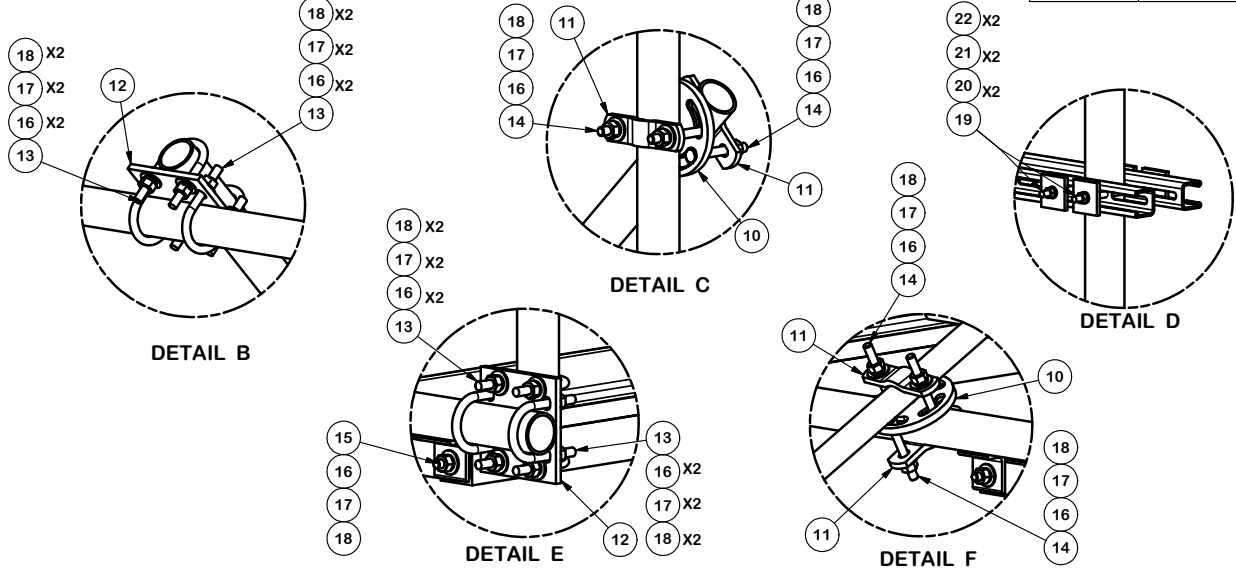


PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	P2174	2-3/8" OD X 174" SCH 40 GALVANIZED PIPE	174 in	55.75	222.98
2	1	P2150	2-3/8" OD X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	45.77
3	2	P2126	2-3/8" OD X 126" SCH 40 GALVANIZED PIPE	126 in	40.75	81.50
4	2	P272	2-3/8" X 72" SCH 40 GALVANIZED PIPE	72 in	23.07	46.13
5	2	P263	2-3/8" X 63" SCH 40 GALVANIZED PIPE	63 in	20.18	40.37
6	2	P1126	1 1/4" X 126" SCH 40 PIPE (STIFF ARM)	126 in	25.12	50.23
7	4	X-232696	BALLAST TRAY WELDMENT - SITE PRO 1		66.53	266.13
8	2	X-RTP12	FRONT AND BACK HORIZONTAL TRAY SUPPORT WELDMENT		53.92	107.84
9	6	UNT10	UNISTRUT	120 in	20.38	122.27
10	8	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALV.)		2.51	20.05
11	16	X-100064	CLAMP (4" V-CLAMP) GALVANIZED		0.91	14.61
12	14	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6 in	3.71	51.92
13	56	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	35.01
14	32	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD	4 in	0.27	8.64
15	16	G1202	1/2" x 2" HDG HEX BOLT GR5	2 in	0.18	2.81
16	160	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	5.45
17	160	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	2.22
18	160	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	11.46
19	12	SS38R-8	3/8" X 8" THREADED ROD (STAINLESS STEEL)		0.25	3.01
20	24	SQW38	3/8" SQUARE WASHER	2 in	0.29	6.94
21	24	SS38LW	3/8" SS LOCKWASHER		0.01	0.16
22	24	SS38NUT	3/8" SS HEX NUT		0.02	0.44
				TOTAL WT. #	1145.97	

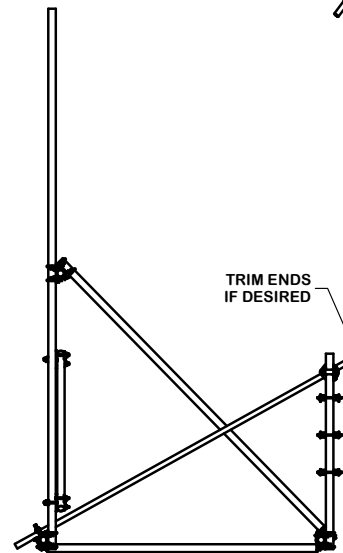
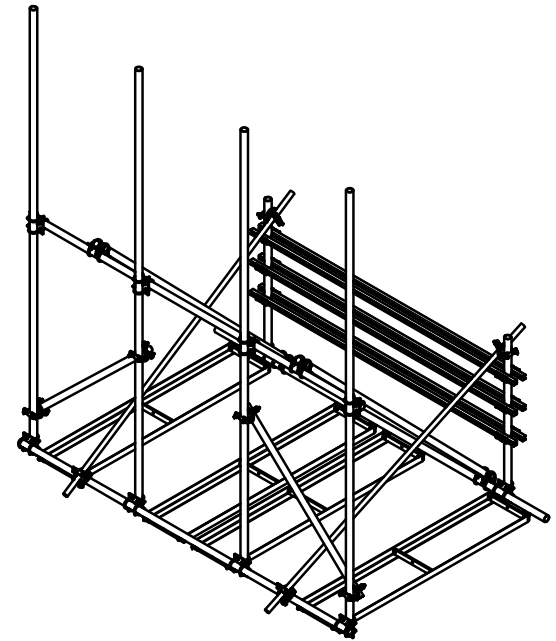
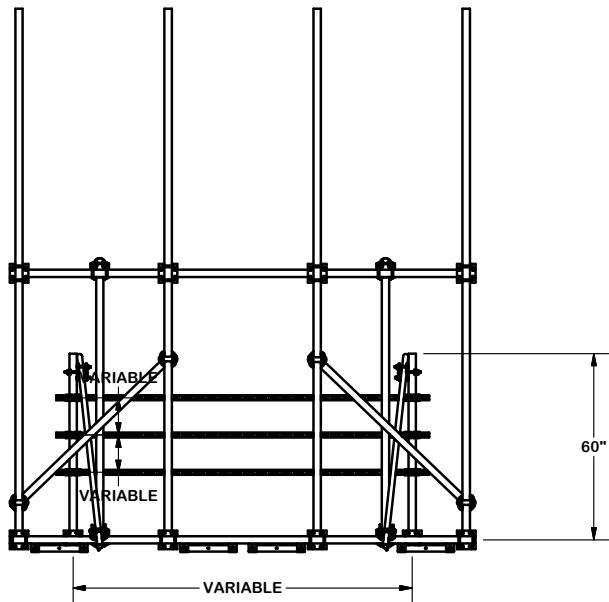
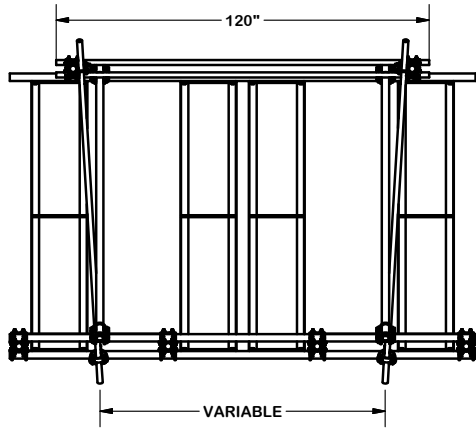


**TOLERANCE NOTES**  
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL 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		3 LEVEL RRU / EQUIPMENT RACK FOR RTP FRAMES	
CPD NO.	DRAWN BY	ENG. APPROVAL	
	CEK 4/23/2015		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER	BMC 4/24/2015

 Engineering Support Team: 1-888-753-7446	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX		
	A valmont COMPANY		
PART NO.	RTP12-3RRU	PAGE	1 OF 3
DWG. NO.	RTP12-3RRU		



**TOLERANCE NOTES**

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 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
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DESCRIPTION

3 LEVEL  
 RRU / EQUIPMENT RACK  
 FOR RTP FRAMES

CPD NO.	DRAWN BY	ENG. APPROVAL
CLASS	DRAWING USAGE	CHECKED BY
81	01	BMC 4/24/2015
	CUSTOMER	

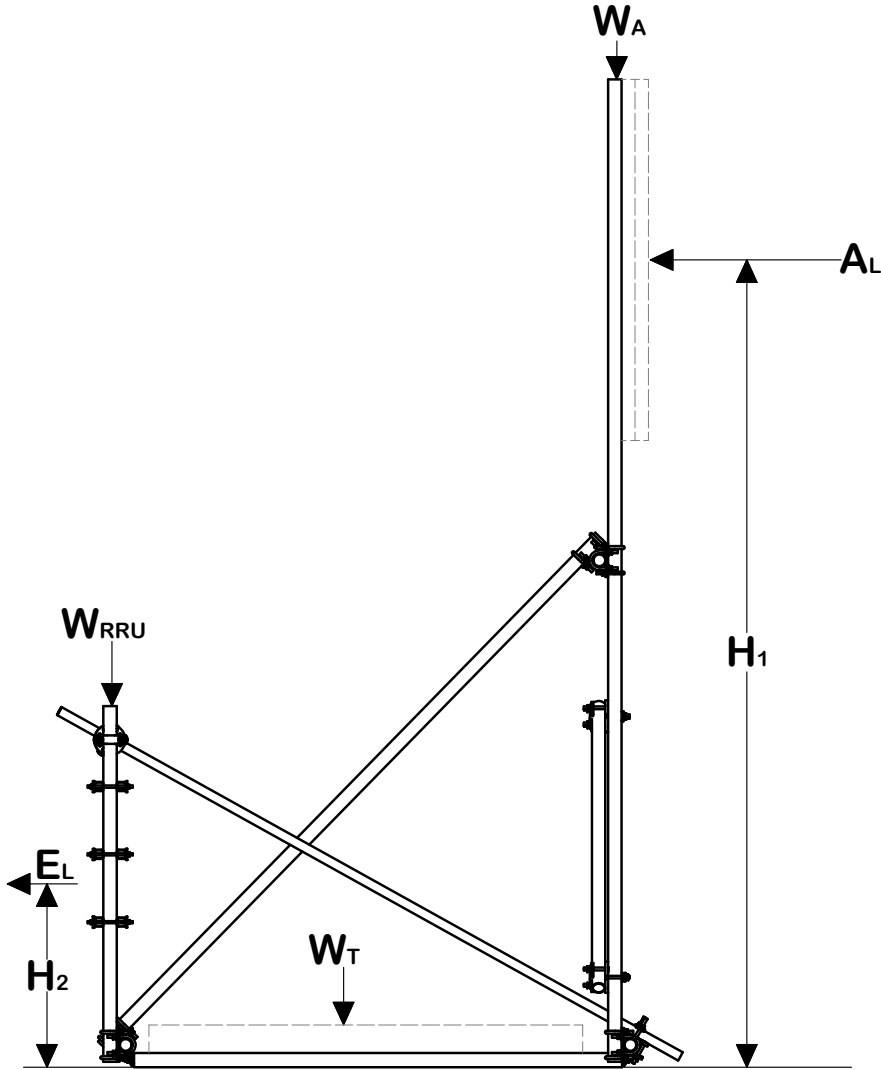


Engineering  
 Support Team:  
 1-888-753-7446

Locations:  
 New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Plymouth, IN  
 Salem, OR  
 Dallas, TX

PART NO.	RTP12-3RRU
DWG. NO.	RTP12-3RRU

# RTP FRAMES & RTP-RRU BALLAST EQUATIONS



BALLAST EQUATION WITH 1.5 SAFETY FACTOR:

$$\text{FRONT WIND} = W_T = \frac{(((AL * H_1) + (EL * H_2)) * 1.5) - (W_A * 7.25)}{3.625}$$

$$\text{BACK WIND} = W_T = \frac{(((AL * H_1) + (-EL * H_2)) * 1.5) - (W_{RRU} * 7.25)}{3.625}$$

BALLAST EQUATION WITH REV. G LOADING:

$$\text{FRONT WIND} = W_T = \frac{(((AL * H_1) + (EL * H_2)) * 1.6) - (W_A * 7.25)}{3.625 (0.9)}$$

$$\text{BACK WIND} = W_T = \frac{(((AL * H_1) + (-EL * H_2)) * 1.6) - (W_{RRU} * 7.25)}{3.625 (0.9)}$$

$$W = W_T / 4$$

- EL = EQUIPMENT LOAD (NON-FACTORED) lbs
- AL = ANTENNA LOAD (NON-FACTORED) lbs
- H<sub>1</sub> & H<sub>2</sub> = HEIGHT FROM ROOFTOP ft
- W<sub>T</sub> = TOTAL BALLAST WEIGHT lbs
- W = BALLAST WEIGHT PER TRAY lbs
- W<sub>RRU</sub> = 200 + EQUIPMENT WEIGHT lbs
- W<sub>A</sub> = 260 + ANTENNA WEIGHT lbs

**TOLERANCE NOTES**

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

PROPRIETARY NOTE:  
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DESCRIPTION  
**3 LEVEL  
 RRU / EQUIPMENT RACK  
 FOR RTP FRAMES**

**SITE PRO 1**  
 Engineering Support Team:  
 1-888-753-7446  
 Locations:  
 New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Plymouth, IN  
 Salem, OR  
 Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL
CLASS	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER
		BMC 4/24/2015

PART NO.	RTP12-3RRU
DWG. NO.	RTP12-3RRU