

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

July 14, 2011

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **TS-VER-124-100823** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 6 Progress Avenue, Seymour, Connecticut.
Request for Extension

Dear Attorney Baldwin:

At a public meeting held July 14, 2011, the Connecticut Siting Council (Council) considered your request for a 12-month extension, dated June 7, 2011, and granted the extension of time until September 24, 2012. This extension is granted with the understanding that the Council will be notified should Cellco Partnership decide not to proceed with the tower sharing request.

Thank you for your attention and cooperation.

Very truly yours,

Robert Stein *RS*
Chairman

RS/CDM/laf

c: The Honorable Paul F. Roy, First Selectman, Town of Seymour
James Baldwin, Sr., Zoning Enforcement Officer, Town of Seymour
EMAC Communications, LLC

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280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

June 7, 2011

Via Electronic Mail

ORIGINAL

Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **TS-VER-124-100823**
6 Progress Avenue, Seymour, Connecticut

Dear Ms. Roberts:

By letter of September 24, 2010, Siting Council staff acknowledged receipt of the above-referenced tower share filing for Cellco's shared use of the existing tower at 6 Progress Avenue in Seymour, Connecticut. The acknowledgement letter states that the validity of the staff's action will expire one year from the date of the acknowledgement.

The purpose of this letter is to inform you that, Cellco intends to move forward with the construction of this cell site, but will not do until calendar year 2012. We are, therefore, requesting that the Council staff extend the time period of its acknowledgement for an additional 12 months until September 24, 2012.

Thank you in advance for your cooperation.

Sincerely,



Kenneth C. Baldwin

KCB/kmd
Copy to:
Sandy M. Carter



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Phone: (860) 827-2935 Fax: (860) 827-2950

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Internet: ct.gov/csc

Daniel F. Caruso
Chairman

September 24, 2010

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **TS-VER-124-100823** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 6 Progress Avenue, Seymour, Connecticut.

Dear Attorney Baldwin:

At a public meeting held September 23, 2010, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated August 23, 2010 and additional correspondence dated August 31, 2010, including the placement of all necessary equipment and shelters within the tower compound.

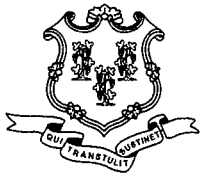
Thank you for your attention and cooperation.

Very truly yours,

Daniel F. Caruso
Chairman

DFC/CDM/laf

c: The Honorable Paul F. Roy, First Selectman, Town of Seymour
James Baldwin, Sr., Zoning Enforcement Officer, Town of Seymour
EMAC Communications, LLC



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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Daniel F. Caruso
Chairman

August 26, 2010

The Honorable Paul F. Roy
First Selectman
Town of Seymour
Town Hall
One First Street
Seymour, CT 06483

RE: **EM-VER-124-100823**- Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 6 Progress Avenue, Seymour, Connecticut.

Dear First Selectman Roy:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by September 9, 2010.

Thank you for your cooperation and consideration.

Very truly yours,

Melanie Bachman
Acting Executive Director

MB/jbw

Enclosure: Notice of Intent

c: James Baldwin, Sr., Zoning Enforcement Officer, Town of Seymour

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August 31, 2010

ORIGINAL

Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of a Tower Facility at 6 Progress Avenue, Seymour, Connecticut**

Dear Ms. Roberts:

On August 23, 2010, Cellco Partnership d/b/a Verizon Wireless ("Cellco") filed a notice of exempt modification with the Connecticut Siting Council ("Council") for the installation of its antennas on the existing telecommunications tower at the above-referenced address. Pursuant to a recent Council directive, modifications to existing facilities that involve the placement of antennas of a new carrier on that structure, should take the form of a tower share request rather than a notice of exempt modification. I write, therefore, to request that the Cellco August 23, 2010 filing be treated as a tower share request pursuant to the provisions of Connecticut General Statutes § 16-50aa, as amended. All future filings of this sort will comply with the Council's directive.

In support of this request, Cellco respectfully submits that the proposed shared use of the existing tower at 6 Progress Avenue in Seymour, Connecticut is technically, legally, environmentally and economically feasible and meets public safety concerns. The shared use of the existing tower satisfies those criteria as follows:

A. Technical Feasibility. The existing tower is structurally capable of supporting Cellco's antennas. The proposed shared use of this tower, therefore, is



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Linda Roberts
August 31, 2010
Page 2

technically feasible. A report verifying the structural integrity of the tower was included in Cellco's August 23, 2010 filing.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the proposed shared use of an existing tower facility such as the facility in Seymour. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use would have a minimal environmental effect, for the following reasons:

1. The proposed installations would have an insignificant incremental visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing site. Cellco will install its antennas at the 140-foot level on the existing 280-foot tower. The proposed installations will not require expansion of the existing lease area.
2. The proposed installations would not increase the noise levels at the existing facility by six decibels or more.
3. Operation of Cellco antennas at this site would not exceed the total radio frequency (RF) electromagnetic radiation power density level adopted by the Federal Communications Commission. The "worst-case" exposure calculated for operation of Cellco's facility (i.e., calculated at the base of the tower), would be 37.3% of the standard). See Power Density Calculation Table attached to Cellco's August 23, 2010 filing.
4. The proposed Cellco installation, would not require any water or sanitary facilities, or generate air emissions or discharges to water or sanitary facilities, or generate air emissions or



Linda Roberts
August 31, 2010
Page 3

discharges to water bodies. After construction is complete the proposed installations would not generate any traffic other than periodic maintenance visits.

The proposed use of this facility would therefore have a minimal environmental effect, and is environmentally feasible.

D. Economic Feasibility. EMAC, the tower owner and Cellco have entered into a mutual agreement to share the use of the tower on terms agreeable to the parties. The proposed tower sharing is therefore economically feasible.

E. Public Safety Concerns. As stated above, the tower is structurally capable of supporting the Cellco antennas. Cellco is not aware of any public safety concerns relative to the proposed sharing of the existing tower. In fact, the provision of new or improved phone service through shared use of the existing tower is expected to enhance the safety and welfare of area residents.

Thank you for your consideration of this matter.

Sincerely,



Kenneth C. Baldwin

KCB/kmd

Copy to:

David C. Martin, Siting Analyst



280 Trumbull Street
 Hartford, CT 06103-3597
 Main (860) 275-8200
 Fax (860) 275-8299
 kbaldwin@rc.com
 Direct (860) 275-8345

August 23, 2010

Via Hand Delivery

ORIGINAL RECEIVED
 AUG 23 2010
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 SITING COUNCIL

Linda Roberts
 Executive Director
 Connecticut Siting Council
 10 Franklin Square
 New Britain, CT 06051

Re: **Notice of Exempt Modification
 6 Progress Avenue, Seymour, Connecticut**

Dear Ms. Roberts:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") intends to install antennas on the existing 280-foot self-supporting lattice tower owned by EMAC Communications, LLC ("EMAC") at 6 Progress Avenue in Seymour, Connecticut. Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Seymour's First Selectman, Paul Roy and EMAC, the owner of the property on which the tower is located.

The facility consists of a 280-foot self-supporting lattice tower capable of supporting multiple carriers within a fenced compound at 6 Progress Avenue in Seymour. The tower is currently shared by T-Mobile with antennas at the 250-foot level; Town of Seymour with antennas at the 235-foot level; Sprint with antennas at the 170-foot level; AT&T with antennas at the 160-foot level; and Pocket Communications with antennas at the 150-foot level on the tower. Cellco intends to install twelve (12) panel-type antennas at the 140-foot level on the tower and place a 10' x 20' equipment shelter within the existing fenced compound. Cellco will not be installing its own back-up generator at this site, but will share the property owner's existing natural gas-fueled generator, located inside the property owner's building adjacent to the tower compound. Attached behind Tab 1 are Project Plans for the proposed modified facility.

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Linda Roberts
August 23, 2010
Page 2

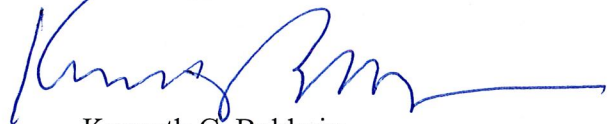
The planned modifications to the Seymour facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modification will not increase the overall height of the existing tower. Cellco's antennas will be mounted with their centerline at the 140-foot level on the 280-foot tower.
2. The proposed installation of a 10' x 20' equipment shelter will not require an extension of the fenced compound or lease area.
3. The proposed installation will not increase the noise levels at the facility by six decibels or more.
4. The operation of the antennas will not increase radio frequency (RF) power density levels at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. The worst-case RF power density calculations for all existing and Cellco antennas would be 33.24% of the FCC standard. A copy of the cumulative power density calculations table is attached behind Tab 2.

Also attached, behind Tab 3, is a Structural Analysis confirming that the tower and foundation can support the existing and Cellco antennas and associated equipment.

For the foregoing reasons, Cellco respectfully submits that the proposed antenna installation at the facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Kenneth C. Baldwin

Attachments

Copy to:

Paul Roy, Seymour First Selectman
Sandy M. Carter
Michelle Kababik



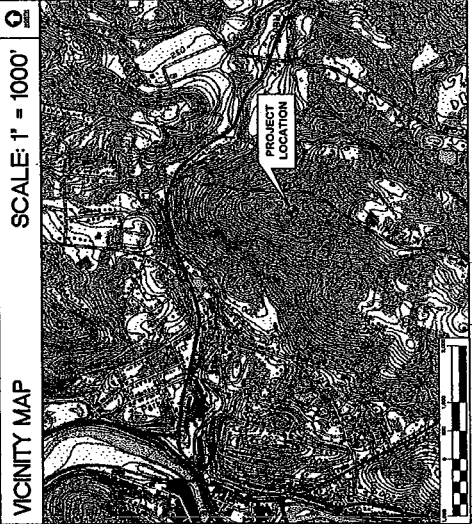
Cellco Partnership

d.b.a. **verizon** wireless
WIRELESS COMMUNICATIONS FACILITY

WOODBIDGE NORTH
6 PROGRESS AVENUE
SEYMOUR, CT 06483

PROJECT SUMMARY

SITE NAME: WOODBRIDGE NORTH
 SITE ADDRESS: 6 PROGRESS AVENUE SEYMOUR, CT 06483
 LESSEE/TENANT: CELCO PARTNERSHIP d/b/a VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
 CONTACT PERSON: SANDY CARTER
 ENGINEER: CELCO PARTNERSHIP d/b/a VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
 TOWER COORDINATES: CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD ROAD BRANFORD, CT 06405 (203) 488-0580
 LATITUDE 41°-23'-30"
 LONGITUDE 73°-03'-12"
 GROUND ELEVATION: 480' ± A.M.S.L.
 COORDINATES REFERENCED CSC WEBLOG AND GROUND ELEVATIONS ARE BASED ON TOPO MAP



SITE DIRECTIONS

FROM: 99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	TO: 6 PROGRESS AVENUE SEYMOUR, CT 06483	0.3 mi
1. Depart E River Dr toward Darlin Rd		0.1 mi
2. Turn Left to stay on E River Dr		0.2 mi
3. Turn Left onto US-44/Connecticut Blvd		3.2 mi
4. Take ramp Left for I-84 West/US-44 West		3.2 mi
5. Exit 3, take left/Right on SR-8 South		11.2mi
6. Take Exit 22 for SR-67 toward Bank St/Seymour		0.2 mi
7. Turn Left at SR-67 E/New Haven Rd		1.0 mi
8. Bear Right into Silvermine Rd		0.5 mi
9. Arrive at 6 Progress Avenue, Seymour, CT 06483		

GENERAL NOTES

- PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELCO PARTNERSHIP.

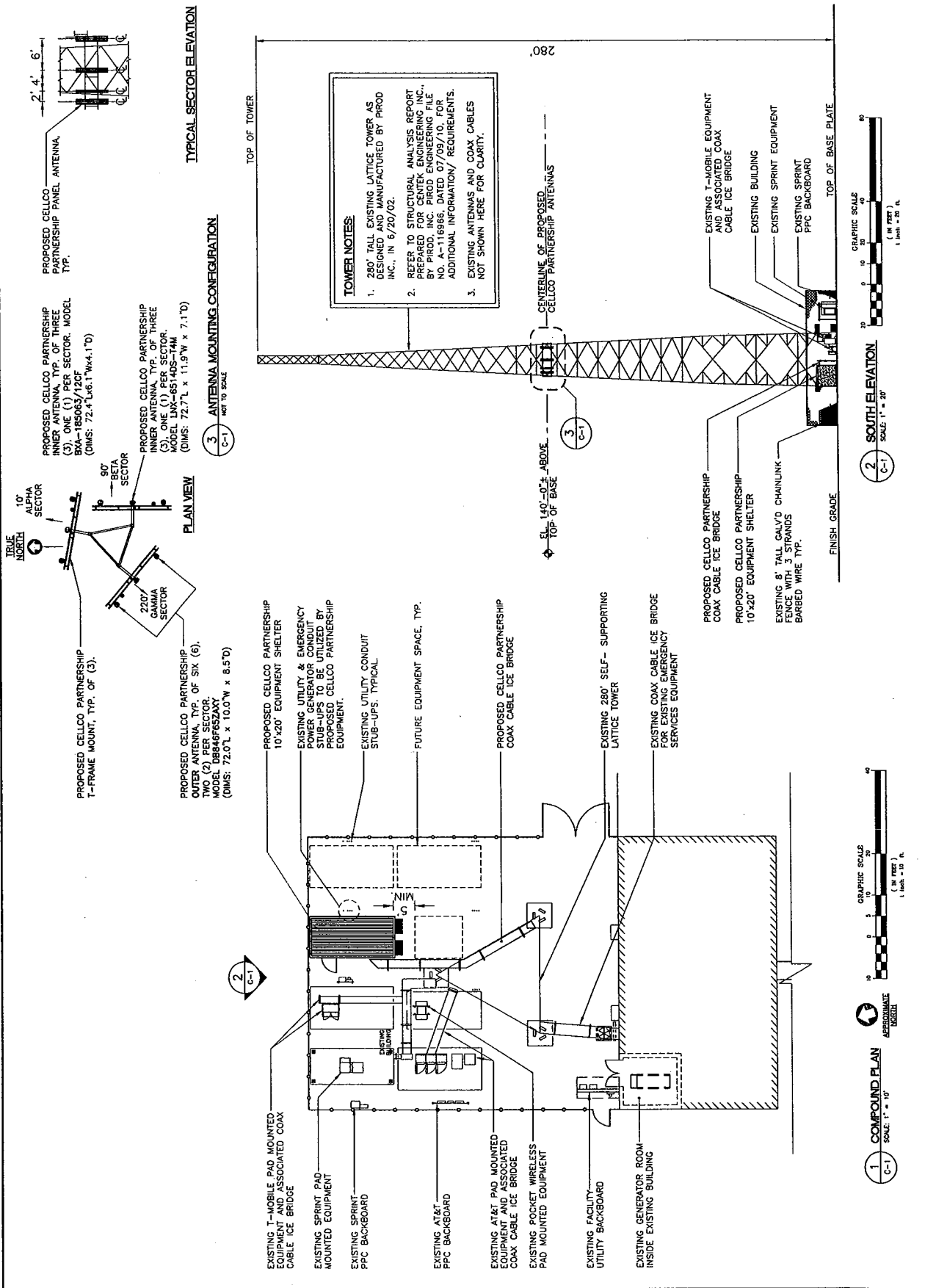
PROJECT SCOPE

- THE PROPOSED SCOPE OF WORK GENERALLY INCLUDE CELCO PARTNERSHIP 10'x20'± LEASE AREA (EQUIPMENT).
- CELCO PARTNERSHIP PROPOSING TO INSTALL A TOTAL OF TWELVE (12) DIRECTIONAL ANTENNAS PROPOSED TO BE MOUNTED AT A CENTERLINE ELEVATION OF ±140' ABOVE OF AN EXISTING LATTICE TOWER BASE. ELECTRIC AND TELCO UTILITIES SHALL BE ROUTED UNDERGROUND TO THE PROPOSED EQUIPMENT SHELTER FROM AN EXISTING UTILITY BACKBOARD LOCATED ADJACENT TO THE FENCED COMPOUND.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	A
C-1	COMPOUND PLAN AND ELEVATION	A

DESIGNED BY: CFC	DATE: 08/18/10	CELLCO PARTNERSHIP d/b/a Verizon Wireless COMMUNICATIONS FACILITY WOODBIDGE NORTH 6 PROGRESS AVENUE SEYMOUR, CT 06483
DRAWN BY: JFV	DATE: 08/18/10	
CHECK'D BY: DMD	DATE: 08/18/10	CENTEK 7201 488-0580 63-2 North Branford Road Branford, CT 06405 www.centekgroup.com
REV. A	DATE: 08/19/10	Cellco Partnership d/b.a. Verizon Wireless 99 East River Drive East Hartford, CT 06108
	DATE:	PROFESSIONAL ENGINEER REG. NO. 10008 TITLE SHEET T-1 SHEET NO. 1 of 2



1 C-1 COMPOUND PLAN SCALE: 1" = 10'

2 C-1 SOUTH ELEVATION SCALE: 1" = 20'

3 C-1 ANTENNA MOUNTING CONFIGURATION NOT TO SCALE

4 C-1 TYPICAL SECTOR ELEVATION

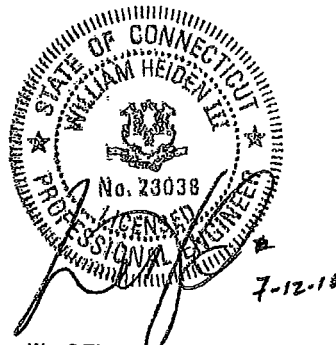
Tower Reanalysis Report Proposal PR201007003

Model: U-28 x 280' Tower
Site: Seymour, CT
PiRod Engineering File A-116966

Tower Contact Person:

Carol Fehrer
Product Specialist
e-mail: carol.fehrer@valmont.com
telephone extension: 5220

Completed under the Supervision and Approval by
William R. Heiden III, P.E.
Engineering Group Leader
e-mail: William.Heiden@valmont.com
telephone extension: 5243



William R. Heiden III, CT Professional Engineer # 23038

TABLE OF CONTENTS

Description	Page No.
1.0 EXECUTIVE SUMMARY.....	1
2.0 ASSUMPTIONS.....	1
3.0 TOWER HISTORY.....	2
4.0 CURRENT WIND LOAD REQUIREMENT.....	2
5.0 ANTENNA LOADING.....	3
6.0 RESULTS.....	4
6.1 Tower Modifications.....	4
6.2 Foundation Modifications.....	4
7.0 LIST OF APPENDICES.....	4
8.0 DISCLAIMER.....	5

1.0 EXECUTIVE SUMMARY

This reanalysis was performed by PiRod to determine if the structure is capable of accommodating loading that is different than previous design specifications. This engineering report gives details how the loading changes affect the tower, specifies feasible modifications, and proposes modification materials. **PiRod's engineering study concludes that the tower complies without modifications.** See section 6.0 for details.

2.0 ASSUMPTIONS

This engineering study is based on the theoretical capacity of the structure. It is not a condition assessment of the tower. This report is being provided by PiRod without the benefit of an inspection by PiRod personnel and is based on information supplied by the customer to PiRod. PiRod has made no independent determination, nor is required to, of the accuracy of the information provided. Therefore, unless specifically informed to the contrary by the customer in writing, PiRod assumes the following:

1. The subsoil characteristics exist as stated on the tower drawing or stated elsewhere in this report;
2. The tower is erected and maintained in accordance with the manufacturer's plans and specifications and is plumb;
3. There is no damage, natural or manmade, to the structure, either gradual or sudden;
4. All connections and guy cables are properly installed;
5. The information concerning the components, existing and proposed, is accurate; and
6. There are no modifications to the tower itself, except as may be disclosed elsewhere in this report.

PiRod recommends that qualified personnel assess the physical condition of the tower, preferably under the direction of a licensed professional engineer. Following is a list of the general areas that PiRod recommends to be inspected.

<u>Tower Structure</u>	<u>Guyed Towers</u>	<u>Foundations</u>	<u>Appurtenances</u>
Tower Sections	Guy Cables	Cracking	Antennas
Bolted Connections	Turnbuckles	Drainage	Mounts
Welded Connections	Preforms	Spalling	Transmission Lines
Plumbness	Guy Lugs	Anchor Bolts	Line Brackets
Corrosion	Thimbles	Settling	Cable Hangers
Linearity	Torque Arms	Grounding	Lighting
Galvanization	Ice Clips	Grout	
Paint	Guy Tensions	Subsoil	
	Anchor Rods	Characteristics	
	Shackles	Erosion	
	Insulators		

3.0 TOWER HISTORY

Date of Origination: 4/2000
 PiRod Model: U-28 x 280' Tower
 Sold to: EMAC Communications

ORIGINAL DESIGN CRITERIA				
Code/Standard	Wind Loading	Radial Ice	Wind Load Reduction Used	Allowable Stress Increase Used
TIA/EIA-222- F	90 mph fastest mile	no	none	yes
TIA/EIA-222-F	90 mph fastest mile	½" solid	25%	yes

For the structural analysis, the tower and foundation are assumed to exist as shown on the enclosed tower drawing, which is PiRod's latest revision.

4.0 CURRENT WIND LOAD REQUIREMENT

The TIA/EIA Standard is currently at version F for New Haven County. We have taken the opportunity to reanalyze this structure using the following wind speed and ice load conditions:

Code/Standard	Wind Loading	Radial Ice	Wind Load Reduction Used ⁽¹⁾	Allowable Stress Increase Used ⁽²⁾
TIA/EIA-222-F	85 mph fastest mile	no	none	yes
TIA/EIA-222-F	85 mph fastest mile	0.5"	25%	yes

(1) The wind load reduction is permitted by the TIA/EIA-222-F Standard section 2.3.16 and most other codes to account for the minimal chance that the maximum wind speed will occur simultaneously with the ice load.

(2) The allowable stress increase is permitted by the TIA/EIA-222-F Standard and most other codes in accordance with the AISC-ASD Manual of Steel Construction.

Note: Some localities stipulate wind load requirements that are different from that required by the TIA/EIA Standard. Please check with your local building department and verify the required wind load.

5.0 ANTENNA LOADING

The tower analysis uses the following antenna loading, which was provided on 6/16.

HEIGHT (FT)	ANTENNAS		ASSUMED C _{AAc} (SQ.FT)	MOUNTS		LINES		
	#	MODEL		#	MODEL	SIZE	BRACKET	
Existing Loading								
Top	1	Beacon				1	1"	
	1	Lightning Rod Ext						
280	1	DB420		1	9-arm Halo	2	1-5/8"	
	1	DB586-XC						
250	12	RR90-17-02DP		3	15' T-frame	12	1-5/8"	
				12	2" x 84" Antenna Pipe			
245	1	DB420				1	1-5/8"	
235	1	DB225-2-F		1	9-arm Halo	1	1-5/8"	
200	9	DB980HI20A-M		3	10' Lt T-frames	9	1-5/8"	
				9	2" x 60" Antenna Pipe			
190	9	DB980HI20A-M		3	10' Lt T-frames	9	1-5/8"	
				9	2" x 60" Antenna Pipe			
180	9	DB980HI20A-M		3	10' Lt T-frames	9	1-5/8"	
				9	2" x 60" Antenna Pipe			
170	6	DB980F65T2E		3	15' T-frame	6	1-5/8"	
				9	2" x " Antenna Pipe			
160	6	7770.00		3	15' T-frame	6	1-5/8"	
	4	LGP 21401 TMA		6	2" x " Antenna Pipe			
	6	7020.00 RET Unit						
150	3	APXV18-206517S0C-ACU				3	1-5/8"	
Proposed Additional Loading								
140	3	LNX-6514DS-T4M	Verizon	3	T-frames	12	1-5/8"	SE leg
	6	DB846F65ZAXY						
	3	BXA-185063/12CF						

These antennas, mounts, and lines represent our understanding of the antenna loading required. Please contact us if any discrepancies are evident. If different antennas, mounts, or lines are installed on this structure, this analysis is invalid. If the lines are mounted on PiRod Double-T, Extended Double-T or Expandable Double-T, they are assumed to be mounted inside the tower and the transmission lines are mounted in a back to back configuration. If any of these brackets cannot be placed inside concerning physical fit, alternatively they can be installed outside the tower, but all the brackets need to be swung back as close as possible to one of the tower faces, to minimize the torque.

* An asterisk indicates that we were not provided with a value for the effective projected area (C_{AAc}), and that the area has been assumed based on any information that was made available. The actual effective projected area for each antenna must be confirmed to be equal to the assumed area listed above. If it is determined that the area is different than that stated for any of the above items, this analysis is invalid.

6.0 RESULTS

With the antennas listed in section 5.0, the following modifications are required for the tower to comply with the indicated code and TIA/EIA Standard listed in section 4.0.

6.1 Tower Results - The tower complies without modifications.

- Tower capacity 66.8%

6.2 Foundation Results – The foundation complies without modifications.

The foundation analysis is based on the soil report by AET, Inc., dated 3/31/2000, file #42GT2K.

7.0 LIST OF APPENDICES

Tower elevation drawing

8.0 DISCLAIMER

1. The information and conclusions contained in this Report were determined by the application of the then current "state of the art" engineering and analysis procedures and formulae, and Valmont Structures⁽¹⁾ assumes no obligation to revise any of the information or conclusions contained in this Report in the event such engineering and analysis procedures and formulae are hereafter modified or revised.
2. In no event shall Valmont Structures be liable for any incidental, consequential, indirect, special or punitive damages (including without limitation lost profits) arising out of any claim associated with the use of this report (whether for breach of contract, tort, negligence or other form of action), irrespective of whether Valmont Structures has been advised of the possibility of any such loss or damage. In no event shall Valmont Structures' total, cumulative liability to the customer exceed the amount paid by customer for the preparation of this report.
3. Valmont Structures shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than Valmont Structures personnel, including but not limited to, any services rendered by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer for the quality of work performed by them.
4. Valmont Structures makes no warranties, expressed or implied, in connection with this Report as to any other matter whatsoever, and in particular, any and all warranties of merchantability or fitness for a particular purpose are hereby expressly disclaimed. Valmont Structures further expressly disclaims any liability arising from material, fabrication, and erection deficiencies. This Report is being provided by Valmont Structures without the benefit of an inspection by Valmont Structures personnel and is based solely on information supplied by the Customer to Valmont Structures. Valmont Structures has made no independent determination, nor is it required to do so, of the accuracy of the information provided by Customer. Therefore, unless specifically informed to the contrary by the Customer in writing, the following assumptions apply to the Report:
 - A. The subsoil characteristics exist as stated on the tower drawing or stated elsewhere in this report;
 - B. The tower is erected and maintained in accordance with the manufacturer's plans and specifications and is plumb;
 - C. There is no damage, natural or manmade, to the structure, either gradual or sudden;
 - D. All connections are properly installed;
 - E. The information concerning the components, existing and proposed, is accurate; and
 - F. There are no modifications to the tower itself, except as may be disclosed elsewhere in this report. Examples include but are not limited to replacement or strengthening of bracing members, reinforcing vertical members in any manner, adding additional bracing, or extending tower.
6. All representations and recommendations and conclusions are based upon the information contained and set forth herein. If Customer is aware of any information which is contrary to that which is contained herein, or if Customer is aware of any defects arising from the original design, material, fabrication, and erection deficiencies Customer must disregard this Report and immediately contact Valmont Structures.

⁽¹⁾ Valmont Structures is the Structures Division of Valmont Industries, Inc., and performs engineering services under the engineering corporation name PiRod, Inc.

Client: EMAC Comm
 File: A-116966pr201006019
 Location: Seymour, CT
 Model: U-28.0 x 28.0

Unit Base Foundation



STRUCTURES

Version = 3.0

Tower Reactions:

Shear: $S = 81$ kips
 Moment: $M = 11777$ ft-kips
 Compression: $C = 520$ kips
 Uplift: $U = 443$ kips
 Weight: $W_t = 103$ kips

Height = 280 ft

- Soil parameters per soil report
 by: "AET, DATED: 3/31/00 (FILE: 142GT2K)"

- Concrete design conforms to the following:

- * Building Code Requirements for Reinforced Concrete (ACI 318-02)
- * 2003 International Building Code (IBC)
- * Structural Standards for Steel Antenna Towers TIA/EIA-222-F-1996

Soil Properties:

Soil strengths: $B_u = 5$ ksf (Allowable bearing capacity)
 $\phi = 30$ deg (Internal angle of friction)
 $c = 0$ ksf (Undrained shear strength)
 $P_u = 0$ kcf (Ultimate Passive Pressure)
 Soil unit weight: $\gamma = 10.110$ kcf
 Friction Coeff.: $\mu = 0.20$ (Concrete/Soil)

Foundation Dimensions:

Depth: $D = 6.50$ ft
 Depth to neglect: $n = 3.50$ ft
 Thickness: $T = 3.25$ ft
 Pier diameter: $d = 5.00$ ft
 Tower width: $W_t = 28$ ft
 Ext. above grade: $E = 0.25$ ft
 Clear Cover: $CC = 3.0$ in

Soil Compaction Specifications:

Lift Thickness: $TL = 8$ in
 Compaction Percent: $CP = 98\%$
 Proctor Test:
 Enter: 698 = ASTM D698 $ASTM = 698$
 1557 = ASTM D1557

Material Properties:

Concrete Strength: $f'_c = 4000$ psi
 Concrete unit weight: $\delta\chi = 0.150$ kcf
 Rebar yield strength: $f_y = 60000$ psi

Seismic zone (0,1,2,3 or 4): $Z = 2$
 (UBC Fig. 23-2)

Is tower centroid offset from foundation centroid? (no=0,yes=1) $OS = 1$

$$\text{Initial Width: } W := \left[\frac{2 \cdot M \cdot 1.5}{T \cdot (\delta\chi - \gamma) + D \cdot \gamma} \right]^{\frac{1}{3}} \quad W = 34.71 \text{ ft} \quad \text{Try: } W = 38.5 \text{ ft}$$

$$\text{Concrete volume} := (W^2 \cdot T) + 3 \cdot (D - T + E) \cdot \left(\frac{\pi}{4} \cdot d^2 \right) \quad \text{volume} = 186.1 \cdot \text{yd}^3$$

$$\text{Concrete weight: } W_c := (\text{volume}) \cdot \delta\chi \quad W_c = 753.5 \cdot \text{kips}$$

$$\text{Soil weight (above footing): } W_s := \left[W^2 \cdot (D - T) - 3 \cdot (D - T + E) \cdot \left(\frac{\pi}{4} \cdot d^2 \right) \right] \cdot \gamma \quad W_s = 507.2 \cdot \text{kips}$$

$$\text{Total weight: } P := W_c + W_s + W_t \quad P = 1363.7 \cdot \text{kips}$$

EIA/TIA-222 Load Factor [EIA - 3.1.13]

$$LF := \text{if} \left[\text{Height} \leq 700, 1.3, \text{if} \left[\text{Height} \geq 1200, 1.7, 1.3 + \left(\frac{\text{Height} - 700}{1200 - 700} \right) \cdot 0.4 \right] \right] \quad LF = 1.3$$

Passive Pressure:

Passive pressure coeff.: $K_p := \text{if} \left(P_p > 0 \text{ kcf}, 0, \tan \left(45 \cdot \text{deg} + \frac{\phi}{2} \right)^2 \right) \quad K_p = 3.00$

Passive pressure: $P_{pn} := K_p \cdot \gamma \cdot n + 2 \cdot c \cdot \sqrt{K_p} \quad P_{pn} = 1.155 \cdot \text{ksf}$

$P_{pt} := K_p \cdot \gamma \cdot (D - T) + 2 \cdot c \cdot \sqrt{K_p} \quad P_{pt} = 1.072 \cdot \text{ksf}$

$P_{ptop} := \text{if} (n < D - T, P_{pt}, P_{pn}) \quad P_{ptop} = 1.155 \cdot \text{ksf}$

$P_{pb} := K_p \cdot \gamma \cdot D + 2 \cdot c \cdot \sqrt{K_p} \quad P_{pb} = 2.145 \cdot \text{ksf}$

$P_p := \frac{P_{ptop} + P_{pb}}{2} \quad P_p = 1.65 \cdot \text{ksf}$

Shear area: $T_{pp} := \text{if} (n < D - T, T, D - n) \quad T_{pp} = 3 \text{ ft}$

$A_{pp} := W \cdot T_{pp} \quad A_{pp} = 115.5 \text{ ft}^2$

Shear Capacity: (factor of safety: ~~FS = 2.0~~)

$S_{\text{actual}} := \frac{(P_p \cdot A_{pp}) + \mu \cdot P}{FS} \quad S_{\text{actual}} = 231.66 \cdot \text{kips} > S = 81.00 \cdot \text{kips}$

CHECK = "OK"

Moment resisting at toe: (assume soil is perfectly rigid)

Weight of soil wedge (back face): $W_{sw} := \frac{D \cdot (D \cdot \tan(\phi))}{2} \cdot W \cdot \gamma \quad W_{sw} = 51.652 \cdot \text{kips}$

Distance from leg to edge of concrete: $O := \text{if} \left(o_s = 0, \frac{W}{2} - \frac{1}{3} \cdot 0.866 \cdot W', \frac{W - 0.866 \cdot W'}{2} \right) \quad O = 7.126 \text{ ft}$

Additional offset of tower weight: $O_a := \frac{W}{2} - \left(\frac{1}{3} \cdot 0.866 \cdot W' + O \right) \quad O_a = 4.041 \text{ ft}$

Resisting moment: $M_{rwt} := (W_c + W_s) \cdot \frac{W}{2} + W_t \cdot \left(\frac{W}{2} - O_a \right) \quad M_{rwt} = 25835.89 \cdot \text{ft} \cdot \text{kips}$

$M_{rp} := (P_p \cdot A_{pp}) \cdot \frac{T_{pp}}{3} \quad M_{rp} = 190.575 \cdot \text{ft} \cdot \text{kips}$

$M_{rsw} := W_{sw} \cdot \left(W + D \cdot \frac{\tan(\phi)}{3} \right) \quad M_{rsw} = 2053.226 \cdot \text{ft} \cdot \text{kips}$

Total resisting moment: $M_{rt} := M_{rwt} + M_{rp} + M_{rsw} \quad M_{rt} = 28079.69 \cdot \text{ft} \cdot \text{kips}$

Overturning moment: $M_o := M + S \cdot (D + E) \quad M_o = 1.232 \times 10^4 \cdot \text{ft} \cdot \text{kips}$

Factor of safety: $FS := \frac{M_{rt}}{M_o} \quad FS = 2.28 > FS_{\text{required}} = 1.50$

CHECK = "OK"

Compression exerted by foundation:

Area of mat: $Area := W^2$ Area = 1482.25 ft²

Section modulus: $SM := \frac{W^3}{6}$ SM = 9511.104 ft³

Pressure exerted: $P_{pos} := \frac{P}{Area} + \frac{M_o}{SM}$ P_{pos} = 2.22·ksf < B_c = 5.00·ksf

$P_{neg} := \frac{P}{Area} - \frac{M_o}{SM}$ P_{neg} = -0.376·ksf < 0 ksf

Note = "The stress resultant is NOT within the kern. Bearing area has been adjusted below."

Load eccentricity: $e := \frac{M_o}{P}$ e = 9.037 ft $P_{adj} := \frac{2 \cdot P}{3 \cdot W \cdot \left(\frac{W}{2} - e\right)}$ P_{adj} = 2.312·ksf

Adjusted applied pressure: $q_a := \text{if}(P_{neg} \geq 0 \cdot \text{ksf}, P_{pos}, P_{adj})$
 (assume symmetric condition controls) q_a = 2.31·ksf < B_c = 5.00·ksf CHECK = "OK"

Column compression capacity: (ACI 10.15)

Compression reaction: $\phi_c = 0.75$ (ACI 9.3.2.2)

$P_c := \phi \cdot 0.85 \cdot f'c \cdot \text{psi} \cdot \left(\frac{d^2}{4} \cdot \pi\right)$ P_c = 6248.63·kips > LF·C = 676.00·kips CHECK = "OK"

Concrete shear strength:

One way beam action at d from column face: (ACI 11.3.1.1)

Effective depth: $d_c := T - cc - 0.5 \cdot \text{in}$ d_c = 35.5·in

Factored load intensity: $q_s := LF \cdot \frac{C}{W^2}$ q_s = 0.456·ksf

Required shear: $q_s \cdot \left(0 - \frac{1}{2} \cdot d - d_c\right) \cdot W$
 (φ = 0.75 - ACI 9.3.2.3) $V_n := \frac{\quad}{\phi}$ V_n = 39.042·kips

Available shear: $V_c := 2.0 \cdot \sqrt{f'c} \cdot \text{psi} \cdot W \cdot d_c$ V_c = 2074.581·kips

$V_c = 2074.58 \cdot \text{kips}$ > V_n = 39.04·kips CHECK = "OK"

Two way action at d/2 from column face: (ACI 11.12.2.1)

Perimeter: $P_o := (d + d_c) \cdot \pi$ P_o = 25.002 ft

Required shear: $W^2 - (d + d_c)^2 \cdot \frac{\pi}{4}$
 (φ = 0.75 - ACI 9.3.2.3) $V_n := q_s \cdot \frac{\quad}{\phi}$ V_n = 871.085·kips

Available shear: $V_c := 4.0 \cdot \sqrt{f'c} \cdot \text{psi} \cdot d_c \cdot P_o$ V_c = 2694.459·kips

$V_c = 2694.46 \cdot \text{kips}$ > V_n = 871.09·kips CHECK = "OK"

Pier reinforcement:

Cross sectional area of pier: $A_c := d^2 \cdot \frac{\pi}{4}$ $A_c = 2827.433 \cdot \text{in}^2$

Minimum area of steel: Percent (min) := if (Z > 2, 1.0%, 0.50 · 1.0%)
(ACI 10.8.4 & 10.9.1)

$A_{stmin} := A_c \cdot (\text{Percent (min)})$ $A_{stmin} = 14.137 \cdot \text{in}^2$

Bending and tension requirements:

Bar Size: $s_c = 9$ Area: $A_{bc} := \text{area}_{s_c}$ $A_{bc} = 1.00 \cdot \text{in}^2$

Quantity: $m_c = 23$ Diameter: $d_{bc} := \text{dia}_{s_c}$ $d_{bc} = 1.128 \cdot \text{in}$

Total area of steel: $A_{st} := m_c \cdot A_{bc}$
 $A_{st} = 23.00 \cdot \text{in}^2 > A_{stmin} = 14.14 \cdot \text{in}^2$

CHECK = "OK"

Treat the circular cage of reinforcement as an equivalent hollow circle (pipe). Set the outer diameter of the pipe to the diameter of the cage (d_o) and solve for the inner diameter (d_i) using the area of a pipe (A) equation.

Cage diameter: $d_o := d - 2 \cdot cc$ $d_o = 4.50 \text{ ft}$

Given $A_{st} = \frac{\pi \cdot (d_o^2 - d_i^2)}{4}$ $d_i := \text{Find}(d_i)$ $d_i = 4.477 \text{ ft}$

$A := \frac{\pi \cdot (d_o^2 - d_i^2)}{4}$ $A = 23 \cdot \text{in}^2 = A_{st} = 23 \cdot \text{in}^2$

Section Modulus: $SM := \pi \cdot \frac{d_o^4 - d_i^4}{32 \cdot d_o}$ $SM = 308.941 \cdot \text{in}^3$

Combined Stress: $\sigma := \frac{U}{A_{st}} + \frac{0.5 \cdot S \cdot (D - T + E)}{SM}$
 $\sigma = 24.77 \cdot \text{ksi} < (f_y \cdot 0.60) = 36 \cdot \text{ksi}$

CHECK = "OK"

Bar separation: $B_s := \frac{d_o \cdot \pi}{m_c} - d_{bc}$ $B_s = 6.25 \cdot \text{in}$

CHECK = "OK"

Reinforcement Development length:

Tension: (ACI 12.2.3 & 12.2.4)

$\alpha := 1.0$ $\alpha = 1$

$\beta := 1.0$ $\beta = 1$

$\gamma := \text{if}(s_c > 6, 1.0, 0.8)$ $\gamma = 1$

$\lambda := 1.0$ $\lambda = 1$

$k := 0 \cdot \text{in}$ $k = 0 \cdot \text{in}$

$c := \min\left(\frac{B_s}{2} + d_{bc}, cc + \frac{d_{bc}}{2}\right)$ $c = 3.564 \cdot \text{in}$

$c' := \min\left(2.5, \frac{c + k}{d_{bc}}\right)$ $c' = 2.5$

$L_{dt} := \frac{3 \cdot f_y}{40 \cdot \sqrt{f'_c \cdot \text{psi}}} \cdot \frac{\alpha \cdot \beta \cdot \gamma \cdot \lambda}{c'} \cdot d_{bc}$ $L_{dt} = 32.103 \cdot \text{in}$

Reinforcement Development length: - (continued)

Minimum development length: (ACI 12.2.1)

$$L_{dt} := \text{if}(L_{dt} < 12 \cdot \text{in}, 12 \cdot \text{in}, L_{dt}) \quad L_{dt} = 32.103 \cdot \text{in}$$

Compression: (ACI 12.3.2)

$$L_{db} := 0.02 \cdot d_{bc} \cdot \frac{f_y}{\sqrt{f'_c \cdot \text{psi}}} \quad L_{db} = 21.402 \cdot \text{in}$$

$$L_{dmin} := 0.0003 \cdot d_{bc} \cdot \frac{f_y}{\text{psi}} \quad L_{dmin} = 20.304 \cdot \text{in}$$

$$L_{dc} := \text{max}(8 \cdot \text{in}, L_{dmin}, L_{db}) \quad L_{dc} = 21.402 \cdot \text{in}$$

Length available in pier: $L_{pier} := (D + E) - T - cc$

Tension: $L_{pier} = 39.00 \cdot \text{in} > L_{dt} = 32.10 \cdot \text{in}$

Compression: $L_{pier} = 39.00 \cdot \text{in} > L_{dc} = 21.40 \cdot \text{in}$

CHECK = "OK"
CHECK = "OK"

Length available in pad: $L_{pad} := T - cc$

Tension: $L_{pad} = 36.00 \cdot \text{in} > L_{dt} = 32.10 \cdot \text{in}$

Compression: $L_{pad} = 36.00 \cdot \text{in} > L_{dc} = 21.40 \cdot \text{in}$

CHECK = "OK"
CHECK = "OK"

Rebar Hook Design:

Basic development length: $\alpha := \text{if}[(cc \geq 2.5 \cdot \text{in}) \cdot (s_c \leq 11), 0.7, 1]$ $\alpha = 0.7$
(ACI 12.5.2 & 12.5.3) $\beta := 1.0$ $\beta = 1$

$$\lambda := 1.0 \quad \lambda = 1$$

$$L_{dh} := 0.02 \cdot \alpha \cdot \beta \cdot \lambda \cdot \frac{f_y}{\sqrt{f'_c \cdot \text{psi}}} \cdot d_{bc} \quad L_{dh} = 14.982 \cdot \text{in}$$

Minimum development length: (ACI 12.5.1)

$$L_{dh} := \text{max}(8 \cdot d_{bc}, 6 \cdot \text{in}, L_{dh}) \quad L_{dh} = 14.982 \cdot \text{in}$$

Length available in pad: $L_{pad} = 36.00 \cdot \text{in} > L_{dh} = 14.98 \cdot \text{in}$

CHECK = "OK"

Hook extension length: (ACI 7.1.2) $l_{hex} := 12 \cdot d_{bc}$ $l_{hex} = 13.536 \cdot \text{in}$

Length available in pad: $L_{havail} := \frac{W'}{2} - \frac{d}{2} - cc - \text{if}(s_c < 9, 3, 4) \cdot d_{bc}$

$$L_{havail} = 130.49 \cdot \text{in} > l_{hex} = 13.54 \cdot \text{in}$$

CHECK = "OK"

Pad reinforcement: Required Bending Capacity: ($\phi := 0.90$ - ACI 9.3.2.1)

Tower Height: $W' := W' \cdot \sin(60 \cdot \text{deg})$ $W' = 24.249 \cdot \text{ft}$

Total weight on pad: $W_g := W_s + W_c$ $W_g = 1260.748 \cdot \text{kips}$

$$C := C + \frac{W_t}{3} \quad C = 554.333 \cdot \text{kips}$$

Resultant force from soil: $\Sigma \text{Forces} = Q + U - C - W_g = 0$

$$Q := C + W_g - U \quad Q = 1372.081 \cdot \text{kips}$$

Pad Reinforcement: - (continued)

Horizontal distances of forces from edge of pad:

$$C_x := \text{if} \left(\text{os} = 0, \frac{W}{2} - \frac{W''}{3}, \frac{W - W''}{2} \right)$$

$$C_x = 7.126 \text{ ft}$$

$$U_x := C_x + W''$$

$$U_x = 31.374 \text{ ft}$$

$$Wg_x := \frac{W}{2}$$

$$Wg_x = 19.25 \text{ ft}$$

$$\Sigma \text{ Moments} = (Q * Q_x) + (U * U_x) - (C * C_x) - (Wg * Wg_x) + (S * P) = 0$$

$$Q_x := \frac{(C * C_x + Wg * Wg_x - U * U_x) - S * (D + E)}{Q}$$

$$Q_x = 10.039 \text{ ft}$$

Case 1: $Q_x < C_x$

Shear Diagram:

$$V_{1A} := Q$$

$$V_{1A} = 1372.081 \cdot \text{kips}$$

$$V_{2A} := V_{1A} - C$$

$$V_{2A} = 817.748 \cdot \text{kips}$$

$$V_{3A} := V_{2A} - Wg$$

$$V_{3A} = -443 \cdot \text{kips}$$

$$V_{4A} := V_{3A} + U$$

$$V_{4A} = 0 \cdot \text{kips} = 0 \text{ ft-kips} \quad \text{OK!}$$

Moment Diagram:

$$M_{1A} := V_{1A} \cdot (C_x - Q_x)$$

$$M_{1A} = -3996.827 \text{ ft} \cdot \text{kips}$$

$$M_{2A} := M_{1A} - \frac{S}{2} \cdot (D + E)$$

$$M_{2A} = -4270.202 \text{ ft} \cdot \text{kips}$$

$$M_{3A} := M_{2A} + V_{2A} \cdot (Wg_x - C_x)$$

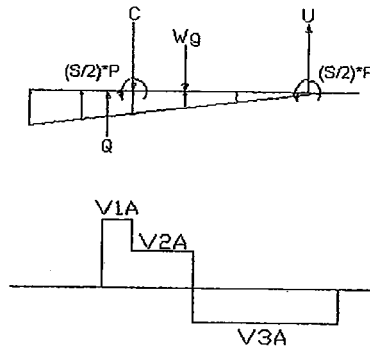
$$M_{3A} = 5644.465 \text{ ft} \cdot \text{kips}$$

$$M_{4A} := M_{3A} + V_{3A} \cdot (U_x - Wg_x)$$

$$M_{4A} = 273.375 \text{ ft} \cdot \text{kips}$$

$$M_{5A} := M_{4A} - \frac{S}{2} \cdot (D + E)$$

$$M_{5A} = -0 \text{ ft} \cdot \text{kips} = 0 \text{ ft-kips} \quad \text{OK!}$$



Case 2: $Q_x > C_x$

Shear Diagram:

$$V_{1B} := -C$$

$$V_{1B} = -554.333 \cdot \text{kips}$$

$$V_{2B} := V_{1B} + Q$$

$$V_{2B} = 817.748 \cdot \text{kips}$$

$$V_{3B} := V_{2B} - Wg$$

$$V_{3B} = -443 \cdot \text{kips}$$

$$V_{4B} := V_{3B} + U$$

$$V_{4B} = 0 \cdot \text{kips} = 0 \text{ ft-kips} \quad \text{OK!}$$

Moment Diagram:

$$M_{1B} := \left[\frac{S}{2} \cdot (D + E) \right]$$

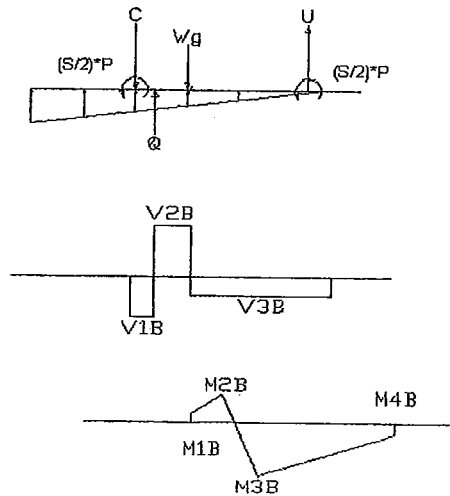
$$M_{1B} = -273.375 \text{ ft} \cdot \text{kips}$$

$$M_{2B} := M_{1B} + V_{1B} \cdot (Q_x - C_x)$$

$$M_{2B} = -1888.13 \text{ ft} \cdot \text{kips}$$

$$M_{3B} := M_{2B} + V_{2B} \cdot (Wg_x - Q_x)$$

$$M_{3B} = 5644.465 \text{ ft} \cdot \text{kips}$$



Case 2: $Q_x > C_x$ (continued)

$$M_{4B} := M_{3B} + V_{3B} \cdot (U_x - W_{Gx})$$

$$M_{4B} = 273.375 \text{ ft} \cdot \text{kips}$$

$$M_{5B} := M_{4B} - \frac{S}{2} \cdot (D + E)$$

$$M_{5B} = -0 \text{ ft} \cdot \text{kips} = 0 \text{ ft} \cdot \text{kips} \quad \text{OK!}$$

Summary: Use: Case = 2

Shear:	$V_1 := \text{if}(Q_x < C_x, V_{1A}, V_{1B})$	$V_1 := V_1$	$V_1 = -554.333 \cdot \text{kips}$
	$V_2 := \text{if}(Q_x < C_x, V_{2A}, V_{2B})$	$V_2 := V_2$	$V_2 = 817.748 \cdot \text{kips}$
	$V_3 := \text{if}(Q_x < C_x, V_{3A}, V_{3B})$	$V_3 := V_3$	$V_3 = -443 \cdot \text{kips}$
	$V_4 := \text{if}(Q_x < C_x, V_{4A}, V_{4B})$	$V_4 := V_4$	$V_4 = 0 \cdot \text{kips}$
Moment:	$M_1 := \text{if}(Q_x < C_x, M_{1A} , M_{1B})$	$M_1 := M_1$	$M_1 = 273.375 \text{ ft} \cdot \text{kips}$
	$M_2 := \text{if}(Q_x < C_x, M_{2A} , M_{2B})$	$M_2 := M_2$	$M_2 = 1888.13 \text{ ft} \cdot \text{kips}$
	$M_3 := \text{if}(Q_x < C_x, M_{3A} , M_{3B})$	$M_3 := M_3$	$M_3 = 5644.465 \text{ ft} \cdot \text{kips}$
	$M_4 := \text{if}(Q_x < C_x, M_{4A} , M_{4B})$	$M_4 := M_4$	$M_4 = 273.375 \text{ ft} \cdot \text{kips}$
	$M_5 := \text{if}(Q_x < C_x, M_{5A} , M_{5B})$	$M_5 := M_5$	$M_5 = 0 \text{ ft} \cdot \text{kips}$

Maximum Moment: $M_{\max} := \max(M)$ $M_{\max} = 5644.465 \text{ ft} \cdot \text{kips}$

Maximum Moment w/ACI Strength Reduction Factor and EIA/TIA Load Increase Factor:

$$M_n := \frac{L_F}{\phi} \cdot M_{\max}$$

$$M_n = 8115.37 \text{ ft} \cdot \text{kips}$$

$$\beta := \text{if}\left[f'c \leq 4000, 0.85, \text{if}\left[f'c \geq 8000, 0.65, 0.85 - \left(\frac{f'c - 4000}{1000}\right) \cdot 0.05\right]\right]$$

$$\beta = 0.85$$

(ACI 10.2.7.3)

Effective Beam Width: $W_e := W$ $W_e = 38.5 \text{ ft}$

Required Steel: $A_{st} := \frac{M_n}{0.9 \cdot f_y \cdot d_c}$ $A_{st} = 51.037 \cdot \text{in}^2$

$$a := \frac{A_{st} \cdot f_y}{\beta \cdot f'c \cdot \text{psi} \cdot W_e}$$

$a = 1.949 \cdot \text{in}$

$$A_{st} := \frac{M_n}{f_y \cdot \left(d_c - \frac{a}{2}\right)}$$

$A_{st} = 47.23 \cdot \text{in}^2$

$$\rho := \frac{A_{st}}{W_e \cdot T}$$

$\rho = 0.0026$

Temperature & shrinkage (ACI 7.12.2.1): $\rho_{sh} := \text{if}(f_y \geq 60000 \cdot \text{psi}, 0.0018, 0.0020)$ $\rho_{sh} = 0.0018$

$$A_{st} := \text{if}\left(\rho \geq \frac{\rho_{sh}}{2}, A_{st}, \rho_{sh} \cdot W_e \cdot \frac{T}{2}\right)$$

$A_{st} = 47.23 \cdot \text{in}^2$

Bars required in pad both ways:

(width:

$$W = 38.5 \text{ ft}$$

Bar Size:



Area:

$$A_{bp} := \text{area}_{s_p}$$

$$A_{bp} = 1.56 \cdot \text{in}^2$$

Diameter:

$$d_{bp} := \text{dia}_{s_p}$$

$$d_{bp} = 1.410 \cdot \text{in}$$

Quantity:

$$m_{pad} := \frac{A_{st}}{A_{bp}} \cdot \left(\frac{W}{W_e} \right)$$

$$m_{pad} = 30.28$$

Use: $m_p = 60$

Bar separation:

$$B_s := \left(\frac{W - 2 \cdot cc - d_{bp}}{m_p - 1} \right) - d_{bp}$$

$$B_s = 6.29 \cdot \text{in}$$

CHECK = "OK"

Development length of Pad Reinforcement: (ACI 12.2.3 & 12.2.4)

$$\alpha := \text{if} [T > 12 \cdot \text{in} + 2 \cdot (cc + d_{bp}), 1.3, 1.0]$$

$$\alpha = 1.3$$

$$\beta := 1.0$$

$$\beta = 1$$

$$\gamma := \text{if} (s_p > 6, 1.0, 0.8)$$

$$\gamma = 1$$

$$\lambda := 1.0$$

$$\lambda = 1$$

$$k := 0 \cdot \text{in}$$

$$k = 0 \cdot \text{in}$$

$$c := \min \left(\frac{B_s}{2} + d_{bp}, cc + \frac{d_{bp}}{2} \right)$$

$$c = 3.705 \cdot \text{in}$$

$$c' := \min \left(2.5, \frac{c + k}{d_{bp}} \right)$$

$$c' = 2.5$$

$$L_d := \frac{3 \cdot f_y}{40 \cdot \sqrt{f'c \cdot \text{psi}}} \cdot \frac{\alpha \cdot \beta \cdot \gamma \cdot \lambda}{c'} \cdot d_{bp}$$

$$L_d = 52.168 \cdot \text{in}$$

Minimum development length: (ACI 12.2.1)

$$L_{dt} := \text{if} (L_{dt} < 12 \cdot \text{in}, 12 \cdot \text{in}, L_d)$$

$$L_d = 52.168 \cdot \text{in}$$

Length available in pad: $L_{pad} := \frac{W}{2} - \frac{W'}{2} - cc$

$$L_{pad} = 60.0 \cdot \text{in} > L_d = 52.2 \cdot \text{in}$$

CHECK = "OK"

Width required to ensure space for column hooks in pad:

$$W_{req} := \left(\frac{W'}{2} + \frac{d}{2} + \text{if} (s_c < 9, 16, 17) \cdot d_{bc} \right) \cdot 2$$

$$W = 38.5 \text{ ft} > W_{req} = 36.2 \cdot \text{ft}$$

CHECK = "OK"

Determination of Tie size and spacing requirements for columns: (ACI 7.10.5)

Minimum tie bar size: $d_{tiemin} := \text{if} (s_c \leq 10, 3, 4)$

$$d_{tiemin} = 3$$

Use: $d_{tie} = 4$

Factor based on seismic zone: (ACI 21.3.3.2)

$$z := \text{if} (Z < 2, 1, 0.5) \quad z = 0.5$$

$$s_{lim1} := 16 \cdot d_{bc} \cdot z$$

$$s_{lim1} = 9.024 \cdot \text{in}$$

$$s_{lim2} := 48 \cdot \frac{d_{tie}}{8} \cdot \text{in} \cdot z$$

$$s_{lim2} = 12 \cdot \text{in}$$

$$s_{lim3} := D \cdot z^2$$

$$s_{lim3} = 19.5 \cdot \text{in}$$

$$s_{lim4} := \text{if} (z > 0.5, 18.0, 12.0) \cdot \text{in}$$

$$s_{lim4} = 12 \cdot \text{in}$$

Maximum tie spacing:

$$s_{tie} := \min (s_{lim1}, s_{lim2}, s_{lim3}, s_{lim4})$$

$$s_{tie} = 9.024 \cdot \text{in}$$

Number of ties required:

$$n_t := \frac{D - T + E}{s_{tie}} + 2$$

$$n_t = 6.7$$

Use: $n_{tie} = 7$

CHECK = "OK"

Foundation Design Summary

Soil Parameters: Soil parameters per soil report

by = "AET, DATED: 3/31/00 (FILE: 42GT2K)."

Allowable Soil Bearing Pressure: $B_c = 5.00 \cdot \text{ksf}$

Allowable Passive Pressure = $0.165 \cdot \text{kcf}$

Dimensions: Base Width: $W = 38.50 \text{ ft}$
Depth below grade: $D = 6.50 \text{ ft}$
Extension above grade: $E = 3 \cdot \text{in}$
Pier Diameter: $d = 5.00 \text{ ft}$
Pad Thickness: $T = 3.25 \text{ ft}$
Concrete Volume: $\text{volume} = 186.1 \cdot \text{yd}^3$

Note = "CENTROID OF THE TOWER IS OFFSET FROM THE CENTROID OF THE FOUNDATION."
(ADDITIONAL ECCENTRIC LOAD WILL BE INDUCED TO THE TOWER IS OFFSET)

Reinforcement:	Quantity	Size	
Pad:	$m_p = 60$	$s_p = 11$	equally spaced, both ways, top & bottom
Pier:	$m_c = 23$	$s_c = 9$	equally spaced on $d_o = 4.5 \text{ ft}$
Ties:	$n_{\text{tie}} = 7$	$d_{\text{tie}} = 4$	cage per UBC spacing & standard overlap requirements

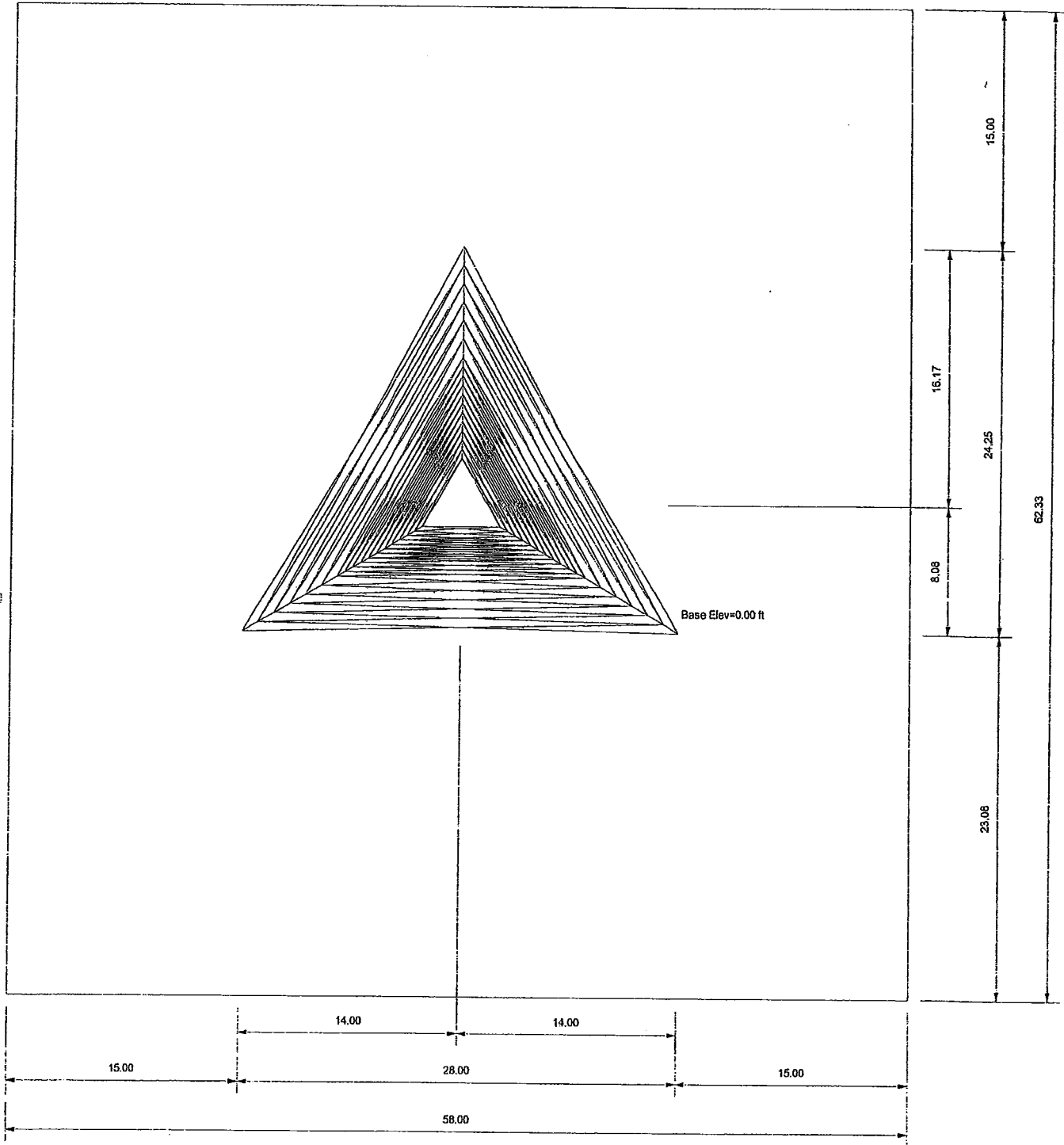
Use standees to support the top rebar above the bottom rebar in the mat.
Concrete clear cover: $cc = 3 \cdot \text{in}$

Material strengths: Concrete strength: $f'_c = 4000 \text{ psi}$
Rebar yield strength: $f_y = 60 \cdot \text{ksi}$

Compaction Notes: ALL FILL SHOULD BE PLACED IN LOOSE LEVEL LIFTS OF NO MORE THAN
 $8 \cdot \text{in}$ THICK. FILL MATERIALS SHOULD BE CLEAN AND FREE OF ORGANIC AND
FROZEN MATERIALS OR ANY OTHER DELETERIOUS MATERIALS. COMPACT FILL TO
 $CP = 98\%$ OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH
ASTM = "D698 STANDARD PROCTOR TEST."

Additional Notes: None

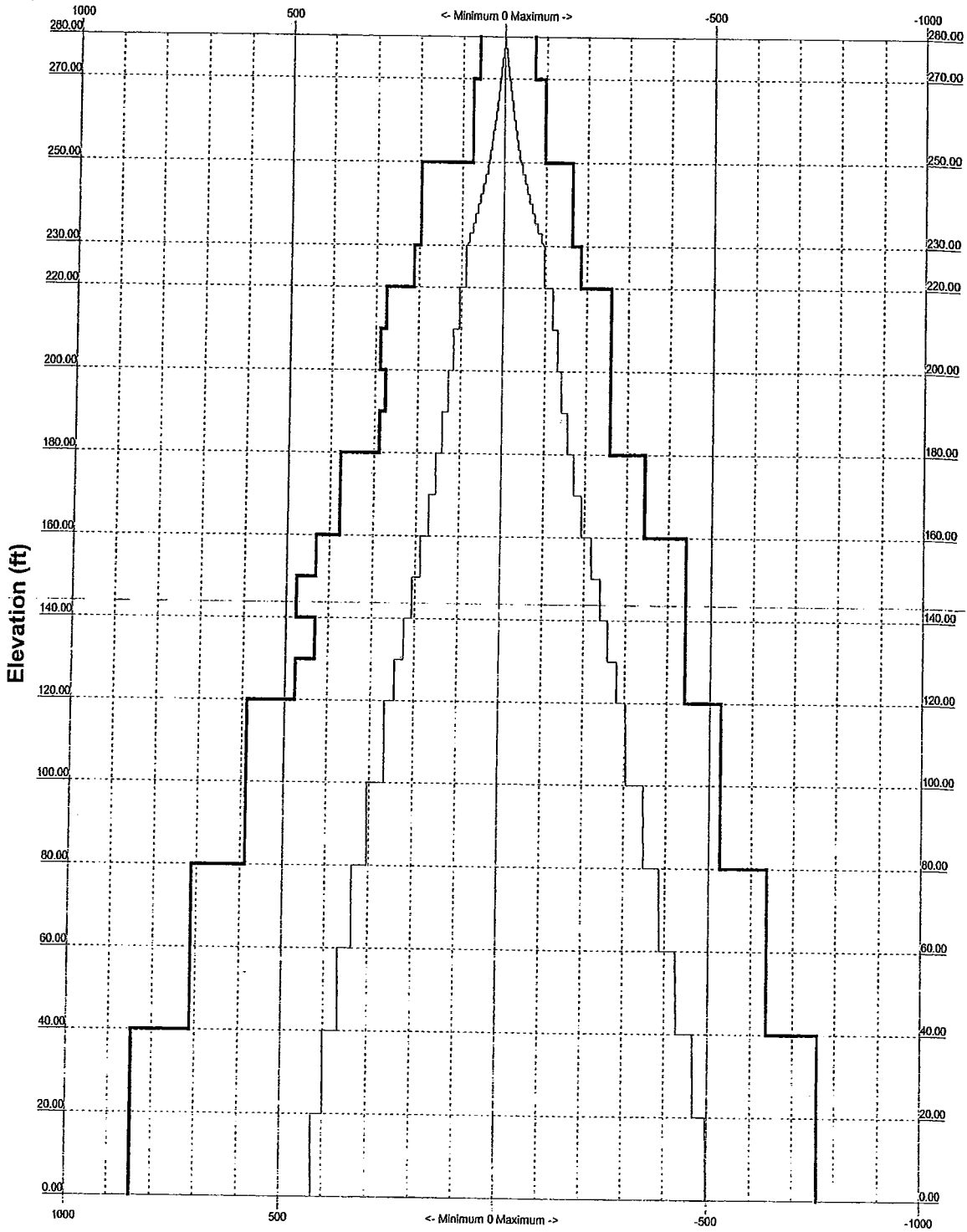
Plot Plan
Total Area - 0.08 Acres




<p>Valmont Structures 1545 Pidco Drive Plymouth, IN 46563 Phone: (574) 936-4221 FAX: (574) 936-6458</p> <p>Valmont Industries - Specialty Structures Group</p>	Job: A-116966 (PR2010-06-019)
	Project: U-28.0 x 280' - Seymour, CT
	Client: EMAC Communications LLC Drawn by: CRF App'd:
	Code: TIA/EIA-222-F Date: 07/08/10 Scale: NTS
	Path: _____ Dwg No. E-2

TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

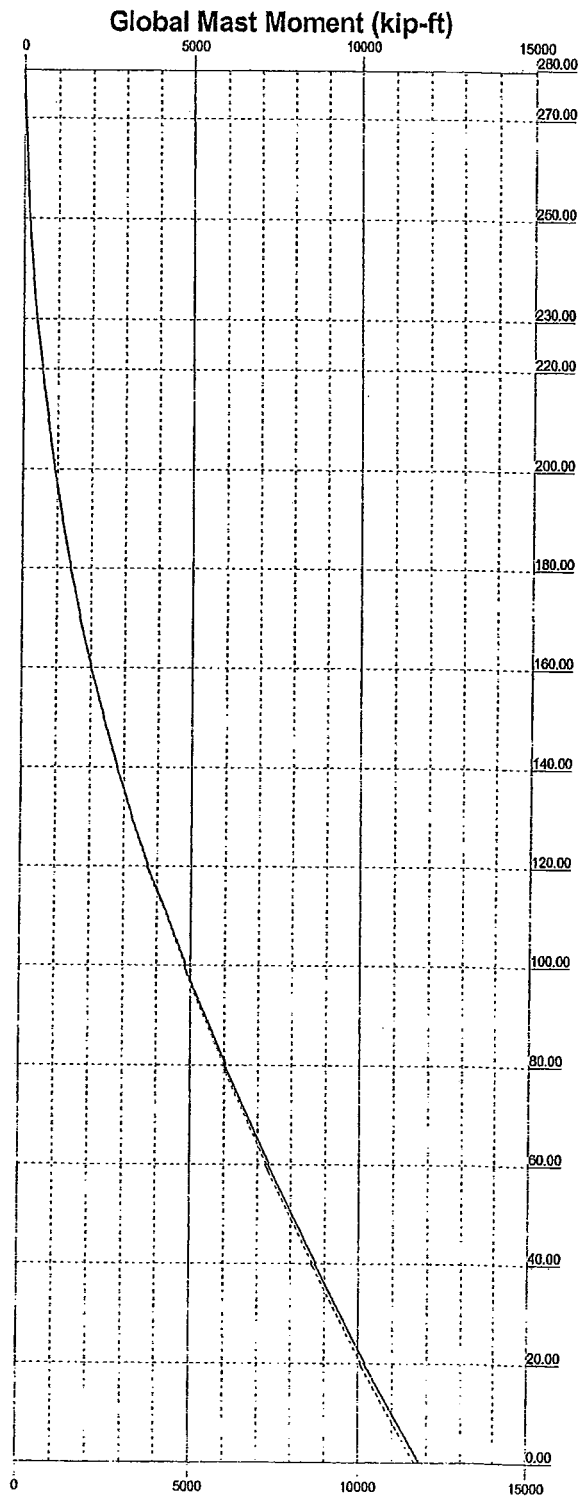
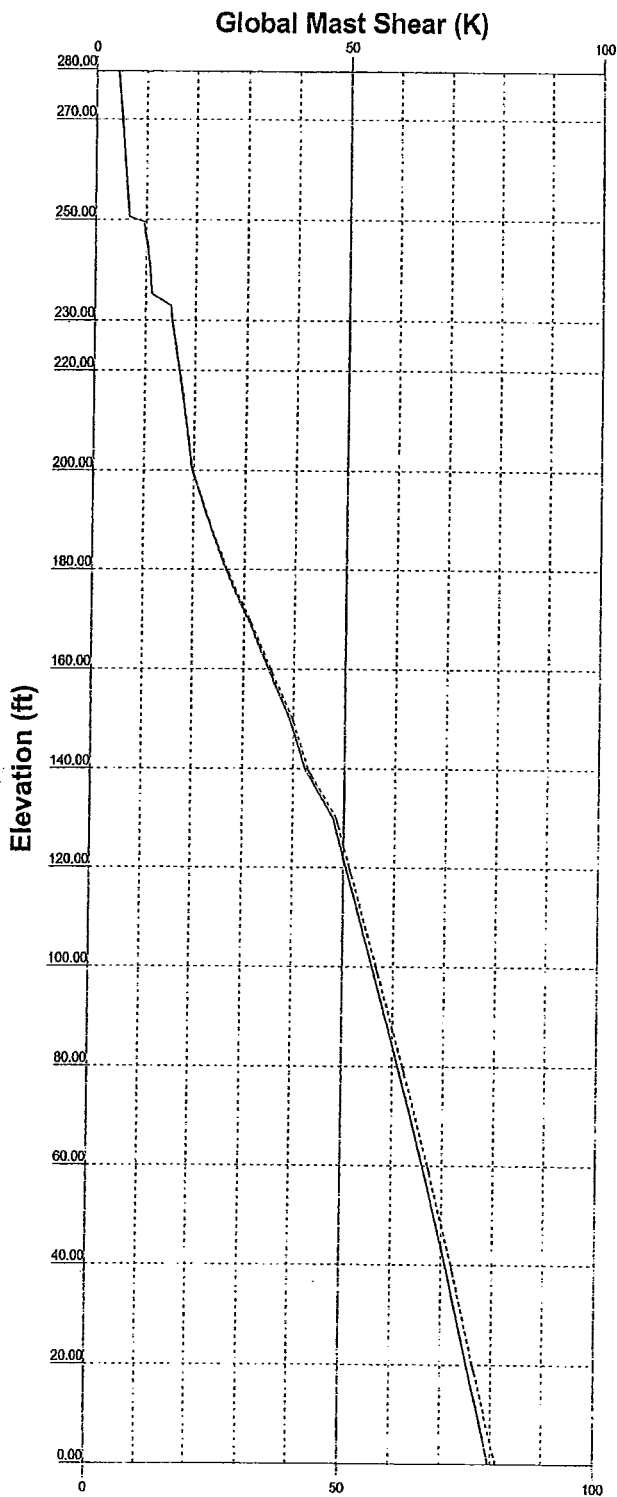
Leg Capacity ——— Leg Compression (K)



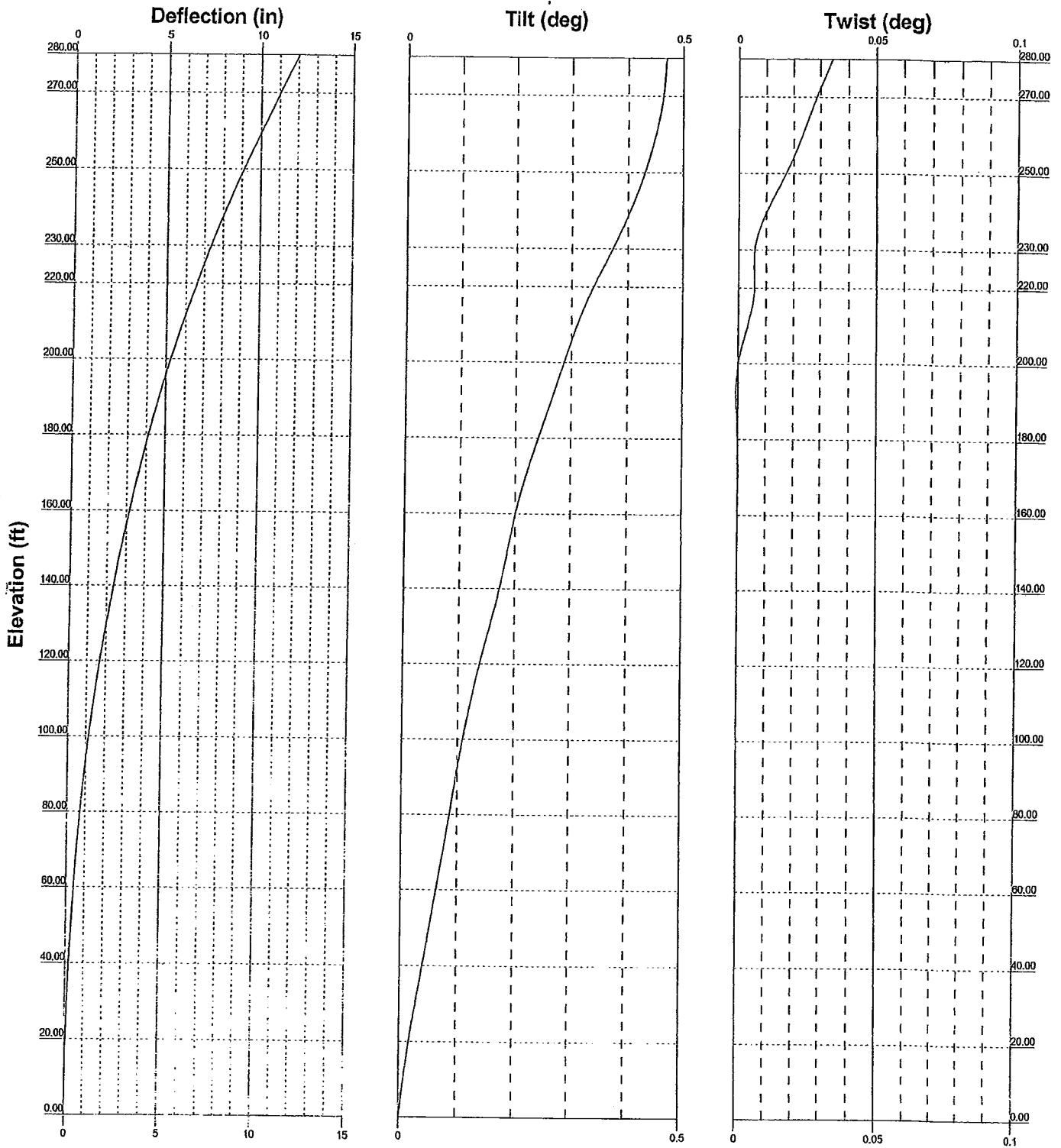
 <p>Valmont Structures 1545 Pidco Drive Plymouth, IN 46563 Phone: (574) 936-4221 FAX: (574) 936-6458</p> <p>Valmont Industries - Specialty Structures Group</p>	Job: A-116966 (PR2010-06-019)
	Project: U-28.0 x 280' - Seymour, CT
	Client: EMAC Communications LLC Drawn by: CRF App'd:
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	Path: _____ Dwg No. E-3

—— Vx - - - - Vz

—— Mx - - - - Mz



<p>Valmont Structures 1545 Pidco Drive Plymouth, IN 46563 Phone: (574) 936-4221 FAX: (574) 936-6458</p> <p><small>Valmont Industries - Specialty Structures Group</small></p>	Job: A-116966 (PR2010-06-019)	Project: U-28.0 x 280' - Seymour, CT	
	Client: EMAC Communications LLC	Drawn by: CRF	App'd:
	Code: TIA/EIA-222-F	Date: 07/08/10	Scale: NTS
	Path:		
			Dwg No. E-4

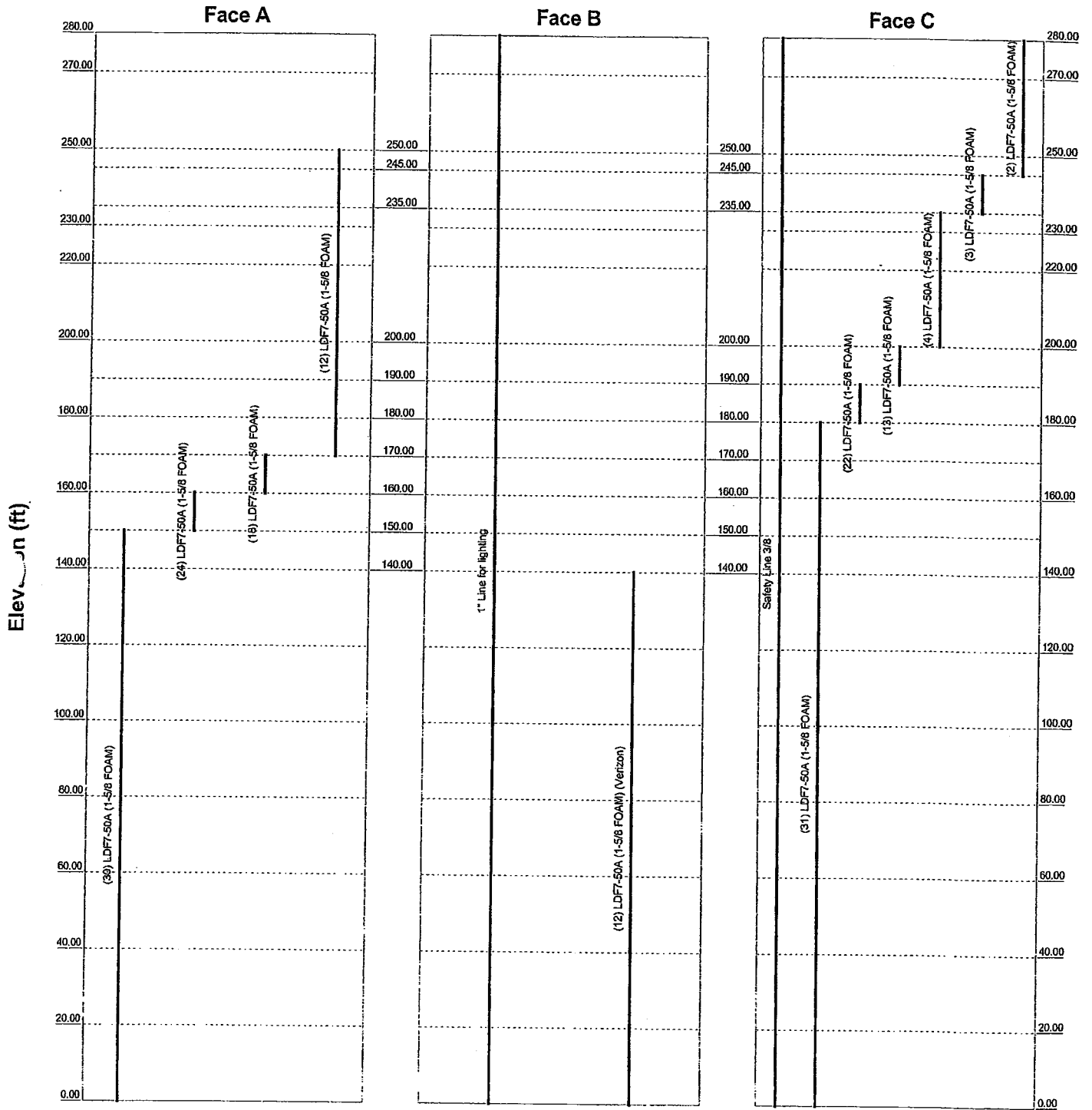


 Valmont Structures STRUCTURES Valmont Industries - Specialty Structures Group	1545 Pidco Drive Plymouth, IN 46563 Phone: (574) 936-4221 FAX: (574) 936-6458	Job: A-116966 (PR2010-06-019) Project: U-28.0 x 280' - Seymour, CT Client: EMAC Communications LLC Drawn by: CRF App'd: Code: TIA/EIA-222-F Date: 07/08/10 Scale: NTS Path: _____ Dwg No. E-5
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Feedline Distribution Chart

0' - 280'

Round
Flat
App In Face
App Out Face
Truss Leg



Valmont Structures 1545 Pidco Drive Plymouth, IN 46563 Valmont Industries - Specialty Structures Group Phone: (574) 936-4221 FAX: (574) 936-6458	Job: A-116966 (PR2010-06-019)	Project: U-28.0 x 280' - Seymour, CT	
	Client: EMAC Communications LLC	Drawn by: CRF	App'd:
	Code: TIA/EIA-222-F	Date: 07/08/10	Scale: NTS
	Path:	Dwg No. E-7	

RISATower Valmont Structures 1514 Pike Drive Plymouth, VT 05663 Phone: (374) 936-4211 FAX: (374) 936-6418	Job	A-116956 (PR2010-06-019)	Page	1 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1514 Pike Drive Plymouth, VT 05663 Phone: (374) 936-4211 FAX: (374) 936-6418	Job	A-116956 (PR2010-06-019)	Page	2 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 280.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 5.00 ft at the top and 28.00 ft at the base.
This tower is designed using the TIA/EIA-732-F standard.

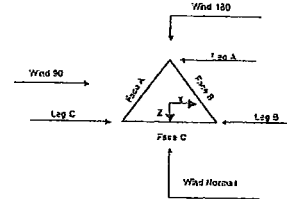
The following design criteria apply:
Tower is located in New Haven County, Connecticut.
Basic wind speed of 83 mph.
Nominal ice thickness of 0.3000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appearance mounts are not considered.



Triangular Tower

Options

- Consider Moments - Legs
- Consider Moments - Horizontals
- Consider Moments - Diagonals
- Use Moment Magnification
- Use Creep Stress Ratio
- Use Code Safety Factors - Only
- Exclude Ice
- Always Use Max Kz
- Use Special Wind Profile
- Include Bolt in Member Capacity
- Leg Bolt Area At Top Of Section
- Secondary Horizontal Braces Leg
- Use Diamond Inner Bracing (1/8" dia)
- Add IRC, SD+W Combination
- Distribute Leg Loads As Uniform
- Assume Legs Pinned
- Assume Right Angle Plate
- Use Clear Spans For Wind Area
- Use Clear Spans For LL/E
- Retention Only To Initial Tension
- Bypass Nut Stability Checks
- Use Airbrake Disk Coefficients
- Project Wind Area of Support
- Anticlock Torque Arm Joints
- SR Members Have Cut Joints
- Set Capacity Reports By Component
- Triangular Diamond Inner Bracing
- Treat Feedline Bundles As Cylinder
- Use ASCE 10 N-Bridge Lr Rules
- Calculate Redundant Bracing Forces
- Ignore Redundant Members in IEA
- SR Leg Bolt Rupture Compression
- All Leg Panels Have Same Allowable
- Offset Gir at Foundation
- Consider Feedline Torque
- Include Angle Block Shear Check
- Include Shear Section Interactions
- Always Use Sub-Critical Flow
- Use Top Mounted Sockets

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
T1	280.00-270.00		66969 1.131x1.131x1.131 (06171)	5.00	1	10.00
T2	270.00-250.00		66969 1.007x1.007x1.007 (06072)	5.00	1	20.00
T3	250.00-230.00		66969 1.007x1.007x1.007 (06072)	5.00	1	20.00
T4	230.00-220.00		2.50x1x1.000x1.000 (22729)	5.00	1	16.00
T5	220.00-200.00		U-4.122 1.007D x 20'	6.78	1	20.00
T6	200.00-180.00		U-10.122 1.007D x 20'	5.00	1	20.00
T7	180.00-160.00		U-12.122 1.131D x 20'	10.00	1	20.00
T8	160.00-140.00		U-14.122 1.257D x 20'	12.00	1	20.00
T9	140.00-120.00		U-16.122 1.257D x 20'	14.00	1	20.00
T10	120.00-100.00		U-18.18K 1.257 1.007D x 20'	16.00	1	20.00
T11	100.00-80.00		U-20.18K 1.257 1.007D x 20'	18.00	1	20.00
T12	80.00-60.00		U-22.18K 1.257 1.007D x 20'	20.00	1	20.00
T13	60.00-40.00		U-24.18K 1.257 1.007D x 20'	22.00	1	20.00
T14	40.00-20.00		U-26.18K 1.257 1.007D x 20'	24.00	1	20.00
T15	20.00-0.00		U-28.18K 1.257 1.007D x 20'	26.00	1	20.00

Tower Section Geometry (cont'd)

RISATower Valmont Structures 1514 Pike Drive Plymouth, VT 05663 Phone: (374) 936-4211 FAX: (374) 936-6418	Job	A-116956 (PR2010-06-019)	Page	3 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1514 Pike Drive Plymouth, VT 05663 Phone: (374) 936-4211 FAX: (374) 936-6418	Job	A-116956 (PR2010-06-019)	Page	4 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
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Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Feet?	Has Horizontal	Top Gir Offset	Bottom Gir Offset
T1	280.00-270.00	2.15	X Brace	No	Steps	5.000	5.000
T2	270.00-250.00	2.18	X Brace	No	Steps	5.000	6.100
T3	250.00-230.00	2.28	X Brace	No	Steps	5.000	6.100
T4	230.00-220.00	10.00	X Brace	No	No	0.000	0.000
T5	220.00-200.00	10.00	X Brace	No	No	0.000	0.000
T6	200.00-180.00	10.00	X Brace	No	No	0.000	0.000
T7	180.00-160.00	10.00	X Brace	No	No	0.000	0.000
T8	160.00-140.00	10.00	X Brace	No	No	0.000	0.000
T9	140.00-120.00	10.00	X Brace	No	No	0.000	0.000
T10	120.00-100.00	20.00	X Brace	No	No	0.000	0.000
T11	100.00-80.00	20.00	X Brace	No	No	0.000	0.000
T12	80.00-60.00	20.00	X Brace	No	No	0.000	0.000
T13	60.00-40.00	20.00	X Brace	No	No	0.000	0.000
T14	40.00-20.00	20.00	X Brace	No	No	0.000	0.000
T15	20.00-0.00	20.00	X Brace	No	No	0.000	0.000

Tower Section Geometry (cont'd)

Tower Elevation	Top Gir Type	Top Gir Size	Top Gir Grade	Bottom Gir Type	Bottom Gir Size	Bottom Gir Grade
T1 280.00-270.00	Solid Round	1	A372-70 (50 ksi)	Solid Round	1	A372-70 (50 ksi)
T2 270.00-250.00	Solid Round	1	A372-50 (50 ksi)	Solid Round	1	A372-50 (50 ksi)
T3 250.00-230.00	Solid Round	1 1/4	A372-50 (50 ksi)	Solid Round	1 1/4	A372-50 (50 ksi)
T4 230.00-220.00	Equal Angle	L3x3x3/16	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T5 220.00-200.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T6 200.00-180.00	Equal Angle	L3 1/2x3 1/2x3/16	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 280.00-270.00	Solid Round	1 3/4	A372-50 (50 ksi)	Solid Round	7/8	A372-50 (50 ksi)
T2 270.00-250.00	Solid Round	2	A372-50 (50 ksi)	Solid Round	7/8	A372-50 (50 ksi)
T3 250.00-230.00	Solid Round	2 1/2	A372-50 (50 ksi)	Solid Round	1	A372-50 (50 ksi)
T4 230.00-220.00	Truss Leg	#12@ 1.50' - 1.00' conn. (Pinned 103243-RA0)	A372-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 220.00-200.00	Truss Leg	#12 - 1.13' - 1.00' conn. (Pinned 103213)	A372-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 200.00-180.00	Truss Leg	#12 - 1.13' - 1.00' conn. (Pinned 103213)	A372-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 180.00-160.00	Truss Leg	#12 - 2.00' - 1.25' conn. (Pinned 103219)	A372-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T8 160.00-140.00	Truss Leg	#12 - 2.25' - 1.25' conn. (Pinned 103220)	A372-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x3/16	A36 (36 ksi)
T9 140.00-120.00	Truss Leg	#12 - 2.25' - 1.25' conn. (Pinned 103220)	A372-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x3/16	A36 (36 ksi)
T10 120.00-100.00	Truss Leg	#18 - 2.00' (Pinned 112743)	A372-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x3/16	A36 (36 ksi)
T11 100.00-80.00	Truss Leg	#18 - 2.00' (Pinned 112743)	A372-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x3/16	A36 (36 ksi)
T12 80.00-60.00	Truss Leg	#18 - 2.25' (Pinned 112744)	A372-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x3/16	A36 (36 ksi)
T13 60.00-40.00	Truss Leg	#18 - 2.25' (Pinned 112744)	A372-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x3/16	A36 (36 ksi)
T14 40.00-20.00	Truss Leg	#18 - 3.00' (Pinned 112745)	A372-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x3/16	A36 (36 ksi)
T15 20.00-0.00	Truss Leg	#18 - 3.00' (Pinned 112745)	A372-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	No. of Mid Girs	Mid Gir Type	Mid Gir Size	Mid Gir Grade	Horizontal Type	Horizontal Size	Perforated Grade
T1 280.00-270.00	1	Solid Round	1	A372-70 (50 ksi)	Solid Round	7/8	A372-50 (50 ksi)
T2 270.00-250.00	1	Solid Round	1	A372-50 (50 ksi)	Solid Round	7/8	A372-50 (50 ksi)
T3 250.00-230.00	None	Solid Round		A372-50 (50 ksi)	Solid Round	7/8	A372-50 (50 ksi)
T4 230.00-220.00	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A372-50 (50 ksi)
T5 220.00-200.00	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Solid Round		A372-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Gir Area (sq ft)	Gir Thickness	Gir Area (sq ft)	Adjust. Factor A	Adjust. Factor B	Height (ft)	Double Angle Spacing (ft)	Double Angle Spacing (ft)	Double Angle Spacing (ft)
T1	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
230.00-270.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
270.00-250.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
250.00-230.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
230.00-220.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
220.00-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
200.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000
20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.03	36.0000	36.0000	36.0000

RISA Tower Valmont Structures 1343 Pike Drive Plymouth, MI 48153 Phone: (734) 936-4221 FAX: (734) 936-6433	Job	A-116966 (PR2010-06-019)	Page	9 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISA Tower Valmont Structures 1343 Pike Drive Plymouth, MI 48153 Phone: (734) 936-4221 FAX: (734) 936-6433	Job	A-116966 (PR2010-06-019)	Page	10 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Tower Section	Tower Elevation	Face	A ₁	A ₂	C ₁ A ₁ In Face	C ₁ A ₂ Out Face	Weight
T1	200.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T2	170.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T3	250.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T4	230.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T5	220.00-200.00	A	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation	Face	A ₁	A ₂	C ₁ A ₁ In Face	C ₁ A ₂ Out Face	Weight
T6	200.00-180.00	B	3.073	0.000	0.000	0.000	0.01
T7	180.00-160.00	A	37.548	0.000	0.000	0.000	0.23
T8	160.00-140.00	A	66.601	0.000	0.000	0.000	0.41
T9	140.00-120.00	A	71.095	0.000	0.000	0.000	0.49
T10	120.00-100.00	A	74.005	0.000	0.000	0.000	0.50
T11	100.00-80.00	A	79.584	0.000	0.000	0.000	0.51
T12	80.00-60.00	A	74.006	0.000	0.000	0.000	0.49
T13	60.00-40.00	A	79.584	0.000	0.000	0.000	0.51
T14	40.00-20.00	A	74.006	0.000	0.000	0.000	0.49
T15	20.00-0.00	A	79.584	0.000	0.000	0.000	0.51

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placenta	Total Number	Number Per Row	Clear Spacing	Radius Diameter	Future	Weight
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	B	Yes	Ar (CFA)	280.00 - 0.00	1	1	4.0000	1.2500	0.18	0.18
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	C	Yes	Ar (CFA)	280.00 - 0.00	1	1	4.0000	1.2500	0.18	0.18
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	B	Yes	Ar (CFA)	140.00 - 0.00	12	6	3.2000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	A	Yes	Ar (CFA)	140.00 - 0.00	12	6	3.2000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	A	Yes	Ar (CFA)	160.00 - 150.00	24	12	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	A	Yes	Ar (CFA)	170.00 - 160.00	18	9	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	A	Yes	Ar (CFA)	150.00 - 170.00	12	6	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	C	Yes	Ar (CFA)	180.00 - 0.00	31	16	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	C	Yes	Ar (CFA)	190.00 - 180.00	22	11	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	C	Yes	Ar (CFA)	200.00 - 190.00	13	7	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	C	Yes	Ar (CFA)	235.00 - 200.00	4	2	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	C	Yes	Ar (CFA)	245.00 - 235.00	3	2	1.8000	1.9000	0.32	0.32
1" Line for Backlog Safety Line 5/8 LDF7-50A (1-5/8 FOAM) (Vermont)	C	Yes	Ar (CFA)	280.00 - 245.00	2	1	1.8000	1.9000	0.32	0.32

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation	Face or Leg	A ₁	A ₂	C ₁ A ₁ In Face	C ₁ A ₂ Out Face	Weight
T1	280.00-210.00	A	0.500	0.000	0.000	0.000	0.00
T2	270.00-210.00	A	0.500	0.000	0.000	0.000	0.00
T3	250.00-210.00	A	0.500	0.000	0.000	0.000	0.00
T4	230.00-210.00	A	0.500	0.000	0.000	0.000	0.00
T5	220.00-200.00	A	0.500	0.000	0.000	0.000	0.00
T6	200.00-180.00	A	0.500	0.000	0.000	0.000	0.00
T7	180.00-160.00	A	0.500	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation	Face	A ₁	A ₂	C ₁ A ₁ In Face	C ₁ A ₂ Out Face	Weight
T1	280.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T2	270.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T3	250.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T4	230.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T5	220.00-200.00	A	0.000	0.000	0.000	0.000	0.00

RISA Tower Valmont Structures 1343 Pike Drive Plymouth, MI 48153 Phone: (734) 936-4221 FAX: (734) 936-6433	Job	A-116966 (PR2010-06-019)	Page	11 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISA Tower Valmont Structures 1343 Pike Drive Plymouth, MI 48153 Phone: (734) 936-4221 FAX: (734) 936-6433	Job	A-116966 (PR2010-06-019)	Page	12 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Tower Section	Tower Elevation	Face or Leg	A ₁	A ₂	C ₁ A ₁ In Face	C ₁ A ₂ Out Face	Weight
T8	160.00-140.00	C	0.500	0.000	0.000	0.000	0.00
T9	140.00-120.00	A	0.500	0.000	0.000	0.000	0.00
T10	120.00-100.00	A	0.500	0.000	0.000	0.000	0.00
T11	100.00-80.00	A	0.500	0.000	0.000	0.000	0.00
T12	80.00-60.00	A	0.500	0.000	0.000	0.000	0.00
T13	60.00-40.00	A	0.500	0.000	0.000	0.000	0.00
T14	40.00-20.00	A	0.500	0.000	0.000	0.000	0.00
T15	20.00-0.00	A	0.500	0.000	0.000	0.000	0.00

Section	Elevation	Face	A ₁	A ₂	C ₁ A ₁ In Face	C ₁ A ₂ Out Face	Weight
T10	120.00-100.00	A	0.000	0.000	0.000	0.000	0.00
T11	100.00-80.00	A	0.000	0.000	0.000	0.000	0.00
T12	80.00-60.00	A	0.000	0.000	0.000	0.000	0.00
T13	60.00-40.00	A	0.000	0.000	0.000	0.000	0.00
T14	40.00-20.00	A	0.000	0.000	0.000	0.000	0.00
T15	20.00-0.00	A	0.000	0.000	0.000	0.000	0.00

Feed Line Shielding

Section	Elevation	Face	A ₁	A ₂	C ₁ A ₁ In Face	C ₁ A ₂ Out Face	Weight
T1	280.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T2	270.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T3	250.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T4	230.00-210.00	A	0.000	0.000	0.000	0.000	0.00
T5	220.00-200.00	A	0.000	0.000	0.000	0.000	0.00
T6	200.00-180.00	A	0.000	0.000	0.000	0.000	0.00
T7	180.00-160.00	A	0.000	0.000	0.000	0.000	0.00
T8	160.00-140.00	A	0.000	0.000	0.000	0.000	0.00
T9	140.00-120.00	A	0.000	0.000	0.000	0.000	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offset Horiz Lateral	Offset Vert	Placenta	C ₁ A ₁ Front	C ₁ A ₂ Side	Weight
Beacon	B	From Leg	0.000	0.000	280.00	No Ice	2.50	1.40
1" LRE (3mm 5/8) 900011	C	From Leg	0.000	0.000	280.00	No Ice	4.31	4.51
DB120-A	D	From Central-Fa	0.000	0.000	280.00	No Ice	5.99	5.99
DB184-NC	A	From Central-Fa	0.000	0.000	280.00	No Ice	0.91	0.91
2" x 14" Std. 40	B	From Central-Fa	0.000	0.000	280.00	No Ice	1.56	1.56
2" x 14" Std. 40	A	From Central-Fa	0.000	0.000	280.00	No Ice	1.56	1.56
3-Ara 114a Mount	C	From Central-Fa	0.000	0.000	280.00	No Ice	0.00	0.00
(4) RR00-17-NCNDP	C	None	0.000	0.000	250.00	No Ice	1.48	1.51
(4) RR00-17-NCNDP	B	None	0.000	0.000	250.00	No Ice	1.48	1.51
(4) RR00-17-NCNDP	A	None	0.000	0.000	250.00	No Ice	1.48	1.51
(4) 2" x 14" Std. 40	C	None	0.000	0.000	250.00	No Ice	1.48	1.51

RISATower Valmont Structures 1145 Peko Drive Plymouth, NJ 08653 Phone: (732) 936-4211 FAX: (732) 936-6438	Job	A-116966 (PR2010-06-019)	Page	13 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1145 Peko Drive Plymouth, NJ 08653 Phone: (732) 936-4211 FAX: (732) 936-6438	Job	A-116966 (PR2010-06-019)	Page	14 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Description	Face of Leg	Offset Type	Offset: Horiz Lateral Vert	Annular Adjustment	Placement	C ₁ , Front	C ₁ , Side	Weight
			ft		ft	ft	ft	K
(4) 2" x 14" Sch. 40	B	None	0.0000	250.00	1/2" loc	0.64	2.36	0.64
(4) 2" x 14" Sch. 40	A	None	0.0000	250.00	1/2" loc	0.64	2.36	0.64
15' Universal T-Frame	C	None	0.0000	250.00	1/2" loc	0.64	2.36	0.64
15' Universal T-Frame	B	None	0.0000	250.00	1/2" loc	0.64	2.36	0.64
15' Universal T-Frame	A	None	0.0000	250.00	1/2" loc	0.64	2.36	0.64
DB20-A	B	None	0.0000	245.00	1/2" loc	0.78	3.21	0.45
DB23-T1	A	None	0.0000	235.00	1/2" loc	0.78	3.21	0.45
2" x 14" Sch. 40	A	None	0.0000	235.00	1/2" loc	0.78	3.21	0.45
9-Arm Hub Mount	A	None	0.0000	235.00	1/2" loc	0.78	3.21	0.45
(2) DB980H120EM & EKL	C	None	0.0000	200.00	1/2" loc	3.00	1.33	0.01
(2) DB980H120EM & EKL	B	None	0.0000	200.00	1/2" loc	3.00	1.33	0.01
(2) DB980H120EM & EKL	A	None	0.0000	200.00	1/2" loc	3.00	1.33	0.01
(2) 2" x 60" Sch. 40	C	None	0.0000	200.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	B	None	0.0000	200.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	A	None	0.0000	200.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	C	None	0.0000	200.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	B	None	0.0000	200.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	A	None	0.0000	200.00	1/2" loc	0.00	0.93	0.02
(2) DB980H120EM & EKL	C	None	0.0000	190.00	1/2" loc	3.00	1.33	0.01
(2) DB980H120EM & EKL	B	None	0.0000	190.00	1/2" loc	3.00	1.33	0.01
(2) DB980H120EM & EKL	A	None	0.0000	190.00	1/2" loc	3.00	1.33	0.01
(2) 2" x 60" Sch. 40	C	None	0.0000	190.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	B	None	0.0000	190.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	A	None	0.0000	190.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	C	None	0.0000	190.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	B	None	0.0000	190.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	A	None	0.0000	190.00	1/2" loc	0.00	0.93	0.02
(2) DB980H120EM & EKL	C	None	0.0000	150.00	1/2" loc	3.00	1.33	0.01
(2) DB980H120EM & EKL	B	None	0.0000	150.00	1/2" loc	3.00	1.33	0.01
(2) DB980H120EM & EKL	A	None	0.0000	150.00	1/2" loc	3.00	1.33	0.01
(2) 2" x 60" Sch. 40	C	None	0.0000	150.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	B	None	0.0000	150.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	A	None	0.0000	150.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	C	None	0.0000	150.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	B	None	0.0000	150.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	A	None	0.0000	150.00	1/2" loc	0.00	0.93	0.02

Description	Face of Leg	Offset Type	Offset: Horiz Lateral Vert	Annular Adjustment	Placement	C ₁ , Front	C ₁ , Side	Weight
			ft		ft	ft	ft	K
(2) DB980H120EM & EKL	B	None	0.0000	180.00	1/2" loc	3.00	1.33	0.01
(2) DB980H120EM & EKL	A	None	0.0000	180.00	1/2" loc	3.00	1.33	0.01
(2) 2" x 60" Sch. 40	C	None	0.0000	180.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	B	None	0.0000	180.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	A	None	0.0000	180.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	C	None	0.0000	180.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	B	None	0.0000	180.00	1/2" loc	0.00	0.93	0.02
10' Lightweight T-Frame	A	None	0.0000	180.00	1/2" loc	0.00	0.93	0.02
(2) DB980F65	C	None	0.0000	170.00	1/2" loc	3.12	1.33	0.01
(2) DB980F65	B	None	0.0000	170.00	1/2" loc	3.12	1.33	0.01
(2) DB980F65	A	None	0.0000	170.00	1/2" loc	3.12	1.33	0.01
(2) 2" x 60" Sch. 40	C	None	0.0000	170.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	B	None	0.0000	170.00	1/2" loc	0.00	0.93	0.02
(2) 2" x 60" Sch. 40	A	None	0.0000	170.00	1/2" loc	0.00	0.93	0.02
15' Universal T-Frame	C	None	0.0000	170.00	1/2" loc	0.00	0.93	0.02
15' Universal T-Frame	B	None	0.0000	170.00	1/2" loc	0.00	0.93	0.02
15' Universal T-Frame	A	None	0.0000	170.00	1/2" loc	0.00	0.93	0.02
(2) 7000-50	C	None	0.0000	160.00	1/2" loc	1.38	0.87	0.02
(2) 7000-50	B	None	0.0000	160.00	1/2" loc	1.38	0.87	0.02
(2) 7000-50	A	None	0.0000	160.00	1/2" loc	1.38	0.87	0.02
(4) Post-tension LCP14in	C	None	0.0000	160.00	1/2" loc	0.54	0.18	0.01
(4) Post-tension LCP14in	B	None	0.0000	160.00	1/2" loc	0.54	0.18	0.01
(4) Post-tension LCP14in	A	None	0.0000	160.00	1/2" loc	0.54	0.18	0.01
(2) Post-tension 7020.00	C	None	0.0000	160.00	1/2" loc	0.33	0.11	0.01
(2) Post-tension 7020.00	B	None	0.0000	160.00	1/2" loc	0.33	0.11	0.01
(2) Post-tension 7020.00	A	None	0.0000	160.00	1/2" loc	0.33	0.11	0.01
(2) 2" x 60" Sch. 40	C	None	0.0000	160.00	1/2" loc	0.08	0.25	0.02
(2) 2" x 60" Sch. 40	B	None	0.0000	160.00	1/2" loc	0.08	0.25	0.02
(2) 2" x 60" Sch. 40	A	None	0.0000	160.00	1/2" loc	0.08	0.25	0.02

RISATower Valmont Structures 1145 Peko Drive Plymouth, NJ 08653 Phone: (732) 936-4211 FAX: (732) 936-6438	Job	A-116966 (PR2010-06-019)	Page	15 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1145 Peko Drive Plymouth, NJ 08653 Phone: (732) 936-4211 FAX: (732) 936-6438	Job	A-116966 (PR2010-06-019)	Page	16 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Description	Face of Leg	Offset Type	Offset: Horiz Lateral Vert	Annular Adjustment	Placement	C ₁ , Front	C ₁ , Side	Weight
			ft		ft	ft	ft	K
15' Universal T-Frame	C	None	0.0000	160.00	1/2" loc	0.71	1.17	0.03
15' Universal T-Frame	B	None	0.0000	160.00	1/2" loc	0.71	1.17	0.03
15' Universal T-Frame	A	None	0.0000	160.00	1/2" loc	0.71	1.17	0.03
APXV18-205175-C	C	None	0.0000	150.00	1/2" loc	4.78	2.51	0.45
APXV18-205175-C	B	None	0.0000	150.00	1/2" loc	4.78	2.51	0.45
APXV18-205175-C	A	None	0.0000	150.00	1/2" loc	4.78	2.51	0.45
LNK-6514DS-VTM (Vertico)	C	None	0.0000	140.00	1/2" loc	4.13	2.43	0.63
LNK-6514DS-VTM (Vertico)	B	None	0.0000	140.00	1/2" loc	4.13	2.43	0.63
LNK-6514DS-VTM (Vertico)	A	None	0.0000	140.00	1/2" loc	4.13	2.43	0.63
2" x 72" Sch. 40 (Vertico)	C	None	0.0000	140.00	1/2" loc	0.39	1.14	0.02
2" x 72" Sch. 40 (Vertico)	B	None	0.0000	140.00	1/2" loc	0.39	1.14	0.02
2" x 72" Sch. 40 (Vertico)	A	None	0.0000	140.00	1/2" loc	0.39	1.14	0.02
(2) DB4676ZANY (Vertico)	C	None	0.0000	140.00	1/2" loc	5.63	3.15	0.61
(2) DB4676ZANY (Vertico)	B	None	0.0000	140.00	1/2" loc	5.63	3.15	0.61
(2) DB4676ZANY (Vertico)	A	None	0.0000	140.00	1/2" loc	5.63	3.15	0.61
BNV-18504H2CF (Vertico)	C	None	0.0000	140.00	1/2" loc	3.82	2.91	0.41
BNV-18504H2CF (Vertico)	B	None	0.0000	140.00	1/2" loc	3.82	2.91	0.41
BNV-18504H2CF (Vertico)	A	None	0.0000	140.00	1/2" loc	3.82	2.91	0.41
(2) 2" x 12" Sch. 40 (Vertico)	C	None	0.0000	140.00	1/2" loc	0.00	1.14	0.02
(2) 2" x 12" Sch. 40 (Vertico)	B	None	0.0000	140.00	1/2" loc	0.00	1.14	0.02
(2) 2" x 12" Sch. 40 (Vertico)	A	None	0.0000	140.00	1/2" loc	0.00	1.14	0.02
12" V Frame (Vertico)	C	None	0.0000	140.00	1/2" loc	0.91	2.31	0.39
12" V Frame (Vertico)	B	None	0.0000	140.00	1/2" loc	0.91	2.31	0.39
12" V Frame (Vertico)	A	None	0.0000	140.00	1/2" loc	0.91	2.31	0.39

Station Designation	Area	Area Ics	Self Weight	Ice Weight	Beam Diameter	Beam Diameter Ics	Leg Area
	sq ft	sq ft	lb/ft	lb/ft	in	in	sq ft
#1220 - 1.50" (10218-040)	1220.4471	1981.9398	0.77	0.22	9.010	10.7811	3.1014
#12 - 1.75" - 1.00" (101213)	2029.7828	3253.0084	0.50	0.46	7.0479	11.2992	7.2158
#12 - 1.75" - 1.00" (101213) (101213)	2029.7828	3253.0084	0.50	0.46	7.0479	11.2992	7.2158
#12 - 2.00" - 1.25" (101219)	3260.7157	5361.6172	1.03	0.49	7.3498	12.2565	9.4248
#12 - 2.25" - 1.25" (101220)	2387.7320	3711.1206	1.20	0.50	8.2907	12.9898	11.9282
#12 - 2.50" - 1.25" (101220)	3726.9434	5150.9263	1.32	0.70	12.9408	17.8812	14.7262
#18 - 2.50" (101243)	3726.9434	5150.9263	1.32	0.70	12.9408	17.8812	14.7262
#18 - 2.75" (101243)	3817.6164	5324.7207	2.04	0.72	13.3946	18.4886	17.1187
#18 - 3.00" (101243)	3817.6164	5324.7207	2.04	0.72	13.3946	18.4886	17.1187
#18 - 3.00" (10							

RISATower		Job	A-116956 (PR2010-06-019)	Page	17 of 149
Valmont Structures 1343 Piko Drive Plymouth, IN 46163 Phone: (317) 936-4321 Fax: (317) 936-6433		Project	U-28.0 x 280' - Seymour, CT	Date	09/48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

RISATower		Job	A-116956 (PR2010-06-019)	Page	18 of 149
Valmont Structures 1343 Piko Drive Plymouth, IN 46163 Phone: (317) 936-4321 Fax: (317) 936-6433		Project	U-28.0 x 280' - Seymour, CT	Date	09/48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Section Elevation	z	K _t	g _s	t _r	A ₀	F _r	A _r	A ₁	Leg %	C ₁ A ₁	C ₂ A ₂
β	β	β	β	β	β	β	β	β	β	β	β
160.00-140.00	150.00	1.541	29	283.780	C	13.764	105.794	27.682	21.92	0.000	0.000
					A	15.913	94.283	27.682	25.11	0.000	0.000
					B	19.700	79.765	27.682	25.56	0.000	0.000
					C	14.777	107.256	27.682	22.51	0.000	0.000
140.00-120.00	130.00	1.48	27	323.230	A	11.564	117.214	37.482	23.71	0.000	0.000
					B	16.989	14.91	37.482	28.62	0.000	0.000
					C	14.777	107.256	37.482	22.69	0.000	0.000
120.00-100.00	110.00	1.411	26	374.200	A	11.564	117.214	43.208	23.71	0.000	0.000
					B	12.907	70.217	43.208	21.92	0.000	0.000
					C	11.487	122.792	43.208	22.18	0.000	0.000
100.00-80.00	90.00	1.332	25	414.200	A	12.533	117.214	43.208	23.71	0.000	0.000
					B	13.704	70.217	43.208	21.92	0.000	0.000
					C	12.248	122.792	43.208	21.97	0.000	0.000
80.00-60.00	70.00	1.24	23	454.627	A	13.428	117.214	44.723	23.84	0.000	0.000
					B	14.140	70.217	44.723	21.92	0.000	0.000
					C	13.370	124.307	44.723	22.51	0.000	0.000
60.00-40.00	50.00	1.126	21	494.627	A	14.241	117.214	44.723	23.61	0.000	0.000
					B	15.111	70.217	44.723	21.92	0.000	0.000
					C	14.192	124.307	44.723	22.20	0.000	0.000
40.00-20.00	30.00	1	18	535.044	A	15.283	120.255	46.279	24.14	0.000	0.000
					B	16.315	73.288	46.279	21.45	0.000	0.000
					C	15.137	123.354	46.279	21.45	0.000	0.000
20.00-0.00	10.00	1	18	575.044	A	16.243	120.255	46.839	24.18	0.000	0.000
					B	17.249	73.288	46.839	21.43	0.000	0.000
					C	16.101	126.412	46.839	21.43	0.000	0.000

Section Elevation	z	K _t	g _s	t _r	A ₀	F _r	A _r	A ₁	Leg %	C ₁ A ₁	C ₂ A ₂
β	β	β	β	β	β	β	β	β	β	β	β
160.00-120.00	150.00	1.48	21	0.500	B	18.533	52.341	19.83	0.000	0.000	
					C	12.670	129.562	30.21	0.000	0.000	
					A	13.290	122.977	31.68	0.000	0.000	
140.00-120.00	130.00	1.411	20	0.500	B	18.077	56.441	19.83	0.000	0.000	
					C	12.790	129.596	30.21	0.000	0.000	
					A	13.290	126.900	31.68	0.000	0.000	
120.00-100.00	110.00	1.332	18	0.500	B	14.188	72.022	19.83	0.000	0.000	
					C	10.212	145.533	38.24	0.000	0.000	
					A	11.490	138.694	39.71	0.000	0.000	
100.00-80.00	90.00	1.24	16	0.500	B	14.517	74.514	19.83	0.000	0.000	
					C	11.169	145.825	38.04	0.000	0.000	
					A	12.421	140.993	41.731	0.000	0.000	
80.00-60.00	70.00	1.126	14	0.500	B	15.318	74.514	19.83	0.000	0.000	
					C	11.229	148.114	38.21	0.000	0.000	
					A	13.318	141.226	41.731	0.000	0.000	
60.00-40.00	50.00	1	14	0.500	B	16.249	74.514	19.83	0.000	0.000	
					C	11.997	148.291	38.21	0.000	0.000	
					A	14.399	143.283	43.311	0.000	0.000	
40.00-20.00	30.00	1	14	0.500	B	17.084	74.514	19.83	0.000	0.000	
					C	11.997	148.291	38.21	0.000	0.000	
					A	15.316	141.816	46.762	0.000	0.000	
20.00-0.00	10.00	1	14	0.500	B	18.599	74.514	19.83	0.000	0.000	
					C	11.997	148.291	38.21	0.000	0.000	
					A	15.023	151.216	46.762	0.000	0.000	

Tower Pressure - With Ice

G_w = 1.022

Section Elevation	z	K _t	g _s	t _r	A ₀	F _r	A _r	A ₁	Leg %	C ₁ A ₁	C ₂ A ₂
β	β	β	β	β	β	β	β	β	β	β	β
190.00-170.00	175.00	1.833	21	0.500	A	25.207	0.000	12.654	4.883	33.54	0.000
					B	0.000	0.000	18.188	18.188	0.000	0.000
					C	0.000	0.000	20.101	33.36	0.000	0.000
170.00-150.00	160.00	1.804	25	0.500	A	0.000	0.000	24.194	10.000	38.77	0.000
					B	0.000	0.000	24.54	14.54	0.000	0.000
					C	0.000	0.000	24.23	21.23	0.000	0.000
150.00-130.00	140.00	1.763	34	0.500	A	0.000	0.000	14.572	11.667	31.39	0.000
					B	0.000	0.000	10.736	37.96	0.000	0.000
					C	0.000	0.000	14.299	24.99	0.000	0.000
130.00-120.00	125.00	1.731	24	0.500	A	2.731	40.811	23.007	15.61	0.000	0.000
					B	3.960	28.466	25.822	15.61	0.000	0.000
					C	3.994	33.466	25.822	15.61	0.000	0.000
120.00-100.00	110.00	1.697	24	0.500	A	5.944	72.243	37.713	47.03	0.000	0.000
					B	10.227	44.372	37.713	47.03	0.000	0.000
					C	9.466	52.34	37.713	47.03	0.000	0.000
100.00-80.00	90.00	1.649	23	0.500	A	12.445	73.742	37.713	47.03	0.000	0.000
					B	15.647	48.479	37.713	47.03	0.000	0.000
					C	10.728	52.34	37.713	47.03	0.000	0.000
80.00-60.00	70.00	1.597	22	0.500	A	15.597	84.686	40.943	51.91	0.000	0.000
					B	18.780	50.436	40.943	51.91	0.000	0.000
					C	10.303	127.195	40.943	51.91	0.000	0.000
60.00-40.00	50.00	1.541	21	0.500	A	18.544	84.686	43.024	51.91	0.000	0.000
					B	21.746	50.436	43.024	51.91	0.000	0.000
					C	11.293	132.283	43.024	51.91	0.000	0.000

Tower Pressure - Service

G_w = 1.022

Section Elevation	z	K _t	g _s	t _r	A ₀	F _r	A _r	A ₁	Leg %	C ₁ A ₁	C ₂ A ₂
β	β	β	β	β	β	β	β	β	β	β	β
180.00-170.00	175.00	1.833	12	11.458	A	0.000	7.933	1.917	40.31	0.000	0.000
					B	0.000	3.084	15.61	35.61	0.000	0.000
					C	0.000	13.312	25.69	0.000	0.000	0.000
170.00-150.00	160.00	1.804	12	103.393	A	0.000	14.118	6.667	47.22	0.000	0.000
					B	0.000	16.000	41.56	0.000	0.000	0.000
					C	0.000	23.009	25.00	0.000	0.000	0.000
150.00-130.00	140.00	1.763	11	104.167	A	0.000	44.990	1.333	18.54	0.000	0.000
					B	0.000	18.312	20.66	0.000	0.000	0.000
					C	0.000	28.073	41.01	0.000	0.000	0.000
130.00-120.00	125.00	1.731	11	68.254	A	3.287	30.418	15.042	43.01	0.000	0.000
					B	4.072	16.083	18.312	74.73	0.000	0.000
					C	3.110	19.514	18.312	74.73	0.000	0.000
120.00-100.00	110.00	1.697	11	162.943	A	8.723	57.745	23.532	37.41	0.000	0.000
					B	10.710	25.615	23.532	37.41	0.000	0.000
					C	9.923	37.317	23.532	37.41	0.000	0.000
100.00-80.00	90.00	1.649	11	202.943	A	13.441	57.745	23.532	35.02	0.000	0.000
					B	15.213	33.615	23.532	35.02	0.000	0.000
					C	12.390	47				

RISA Tower		Job	A-116866 (PR2010-06-019)	Page	21 of 149
Volant Structures 1545 Piko Drive Plymouth, NY 46643 Phone: (514) 938-4321 FAX: (514) 938-6438		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRFI

Section Elevation	Add Weight	Self Weight	F _a	F _e	C _r	R _a	D _r	D _s	A _t	F	w	Col. Face
#	K	K	e	e					#	K	#/ft	
T11	1.21	1.75	A	0.313	2.763	0.62	0.8	1	72.703	5.19	359.26	C
			B	0.201	2.187	0.591	0.8	1	52.457			
			C	0.236	2.228	0.623	0.8	1	36.554			
T12	1.21	1.49	A	0.291	2.311	0.613	0.8	1	33.554	5.00	258.13	C
			B	0.19	2.631	0.528	0.8	1	33.536			
			C	0.293	2.239	0.617	0.8	1	37.777			
T13	1.21	1.62	A	0.269	2.322	0.609	0.8	1	35.252	4.66	335.01	C
			B	0.176	2.677	0.546	0.8	1	34.332			
			C	0.23	2.351	0.61	0.8	1	37.180			
T14	1.21	1.48	A	0.252	2.477	0.603	0.8	1	34.728	4.28	313.33	C
			B	0.167	2.708	0.554	0.8	1	35.774			
			C	0.264	2.398	0.605	0.8	1	38.309			
T15	1.21	1.16	A	0.238	2.475	0.599	0.8	1	35.291	4.39	319.46	C
			B	0.138	2.741	0.531	0.8	1	34.446			
			C	0.241	2.444	0.601	0.8	1	38.015			
Sum Weight	11.48	72.88						OTM	6840.31	56.70		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F _a	F _e	C _r	R _a	D _r	D _s	A _t	F	w	Col. Face
#	K	K	e	e					#	K	#/ft	
T1	0.02	0.69	A	0.241	2.906	0.78	0.85	1	4.197	0.63	63.21	C
			B	0.159	2.718	0.783	0.85	1	4.771			
			C	0.21	2.929	0.795	0.85	1	5.753			
T2	0.05	1.44	A	0.137	2.931	0.78	0.85	1	4.181	1.26	63.05	C
			B	0.155	2.932	0.792	0.85	1	9.240			
			C	0.223	2.932	0.795	0.85	1	13.734			
T3	0.26	2.00	A	0.432	2.603	0.665	0.85	1	28.951	2.13	106.69	A
			B	0.176	2.699	0.586	0.85	1	10.727			
			C	0.235	2.564	0.609	0.85	1	15.492			
T4	0.14	1.26	A	0.504	1.995	0.7	0.85	1	33.871	1.58	158.08	A
			B	0.204	2.587	0.617	0.85	1	13.250			
			C	0.189	2.687	0.647	0.85	1	12.048			
T5	0.28	2.09	A	0.384	2.097	0.648	0.85	1	42.176	3.03	151.53	A
			B	0.221	2.728	0.599	0.85	1	34.053			
			C	0.28	2.727	0.613	0.85	1	31.338			
T6	0.50	3.14	A	0.231	2.317	0.616	0.85	1	45.066	3.80	190.21	C
			B	0.201	3.592	0.591	0.85	1	38.061			
			C	0.4	2.864	0.652	0.85	1	53.338			
T7	0.77	4.50	A	0.33	2.22	0.623	0.85	1	39.625	5.24	262.21	C
			B	0.194	2.616	0.589	0.85	1	32.777			
			C	0.191	1.922	0.629	0.85	1	35.024			
T8	0.97	5.17	A	0.318	2.087	0.627	0.85	1	40.045	5.26	262.36	C
			B	0.174	2.84	0.583	0.85	1	34.172			
			C	0.421	2.069	0.665	0.85	1	34.220			
T9	1.21	5.04	A	0.461	2.147	0.616	0.85	1	77.192	5.14	237.06	C
			B	0.221	2.525	0.599	0.85	1	46.992			
			C	0.377	2.311	0.642	0.85	1	31.475			
T10	1.21	1.60	A	0.314	2.183	0.63	0.85	1	33.517	5.38	269.84	C
			B	0.222	2.524	0.599	0.85	1	52.762			
			C	0.359	2.181	0.656	0.85	1	37.819			
T11	1.31	1.72	A	0.203	2.387	0.591	0.85	1	33.142	5.23	361.31	C
			B									

RISA Tower		Job	A-116866 (PR2010-06-019)	Page	22 of 149
Volant Structures 1545 Piko Drive Plymouth, NY 46643 Phone: (514) 938-4321 FAX: (514) 938-6438		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRFI

Section Elevation	Add Weight	Self Weight	F _a	F _e	C _r	R _a	D _r	D _s	A _t	F	w	Col. Face
#	K	K	e	e					#	K	#/ft	
T12	1.31	1.49	A	0.326	2.228	0.623	0.85	1	32.173	5.04	253.03	C
			B	0.201	2.391	0.61	0.85	1	24.706			
			C	0.19	2.631	0.588	0.85	1	34.563			
T13	1.21	1.62	A	0.263	2.389	0.617	0.85	1	32.940	4.70	234.94	C
			B	0.176	2.677	0.546	0.85	1	34.221			
			C	0.176	2.677	0.546	0.85	1	34.221			
T14	1.21	1.48	A	0.258	2.331	0.61	0.85	1	32.839	4.31	215.56	C
			B	0.167	2.708	0.554	0.85	1	35.492			
			C	0.264	2.398	0.605	0.85	1	36.659			
T15	1.21	1.16	A	0.238	2.475	0.599	0.85	1	36.703	4.43	221.44	C
			B	0.138	2.741	0.531	0.85	1	37.708			
			C	0.241	2.444	0.601	0.85	1	39.720			
Sum Weight	11.48	72.88						OTM	6911.14	57.18		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F _a	F _e	C _r	R _a	D _r	D _s	A _t	F	w	Col. Face
#	K	K	e	e					#	K	#/ft	
T1	0.07	0.89	A	0.261	2.404	0.605	0.85	1	3.254	0.77	76.76	C
			B	0.229	2.322	0.613	0.85	1	9.211			
			C	0.392	2.28	0.644	0.85	1	13.203			
T2	0.14	1.82	A	0.216	2.451	0.601	0.85	1	15.196	1.31	75.62	C
			B	0.276	2.353	0.609	0.85	1	17.611			
			C	0.391	2.033	0.643	0.85	1	26.377			
T3	0.73	2.42	A	0.515	1.881	0.703	0.85	1	28.467	1.93	96.61	A
			B	0.229	2.322	0.613	0.85	1	18.441			
			C	0.441	1.911	0.669	0.85	1	31.236			
T4	0.40	1.83	A	0.464	1.781	0.729	0.85	1	34.043	1.59	159.29	A
			B	0.453	1.988	0.659	0.85	1	21.221			
			C	0.554	1.839	0.722	0.85	1	45.555			
T5	0.80	4.62	A	0.487	1.917	0.691	0.85	1	57.370	2.35	142.60	A
			B	0.335	2.208	0.627	0.85	1	38.569			
			C	0.49	1.911	0.692	0.85	1	61.150			
T6	1.43	3.04	A	0.421	2.024	0.667	0.85	1	61.150	3.49	174.29	C
			B	0.301	2.294	0.616	0.85	1	43.643			
			C	0.554	1.831	0.722	0.85	1	75.601			
T7	2.20	6.60	A	0.408	2.018	0.655	0.85	1	70.314	4.61	230.43	C
			B	0.282	2.344	0.611	0.85	1	49.383			
			C	0.492	1.911	0.692	0.85	1	102.068			
T8	2.76	7.30	A	0.453	1.969	0.673	0.85	1	91.734	4.57	223.58	C
			B	0.232	2.432	0.602	0.85	1	51.099			
			C	0.494	1.903	0.697	0.85	1	102.800			
T9	3.49	7.12	A	0.417	1.931	0.659	0.85	1	93.299	4.44	231.98	C
			B	0.29	2.322	0.613	0.85	1	72.677			
			C	0.498	1.999	0.668	0.85	1	99.311			
T10	3.49	10.36	A	0.396	2.011	0.653	0.85	1	106.209	4.63	230.44	C
			B	0.28	2.343	0.611	0.85	1	78.175			
			C	0.414	2.016	0.638	0.85	1	103.924			
T11	3.49	10.31	A	0.382	2.166	0.631	0.85	1	106.209	4.47	233.31	C
			B	0.238	2.414	0.604	0.85	1	78.642			
			C	0.378	2.11	0.643	0.85	1	104.888			
T12	3.49	11.37	A	0.31								

RISATower		Job	A-116966 (PR2010-06-019)	Page	25 of 149
Valmont Structures 1343 Piko Drive Plymouth, NY 46663 Phone: (714) 936-4121 FAX: (714) 936-4118		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

RISATower		Job	A-116966 (PR2010-06-019)	Page	26 of 149
Valmont Structures 1343 Piko Drive Plymouth, NY 46663 Phone: (714) 936-4121 FAX: (714) 936-4118		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Section Elevation	Add Weight	Self Weight	F	e	C _r	R _e	D _r	D _s	A _t	F	w	Ctrl
ft	K	K	ft	ft					ft ²	K	psf	Face
T1	3.49	12.47			0.235	2.231	0.624	0.85	101.729			
40.00-20.00			A	0.294	2.211	0.614	0.85	1	100.300	3.63	181.37	C
			B	0.214	2.55	0.593	0.85	1	77.755			
			C	0.207	2.277	0.618	0.85	1	101.146			
T2	3.49	12.54			0.218	2.57	0.591	0.85	101.276	3.73	186.49	C
20.00-0.00			A	0.203	2.587	0.591	0.85	1	79.692			
			B	0.209	2.277	0.618	0.85	1	101.276			
			C	0.209	2.277	0.618	0.85	1	101.276			
Sum Weight:	32.99	106.31						OTM	4201.52	49.84		

Section Elevation	Add Weight	Self Weight	F	e	C _r	R _e	D _r	D _s	A _t	F	w	Ctrl
ft	K	K	ft	ft					ft ²	K	psf	Face
T1	1.21	9.76			0.167	2.204	0.584	1	101.729			
40.00-20.00			A	0.264	2.398	0.605	1	1	91.337			
			B	0.229	2.473	0.599	1	1	18.439	1.57	78.69	C
			C	0.158	2.34	0.303	1	1	91.255			
T2	1.21	9.76			0.248	2.444	0.601	1	101.276			
20.00-0.00			A	0.248	2.444	0.601	1	1	240.70			
			B	0.248	2.444	0.601	1	1	240.70			
			C	0.248	2.444	0.601	1	1	240.70			
Sum Weight:	11.48	77.88						OTM	4201.52	20.25		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F	e	C _r	R _e	D _r	D _s	A _t	F	w	Ctrl
ft	K	K	ft	ft					ft ²	K	psf	Face
T1	0.02	0.69			0.141	2.306	0.518	1	4.771			
280.00-270.00			A	0.159	2.372	0.518	1	1	4.771	0.22	21.87	C
			B	0.221	2.529	0.595	1	1	6.735			
			C	0.137	2.321	0.518	1	1	8.181	0.44	21.82	C
T2	0.05	1.44			0.159	2.372	0.518	1	9.250			
270.00-210.00			A	0.223	2.52	0.595	1	1	13.726			
			B	0.176	2.679	0.566	1	1	20.991	0.74	36.92	A
			C	0.137	2.321	0.518	1	1	10.727			
T3	0.26	2.00			0.223	2.52	0.595	1	17.432			
210.00-210.00			A	0.402	2.609	0.665	1	1	29.991	0.74	36.92	A
			B	0.264	2.372	0.566	1	1	40.727	1.04	51.88	A
			C	0.275	2.564	0.669	1	1	32.201			
T4	0.14	1.36			0.159	2.372	0.518	1	18.016			
210.00-210.00			A	0.184	1.995	0.47	1	1	24.361	0.56	55.72	A
			B	0.204	2.297	0.495	1	1	13.995			
			C	0.209	2.077	0.647	1	1	18.016			
T5	0.28	2.89			0.231	2.697	0.645	1	43.300	1.03	54.03	A
210.00-200.00			A	0.231	2.697	0.645	1	1	15.611			
			B	0.231	2.697	0.645	1	1	32.201			
			C	0.231	2.697	0.645	1	1	47.683	1.36	58.03	C
T6	0.10	3.14			0.141	2.306	0.518	1	30.340			
200.00-180.00			A	0.201	2.392	0.591	1	1	37.159	1.26	92.03	C
			B	0.141	2.306	0.518	1	1	35.619			
			C	0.141	2.306	0.518	1	1	35.619			
T7	0.77	4.50			0.338	2.837	0.647	1	37.159	1.57	93.41	C
180.00-160.00			A	0.338	2.837	0.647	1	1	17.127			
			B	0.338	2.837	0.647	1	1	37.159			
			C	0.338	2.837	0.647	1	1	37.159			
T8	0.97	5.17			0.338	2.837	0.647	1	46.495	1.57	93.41	C
160.00-140.00			A	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			B	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			C	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
T9	1.21	5.04			0.338	2.837	0.647	1	46.495	1.57	93.41	C
140.00-120.00			A	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			B	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			C	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
T10	1.21	7.60			0.338	2.837	0.647	1	46.495	1.57	93.41	C
120.00-100.00			A	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			B	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			C	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
T11	1.21	7.72			0.338	2.837	0.647	1	46.495	1.57	93.41	C
100.00-80.00			A	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			B	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			C	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
T12	1.21	8.19			0.338	2.837	0.647	1	46.495	1.57	93.41	C
80.00-60.00			A	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			B	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			C	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
T13	1.21	3.62			0.338	2.837	0.647	1	46.495	1.57	93.41	C
60.00-40.00			A	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			B	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			C	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
T14	1.21	9.48			0.338	2.837	0.647	1	46.495	1.57	93.41	C
40.00-20.00			A	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			B	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C
			C	0.338	2.837	0.647	1	1	46.495	1.57	93.41	C

Tower Forces - Service - Wind 80 To Face

Section Elevation	Add Weight	Self Weight	F	e	C _r	R _e	D _r	D _s	A _t	F	w	Ctrl
ft	K	K	ft	ft					ft ²	K	psf	Face
T1	0.02	0.69			0.141	2.306	0.518	1	4.771			
280.00-270.00			A	0.159	2.372	0.518	1	1	4.771	0.22	21.87	C
			B	0.221	2.529	0.595	1	1	6.735			
			C	0.137	2.321	0.518	1	1	8.181	0.44	21.82	C
T2	0.05	1.44			0.159	2.372	0.518	1	9.250			
270.00-210.00			A	0.223	2.52	0.595	1	1	13.726			
			B	0.176	2.679	0.566	1	1	20.991	0.74	36.92	A
			C	0.137	2.321	0.518	1	1	10.727			
T3	0.26	2.00			0.223	2.52	0.595	1	17.432			
210.00-210.00			A	0.402	2.609	0.665	1	1	29.991	0.74	36.92	A
			B	0.264	2.372	0.566	1	1	40.727	1.04	51.88	A
			C	0.275	2.564	0.669	1	1	32.201			
T4	0.14	1.36			0.159	2.372	0.518	1	18.016			
210.00-200.00			A	0.184	1.995	0.47	1	1	24.361	0.56	55.72	A
			B	0.204	2.297	0.495	1	1	13.995			
			C	0.209	2.077	0.647	1	1	18.016			
T5	0.28	2.89			0.231	2.697	0.645	1	43.300	1.03	54.03	A
200.00-200.00			A	0.231	2.697	0.645	1	1	15.611			
			B	0.231	2.697	0.645	1	1	32.201			
			C									

RISATower		Job	A-116966 (PR2010-06-019)	Page	29 of 149
Valmont Structures 1545 Pike Drive Plymouth, IN 46663 Phone: (317) 936-4121 Fax: (317) 936-6128		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF I

RISATower		Job	A-116966 (PR2010-06-019)	Page	30 of 149
Valmont Structures 1545 Pike Drive Plymouth, IN 46663 Phone: (317) 936-4121 Fax: (317) 936-6128		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF I

Section No.	Section Elevation	Wind Attenuation	Directionality	F	V _x	V _y	OTM _x	OTM _y	Torque
				K	K _x	K _y	top-ft	top-ft	top-ft
T5	120.00-100.00	330	Wind Normal	1.13	-0.39	-1.37	-309.04	177.93	0.00
			Wind 90	3.13	0.00	-0.12	-658.41	0.00	0.00
			Wind 60	3.03	1.72	2.63	-511.17	-318.22	0.00
			Wind 30	3.00	2.50	-1.50	-314.89	-145.41	0.00
			Wind 0	3.03	3.03	0.00	0.00	-636.44	0.00
			Wind 330	1.13	1.71	1.56	128.20	-188.47	0.00
			Wind 300	3.03	1.32	2.62	551.17	-318.22	0.00
			Wind 270	3.00	0.00	3.00	639.78	0.00	0.00
			Wind 240	3.03	-1.32	2.62	-551.17	318.22	0.00
			Wind 210	3.03	-3.03	0.00	0.00	676.44	0.00
			Wind 180	3.00	-2.60	1.26	-418.89	515.41	0.00
			Wind 150	3.03	-1.32	-2.62	-551.17	318.22	0.00
T6	200.00-180.00	0	Wind Normal	3.99	0.00	-0.39	-743.10	0.00	0.00
			Wind 90	3.89	1.20	-2.29	-625.97	-361.41	0.00
			Wind 60	3.76	2.16	-1.18	-372.36	-619.99	0.00
			Wind 30	3.90	3.80	0.00	0.00	-723.31	0.00
			Wind 0	3.99	3.41	1.87	379.33	-670.00	0.00
			Wind 330	3.89	1.00	3.29	625.97	361.41	0.00
			Wind 300	3.76	0.00	3.00	723.31	0.00	0.00
			Wind 270	3.90	-1.90	2.29	-625.97	361.41	0.00
			Wind 240	3.93	-3.80	1.37	-723.31	361.41	0.00
			Wind 210	3.76	-3.25	-1.39	-372.36	619.99	0.00
			Wind 180	3.80	-1.90	-2.29	-625.97	361.41	0.00
			Wind 150	3.93	-0.00	-3.29	-723.31	0.00	0.00
T7	180.00-160.00	0	Wind Normal	5.37	0.00	-0.37	-913.15	0.00	0.00
			Wind 90	5.24	2.02	-1.41	-772.07	-443.73	0.00
			Wind 60	5.20	3.40	-2.60	-482.13	-765.97	0.00
			Wind 30	5.24	5.24	0.00	0.00	-913.15	0.00
			Wind 0	5.37	4.61	2.69	456.58	-700.81	0.00
			Wind 330	5.24	2.69	4.34	772.07	-443.73	0.00
			Wind 300	5.20	0.00	5.20	913.15	0.00	0.00
			Wind 270	5.24	-2.69	4.34	-772.07	443.73	0.00
			Wind 240	5.37	-4.61	2.69	-456.58	700.81	0.00
			Wind 210	5.24	-3.24	0.00	0.00	913.15	0.00
			Wind 180	5.37	-2.02	-1.41	-772.07	443.73	0.00
			T8	160.00-140.00	0	Wind Normal	5.40	0.00	-0.40
Wind 90	5.26	2.63				-1.55	-625.97	-384.20	0.00
Wind 60	5.21	4.51				-2.60	-390.74	-676.71	0.00
Wind 30	5.26	5.26				0.00	0.00	-899.99	0.00
Wind 0	5.40	4.61				2.70	404.94	-701.31	0.00
Wind 330	5.26	2.63				4.55	625.97	-384.20	0.00
Wind 300	5.21	0.00				5.21	781.40	0.00	0.00
Wind 270	5.26	-2.63				4.55	-625.97	384.20	0.00
Wind 240	5.40	-4.61				2.70	-404.94	701.31	0.00
Wind 210	5.26	-3.24				0.00	0.00	899.99	0.00
Wind 180	5.40	-2.02				-1.41	-772.07	443.73	0.00
T9	140.00-120.00	0				Wind Normal	5.28	0.00	-0.28
			Wind 90	5.14	2.37	-1.45	-318.11	-314.11	0.00
			Wind 60	5.09	4.41	-2.51	-131.14	-573.56	0.00
			Wind 30	5.14	5.14	0.00	0.00	-668.33	0.00
			Wind 0	5.28	4.37	2.64	382.29	-334.11	0.00
			Wind 330	5.14	2.37	4.45	573.56	-314.11	0.00
			Wind 300	5.09	0.00	5.09	668.33	0.00	0.00
			Wind 270	5.14	-2.37	4.45	-573.56	314.11	0.00
			Wind 240	5.28	-4.37	2.64	-382.29	334.11	0.00
			Wind 210	5.14	-3.14	0.00	0.00	668.33	0.00
			Wind 180	5.09	-1.41	-2.51	-131.14	573.56	0.00
			Wind 150	5.14	-2.37	-1.45	-318.11	314.11	0.00

Section No.	Section Elevation	Wind Attenuation	Directionality	F	V _x	V _y	OTM _x	OTM _y	Torque
				K	K _x	K _y	top-ft	top-ft	top-ft
T10	120.00-100.00	0	Wind Normal	3.49	0.00	-1.49	-603.72	0.00	0.00
			Wind 90	3.34	2.69	-1.66	-312.74	-296.03	0.00
			Wind 60	3.31	4.63	-2.67	-294.13	-599.23	0.00
			Wind 30	3.34	5.33	0.00	0.00	-592.11	0.00
			Wind 0	3.49	4.73	2.74	301.36	-572.93	0.00
			Wind 330	3.34	2.69	4.66	512.74	-296.03	0.00
			Wind 300	3.31	0.00	3.31	582.03	0.00	0.00
			Wind 270	3.34	-2.69	4.66	-512.74	296.03	0.00
			Wind 240	3.49	-4.73	2.74	-301.36	572.93	0.00
			Wind 210	3.34	-1.66	-1.66	-312.74	296.03	0.00
			Wind 180	3.31	-2.67	-2.67	-294.13	592.11	0.00
			Wind 150	3.34	-1.49	-1.49	-603.72	296.03	0.00
T11	100.00-90.00	0	Wind Normal	5.23	0.00	-0.23	-407.34	0.00	0.00
			Wind 90	5.13	4.47	-2.39	-233.51	-404.43	0.00
			Wind 60	5.23	7.23	0.00	0.00	-478.33	0.00
			Wind 30	5.13	4.62	2.67	240.19	-416.01	0.00
			Wind 0	5.23	2.61	4.53	492.34	-233.18	0.00
			Wind 330	5.13	0.00	5.13	467.00	0.00	0.00
			Wind 300	5.23	-0.23	4.53	492.34	0.00	0.00
			Wind 270	5.13	-2.61	4.53	-492.34	233.18	0.00
			Wind 240	5.23	-4.62	2.67	-240.19	416.01	0.00
			Wind 210	5.23	-3.23	0.00	0.00	478.33	0.00
			Wind 180	5.13	-1.49	-1.49	-603.72	296.03	0.00
			Wind 150	5.23	-0.23	-0.23	-407.34	296.03	0.00
T12	80.00-60.00	0	Wind Normal	5.19	0.00	-0.19	-353.51	0.00	0.00
			Wind 90	5.04	3.04	-1.33	-250.00	-302.26	0.00
			Wind 60	5.04	5.04	0.00	0.00	-332.34	0.00
			Wind 30	5.19	4.46	2.58	189.41	-312.47	0.00
			Wind 0	5.19	3.33	4.37	305.37	-176.22	0.00
			Wind 330	5.04	0.00	5.04	330.13	0.00	0.00
			Wind 300	5.19	-0.19	4.37	330.13	0.00	0.00
			Wind 270	5.04	-2.58	4.37	-305.37	176.22	0.00
			Wind 240	5.19	-4.46	2.58	-189.41	312.47	0.00
			Wind 210	5.19	-3.04	0.00	0.00	332.34	0.00
			Wind 180	5.04	-1.33	-1.33	-250.00	302.26	0.00
			Wind 150	5.19	-0.19	-0.19	-353.51	302.26	0.00
T13	60.00-40.00	0	Wind Normal	4.81	0.00	-0.81	-260.63	0.00	0.00
			Wind 90	4.70	2.35	-1.07	-203.47	-117.47	0.00
			Wind 60	4.66	4.04	-2.23	-116.32	-209.32	0.00
			Wind 30	4.70	4.70	0.00	0.00	-284.91	0.00
			Wind 0	4.81	3.17	2.41	120.72	-209.39	0.00
			Wind 330	4.70	2.35	4.04	203.47	-117.47	0.00
			Wind 300	4.66	0.00	4.66	235.04	0.00	0.00
			Wind 270	4.70	-2.35	4.04	-203.47	117.47	0.00
			Wind 240	4.81	-4.04	2.23	-116.32	209.32	0.00
			Wind 210	4.70	-3.17	1.07	-203.47	117.47	0.00
			Wind 180	4.66	-1.07	-1.07	-203.47	117.47	0.00
			Wind 150	4.81	-0.81	-0.81	-260.63	117.47	0.00
T14	40.00-20.00	0	Wind Normal	4.42	0.00	-0.42	-116.52	0.00	0.00
			Wind 90	4.31	2.16	-1.74	-81.26	-64.70	0.00
			Wind 60	4.28	3.70	-1.14	-44.15	-111.11	0.00
			Wind 30	4.42	4.31	0.00	0.00	-129.40	0.00
			Wind 0	4.42	3.33	2.31	66.33	-114.92	0.00
			Wind 330	4.31	2.16	3.74	116.06	-64.70	0.00
			Wind 300	4.28	0.00	4.28	129.40	0.00	0.00
			Wind 270	4.42	-2.16	2.31	-66.33	114.92	0.00
			Wind 240	4.42	-3.33	1.14	-81.26	111.11	0.00
			Wind 210	4.42	-4.31	0.00	0.00	129.40	0.00
			Wind 180	4.31	-1.74	-1.74	-81.26	111.11	0.00
			Wind 150	4.42	-0.42	-0.42	-116.52	111.11	0.00
T15	20.00-0.00	0	Wind Normal	3.51	0.00	-1.51	-45.41	0.00	0.00
			Wind 90	3.49	0.00	-1.49	-403.72	0.00	0.00
			Wind 60	3.34	2.69	-1.66	-312.74	-296.03	0.00
			Wind 30	3.31	4.63	-2.67	-294.13	-599.23	0.00
			Wind 0	3.49	4.73	2.74	301.36	-572.93	0.00
			Wind 330	3.34	2.69	4.66	512.74	-296.03	0.00
			Wind 300	3.31	0.00	3.31	582.03	0.00	0.00
			Wind 270	3.34	-2.69	4.66	-512.74	296.03	0.00
			Wind 240	3.49	-4.73	2.74	-301.36	572.93	0.00
			Wind 210	3.34	-1.66	-1.66	-312.74	296.03	0.00
			Wind 180	3.31	-2.67	-2.67	-294.13	599.23	0.00
			Wind 150	3.34	-1.49	-1.49	-603.72	296.03	0.00

RISATower		Job	A-116966 (PR2010-06-019)	Page	31 of 149
Valmont Structures 1545 Pike Drive Plymouth, IN 46663 Phone: (317) 936-4121 Fax: (317) 936-6128		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF I

RISATower		Job	A-116966 (PR2010-08-019)	Page	33 of 149
Valmont Structures 1145 Picket Drive Plymouth, IN 46163 Phone: (317) 936-4121 FAX: (317) 936-6128		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

RISATower		Job	A-116966 (PR2010-06-019)	Page	34 of 149
Valmont Structures 1145 Picket Drive Plymouth, IN 46163 Phone: (317) 936-4121 FAX: (317) 936-6128		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Section No.	Section Elevation #	Wind Attenuation #	Directionality	F	V _z	V _z	OTM ₁	OTM ₂	Torque
				K	K	K	H _z -β	H _z -β	H _z -β
T8	160.00-140.00	0	Wind 60	4.31	0.00	4.31	787.03	0.00	0.00
			Wind 90	4.54	-2.27	1.91	573.34	185.38	0.00
			Wind Normal	4.61	-1.99	2.30	391.74	578.39	0.00
			Wind 90	4.51	-4.54	0.00	0.00	711.15	0.00
			Wind 60	4.54	-1.91	-2.27	-183.32	664.28	0.00
			Wind 90	4.54	-2.27	-1.91	-573.34	385.58	0.00
			Wind Normal	4.57	0.00	-4.57	-615.73	0.00	0.00
			Wind 60	4.49	2.24	-3.89	-582.89	-326.19	0.00
			Wind 90	4.46	1.64	-2.23	-354.02	-473.01	0.00
			Wind 60	4.49	1.49	0.00	0.00	0.00	0.00
			Wind 90	4.57	1.96	2.29	132.37	-193.16	0.00
			Wind Normal	4.48	2.31	3.89	382.28	-179.23	0.00
T9	140.00-120.00	0	Wind 60	4.46	0.00	4.46	655.81	0.00	0.00
			Wind 90	4.49	-2.24	3.89	382.29	336.53	0.00
			Wind Normal	4.49	-1.96	2.29	312.27	393.84	0.00
			Wind 90	4.49	-4.49	0.00	0.00	473.01	0.00
			Wind 60	4.46	-1.96	-2.23	-334.42	579.34	0.00
			Wind 90	4.46	-2.24	-3.89	-582.89	326.53	0.00
			Wind Normal	4.44	0.00	-4.44	-571.15	0.00	0.00
			Wind 60	4.33	2.19	-3.77	-490.17	-283.00	0.00
			Wind 90	4.32	1.75	-2.16	-281.14	-486.93	0.00
			Wind 60	4.35	4.35	0.00	0.00	0.00	0.00
			Wind Normal	4.44	1.84	2.23	283.58	-499.33	0.00
			Wind 90	4.33	2.18	3.77	490.17	-283.00	0.00
T10	120.00-100.00	0	Wind 60	4.33	0.00	4.33	562.20	0.00	0.00
			Wind 90	4.35	-2.18	3.77	301.11	283.00	0.00
			Wind Normal	4.44	-1.84	2.23	283.58	499.33	0.00
			Wind 90	4.44	-4.44	0.00	0.00	562.20	0.00
			Wind 60	4.33	-2.18	-3.77	-490.17	-283.00	0.00
			Wind 90	4.33	-3.55	0.00	0.00	566.00	0.00
			Wind Normal	4.54	2.27	3.89	481.24	-486.93	0.00
			Wind 60	4.33	-2.18	-3.77	-490.17	-283.00	0.00
			Wind 90	4.61	0.00	-4.61	-106.98	0.00	0.00
			Wind Normal	4.54	2.27	3.89	481.24	-486.93	0.00
			Wind 60	4.32	1.91	-2.25	-249.92	436.19	0.00
			Wind 90	4.54	4.54	0.00	0.00	499.61	0.00
T11	100.00-80.00	0	Wind Normal	4.68	2.09	2.50	251.49	-439.06	0.00
			Wind 60	4.54	1.99	2.38	252.49	-439.66	0.00
			Wind 90	4.52	0.00	-4.52	-497.20	0.00	0.00
			Wind Normal	4.34	-2.23	1.91	492.71	249.92	0.00
			Wind 60	4.61	4.61	0.00	0.00	499.61	0.00
			Wind 90	4.54	-1.91	-2.25	-249.92	436.19	0.00
			Wind Normal	4.54	2.09	2.50	251.49	-439.06	0.00
			Wind 60	4.54	-1.91	-2.25	-249.92	436.19	0.00
			Wind 90	4.54	-4.54	0.00	0.00	499.61	0.00
			Wind Normal	4.54	2.09	2.50	251.49	-439.06	0.00
			Wind 60	4.54	-1.91	-2.25	-249.92	436.19	0.00
			Wind 90	4.54	-4.54	0.00	0.00	499.61	0.00
T12	80.00-60.00	0	Wind Normal	4.47	1.79	2.19	196.70	-340.70	0.00
			Wind 60	4.37	1.79	2.19	196.70	-340.70	0.00
			Wind 90	4.39	2.20	3.81	342.55	-197.77	0.00
			Wind Normal	4.37	1.79	2.19	196.70	-340.70	0.00
			Wind 60	4.37	-1.79	-2.19	-196.70	340.70	0.00
			Wind 90	4.39	-2.20	-3.81	-342.55	197.77	0.00
			Wind Normal	4.37	1.79	2.19	196.70	-340.70	0.00
			Wind 60	4.37	-1.79	-2.19	-196.70	340.70	0.00
			Wind 90	4.39	-2.20	-3.81	-342.55	197.77	0.00
			Wind Normal	4.37	1.79	2.19	196.70	-340.70	0.00
			Wind 60	4.37	-1.79	-2.19	-196.70	340.70	0.00
			Wind 90	4.39	-2.20	-3.81	-342.55	197.77	0.00

Section No.	Section Elevation #	Wind Attenuation #	Directionality	F	V _z	V _z	OTM ₁	OTM ₂	Torque
				K	K	K	H _z -β	H _z -β	H _z -β
T13	60.00-40.00	0	Wind 60	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind 90	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind Normal	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind 60	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind 90	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind Normal	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind 60	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind 90	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind Normal	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind 60	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind 90	4.24	-2.12	1.67	256.91	142.23	0.00
			Wind Normal	4.24	-2.12	1.67	256.91	142.23	0.00
T14	40.00-20.00	0	Wind 60	3.92	1.97	3.42	170.91	98.68	0.00
			Wind 90	3.92	1.97	3.42	170.91	98.68	0.00
			Wind Normal	3.92	1.97	3.42	170.91	98.68	0.00
			Wind 60	3.92	1.97	3.42	170.91	98.68	0.00
			Wind 90	3.92	1.97	3.42	170.91	98.68	0.00
			Wind Normal	3.92	1.97	3.42	170.91	98.68	0.00
			Wind 60	3.92	1.97	3.42	170.91	98.68	0.00
			Wind 90	3.92	1.97	3.42	170.91	98.68	0.00
			Wind Normal	3.92	1.97	3.42	170.91	98.68	0.00
			Wind 60	3.92	1.97	3.42	170.91	98.68	0.00
			Wind 90	3.92	1.97	3.42	170.91	98.68	0.00
			Wind Normal	3.92	1.97	3.42	170.91	98.68	0.00
T15	20.00-0.00	0	Wind 60	3.71	1.36	1.90	190.91	122.99	0.00
			Wind 90	3.71	1.36	1.90	190.91	122.99	0.00
			Wind Normal	3.71	1.36	1.90	190.91	122.99	0.00
			Wind 60	3.71	1.36	1.90	190.91	122.99	0.00
			Wind 90	3.71	1.36	1.90	190.91	122.99	0.00
			Wind Normal	3.71	1.36	1.90	190.91	122.99	0.00
			Wind 60	3.71	1.36	1.90	190.91	122.99	0.00
			Wind 90	3.71	1.36	1.90	190.91	122.99	0.00
			Wind Normal	3.71	1.36	1.90	190.91	122.99	0.00
			Wind 60	3.71	1.36	1.90	190.91	122.99	0.00
			Wind 90	3.71	1.36	1.90	190.91	122.99	0.00
			Wind Normal	3.71	1.36	1.90	190.91	122.99	0.00

Wind Attenuation #	V _z	V _z	OTM ₁	OTM ₂	Torque
K	K	K	H _z -β	H _z -β	H _z -β
0	0.00	-50.63	-4293.02	0.00	0.00
30	24.92	-43.17	-3170.93	0.00	0.00
60	42.92	-24.18	-3011.93	0.00	0.00
90	49.81	0.00	0.00	-4919.82	0.00
120	49.89	25.24	3142.51	-4431.63	0.00
150	24.92	0.00	-3170.93	-1100.91	0.00
180	0.00	49.85	4170.15	0.00	0.00
210	-24.92	43.17	3170.93	1100.91	0.00
240	-42.92	24.18	3170.93	4431.63	0.00
270	-49.81	0.00	0.00	4919.82	0.00

RISATower		Job	A-116966 (PR2010-08-019)	Page	35 of 149
Valmont Structures 1145 Picket Drive Plymouth, IN 46163 Phone: (317) 936-4121 FAX: (317) 936-6128		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
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RISATower		Job	A-116966 (PR2010-06-019)	Page	36 of 149
Valmont Structures 1145 Picket Drive Plymouth, IN 46163 Phone: (317) 936-4121 FAX: (317) 936-6128		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
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Wind Attenuation #	V _z	V _z	OTM ₁	OTM ₂	Torque
K	K	K	H _z -β	H _z -β	H _z -β
300	-42.92	-43.17	-3170.93	3170.93	0.00
330	-24.92	-43.17	-3170.93	3100.91	0.00

Section No.	Section Elevation #	Wind Attenuation #	Directionality	F	V _z	V _z	OTM ₁	OTM ₂	Torque
				K	K	K	H _z -β	H _z -β	H _z -β
T1	180.00-270.00	0	Wind Normal	0.22	0.00	-0.22	49.15	0.91	0.00
			Wind 60	0.22	0.11	-0.19	-32.09	-10.02	0.00
			Wind 90	0.22	0.11	-0.19	-32.09	-10.02	0.00
			Wind Normal	0.22	0.00	-0.22	49.15	0.91	0.00
			Wind 60	0.22	0.19	0.11	10.02	-32.09	0.00
			Wind 90	0.22	0.19	0.11	10.02	-32.09	0.00
			Wind Normal	0.22	0.00	-0.22	49.15	0.91	0.00
			Wind 60	0.22	-0.11	-0.19	-32.09	10.02	0.00
			Wind 90	0.22	-0.11	-0.19	-32.09	10.02	0.00
			Wind Normal	0.22	0.00	-0.22	49.15	0.91	0.00
			Wind 60	0.22	-0.19	-0.11	-10.02	32.09	0.00
			Wind 90	0.22	-0.19	-0.11	-10.02	32.09	0.00
T2	270.00-350.00	0	Wind Normal	0.44	0.00	-0.44	113.45	0.00	0.00
			Wind 60	0.44	0.22	-0.22	-67.23	-56.73	0.00
			Wind 90	0.44	0.22	-0.22	-67.23	-56.73	0.00
			Wind Normal	0.44	0.00	-0.44	113.45	0.00	0.00
			Wind 60	0.44	0.22	-0.22	-67.23	-56.73	0.00
			Wind 90	0.44	0.22	-0.22	-67.23	-56.73	0.00
			Wind Normal	0.44	0.00	-0.44	113.45	0.00	0.00
			Wind 60	0.44	-0.22	0.22	56.73	-67.23	0.00
			Wind 90	0.44	-0.22	0.22	56.73	-67.23	0.00
			Wind Normal	0.44	0.00	-0.44	113.45	0.00	0.00
			Wind 60	0.44	-0.22	0.22	56.73	-67.23	0.00
			Wind 90	0.44	-0.22	0.22	56.73	-67.23	0.00
T3	350.00-210.00	0	Wind Normal	0.74	0.00	-0.74	177.21	0.00	0.00
			Wind 60	0.74	0.37	-0.37	-113.45	-88.50	0.00
			Wind 90	0.74	0.37	-0.37	-113.45	-88.50	0.00
			Wind Normal	0.74	0.00	-0.74	177.21	0.00	0.00
			Wind 60	0.74	0.37	-0.37	-113.45	-88.50	0.00
			Wind 90	0.74	0.37	-0			

RISATower
 Vahnan Structures
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Job: A-116966 (PR2010-06-019)
 Project: U-28.0 x 280' - Seymour, CT
 Client: EMAC Communications LLC

Page: 37 of 149
 Date: 09/18/09 07:08/10
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Page: 38 of 149
 Date: 09/18/09 07:08/10
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Section No.	Section Elevation	Wind Attach	Directionality	F	K _z	V _z	OTM _z	OTM _z	Torque
T11	100.00-30.00	Wind 60	1.33	1.50	-0.93	-103.77	-176.37	0.00	
		Wind 90	1.24	1.36	0.00	0.00	-264.31	0.00	
		Wind Normal	1.50	1.64	0.91	104.43	-189.91	0.00	
		Wind 150	1.16	0.93	1.61	173.43	-102.44	0.00	
		Wind 180	1.82	0.00	1.83	203.24	0.00	0.00	
		Wind 210	1.36	-0.91	1.51	172.43	102.44	0.00	
		Wind Normal	1.50	-1.64	0.93	104.43	189.91	0.00	
		Wind 270	1.26	-1.86	0.00	0.00	204.18	0.00	
		Wind 300	1.82	-0.00	-0.93	-103.77	176.37	0.00	
		Wind 60	1.16	-0.93	1.61	173.43	102.44	0.00	
		Wind Normal	1.53	0.00	-1.83	-166.27	0.00	0.00	
		Wind 90	1.11	0.90	0.00	0.00	-131.25	0.00	
Wind 150	1.30	1.33	-0.20	-10.30	-159.93	0.00			
Wind 180	1.81	1.11	0.00	0.00	-162.73	0.00			
Wind 210	1.85	1.46	0.09	103.77	-143.03	0.00			
Wind 270	1.31	-0.90	1.57	160.20	-81.35	0.00			
Wind 300	1.30	0.00	1.30	161.60	0.00	0.00			
Wind Normal	1.81	-0.90	1.57	159.93	91.38	0.00			
Wind 60	1.33	1.60	0.03	31.11	143.55	0.00			
Wind 90	1.81	-1.31	0.00	0.00	162.15	0.00			
Wind 150	1.30	-1.33	-0.90	-30.30	139.93	0.00			
Wind 180	1.81	0.90	-1.31	-149.93	51.38	0.00			
Wind 210	1.74	0.87	-1.31	-103.77	-41.05	0.00			
Wind 270	1.74	1.31	0.00	0.00	-132.09	0.00			
Wind 300	1.74	1.74	0.00	0.00	-132.09	0.00			
Wind Normal	1.78	1.51	0.39	62.43	-103.13	0.00			
Wind 60	1.74	1.74	0.00	0.00	-41.05	0.00			
Wind 90	1.73	0.00	1.73	121.17	0.00	0.00			
Wind 150	1.74	-0.37	1.51	103.77	41.05	0.00			
Wind 180	1.78	-1.34	0.89	62.43	103.13	0.00			
Wind 210	1.74	-1.73	0.00	0.00	122.09	0.00			
Wind 270	1.73	-1.50	-0.87	-60.58	104.94	0.00			
Wind 300	1.74	-1.81	-1.31	-103.77	61.03	0.00			
Wind Normal	1.74	-0.00	-1.51	-103.77	0.00	0.00			
Wind 60	1.63	0.81	-1.41	-70.40	-40.63	0.00			
Wind 90	1.63	1.40	-0.81	-40.39	-49.83	0.00			
Wind 150	1.63	1.63	0.00	0.00	-41.29	0.00			
Wind Normal	1.67	1.44	0.83	41.63	-72.11	0.00			
Wind 60	1.63	0.91	1.41	70.40	-40.63	0.00			
Wind 90	1.63	1.41	0.83	41.63	-72.11	0.00			
Wind 150	1.63	1.41	0.83	41.63	-72.11	0.00			
Wind 180	1.63	0.91	1.41	70.40	-40.63	0.00			
Wind 210	1.67	-1.44	0.83	41.63	72.11	0.00			
Wind 270	1.67	-1.41	0.83	41.63	72.11	0.00			
Wind 300	1.67	-1.41	0.83	41.63	72.11	0.00			
Wind Normal	1.63	-1.40	-0.31	-40.32	69.93	0.00			
Wind 60	1.63	-0.81	-1.41	-70.40	40.63	0.00			
Wind 90	1.63	0.00	-1.33	-103.77	0.00	0.00			
Wind 150	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 180	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 210	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 270	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 300	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind Normal	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 60	1.49	-0.75	1.29	38.78	-22.39	0.00			
Wind 90	1.49	0.75	1.29	38.78	-22.39	0.00			
Wind 150	1.49	0.75	1.29	38.78	-22.39	0.00			
Wind 180	1.49	0.75	1.29	38.78	-22.39	0.00			
Wind 210	1.49	0.75	1.29	38.78	-22.39	0.00			
Wind 270	1.49	0.75	1.29	38.78	-22.39	0.00			
Wind 300	1.49	0.75	1.29	38.78	-22.39	0.00			
Wind Normal	1.49	-0.75	-1.29	-38.78	22.39	0.00			
Wind 60	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 90	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 150	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 180	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 210	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 270	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 300	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind Normal	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 60	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 90	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 150	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 180	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 210	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 270	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 300	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind Normal	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 60	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 90	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 150	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 180	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 210	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 270	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 300	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind Normal	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 60	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 90	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 150	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 180	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 210	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 270	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 300	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind Normal	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 60	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 90	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 150	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 180	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 210	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 270	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 300	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind Normal	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 60	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 90	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 150	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 180	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 210	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 270	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 300	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind Normal	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 60	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 90	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 150	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 180	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 210	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 270	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 300	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind Normal	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 60	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 90	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 150	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 180	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 210	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 270	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 300	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind Normal	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 60	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 90	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 150	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 180	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 210	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 270	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind 300	1.49	-1.49	0.00	0.00	44.77	0.00			
Wind Normal	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 60	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 90	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 150	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 180	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 210	1.49	1.49	0.00	0.00	-44.77	0.00			
Wind 270	1.49	1.49	0.00	0.00	-44.77	0.00			

RISATower Valmont Structures 1545 Pabco Drive Plymouth, NY 41658 Phone: (514) 936-4121 FAX: (514) 936-4128	Job	A-116986 (PR2010-06-019)	Page	41 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1545 Pabco Drive Plymouth, NY 41658 Phone: (514) 936-4121 FAX: (514) 936-4128	Job	A-116986 (PR2010-06-019)	Page	42 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	0.11	0.19	0.00	0.00	-0.23	-43.36	-0.27	1.58
10	0.11	0.19	0.00	0.11	-0.19	-16.14	-32.50	0.00
30	0.22	0.00	0.19	-0.11	-0.11	-32.70	-16.61	0.00
45	0.19	0.11	0.22	0.00	0.00	-63.35	-0.14	-0.90
60	0.11	0.19	0.19	0.11	-0.11	-32.43	-16.64	-1.56
75	0.00	0.22	0.11	0.19	-0.11	-16.36	-32.90	-1.30
90	0.11	0.19	0.00	0.22	-0.19	-64.89	-0.24	-1.56
105	0.19	0.11	-0.11	0.19	0.11	-32.33	-16.64	-0.90
120	0.22	0.00	-0.19	0.11	0.11	-32.43	-16.61	0.00
135	0.19	0.11	-0.22	0.00	0.11	-64.89	-0.14	0.90
150	0.11	0.19	0.19	-0.11	-0.11	-32.70	-16.61	1.58
180	0.00	0.22	-0.11	-0.19	-0.11	-16.36	-32.90	1.30

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	0.03	0.03	0.00	0.00	-0.04	-10.39	0.08	-0.23
10	0.03	0.03	0.00	0.03	-0.03	-4.11	-8.09	-0.23
30	0.03	0.03	0.03	-0.03	-0.03	-8.11	-4.11	0.00
45	0.03	0.03	0.03	0.00	0.00	-16.22	-8.11	0.00
60	0.03	0.03	0.03	0.03	0.00	-16.22	-8.11	0.00
75	0.03	0.03	0.03	0.03	0.03	-16.22	-8.11	0.00
90	0.03	0.03	0.00	0.03	-0.03	-8.11	-16.22	0.00
105	0.03	0.03	0.03	-0.03	-0.03	-16.22	-8.11	0.00
120	0.03	0.03	0.03	0.00	0.00	-16.22	-8.11	0.00
135	0.03	0.03	0.03	0.03	0.00	-16.22	-8.11	0.00
150	0.03	0.03	0.03	0.03	0.03	-16.22	-8.11	0.00
180	0.03	0.03	0.00	0.03	-0.03	-8.11	-16.22	0.00

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	0.02	0.03	0.00	0.00	-0.04	-10.39	0.08	-0.23
10	0.02	0.03	0.00	0.02	-0.02	-4.11	-8.09	-0.23
30	0.02	0.03	0.02	-0.02	-0.02	-8.11	-4.11	0.00
45	0.02	0.03	0.02	0.00	0.00	-16.22	-8.11	0.00
60	0.02	0.03	0.02	0.02	0.00	-16.22	-8.11	0.00
75	0.02	0.03	0.02	0.02	0.02	-16.22	-8.11	0.00
90	0.02	0.03	0.00	0.02	-0.02	-8.11	-16.22	0.00
105	0.02	0.03	0.02	-0.02	-0.02	-16.22	-8.11	0.00
120	0.02	0.03	0.02	0.00	0.00	-16.22	-8.11	0.00
135	0.02	0.03	0.02	0.02	0.00	-16.22	-8.11	0.00
150	0.02	0.03	0.02	0.02	0.02	-16.22	-8.11	0.00
180	0.02	0.03	0.00	0.02	-0.02	-8.11	-16.22	0.00

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	1.38	1.69	0.00	0.00	-1.31	-942.56	0.00	0.00
10	1.69	2.93	1.69	1.69	-2.93	-1163.37	-471.33	0.00
30	1.69	2.93	2.93	1.69	-1.69	-471.33	-1163.37	0.00
45	1.69	2.93	2.93	1.69	0.00	-942.56	-471.33	0.00
60	1.69	2.93	2.93	1.69	1.69	-942.56	-471.33	0.00
75	1.69	2.93	2.93	1.69	2.93	-942.56	-471.33	0.00
90	1.69	2.93	0.00	1.69	-2.93	-471.33	-942.56	0.00
105	1.69	2.93	0.00	1.69	-1.69	-471.33	-942.56	0.00
120	1.69	2.93	0.00	1.69	0.00	-942.56	-471.33	0.00
135	1.69	2.93	0.00	1.69	1.69	-942.56	-471.33	0.00
150	1.69	2.93	0.00	1.69	2.93	-942.56	-471.33	0.00
180	1.69	2.93	0.00	1.69	-2.93	-471.33	-942.56	0.00

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	0.03	0.03	0.00	0.00	-0.04	-10.39	0.08	-0.23
10	0.03	0.03	0.00	0.03	-0.03	-4.11	-8.09	-0.23
30	0.03	0.03	0.03	-0.03	-0.03	-8.11	-4.11	0.00
45	0.03	0.03	0.03	0.00	0.00	-16.22	-8.11	0.00
60	0.03	0.03	0.03	0.03	0.00	-16.22	-8.11	0.00
75	0.03	0.03	0.03	0.03	0.03	-16.22	-8.11	0.00
90	0.03	0.03	0.00	0.03	-0.03	-8.11	-16.22	0.00
105	0.03	0.03	0.03	-0.03	-0.03	-16.22	-8.11	0.00
120	0.03	0.03	0.03	0.00	0.00	-16.22	-8.11	0.00
135	0.03	0.03	0.03	0.03	0.00	-16.22	-8.11	0.00
150	0.03	0.03	0.03	0.03	0.03	-16.22	-8.11	0.00
180	0.03	0.03	0.00	0.03	-0.03	-8.11	-16.22	0.00

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	0.50	0.00	0.00	0.00	-0.50	-125.52	0.00	0.00
10	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00
30	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
45	0.50	0.00	0.00	0.43	-0.25	-62.76	-108.71	0.00
60	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00
75	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
90	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
105	0.50	0.00	0.00	0.43	-0.25	-62.76	-108.71	0.00
120	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00
135	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
150	0.50	0.00	0.00	0.43	-0.25	-62.76	-108.71	0.00
180	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	0.03	0.03	0.00	0.00	-0.04	-10.39	0.08	-0.23
10	0.03	0.03	0.00	0.03	-0.03	-4.11	-8.09	-0.23
30	0.03	0.03	0.03	-0.03	-0.03	-8.11	-4.11	0.00
45	0.03	0.03	0.03	0.00	0.00	-16.22	-8.11	0.00
60	0.03	0.03	0.03	0.03	0.00	-16.22	-8.11	0.00
75	0.03	0.03	0.03	0.03	0.03	-16.22	-8.11	0.00
90	0.03	0.03	0.00	0.03	-0.03	-8.11	-16.22	0.00
105	0.03	0.03	0.03	-0.03	-0.03	-16.22	-8.11	0.00
120	0.03	0.03	0.03	0.00	0.00	-16.22	-8.11	0.00
135	0.03	0.03	0.03	0.03	0.00	-16.22	-8.11	0.00
150	0.03	0.03	0.03	0.03	0.03	-16.22	-8.11	0.00
180	0.03	0.03	0.00	0.03	-0.03	-8.11	-16.22	0.00

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
0	0.50	0.00	0.00	0.00	-0.50	-125.52	0.00	0.00
10	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00
30	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
45	0.50	0.00	0.00	0.43	-0.25	-62.76	-108.71	0.00
60	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00
75	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
90	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
105	0.50	0.00	0.00	0.43	-0.25	-62.76	-108.71	0.00
120	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00
135	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
150	0.50	0.00	0.00	0.43	-0.25	-62.76	-108.71	0.00
180	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00

RISATower Valmont Structures 1545 Pabco Drive Plymouth, NY 41658 Phone: (514) 936-4121 FAX: (514) 936-4128	Job	A-116986 (PR2010-06-019)	Page	43 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1545 Pabco Drive Plymouth, NY 41658 Phone: (514) 936-4121 FAX: (514) 936-4128	Job	A-116986 (PR2010-06-019)	Page	44 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
150	0.50	0.00	0.00	0.25	-0.43	-108.71	-62.76	0.00
180	0.50	0.00	0.00	0.00	0.00	-125.52	0.00	0.00
210	0.50	0.00	0.00	-0.25	0.43	-108.71	-62.76	0.00
240	0.50	0.00	0.00	-0.43	-0.25	-62.76	-108.71	0.00
270	0.50	0.00	0.00	-0.25	0.43	-108.71	-62.76	0.00
300	0.50	0.00	0.00	-0.43	-0.25	-62.76	-108.71	0.00
330	0.50	0.00	0.00	-0.25	0.43	-108.71	-62.76	0.00

Wind Direction °	F _x K	F _y K	F _z K	V _x K	V _y K	OTM _x kip-ft	OTM _y kip-ft	Torque kip-ft
220	0.24	0.00	0.00	-0.31	0.12	-19.94	11.37	0.00
270	0.24	0.00	0.00	-0.24	0.00	-19.94	11.37	0.00
300	0.24	0.00	0.00	-0.31	-0.12	-19.94	11.37	0.00
330	0.24							

RISATower Valmont Structures 1543 Pike Drive Plymouth MI 48166 Phone: (734) 956-1212 FAX: (734) 956-5438	Job	A-116966 (PR2010-06-019)	Page	45 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1543 Pike Drive Plymouth MI 48166 Phone: (734) 956-1212 FAX: (734) 956-5438	Job	A-116966 (PR2010-06-019)	Page	46 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
330	0.32	0.00	-0.16	-0.32	-48.43	39.52	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.06	0.00	0.00	-0.06	-13.93	0.00	0.00
30	0.06	0.00	0.00	-0.03	-11.91	0.00	0.00
60	0.06	0.00	0.00	-0.03	-9.91	0.00	0.00
90	0.06	0.00	0.00	0.00	0.00	0.00	0.00
120	0.06	0.00	0.00	0.03	6.91	0.00	0.00
150	0.06	0.00	0.00	0.03	13.93	0.00	0.00
180	0.06	0.00	0.00	0.06	13.93	0.00	0.00
210	0.06	0.00	0.00	0.03	11.91	0.00	0.00
240	0.06	0.00	0.00	0.03	9.91	0.00	0.00
270	0.06	0.00	0.00	0.00	0.00	0.00	0.00
300	0.06	0.00	0.00	-0.03	-6.91	0.00	0.00
330	0.06	0.00	0.00	-0.03	-11.91	0.00	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.32	0.00	0.00	-0.32	-79.04	0.00	0.00
30	0.32	0.00	0.16	-0.27	-39.52	0.00	0.00
60	0.32	0.00	0.27	-0.16	-48.43	0.00	0.00
90	0.32	0.00	0.32	0.00	0.00	0.00	0.00
120	0.32	0.00	0.27	0.16	39.52	0.00	0.00
150	0.32	0.00	0.16	0.27	48.43	0.00	0.00
180	0.32	0.00	0.00	0.32	79.04	0.00	0.00
210	0.32	0.00	-0.16	0.27	39.52	0.00	0.00
240	0.32	0.00	-0.27	0.16	48.43	0.00	0.00
270	0.32	0.00	-0.32	0.00	0.00	0.00	0.00
300	0.32	0.00	-0.27	-0.16	-39.52	0.00	0.00
330	0.32	0.00	-0.16	-0.27	-48.43	0.00	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	3.22	0.00	0.00	-3.22	-756.37	0.00	0.00
30	3.22	0.00	1.61	-2.79	-655.37	0.00	0.00
60	3.22	0.00	2.79	-1.61	-378.44	0.00	0.00
90	3.22	0.00	3.22	0.00	0.00	0.00	0.00
120	3.22	0.00	2.79	1.61	378.44	0.00	0.00
150	3.22	0.00	1.61	2.79	655.37	0.00	0.00
180	3.22	0.00	0.00	3.22	756.37	0.00	0.00
210	3.22	0.00	-1.61	2.79	655.37	0.00	0.00
240	3.22	0.00	-2.79	1.61	378.44	0.00	0.00
270	3.22	0.00	-3.22	0.00	0.00	0.00	0.00
300	3.22	0.00	-2.79	-1.61	-378.44	0.00	0.00
330	3.22	0.00	-1.61	-2.79	-655.37	0.00	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.21	0.00	0.00	-0.21	-32.52	0.00	0.00
30	0.21	0.00	0.11	-0.19	-19.19	0.00	0.00
60	0.21	0.00	0.19	-0.11	-26.26	0.00	0.00
90	0.21	0.00	0.21	0.00	0.00	0.00	0.00
120	0.21	0.00	0.19	0.11	26.26	0.00	0.00
150	0.21	0.00	0.11	0.19	19.19	0.00	0.00
180	0.21	0.00	0.00	0.21	32.52	0.00	0.00
210	0.21	0.00	-0.11	0.19	19.19	0.00	0.00
240	0.21	0.00	-0.19	0.11	26.26	0.00	0.00
270	0.21	0.00	-0.21	0.00	0.00	0.00	0.00
300	0.21	0.00	-0.19	-0.11	-19.19	0.00	0.00
330	0.21	0.00	-0.11	-0.19	-26.26	0.00	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.30	0.00	0.00	-0.30	-60.34	0.00	0.00
30	0.30	0.00	0.15	-0.26	-32.69	0.00	0.00
60	0.30	0.00	0.26	-0.15	-42.42	0.00	0.00
90	0.30	0.00	0.30	0.00	0.00	0.00	0.00
120	0.30	0.00	0.26	0.15	42.42	0.00	0.00
150	0.30	0.00	0.15	0.26	32.69	0.00	0.00
180	0.30	0.00	0.00	0.30	60.34	0.00	0.00
210	0.30	0.00	-0.15	0.26	32.69	0.00	0.00
240	0.30	0.00	-0.26	0.15	42.42	0.00	0.00
270	0.30	0.00	-0.30	0.00	0.00	0.00	0.00
300	0.30	0.00	-0.26	-0.15	-32.69	0.00	0.00
330	0.30	0.00	-0.15	-0.26	-42.42	0.00	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.09	0.00	0.00	-0.09	-10.21	0.00	0.00
30	0.09	0.00	0.04	-0.07	-12.59	0.00	0.00
60	0.09	0.00	0.07	-0.04	-12.59	0.00	0.00
90	0.09	0.00	0.09	0.00	0.00	0.00	0.00
120	0.09	0.00	0.07	0.04	12.59	0.00	0.00
150	0.09	0.00	0.04	0.07	12.59	0.00	0.00
180	0.09	0.00	0.00	0.09	20.31	0.00	0.00
210	0.09	0.00	-0.04	0.07	12.59	0.00	0.00
240	0.09	0.00	-0.07	0.04	12.59	0.00	0.00
270	0.09	0.00	-0.09	0.00	0.00	0.00	0.00
300	0.09	0.00	-0.07	-0.04	-12.59	0.00	0.00
330	0.09	0.00	-0.04	-0.07	-12.59	0.00	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.30	0.00	0.00	-0.30	-60.34	0.00	0.00
30	0.30	0.00	0.15	-0.26	-32.69	0.00	0.00

RISATower Valmont Structures 1543 Pike Drive Plymouth MI 48166 Phone: (734) 956-1212 FAX: (734) 956-5438	Job	A-116966 (PR2010-06-019)	Page	47 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1543 Pike Drive Plymouth MI 48166 Phone: (734) 956-1212 FAX: (734) 956-5438	Job	A-116966 (PR2010-06-019)	Page	48 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
60	0.30	0.00	0.26	-0.15	-30.42	-32.69	0.00
90	0.30	0.00	0.30	0.00	0.00	0.00	0.00
120	0.30	0.00	0.26	0.15	30.42	-32.69	0.00
150	0.30	0.00	0.15	0.26	32.69	-30.42	0.00
180	0.30	0.00	0.00	0.30	60.34	0.00	0.00
210	0.30	0.00	-0.15	0.26	30.42	32.69	0.00
240	0.30	0.00	-0.26	0.15	30.42	32.69	0.00
270	0.30	0.00	-0.30	0.00	0.00	60.34	0.00
300	0.30	0.00	-0.26	-0.15	-30.42	32.69	0.00
330	0.30	0.00	-0.15	-0.26	-32.69	30.42	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
150	0.10	0.00	0.09	0.00	16.63	-9.63	0.00
180	0.10	0.00	0.00	0.10	19.27	0.00	0.00
210	0.10	0.00	-0.09	0.00	16.63	9.63	0.00
240	0.10	0.00	-0.00	0.00	0.00	19.27	0.00
270	0.10	0.00	0.00	-0.10	-9.63	16.63	0.00
300	0.10	0.00	-0.09	-0.00	-16.63	9.63	0.00
330	0.10	0.00	-0.00	-0.00	0.00	0.00	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.10	0.00	0.00	-0.10	-60.34	0.00	0.00
30	0.10	0.00	0.05	-0.08	-16.63	0.00	0.00
60	0.10	0.00	0.08	-0.05	-26.26	0.00	0.00
90	0.10	0.00	0.10	0.00	0.00	0.00	0.00
120	0.10	0.00	0.08	0.05	26.26	0.00	0.00
150	0.10	0.00	0.05	0.08	16.63	0.00	0.00
180	0.10	0.00	0.00	0.10	60.34	0.00	0.00
210	0.10	0.00	-0.05	0.08	16.63	0.00	0.00
240	0.10	0.00	-0.08	0.05	26.26	0.00	0.00
270	0.10	0.00	-0.10	0.00	0.00	60.34	0

RISATower Valmont Structures 1545 Piko Drive Plymouth, MI 48163 Phone: (313) 936-4121 FAX: (313) 936-6138	Job	A-116966 (PR2010-06-019)	Page	49 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1545 Piko Drive Plymouth, MI 48163 Phone: (313) 936-4121 FAX: (313) 936-6138	Job	A-116966 (PR2010-06-019)	Page	50 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
240	0.16	0.00	-0.13	0.00	15.33	26.37	0.00
270	0.16	0.00	-0.16	0.00	9.00	31.03	0.00
300	0.16	0.00	-0.13	-0.08	-15.33	26.37	0.00
330	0.16	0.00	-0.08	-0.13	-26.37	15.33	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
120	0.30	0.00	-0.13	-0.30	-49.32	28.48	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.16	0.00	0.00	-0.16	-11.03	0.00	0.00
30	0.16	0.00	0.08	-0.13	-26.37	-15.33	0.00
60	0.16	0.00	0.13	-0.08	-15.33	-26.37	0.00
90	0.16	0.00	0.16	0.00	0.00	-31.03	0.00
120	0.16	0.00	0.13	0.08	15.33	-26.37	0.00
150	0.16	0.00	0.08	0.13	26.37	-15.33	0.00
180	0.16	0.00	0.00	0.16	31.03	0.00	0.00
210	0.16	0.00	-0.08	0.13	26.37	15.33	0.00
240	0.16	0.00	-0.13	0.08	15.33	26.37	0.00
270	0.16	0.00	-0.16	0.00	9.00	31.03	0.00
300	0.16	0.00	-0.13	-0.08	-15.33	26.37	0.00
330	0.16	0.00	-0.08	-0.13	-26.37	15.33	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.30	0.00	0.00	-0.30	-66.96	0.00	0.00
30	0.30	0.00	0.15	-0.26	-49.32	-18.48	0.00
60	0.30	0.00	0.26	-0.15	-28.48	-49.32	0.00
90	0.30	0.00	0.30	0.00	0.00	-66.96	0.00
120	0.30	0.00	0.26	0.15	28.48	-49.32	0.00
150	0.30	0.00	0.15	0.26	49.32	-28.48	0.00
180	0.30	0.00	0.00	0.30	66.96	0.00	0.00
210	0.30	0.00	-0.15	0.26	49.32	28.48	0.00
240	0.30	0.00	-0.26	0.15	28.48	49.32	0.00
270	0.30	0.00	-0.30	0.00	0.00	66.96	0.00
300	0.30	0.00	-0.26	-0.15	-28.48	49.32	0.00
330	0.30	0.00	-0.15	-0.26	-49.32	28.48	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.30	0.00	0.00	-0.30	-56.96	0.00	0.00
30	0.30	0.00	0.15	-0.26	-49.32	-18.48	0.00
60	0.30	0.00	0.26	-0.15	-28.48	-49.32	0.00
90	0.30	0.00	0.30	0.00	0.00	-56.96	0.00
120	0.30	0.00	0.26	0.15	28.48	-49.32	0.00
150	0.30	0.00	0.15	0.26	49.32	-28.48	0.00
180	0.30	0.00	0.00	0.30	56.96	0.00	0.00
210	0.30	0.00	-0.15	0.26	49.32	28.48	0.00
240	0.30	0.00	-0.26	0.15	28.48	49.32	0.00
270	0.30	0.00	-0.30	0.00	0.00	56.96	0.00
300	0.30	0.00	-0.26	-0.15	-28.48	49.32	0.00
330	0.30	0.00	-0.15	-0.26	-49.32	28.48	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.09	0.00	0.00	-0.09	-18.04	0.00	0.00
30	0.09	0.00	0.04	-0.08	-15.62	-9.02	0.00
60	0.09	0.00	0.08	-0.05	-9.02	-15.62	0.00
90	0.09	0.00	0.09	0.00	0.00	-18.04	0.00
120	0.09	0.00	0.08	0.04	9.02	-15.62	0.00
150	0.09	0.00	0.05	0.08	15.62	-9.02	0.00
180	0.09	0.00	0.00	0.09	18.04	0.00	0.00
210	0.09	0.00	-0.04	0.08	15.62	9.02	0.00
240	0.09	0.00	-0.08	0.05	9.02	15.62	0.00
270	0.09	0.00	-0.09	0.00	0.00	18.04	0.00
300	0.09	0.00	-0.08	-0.04	-9.02	15.62	0.00
330	0.09	0.00	-0.05	-0.08	-15.62	9.02	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.30	0.00	0.00	-0.30	-16.96	0.00	0.00
30	0.30	0.00	0.11	-0.26	-49.32	-28.48	0.00
60	0.30	0.00	0.26	-0.15	-28.48	-49.32	0.00
90	0.30	0.00	0.30	0.00	0.00	-16.96	0.00
120	0.30	0.00	0.26	0.15	28.48	-49.32	0.00
150	0.30	0.00	0.15	0.26	49.32	-28.48	0.00
180	0.30	0.00	0.00	0.30	16.96	0.00	0.00
210	0.30	0.00	-0.11	0.26	28.48	49.32	0.00
240	0.30	0.00	-0.26	0.15	16.96	28.48	0.00
270	0.30	0.00	-0.30	0.00	0.00	16.96	0.00
300	0.30	0.00	-0.26	-0.15	-28.48	49.32	0.00
330	0.30	0.00	-0.15	-0.26	-49.32	28.48	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.09	0.00	0.00	-0.09	-18.04	0.00	0.00
30	0.09	0.00	0.04	-0.08	-15.62	-9.02	0.00
60	0.09	0.00	0.08	-0.05	-9.02	-15.62	0.00
90	0.09	0.00	0.09	0.00	0.00	-18.04	0.00
120	0.09	0.00	0.08	0.04	9.02	-15.62	0.00
150	0.09	0.00	0.05	0.08	15.62	-9.02	0.00
180	0.09	0.00	0.00	0.09	18.04	0.00	0.00
210	0.09	0.00	-0.04	0.08	15.62	9.02	0.00
240	0.09	0.00	-0.08	0.05	9.02	15.62	0.00
270	0.09	0.00	-0.09	0.00	0.00	18.04	0.00
300	0.09	0.00	-0.08	-0.04	-9.02	15.62	0.00
330	0.09	0.00	-0.05	-0.08	-15.62	9.02	0.00

RISATower Valmont Structures 1545 Piko Drive Plymouth, MI 48163 Phone: (313) 936-4121 FAX: (313) 936-6138	Job	A-116966 (PR2010-06-019)	Page	51 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1545 Piko Drive Plymouth, MI 48163 Phone: (313) 936-4121 FAX: (313) 936-6138	Job	A-116966 (PR2010-06-019)	Page	52 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.09	0.00	0.00	-0.09	-18.04	0.00	0.00
30	0.09	0.00	0.04	-0.08	-15.62	-9.02	0.00
60	0.09	0.00	0.08	-0.05	-9.02	-15.62	0.00
90	0.09	0.00	0.09	0.00	0.00	-18.04	0.00
120	0.09	0.00	0.08	0.04	9.02	-15.62	0.00
150	0.09	0.00	0.05	0.08	15.62	-9.02	0.00
180	0.09	0.00	0.00	0.09	18.04	0.00	0.00
210	0.09	0.00	-0.04	0.08	15.62	9.02	0.00
240	0.09	0.00	-0.08	0.05	9.02	15.62	0.00
270	0.09	0.00	-0.09	0.00	0.00	18.04	0.00
300	0.09	0.00	-0.08	-0.04	-9.02	15.62	0.00
330	0.09	0.00	-0.05	-0.08	-15.62	9.02	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
60	0.15	0.00	0.11	-0.08	-14.33	-25.16	0.00
120	0.15	0.00	0.11	0.00	0.00	-46.01	0.00
180	0.15	0.00	0.00	0.11	14.33	-25.16	0.00
240	0.15	0.00	-0.11	0.00	-14.33	25.16	0.00
300	0.15	0.00	-0.11	-0.08	-25.16	14.33	0.00
330	0.15	0.00	-0.08	-0.11	-25.16	14.33	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.15	0.00	0.00	-0.15	-29.03	0.00	0.00
30	0.15	0.00	0.08	-0.13	-25.16	-14.33	0.00
60	0.15	0.00	0.13	-0.08	-14.33	-25.16	0.00
90	0.15	0.00	0.15	0.00	0.00	-29.03	0.00
120	0.15	0.00	0.13	0.08	14.33	-25.16	0.00
150	0.15	0.00	0.08	0.13	25.16	-14.33	0.00
180	0.15	0.00	0.00	0.15	29.03	0.00	0.00
210	0.15	0.00	-0.08	0.13	25.16	14.33	0.00
240	0.15	0.00	-0.13	0.08	14.33	25.16	0.00
270	0.15	0.00	-0.15	0.00	0.00	29.03	0.00
300	0.15	0.00	-0.13	-0.08	-14.33	25.16	0.00
330	0.15	0.00	-0.08	-0.13	-25.16	14.33	0.00

Wind Attach #	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.30	0.00	0.00	-0.30			

RISATower
 Valmont Structures
 1545 Piko Drive
 Plymouth, IN 46353
 Phone: (317) 936-4331
 FAX: (317) 936-6438

Job: A-116966 (PR2010-06-019) Page: 69 of 149
 Project: U-28.0 x 280' - Seymour, CT Date: 09/18/09 07/08/10
 Client: EMAC Communications LLC Designed by: CRF1

RISATower
 Valmont Structures
 1545 Piko Drive
 Plymouth, IN 46353
 Phone: (317) 936-4331
 FAX: (317) 936-6438

Job: A-116966 (PR2010-06-019) Page: 70 of 149
 Project: U-28.0 x 280' - Seymour, CT Date: 09/18/09 07/08/10
 Client: EMAC Communications LLC Designed by: CRF1

Wind Attach #	15' Frame - 15' x 15' - From Crown 120' - News 1						OTM ₁	OTM ₂	Torque
	F _x	F _y	F _z	K _x	K _y	K _z			
120	0.21	0.00	-0.00	-0.19	0.11	-0.11	14.77	25.59	0.00
120	0.21	0.00	0.00	-0.19	0.11	-0.11	14.77	25.59	0.00
120	0.21	0.00	0.00	-0.19	0.11	-0.11	14.77	25.59	0.00
120	0.21	0.00	0.00	-0.19	0.11	-0.11	14.77	25.59	0.00

Discrete Appurtenance Totals - No Ice

Wind Attach #	Discrete Appurtenance Totals - No Ice						OTM ₁	OTM ₂	Torque
	F _x	F _y	F _z	K _x	K _y	K _z			
0	0.00	-22.41	0.00	-1723.79	-0.14	1.31			
30	11.20	-19.41	0.00	-4099.94	-0.26	0.37			
60	19.41	-11.20	0.00	-2341.97	-0.46				
90	22.41	0.00	0.00	-1723.79	-1.17				
120	19.41	11.20	0.00	-2341.97	-1.56				
150	11.20	19.41	0.00	-4099.94	-2.61				
180	0.00	22.41	0.00	-1723.79	-4.14				
210	-11.20	19.41	0.00	-2341.97	-6.27				
240	-19.41	11.20	0.00	-4099.94	-9.04				
270	-22.41	0.00	0.00	-1723.79	-13.77				
300	-19.41	-11.20	0.00	-2341.97	-20.57				
330	-11.20	-19.41	0.00	-4099.94	-31.59				

Discrete Appurtenance Pressures - With Ice

Description	Along Attach	Weight	Offset		z	K _x	K _y	K _z	C _{dc} Front	C _{dc} Side	ε
			K	β							
15' LRE (from 1.31)	120.0000	0.30	2.10	1.44	281.65	1.24	36	2.61	2.67	0.5000	
B0601	250.0000	0.12	-2.50	1.44	281.65	1.24	36	6.41	6.41	0.5000	
DB420-A	60.0000	0.05	6.93	-4.00	288.61	1.30	36	8.91	8.91	0.5000	
DB420-C	200.0000	0.05	6.93	-4.00	288.61	1.30	36	13.00	13.00	0.5000	
2" x 24" S&L 40	60.0000	0.04	6.93	-4.00	278.75	1.30	36	2.16	2.16	0.5000	
2" x 24" S&L 40	100.0000	0.04	-6.93	-4.00	278.75	1.30	36	2.16	2.16	0.5000	
9" Ann Hole Mount	180.0000	0.33	0.00	0.00	278.75	1.30	36	13.00	13.00	0.5000	
RR00-17-XNDP	0.0000	0.14	0.00	0.00	250.00	1.73	25	14.78	7.03	0.5000	
RR00-17-XNDP	0.0000	0.14	0.00	0.00	250.00	1.73	25	14.78	7.03	0.5000	
2" x 24" S&L 40	0.0000	0.15	0.00	0.00	250.00	1.73	25	12.22	7.24	0.5000	
2" x 24" S&L 40	0.0000	0.15	0.00	0.00	250.00	1.73	25	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	250.00	1.73	25	2.54	9.43	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	250.00	1.73	25	2.54	9.43	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	250.00	1.73	25	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	250.00	1.73	25	12.22	7.24	0.5000	
DB420-A	0.0000	0.06	0.00	0.00	245.00	1.73	25	5.91	5.91	0.5000	
DB420-B	0.0000	0.03	0.00	0.00	235.00	1.73	24	3.45	3.45	0.5000	
2" x 24" S&L 40	0.0000	0.04	0.00	0.00	235.00	1.73	24	3.16	3.16	0.5000	
9" Ann Hole Mount	0.0000	0.33	0.00	0.00	235.00	1.73	24	13.00	13.00	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	200.00	1.47	23	9.68	6.07	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	200.00	1.47	23	9.68	6.07	0.5000	

Description	Along Attach	Weight	Offset		z	K _x	K _y	K _z	C _{dc} Front	C _{dc} Side	ε
			K	β							
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	200.00	1.47	23	9.68	6.07	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	200.00	1.47	23	0.00	1.51	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	200.00	1.47	23	0.00	1.51	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	200.00	1.47	23	0.00	1.51	0.5000	
10' Upright T-Frame	0.0000	0.23	0.00	0.00	200.00	1.47	23	7.77	5.49	0.5000	
10' Upright T-Frame	0.0000	0.23	0.00	0.00	200.00	1.47	23	7.77	5.49	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	190.00	1.49	23	9.68	6.07	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	190.00	1.49	23	9.68	6.07	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	190.00	1.49	23	0.00	1.51	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	190.00	1.49	23	0.00	1.51	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	190.00	1.49	23	0.00	1.51	0.5000	
10' Upright T-Frame	0.0000	0.23	0.00	0.00	190.00	1.49	23	7.77	5.49	0.5000	
10' Upright T-Frame	0.0000	0.23	0.00	0.00	190.00	1.49	23	7.77	5.49	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	180.00	1.52	23	9.68	6.07	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	180.00	1.52	23	9.68	6.07	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	180.00	1.52	23	0.00	1.51	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	180.00	1.52	23	0.00	1.51	0.5000	
10' Upright T-Frame	0.0000	0.23	0.00	0.00	180.00	1.52	23	7.77	5.49	0.5000	
10' Upright T-Frame	0.0000	0.23	0.00	0.00	180.00	1.52	23	7.77	5.49	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	170.00	1.57	22	6.69	4.05	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.09	0.00	0.00	170.00	1.57	22	6.69	4.05	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	170.00	1.57	22	0.00	1.51	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	170.00	1.57	22	0.00	1.51	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	170.00	1.57	22	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	170.00	1.57	22	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	170.00	1.57	22	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	170.00	1.57	22	12.22	7.24	0.5000	
7700.00	0.0000	0.06	0.00	0.00	160.00	1.70	21	3.01	1.56	0.5000	
7700.00	0.0000	0.06	0.00	0.00	160.00	1.70	21	3.01	1.56	0.5000	
Permanave LGP124mm	0.0000	0.08	0.00	0.00	160.00	1.70	21	3.73	0.92	0.5000	
Permanave LGP124mm	0.0000	0.08	0.00	0.00	160.00	1.70	21	3.73	0.92	0.5000	
Permanave LGP124mm	0.0000	0.08	0.00	0.00	160.00	1.70	21	3.73	0.92	0.5000	
Permanave LGP124mm	0.0000	0.08	0.00	0.00	160.00	1.70	21	3.73	0.92	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.01	0.00	0.00	160.00	1.70	21	0.66	0.23	0.5000	
DB420H2E-N1 & E-N1	0.0000	0.01	0.00	0.00	160.00	1.70	21	0.66	0.23	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	150.00	1.75	22	0.23	2.34	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	150.00	1.75	22	0.23	2.34	0.5000	
2" x 60" S&L 40	0.0000	0.01	0.00	0.00	150.00	1.75	22	0.23	2.34	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	150.00	1.75	22	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	150.00	1.75	22	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	150.00	1.75	22	12.22	7.24	0.5000	
15' Universal T-Frame	0.0000	0.59	0.00	0.00	150.00	1.75	22	12.22	7.24	0.5000	
APXV18-206175-C	0.0000	0.05	0.00	0.00	110.00	1.51	21	4.40	2.65	0.5000	
APXV18-206175-C	0.0000	0.05	0.00	0.00	110.00	1.51	21	4.40	2.65	0.5000	
APXV18-206175-C	0.0000	0.05	0.00	0.00	110.00	1.51	21	4.40	2.65	0.5000	
APXV18-206175-C	0.0000	0.05	0.00	0.00	110.00	1.51	21	4.40	2.65	0.5000	
LXN-6314DS-VT1	0.0000	0.09	0.00	0.00	110.00	1.51	21	6.73	4.60	0.5000	
LXN-6314DS-VT1	0.0000	0.09	0.00	0.00	110.00	1.51	21	6.73	4.60	0.5000	
LXN-6314DS-VT1	0.0000	0.09	0.00	0.00	110.00	1.51	21	6.73	4.60	0.5000	
LXN-6314DS-VT1	0.0000	0.09	0.00	0.00	110.00	1.51	21	6.73	4.60	0.5000	
2" x 72" S&L 40	0.0000	0.03	0.00	0.00	110.00	1.51	21	0.39	1.51	0.5000	
2" x 72" S&L 40	0.0000	0.03	0.00	0.00	110.00	1.51	21	0.39	1.51	0.5000	

RISATower
 Valmont Structures
 1545 Piko Drive

RISATower Valmont Structures 1545 Pike Drive Plymouth, CT 06453 Phone: (874) 936-4121 FAX: (874) 936-4121	Job	A-116966 (PR2010-06-019)	Page	77 of 149
	Project	U-28.0 x 280 - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.06	0.00	0.00	0.00	-7.33	-12.74	0.00
60	0.06	0.00	0.00	0.00	0.00	-14.71	0.00
90	0.06	0.00	0.00	0.00	0.00	0.00	0.00
120	0.06	0.00	0.00	0.00	7.33	-12.74	0.00
150	0.06	0.00	0.00	0.00	12.74	-7.33	0.00
180	0.06	0.00	0.00	0.00	14.71	0.00	0.00
210	0.06	0.00	0.00	0.00	12.74	7.33	0.00
240	0.06	0.00	0.00	0.00	7.33	12.74	0.00
270	0.06	0.00	0.00	0.00	0.00	14.71	0.00
300	0.06	0.00	0.00	0.00	-7.33	12.74	0.00
330	0.06	0.00	0.00	0.00	-12.74	7.33	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	3.48	0.00	1.74	-3.01	-117.17	0.00	0.00
30	3.48	0.00	1.74	-3.01	-707.69	-48.59	0.00
60	3.48	0.00	3.01	-1.74	-408.59	-707.69	0.00
90	3.48	0.00	3.48	0.00	0.00	-117.17	0.00
120	3.48	0.00	3.01	1.74	-408.59	-707.69	0.00
150	3.48	0.00	1.74	3.01	-707.69	-408.59	0.00
180	3.48	0.00	3.48	0.00	117.17	0.00	0.00
210	3.48	0.00	3.01	1.74	-707.69	-408.59	0.00
240	3.48	0.00	1.74	3.01	-408.59	-707.69	0.00
270	3.48	0.00	3.48	0.00	0.00	117.17	0.00
300	3.48	0.00	3.01	-1.74	-707.69	-408.59	0.00
330	3.48	0.00	1.74	-3.01	-117.17	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.25	0.00	0.00	-0.25	-19.97	0.00	0.00
30	0.25	0.00	0.00	-0.25	-12.50	-24.53	0.00
60	0.25	0.00	0.00	-0.12	-24.53	-12.50	0.00
90	0.25	0.00	0.00	0.00	0.00	-19.97	0.00
120	0.25	0.00	0.00	0.12	-24.53	-12.50	0.00
150	0.25	0.00	0.00	0.25	-12.50	-24.53	0.00
180	0.25	0.00	0.00	0.25	19.97	0.00	0.00
210	0.25	0.00	0.00	0.12	24.53	12.50	0.00
240	0.25	0.00	0.00	0.12	12.50	24.53	0.00
270	0.25	0.00	0.00	0.00	0.00	19.97	0.00
300	0.25	0.00	0.00	-0.12	-24.53	12.50	0.00
330	0.25	0.00	0.00	-0.25	-12.50	24.53	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.25	0.00	0.00	-0.25	-19.97	0.00	0.00
30	0.25	0.00	0.00	-0.25	-12.50	-24.53	0.00
60	0.25	0.00	0.00	-0.12	-24.53	-12.50	0.00
90	0.25	0.00	0.00	0.00	0.00	-19.97	0.00
120	0.25	0.00	0.00	0.12	-24.53	-12.50	0.00

RISATower Valmont Structures 1545 Pike Drive Plymouth, CT 06453 Phone: (874) 936-4121 FAX: (874) 936-4121	Job	A-116966 (PR2010-06-019)	Page	79 of 149
	Project	U-28.0 x 280 - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.09	0.00	0.00	0.00	4.59	15.40	0.00
30	0.09	0.00	0.00	0.00	17.79	0.00	0.00
60	0.09	0.00	0.00	0.00	15.40	4.59	0.00
90	0.09	0.00	0.00	0.00	0.00	17.79	0.00
120	0.09	0.00	0.00	0.00	15.40	4.59	0.00
150	0.09	0.00	0.00	0.00	4.59	15.40	0.00
180	0.09	0.00	0.00	0.00	0.00	17.79	0.00
210	0.09	0.00	0.00	0.00	17.79	0.00	0.00
240	0.09	0.00	0.00	0.00	15.40	4.59	0.00
270	0.09	0.00	0.00	0.00	4.59	15.40	0.00
300	0.09	0.00	0.00	0.00	0.00	17.79	0.00
330	0.09	0.00	0.00	0.00	15.40	4.59	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.09	0.00	0.00	-0.09	-17.79	0.00	0.00
30	0.09	0.00	0.00	-0.09	-15.40	-8.39	0.00
60	0.09	0.00	0.00	-0.09	-8.39	-15.40	0.00
90	0.09	0.00	0.00	0.00	0.00	-17.79	0.00
120	0.09	0.00	0.00	0.09	8.39	-15.40	0.00
150	0.09	0.00	0.00	0.09	15.40	-8.39	0.00
180	0.09	0.00	0.00	0.00	17.79	0.00	0.00
210	0.09	0.00	0.00	-0.09	15.40	8.39	0.00
240	0.09	0.00	0.00	-0.09	8.39	15.40	0.00
270	0.09	0.00	0.00	-0.09	0.00	17.79	0.00
300	0.09	0.00	0.00	-0.09	-8.39	15.40	0.00
330	0.09	0.00	0.00	-0.09	-15.40	8.39	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.20	0.00	0.00	-0.20	-39.41	0.00	0.00
30	0.20	0.00	0.00	-0.17	-19.71	-34.13	0.00
60	0.20	0.00	0.00	-0.10	-34.13	-19.71	0.00
90	0.20	0.00	0.00	0.00	0.00	-39.41	0.00
120	0.20	0.00	0.00	0.10	-19.71	-34.13	0.00
150	0.20	0.00	0.00	0.17	-34.13	-19.71	0.00
180	0.20	0.00	0.00	0.20	39.41	0.00	0.00
210	0.20	0.00	0.00	0.17	19.71	34.13	0.00
240	0.20	0.00	0.00	0.17	34.13	19.71	0.00
270	0.20	0.00	0.00	0.00	0.00	39.41	0.00
300	0.20	0.00	0.00	-0.10	-19.71	34.13	0.00
330	0.20	0.00	0.00	-0.17	-34.13	19.71	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.20	0.00	0.00	-0.20	-39.41	0.00	0.00
30	0.20	0.00	0.00	-0.17	-19.71	-34.13	0.00
60	0.20	0.00	0.00	-0.10	-34.13	-19.71	0.00
90	0.20	0.00	0.00	0.00	0.00	-39.41	0.00
120	0.20	0.00	0.00	0.10	19.71	-34.13	0.00
150	0.20	0.00	0.00	0.17	34.13	-19.71	0.00
180	0.20	0.00	0.00	0.20	39.41	0.00	0.00
210	0.20	0.00	0.00	0.17	19.71	34.13	0.00
240	0.20	0.00	0.00	0.17	34.13	19.71	0.00
270	0.20	0.00	0.00	0.00	0.00	39.41	0.00
300	0.20	0.00	0.00	-0.10	-19.71	34.13	0.00
330	0.20	0.00	0.00	-0.17	-34.13	19.71	0.00

RISATower Valmont Structures 1545 Pike Drive Plymouth, CT 06453 Phone: (874) 936-4121 FAX: (874) 936-4121	Job	A-116966 (PR2010-06-019)	Page	78 of 149
	Project	U-28.0 x 280 - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.25	0.00	0.00	0.00	24.53	0.00	0.00
30	0.25	0.00	0.00	0.00	0.00	24.53	0.00
60	0.25	0.00	0.00	0.00	0.00	0.00	0.00
90	0.25	0.00	0.00	0.00	0.00	0.00	0.00
120	0.25	0.00	0.00	0.00	0.00	0.00	0.00
150	0.25	0.00	0.00	0.00	0.00	0.00	0.00
180	0.25	0.00	0.00	0.00	0.00	0.00	0.00
210	0.25	0.00	0.00	0.00	0.00	0.00	0.00
240	0.25	0.00	0.00	0.00	0.00	0.00	0.00
270	0.25	0.00	0.00	0.00	0.00	0.00	0.00
300	0.25	0.00	0.00	0.00	0.00	0.00	0.00
330	0.25	0.00	0.00	0.00	0.00	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.25	0.00	0.00	0.00	-49.07	0.00	0.00
30	0.25	0.00	0.00	0.00	-12.50	-24.53	0.00
60	0.25	0.00	0.00	0.00	-24.53	-12.50	0.00
90	0.25	0.00	0.00	0.00	0.00	-49.07	0.00
120	0.25	0.00	0.00	0.00	0.00	0.00	0.00
150	0.25	0.00	0.00	0.00	0.00	0.00	0.00
180	0.25	0.00	0.00	0.00	0.00	0.00	0.00
210	0.25	0.00	0.00	0.00	0.00	0.00	0.00
240	0.25	0.00	0.00	0.00	0.00	0.00	0.00
270	0.25	0.00	0.00	0.00	0.00	0.00	0.00
300	0.25	0.00	0.00	0.00	0.00	0.00	0.00
330	0.25	0.00	0.00	0.00	0.00	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.09	0.00	0				

RISATower Valmont Structures 1343 Pike Drive Plymouth, NY 44863 Phone: (374) 936-4111 FAX: (374) 936-6418	Job	A-116986 (PR2010-06-019)	Page	81 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1343 Pike Drive Plymouth, NY 44863 Phone: (374) 936-4111 FAX: (374) 936-6418	Job	A-116986 (PR2010-06-019)	Page	82 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	F _z	M _x	M _y	M _z	OTM _x	OTM _y	Torque
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.24	0.00	0.00	0.12	-0.24	-15.94	-22.97	0.00	0.00
60	0.24	0.00	0.00	0.21	-0.12	-22.97	-19.78	0.00	0.00
90	0.24	0.00	0.00	0.24	0.00	-22.97	-15.94	0.00	0.00
120	0.24	0.00	0.00	0.21	0.12	-22.97	-19.78	0.00	0.00
150	0.24	0.00	0.00	0.12	0.21	-22.97	-15.94	0.00	0.00
180	0.24	0.00	0.00	0.00	0.24	-22.97	-15.94	0.00	0.00
210	0.24	0.00	0.00	-0.12	0.21	-22.97	-19.78	0.00	0.00
240	0.24	0.00	0.00	-0.21	0.12	-22.97	-19.78	0.00	0.00
270	0.24	0.00	0.00	-0.24	0.00	-22.97	-15.94	0.00	0.00
300	0.24	0.00	0.00	-0.21	-0.12	-22.97	-19.78	0.00	0.00
330	0.24	0.00	0.00	-0.12	-0.21	-22.97	-19.78	0.00	0.00

Wind Direction	F _x	F _y	F _z	M _x	M _y	M _z	OTM _x	OTM _y	Torque
50	0.09	0.00	0.00	0.09	-0.04	-14.33	-14.33	0.00	0.00
55	0.09	0.00	0.00	0.09	-0.04	-14.33	-14.33	0.00	0.00
60	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
65	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
70	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
75	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
80	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
85	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
90	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
95	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
100	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
105	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
110	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
115	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
120	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
125	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
130	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
135	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
140	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
145	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
150	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
155	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
160	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
165	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
170	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
175	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
180	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
185	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
190	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
195	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
200	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
205	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
210	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
215	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
220	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
225	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
230	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
235	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
240	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
245	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
250	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
255	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
260	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
265	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
270	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
275	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
280	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
285	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
290	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
295	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
300	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
305	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
310	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
315	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
320	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
325	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00
330	0.09	0.00	0.00	0.08	-0.04	-14.33	-14.33	0.00	0.00

Wind Direction	F _x	F _y	F _z	M _x	M _y	M _z	OTM _x	OTM _y	Torque
0	0.09	0.00	0.00	0.00	-0.09	-16.63	0.00	0.00	0.00
30	0.09	0.00	0.00	0.04	-0.08	-14.42	-3.33	-14.42	0.00
60	0.09	0.00	0.00	0.08	-0.04	-14.42	-3.33	-14.42	0.00
90	0.09	0.00	0.00	0.09	0.00	0.00	-16.63	0.00	0.00
120	0.09	0.00	0.00	0.08	0.04	0.00	-14.42	-3.33	0.00
150	0.09	0.00	0.00	0.04	0.08	0.00	-14.42	-3.33	0.00
180	0.09	0.00	0.00	0.00	0.09	0.00	0.00	-16.63	0.00
210	0.09	0.00	0.00	-0.04	0.08	0.00	-14.42	-3.33	0.00
240	0.09	0.00	0.00	-0.08	0.04	0.00	-14.42	-3.33	0.00
270	0.09	0.00	0.00	-0.09	0.00	0.00	0.00	-16.63	0.00
300	0.09	0.00	0.00	-0.08	-0.04	0.00	-14.42	-3.33	0.00
330	0.09	0.00	0.00	-0.04	-0.08	0.00	-14.42	-3.33	0.00

Wind Direction	F _x	F _y	F _z	M _x	M _y	M _z	OTM _x	OTM _y	Torque
0	0.19	0.00	0.00	0.00	-0.19	-16.90	0.00	0.00	0.00
30	0.19	0.00	0.00	0.10	-0.17	-14.95	-18.45	0.00	0.00
60	0.19	0.00	0.00	0.17	-0.10	-14.95	-18.45	0.00	0.00
90	0.19	0.00	0.00	0.19	0.00	0.00	0.00	-16.90	0.00
120	0.19	0.00	0.00	0.17	0.10	0.00	-14.95	-18.45	0.00
150	0.19	0.00	0.00	0.10	0.17	0.00	-14.95	-18.45	0.00
180	0.19	0.00	0.00	0.00	0.19	0.00	0.00	-16.90	0.00
210	0.19	0.00	0.00	-0.10	0.17	0.00	-14.95	-18.45	0.00
240	0.19	0.00	0.00	-0.17	0.10	0.00	-14.95	-18.45	0.00
270	0.19	0.00	0.00	-0.19	0.00	0.00	0.00	-16.90	0.00
300	0.19	0.00	0.00	-0.17	-0.10	0.00	-14.95	-18.45	0.00
330	0.19	0.00	0.00	-0.10	-0.17	0.00	-14.95	-18.45	0.00

Wind Direction	F _x	F _y	F _z	M _x	M _y	M _z	OTM _x	OTM _y	Torque
0	0.09	0.00	0.00	0.00	-0.09	-16.63	0.00	0.00	0.00
30	0.09	0.00	0.00	0.04	-0.08	-14.42	-3.33	-14.42	0.00
60	0.09	0.00	0.00	0.08	-0.04	-14.42	-3.33	-14.42	0.00
90	0.09	0.00	0.00	0.09	0.00	0.00	-16.63	0.00	0.00
120	0.09	0.00	0.00	0.08	0.04	0.00	-14.42	-3.33	0.00
150	0.09	0.00	0.00	0.04	0.08	0.00	-14.42	-3.33	0.00
180	0.09	0.00	0.00	0.00	0.09	0.00	0.00	-16.63	0.00
210	0.09	0.00	0.00	-0.04	0.08	0.00	-14.42	-3.33	0.00
240	0.09	0.00	0.00	-0.08	0.04	0.00	-14.42	-3.33	0.00
270	0.09	0.00	0.00	-0.09	0.00	0.00	0.00	-16.63	0.00
300	0.09	0.00	0.00	-0.08	-0.04	0.00	-14.42	-3.33	0.00
330	0.09	0.00	0.00	-0.04	-0.08	0.00	-14.42	-3.33	0.00

Wind Direction	F _x	F _y	F _z	M _x	M _y	M _z	OTM _x	OTM _y	Torque
0	0.19	0.00	0.00	0.00	-0.19	-16.90	0.00	0.00	0.00
30	0.19	0.00	0.00	0.10	-0.17	-14.95	-18.45	0.00	0.00
60	0.19	0.00	0.00	0.17	-0.10	-14.95	-18.45	0.00	0.00
90	0.19	0.00	0.00	0.19	0.00	0.00	0.00	-16.90	0.00
120	0.19	0.00	0.00	0.17	0.10	0.00	-14.95	-18.45	0.00
150	0.19	0.00	0.00	0.10	0.17	0.00	-14.95	-18.45	0.00
180	0.19	0.00	0.00	0.00	0.19	0.00	0.00	-16.90	0.00
210	0.19	0.00	0.00</						

RISATower Valmont Structures 1143 Pkwa Drive Plymouth, MI 48153 Phone: (313) 936-4131 Fax: (313) 936-6433	Job	A-116966 (PR2010-06-019)	Page	85 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1143 Pkwa Drive Plymouth, MI 48153 Phone: (313) 936-4131 Fax: (313) 936-6433	Job	A-116966 (PR2010-06-019)	Page	86 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.16	0.00	0.00	0.00	-0.16	-27.52	0.00
30	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
60	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00
90	0.16	0.00	0.00	0.00	0.00	0.00	0.00
120	0.16	0.00	0.00	0.00	0.08	13.76	0.00
150	0.16	0.00	0.00	0.00	0.14	23.54	0.00
180	0.16	0.00	0.00	0.00	0.16	27.52	0.00
210	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00
240	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
270	0.16	0.00	0.00	0.00	-0.16	-27.52	0.00
300	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
330	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.19	0.00	0.10	0.17	-31.42	0.00	0.00
30	0.19	0.00	0.10	0.17	-29.81	-17.21	0.00
60	0.19	0.00	0.17	0.10	-17.21	-29.81	0.00
90	0.19	0.00	0.19	0.00	0.00	-34.42	0.00
120	0.19	0.00	0.17	0.10	17.21	-29.81	0.00
150	0.19	0.00	0.10	0.17	29.81	-17.21	0.00
180	0.19	0.00	0.00	0.19	34.42	0.00	0.00
210	0.19	0.00	-0.10	0.17	29.81	17.21	0.00
240	0.19	0.00	-0.17	0.10	17.21	29.81	0.00
270	0.19	0.00	-0.19	0.00	0.00	34.42	0.00
300	0.19	0.00	-0.17	0.10	-17.21	29.81	0.00
330	0.19	0.00	-0.10	0.17	-29.81	17.21	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.16	0.00	0.00	0.00	-0.16	-27.52	0.00
30	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
60	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00
90	0.16	0.00	0.00	0.00	0.00	0.00	0.00
120	0.16	0.00	0.00	0.00	0.08	13.76	0.00
150	0.16	0.00	0.00	0.00	0.14	23.54	0.00
180	0.16	0.00	0.00	0.00	0.16	27.52	0.00
210	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00
240	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
270	0.16	0.00	0.00	0.00	-0.16	-27.52	0.00
300	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
330	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.19	0.00	0.10	0.17	-31.42	0.00	0.00
30	0.19	0.00	0.10	0.17	-29.81	-17.21	0.00
60	0.19	0.00	0.17	0.10	-17.21	-29.81	0.00
90	0.19	0.00	0.19	0.00	0.00	-34.42	0.00
120	0.19	0.00	0.17	0.10	17.21	-29.81	0.00
150	0.19	0.00	0.10	0.17	29.81	-17.21	0.00
180	0.19	0.00	0.00	0.19	34.42	0.00	0.00
210	0.19	0.00	-0.10	0.17	29.81	17.21	0.00
240	0.19	0.00	-0.17	0.10	17.21	29.81	0.00
270	0.19	0.00	-0.19	0.00	0.00	34.42	0.00
300	0.19	0.00	-0.17	0.10	-17.21	29.81	0.00
330	0.19	0.00	-0.10	0.17	-29.81	17.21	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.16	0.00	0.00	0.00	-0.16	-27.52	0.00
30	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
60	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00
90	0.16	0.00	0.00	0.00	0.00	0.00	0.00
120	0.16	0.00	0.00	0.00	0.08	13.76	0.00
150	0.16	0.00	0.00	0.00	0.14	23.54	0.00
180	0.16	0.00	0.00	0.00	0.16	27.52	0.00
210	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00
240	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
270	0.16	0.00	0.00	0.00	-0.16	-27.52	0.00
300	0.16	0.00	0.00	0.00	-0.14	-23.54	0.00
330	0.16	0.00	0.00	0.00	-0.08	-13.76	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.19	0.00	0.10	0.17	-31.42	0.00	0.00
30	0.19	0.00	0.10	0.17	-29.81	-17.21	0.00
60	0.19	0.00	0.17	0.10	-17.21	-29.81	0.00
90	0.19	0.00	0.19	0.00	0.00	-34.42	0.00
120	0.19	0.00	0.17	0.10	17.21	-29.81	0.00
150	0.19	0.00	0.10	0.17	29.81	-17.21	0.00
180	0.19	0.00	0.00	0.19	34.42	0.00	0.00
210	0.19	0.00	-0.10	0.17	29.81	17.21	0.00
240	0.19	0.00	-0.17	0.10	17.21	29.81	0.00
270	0.19	0.00	-0.19	0.00	0.00	34.42	0.00
300	0.19	0.00	-0.17	0.10	-17.21	29.81	0.00
330	0.19	0.00	-0.10	0.17	-29.81	17.21	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.06	0.00	0.00	0.00	-0.06	-9.62	0.00
30	0.06	0.00	0.00	0.00	-0.05	-8.33	0.00

RISATower Valmont Structures 1143 Pkwa Drive Plymouth, MI 48153 Phone: (313) 936-4131 Fax: (313) 936-6433	Job	A-116966 (PR2010-06-019)	Page	87 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1143 Pkwa Drive Plymouth, MI 48153 Phone: (313) 936-4131 Fax: (313) 936-6433	Job	A-116966 (PR2010-06-019)	Page	88 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
60	0.06	0.00	0.00	0.00	-0.03	-4.81	0.00
90	0.06	0.00	0.00	0.00	0.00	-9.62	0.00
120	0.06	0.00	0.00	0.00	0.03	-4.81	0.00
150	0.06	0.00	0.00	0.00	0.00	9.62	0.00
180	0.06	0.00	0.00	0.00	0.03	4.81	0.00
210	0.06	0.00	0.00	0.00	0.00	9.62	0.00
240	0.06	0.00	0.00	0.00	0.03	4.81	0.00
270	0.06	0.00	0.00	0.00	0.00	9.62	0.00
300	0.06	0.00	0.00	0.00	-0.03	4.81	0.00
330	0.06	0.00	0.00	0.00	-0.03	-4.81	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
150	0.20	0.00	0.15	0.26	-32.13	-23.13	0.00
180	0.20	0.00	0.00	0.20	50.27	0.00	0.00
210	0.20	0.00	-0.15	0.26	43.13	23.13	0.00
240	0.20	0.00	-0.26	0.15	23.13	43.13	0.00
270	0.20	0.00	-0.20	0.00	0.00	50.27	0.00
300	0.20	0.00	-0.26	-0.15	-23.13	43.13	0.00
330	0.20	0.00	-0.15	-0.26	-43.13	23.13	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.06	0.00	0.00	0.00	-0.06	-9.62	0.00
30	0.06	0.00	0.00	0.00	-0.05	-8.33	0.00
60	0.06	0.00	0.00	0.00	-0.03	-4.81	0.00
90	0.06	0.00	0.00	0.00	0.00	-9.62	0.00
120	0.06	0.00	0.00	0.00	0.03	-4.81	0.00
150	0.06	0.00	0.00	0.00	0.00	9.62	0.00
180	0.06	0.00	0.00	0.00	0.03	4.81	0.00
210	0.06	0.00	0.00	0.00	0.00	9.62	0.00
240	0.06	0.00	0.00	0.00	0.03	4.81	0.00
270	0.06	0.00	0.00	0.00	0.00	9.62	0.00
300	0.06	0.00	0.00	0.00	-0.03	4.81	0.00
330	0.06	0.00	0.00	0.00	-0.03	-4.81	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.20	0.00	0.00	0.00	-0.20	-50.27	0.00
30	0.20	0.00	0.00	0.00	-0.15	-43.13	0.00
60	0.20	0.00	0.00	0.00	-0.03	-9.62	0.00
90	0.20	0.00	0.00	0.00	0.00	0.00	0.00
120	0.20	0.00	0.00	0.00	0.03	9.62	0.0

RISATower Valmont Structures 1545 Pikeo Drive Plymouth, IN 46683 Phone: (317) 936-4131 FAX: (317) 936-6458	Job	A-116986 (PR2010-06-019)	Page	89 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1545 Pikeo Drive Plymouth, IN 46683 Phone: (317) 936-4131 FAX: (317) 936-6458	Job	A-116986 (PR2010-06-019)	Page	90 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
140	0.07	0.00	-0.04	0.04	5.33	3.97	0.00
170	0.07	0.00	-0.07	0.00	9.00	11.46	0.00
200	0.07	0.00	-0.06	-0.04	-3.73	9.93	0.00
230	0.07	0.00	-0.01	-0.06	-9.93	3.73	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
330	0.02	0.00	-0.04	-0.03	-12.30	7.10	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.07	0.00	0.00	-0.07	-11.46	0.00	0.00
30	0.07	0.00	0.04	-0.06	-9.97	-5.73	0.00
60	0.07	0.00	0.06	-0.04	-7.11	-9.93	0.00
90	0.07	0.00	0.07	0.00	0.00	-11.46	0.00
120	0.07	0.00	0.06	0.04	3.73	-9.93	0.00
150	0.07	0.00	0.04	0.06	9.93	-5.73	0.00
180	0.07	0.00	0.00	0.07	11.46	0.00	0.00
210	0.07	0.00	-0.04	0.06	9.93	3.73	0.00
240	0.07	0.00	-0.06	0.04	5.73	9.93	0.00
270	0.07	0.00	-0.07	0.00	0.00	11.46	0.00
300	0.07	0.00	-0.06	-0.04	-3.73	9.93	0.00
330	0.07	0.00	-0.01	-0.06	-9.93	3.73	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.09	0.00	0.00	-0.09	-12.30	0.00	0.00
30	0.09	0.00	0.04	-0.08	-10.00	-7.10	0.00
60	0.09	0.00	0.06	-0.06	-7.10	-12.30	0.00
90	0.09	0.00	0.07	0.00	0.00	-12.30	0.00
120	0.09	0.00	0.06	0.04	0.00	-10.00	0.00
150	0.09	0.00	0.04	0.06	7.10	-7.10	0.00
180	0.09	0.00	0.00	0.09	12.30	0.00	0.00
210	0.09	0.00	-0.04	0.06	10.00	7.10	0.00
240	0.09	0.00	-0.06	0.04	7.10	12.30	0.00
270	0.09	0.00	-0.07	0.00	0.00	12.30	0.00
300	0.09	0.00	-0.06	-0.04	-7.10	10.00	0.00
330	0.09	0.00	-0.01	-0.06	-12.30	7.10	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.07	0.00	0.00	-0.07	-11.46	0.00	0.00
30	0.07	0.00	0.04	-0.06	-9.93	-5.73	0.00
60	0.07	0.00	0.06	-0.04	-7.11	-9.93	0.00
90	0.07	0.00	0.07	0.00	0.00	-11.46	0.00
120	0.07	0.00	0.06	0.04	3.73	-9.93	0.00
150	0.07	0.00	0.04	0.06	9.93	-5.73	0.00
180	0.07	0.00	0.00	0.07	11.46	0.00	0.00
210	0.07	0.00	-0.04	0.06	9.93	3.73	0.00
240	0.07	0.00	-0.06	0.04	5.73	9.93	0.00
270	0.07	0.00	-0.07	0.00	0.00	11.46	0.00
300	0.07	0.00	-0.06	-0.04	-3.73	9.93	0.00
330	0.07	0.00	-0.01	-0.06	-9.93	3.73	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.09	0.00	0.00	-0.09	-12.30	0.00	0.00
30	0.09	0.00	0.04	-0.08	-10.00	-7.10	0.00
60	0.09	0.00	0.06	-0.06	-7.10	-12.30	0.00
90	0.09	0.00	0.07	0.00	0.00	-12.30	0.00
120	0.09	0.00	0.06	0.04	0.00	-10.00	0.00
150	0.09	0.00	0.04	0.06	7.10	-7.10	0.00
180	0.09	0.00	0.00	0.09	12.30	0.00	0.00
210	0.09	0.00	-0.04	0.06	10.00	7.10	0.00
240	0.09	0.00	-0.06	0.04	7.10	12.30	0.00
270	0.09	0.00	-0.07	0.00	0.00	12.30	0.00
300	0.09	0.00	-0.06	-0.04	-7.10	10.00	0.00
330	0.09	0.00	-0.01	-0.06	-12.30	7.10	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.09	0.00	0.00	-0.09	-11.21	0.00	0.00
30	0.09	0.00	0.04	-0.08	-12.30	-7.10	0.00
60	0.09	0.00	0.06	-0.06	-9.00	-12.30	0.00
90	0.09	0.00	0.07	0.00	0.00	-12.30	0.00
120	0.09	0.00	0.06	0.04	3.10	-12.30	0.00
150	0.09	0.00	0.04	0.06	12.30	-7.10	0.00
180	0.09	0.00	0.00	0.09	14.21	0.00	0.00
210	0.09	0.00	-0.04	0.06	12.30	7.10	0.00
240	0.09	0.00	-0.06	0.04	9.00	12.30	0.00
270	0.09	0.00	-0.07	0.00	0.00	14.21	0.00
300	0.09	0.00	-0.06	-0.04	-7.10	12.30	0.00
330	0.09	0.00	-0.01	-0.06	-11.21	7.10	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.02	0.00	0.00	-0.02	-2.32	0.00	0.00
30	0.02	0.00	0.01	-0.01	-2.18	-1.26	0.00
60	0.02	0.00	0.01	-0.01	-1.26	-2.18	0.00
90	0.02	0.00	0.01	0.00	0.00	-2.32	0.00
120	0.02	0.00	0.01	0.01	1.26	-2.18	0.00
150	0.02	0.00	0.01	0.01	2.32	-1.26	0.00
180	0.02	0.00	0.00	0.02	2.18	0.00	0.00
210	0.02	0.00	-0.01	0.01	1.26	2.18	0.00
240	0.02	0.00	-0.01	0.01	0.00	2.32	0.00
270	0.02	0.00	-0.01	0.00	-1.26	2.18	0.00
300	0.02	0.00	-0.01	-0.01	-2.18	1.26	0.00
330	0.02	0.00	-0.01	-0.01	-2.32	1.26	0.00

RISATower Valmont Structures 1545 Pikeo Drive Plymouth, IN 46683 Phone: (317) 936-4131 FAX: (317) 936-6458	Job	A-116986 (PR2010-06-019)	Page	91 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1545 Pikeo Drive Plymouth, IN 46683 Phone: (317) 936-4131 FAX: (317) 936-6458	Job	A-116986 (PR2010-06-019)	Page	92 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.02	0.00	0.00	-0.02	-2.32	0.00	0.00
30	0.02	0.00	0.01	-0.01	-2.18	-1.26	0.00
60	0.02	0.00	0.01	-0.01	-1.26	-2.18	0.00
90	0.02	0.00	0.01	0.00	0.00	-2.32	0.00
120	0.02	0.00	0.01	0.01	1.26	-2.18	0.00
150	0.02	0.00	0.01	0.01	2.32	-1.26	0.00
180	0.02	0.00	0.00	0.02	2.18	0.00	0.00
210	0.02	0.00	-0.01	0.01	1.26	2.18	0.00
240	0.02	0.00	-0.01	0.01	0.00	2.32	0.00
270	0.02	0.00	-0.01	0.00	-1.26	2.18	0.00
300	0.02	0.00	-0.01	-0.01	-2.18	1.26	0.00
330	0.02	0.00	-0.01	-0.01	-2.32	1.26	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.06	0.00	0.00	-0.06	-4.43	0.00	0.00
30	0.06	0.00	0.03	-0.03	-4.43	-2.91	0.00
60	0.06	0.00	0.03	-0.03	-2.91	-4.43	0.00
90	0.06	0.00	0.03	0.00	0.00	-4.43	0.00
120	0.06	0.00	0.03	0.03	2.91	-4.43	0.00
150	0.06	0.00	0.03	0.03	4.43	-2.91	0.00
180	0.06	0.00	0.00	0.06	4.43	0.00	0.00
210	0.06	0.00	-0.03	0.03	2.91	4.43	0.00
240	0.06	0.00	-0.03	0.03	0.00	4.43	0.00
270	0.06	0.00	-0.03	0.00	-2.91	4.43	0.00
300	0.06	0.00	-0.03	-0.03	-4.43	2.91	0.00
330	0.06	0.00	-0.03	-0.03	-4.43	2.91	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.02	0.00	0.00	-0.02	-2.32	0.00	0.00
30	0.02	0.00	0.01	-0.01	-2.18	-1.26	0.00
60	0.02	0.00	0.01	-0.01	-1.26	-2.18	0.00
90	0.02	0.00	0.01	0.00	0.00	-2.32	0.00
120	0.02	0.00	0.01	0.01	1.26	-2.18	0.00
150	0.02	0.00	0.01	0.01	2.32	-1.26	0.00
180	0.02	0.00	0.00	0.02	2.18	0.00	0.00
210	0.02	0.00	-0.01	0.01	1.26	2.18	0.00
240	0.02	0.00	-0.01	0.01	0.00	2.32	0.00
270	0.02	0.00	-0.01	0.00	-1.26	2.18	0.00
300	0.02	0.00	-0.01	-0.01	-2.18	1.26	0.00
330	0.02	0.00	-0.01	-0.01	-2.32	1.26	0.00

Wind Direction *	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.0						

RISA Tower Valmont Structures 1345 Piko Drive Phonix, AZ 85663 Phone: (574) 936-4321 FAX: (574) 936-6438	Job	A-116966 (PR2010-06-019)	Page	93 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
150	0.29	0.00	0.13	0.23	40.77	-23.23	0.00
180	0.29	0.00	0.00	0.29	46.10	0.00	0.00
210	0.29	0.00	-0.13	0.23	40.77	23.23	0.00
240	0.29	0.00	-0.23	0.13	23.23	40.77	0.00
270	0.29	0.00	-0.29	0.00	46.10	0.00	0.00
300	0.29	0.00	-0.23	-0.13	40.77	23.23	0.00
330	0.29	0.00	-0.13	-0.23	40.77	-23.23	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.29	0.00	0.00	-0.29	-46.10	0.00	0.00
30	0.29	0.00	0.13	-0.23	-40.77	-23.23	0.00
60	0.29	0.00	0.23	-0.13	-23.23	-40.77	0.00
90	0.29	0.00	0.29	0.00	-46.10	0.00	0.00
120	0.29	0.00	0.23	0.13	-40.77	23.23	0.00
150	0.29	0.00	0.13	0.23	-40.77	23.23	0.00
180	0.29	0.00	0.00	0.29	-46.10	0.00	0.00
210	0.29	0.00	-0.13	0.23	-40.77	23.23	0.00
240	0.29	0.00	-0.23	0.13	-23.23	40.77	0.00
270	0.29	0.00	-0.29	0.00	-46.10	0.00	0.00
300	0.29	0.00	-0.23	-0.13	-40.77	23.23	0.00
330	0.29	0.00	-0.13	-0.23	-40.77	23.23	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.10	0.00	0.00	-0.10	-15.41	0.00	0.00
30	0.10	0.00	0.09	-0.09	-13.33	-7.70	0.00
60	0.10	0.00	0.09	-0.09	-7.70	-13.33	0.00
90	0.10	0.00	0.10	0.00	-15.41	0.00	0.00
120	0.10	0.00	0.09	0.09	-7.70	13.33	0.00
150	0.10	0.00	0.09	0.09	-7.70	13.33	0.00
180	0.10	0.00	0.10	0.00	-15.41	0.00	0.00
210	0.10	0.00	-0.09	0.09	13.33	7.70	0.00
240	0.10	0.00	-0.09	0.09	7.70	13.33	0.00
270	0.10	0.00	-0.10	0.00	15.41	0.00	0.00
300	0.10	0.00	-0.09	-0.09	-7.70	13.33	0.00
330	0.10	0.00	-0.09	-0.09	-13.33	7.70	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.10	0.00	0.00	-0.10	-15.41	0.00	0.00
30	0.10	0.00	0.09	-0.09	-13.33	-7.70	0.00
60	0.10	0.00	0.09	-0.09	-7.70	-13.33	0.00
90	0.10	0.00	0.10	0.00	-15.41	0.00	0.00
120	0.10	0.00	0.09	0.09	-7.70	13.33	0.00
150	0.10	0.00	0.09	0.09	-7.70	13.33	0.00
180	0.10	0.00	0.10	0.00	-15.41	0.00	0.00
210	0.10	0.00	-0.09	0.09	13.33	7.70	0.00
240	0.10	0.00	-0.09	0.09	7.70	13.33	0.00
270	0.10	0.00	-0.10	0.00	15.41	0.00	0.00
300	0.10	0.00	-0.09	-0.09	-7.70	13.33	0.00
330	0.10	0.00	-0.09	-0.09	-13.33	7.70	0.00

RISA Tower Valmont Structures 1345 Piko Drive Phonix, AZ 85663 Phone: (574) 936-4321 FAX: (574) 936-6438	Job	A-116966 (PR2010-06-019)	Page	95 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
330	0.16	0.00	-0.01	-0.13	-13.91	10.93	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.16	0.00	0.00	-0.16	-11.56	0.00	0.00
30	0.16	0.00	0.01	-0.14	-10.93	-10.93	0.00
60	0.16	0.00	0.14	-0.01	-10.93	-10.93	0.00
90	0.16	0.00	0.16	0.00	-11.56	0.00	0.00
120	0.16	0.00	0.14	0.01	10.93	-10.93	0.00
150	0.16	0.00	0.01	0.14	10.93	-10.93	0.00
180	0.16	0.00	0.00	0.16	11.56	0.00	0.00
210	0.16	0.00	-0.01	0.14	10.93	10.93	0.00
240	0.16	0.00	-0.14	0.01	10.93	10.93	0.00
270	0.16	0.00	-0.16	0.00	11.56	0.00	0.00
300	0.16	0.00	-0.14	-0.01	-10.93	10.93	0.00
330	0.16	0.00	-0.01	-0.14	-10.93	10.93	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-4.34	0.00	0.00
30	0.03	0.00	0.02	-0.02	-4.19	-2.42	0.00
60	0.03	0.00	0.02	-0.02	-2.42	-4.19	0.00
90	0.03	0.00	0.03	0.00	-4.34	0.00	0.00
120	0.03	0.00	0.02	0.02	-2.42	4.19	0.00
150	0.03	0.00	0.02	0.02	-2.42	4.19	0.00
180	0.03	0.00	0.03	0.00	-4.34	0.00	0.00
210	0.03	0.00	-0.02	0.02	4.19	-2.42	0.00
240	0.03	0.00	-0.02	0.02	2.42	4.19	0.00
270	0.03	0.00	-0.03	0.00	4.34	0.00	0.00
300	0.03	0.00	-0.02	-0.02	-2.42	4.19	0.00
330	0.03	0.00	-0.02	-0.02	-4.19	2.42	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-4.34	0.00	0.00
30	0.03	0.00	0.02	-0.02	-4.19	-2.42	0.00
60	0.03	0.00	0.02	-0.02	-2.42	-4.19	0.00
90	0.03	0.00	0.03	0.00	-4.34	0.00	0.00
120	0.03	0.00	0.02	0.02	-2.42	4.19	0.00
150	0.03	0.00	0.02	0.02	-2.42	4.19	0.00
180	0.03	0.00	0.03	0.00	-4.34	0.00	0.00
210	0.03	0.00	-0.02	0.02	4.19	-2.42	0.00
240	0.03	0.00	-0.02	0.02	2.42	4.19	0.00
270	0.03	0.00	-0.03	0.00	4.34	0.00	0.00
300	0.03	0.00	-0.02	-0.02	-2.42	4.19	0.00
330	0.03	0.00	-0.02	-0.02	-4.19	2.42	0.00

RISA Tower Valmont Structures 1345 Piko Drive Phonix, AZ 85663 Phone: (574) 936-4321 FAX: (574) 936-6438	Job	A-116966 (PR2010-06-019)	Page	94 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
140	0.10	0.00	-0.09	0.01	-7.70	13.33	0.00
270	0.10	0.00	-0.10	0.00	15.41	0.00	0.00
300	0.10	0.00	-0.09	-0.01	-7.70	13.33	0.00
330	0.10	0.00	-0.09	-0.09	-13.33	7.70	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.10	0.00	0.00	-0.10	-15.41	0.00	0.00
30	0.10	0.00	0.09	-0.09	-13.33	-7.70	0.00
60	0.10	0.00	0.09	-0.09	-7.70	-13.33	0.00
90	0.10	0.00	0.10	0.00	-15.41	0.00	0.00
120	0.10	0.00	0.09	0.09	-7.70	13.33	0.00
150	0.10	0.00	0.09	0.09	-7.70	13.33	0.00
180	0.10	0.00	0.10	0.00	-15.41	0.00	0.00
210	0.10	0.00	-0.09	0.09	13.33	7.70	0.00
240	0.10	0.00	-0.09	0.09	7.70	13.33	0.00
270	0.10	0.00	-0.10	0.00	15.41	0.00	0.00
300	0.10	0.00	-0.09	-0.09	-7.70	13.33	0.00
330	0.10	0.00	-0.09	-0.09	-13.33	7.70	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.16	0.00	0.00	-0.16	-21.36	0.00	0.00
30	0.16	0.00	0.08	-0.14	-18.93	-10.93	0.00
60	0.16	0.00	0.14	-0.08	-18.93	-10.93	0.00
90	0.16	0.00	0.16	0.00	-21.36	0.00	0.00
120	0.16	0.00	0.14	0.08	-18.93	-10.93	0.00
150	0.16	0.00	0.08	0.14	-18.93	-10.93	0.00
180	0.16	0.00	0.00	0.16	-21.36	0.00	0.00
210	0.16	0.00	-0.08	0.14	-18.93	10.93	0.00
240	0.16	0.00	-0.14	0.08	-18.93	10.93	0.00
270	0.16	0.00	-0.16	0.00	-21.36	0.00	0.00
300	0.16	0.00	-0.14	-0.08	-18.93	10.93	0.00
330	0.16	0.00	-0.08	-0.14	-18.93	10.93	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
K	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.16	0.00	0.00	-0.16	-21.36	0.00	0.00
30	0.16	0.00	0.08	-0.14	-18.93	-10.93	0.00
60	0.16	0.00	0.14	-0.08	-18.93	-10.93	0.00
90	0.16	0.00	0.16	0.00	-21.36	0.00	0.00
120	0.16	0.00	0.14	0.08	-18.93	-10.93	0.00
150	0.16	0.00	0.08	0.14	-18.93	-10.93	0.00
180	0.16	0.00	0.00	0.16	-21.36	0.00	0.00
210	0.16	0.00	-0.08	0.14	-18.93	10.93	0.00
240	0.16	0.00	-0.14	0.08	-18.93	10.93	

RISATower Valmont Structures 1543 Pico Drive Plymouth, MI 48163 Phone: (734) 936-4331 FAX: (734) 936-6432	Job	A-116966 (PR2010-06-019)	Page	105 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1543 Pico Drive Plymouth, MI 48163 Phone: (734) 936-4331 FAX: (734) 936-6432	Job	A-116966 (PR2010-06-019)	Page	103 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.17	0.00	-0.15	0.09	-21.72	-17.61	0.00
30	0.17	0.00	-0.17	0.00	0.00	43.43	0.00
60	0.17	0.00	-0.15	-0.09	-21.72	-17.61	0.00
90	0.17	0.00	-0.09	-0.15	-17.61	-21.72	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.01	0.00	-0.04	0.01	-17.93	-10.34	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
30	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
60	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
90	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
120	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
150	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
180	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
210	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
240	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
270	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
300	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00
330	0.19	0.00	-0.11	0.00	-43.43	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
30	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
60	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
90	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
120	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
150	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
180	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
210	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
240	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
270	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
300	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00
330	0.01	0.00	-0.03	0.00	-23.73	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
30	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
60	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
90	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
120	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
150	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
180	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
210	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
240	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
270	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
300	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
330	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
30	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
60	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
90	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
120	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
150	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
180	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
210	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
240	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
270	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
300	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
330	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
30	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
60	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
90	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
120	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
150	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
180	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
210	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
240	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
270	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
300	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00
330	0.04	0.00	-0.04	0.00	-20.72	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
30	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
60	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
90	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
120	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
150	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
180	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
210	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
240	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
270	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
300	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
330	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00

RISATower Valmont Structures 1543 Pico Drive Plymouth, MI 48163 Phone: (734) 936-4331 FAX: (734) 936-6432	Job	A-116966 (PR2010-06-019)	Page	107 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1543 Pico Drive Plymouth, MI 48163 Phone: (734) 936-4331 FAX: (734) 936-6432	Job	A-116966 (PR2010-06-019)	Page	108 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
30	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
60	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
90	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
120	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
150	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
180	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
210	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
240	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
270	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
300	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00
330	0.11	0.00	-0.11	0.00	-27.35	0.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
60	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
90	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
120	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
150	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
180	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
210	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
240	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
270	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
300	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00
330	0.02	0.00	0.02	-0.01	-2.39	-4.14	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
30	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
60	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
90	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
120	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
150	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
180	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
210	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
240	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
270	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
300	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00
330	0.01	0.00	-0.01	0.00	-18.17	0.00	0.00

Direction: 0° Azimuth - Elevation: 20° - Node 3

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.11	0.00	0.00	0.00	14.23	-10.33	0.00
30	0.11	0.00	0.00	0.11	21.05	-10.33	0.00
60	0.11	0.00	-0.03	0.09	18.23	10.33	0.00
90	0.11	0.00	-0.09	0.00	10.33	18.23	0.00
120	0.11	0.00	-0.11	0.00	0.00	21.05	0.00
150	0.11	0.00	-0.09	-0.03	-10.33	18.23	0.00
180	0.11	0.00	-0.00	-0.11	-18.23	10.33	0.00

Direction: 0° Azimuth - Elevation: 20° - Node 4

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	0.00	3.33	-3.77	0.00
30	0.03	0.00	0.00	0.03	4.67	-3.77	0.00
60	0.03	0.00	-0.01	0.02	3.33	3.77	0.00
90	0.03	0.00	-0.02	0.00	-3.33	4.67	0.00
120	0.03	0.00	-0.03	0.00	-4.67	3.33	0.00
150	0.03	0.00	-0.02	-0.01	-3.33	-3.77	0.00
180	0.03	0.00	0.00	-0.03	-4.67	-3.33	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 1

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.11	0.00	0.00	-0.11	-21.05	0.00	0.00
30	0.11	0.00	0.00	-0.09	-18.23	-10.33	0.00
60	0.11	0.00	0.09	-0.03	-10.33	-18.23	0.00
90	0.11	0.00	0.11	0.00	0.00	-21.05	0.00
120	0.11	0.00	0.09	0.03	10.33	-18.23	0.00
150	0.11	0.00	0.03	0.09	18.23	-10.33	0.00
180	0.11	0.00	0.00	0.11	21.05	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 2

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-4.67	0.00	0.00
30	0.03	0.00	0.00	-0.03	-3.33	-3.77	0.00
60	0.03	0.00	0.01	-0.02	-3.33	-3.77	0.00
90	0.03	0.00	0.01	0.00	0.00	-4.67	0.00
120	0.03	0.00	0.01	0.02	3.33	-3.77	0.00
150	0.03	0.00	0.02	0.03	3.77	-3.33	0.00
180	0.03	0.00	0.03	0.03	4.67	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 3

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-4.67	0.00	0.00
30	0.03	0.00	0.00	-0.03	-3.33	-3.33	0.00
60	0.03	0.00	0.03	-0.03	-3.33	-3.77	0.00
90	0.03	0.00	0.03	0.00	0.00	-4.67	0.00
120	0.03	0.00	0.03	0.03	3.33	-3.77	0.00
150	0.03	0.00	0.03	0.03	3.77	-3.33	0.00
180	0.03	0.00	0.00	0.03	4.67	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 4

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-10.74	0.00	0.00
30	0.03	0.00	0.00	-0.03	-9.30	-3.33	0.00
60	0.03	0.00	0.03	-0.03	-3.33	-9.30	0.00
90	0.03	0.00	0.03	0.00	0.00	-10.74	0.00
120	0.03	0.00	0.03	0.03	3.33	-9.30	0.00
150	0.03	0.00	0.03	0.03	3.33	-9.30	0.00
180	0.03	0.00	0.00	0.03	10.74	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 5

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-4.67	0.00	0.00
30	0.03	0.00	0.00	-0.03	-3.33	-3.33	0.00
60	0.03	0.00	0.03	-0.03	-3.33	-3.77	0.00
90	0.03	0.00	0.03	0.00	0.00	-4.67	0.00
120	0.03	0.00	0.03	0.03	3.33	-3.77	0.00
150	0.03	0.00	0.03	0.03	3.77	-3.33	0.00
180	0.03	0.00	0.00	0.03	4.67	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 6

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-10.74	0.00	0.00
30	0.03	0.00	0.00	-0.03	-9.30	-3.33	0.00
60	0.03	0.00	0.03	-0.03	-3.33	-9.30	0.00
90	0.03	0.00	0.03	0.00	0.00	-10.74	0.00
120	0.03	0.00	0.03	0.03	3.33	-9.30	0.00
150	0.03	0.00	0.03	0.03	3.33	-9.30	0.00
180	0.03	0.00	0.00	0.03	10.74	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 7

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
330	0.03	0.00	-0.03	-0.03	-9.30	3.33	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 8

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.10	0.00	0.00	-0.10	-19.71	0.00	0.00
30	0.10	0.00	0.00	-0.09	-17.07	-9.35	0.00
60	0.10	0.00	0.09	-0.03	-9.35	-17.07	0.00
90	0.10	0.00	0.10	0.00	0.00	-19.71	0.00
120	0.10	0.00	0.09	0.03	9.35	-17.07	0.00
150	0.10	0.00	0.03	0.09	17.07	-9.35	0.00
180	0.10	0.00	0.00	0.10	19.71	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 9

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-10.74	0.00	0.00
30	0.03	0.00	0.00	-0.03	-9.30	-3.33	0.00
60	0.03	0.00	0.03	-0.03	-3.33	-9.30	0.00
90	0.03	0.00	0.03	0.00	0.00	-10.74	0.00
120	0.03	0.00	0.03	0.03	3.33	-9.30	0.00
150	0.03	0.00	0.03	0.03	3.33	-9.30	0.00
180	0.03	0.00	0.00	0.03	10.74	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 10

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-4.24	0.00	0.00
30	0.03	0.00	0.00	-0.03	-3.12	-3.12	0.00
60	0.03	0.00	0.02	-0.02	-3.12	-3.12	0.00
90	0.03	0.00	0.02	0.00	0.00	-4.24	0.00
120	0.03	0.00	0.02	0.02	3.12	-3.12	0.00
150	0.03	0.00	0.02	0.02	3.12	-3.12	0.00
180	0.03	0.00	0.00	0.02	4.24	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 11

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.10	0.00	0.00	-0.10	-19.71	0.00	0.00
30	0.10	0.00	0.00	-0.09	-17.07	-9.35	0.00
60	0.10	0.00	0.09	-0.03	-9.35	-17.07	0.00
90	0.10	0.00	0.10	0.00	0.00	-19.71	0.00
120	0.10	0.00	0.09	0.03	9.35	-17.07	0.00
150	0.10	0.00	0.03	0.09	17.07	-9.35	0.00
180	0.10	0.00	0.00	0.10	19.71	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 12

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-5.34	0.00	0.00
30	0.03	0.00	0.00	-0.03	-4.24	-3.12	0.00
60	0.03	0.00	0.02	-0.02	-3.12	-3.12	0.00
90	0.03	0.00	0.02	0.00	0.00	-5.34	0.00
120	0.03	0.00	0.02	0.02	3.12	-3.12	0.00
150	0.03	0.00	0.02	0.02	3.12	-3.12	0.00
180	0.03	0.00	0.00	0.02	5.34	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 13

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.10	0.00	0.00	-0.10	-19.71	0.00	0.00
30	0.10	0.00	0.00	-0.09	-17.07	-9.35	0.00
60	0.10	0.00	0.09	-0.03	-9.35	-17.07	0.00
90	0.10	0.00	0.10	0.00	0.00	-19.71	0.00
120	0.10	0.00	0.09	0.03	9.35	-17.07	0.00
150	0.10	0.00	0.03	0.09	17.07	-9.35	0.00
180	0.10	0.00	0.00	0.10	19.71	0.00	0.00

Direction: 0° Azimuth - Elevation: 30° - Node 14

Wind Azimuth	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
°	K	K	K	K	kip-ft	kip-ft	kip-ft
0	0.03	0.00	0.00	-0.03	-6.31	0.00	0.00
30	0.03	0.00	0.00	-0.03	-4.80	-3.12	0.00
60	0.03	0.00	0.02	-0.02	-3.12	-3.12	0.00
90	0.03	0.00	0.02	0.00</			

RISATower Valmont Structures 1545 Pickett Drive Plymouth, NY 14553 Phone: (518) 936-4121 FAX: (518) 936-6458	Job	A-116966 (PR2010-06-019)	Page	113 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

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	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
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Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.03	0.00	0.00	0.00	-3.17	-5.40	0.00
30	0.03	0.00	0.03	0.00	0.00	-4.21	0.00
60	0.03	0.00	0.09	0.00	0.00	-3.12	0.00
90	0.03	0.00	0.00	0.03	3.49	-3.12	0.00
120	0.03	0.00	0.00	0.09	6.24	0.00	0.00
150	0.03	0.00	-0.03	0.03	5.40	3.12	0.00
180	0.03	0.00	-0.09	0.00	3.12	5.40	0.00
210	0.03	0.00	-0.03	0.03	0.00	6.24	0.00
240	0.03	0.00	0.00	0.09	-3.12	5.40	0.00
270	0.03	0.00	0.03	0.00	-5.40	3.12	0.00
300	0.03	0.00	0.09	0.00	-6.24	0.00	0.00
330	0.03	0.00	-0.03	0.03	-5.40	-3.12	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.03	0.00	0.00	0.00	3.71	-5.03	0.00
30	0.03	0.00	0.03	0.00	10.03	-6.00	0.00
60	0.03	0.00	0.09	0.00	1.71	5.03	0.00
90	0.03	0.00	0.00	0.03	0.00	3.71	0.00
120	0.03	0.00	0.00	0.09	0.00	10.03	0.00
150	0.03	0.00	-0.03	0.03	0.00	6.00	0.00
180	0.03	0.00	-0.09	0.00	0.00	3.71	0.00
210	0.03	0.00	-0.03	0.03	0.00	10.03	0.00
240	0.03	0.00	0.00	0.09	0.00	6.00	0.00
270	0.03	0.00	0.03	0.00	0.00	3.71	0.00
300	0.03	0.00	0.09	0.00	0.00	10.03	0.00
330	0.03	0.00	-0.03	0.03	0.00	6.00	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.03	0.00	0.00	0.00	-18.63	0.00	0.00
30	0.03	0.00	0.03	0.00	-4.71	-5.03	0.00
60	0.03	0.00	0.09	0.00	-3.03	-4.71	0.00
90	0.03	0.00	0.00	0.03	0.00	-10.03	0.00
120	0.03	0.00	0.00	0.09	3.03	-4.71	0.00
150	0.03	0.00	-0.03	0.03	3.71	-5.03	0.00
180	0.03	0.00	-0.09	0.00	0.00	10.03	0.00
210	0.03	0.00	-0.03	0.03	3.71	5.03	0.00
240	0.03	0.00	0.00	0.09	0.00	10.03	0.00
270	0.03	0.00	0.03	0.00	-3.71	5.03	0.00
300	0.03	0.00	0.09	0.00	-10.03	0.00	0.00
330	0.03	0.00	-0.03	0.03	-4.71	-5.03	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.10	0.00	0.00	0.00	-18.38	0.00	0.00
30	0.10	0.00	0.03	0.00	-15.92	-9.19	0.00
60	0.10	0.00	0.09	0.00	-9.19	-15.92	0.00
90	0.10	0.00	0.00	0.03	0.00	-18.38	0.00
120	0.10	0.00	0.00	0.09	9.19	-15.92	0.00
150	0.10	0.00	-0.03	0.03	15.92	-9.19	0.00
180	0.10	0.00	-0.09	0.00	18.38	0.00	0.00
210	0.10	0.00	-0.03	0.03	15.92	9.19	0.00
240	0.10	0.00	0.00	0.09	9.19	15.92	0.00
270	0.10	0.00	0.03	0.00	0.00	18.38	0.00
300	0.10	0.00	0.09	0.00	-9.19	15.92	0.00
330	0.10	0.00	-0.03	0.03	-15.92	9.19	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.03	0.00	0.00	0.00	-10.03	0.00	0.00
30	0.03	0.00	0.03	0.00	-4.71	-5.03	0.00
60	0.03	0.00	0.09	0.00	-3.03	-4.71	0.00
90	0.03	0.00	0.00	0.03	0.00	-10.03	0.00
120	0.03	0.00	0.00	0.09	3.03	-4.71	0.00
150	0.03	0.00	-0.03	0.03	3.71	-5.03	0.00
180	0.03	0.00	-0.09	0.00	0.00	10.03	0.00
210	0.03	0.00	-0.03	0.03	3.71	5.03	0.00
240	0.03	0.00	0.00	0.09	0.00	10.03	0.00
270	0.03	0.00	0.03	0.00	-3.71	5.03	0.00
300	0.03	0.00	0.09	0.00	-10.03	0.00	0.00
330	0.03	0.00	-0.03	0.03	-4.71	-5.03	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.10	0.00	0.00	0.00	-18.38	0.00	0.00
30	0.10	0.00	0.03	0.00	-15.92	-9.19	0.00
60	0.10	0.00	0.09	0.00	-9.19	-15.92	0.00
90	0.10	0.00	0.00	0.03	0.00	-18.38	0.00
120	0.10	0.00	0.00	0.09	9.19	-15.92	0.00
150	0.10	0.00	-0.03	0.03	15.92	-9.19	0.00
180	0.10	0.00	-0.09	0.00	18.38	0.00	0.00
210	0.10	0.00	-0.03	0.03	15.92	9.19	0.00
240	0.10	0.00	0.00	0.09	9.19	15.92	0.00
270	0.10	0.00	0.03	0.00	0.00	18.38	0.00
300	0.10	0.00	0.09	0.00	-9.19	15.92	0.00
330	0.10	0.00	-0.03	0.03	-15.92	9.19	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.03	0.00	0.00	0.00	-10.03	0.00	0.00
30	0.03	0.00	0.03	0.00	-4.71	-5.03	0.00
60	0.03	0.00	0.09	0.00	-3.03	-4.71	0.00
90	0.03	0.00	0.00	0.03	0.00	-10.03	0.00
120	0.03	0.00	0.00	0.09	3.03	-4.71	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.10	0.00	0.00	0.00	-18.38	0.00	0.00
30	0.10	0.00	0.03	0.00	-15.92	-9.19	0.00
60	0.10	0.00	0.09	0.00	-9.19	-15.92	0.00
90	0.10	0.00	0.00	0.03	0.00	-18.38	0.00
120	0.10	0.00	0.00	0.09	9.19	-15.92	0.00
150	0.10	0.00	-0.03	0.03	15.92	-9.19	0.00
180	0.10	0.00	-0.09	0.00	18.38	0.00	0.00
210	0.10	0.00	-0.03	0.03	15.92	9.19	0.00
240	0.10	0.00	0.00	0.09	9.19	15.92	0.00
270	0.10	0.00	0.03	0.00	0.00	18.38	0.00
300	0.10	0.00	0.09	0.00	-9.19	15.92	0.00
330	0.10	0.00	-0.03	0.03	-15.92	9.19	0.00

RISATower Valmont Structures 1545 Pickett Drive Plymouth, NY 14553 Phone: (518) 936-4121 FAX: (518) 936-6458	Job	A-116966 (PR2010-06-019)	Page	115 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
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	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
150	0.10	0.00	-0.03	0.03	9.19	-15.92	0.00
210	0.10	0.00	-0.10	0.00	18.38	0.00	0.00
300	0.10	0.00	-0.09	0.00	-9.19	15.92	0.00
330	0.10	0.00	-0.03	0.03	-15.92	9.19	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
330	0.03	0.00	-0.03	0.03	-3.04	2.91	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.03	0.00	0.00	0.00	-3.17	0.00	0.00
30	0.03	0.00	0.03	0.00	0.00	-2.91	0.00
60	0.03	0.00	0.09	0.00	0.00	-1.84	0.00
90	0.03	0.00	0.00	0.03	3.04	-3.17	0.00
120	0.03	0.00	0.00	0.09	6.00	0.00	0.00
150	0.03	0.00	-0.03	0.03	5.04	3.17	0.00
180	0.03	0.00	-0.09	0.00	3.17	6.00	0.00
210	0.03	0.00	-0.03	0.03	0.00	6.00	0.00
240	0.03	0.00	0.00	0.09	0.00	6.00	0.00
270	0.03	0.00	0.03	0.00	-3.17	6.00	0.00
300	0.03	0.00	0.09	0.00	-6.00	3.17	0.00
330	0.03	0.00	-0.03	0.03	-5.04	3.17	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	0.03	0.00	0.00	0.00	-3.38	0.00	0.00
30	0.03	0.00	0.03	0.00	-1.12	-4.69	0.00
60	0.03	0.00	0.09	0.00	-0.63	-4.69	0.0

RISATower Valmont Structures 1145 Pike Drive Plymouth, MI 48161 Phone: (313) 936-4121 Fax: (313) 936-6128	Job	A-118966 (PR2010-06-019)	Page	121 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1145 Pike Drive Plymouth, MI 48161 Phone: (313) 936-4121 Fax: (313) 936-6128	Job	A-118966 (PR2010-06-019)	Page	122 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
330	K	K	K	K	kip-ft	kip-ft	kip-ft
	0.04	0.00	-0.02	-0.01	-1.11	2.95	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.01	0.00	0.00	-0.01	-0.91	0.00	0.00
60	0.01	0.00	0.00	-0.01	-0.84	-0.38	0.00
90	0.01	0.00	0.00	0.00	-0.84	-0.38	0.00
120	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
150	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
180	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
210	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
240	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
270	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
300	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
330	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.04	0.00	0.00	-0.01	-3.90	0.00	0.00
60	0.04	0.00	0.00	-0.01	-3.11	-2.95	0.00
90	0.04	0.00	0.00	0.00	-3.11	-2.95	0.00
120	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
150	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
180	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
210	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
240	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
270	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
300	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
330	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.01	0.00	0.00	-0.01	-0.91	0.00	0.00
60	0.01	0.00	0.00	-0.01	-0.84	-0.38	0.00
90	0.01	0.00	0.00	0.00	-0.84	-0.38	0.00
120	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
150	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
180	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
210	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
240	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
270	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
300	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00
330	0.01	0.00	0.00	0.01	-0.84	-0.38	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.04	0.00	0.00	-0.01	-3.90	0.00	0.00
60	0.04	0.00	0.00	-0.01	-3.11	-2.95	0.00
90	0.04	0.00	0.00	0.00	-3.11	-2.95	0.00
120	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
150	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
180	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
210	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
240	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
270	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
300	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00
330	0.04	0.00	0.00	0.01	-3.11	-2.95	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.02	0.00	0.00	-0.02	-3.34	0.00	0.00
60	0.02	0.00	0.00	-0.02	-2.99	-1.67	0.00
90	0.02	0.00	0.00	0.00	-2.99	-1.67	0.00
120	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
150	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
180	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
210	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
240	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
270	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
300	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
330	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.01	0.00	0.00	-0.01	-0.97	0.00	0.00
60	0.01	0.00	0.00	-0.01	-0.84	-0.48	0.00
90	0.01	0.00	0.00	0.00	-0.84	-0.48	0.00
120	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00
150	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00
180	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00
210	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00
240	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00
270	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00
300	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00
330	0.01	0.00	0.00	0.01	-0.84	-0.48	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.02	0.00	0.00	-0.02	-3.34	0.00	0.00
60	0.02	0.00	0.00	-0.02	-2.99	-1.67	0.00
90	0.02	0.00	0.00	0.00	-2.99	-1.67	0.00
120	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
150	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
180	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
210	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
240	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
270	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
300	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
330	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00

RISATower Valmont Structures 1145 Pike Drive Plymouth, MI 48161 Phone: (313) 936-4121 Fax: (313) 936-6128	Job	A-118966 (PR2010-06-019)	Page	123 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1145 Pike Drive Plymouth, MI 48161 Phone: (313) 936-4121 Fax: (313) 936-6128	Job	A-118966 (PR2010-06-019)	Page	124 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
50	K	K	K	K	kip-ft	kip-ft	kip-ft
60	0.02	0.00	0.00	-0.01	-1.62	2.95	0.00
90	0.02	0.00	0.00	0.00	1.60	-3.34	0.00
120	0.02	0.00	0.00	0.01	1.67	-2.99	0.00
150	0.02	0.00	0.00	0.01	1.67	-2.99	0.00
180	0.02	0.00	0.00	0.01	1.67	-2.99	0.00
210	0.02	0.00	0.00	0.01	1.67	-2.99	0.00
240	0.02	0.00	0.00	0.01	1.67	-2.99	0.00
270	0.02	0.00	0.00	0.01	1.67	-2.99	0.00
300	0.02	0.00	0.00	0.01	1.67	-2.99	0.00
330	0.02	0.00	0.00	0.01	1.67	-2.99	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
150	K	K	K	K	kip-ft	kip-ft	kip-ft
160	0.10	0.00	0.00	0.00	13.24	-7.20	0.00
180	0.10	0.00	0.00	0.00	15.41	0.00	0.00
210	0.10	0.00	0.00	0.00	13.24	-7.20	0.00
240	0.10	0.00	0.00	0.00	7.20	13.24	0.00
270	0.10	0.00	0.00	0.00	9.00	15.41	0.00
300	0.10	0.00	0.00	0.00	-7.20	13.24	0.00
330	0.10	0.00	0.00	0.00	-13.24	7.20	0.00

Wind Direction	F _x	F _y	V _x	V _y	OTM _x	OTM _y	Torque
0	K	K	K	K	kip-ft	kip-ft	kip-ft
30	0.02	0.00	0.00	-0.02	-3.34	0.00	0.00
60	0.02	0.00	0.00	-0.02	-2.99	-1.67	0.00
90	0.02	0.00	0.00	0.00	-2.99	-1.67	0.00
120	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
150	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
180	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
210	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
240	0.02	0.00	0.00	0.02	-2.99	-1.67	0.00
270</							

RISATower Valmont Structures 1343 Pike Drive Plymouth, IN 46363 Phone: (317) 936-4231 FAX: (317) 936-6438	Job	A-116966 (PR2010-06-019)	Page	133 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1343 Pike Drive Plymouth, IN 46363 Phone: (317) 936-4231 FAX: (317) 936-6438	Job	A-116966 (PR2010-06-019)	Page	134 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Constr. No.	Description
34	Dead+Wind 210 deg - Service
33	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force k	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	280 - 270	Leg	Max Tension	17	497	0.61	-0.39
			Max. Compression	15	-12.03	0.02	0.27
			Max. Mx	14	1.35	0.73	0.00
			Max. My	21	7.27	0.06	0.73
			Max. Vz	18	1.71	-0.23	0.00
			Max. Vx	15	-1.83	0.02	0.27
		Diagonal	Max Tension	26	231	0.00	0.00
			Max. Compression	20	-2.31	0.00	0.00
			Max. Mx	18	1.72	-0.00	-0.00
			Max. My	16	2.09	-0.00	-0.00
			Max. Vz	18	-0.00	-0.00	-0.00
			Max. Vx	26	-0.00	-0.00	0.00
		Horizontal	Max Tension	21	0.35	0.00	0.00
			Max. Compression	15	-0.26	0.00	0.00
			Max. Mx	14	0.01	0.01	0.00
			Max. My	18	-0.01	0.01	0.00
			Max. Vz	23	1.02	0.60	0.00
			Max. Vx	15	-1.04	0.00	0.00
		Top Girt	Max Tension	13	1.01	0.00	0.00
			Max. Compression	19	-0.98	0.00	0.00
			Max. Mx	14	0.01	0.01	0.00
			Max. My	14	-0.01	0.00	0.00
			Max. Vz	21	1.01	0.00	0.00
			Max. Vx	19	-0.98	0.00	0.00
Bottom Girt	Max Tension	21	0.10	0.00	0.00		
	Max. Compression	2	-0.03	0.00	0.00		
	Max. Mx	14	0.00	0.01	0.00		
	Max. My	14	-0.01	0.00	0.00		
	Max. Vz	17	15.25	0.18	0.48		
	Max. Vx	19	-39.61	-0.26	-0.27		
NGI Girt	Max Tension	18	-10.62	-1.02	-0.16		
	Max. Compression	15	-14.00	0.00	1.11		
	Max. Mx	18	2.39	-0.39	-1.11		
	Max. My	15	-2.33	0.00	0.45		
	Max. Vz	26	3.15	0.00	0.00		
	Max. Vx	26	-3.17	0.00	0.00		
Diagonal	Max Tension	16	1.10	-0.00	-0.00		
	Max. Compression	28	2.11	-0.00	0.00		
	Max. Mx	16	0.01	-0.00	0.00		
	Max. My	26	-0.00	-0.00	0.00		
	Max. Vz	26	-0.00	-0.00	0.00		
	Max. Vx	21	0.37	0.00	0.00		
Horizontal	Max Tension	15	-0.18	0.00	0.00		
	Max. Compression	14	0.06	0.01	0.00		
	Max. Mx	14	-0.01	0.00	0.00		
	Max. My	23	1.14	0.00	0.00		
	Max. Vz	25	-1.14	0.00	0.00		
	Max. Vx	14	-0.00	0.01	0.00		
Top Girt	Max Tension	14	-0.01	0.00	0.00		
	Max. Compression	25	-1.14	0.00	0.00		
	Max. Mx	14	-0.00	0.01	0.00		
	Max. My	14	-0.01	0.00	0.00		
	Max. Vz	23	1.14	0.00	0.00		
	Max. Vx	25	-1.14	0.00	0.00		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force k	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T3	150 - 230	Bottom Girt	Max Tension	21	1.32	0.00	0.00
			Max. Compression	15	-1.21	0.00	0.00
			Max. Mx	14	0.02	0.01	0.00
			Max. My	14	-0.01	0.00	0.00
			Max. Vz	21	0.37	0.00	0.00
			Max. Vx	15	-0.27	0.00	0.00
		NGI Girt	Max Tension	14	0.02	0.01	0.00
			Max. Compression	11	-0.01	0.00	0.00
			Max. Mx	14	0.01	0.00	0.00
			Max. My	14	-0.01	0.00	0.00
			Max. Vz	17	14.33	0.18	-0.27
			Max. Vx	17	-14.09	-0.27	-1.66
		Diagonal	Max Tension	18	17.32	0.29	0.13
			Max. Compression	21	14.26	-0.06	-0.37
			Max. Mx	21	9.22	-0.39	1.71
			Max. My	21	7.21	0.06	0.73
			Max. Vz	26	6.15	0.00	0.00
			Max. Vx	20	-6.19	0.00	0.00
		Horizontal	Max Tension	15	5.21	0.00	0.00
			Max. Compression	26	-4.89	-0.00	0.00
			Max. Mx	15	0.01	-0.01	0.00
			Max. My	26	-0.00	0.00	0.00
			Max. Vz	26	-0.00	0.00	0.00
			Max. Vx	31	0.96	0.00	0.00
Top Girt	Max Tension	23	1.52	0.00	0.00		
	Max. Compression	15	-0.82	0.00	0.00		
	Max. Mx	14	0.01	0.01	0.00		
	Max. My	14	-0.01	0.00	0.00		
	Max. Vz	21	1.55	0.00	0.00		
	Max. Vx	2	-1.20	0.00	0.00		
Bottom Girt	Max Tension	14	0.21	0.02	0.00		
	Max. Compression	21	-1.55	0.00	0.00		
	Max. Mx	2	-1.20	0.00	0.00		
	Max. My	14	0.21	0.02	0.00		
	Max. Vz	17	-0.01	0.00	0.00		
	Max. Vx	17	18.48	-0.70	-0.03		
T4	230 - 220	Leg	Max Tension	19	97.34	9.81	0.26
			Max. Compression	25	88.12	-9.99	-0.27
			Max. Mx	18	-4.56	-0.10	9.15
			Max. My	25	1.20	-9.99	-0.27
			Max. Vz	18	-1.42	-0.10	9.15
			Max. Vx	17	5.82	0.07	-0.02
Diagonal	Max Tension	19	7.00	0.00	0.00		
	Max. Compression	19	-6.31	-0.07	-0.01		
	Max. Mx	26	-3.37	-0.06	-0.07		
	Max. My	18	0.02	0.07	-0.01		
	Max. Vz	26	0.01	0.00	0.00		
	Max. Vx	17	117.34	-1.33	-0.00		
T5	220 - 200	Leg	Max Tension	19	-113.49	9.51	0.12
			Max. Compression	19	-131.49	9.51	0.12
			Max. Mx	18	-7.34	-0.66	9.47
			Max. My	19	-1.28	1.06	-0.12
			Max. Vz	20	-4.10	-0.28	-4.12
			Max. Vx	26	5.24	0.07	0.00
Diagonal	Max Tension	26	-5.19	0.00	0.00		
	Max. Compression	36	-5.19	0.00	0.00		
	Max. Mx	20	2.52	0.15	0.01		
	Max. My	18	-2.26	0.11	0.23		
	Max. Vz	20	-0.04	0.15	0.01		
	Max. Vx	18	0.01	0.00	0.00		
T6	200 - 180	Leg	Max Tension	17	141.55	-0.92	-0.02
			Max. Compression	19	-192.29	9.30	0.09
			Max. Mx	2	-159.97	9.49	-0.06
			Max. My	18	-6.78	-0.23	7.10
			Max. Vz	2	-1.26	9.49	-0.06
			Max. Vx	2	-1.26	9.49	-0.06

RISATower Valmont Structures 1343 Pike Drive Plymouth, IN 46363 Phone: (317) 936-4231 FAX: (317) 936-6438	Job	A-116966 (PR2010-05-019)	Page	135 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1343 Pike Drive Plymouth, IN 46363 Phone: (317) 936-4231 FAX: (317) 936-6438	Job	A-116966 (PR2010-06-019)	Page	136 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force k	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
T7	180 - 160	Diagonal	Max Tension	5	1.04	-0.10	-0.01		
			Max. Compression	12	-2.19	0.00	0.00		
			Max. Mx	19	-9.18	0.00	0.00		
			Max. My	19	0.60	0.09	0.01		
			Max. Vz	26	6.41	-0.05	-0.01		
			Max. Vx	19	-0.03	0.09	0.01		
		Top Girt	Max Tension	26	0.00	0.00	0.00		
			Max. Compression	21	-1.12	0.00	0.00		
			Max. Mx	2	-3.34	0.00	0.00		
			Max. My	14	1.13	-0.03	0.00		
			Max. Vz	14	-0.03	0.00	0.00		
			Max. Vx	14	-0.03	0.00	0.00		
		NGI Girt	Max Tension	14	0.00	0.00	0.00		
			Max. Compression	21	-4.39	0.00	0.00		
			Max. Mx	6	-4.27	0.00	0.00		
			Max. My	14	1.71	-0.07	0.00		
			Max. Vz	14	1.71	0.00	0.00		
			Max. Vx	14	0.03	0.00	0.00		
		T8	160 - 140	Leg	Max Tension	17	170.22	-0.54	-0.32
					Max. Compression	19	-193.00	12.43	0.03
					Max. Mx	19	-193.00	12.43	0.03
					Max. My	5	-7.33	-0.08	7.22
					Max. Vz	23	-1.72	12.43	0.03
					Max. Vx	7	-1.04	-0.21	-4.39
Diagonal	Max Tension	12	8.91	0.00	0.00				
	Max. Compression	19	-11.41	0.00	0.00				
	Max. Mx	19	1.09	0.12	0.01				
	Max. My	19	1.09	0.12	0.01				
	Max. Vz	19	-0.04	0.12	0.01				
	Max. Vx	19	-0.00	0.00	0.00				
Top Girt	Max Tension	17	9.20	0.00	0.00				
	Max. Compression	6	-5.94	0.00	0.00				
	Max. Mx	14	2.76	-0.43	0.00				
	Max. My	14	2.76	0.00	0.00				
	Max. Vz	14	0.05	0.00	0.00				
	Max. Vx	14	0.00	0.00	0.00				
NGI Girt	Max Tension	17	9.32	0.00	0.00				
	Max. Compression	5	-3.79	0.00	0.00				
	Max. Mx	14	2.83	-0.16	0.00				
	Max. My	14	2.83	0.00	0.00				
	Max. Vz	14	0.05	0.00	0.00				
	Max. Vx	14	-0.00	0.00	0.00				
T9	160 - 140	Leg	Max Tension	3	207.13	-0.14	-0.02		
			Max. Compression	19	-239.78	9.18	0.03		
			Max. Mx	17	184.22	-9.20	0.01		
			Max. My	5	-10.79	-0.03	3.84		
			Max. Vz	2	-1.40	9.40	-0.02		
			Max. Vx	5	-1.69	-0.03	3.84		
Diagonal	Max Tension	13	3.04	0.00	0.00				
	Max. Compression	13	-8.33	0.00	0.00				
	Max. Mx	19	7.51	0.18	0.01				
	Max. My	20	-8.42	-0.04	0.02				
	Max. Vz	19	-0.06	0.18	0.01				
	Max. Vx	20	-0.00	0.00	0.00				
Top Girt	Max Tension	17	7.56	0.00	0.00				
	Max. Compression	6	-4.87	0.00	0.00				
	Max. Mx	14	2.21	-0.19	0.00				
	Max. My	14	2.21	0.00	0.01				
	Max. Vz	14	0.06	0.00	0.00				
	Max. Vx	14	0.00	0.00	0.00				

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force k	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T9	16						

RISA Tower		Job	A-116986 (PR2010-08-019)	Page	137 of 149
Valmont Structures 1545 Pickett Drive Plymouth, IN 46361 Phone: (317) 936-4211 FAX: (317) 936-5432		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Item No.	Elevation #	Component Type	Condition	Gen. Load Const.	Force K	Major Axis Moment Hb-ft	Minor Axis Moment Hb-ft
T15	20-9	Diagonal	Max. Compression	6	-457.14	19.58	0.02
			Max. Mc	23	-147.70	37.10	-0.01
			Max. My	3	-20.45	-1.44	29.84
			Max. Vy	23	-2.29	32.10	-0.01
			Max. Vx	3	-1.95	-1.44	29.84
			Max. Twiston	13	14.81	0.00	0.00
			Max. Compression	25	-11.11	0.00	0.00
			Max. Mc	21	6.56	-0.57	-0.03
			Max. My	26	-14.55	-3.33	0.07
	Max. Vy	21	-0.15	-0.57	-0.05		
	Diagonal	Max. Vx	25	-0.01	0.00	0.00	
		Max. Twiston	1	426.50	-1.53	-0.01	
		Max. Compression	6	-498.78	11.01	0.01	
		Max. Mc	19	-488.11	15.05	-0.02	
		Max. My	7	-39.54	-1.62	-21.63	
		Max. Vy	25	1.34	-10.20	-0.02	
		Max. Vx	7	-1.76	-1.62	-21.63	
		Max. Twiston	25	18.00	0.00	0.00	
Max. Compression		6	-1724	0.00	0.00		

Maximum Reactions

Location	Condition	Gen. Load Const.	Vertical K	Horizontal X K	Horizontal Z K
Leg C	Max. Vert	10	520.11	47.20	-27.26
	Max. Hx	4	-442.58	47.20	-27.26
	Min. Vert	4	-412.81	-44.05	33.71
	Max. Hx	4	-442.58	-44.05	33.71
	Min. Hx	10	520.11	47.20	-27.26
	Max. Hx	10	520.11	47.20	-27.26
Leg B	Max. Vert	6	520.12	-47.19	-27.28
	Max. Hx	12	-412.87	41.04	23.73
	Min. Vert	12	-412.87	41.04	23.73
	Max. Hx	6	520.12	-47.19	-27.28
	Min. Hx	6	520.12	-47.19	-27.28
	Max. Vert	2	0.02	54.34	0.00
Leg A	Max. Hx	11	34.42	2.39	3.01
	Max. Hx	2	520.11	0.02	54.31
	Min. Vert	8	-412.80	-47.41	33.71
	Max. Hx	5	34.42	-2.39	-3.01
	Min. Hx	3	-412.88	-0.02	-47.41

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear K	Shear K	Overturning Moment, M _{ft}	Overturning Moment, M _{ft}	Torque Hb-ft
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RISA Tower		Job	A-116986 (PR2010-08-019)	Page	138 of 149
Valmont Structures 1545 Pickett Drive Plymouth, IN 46361 Phone: (317) 936-4211 FAX: (317) 936-5432		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Load Combination	Vertical K	Shear K	Shear K	Overturning Moment, M _{ft}	Overturning Moment, M _{ft}	Torque Hb-ft
Dead Only	103.27	0.00	0.00	0.00	-0.14	0.00
Dead+Wind 0 deg - No Ice	103.27	0.00	40.92	-1177.20	-0.14	1.11
Dead+Wind 30 deg - No Ice	103.27	39.29	-48.92	-1069.23	-1812.54	0.37
Dead+Wind 60 deg - No Ice	103.27	68.54	-59.57	-516.39	-10123.49	-0.26
Dead+Wind 90 deg - No Ice	103.27	39.29	0.00	0.00	-11624.54	-1.19
Dead+Wind 120 deg - No Ice	103.27	70.88	40.46	588.74	-10199.37	-1.56
Dead+Wind 150 deg - No Ice	103.27	39.29	68.92	1067.47	-1812.54	-1.58
Dead+Wind 180 deg - No Ice	103.27	0.00	79.14	1177.20	-0.14	-1.11
Dead+Wind 210 deg - No Ice	103.27	-39.29	48.92	1067.47	1812.27	0.37
Dead+Wind 240 deg - No Ice	103.27	-70.88	40.46	588.74	10199.30	1.56
Dead+Wind 270 deg - No Ice	103.27	-39.29	-48.92	-1067.23	-1812.54	0.37
Dead+Wind 300 deg - No Ice	103.27	39.29	0.00	0.00	-11624.54	-1.19
Dead+Wind 330 deg - No Ice	103.27	70.88	40.46	588.74	-10199.30	-1.56
Dead+Wind 360 deg - No Ice	103.27	0.00	79.14	1177.20	-0.14	-1.11
Dead+Ice+Temp	60.57	0.00	-72.60	-10979.00	-0.27	0.00
Dead+Wind 0 deg+Ice+Temp	60.57	35.18	-42.15	-972.15	-1432.62	0.40
Dead+Wind 30 deg+Ice+Temp	60.57	61.71	-51.74	-547.80	-9401.53	-0.33
Dead+Wind 60 deg+Ice+Temp	60.57	71.76	0.00	0.00	-10162.08	-1.21
Dead+Wind 90 deg+Ice+Temp	60.57	62.18	36.30	5489.50	-9909.15	-1.25
Dead+Wind 120 deg+Ice+Temp	60.57	35.18	62.15	9428.19	-1543.62	-0.71
Dead+Wind 150 deg+Ice+Temp	60.57	0.00	71.49	10155.66	-9.23	-1.22
Dead+Wind 180 deg+Ice+Temp	60.57	-35.18	62.15	9428.19	1543.62	0.71
Dead+Wind 210 deg+Ice+Temp	60.57	-62.18	36.30	5489.50	9909.62	0.93
Dead+Wind 240 deg+Ice+Temp	60.57	-71.76	0.00	0.00	10162.08	1.21
Dead+Wind 270 deg+Ice+Temp	60.57	-61.71	-51.74	-547.80	9401.53	0.33
Dead+Wind 300 deg+Ice+Temp	60.57	-35.18	-62.15	-9428.15	-1432.62	0.40
Dead+Wind 330 deg+Ice+Temp	60.57	-62.18	-36.30	-5489.50	-9909.15	-1.25
Dead+Wind 360 deg+Ice+Temp	60.57	-35.18	62.15	9428.19	-1543.62	-0.71
Dead+Wind 0 deg - Service	103.27	0.00	-28.00	-4015.09	-0.14	0.13
Dead+Wind 30 deg - Service	103.27	13.77	-23.85	-3411.11	-2011.21	0.18
Dead+Wind 60 deg - Service	103.27	23.71	-13.69	-2002.32	-1468.43	0.16
Dead+Wind 90 deg - Service	103.27	27.54	0.00	0.00	-4022.56	-0.40
Dead+Wind 120 deg - Service	103.27	24.23	14.00	3483.82	-2011.21	-0.18
Dead+Wind 150 deg - Service	103.27	13.77	23.85	2443.62	-2011.21	-0.18
Dead+Wind 180 deg - Service	103.27	0.00	27.54	4042.90	-0.14	-0.38
Dead+Wind 210 deg - Service	103.27	-13.77	23.85	3483.82	2011.21	0.18
Dead+Wind 240 deg - Service	103.27	-24.23	14.00	2017.69	1352.08	0.16
Dead+Wind 270 deg - Service	103.27	-27.54	0.00	0.00	4022.29	0.40
Dead+Wind 300 deg - Service	103.27	-24.23	-13.69	-2002.32	1468.15	0.54
Dead+Wind 330 deg - Service	103.27	-13.77	-23.85	-3483.82	2011.21	0.33

Solution Summary

Load Comb.	Sum of Applied Forces				Sum of Reactions				% Error
	PX K	PZ K	FX K	FZ K	PX K	PZ K	FX K	FZ K	
1	0.00	-103.27	0.00	0.00	103.27	0.00	0.00	0.00	0.000%
2	0.00	-103.27	-40.92	0.00	103.27	10.92	0.00	0.00	0.000%
3	39.29	-103.27	-48.92	-39.29	103.27	58.92	39.29	0.00	0.000%
4	68.54	-103.27	-59.57	-68.54	103.27	39.27	0.00	0.00	0.000%
5	39.29	-103.27	0.00	-39.29	103.27	0.00	39.29	0.00	0.000%
6	70.88	-103.27	40.46	-70.88	103.27	-40.46	0.00	0.00	0.000%
7	39.29	-103.27	48.92	-39.29	103.27	-8.92	0.00	0.00	0.000%
8	0.00	-103.27	79.14	0.00	103.27	0.00	79.14	0.00	0.000%
9	-39.29	-103.27	48.92	39.29	103.27	-48.92	0.00	0.00	0.000%
10	-70.88	-103.27	40.46	-70.88	103.27	-40.46	0.00	0.00	0.000%
11	-39.29	-103.27	0.00	39.29	103.27	0.00	39.29	0.00	0.000%
12	-62.18	-103.27	-36.30	62.18	103.27	36.30	0.00	0.00	0.000%
13	-39.29	-103.27	-48.92	39.29	103.27	0.00	48.92	0.00	0.000%
14	0.00	-103.27	79.14	0.00	103.27	0.00	79.14	0.00	0.000%

RISA Tower		Job	A-116986 (PR2010-08-019)	Page	139 of 149
Valmont Structures 1545 Pickett Drive Plymouth, IN 46361 Phone: (317) 936-4211 FAX: (317) 936-5432		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Load Comb.	Sum of Applied Forces				Sum of Reactions				% Error
	PX K	PZ K	FX K	FZ K	PX K	PZ K	FX K	FZ K	
15	0.00	-160.57	-72.60	0.00	160.57	72.60	0.00	0.00	0.000%
16	15.33	-160.57	-62.15	-35.38	160.57	52.15	35.38	0.00	0.000%
17	51.91	-160.57	-35.21	-60.57	160.57	35.21	60.57	0.00	0.000%
18	71.76	-160.57	0.00	-71.76	160.57	0.00	0.00	0.00	0.000%
19	62.28	-160.57	36.30	-62.28	160.57	-36.30	0.00	0.00	0.000%
20	35.97	-160.57	62.15	-35.98	160.57	-62.15	0.00	0.00	0.000%
21	0.00	-160.57	11.49	0.00	160.57	-11.49	0.00	0.00	0.000%
22	-31.88	-160.57	62.15	35.38	160.57	-62.15	35.38	0.00	0.000%
23	-62.82	-160.57	26.30	62.82	160.57	-26.30	0.00	0.00	0.000%
24	-71.76	-160.57	0.00	71.76	160.57	0.00	0.00	0.00	0.000%
25	-61.91	-160.57	-35.74	61.91	160.57	35.74	0.00	0.00	0.000%
26	-15.38	-160.57	62.15	35.38	160.57	-62.15	35.38	0.00	0.000%
27	0.00	-103.27	-21.00	0.00	103.27	21.00	0.00	0.00	0.000%
28	13.77	-103.27	-23.85	-13.77	103.27	23.85	13.77	0.00	0.000%
29	22.71	-103.27	-18.69	-22.71	103.27	18.69	0.00	0.00	0.000%
30	27.54	-103.27	0.00	-27.54	103.27	0.00	27.54	0.00	0.000%
31	24.23	-103.27	14.00	-24.23	103.27	-14.00	0.00	0.00	0.000%
32	13.77	-103.27	23.85	-13.77	103.27	-23.85	13.77	0.00	0.000%
33	0.00	-103.27	72.38	0.00	103.27	0.00	72.38	0.00	0.000%
34	-13.77	-103.27	23.85	13.77	103.27	-23.85	13.77	0.00	0.000%
35	-24.23	-103.27	14.00	-24.23	103.27	-14.00	0.00	0.00	0.000%
36	-27.54	-103.27	0.00	27.54	103.27	0.00	0.00	0.00	0.000%
37	-23.71	-103.27	-13.69	23.71	103.27	13.69	0.00	0.00	0.000%
38	-13.77	-103.27	-23.85	13.77	103.27	23.85	13.77	0.00	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation #	Horiz. Deflection in	Gen. Load Const.	Tilt	Twist	Radius of Curvature
T1	770 - 770	12.019	31	0.4676	0.0165	
T2	710 - 770	11.004	31	0.4663	0.0272	
T3	250 - 770	9.108	31	0.4210	0.0156	

RISATower Valmont Structures 1543 Pike Drive Plymouth, IN 46553 Phone: (317) 936-4321 FAX: (317) 936-6438	Job	A-116966 (PR2010-06-019)	Page	141 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

RISATower Valmont Structures 1543 Pike Drive Plymouth, IN 46553 Phone: (317) 936-4321 FAX: (317) 936-6438	Job	A-116966 (PR2010-06-019)	Page	142 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
	Client	EMAC Communications LLC	Designed by	CRF1

Bolt Design Data

Section No.	Elevation	Component	Bolt Grade	Bolt Size	Number of Bolts	Actual Load per Bolt	Allowable Load	Ratio	Remarks
						$\frac{K}{K}$	$\frac{K}{K}$		
T1	350	Leg	A325N	0.6250	3	2.11	12.99	0.163	Bolt DS
T2	270	Leg	A325N	0.7500	5	7.92	18.56	0.427	Bolt DS
T3	230	Leg	A325N	1.0000	6	14.05	34.41	0.408	Bolt Tension
T4	230	Leg	A325N	1.0000	6	14.78	34.56	0.418	Bolt Tension
T5	220	Diagonal	A325N	1.0000	1	5.92	9.32	0.612	Member Bearing
T5	220	Leg	A325N	1.0000	5	12.54	34.56	0.363	Bolt Tension
T6	200	Diagonal	A325N	1.0000	1	5.24	9.32	0.562	Member Bearing
T6	200	Leg	A325N	1.0000	6	23.49	34.56	0.680	Bolt Tension
T7	180	Diagonal	A325N	1.0000	1	7.19	9.32	0.776	Member Bearing
T7	180	Leg	A325N	1.2500	6	18.27	53.99	0.338	Bolt Tension
T8	160	Diagonal	A325N	1.2500	1	11.41	25.77	0.443	Bolt Shear
T8	160	Leg	A325N	1.2500	5	34.32	53.99	0.636	Bolt Tension
T9	140	Diagonal	A325N	1.2500	1	9.04	20.39	0.443	Member Bearing
T9	140	Leg	A325N	1.2500	6	40.97	53.99	0.759	Bolt Tension
T10	120	Diagonal	A325N	1.2500	1	10.30	20.39	0.505	Member Bearing
T10	120	Leg	A325N	1.2500	12	22.32	53.99	0.413	Bolt Tension
T11	100	Diagonal	A325N	1.0000	2	3.24	32.99	0.098	Bolt Shear
T11	100	Leg	A325N	1.2500	12	25.45	53.99	0.471	Bolt Tension
T12	80	Diagonal	A325N	1.0000	2	7.39	32.99	0.224	Bolt Shear
T12	80	Leg	A325N	1.2500	12	23.19	54.00	0.429	Bolt Tension
T13	60	Diagonal	A325N	1.0000	2	7.24	32.99	0.220	Bolt Shear
T13	60	Leg	A325N	1.2500	12	20.75	54.00	0.384	Bolt Tension
T14	40	Diagonal	A325N	1.0000	2	7.74	32.99	0.233	Bolt Shear
T14	40	Leg	A325N	1.2500	12	23.45	54.00	0.434	Bolt Tension
T15	20	Diagonal	A325N	1.0000	2	7.53	32.99	0.229	Bolt Shear
T15	20	Leg	A325N	1.2500	6	21.13	53.99	0.391	Bolt Tension
		Diagonal	A325N	1.0000	2	9.00	32.99	0.273	Bolt Shear

Compression Checks:

Leg Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K/R	F _c	A	Actual P	Allow. P	Ratio
			β	β	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{P}{P}$
T1	350-270	0.5	1.16	98.3	13,194	0.1963	1.92	2.91	0.183	✓
T2	270-230	0.5	1.16	98.0	13,227	0.1963	1.28	2.91	0.442	✓
T3	230-200	0.5	1.16	98.0	13,227	0.1963	1.36	2.91	0.455	✓
T4	230-200	0.625	1.45	72.3	15,602	0.3068	1.72	5.36	0.321	✓
T5	220-200	0.625	1.43	72.3	15,672	0.3068	1.40	5.38	0.261	✓
T6	200-180	0.625	1.43	72.1	15,672	0.3068	1.35	5.38	0.256	✓
T7	180-160	0.75	1.76	112.3	15,736	0.4418	2.31	9.43	0.245	✓

Diagonal Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K/R	F _c	A	Actual P	Allow. P	Ratio
			β	β	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{P}{P}$
T1	350-270	7/8	3.18	2.66	131.4	8,649	6,6013	-2.31	5.20	0.443
T2	270-230	7/8	3.54	2.64	132.1	3,359	6,6013	-3.17	5.15	0.613
T3	230-200	1	5.54	2.61	114.6	11,374	6,7854	-6.19	3.93	0.993
T4	230-220	L2 1/2x3 1/2x5/16	9.49	5.21	135.2	9,267	6,9020	-7.09	8.45	0.829
T5	220-200	L3x3x5/16	10.30	5.57	114.2	10,986	10,9990	-5.19	11.58	0.453
T6	200-180	L3x3x5/16	11.88	6.12	121.2	9,385	10,9990	-9.19	10.67	0.860
T7	180-160	L3x3x5/16	13.17	6.54	135.4	8,149	1,7800	-11.11	14.51	0.767
T8	160-140	L3 1/2x3 1/2x5/16	14.65	7.28	128.4	9,665	2,6990	-8.28	18.94	0.469
T9	140-120	L3 1/2x3 1/2x5/16	15.47	7.77	135.2	9,179	2,0990	-10.64	17.08	0.626
T10	120-100	2L3 1/2x3 1/2x5/16	23.92	12.50	132.7	5,480	4,1800	-14.69	33.44	0.414
T11	100-80	2L3 1/2x3 1/2x5/16	25.08	12.89	137.7	7,374	4,1800	-14.78	32.91	0.419
T12	80-60	2L3 1/2x3 1/2x5/16	26.44	13.53	142.2	7,233	4,1800	-14.49	30.44	0.476
T13	60-40	2L3 1/2x3 1/2x5/16	27.37	14.23	149.1	5,721	4,1800	-15.48	28.09	0.551
T14	40-20	2L3 1/2x3 1/2x5/16	29.27	14.96	155.3	5,195	4,1800	-15.11	25.91	0.583
T15	20-0	2L3 1/2x3 1/2x5/16	30.93	15.72	161.7	5,710	4,1800	-17.91	23.37	0.732

Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K/R	F _c	A	Actual P	Allow. P	Ratio
			β	β	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{P}{P}$
T1	350-270	7/8	3.00	4.83	166.4	4,298	6,6013	-0.26	2.18	0.101
T2	270-230	7/8	3.00	4.83	161.5	4,335	6,6013	-0.48	2.61	0.183
T3	230-200	7/8	3.00	4.79	184.0	4,411	6,6013	-0.32	2.65	0.208

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K/R	F _c	A	Actual P	Allow. P	Ratio
			β	β	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{P}{P}$
T1	350-270	1	5.00	4.55	163.1	3,614	6,7854	-1.04	4.11	0.235
T2	270-230	1	5.00	4.33	162.1	5,662	6,7854	-1.14	4.45	0.257
T3	230-200	1 1/4	5.00	4.29	128.3	9,002	1,2272	-1.30	11.05	0.163
T6	200-180	L3x3x5/16	4.00	3.00	132.9	8,458	1,0990	-3.24	9.22	0.334
T7	180-160	L3x3x5/16	10.00	3.00	129.7	3,371	1,9000	-5.84	17.21	0.343
T8	160-140	L3 1/2x3 1/2x5/16	12.00	11.00	163.9	3,562	2,0990	-4.67	11.43	0.402

Bottom Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K/R	F _c	A	Actual P	Allow. P	Ratio
			β	β	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{P}{P}$
T1	350-270	1	3.00	4.83	163.1	3,614	6,7854	-0.92	4.41	0.232
T2	270-230	1	3.00	4.83	162.1	5,662	6,7854	-1.24	4.45	0.279
T3	230-200	1 1/4	3.00	4.29	128.3	9,002	1,2272	-1.20	11.05	0.101

Mid Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _c	K/R	F _c	A	Actual P	Allow. P	Ratio
			β	β	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{bt}{K}$	$\frac{P}{P}$
T1	350-270	1	3.00	4.83	163.1	3,614	6,7854	-0.92	4.41	0.232
T2	270-230	1	3.00	4.83	162.1	5,662	6,7854	-1.24	4.45	0.279
T3	230-200	1 1/4	3.00	4.29	128.3	9,002	1,2272	-1.20	11.05	0.101

RISA Tower		Job	A-116966 (PR2010-06-019)	Page	145 of 149
Valmont Structures 1345 Piko Drive Plymouth, CT 06563 Phone: (374) 936-4321 Fax: (374) 936-6438		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T1	230 - 270	1	5.00	4.83	163.1	5.614	0.7814	-0.63	4.41	0.006
T2	270 - 250	1	5.00	4.83	162.4	5.662	0.7814	-0.27	4.45	0.006
T6	200 - 180	L3x3x3/16	9.00	1.00	145.3	10.77	1.0900	-4.27	7.71	0.553
T7	180 - 160	L4x4x1/4	11.00	10.00	139.0	17.15	1.0900	-5.79	14.99	0.387

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T1	230 - 270	1 3/4	10.00	2.15	61.7	32.500	1.3724	1.97	11.95	0.164
T2	270 - 250	1	20.00	17.0	32.500	1.7017	35.23	55.30	0.637	
T3	250 - 230	2 1/2	20.00	2.18	45.6	20.000	4.9087	14.33	147.25	0.573
T4	230 - 220	#12@ - 1.50' - 1.00' conn. (Pined 105241-RAO)	10.02	10.02	37.5	30.000	5.3014	38.68	159.04	0.458
T5	220 - 200	#12 - 1.75' - 1.00' conn. (Pined 105218)	20.03	10.02	32.4	30.000	7.2153	117.34	216.47	0.542
T6	200 - 180	#12 - 1.25' - 1.00' conn. (Pined 105215)	20.03	10.02	32.4	30.000	7.2158	140.39	216.47	0.651
T7	180 - 160	#12 - 2.00' - 1.25' conn. (Pined 105219)	20.01	10.02	28.4	30.000	9.4248	169.65	282.74	0.650
T8	160 - 140	#12 - 2.25' - 1.50' conn. (Pined 105220)	20.03	10.02	25.2	30.000	11.9242	209.13	357.85	0.579
T9	140 - 120	#12 - 2.25' - 1.25' conn. (Pined 105220)	20.03	10.02	25.2	30.000	11.9242	245.24	357.85	0.683
T10	120 - 100	#18 - 2.50' (Pined 112743)	20.01	20.03	32.6	30.000	14.7262	267.37	441.79	0.606
T11	100 - 80	#18 - 2.50' (Pined 112743)	20.03	20.03	32.6	30.000	14.7262	395.57	441.79	0.693
T12	80 - 60	#18 - 2.75' (Pined 112744)	20.03	20.03	32.6	30.000	17.8187	338.33	514.56	0.631
T13	60 - 40	#18 - 2.75' (Pined 112744)	20.03	20.03	32.6	30.000	17.8187	369.00	514.56	0.690
T14	40 - 20	#18 - 3.00' (Pined 112745)	20.03	20.03	32.3	30.000	21.2057	401.31	616.17	0.631
T15	20 - 0	#18 - 3.00' (Pined 112746)	20.03	20.03	32.3	30.000	21.2057	426.39	616.17	0.671

RISA Tower		Job	A-116966 (PR2010-06-019)	Page	147 of 149
Valmont Structures 1345 Piko Drive Plymouth, CT 06563 Phone: (374) 936-4321 Fax: (374) 936-6438		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T9	140 - 120	L3 1/2x3 1/2x3/16	15.47	7.77	38.0	20.000	1.2452	10.30	36.11	0.285
T10	120 - 100	2L3 1/2x3 1/2x3/16	23.32	12.50	140.1	20.000	2.5077	13.71	75.62	0.181
T11	100 - 80	2L3 1/2x3 1/2x3/16	23.08	12.39	146.7	20.000	2.6077	14.70	75.62	0.194
T12	80 - 60	2L3 1/2x3 1/2x3/16	26.41	12.33	153.0	20.000	2.6077	14.42	75.62	0.191
T13	60 - 40	2L3 1/2x3 1/2x3/16	27.87	14.23	161.6	20.000	2.6077	14.30	75.62	0.197
T14	40 - 20	2L3 1/2x3 1/2x3/16	29.37	14.96	169.7	20.000	2.6077	14.41	75.62	0.196
T15	20 - 0	2L3 1/2x3 1/2x3/16	30.33	15.72	178.2	20.000	2.6077	18.00	75.62	0.238

Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T1	230 - 270	7/8	5.00	4.83	266.3	20.000	0.5013	0.35	18.04	0.020
T2	270 - 250	7/8	5.00	4.83	265.1	20.000	0.6013	0.37	18.04	0.022
T3	250 - 230	7/8	5.00	4.79	252.9	20.000	0.6813	0.36	18.04	0.033

Top Girt Design Data (Tension)

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T1	230 - 270	1	5.00	4.83	233.0	20.000	0.7814	1.02	33.26	0.043
T2	270 - 250	1	5.00	4.83	232.0	20.000	0.7814	1.14	33.26	0.048
T3	250 - 230	1 1/4	5.00	4.79	184.0	20.000	1.2272	1.32	36.42	0.049
T6	200 - 180	L3x3x3/16	9.00	1.00	99.5	21.600	1.0900	5.12	25.54	0.218
T7	180 - 160	L4x4x1/4	10.00	9.00	96.4	21.600	1.0900	9.29	41.50	0.222
T8	160 - 140	L3 1/2x3 1/2x3/16	12.00	11.00	122.2	21.600	1.0900	7.46	45.14	0.165

RISA Tower		Job	A-116966 (PR2010-06-019)	Page	148 of 149
Valmont Structures 1345 Piko Drive Plymouth, CT 06563 Phone: (374) 936-4321 Fax: (374) 936-6438		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Truss-Leg Diagonal Data

Section No.	Elevation	Diagonal Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T4	220 - 220	0.3	1.46	98.3	13.194	0.1963	1.42	2.91	0.488	
T5	220 - 200	0.5	1.46	98.0	13.227	0.1963	1.28	2.91	0.542	
T6	200 - 150	0.5	1.46	98.0	13.227	0.1963	1.26	2.91	0.435	
T7	180 - 160	0.625	1.45	77.3	15.602	0.3063	1.72	5.26	0.323	
T8	160 - 140	0.625	1.43	77.1	15.672	0.3063	1.48	5.28	0.261	
T9	140 - 120	0.625	1.43	77.1	15.672	0.3063	1.75	5.28	0.326	
T10	120 - 100	0.75	1.76	112.3	15.756	0.4418	2.31	9.43	0.245	
T11	100 - 80	0.75	1.76	112.5	15.756	0.4418	2.47	9.43	0.262	
T12	80 - 60	0.75	1.74	111.3	15.921	0.4418	1.95	9.54	0.204	
T13	60 - 40	0.75	1.74	111.5	15.921	0.4418	2.31	9.54	0.242	
T14	40 - 20	0.75	1.73	110.6	16.103	0.4418	2.39	9.55	0.237	
T15	20 - 0	0.875	1.73	94.3	18.928	0.6013	1.77	15.44	0.114	

Diagonal Design Data (Tension)

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T1	230 - 270	7/8	5.48	2.66	166.0	20.000	0.5013	2.51	18.04	0.139
T2	270 - 250	7/8	5.14	2.68	156.8	20.000	0.6013	3.15	18.04	0.175
T3	250 - 230	1	5.54	2.65	127.3	20.000	0.7854	4.15	23.56	0.161
T4	230 - 220	L2 1/2x3 1/2x3/16	9.99	3.21	53.2	20.000	0.5183	5.82	15.03	0.387
T5	220 - 200	L3x3x3/16	10.31	3.26	70.9	20.000	0.6593	5.24	19.12	0.274
T6	200 - 150	L3x3x3/16	11.98	6.12	30.6	20.000	0.6593	7.19	19.12	0.376
T7	180 - 160	L3x3x3/16	13.17	6.64	39.5	20.000	1.0127	8.91	29.37	0.303
T8	160 - 140	L3 1/2x3 1/2x3/16	14.68	7.38	34.6	20.000	1.2452	9.04	36.11	0.250

RISA Tower		Job	A-116966 (PR2010-06-019)	Page	148 of 149
Valmont Structures 1345 Piko Drive Plymouth, CT 06563 Phone: (374) 936-4321 Fax: (374) 936-6438		Project	U-28.0 x 280' - Seymour, CT	Date	09:48:49 07/08/10
		Client	EMAC Communications LLC	Designed by	CRF1

Bottom Girt Design Data (Tension)

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T1	270 - 270	1	5.00	4.83	233.0	20.000	0.7814	1.01	33.26	0.033
T2	270 - 250	1	5.00	4.83	232.0	20.000	0.7814	1.32	33.26	0.036
T3	250 - 230	1 1/4	5.00	4.79	184.0	20.000	1.2272	1.53	36.42	0.042

Mid Girt Design Data (Tension)

Section No.	Elevation	Size	L	L _c	K/R	F _t	A	Actual P	Allow. P	Ratio P
β	β	β	β	β	β	ksi	in ²	K	K	P
T1	230 - 270	1	5.00	4.83	233.0	20.000	0.7814	0.10	33.26	0.004
T2	270 - 250	1	5.00	4.83	232.0	20.000	0.7814	0.37	33.26	0.016
T6	200 - 180	L3x3x3/16	9.00	3.00	102.2	21.600	1.0900	6.59	23.51	0.280
T7	180 - 160	L4x4x1/4	11.00	10.00	96.0	21.600	1.0900	9.38	41.50	0.224

Section Capacity Table

Section No.	Elevation	Component	Size	Critical Element	P	Q	R	S	Pass
T1	230 - 270	Leg	1 3/4	3	-12.03	71.89	36.1	Pass	
T2	270 - 250	Leg	1	39	35.23	72.72	42.3	Pass	
T3	250 - 230	Leg	2 1/2	105	-64.9				

RISA Tower Vibration Structures 1543 Picko Drive Plymouth, MA 01963 Phone: (514) 926-2222 FAX: (514) 926-6413	Job	A-116966 (PR2010-06-019)	Page	149 of 149
	Project	U-28.0 x 280' - Seymour, CT	Date:	09-28-09 07:08:10
	Client	EMAC Communications LLC	Designed by	CRF1

Section No.	Elevation β	Component Type	Size	Critical Element	P K	SP ² PA ² K	N Capacity	Pass/Fail
T1	250 - 270	Diagonal	7/8	15	-2.51	6.93	36.3	Pass
T2	270 - 290	Diagonal	7/8	54	-3.17	6.86	46.2	Pass
T3	290 - 310	Diagonal	1	116	-6.19	11.91	52.0	Pass
T4	290 - 310	Diagonal	L2 1/2x3 1/2x3/16	124	-7.00	11.26	43.2	Pass
T5	290 - 310	Diagonal	L3x3x3/16	184	-5.19	15.96	32.5	Pass
T6	200 - 180	Diagonal	L3x3x3/16	204	-9.18	14.22	41.3 (S)	Pass
T7	180 - 160	Diagonal	L3x3x3/16	223	-11.41	19.24	59.0	Pass
T8	160 - 140	Diagonal	L3 1/2x3 1/2x3/16	244	-8.38	23.25	35.2	Pass
T9	140 - 120	Diagonal	L3 1/2x3 1/2x3/16	265	-10.64	22.79	46.7	Pass
T10	120 - 100	Diagonal	2L3 1/2x3 1/2x3/16	273	-14.69	47.26	31.1	Pass
T11	100 - 80	Diagonal	2L3 1/2x3 1/2x3/16	283	-14.78	43.37	33.7	Pass
T12	80 - 60	Diagonal	2L3 1/2x3 1/2x3/16	292	-14.09	48.83	35.7	Pass
T13	60 - 40	Diagonal	2L3 1/2x3 1/2x3/16	301	-15.48	37.49	41.4	Pass
T14	40 - 20	Diagonal	2L3 1/2x3 1/2x3/16	310	-15.11	34.52	43.8	Pass
T15	20 - 0	Diagonal	2L3 1/2x3 1/2x3/16	318	-17.94	31.82	50.4	Pass
T1	280 - 270	Horizontal	7/8	32	-0.26	3.45	7.8	Pass
T2	270 - 270	Horizontal	7/8	98	-0.48	3.47	13.7	Pass
T3	270 - 270	Horizontal	7/8	162	-0.37	3.54	23.3	Pass
T1	280 - 290	Top Gir	1	6	-1.04	3.38	17.7	Pass
T2	270 - 290	Top Gir	1	44	-1.14	5.93	19.3	Pass
T3	270 - 290	Top Gir	1 1/4	110	-1.30	14.72	12.2	Pass
T6	200 - 180	Top Gir	L3x3x3/16	156	-1.54	12.29	28.9	Pass
T7	180 - 160	Top Gir	L4x4x1/4	219	-5.94	22.94	25.0	Pass
T8	160 - 140	Top Gir	L3 1/2x3 1/2x3/16	240	-4.67	13.50	30.2	Pass
T1	280 - 290	Bottom Gir	1	9	-0.98	3.18	16.6	Pass
T2	270 - 290	Bottom Gir	1	45	-1.24	5.93	20.9	Pass
T3	270 - 290	Bottom Gir	1 1/4	111	-1.20	14.73	8.1	Pass
T1	280 - 270	Mid Gir	1	10	-0.03	3.38	6.4	Pass
T2	270 - 290	Mid Gir	1	48	-0.37	3.93	6.5	Pass
T6	200 - 180	Mid Gir	L3x3x3/16	201	-4.27	10.28	41.5	Pass
T7	180 - 160	Mid Gir	L4x4x1/4	222	-5.79	19.95	20.0	Pass
Summary								
Leg (T1)							66.8	Pass
Diagonal (S)							64.5	Pass
Horizontal (T)							23.1	Pass
Top Gir (T)							30.2	Pass
Bottom Gir (T)							20.9	Pass
Mid Gir (T)							41.5	Pass
Both Chords (T)							56.8	Pass
RATING =							66.8	Pass