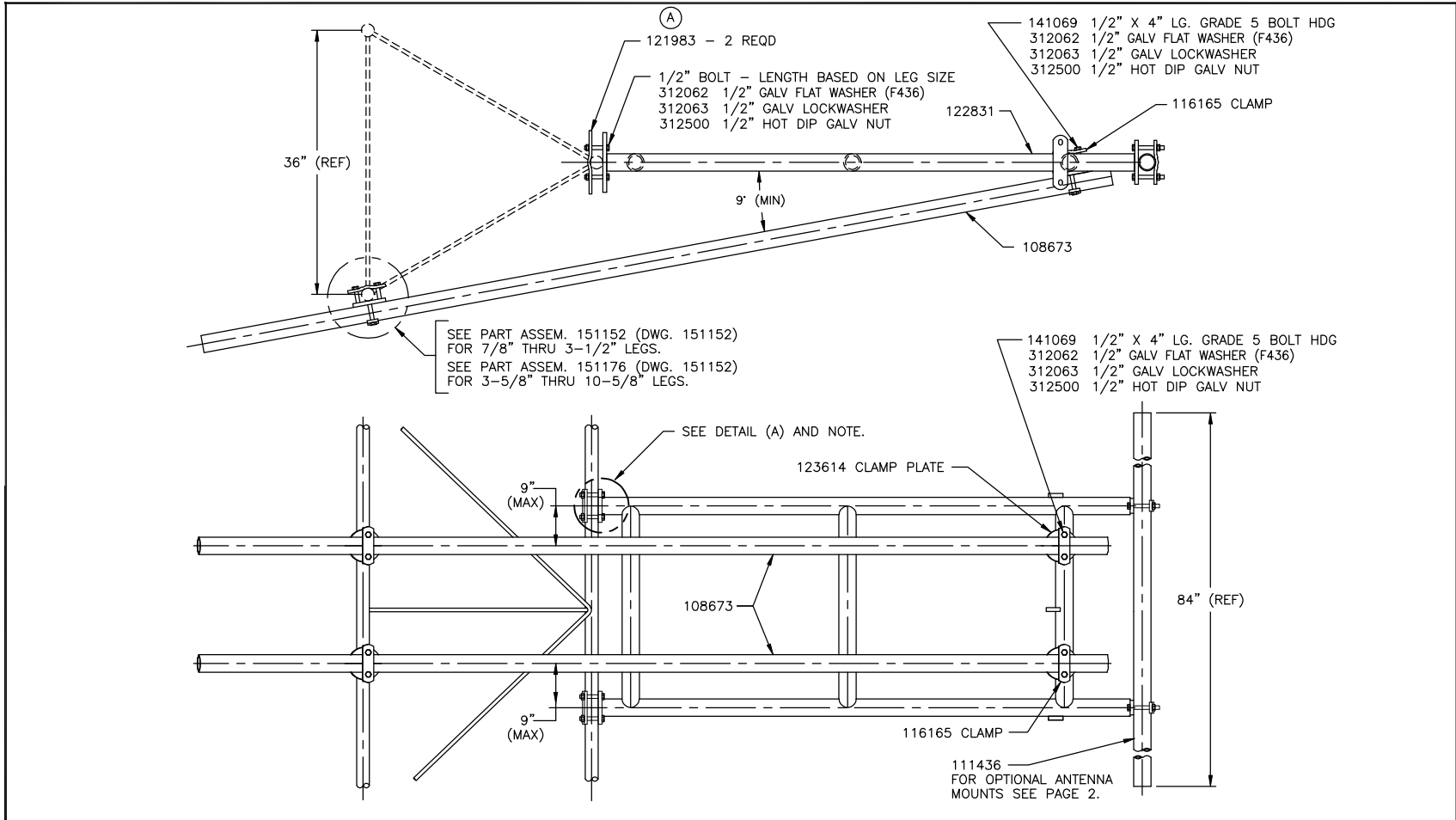


MATERIAL: 1/2" X 13-15 EXPANDED STEEL MESH FLATTENED

TOWER	POSITION	PART #	BLACK P/N	DIM 'A'	DIM 'B'	DIM 'C'	WEIGHT
U-4.5 (54")	4	111329	194363	4'	50 1/4"	49"	23.1#
	3	111249	194407	4'	51 1/2"	50 1/4"	23.7#
	2	100140	194408	4'	52 3/4"	51 1/2"	24.3#
	1	100141	194409	4'	54"	52 3/4"	24.9#
U-5.0 (60")	4	123012	194410	4'	56 1/4"	55"	25.5#
	3	112700	194411	4'	57 1/2"	56 1/4"	26.1#
	2	106828	194412	4'	58 3/4"	57 1/2"	26.6#
U-5.5 (66")	1	106829	194413	4'	60"	58 3/4"	27.2#
	4	111370	194414	4'	62 1/4"	61"	28.6#
	3	111369	194440	4'	63 1/2"	62 1/4"	29.2#
U-6.0 (72")	2	101248	194441	4'	64 3/4"	63 1/2"	30#
	1	101249	195227	4'	66"	64 3/4"	30.8#
	4	111095	194443	4'	68 1/4"	67"	31#
U-7.0 (84")	3	111094	194444	4'	69 1/2"	68 1/4"	31.6#
	2	100546	194445	4'	70 3/4"	69 1/2"	32.5#
	1	100547	194446	4'	72"	70 3/4"	33#
U-7.0 (84")	4	211335	211468	4'	80 1/4"	79"	45.18#
	3	211469	211470	4'	81 1/2"	80 1/4"	44.52#
	2	211471	211472	4'	82 3/4"	80 1/2"	43.85#
	1	211473	211474	4'	84"	82 3/4"	43.18#

FINISH:  
HOT DIPPED GALVANIZED.

©I ADDED P/N's 269852 & 269853 ©H ADDED P/N's 213288 & 216059 ©G CLARIFIED WITH EXAGGERATION DETAIL VIEWS ©F ADDED U-7.0 TO PAGE 3 ©E ADDED P/N'S FOR BLACK PURCHASED PARTS ©D ADDED NEW BORDER ©C ADDED P/N 140538 ©B ADDED 4 ' PART NUMBERS REV. DESCRIPTION OF REVISIONS	JDE 10/06/2016 4253 SAN 01/07/2008 4023 BTJ 12/06/2007 4118 BTJ 05/18/2007 3795 BTJ 08/12/2005 3655 TNS 10/06/2004 DMF 12/20/1999 CJD 11/30/1999 CPD BY DATE	<b>PROPRIETARY NOTE:</b> THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.  <b>TOLERANCE NOTE:</b> TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.	DESCRIPTION ANTI-CLIMB GUARD ASSEMBLY	DR BY HDS 01/12/1995 ENG. APPROVAL WRH 10/06/2106	CPD NO. DRAWING USAGE SHOP	PART NO. DWG. NO.	1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR <b>valmont</b> <b>STRUCTURES</b>	125517	CA 11 CA
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F	ADDED 9" MIN. NOTE ON PAGE 1	3718	SAN	02/24/2005
E	REVISED HARDWARE AND REFERENCED DWG. 151152	3698	TNS	11/01/2004
D	NEW BORDER AND SHIM NOTE	3007	TRS	3/14/02
C	REVISED TIE BACKS		RFC	9/4/97
B	ADDED 2ND TIE BACK		RFC	5/16/97
A	WAS 100064 CLAMP		HDS	9/14/94
REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE

**PROPRIETARY NOTE:**  
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

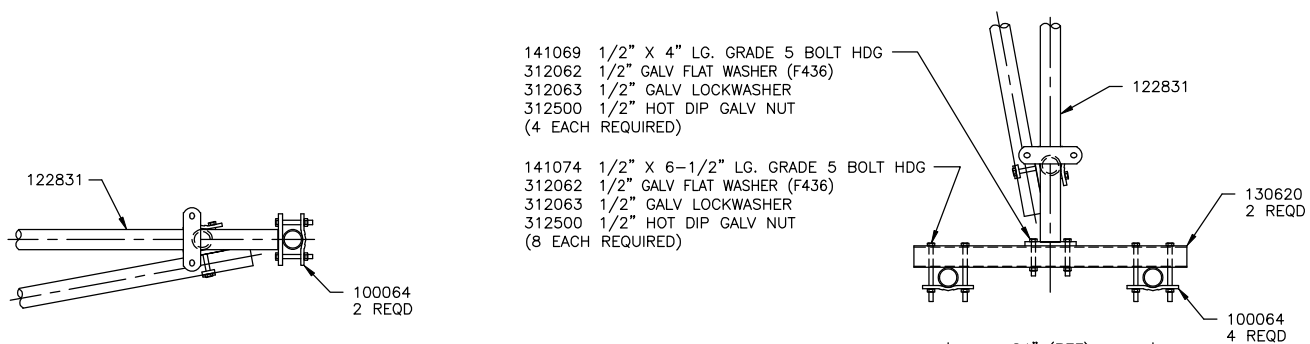
**TOLERANCE NOTE:**  
 TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
 BENDS ARE (+ OR -) 1/2 DEGREE.

DESCRIPTION	
INSTALLATION ASSEMBLY 6" RIGID ARM WITH UNIVERSAL ADJUSTMENT	
DR BY	CPD NO.
HDS 09/08/1994	
ENG. APPROVAL	DRAWING USAGE
WBR 03/01/2005	CUSTOMER
CHECKED BY	PART NO.
MVC 03/01/2005	
DWG. NO.	
124593	

**valmont**   
 STRUCTURES

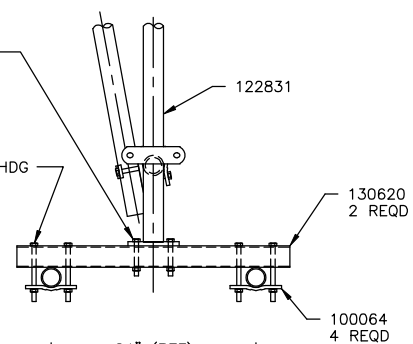
1-877-467-4763 Plymouth, IN  
 1-888-880-9191 Salem, OR

1 OF 1

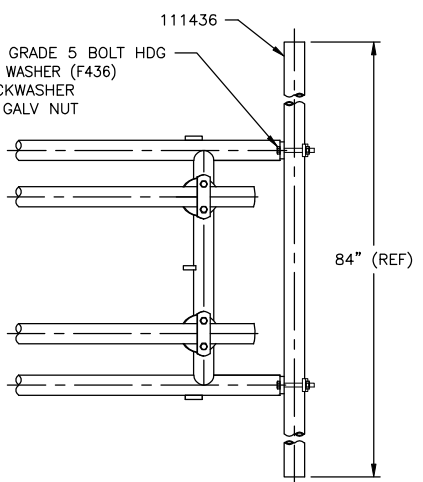


- 141069 1/2" X 4" LG. GRADE 5 BOLT HDG
- 312062 1/2" GALV FLAT WASHER (F436)
- 312063 1/2" GALV LOCKWASHER
- 312500 1/2" HOT DIP GALV NUT  
(4 EACH REQUIRED)

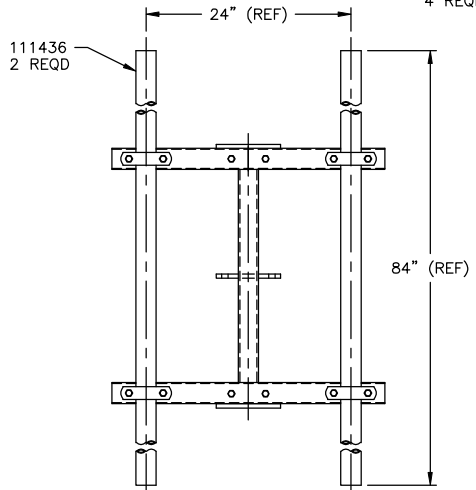
- 141074 1/2" X 6-1/2" LG. GRADE 5 BOLT HDG
- 312062 1/2" GALV FLAT WASHER (F436)
- 312063 1/2" GALV LOCKWASHER
- 312500 1/2" HOT DIP GALV NUT  
(8 EACH REQUIRED)



- 141069 1/2" X 4" LG. GRADE 5 BOLT HDG
- 312062 1/2" GALV FLAT WASHER (F436)
- 312063 1/2" GALV LOCKWASHER
- 312500 1/2" HOT DIP GALV NUT  
(4 EACH REQUIRED)



SINGLE ANTENNA MOUNTING PIPE



F	ADDED 9" MIN. NOTE ON PAGE 1	3718	SAN	02/24/2005
E	REVISED HARDWARE AND REFERENCED DWG. 151152	3698	TNS	11/01/2004
D	NEW BORDER AND SHIM NOTE	3007	TRS	3/14/02
C	REVISED TIE BACKS		RFC	9/4/97
B	ADDED 2ND TIE BACK		RFC	5/16/97
A	WAS 100064 CLAMP		HDS	9/14/94
REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE

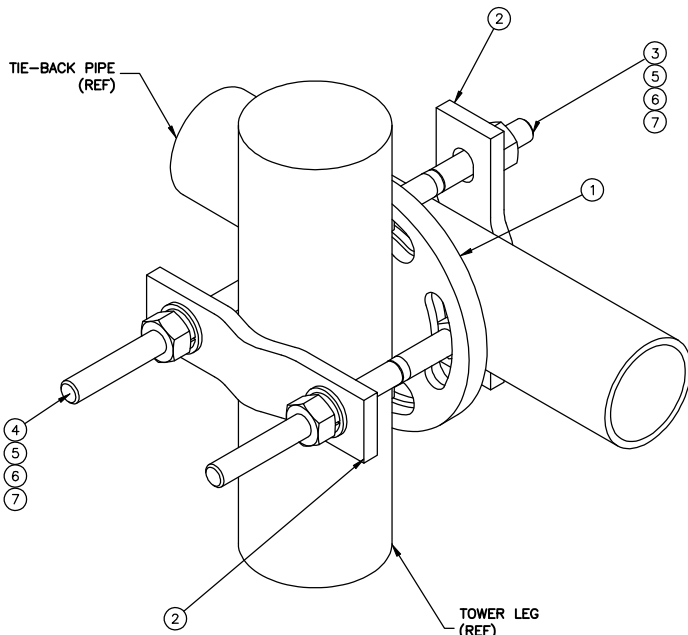
**PROPRIETARY NOTE:**  
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**TOLERANCE NOTE:**  
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
BENDS ARE (+ OR -) 1/2 DEGREE.

DESCRIPTION INSTALLATION ASSEMBLY 6" RIGID ARM WITH UNIVERSAL ADJUSTMENT			
DR BY HDS 09/08/1994	CPD NO.	DRAWING USAGE CUSTOMER	PART NO.
ENG. APPROVAL WBR 03/01/2005	CHECKED BY MVC 03/01/2005	DWG. NO. 124593	

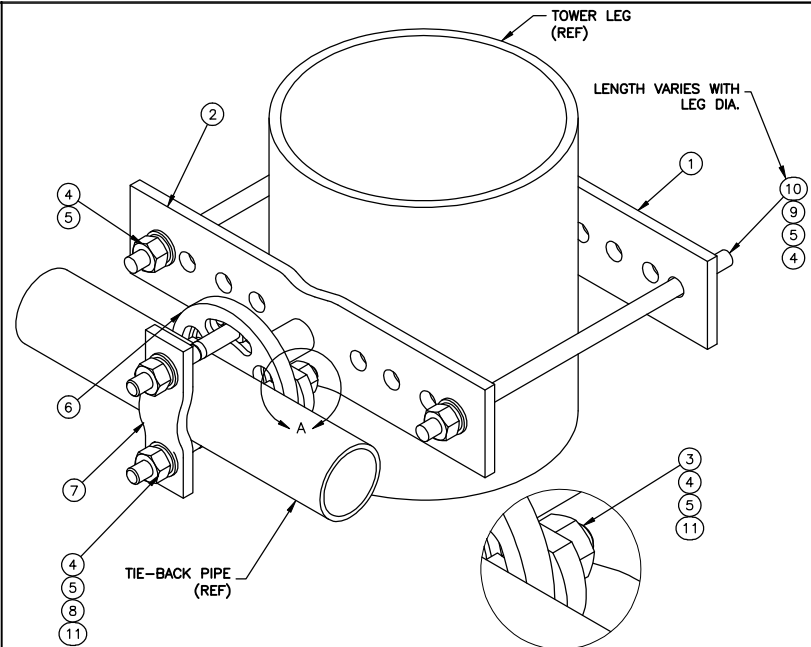
1-877-467-4763 Plymouth, IN  
1-888-880-9191 Salem, OR

13  
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1  
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N



P/N 151152  
FITS LEG SIZES 7/8" TO 3 1/2"

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1	1	127594	4" DISK CLAMP	2.50#
2	2	100064	4" V-CLAMP	0.90#
3	2	141069	1/2" X 4" BOLT	0.23#
4	2	141074	1/2" X 6 1/2" BOLT	0.36#
5	4	312063	1/2" LOCK WASHER	0.01#
6	4	312500	1/2" GALV. NUT	0.05#
7	4	312062	1/2" FLAT WASHER	0.01#
TOTAL WT.				5.76#



P/N 151176  
FITS LEG SIZES 3 5/8" TO 10 5/8"


ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1	1	139928	BACKING BAR	4.68#
2	1	140277	TIE-BACK MOUNT	5.94#
3	2	141062	1/2" X 1 1/2" BOLT	0.10#
4	8	312063	1/2" LOCKWASHER	0.01#
5	8	312500	1/2" GALV. NUT	0.05#
6	1	123614	3" DISK CLAMP	1.50#
7	1	116165	3" V-CLAMP	0.75#
8	2	141069	1/2" X 4" BOLT	0.23#
9	2	141077	1/2" X 8" BOLT	0.30#
10	2	313116	1/2" X 13" THREADED ROD	0.75#
11	8	312062	1/2" FLAT WASHER	0.01#
TOTAL WT.				17.0#

REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE
F	P/N 151152 BOLT WAS P/N 141073 NOW 141074	3840	BTJ	09/18/2006
E	REDRAWN IN MDT, UPDATED	3840	BTJ	07/17/2006
D	EDIT QTY. FOR 1/2" NUTS	2924	KWD	01/08/2002
C	ADDED PLAIN NUTS AND LOCKWASHERS	2888	DLK	12/17/2001
B	ADDED FLAT WASHERS TO P/N 151176	2811	RCH	10/24/2001
A	ADDED WASHERS TO P/N 115152	2404	DLK	12/29/2000

**PROPRIETARY NOTE:**  
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

**TOLERANCE NOTE:**  
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
BENDS ARE (+ OR -) 1/2 DEGREE.

DESCRIPTION			
TIE-BACK ATTACHMENT			
DR BY	CPD NO.	DRAWING USAGE	PART NO.
DLK 09/18/2000	2296	CUSTOMER	
ENG. APPROVAL	CHECKED BY	DWG. NO.	
TBC 09/28/2006	MVC 09/28/2006	151152	

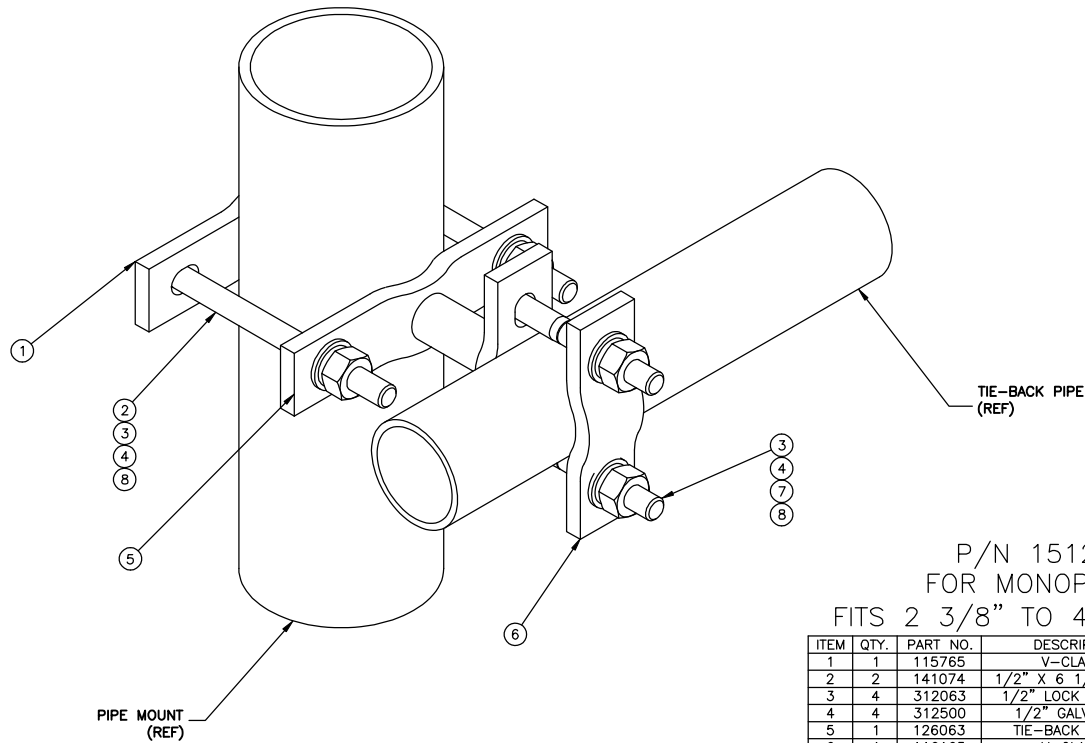


**valmont**  
STRUCTURES

1-877-467-4763 Plymouth, IN  
1-888-880-9191 Salem, OR

03/2006





P/N 151241  
FOR MONOPOLES  
FITS 2 3/8" TO 4 1/2" PIPE

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1	1	115765	V-CLAMP	1.25#
2	2	141074	1/2" X 6 1/2" BOLT	0.34#
3	4	312063	1/2" LOCK WASHER	0.01#
4	4	312500	1/2" GALV. NUT	0.05#
5	1	126063	TIE-BACK CLAMP	21.0#
6	1	116165	V-CLAMP	0.75#
7	2	141069	1/2" X 4" BOLT	0.27#
8	8	312062	1/2" FLAT WASHER	0.01#
TOTAL WT.				5.30#

REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE
F	P/N 151152 BOLT WAS P/N 141073 NOW 141074	3840	BTJ	09/18/2006
E	REDRAWN IN MDT, UPDATED	3840	BTJ	07/17/2006
D	EDIT QTY. FOR 1/2" NUTS	2924	KWD	01/08/2002
C	ADDED PLAIN NUTS AND LOCKWASHERS	2888	DLK	12/17/2001
B	ADDED FLAT WASHERS TO P/N 151176	2811	RCH	10/24/2001
A	ADDED WASHERS TO P/N 115152	2404	DLK	12/29/2000

**PROPRIETARY NOTE:**  
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**TOLERANCE NOTE:**  
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
BENDS ARE (+ OR -) 1/2 DEGREE.

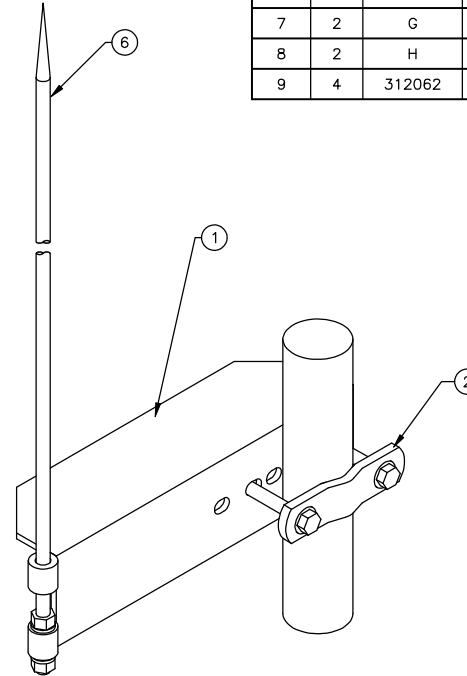
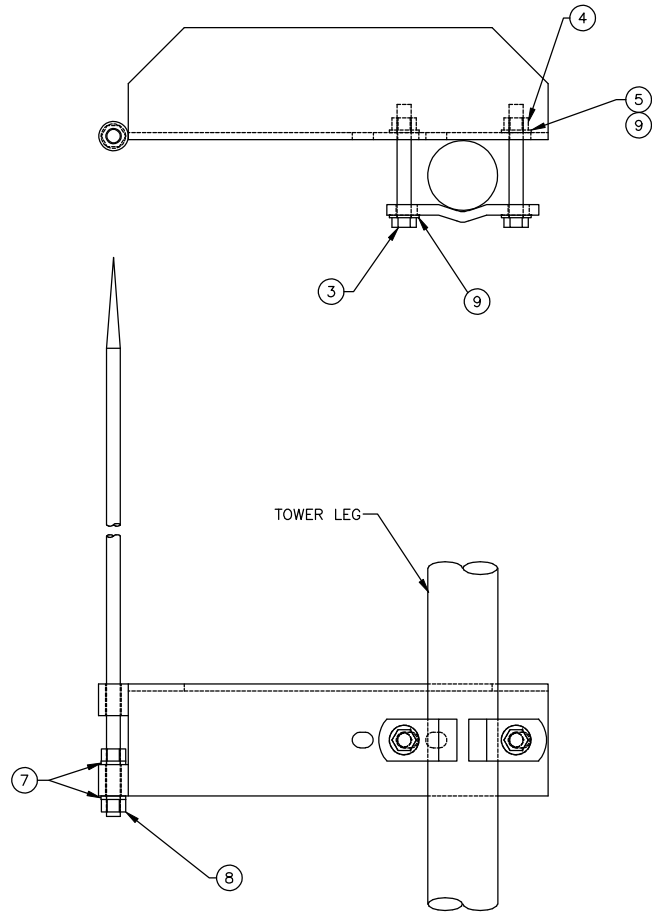
DESCRIPTION			
<b>TIE-BACK ATTACHMENT</b>			
DR BY	CPD NO.	DRAWING USAGE	PART NO.
DLK 09/18/2000	2296	CUSTOMER	
ENG. APPROVAL	CHECKED BY	DWG. NO.	
TBC 09/28/2006	MVC 09/28/2006	151152	

valmont

STRUCTURES

1-877-467-4763 Plymouth, IN  
1-888-880-9191 Salem, OR

15  
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PARTS LIST					
ITEM	QTY.	PART NO.	DESCRIPTION	LENGTH	WEIGHT
1	1	A	LIGHTNING ROD HOLDER		
2	1	B	V-CLAMP		
3	2	C	1/2" BOLT	D	
4	2	312500	1/2" GALV. NUT		0.05#
5	4	312063	1/2" LOCKWASHER		0.01#
6	1	E	LIGHTNING ROD	F	
7	2	G	LOCKWASHER		
8	2	H	PLAIN NUT		
9	4	312062	1/2" FLAT WASHER		0.01#

**PROPRIETARY NOTE:**  
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION  
 LEG MOUNTED  
 LIGHTNING ROD BRACKET  
 ASSEMBLIES

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 1-877-467-4763 Plymouth, IN  
 1-888-880-9191 Salem, OR  
**STRUCTURES**


REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	ADDED PLAIN NUTS AND LOCKWASHERS	2888	DLK	12/14/2001
A	ADDED P/N 161140- 142 TO CHART AND PG. 2	2717	DLK	12/04/2001

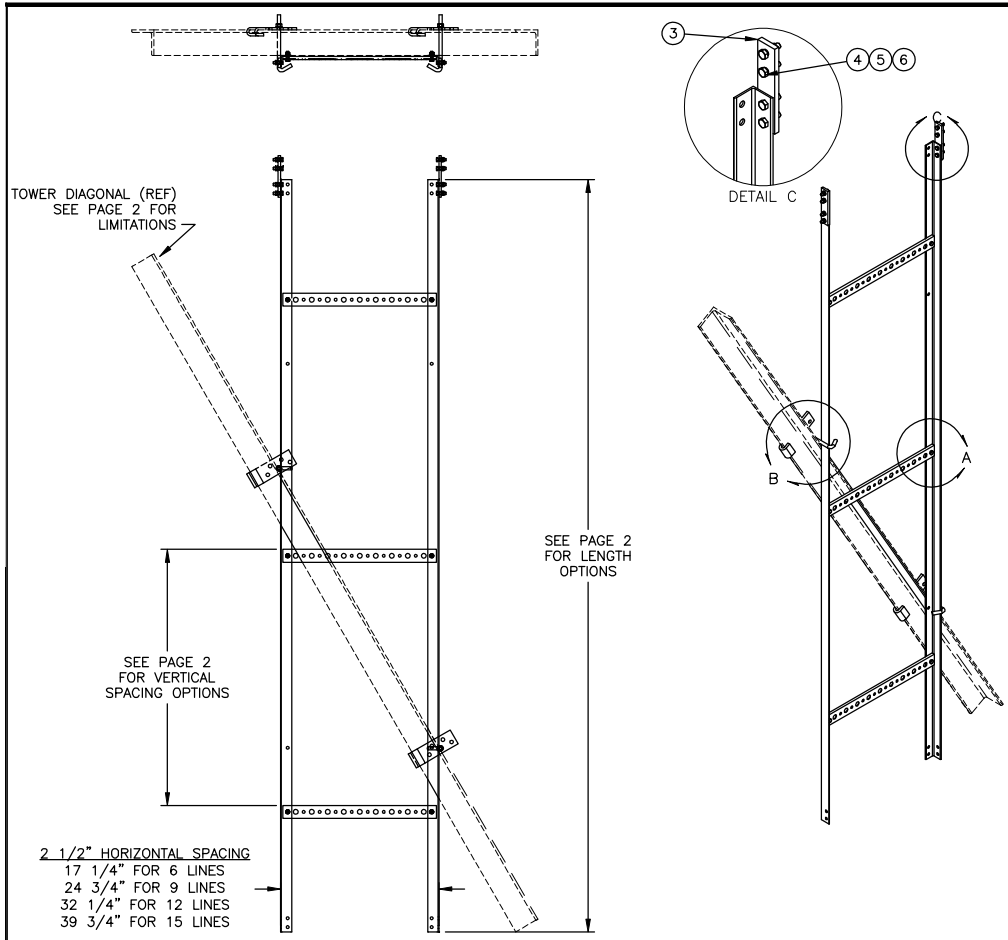
**TOLERANCE NOTE:**  
 TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
 BENDS ARE (+ OR -) 1/2 DEGREE.

DR BY	CPD NO.	DRAWING USAGE	PART NO.
TWR	01/23/2001	2408 CUSTOMER	
ENG. APPROVAL	CHECKED BY	DWG. NO.	
DJI	01/04/2002 KWD	01/04/2002	

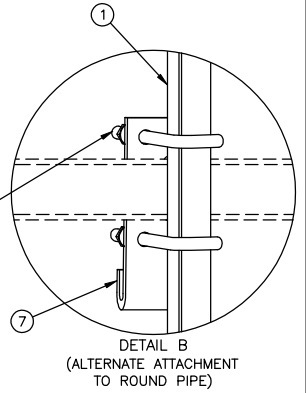
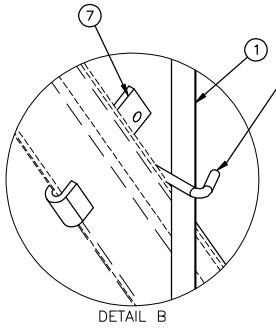
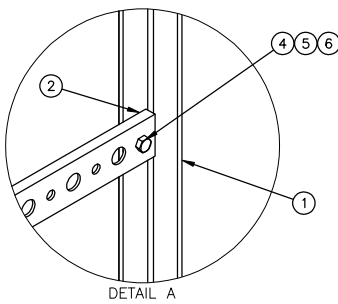
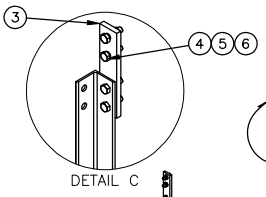
152940	1 OF 2
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LEG SIZE	ASSEMBLY PART NO.	A PART NO.	B PART NO.	C PART NO.	D LENGTH	E PART NO.	F LENGTH	G LOCKWASHER	H PLAIN NUT	ROD DIAMETER	TOTAL WEIGHT
7/8" TO 1 1/2"	152940	116839	100064	141067	3"	101620	4"-0"	312063	312500	1/2"	13.22#
1 3/4" TO 2 1/2"	152941	116839	100064	141069	4"	101620	4"-0"	312063	312500	1/2"	13.30#
2 3/4" TO 4"	152942	116839	104223	141073	5 1/2"	101620	4"-0"	312063	312500	1/2"	13.79#
4 1/4" TO 5"	161140	116839	104223	141074	6 1/2"	101620	4"-0"	312063	312500	1/2"	13.97#
7/8" TO 1 1/2"	152943	136043	100064	141067	3"	126031	7'-6"	312123	312501	5/8"	19.46#
1 3/4" TO 2 1/2"	152944	136043	100064	141069	4"	126031	7'-6"	312123	312501	5/8"	19.54#
2 3/4" TO 4"	152945	136043	104223	141073	5 1/2"	126031	7'-6"	312123	312501	5/8"	20.03#
4 1/4" TO 5"	161141	136043	104223	141074	6 1/2"	126031	7'-6"	312123	312501	5/8"	20.15#
7/8" TO 1 1/2"	152946	136043	100064	141067	3"	123789	10'-0"	312123	312501	5/8"	22.37#
1 3/4" TO 2 1/2"	152947	136043	100064	141069	4"	123789	10'-0"	312123	312501	5/8"	22.45#
2 3/4" TO 4"	152948	136043	104223	141073	5 1/2"	123789	10'-0"	312123	312501	5/8"	22.94#
4 1/4" TO 5"	161142	136043	104223	141074	6 1/2"	123789	10'-0"	312123	312501	5/8"	23.06#

				<b>PROPRIETARY NOTE:</b> THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.				DESCRIPTION LEG MOUNTED LIGHTNING ROD BRACKET ASSEMBLIES				 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR			
<b>TOLERANCE NOTE:</b> TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.				DR BY TWR 01/23/2001		CPD NO. 2408		DRAWING USAGE CUSTOMER		PART NO. 152940					
REV. DESCRIPTION OF REVISIONS B ADDED PLAIN NUT AND LOCKWASHER A ADDED P/N'S TO CHART AND PG. 2				CPD BY DATE 2888 DLK 12/14/2001 2717 DLK 12/04/2001		ENG. APPROVAL DJI 01/04/2002		CHECKED BY KWD 01/04/2002		DWG. NO. 152940 2 OF 2					



PARTS LIST				
ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT
1	2	A	VERTICAL LADDER ANGLE	
2	B	C	HORIZONTAL LADDER CHANNEL	
3	2	163940	VERTICAL ANGLE CONNECTION PLATE	0.75#
4	D	311018	3/8" X 1 1/4" BOLT	0.05#
5	D	312023	3/8" LOCK WASHER	0.01#
6	D	154413	3/8" PLAIN NUT	0.03#
7	E	162821	DIAGONAL CONNECTION PLATE	1.63#
8	E	163064	1/2" X 8" J-BOLT	0.66#
9	E	312063	1/2" LOCK WASHER	0.01#
10	E	312500	1/2" PLAIN NUT	0.05#



1002	SAN	03/04/2013	CPD	BY	DATE
5174	SAN	06/06/2012	CPD	BY	DATE

**PROPRIETARY NOTE:**  
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**TOLERANCE NOTE:**  
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
BENDS ARE (+ OR -) 1/2 DEGREE.

DESCRIPTION <b>TRANSMISSION LINE LADDER ASSEMBLIES</b>	
DR BY SAN 02/08/2010	CPD NO. 4691
ENG. APPROVAL MVC 03/06/2013	DRAWING USAGE CUSTOMER CHECKED BY MVC 03/06/2013


1-877-467-4763 Plymouth, IN  
1-888-880-9191 Salem, OR

PART NO.	SEE TABLE
DWG. NO.	229701

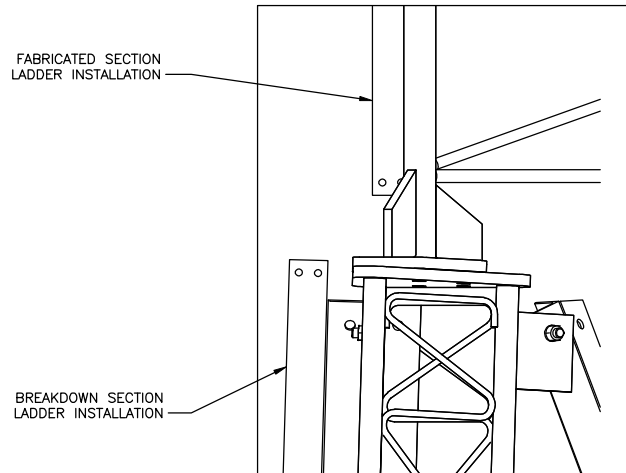
03/11/13

2 1/2" HORIZONTAL SPACING									
			ASSEMBLY PART#	A	B	C	D	E	WEIGHT
6 LINES MIN. 24" FACE WIDTH	10' LONG	2' SPACING	229701	209273	5	237473	18	2	42.25#
		3'-4" SPACING	229702	168058	3	237473	14	2	41.15#
		5' SPACING	229703	168058	2	237473	12	2	39.10#
	20' LONG	2' SPACING	229704	209274	10	237473	28	4	86.30#
		3'-4" SPACING	229705	168059	6	237473	20	4	78.10#
		5' SPACING	229706	168059	4	237473	16	4	76.00#
9 LINES MIN. 30" FACE WIDTH	10' LONG	2' SPACING	229707	209273	5	237474	18	2	49.50#
		3'-4" SPACING	229708	168058	3	237474	14	2	43.70#
		5' SPACING	229709	168058	2	237474	12	2	40.80#
	20' LONG	2' SPACING	229710	209274	10	237474	28	4	96.80#
		3'-4" SPACING	229711	168059	6	237474	20	4	85.20#
		5' SPACING	229712	168059	4	237474	16	4	81.10#
12 LINES MIN. 42" FACE WIDTH	10' LONG	2' SPACING	229713	209273	5	237487	18	2	50.45#
		3'-4" SPACING	229714	168058	3	237487	14	2	42.95#
		5' SPACING	229715	168058	2	237487	12	2	40.30#
	20' LONG	2' SPACING	229716	209274	10	237487	28	4	98.70#
		3'-4" SPACING	229717	168059	6	237487	20	4	83.70#
		5' SPACING	229718	168059	4	237487	16	4	78.40#
15 LINES MIN. 48" FACE WIDTH	10' LONG	2' SPACING	229719	209273	5	237475	18	2	57.90#
		3'-4" SPACING	229720	168058	3	237475	14	2	48.74#
		5' SPACING	229721	168058	2	237475	12	2	44.16#
	20' LONG	2' SPACING	229722	209274	10	237475	28	4	113.60#
		3'-4" SPACING	229723	168059	6	237475	20	4	95.28#
		5' SPACING	229724	168059	4	237475	16	4	86.12#

**\*\*NOTE: THESE ASSEMBLIES ARE TO BE USED ON 18" BACK TO BACK, ALL 12", SU AND FABRICATED SECTIONS. THEY WILL FIT ANGLES UP TO 1/2" X 5". FOR ANGLES 5 1/4" TO 6" LONGER J-BOLT PART NUMBER 163065 MUST BE USED.**

			PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.			DESCRIPTION TRANSMISSION LINE LADDER ASSEMBLIES			 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR		
©B ADDED MIN. FACE WIDTH TO TABLE & PAGE 3 ©A REVISED COLUMN C P/N's REV. DESCRIPTION OF REVISIONS	10020 5174	SAN SAN	03/04/2013 06/06/2012	TOLERANCE NOTE: TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.	DR BY SAN	CPD NO. 4691	DRAWING USAGE CUSTOMER	PART NO. SEE TABLE	DWG. NO. 229701	03/06/2013 03/06/2013	03/06/2013

NOTE:  
 ON TOWERS WITH BREAKDOWN LEGS THE WAVEGUIDE LADDER IS NOT SPLICED TOGETHER WHERE IT MAKES THE TRANSITION FROM BREAKDOWN LEGS TO FABRICATED SECTION. THIS IS DUE TO THE INWARD OFFSET OF THE FABRICATED SECTION RELATIVE TO THE FACE OF THE BREAKDOWN LEGS.



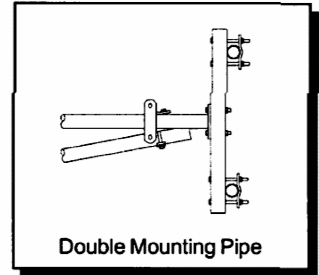
				<b>PROPRIETARY NOTE:</b> THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.		<b>DESCRIPTION</b> TRANSMISSION LINE LADDER ASSEMBLIES		 1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR		
<b>©B</b> ADDED MIN. FACE WIDTH TO TABLE & PAGE 3 <b>©A</b> REVISED COLUMN C P/N's	10020 5174	SAN SAN	03/04/2013 06/06/2012	<b>TOLERANCE NOTE:</b> TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.		DR BY SAN 02/08/2010	CPD NO. 4691	DRAWING USAGE CUSTOMER	PART NO. SEE TABLE	C4 0 11 R1 C4
REV. DESCRIPTION OF REVISIONS	CPD	BY	DATE	ENG. APPROVAL MVC 03/06/2013	CHECKED BY MVC 03/06/2013	DWG. NO. 229701				

# 6' SIDE ARM

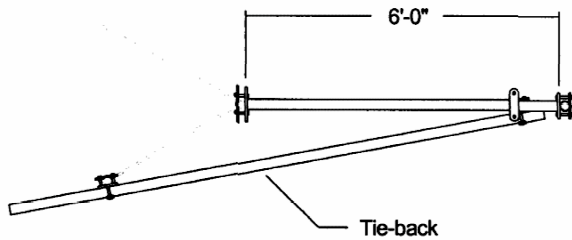
(Dwg. # 141263 Rev. D / 04/02/2002)



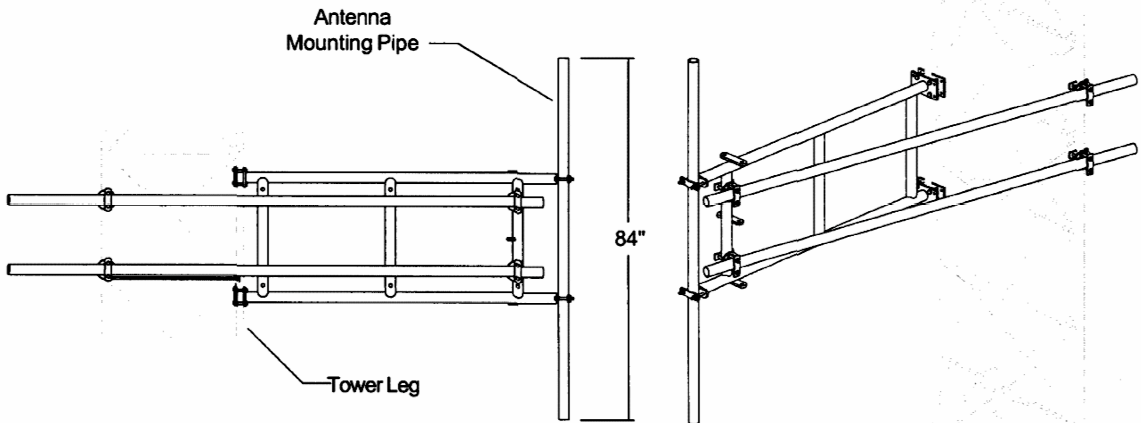
Cost effective antenna mounting system that does not require candelabra angles for tower attachment. The 6' Side Arm attaches directly to the tower leg and is stabilized by two sturdy tie-back arms. Antenna mounting pipes are available in 2" (2-3/8" O.D.) or 3" (3-1/2" O.D.) single and double pipe configurations. Standard pipe length is 84". Mounts on tower legs 7/8" through 5-1/2" in diameter. Shim kits are available for Tapered Sections. Approximate mount capacity would be 20 sq. ft. distributed at the end of the mount considering 90 mph basic windspeed with 1/2" radial ice at 200' elevation<sup>1</sup>.



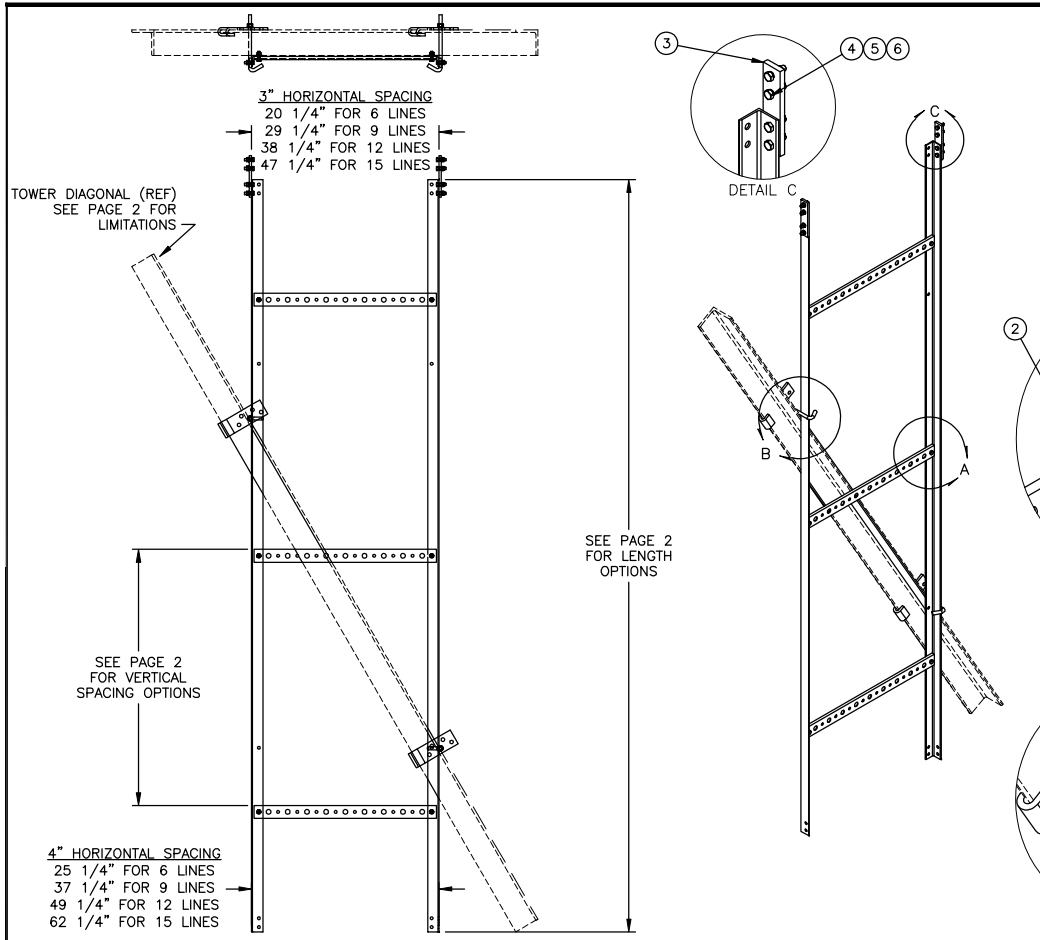
<sup>1</sup> Capacity of mount is provided for comparison purposes only and is valid for conditions specified. Call PiRod for capacity on your specific installation. Actual load capacity is dependent on basic windspeed, ice load, height of mount and other factors specific to individual installations. All PiRod antenna mounts are designed and manufactured in accordance with ANSI/TIA/EIA-222-F standards. See page 37 for additional mount capacity information.



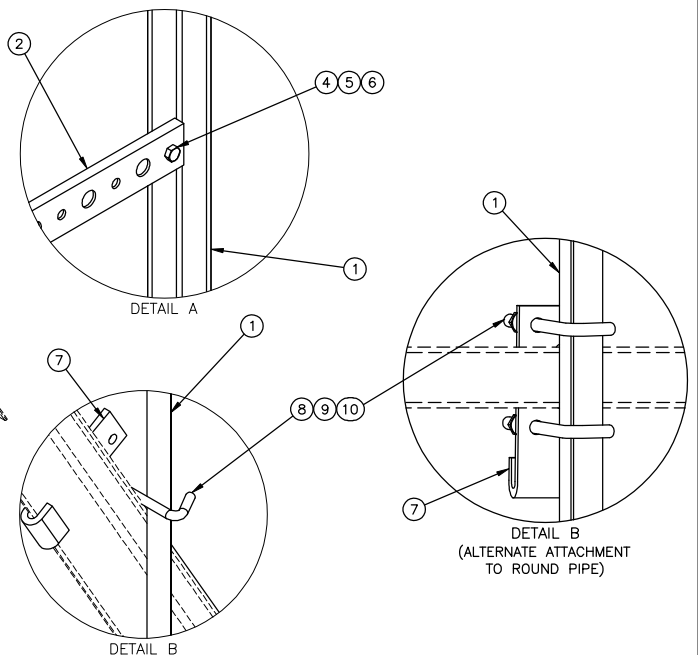
**Note:**  
6' Side Arms must be mounted as close as possible to the point where the diagonal bracing intersects the leg of the tower.



Leg Size	Antenna Mounting			
	2" pipe	3" pipe	Double 2" pipe	Double 3" pipe
Leg 7/8" thru 1-1/4"	807000	807004	807008	807012
Leg 1-1/2" thru 2-3/4"	807001	807005	807009	807013
Leg 3" thru 3-1/2"	807002	807006	807010	807014
Leg 3-3/4 thru 5-1/2"	807003	807007	807011	807015
<b>Price</b>	<b>378.00</b>	<b>408.00</b>	<b>467.00</b>	<b>525.00</b>



PARTS LIST				
ITEM	QTY	PART NO.	DESCRIPTION	WEIGHT
1	2	A	VERTICAL LADDER ANGLE	
2	B	C	HORIZONTAL LADDER CHANNEL	
3	2	163940	VERTICAL ANGLE CONNECTION PLATE	0.75#
4	D	311018	3/8" X 1 1/4" BOLT	0.05#
5	D	312023	3/8" LOCK WASHER	0.01#
6	D	154413	3/8" PLAIN NUT	0.03#
7	E	162821	DIAGONAL CONNECTION PLATE	1.63#
8	E	163064	1/2" X 8" J-BOLT	0.66#
9	E	312063	1/2" LOCK WASHER	0.01#
10	E	312500	1/2" PLAIN NUT	0.05#




REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE
ⓄF	ADDED MIN. FACE WIDTH TO TABLE & PAGE 3	1002	SAN	03/04/2013
ⓄE	CHANGED NOTE	4286	CEK	03/06/2008
ⓄD	ADDED P/N's FOR 2' SPACING	4227	SAN	11/28/2007
ⓄC	ADDED DETAIL VIEW	3521	SAN	03/24/2004
ⓄB	ADDED P/N's 175870,175871,175876 - 175883	3458	SAN	07/23/2003
ⓄA	REVISED VERTICAL ANGLE PART NUMBER	3203	TWR	09/17/2002

**PROPRIETARY NOTE:**  
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**TOLERANCE NOTE:**  
 TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060".  
 BENDS ARE (+ OR -) 1/2 DEGREE.

DESCRIPTION			
<b>TRANSMISSION LINE LADDER ASSEMBLIES</b>			
DR BY	CPD NO.	DRAWING USAGE	PART NO.
TWR 09/06/2002	3203	CUSTOMER	
ENG. APPROVAL	CHECKED BY	DWG. NO.	
MVC 03/06/2013	MVC 03/06/2013	167929	



**valmont**  
STRUCTURES

1-877-467-4763 Plymouth, IN  
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03/11/13



3" HORIZONTAL SPACING									
		ASSEMBLY PART#		A	B	C	D	E	WEIGHT
6 LINES MIN. 24" FACE WIDTH	10' LONG	2' SPACING	215090	209273	5	167920	18	2	44.5#
		3'-4" SPACING	167929	168058	3	167920	14	2	40.7#
		5' SPACING	167930	168058	2	167920	12	2	38.8#
	20' LONG	2' SPACING	215091	209274	10	167920	28	4	84.8#
		3'-4" SPACING	167931	168059	6	167920	20	4	77.2#
		5' SPACING	167932	168059	4	167920	16	4	75.4#
9 LINES MIN. 36" FACE WIDTH	10' LONG	2' SPACING	215092	209273	5	167921	18	2	48.5#
		3'-4" SPACING	167933	168058	3	167921	14	2	43.1#
		5' SPACING	167934	168058	2	167921	12	2	40.4#
	20' LONG	2' SPACING	215093	209274	10	167921	28	4	94.8#
		3'-4" SPACING	167935	168059	6	167921	20	4	84.0#
		5' SPACING	167936	168059	4	167921	16	4	80.3#
12 LINES MIN. 48" FACE WIDTH	10' LONG	2' SPACING	215094	209273	5	167922	18	2	54.7#
		3'-4" SPACING	167937	168058	3	167922	14	2	45.5#
		5' SPACING	167938	168058	2	167922	12	2	42.0#
	20' LONG	2' SPACING	215095	209274	10	167922	28	4	107.2#
		3'-4" SPACING	167939	168059	6	167922	20	4	88.8#
		5' SPACING	167940	168059	4	167922	16	4	81.8#
15 LINES MIN. 54" FACE WIDTH	10' LONG	2' SPACING	215096	209273	5	175870	18	2	57.5#
		3'-4" SPACING	175876	168058	3	175870	14	2	48.5#
		5' SPACING	175877	168058	2	175870	12	2	44.0#
	20' LONG	2' SPACING	215097	209274	10	175870	28	4	112.8#
		3'-4" SPACING	175878	168059	6	175870	20	4	94.8#
		5' SPACING	175879	168059	4	175870	16	4	85.8#

4" HORIZONTAL SPACING									
		ASSEMBLY PART#		A	B	C	D	E	WEIGHT
6 LINES MIN. 30" FACE WIDTH	10' LONG	2' SPACING	215098	209273	5	167923	18	2	45.9#
		3'-4" SPACING	167941	168058	3	167923	14	2	42.1#
		5' SPACING	167942	168058	2	167923	12	2	39.7#
	20' LONG	2' SPACING	215099	209274	10	167923	28	4	86.3#
		3'-4" SPACING	167943	168059	6	167923	20	4	82.1#
		5' SPACING	167944	168059	4	167923	16	4	77.3#
9 LINES MIN. 42" FACE WIDTH	10' LONG	2' SPACING	215100	209273	5	167924	18	2	50.8#
		3'-4" SPACING	167945	168058	3	167924	14	2	45.4#
		5' SPACING	167946	168058	2	167924	12	2	41.9#
	20' LONG	2' SPACING	215101	209274	10	167924	28	4	99.4#
		3'-4" SPACING	167947	168059	6	167924	20	4	88.6#
		5' SPACING	167948	168059	4	167924	16	4	81.7#
12 LINES MIN. 54" FACE WIDTH	10' LONG	2' SPACING	215102	209273	5	167927	18	2	57.8#
		3'-4" SPACING	167949	168058	3	167927	14	2	48.6#
		5' SPACING	167950	168058	2	167927	12	2	44.1#
	20' LONG	2' SPACING	215103	209274	10	167927	28	4	113.5#
		3'-4" SPACING	167951	168059	6	167927	20	4	95.1#
		5' SPACING	167952	168059	4	167927	16	4	86.0#
15 LINES MIN. 66" FACE WIDTH	10' LONG	2' SPACING	215104	209273	5	175871	18	2	65.1#
		3'-4" SPACING	175880	168058	3	175871	14	2	56.1#
		5' SPACING	175881	168058	2	175871	12	2	49.1#
	20' LONG	2' SPACING	215105	209274	10	175871	28	4	128.1#
		3'-4" SPACING	175882	168059	6	175871	20	4	110.1#
		5' SPACING	175883	168059	4	175871	16	4	96.0#


**\*\*NOTE: THESE ASSEMBLIES ARE TO BE USED ON 18" BACK TO BACK, ALL 12", SU AND FABRICATED SECTIONS. THEY WILL FIT ANGLES UP TO 1/2" X 5". FOR ANGLES 5 1/4" TO 6" LONGER J-BOLT PART NUMBER 163065 MUST BE USED.**

①	ADDED MIN. FACE WIDTH TO TABLE & PAGE 3	10020	SAN	03/04/2013
②	CHANGED NOTE	4286	CEK	03/06/2008
③	ADDED P/N's FOR 2' SPACING	4227	SAN	11/28/2007
④	ADDED DETAIL VIEW	3521	SAN	03/24/2004
⑤	ADDED P/N's 175870,175871,175876 - 175883	3458	SAN	07/23/2003
⑥	REVISED VERTICAL ANGLE PART NUMBER	3203	TWR	09/17/2002
REV.	DESCRIPTION OF REVISIONS	CPD	BY	DATE

**PROPRIETARY NOTE:**  
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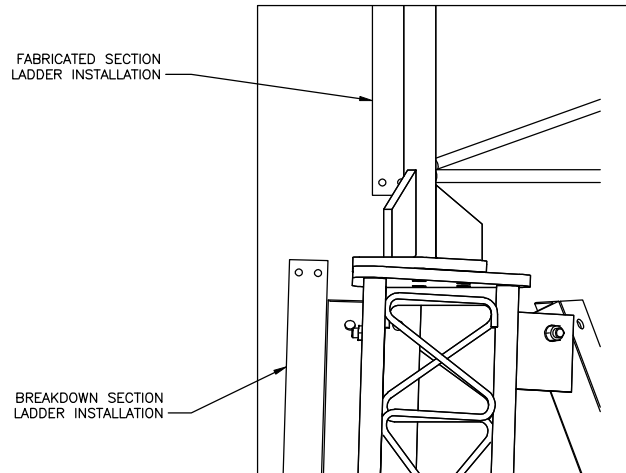
**TOLERANCE NOTE:**  
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.

DESCRIPTION			
TRANSMISSION LINE LADDER ASSEMBLIES			
DR BY	CPD NO.	DRAWING USAGE	
TWR 09/06/2002	3203	CUSTOMER	
ENG. APPROVAL	CHECKED BY		
MVC 03/06/2013	MVC 03/06/2013		

	
1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR	
PART NO.	
DWG. NO.	167929

13  
 0  
 11  
 61

NOTE:  
 ON TOWERS WITH BREAKDOWN LEGS THE WAVEGUIDE LADDER IS NOT SPLICED TOGETHER WHERE IT MAKES THE TRANSITION FROM BREAKDOWN LEGS TO FABRICATED SECTION. THIS IS DUE TO THE INWARD OFFSET OF THE FABRICATED SECTION RELATIVE TO THE FACE OF THE BREAKDOWN LEGS.



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①F ADDED MIN. FACE WIDTH TO TABLE & PAGE 3 ①E CHANGED NOTE ①D ADDED P/N's FOR 2' SPACING ①C ADDED DETAIL VIEW ①B ADDED P/N's 175870,175871,175876 - 175883 ①A REVISED VERTICAL ANGLE PART NUMBER REV. DESCRIPTION OF REVISIONS CPD BY DATE	10020 4286 4227 3521 3458 3203	SAN CEK SAN SAN SAN TWR	03/04/2013 03/06/2008 11/28/2007 03/24/2004 07/23/2003 09/17/2002	TOLERANCE NOTE: TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ARE (PLUS OR MINUS) MACHINING 0.030" AND STRUCTURAL 0.060". BENDS ARE (+ OR -) 1/2 DEGREE.	DR BY TWR 09/06/2002 ENG. APPROVAL MVC 03/06/2013	CPD NO. 3203 CHECKED BY MVC 03/06/2013	DRAWING USAGE CUSTOMER PART NO. DWG. NO.	1-877-467-4763 Plymouth, IN 1-888-880-9191 Salem, OR <b>STRUCTURES</b> 167929	C4 O T R

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