EMPIRE telecom

January 29, 2015

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Street
New Britain, CT 06051

Regarding:	Notice of Exempt Modification – Addition of 3 radio heads previously approved
Property Address:	159 Weingart Road, Harwinton, CT (the "Property")
Applicant:	AT&T Mobility ("AT&T")

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 181.9 foot self-supporting lattice tower ("tower") location on the Property. AT&T's facility consists of nine (9) wireless telecommunications antenna at 185 feet. The tower is controlled by American Tower Corporation. The Council approved the previous application on December 14, 2012, reference number EM-CING-066-121126. This application (attached) granted AT&T the use of 6 radio heads at this location. The approval expired one year from the issue date. During that time AT&T made the changes to the site per the approval but only installed three (3) of the six (6) radio heads that they received approval. AT&T would now like to install the additional three (3) radio heads that were originally approved under EM-CING-066-121126.

Please accept this application 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 the First Selectman for the Town of Harwinton. A copy of this letter is also being sent to AT&T Towers, the owner of the structure that AT&T is located.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T's additional, previously approved 3 radio heads will be installed at 185 foot level of the 181.9 foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety

16 Esquire Road, Billerica, MA 01862 Mobile 617-639-4908 Email: Dcooper@empiretelecomm.com

EMPIRE telecom

standard. An RF emissions calculation (attached) for AT&T's modified facility was provided in the application which led to the December 14, 2012 Decision.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (Please see attached Structural analysis completed by American Tower Corporation dated September 17, 2012).

For the foregoing reasons AT&T respectfully requests that the proposed addition of 3 radio heads previously approved be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

David P. Cooper
Director of Site Acquisition
Empire Telecom

CC: Michael R. Criss, First Selectman, Town of Harwinton
American Tower Corporation

16 Esquire Road, Billerica, MA 01862 Mobile 617-639-4908 Email: Dcooper@empiretelecomm.com

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
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E-Mail: siting.council@ct.gov
www.ct.gov/csc

1057
CT ~~2133~~

December 14, 2012

Melanie Howlett
HPC Wireless Services
46 Mill Plain Road, Floor 2
Danbury, CT 06811

RE: **EM-CING-066-121126** –New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 159 Weingart Road, Harwinton, Connecticut.

Dear Ms. Howlett:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not more than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated November 20, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. 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. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding

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

November 27, 2012

The Honorable Michael R. Criss
First Selectman
Town of Harwinton
100 Bentley Drive
Harwinton, CT 06791

RE: **EM-CING-066-121126** –New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 159 Weingart Road, Harwinton, Connecticut.

Dear First Selectman Criss:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72. A copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by December 11, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts VAB

Linda Roberts
Executive Director

LR/cm

c: Michael J. Orefice, Planning Chairman, Town of Harwinton

EM-CING-066-121126

HPC Wireless Services
46 Mill Plain Rd.
Floor 2
Danbury, CT, 06811
P.: 203.797.1112

HPC
WIRELESS SERVICES

November 20, 2012

ORIGINAL
RECEIVED
NOV 26 2012
CONNECTICUT
SITING COUNCIL

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director

Re: New Cingular Wireless PCS, LLC – Exempt Modification
159 Weingart Road, Harwinton, (aka Weingart Road), Harwinton

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of New Cingular Wireless PCS, LLC ("AT&T"). AT&T is making modifications to certain existing sites in its Connecticut system in order to implement LTE technology. Please accept this letter and attachments as notification, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies ("R.S.C.A."), of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of the Town of Harwinton.

AT&T plans to modify the existing wireless communications facility owned by American Tower Corp. and located at 159 Weingart Road (aka Weingart Road), Harwinton (coordinates 41° -47'-16" N, 73°-5'-33.28" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to AT&T's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. AT&T will add three (3) LTE panel antennas on new pipe mounts attached to the existing platform, and at the same centerline height of the existing GSM/UMTS antennas of approximately 185'. Six (6) RRUs (remote radio units) will be placed behind the LTEs on new mounts, and a Surge Arrestor on a new mounting pipe attached to the

all also at a centerline height of approximately 185'. AT&T will also place DC power and fiber runs along the existing coaxial cable run. These changes will not extend the height of the approximately 181.9' structure.

2. AT&T will place related equipment in an existing Equipment Shelter and mount a new GPS antenna on the existing Equipment Shelter. These changes will be within the existing compound and will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six (6) decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by C Squared Systems, LLC, AT&T's operations at the site will result in a power density of approximately .93%; the combined site operations will result in a total power density of approximately 13.07%.

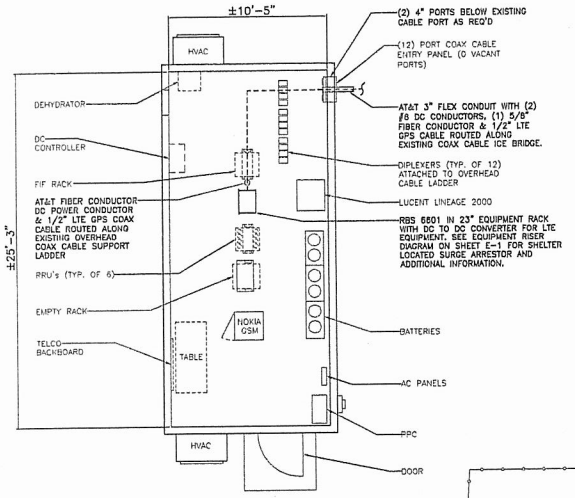
Please do not hesitate to contact me by phone at (203) 610-1071, or by e-mail at mjhowlett@optonline.net, if there are any questions concerning this matter. Thank you for your consideration.

Respectfully yours,

Melanie J. Howlett

Attachments

cc: Honorable Michael R. Criss, First Selectman, Town of Harwinton
Jamie L. and Laura Dorothy Clemente (underlying property owners)



2 C-1 EQUIPMENT BUILDING FLOOR PLAN

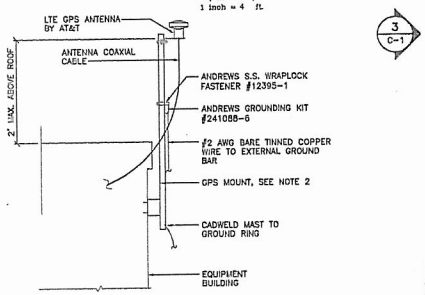
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1 inch = 4 ft.

APPROX. NORTH

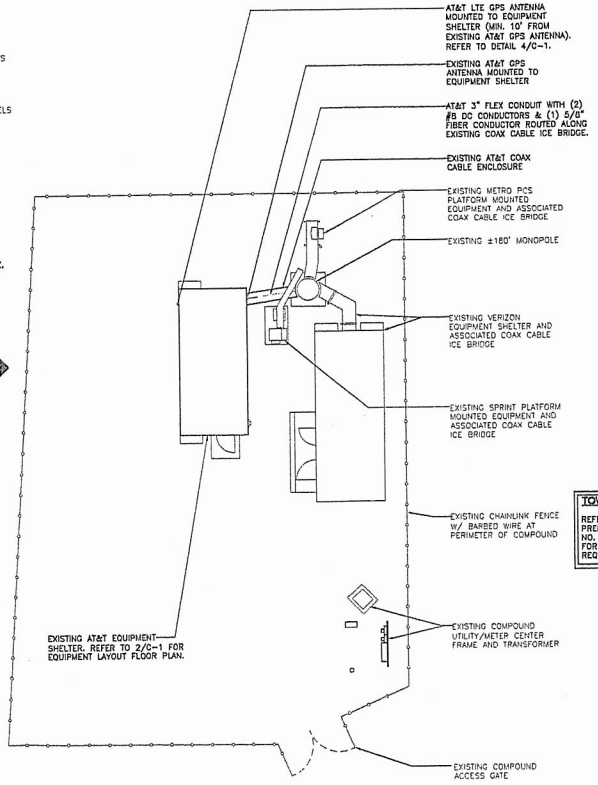


GPS ANTENNA MOUNTING NOTES:

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT AND SHALL BE COORDINATED WITH AT&T'S CONSTRUCTION MANAGER.
2. GPS ANTENNA MOUNT, 3/4"ø THREADED MAST, 4 FEET LONG WITH (4) 7/16" MOUNTING HOLES AND 6" STANDOFF BY SITE PRO 1, INC., TELEPHONE 1-800-438-7761, PART NUMBER GPS1.
3. HOLLOW WALL KITS (HWK3B) FOR "STICK BUILD" SHELTERS AND SOLID WALL KITS (SWK3B) FOR CONCRETE SHELTERS ARE ALSO AVAILABLE FROM SITE PRO 1.

4 C-1 GPS ANTENNA MOUNTING DETAIL

NOT TO SCALE



1 C-1 COMPOUND PLAN

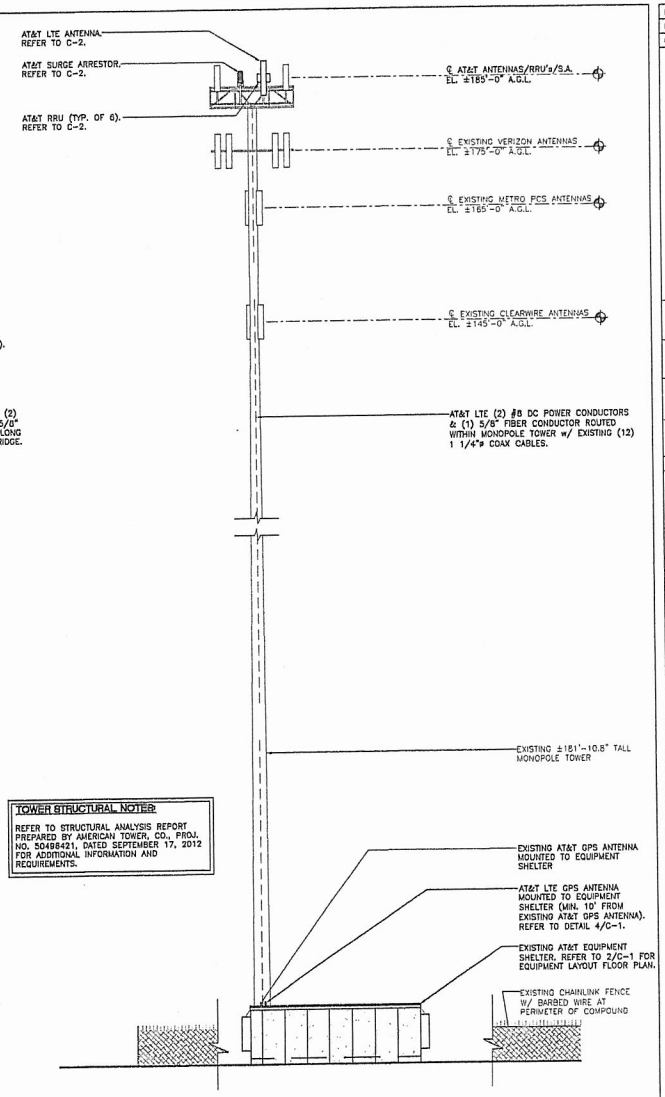
SCALE: 1" = 10'-0"

APPROX. NORTH

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.



TOWER STRUCTURAL NOTE:

REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY AMERICAN TOWER, CO., PROJ. NO. 50486421, DATED SEPTEMBER 17, 2012 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

3 C-1 NORTH ELEVATION

SCALE: 1" = 10'-0"

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

DESIGNED BY:	HWR		
DRAWN BY:	HWR		
CHK'D BY:	CFC		
0	10/05/12	HWR	CONSTRUCTION - CLIENT REVIEW
REV.	DATE	DRAWN BY	CHK'D BY

PROFESSIONAL ENGINEER SEAL

at&t

LINK

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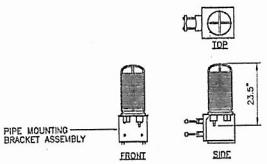
AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY LTE UPGRADE
CT1057
HARWINTON
155 WEINGART ROAD
HARWINTON, CT 06791

DATE: 10/31/12
SCALE: AS NOTED
JOB NO. 12063.C007

PLANS AND ELEVATION

C-1

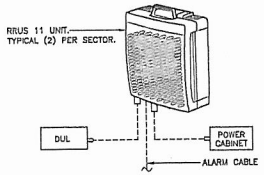
Sheet No. 3 of 5



SURGE ARRESTOR				
SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
TOWER	MAKE: RAYCAP (SQUID) MODEL: DC6-48-60-18-8F	(1) PER SITE	TOWER, ADJACENT TO AT&T ANTENNAS AND RRUs.	20 LBS. (WITHOUT MOUNT)

NOTES:
1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.

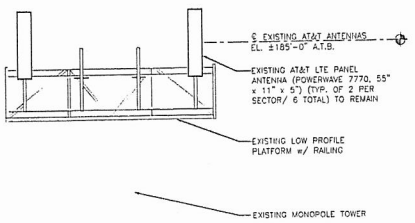
6 C-2 **SURGE ARRESTOR DETAIL**
NOT TO SCALE



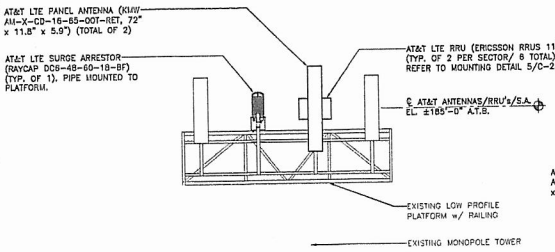
RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERRICSON MODEL: RRUS 11	17.6"L x 17.3"W x 7.2"D	BAND 4: 44 LBS. BAND 12: 50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. SIDE: 0" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

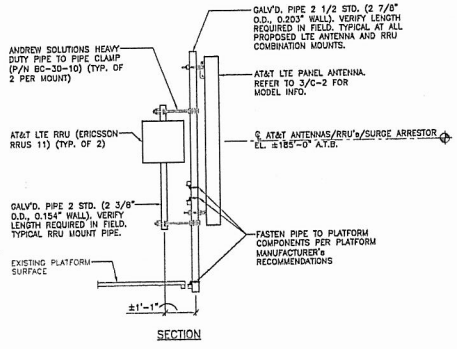
7 C-2 **RRU DETAIL**
NOT TO SCALE



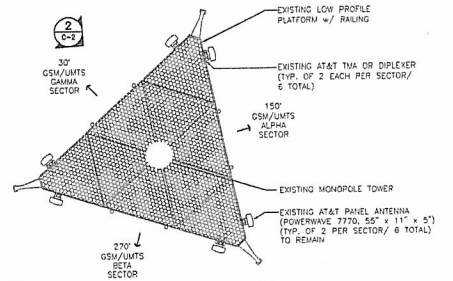
2 C-2 **EXISTING ANTENNA SECTOR ELEVATION**
SCALE: 1/4" = 1'-0"



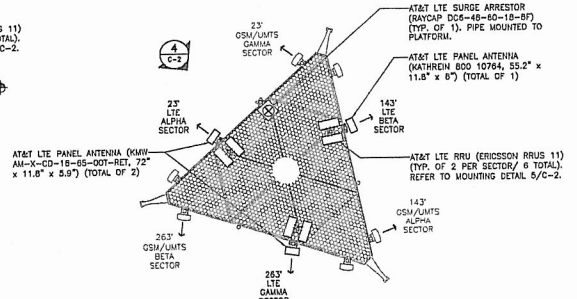
4 C-2 **PROPOSED LTE ANTENNA SECTOR ELEVATION**
SCALE: 1/4" = 1'-0"



5 C-2 **LTE ANTENNA/RRU MOUNT DETAILS**
SCALE: 1/2" = 1'-0"



1 C-2 **EXISTING ANTENNA PLAN**
SCALE: 1/4" = 1'-0"
APPROX. NORTH



3 C-2 **PROPOSED ANTENNA PLAN**
SCALE: 1/4" = 1'-0"
APPROX. NORTH

DESIGNED BY: HWR
DRAWN BY: HWR
CHK'D BY: CFC

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	10/31/12	HWR	DEB	CONSTRUCTION – CLIENT REVIEW
0	8/10/12	DEB	DEB	

PROFESSIONAL ENGINEER SEAL

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DATE: 10/31/12
SCALE: AS NOTED
JOB NO. 12063.C007

LTE EQUIPMENT DETAILS

C-2

Sheet No. 4 of 8

C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions

at&t

CT1057

(Harwinton)

159 Weingart Road, Harwinton, CT 06791

October 17, 2012

Table of Contents

List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the monopole tower located on 159 Weingart Road in Harwinton, CT. The coordinates of the tower are 41° 47' 15.87" N, 73° 5' 33.1" W.

AT&T is proposing the following modifications:

1) Install three multi-band (700/850/1900/2100 MHz) antennas for their LTE network (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times EIRP}{4\pi \times R^2} \right) \text{x Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical patterns of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
Cingular TDMA	*185*	*880*	*16*	*100*	*0.0168*	*0.5867*	*2.87%*
Cingular GSM	*185*	*880*	*2*	*296*	*0.0062*	*0.5867*	*1.06%*
Cingular GSM	*185*	*1930*	*2*	*427*	*0.0090*	*1.0000*	*0.90%*
Clearwire	145	2496	2	153	0.0052	1.0000	0.52%
Clearwire	145	18000	1	211	0.0036	1.0000	0.36%
Pocket	165	2130	3	631	0.0250	1.0000	2.50%
Verizon	175	1970	9	485	0.0512	1.0000	5.12%
Verizon	175	875	9	200	0.0211	0.5833	3.62%
AT&T UMTS	185	880	2	565	0.0012	0.5867	0.20%
AT&T UMTS	185	1900	2	875	0.0018	1.0000	0.18%
AT&T LTE	185	734	1	1313	0.0014	0.4893	0.28%
AT&T GSM	185	880	1	283	0.0003	0.5867	0.05%
AT&T GSM	185	1900	4	525	0.0022	1.0000	0.22%
						Total	**13.07%**

Table 1: Carrier Information[1] [2] [3]

[1] The existing CSC filing for Cingular should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 7/26/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

[2] In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

[3] Antenna height listed for AT&T is in reference to the American Tower Corporation Structural Analysis dated September 17, 2012.

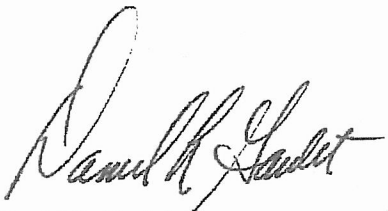
5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **13.07% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

October 17, 2012
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[4]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[5]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

[4] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[5] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

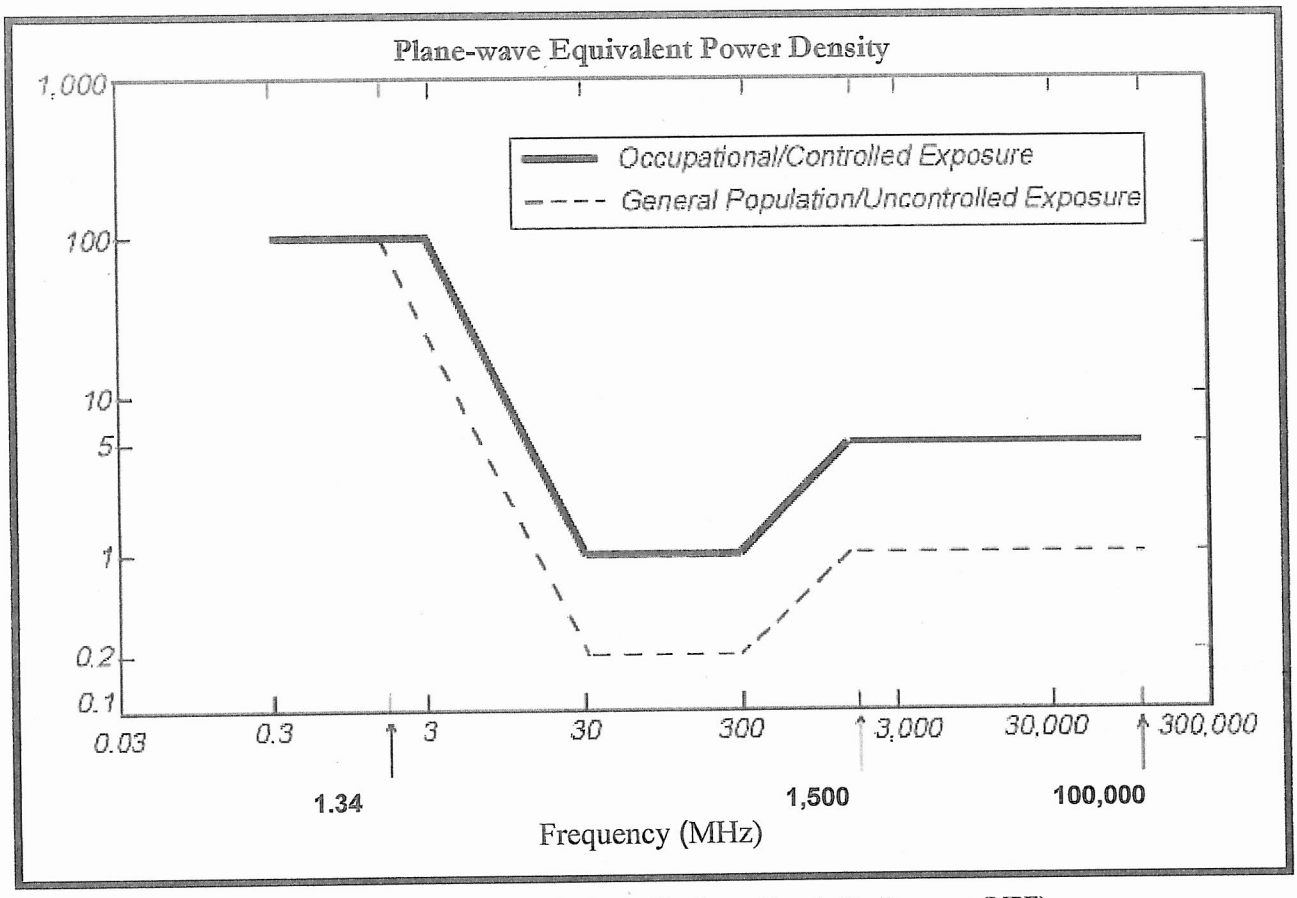
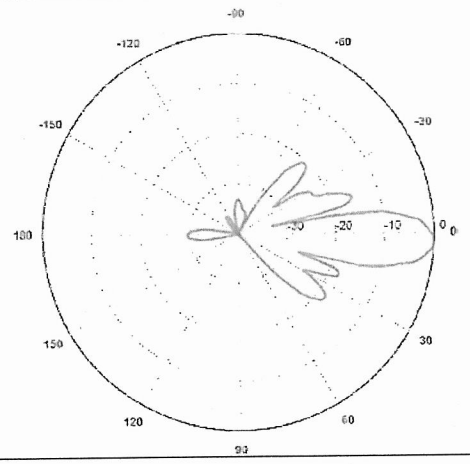


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

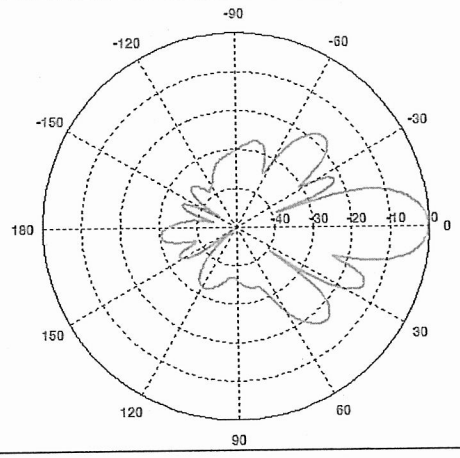
700 MHz

Manufacturer:	KMW
Model #:	AM-X-CD-16-65-00T-RET
Frequency Band:	698-806 MHz
Gain:	13.35 dBd
Vertical Beamwidth:	12.3°
Horizontal Beamwidth:	65°
Polarization:	Dual Slant ± 45°
Size L x W x D:	72.0" x 11.8" x 5.9"



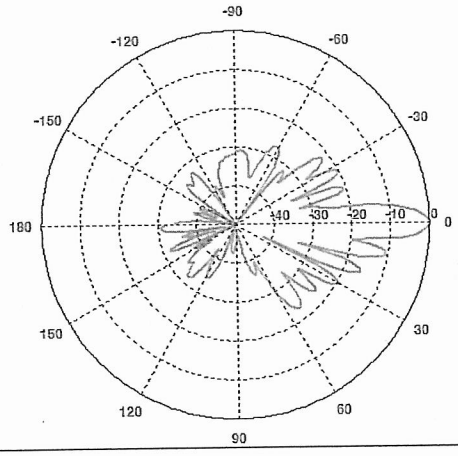
850 MHz

Manufacturer:	Powerwave
Model #:	7770.00
Frequency Band:	824-896 MHz
Gain:	11.5 dBd
Vertical Beamwidth:	15°
Horizontal Beamwidth:	82°
Polarization:	Dual Linear ± 45°
Size L x W x D:	55" x 11.0" x 5.0"



1900 MHz

Manufacturer:	Powerwave
Model #:	7770.00
Frequency Band:	1850-1990 MHz
Gain:	13.4 dBd
Vertical Beamwidth:	7°
Horizontal Beamwidth:	86°
Polarization:	± 45°
Size L x W x D:	55" x 11.0" x 5.0"



AMERICAN TOWER®
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Structural Analysis Report

Structure	:	181.9 ft Monopole
ATC Site Name	:	Harwinton, CT
ATC Site Number	:	302502
Engineering Number	:	50496421
Proposed Carrier	:	AT&T Mobility
Carrier Site Name	:	Harwinton
Carrier Site Number	:	CT1057/ 10035016
Site Location	:	159 Weingart Road Harwinton, CT 06791-1109 41.787750,-73.092500
County	:	Litchfield
Date	:	September 17, 2012
Max Usage	:	97%
Result	:	Pass

Madhukar Ozarker
Project Engineer

STATE OF CONNECTICUT
RAFIQUEL I. MOHAMED
No. 25112
LICENSED
PROFESSIONAL ENGINEER

9/18/12

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Table of Contents

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 181.9 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	Mapping by Smith Cullum Inc. Site #CT-0038, dated February 13, 2002
Foundation Drawing	Girard & Co. Engineers Job # 3C237, dated April 24, 1994
Geotechnical Report	Johnson Soils Engineering Co. Report # 14974-H dated January 28, 2002
Modifications	Hutter Trunkina Engineering Project # 03320B, dated August 4, 2003 ATC Project # 42504234, dated February 27, 2009

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	95 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact me via email at madhukar.ozarker@americantower.com or call 919-466-5184.

Existing and Reserved Equipment

Mount Elev.[1] (ft)	Qty.	Antenna	Mount Type	Coax (in)	Carrier
181.9	6	Allgon 7770.00	Platform w/ Handrails	(12) 1 1/4	AT&T Mobility
	6	Powerwave LGP21401			
175.0	3	Antel BXA-171063-12BF-EDIN	Low Profile Platform	(12) 1 5/8	Verizon
	3	Antel BXA-70063-6CF-EDIN			
	6	Antel LPA-80063/6CF			
	6	RFS FD9R6004/2C-3L			
165.0	3	RFS APXV18-206517-C	Flush	(6) 1 5/8	Youghiogheny
145.0	3	KMW HB-X-WM-17-65-00T	Side Arms	(6) 1 5/8	Clearwire
	3	KMW TTA (HB-X-WM-17-65-00T)			

Proposed Equipment

Elevation[1] (ft)		Qty.	Antenna	Mount Type	Coax (in)	Carrier
Mount	RAD					
181.9	185.0	1	Andrew ABT-DMDF-ADBH	Platform w/ Handrails	(2) 19.7 mm (1) 10 mm (1) 3" Conduit	AT&T Mobility
		6	Ericsson RRUS 11			
		3	KMW AM-X-CD-16-65-00T-RET			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	0%	Pass
Shaft	67%	Pass
Base Plate	58%	Pass
Flanges	27%	Pass
Reinforcement	97%	Pass

Foundations

Reaction Component	Analysis Reactions
Moment (Kips-Ft)	3572.7
Axial (Kips)	86.1
Shear (Kips)	30.0

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

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Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

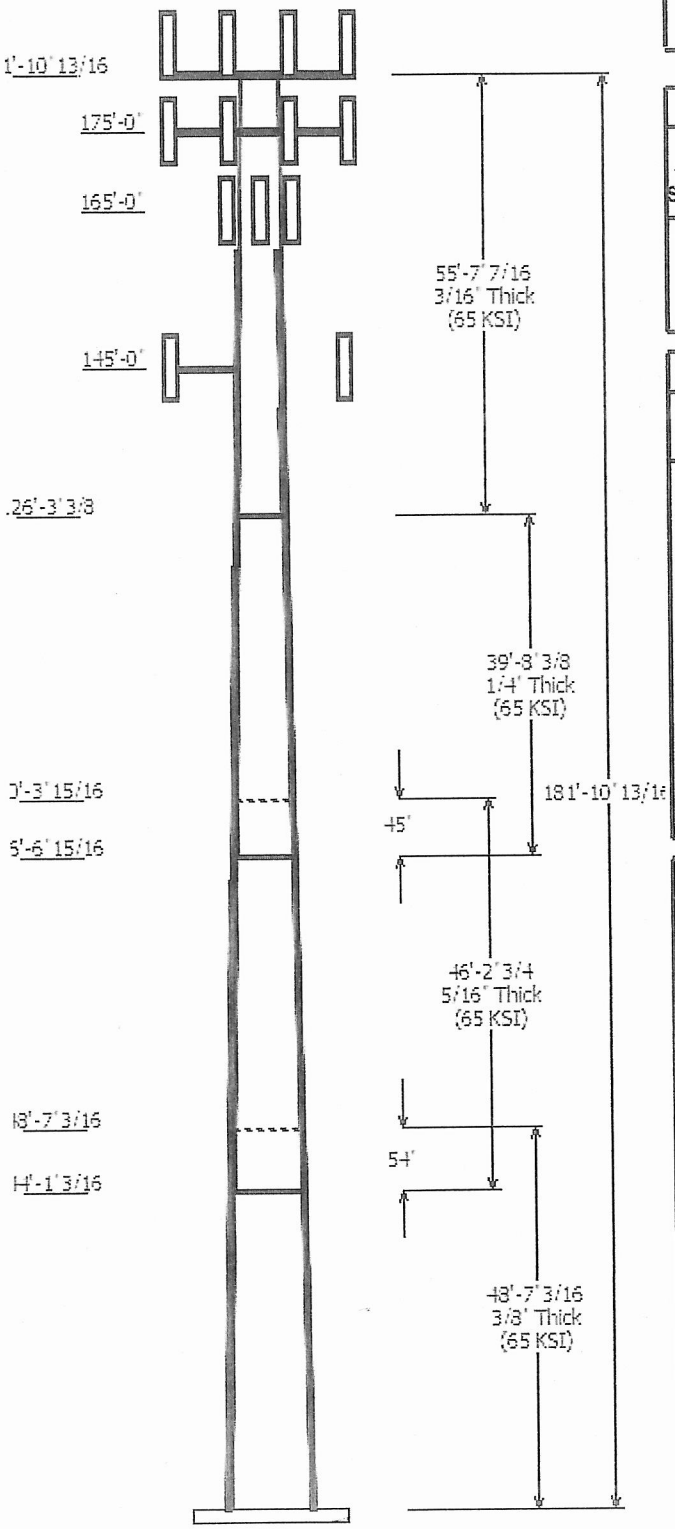
It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Job Information

Pole :	302502	Code:	ANSI/TIA-222 Rev G
Description :	182 ft Monopole		
Client :	AT&T Mobility	Struct Class :	II
Location :	Harwinton, CT		
Shape :	12 Sides	Exposure :	B
Height :	181.90 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.16286 (in/ft)		



Sections Properties

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	48.600	35.08	43.00	0.375		0.000	0.162864	65
2	46.230	28.91	36.44	0.313	Slip Joint	54.000	0.162864	65
3	39.700	23.55	30.02	0.250	Slip Joint	45.000	0.162864	65
4	55.620	14.50	23.55	0.188	Butt Joint	0.000	0.162864	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
181.900	185.000	1	Andrew ABT-DMDF-ADBH
181.900	185.000	6	Ericsson RRUS 11
181.900	185.000	3	KMW AM-X-CD-16-65-00T-RET
181.900	185.000	6	Powerwave LGP21401
181.900	181.900	1	Platform w/ Handrails
181.900	185.000	6	Allgon 7770.00
175.000	175.000	6	RFS FD9R6004/2C-3L
175.000	175.000	3	Antel BXA-70063-6CF-EDIN
175.000	175.000	3	Antel BXA-171063-12BF-EDIN
175.000	175.000	1	Flat Low Profile Platform
175.000	175.000	6	Antel LPA-80063/6CF
165.000	165.000	3	RFS APXV18-206517-C
145.000	145.000	1	Side Arms
145.000	145.000	3	KMW TTA (HB-X-WM-17-65-00T)
145.000	145.000	3	KMW HB-X-WM-17-65-00T

Linear Appurtenance

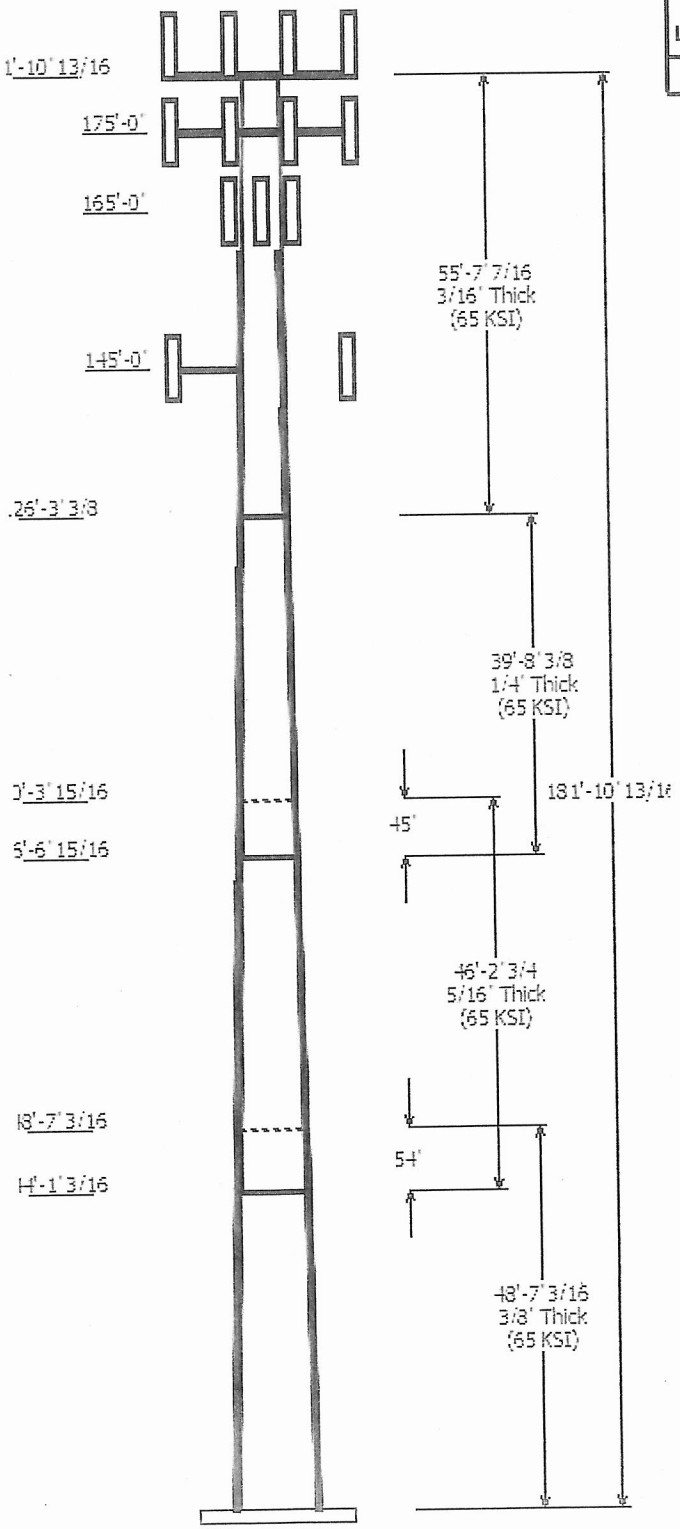
Elev (ft) From	To	Description	Exposed To Wind
140.0	160.0	3" Solid Rod	Yes
120.0	140.0	3.5" Solid Rod	Yes
80.000	120.0	4.0" Solid Rod	Yes
0.000	80.000	4.25" Solid Rod	Yes
0.000	145.0	1 5/8" Coax	No
0.000	165.0	1 5/8" Coax	No
0.000	175.0	1 5/8" Coax	No
0.000	181.9	1 1/4" Coax	No
0.000	181.9	10 mm Cable	No
0.000	181.9	19.7 mm Cable	No
0.000	181.9	3" Conduit	No

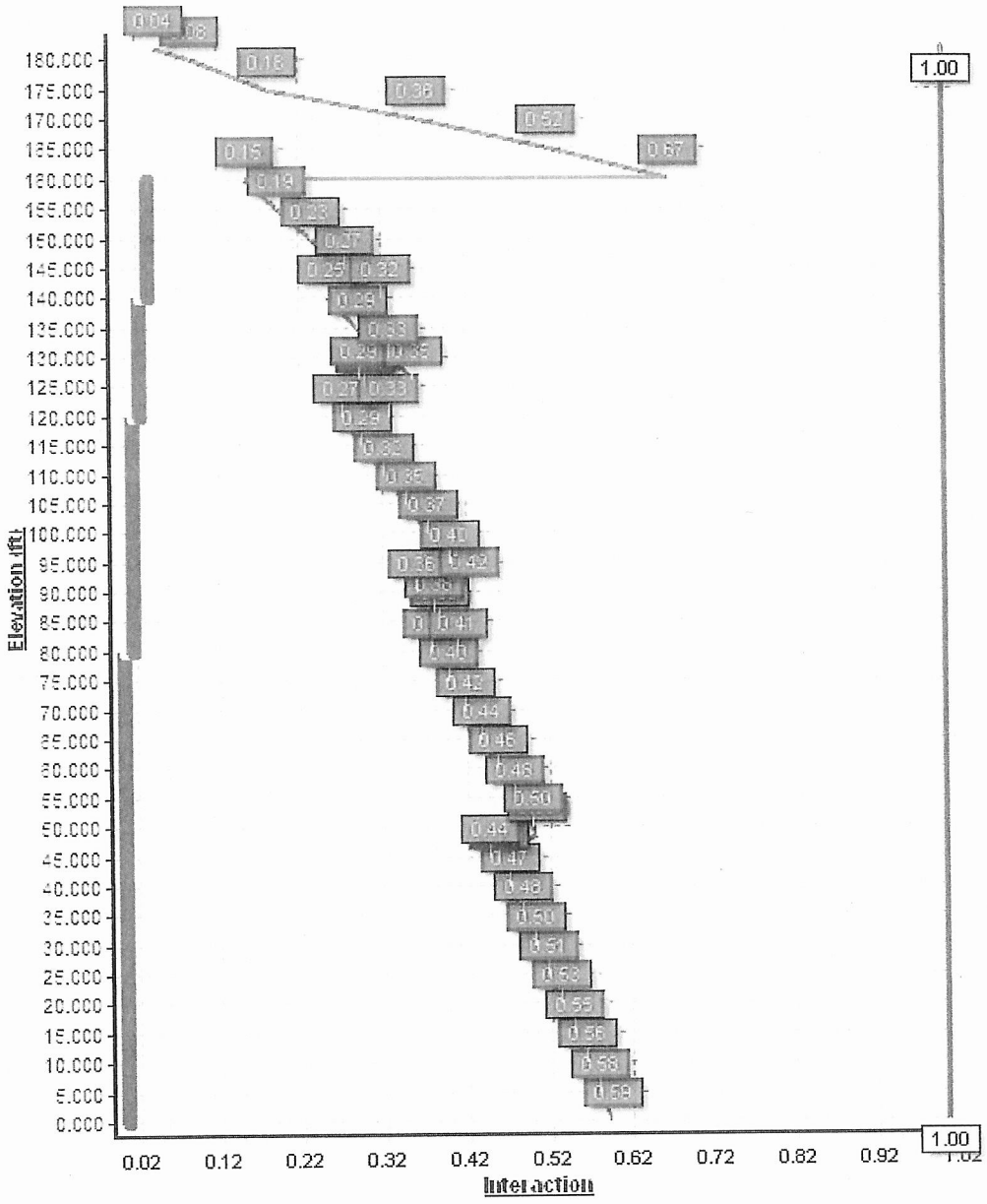
Load Cases

1.2D + 1.6W	95.00 mph with No Ice
0.9D + 1.6W	95.00 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40.00 mph with 1.00 in Radial Ice
1.0D + 1.0W	60.00 mph Serviceability

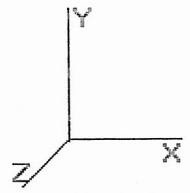
Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3572.75	30.02	55.36
0.9D + 1.6W	3532.65	29.73	46.54
1.2D + 1.0Di + 1.0Wi	607.97	4.65	86.11
1.0D + 1.0W	915.89	7.74	49.53

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000




Elevation (ft)
180.000
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
1.02
Interaction
1.00
1.00

Pole :	302502	Code:	ANSI/TIA-222 Rev G
Location :	Harwinton, CT	Struct Class :	II
Height :	181.9 (ft)	Exposure Category :	B
Base Dia :	43.00 (in)	Topographic Category :	1
Top Dia :	14.50 (in)	Base Elev :	0.000 (ft)
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		



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Page: 1

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (sqin)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (sqin)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	48.600	0.3750	65		0.00	7,722	43.00	0.00	51.47	11936.2	28.05	114.67	35.08	48.60	41.91	6445.1	22.39	93.56	0.162864
2-12	46.230	0.3125	65	Slip	54.00	5,123	36.44	44.10	36.36	6057.6	28.57	116.62	28.91	90.33	28.78	3004.9	22.11	92.52	0.162864
3-12	39.700	0.2500	65	Slip	45.00	2,886	30.02	86.58	23.97	2712.1	29.50	120.10	23.55	126.28	18.76	1301.1	22.57	94.23	0.162864
4-12	55.620	0.1875	65	Butt	0.00	2,153	23.55	126.28	14.11	983.7	30.99	125.65	14.50	181.90	8.64	225.9	18.04	77.33	0.162864
				Shaft Weight		17,884													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Distance From Face (ft)	Vert Ecc (ft)
181.90	Allgon 7770.00	6	35.00	5.510	0.77	233.89	6.977	0.77	0.000	3.100
181.90	Andrew ABT-DMDF-ADBH	1	1.10	0.050	1.00	11.34	0.208	1.00	0.000	3.100
181.90	Ericsson RRUS 11	6	50.00	2.990	1.00	170.52	3.485	0.50	0.000	3.100
181.90	KMW AM-X-CD-16-65-00T-	3	48.50	8.260	0.79	324.05	9.822	0.79	0.000	3.100
181.90	Platform w/ Handrails	1	2000.00	27.200	1.00	3,764.96	60.495	1.00	0.000	0.000
181.90	Powerwave LGP21401	6	14.10	1.290	0.77	66.48	1.758	0.77	0.000	3.100
175.00	Antel BXA-171063-12BF-EDIN	3	15.00	4.730	0.88	193.69	6.435	0.88	0.000	0.000
175.00	Antel BXA-70063-6CF-EDIN	3	17.00	7.570	0.77	261.38	9.309	0.77	0.000	0.000
175.00	Antel LPA-80063/6CF	6	27.00	9.590	0.95	435.27	11.409	0.95	0.000	0.000
175.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,379.07	52.004	1.00	0.000	0.000
175.00	RFS FD9R6004/2C-3L	6	3.10	0.360	0.50	31.80	0.702	0.50	0.000	0.000
165.00	RFS APXV18-206517-C	3	26.40	5.170	0.80	201.37	6.870	0.80	0.000	0.000
145.00	KMW HB-X-WM-17-65-00T	3	30.00	1.920	1.00	190.22	4.560	1.00	0.000	0.000
145.00	KMW TTA (HB-X-WM-17-65-	3	15.90	0.650	0.50	68.24	1.595	0.50	0.000	0.000
145.00	Side Arms	1	560.00	8.500	1.00	1,183.37	17.962	1.00	0.000	0.000
	Totals	52	5294.70			16,683.34			Number of Loadings :	15

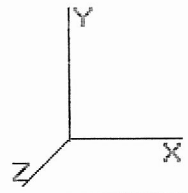
Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Exposed Width (in)	Exposed To Wind
0.00	181.90	(12) 1 1/4" Coax	0.00	N
0.00	181.90	(1) 10 mm Cable	0.00	N
0.00	181.90	(2) 19.7 mm Cable	0.00	N
0.00	181.90	(1) 3" Conduit	0.00	N
0.00	175.00	(12) 1 5/8" Coax	0.00	N
0.00	165.00	(6) 1 5/8" Coax	0.00	N
140.00	160.00	(3) 3" Solid Rod	6.00	Y
0.00	145.00	(6) 1 5/8" Coax	0.00	N
120.00	140.00	(3) 3.5" Solid Rod	7.00	Y
80.00	120.00	(3) 4.0" Solid Rod	8.00	Y
0.00	80.00	(3) 4.25" Solid Rod	8.50	Y

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Hole Dia (in)	Linear Weight (lb/ft)	Thick (in)	Weight (lb)	Len (ft)

Pole :	302502	Code: ANSI/TIA-222 Rev G	9/17/2012 5:15:26 PM
Location :	Harwinton, CT	Struct Class : II	Page: 2
Height :	181.9 (ft)	Exposure Category : B	
Base Dia :	43.00 (in)	Topographic Category : 1	
Top Dia :	14.50 (in)	Base Elev : 0.000 (ft)	
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		



0.00	80.00	3	SOL	4 1/4" SOLID	50	0.75	0.00	48.27	4.25	11,584.8	240.00
80.00	120.0	3	SOL	4" SOLID	50	0.88	0.00	42.76	4.00	5,131.2	120.00
120.0	140.0	3	SOL	3 1/2" SOLID	50	1.13	0.00	32.74	3.50	1,964.4	60.00
140.0	160.0	3	SOL	3" SOLID	50	1.38	0.00	24.05	3.00	1,443.0	60.00
										20,123.4	480.00

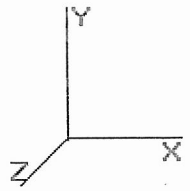
Pole :	302502	Code: ANSI/TIA-222 Rev G	9/17/2012 5:15:26 PM
Location :	Harwinton, CT	Struct Class : II	
Height :	181.9 (ft)	Exposure Category : B	Page: 3
Base Dia :	43.00 (in)	Topographic Category : 1	
Top Dia :	14.50 (in)	Base Elev : 0.000 (ft)	
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		

Segment Properties

(Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	S (in3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	43.000	51.470	11,936.2	28.05	114.67	74.1	536.3	0.0	42.55	12,69	0.0
5.00		0.3750	42.186	50.486	11,265.1	27.46	112.50	74.8	515.9	867.3	42.55	12,27	724.0
10.00		0.3750	41.371	49.503	10,619.6	26.88	110.32	75.4	495.9	850.6	42.55	11,86	724.0
15.00		0.3750	40.557	48.520	9,999.3	26.30	108.15	76.0	476.3	833.9	42.55	11,45	724.0
20.00		0.3750	39.743	47.537	9,403.6	25.72	105.98	76.7	457.1	817.1	42.55	11,05	724.0
25.00		0.3750	38.928	46.553	8,832.0	25.14	103.81	77.3	438.3	800.4	42.55	10,66	724.0
30.00		0.3750	38.114	45.570	8,284.1	24.55	101.64	77.9	419.9	783.7	42.55	10,28	724.0
35.00		0.3750	37.300	44.587	7,759.4	23.97	99.47	78.6	401.9	767.0	42.55	9,907	724.0
40.00		0.3750	36.485	43.603	7,257.2	23.39	97.29	79.2	384.3	750.2	42.55	9,537	724.0
44.10	Bot - Section 2	0.3750	35.818	42.797	6,862.0	22.91	95.51	79.7	370.1	602.7	42.55	9,239	593.7
45.00		0.3750	35.671	42.620	6,777.3	22.81	95.12	79.8	367.0	241.9	42.55	9,452	130.3
48.60	Top - Section 1	0.3125	35.710	35.619	5,696.4	27.94	114.27	74.2	308.2	957.7	42.55	9,192	521.3
50.00		0.3125	35.482	35.389	5,587.1	27.74	113.54	74.5	304.2	169.1	42.55	9,091	202.7
55.00		0.3125	34.667	34.570	5,207.9	27.05	110.94	75.2	290.2	595.1	42.55	8,738	724.0
60.00		0.3125	33.853	33.750	4,846.3	26.35	108.33	76.0	276.6	581.2	42.55	8,391	724.0
65.00		0.3125	33.039	32.931	4,501.8	25.65	105.72	76.7	263.2	567.3	42.55	8,052	724.0
70.00		0.3125	32.225	32.111	4,174.0	24.95	103.12	77.5	250.2	553.3	42.55	7,719	724.0
75.00		0.3125	31.410	31.292	3,862.6	24.25	100.51	78.3	237.6	539.4	42.55	7,394	724.0
80.00	Reinf. Top Reinf	0.3125	30.596	30.473	3,567.0	23.55	97.91	79.0	225.2	525.4	42.55	7,075	724.0
85.00		0.3125	29.782	29.653	3,286.9	22.86	95.30	79.8	213.2	511.5	37.69	5,986	641.4
86.58	Bot - Section 3	0.3125	29.524	29.394	3,201.6	22.64	94.48	80.0	209.5	158.7	37.69	5,901	202.7
90.00		0.3125	28.967	28.834	3,021.9	22.16	92.70	80.5	201.5	615.1	37.69	5,882	438.7
90.33	Top - Section 2	0.2500	29.413	23.477	2,548.6	28.85	117.65	73.3	167.4	58.7	37.69	5,864	42.3
95.00		0.2500	28.653	22.864	2,354.3	28.03	114.61	74.1	158.7	368.2	37.69	5,614	599.1
100.0		0.2500	27.839	22.209	2,157.6	27.16	111.35	75.1	149.7	383.4	37.69	5,354	641.4
105.0		0.2500	27.024	21.553	1,972.1	26.29	108.10	76.0	141.0	372.3	37.69	5,099	641.4
110.0		0.2500	26.210	20.898	1,797.6	25.41	104.84	77.0	132.5	361.1	37.69	4,851	641.4
115.0		0.2500	25.396	20.242	1,633.7	24.54	101.58	78.0	124.3	350.0	37.69	4,608	641.4
120.0	Reinf. Top Reinf	0.2500	24.581	19.587	1,480.1	23.67	98.33	78.9	116.3	338.8	37.69	4,372	641.4
125.0		0.2500	23.767	18.931	1,336.4	22.79	95.07	79.9	108.6	327.7	28.86	3,165	491.1
126.2	Top - Section 3	0.2500	23.559	18.763	1,301.1	22.57	94.23	80.1	106.7	82.1	28.86	3,121	125.7
126.2	Bot - Section 4	0.1875	23.559	14.110	983.7	30.99	125.65	70.9	80.7		28.86	3,121	
130.0		0.1875	22.953	13.744	909.2	30.12	122.41	71.9	76.5	176.3	28.86	2,994	365.4
135.0		0.1875	22.138	13.253	815.1	28.96	118.07	73.1	71.1	229.7	28.86	2,828	491.1
140.0	Reinf. Top Reinf	0.1875	21.324	12.761	727.7	27.79	113.73	74.4	65.9	221.3	28.86	2,666	491.1
145.0		0.1875	20.510	12.270	646.8	26.63	109.39	75.7	60.9	212.9	21.20	1,839	360.8
150.0		0.1875	19.695	11.778	572.1	25.47	105.04	76.9	56.1	204.6	21.20	1,728	360.8
155.0		0.1875	18.881	11.286	503.4	24.30	100.70	78.2	51.5	196.2	21.20	1,620	360.8
160.0	Reinf. Top	0.1875	18.067	10.795	440.4	23.14	96.36	79.5	47.1	187.8	21.20	1,515	360.8
165.0		0.1875	17.252	10.303	383.0	21.98	92.01	80.7	42.9	179.5			
170.0		0.1875	16.438	9.811	330.7	20.81	87.67	81.9	38.9	171.1			
175.0		0.1875	15.624	9.320	283.4	19.65	83.33	81.9	35.0	162.7			
180.0		0.1875	14.809	8.828	240.9	18.48	78.98	81.9	31.4	154.4			
181.9		0.1875	14.500	8.641	225.9	18.04	77.33	81.9	30.1	56.5			
										17,884.1			20,123.

Pole : 302502	Code: ANSI/TIA-222 Rev G		9/17/2012 5:15:26 PM
Location : Harwinton, CT	Struct Class : II		Page: 4
Height : 181.9 (ft)	Exposure Category : B		
Base Dia : 43.00 (in)	Topographic Category : 1		
Top Dia : 14.50 (in)	Base Elev : 0.000 (ft)		
Shape : 12 Sides			
Taper : 0.162864 (in/ft)			



Load Case: 1.2D + 1.6W — 95.00 mph with No Ice — 26 Iterations

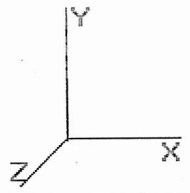
Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)		Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	15.364	16.90	294.86		1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	15.364	16.90	289.27		1.278	* 0.000	5.00	18.373	23.49	635.1	0.0	1,764.9
10.00		1.00	0.70	15.364	16.90	283.69		1.290	* 0.000	5.00	18.022	23.24	628.4	0.0	1,744.8
15.00		1.00	0.70	15.364	16.90	278.10		1.200	* 0.000	5.00	17.671	21.20	573.4	0.0	1,724.7
20.00		1.00	0.70	15.364	16.90	272.52		1.200	* 0.000	5.00	17.319	20.78	562.0	0.0	1,704.6
25.00		1.00	0.70	15.364	16.90	266.94		1.200	* 0.000	5.00	16.968	20.36	550.6	0.0	1,684.5
30.00		1.00	0.70	15.377	16.91	261.46		1.200	* 0.000	5.00	16.617	19.94	539.7	0.0	1,664.5
35.00		1.00	0.73	16.070	17.67	261.57		1.200	* 0.000	5.00	16.265	19.52	552.0	0.0	1,644.4
40.00		1.00	0.76	16.694	18.36	260.79		1.200	* 0.000	5.00	15.914	19.10	561.1	0.0	1,624.3
44.10	Bot - Section 2	1.00	0.78	17.166	18.88	259.61		1.200	* 0.000	4.10	12.788	15.35	463.6	0.0	1,317.0
45.00		1.00	0.78	17.266	18.99	259.30		1.200	* 0.000	0.90	2.824	3.39	103.0	0.0	420.6
48.60	Top - Section 1	1.00	0.80	17.650	19.41	257.85		1.200	* 0.000	3.60	11.182	13.42	416.8	0.0	1,670.6
50.00		1.00	0.81	17.793	19.57	261.83		1.200	* 0.000	1.40	4.299	5.16	161.6	0.0	405.7
55.00		1.00	0.83	18.285	20.11	259.33		1.200	* 0.000	5.00	15.130	18.16	584.3	0.0	1,438.2
60.00		1.00	0.85	18.745	20.61	256.41		1.200	* 0.000	5.00	14.779	17.73	585.1	0.0	1,421.5
65.00		1.00	0.87	19.179	21.09	253.12		1.200	* 0.000	5.00	14.427	17.31	584.4	0.0	1,404.8
70.00		1.00	0.89	19.589	21.54	249.50		1.200	* 0.000	5.00	14.076	16.89	582.4	0.0	1,388.0
75.00		1.00	0.91	19.979	21.97	245.61		1.200	* 0.000	5.00	13.725	16.47	579.1	0.0	1,371.3
80.00	Reinf. Top Reinf	1.00	0.92	20.351	22.38	241.46		1.200	* 0.000	5.00	13.374	16.05	574.8	0.0	1,354.6
85.00		1.00	0.94	20.706	22.77	237.07		1.200	* 0.000	5.00	13.022	15.63	569.5	0.0	1,255.2
86.58	Bot - Section 3	1.00	0.94	20.816	22.89	235.64		1.200	* 0.000	1.58	4.042	4.85	177.7	0.0	393.2
90.00		1.00	0.95	21.047	23.15	232.48		1.200	* 0.000	3.42	8.777	10.53	390.1	0.0	1,176.9
90.33	Top - Section 2	1.00	0.96	21.069	23.17	232.17		1.200	* 0.000	0.33	0.838	1.01	37.3	0.0	112.8
95.00		1.00	0.97	21.375	23.51	231.74		1.200	* 0.000	4.67	11.697	14.04	528.1	0.0	1,040.9
100.0		1.00	0.98	21.690	23.86	226.81		1.200	* 0.000	5.00	12.184	14.62	558.2	0.0	1,101.5
105.0		1.00	1.00	21.995	24.19	221.72		1.200	* 0.000	5.00	11.833	14.20	549.7	0.0	1,088.1
110.0		1.00	1.01	22.289	24.51	216.47		1.200	* 0.000	5.00	11.482	13.78	540.5	0.0	1,074.8
115.0		1.00	1.02	22.574	24.83	211.08		1.200	* 0.000	5.00	11.130	13.36	530.7	0.0	1,061.4
120.0	Reinf. Top Reinf	1.00	1.04	22.850	25.13	205.56		1.200	* 0.000	5.00	10.779	12.93	520.2	0.0	1,048.0
125.0		1.00	1.05	23.118	25.43	199.91		1.200	* 0.000	5.00	10.428	12.51	509.2	0.0	884.3
126.2	Top - Section 3	1.00	1.05	23.186	25.50	198.45		1.200	* 0.000	1.28	2.613	3.14	128.0	0.0	224.2
130.0		1.00	1.06	23.379	25.71	194.15		1.200	* 0.000	3.72	7.464	8.96	368.5	0.0	576.9
135.0		1.00	1.07	23.632	25.99	188.27		1.200	* 0.000	5.00	9.725	11.67	485.4	0.0	766.7
140.0	Reinf. Top Reinf	1.00	1.08	23.879	26.26	182.29		1.200	* 0.000	5.00	9.374	11.25	472.8	0.0	756.7
145.0	Appertunance(s)	1.00	1.09	24.120	26.53	176.21		1.200	* 0.000	5.00	9.023	10.83	459.6	0.0	616.3
150.0		1.00	1.11	24.355	26.79	170.03		1.200	* 0.000	5.00	8.672	10.41	446.0	0.0	606.2
155.0		1.00	1.12	24.584	27.04	163.77		1.200	* 0.000	5.00	8.320	9.98	432.0	0.0	596.2
160.0	Reinf. Top	1.00	1.13	24.808	27.28	157.42		1.200	* 0.000	5.00	7.969	9.56	417.5	0.0	586.2
165.0	Appertunance(s)	1.00	1.14	25.027	27.53	150.99		1.000	0.000	5.00	7.618	7.62	335.5	0.0	215.4
170.0		1.00	1.15	25.241	27.76	144.47		1.000	0.000	5.00	7.266	7.27	322.8	0.0	205.3
175.0	Appertunance(s)	1.00	1.16	25.451	27.99	137.89		1.000	0.000	5.00	6.915	6.92	309.8	0.0	195.3
180.0		1.00	1.16	25.657	28.22	131.23		1.000	0.000	5.00	6.564	6.56	296.4	0.0	185.3
181.9	Appertunance(s)	1.00	1.17	25.734	28.30	128.68		1.000	0.000	1.90	2.402	2.40	108.8	0.0	67.8
* = Cf Adjusted By Linear Load Ra Effect							Totals:			181.90			18,731.5	0.0	41,584.3

Pole : 302502	Code: ANSI/TIA-222 Rev G		9/17/2012 5:15:26 PM
Location : Harwinton, CT	Struct Class : II		Page: 5
Height : 181.9 (ft)	Exposure Category : B		
Base Dia : 43.00 (in)	Topographic Category : 1		
Top Dia : 14.50 (in)	Base Elev : 0.000 (ft)		
Shape : 12 Sides			
Taper : 0.162864 (in/ft)			



Load Case: 1.2D + 1.6W — 95.00 mph with No Ice — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

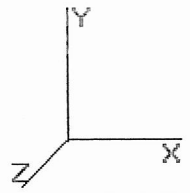
Wind Importance Factor : 1.00

Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
145.0	KMW HB-X-WM-17-65-	3	24.120	26.532	0.80	0.80	4.61	0.000	0.000	195.61	0.00	0.00	108.00
145.0	KMW TTA (HB-X-WM-	3	24.120	26.532	0.40	0.80	0.78	0.000	0.000	33.11	0.00	0.00	57.24
145.0	Side Arms	1	24.120	26.532	1.00	1.00	8.50	0.000	0.000	360.83	0.00	0.00	672.00
165.0	RFS APXV18-206517-C	3	25.027	27.530	0.64	0.80	9.93	0.000	0.000	437.23	0.00	0.00	95.04
175.0	Antel BXA-171063-12B	3	25.451	27.996	0.70	0.80	9.99	0.000	0.000	447.48	0.00	0.00	54.00
175.0	Antel BXA-70063-6CF-	3	25.451	27.996	0.62	0.80	13.99	0.000	0.000	626.64	0.00	0.00	61.20
175.0	Antel LPA-80063/6CF	6	25.451	27.996	0.76	0.80	43.73	0.000	0.000	1,958.87	0.00	0.00	194.40
175.0	Flat Low Profile Pla	1	25.451	27.996	1.00	1.00	26.10	0.000	0.000	1,169.13	0.00	0.00	1,800.00
175.0	RFS FD9R6004/2C-3L	6	25.451	27.996	0.40	0.80	0.86	0.000	0.000	38.70	0.00	0.00	22.32
181.9	Allgon 7770.00	6	25.859	28.444	0.58	0.75	19.09	0.000	3.100	868.90	0.00	2,693.60	252.00
181.9	Andrew ABT-DMDF-	1	25.859	28.444	1.00	1.00	0.05	0.000	3.100	2.28	0.00	7.05	1.32
181.9	Ericsson RRUS 11	6	25.859	28.444	0.80	0.80	14.35	0.000	3.100	653.17	0.00	2,024.84	360.00
181.9	KMW AM-X-CD-16-65-	3	25.859	28.444	0.63	0.80	15.66	0.000	3.100	712.75	0.00	2,209.51	174.60
181.9	Platform w/ Handrail	1	25.734	28.307	1.00	1.00	27.20	0.000	0.000	1,231.93	0.00	0.00	2,400.00
181.9	Powerwave LGP21401	6	25.859	28.444	0.58	0.75	4.47	0.000	3.100	203.43	0.00	630.63	101.52
										8,940.07			6,353.64

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



Load Case: 1.2D + 1.6W — 95.00 mph with No Ice — 26 Iterations

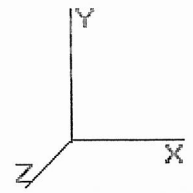
Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Linear Appurtenance Segment Forces (Factored)

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	qz (psf)	Ra	Cf Adjust Factor	FX (lb)	Dead Load (lb)
5.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	3.54	0.00	15.364	0.193	1.278	0.00	0.00
10.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	3.54	0.00	15.364	0.197	1.290	0.00	0.00
15.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.42	15.364	0.200	0.000	65.32	0.00
20.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.42	15.364	0.204	0.000	65.32	0.00
25.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.42	15.364	0.209	0.000	65.32	0.00
30.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.41	15.377	0.213	0.000	65.35	0.00
35.00	(3) 4.25" Solid Rod	Yes	5.00	0.667	8.50	3.54	2.36	16.070	0.218	0.000	66.80	0.00
40.00	(3) 4.25" Solid Rod	Yes	5.00	0.654	8.50	3.54	2.32	16.694	0.223	0.000	68.09	0.00
44.10	(3) 4.25" Solid Rod	Yes	4.10	0.645	8.50	2.90	1.87	17.166	0.227	0.000	56.62	0.00
45.00	(3) 4.25" Solid Rod	Yes	0.90	0.643	8.50	0.64	0.41	17.266	0.230	0.000	12.46	0.00
48.60	(3) 4.25" Solid Rod	Yes	3.60	0.636	8.50	2.55	1.62	17.650	0.232	0.000	50.41	0.00
50.00	(3) 4.25" Solid Rod	Yes	1.40	0.634	8.50	0.99	0.63	17.793	0.231	0.000	19.68	0.00
55.00	(3) 4.25" Solid Rod	Yes	5.00	0.625	8.50	3.54	2.21	18.285	0.234	0.000	71.26	0.00
60.00	(3) 4.25" Solid Rod	Yes	5.00	0.617	8.50	3.54	2.19	18.745	0.240	0.000	72.15	0.00
65.00	(3) 4.25" Solid Rod	Yes	5.00	0.610	8.50	3.54	2.16	19.179	0.245	0.000	72.98	0.00
70.00	(3) 4.25" Solid Rod	Yes	5.00	0.604	8.50	3.54	2.14	19.589	0.252	0.000	73.76	0.00
75.00	(3) 4.25" Solid Rod	Yes	5.00	0.600	8.50	3.54	2.13	19.979	0.258	0.000	74.72	0.00
80.00	(3) 4.25" Solid Rod	Yes	5.00	0.600	8.50	3.54	2.13	20.351	0.265	0.000	76.11	0.00
85.00	(3) 4.0" Solid Rod	Yes	5.00	0.624	8.00	3.33	2.08	20.706	0.256	0.000	75.83	0.00
86.58	(3) 4.0" Solid Rod	Yes	1.58	0.623	8.00	1.05	0.66	20.816	0.261	0.000	24.03	0.00
90.00	(3) 4.0" Solid Rod	Yes	3.42	0.619	8.00	2.28	1.41	21.047	0.264	0.000	52.29	0.00
90.33	(3) 4.0" Solid Rod	Yes	0.33	0.619	8.00	0.22	0.14	21.069	0.267	0.000	5.05	0.00
95.00	(3) 4.0" Solid Rod	Yes	4.67	0.614	8.00	3.11	1.91	21.375	0.266	0.000	71.96	0.00
100.0	(3) 4.0" Solid Rod	Yes	5.00	0.610	8.00	3.33	2.03	21.690	0.274	0.000	77.61	0.00
105.0	(3) 4.0" Solid Rod	Yes	5.00	0.606	8.00	3.33	2.02	21.995	0.282	0.000	78.16	0.00
110.0	(3) 4.0" Solid Rod	Yes	5.00	0.602	8.00	3.33	2.01	22.289	0.290	0.000	78.68	0.00
115.0	(3) 4.0" Solid Rod	Yes	5.00	0.600	8.00	3.33	2.00	22.574	0.299	0.000	79.46	0.00
120.0	(3) 4.0" Solid Rod	Yes	5.00	0.600	8.00	3.33	2.00	22.850	0.309	0.000	80.43	0.00
125.0	(3) 3.5" Solid Rod	Yes	5.00	0.675	7.00	2.92	1.97	23.118	0.280	0.000	80.13	0.00
126.2	(3) 3.5" Solid Rod	Yes	1.28	0.674	7.00	0.75	0.50	23.186	0.286	0.000	20.54	0.00
130.0	(3) 3.5" Solid Rod	Yes	3.72	0.671	7.00	2.17	1.46	23.379	0.291	0.000	59.95	0.00
135.0	(3) 3.5" Solid Rod	Yes	5.00	0.668	7.00	2.92	1.95	23.632	0.300	0.000	81.01	0.00
140.0	(3) 3.5" Solid Rod	Yes	5.00	0.664	7.00	2.92	1.94	23.879	0.311	0.000	81.43	0.00
145.0	(3) 3" Solid Rod	Yes	5.00	0.771	6.00	2.50	1.93	24.120	0.277	0.000	81.84	0.00
150.0	(3) 3" Solid Rod	Yes	5.00	0.767	6.00	2.50	1.92	24.355	0.288	0.000	82.24	0.00
155.0	(3) 3" Solid Rod	Yes	5.00	0.764	6.00	2.50	1.91	24.584	0.300	0.000	82.63	0.00
160.0	(3) 3" Solid Rod	Yes	5.00	0.760	6.00	2.50	1.90	24.808	0.314	0.000	83.00	0.00
										Totals:	2,252.63	0.00

Pole : 302502	Code: ANSI/TIA-222 Rev G		9/17/2012 5:15:26 PM
Location : Harwinton, CT	Struct Class : II		Page: 7
Height : 181.9 (ft)	Exposure Category : B		
Base Dia : 43.00 (in)	Topographic Category : 1		
Top Dia : 14.50 (in)	Base Elev : 0.000 (ft)		
Shape : 12 Sides			
Taper : 0.162864 (in/ft)			



Load Case: 1.2D + 1.6W — 95.00 mph with No Ice — 26 Iterations

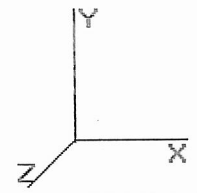
Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	635.09	1,981.25	0.00	0.00
10.00	628.44	1,961.17	0.00	0.00
15.00	638.71	1,941.10	0.00	0.00
20.00	627.32	1,921.02	0.00	0.00
25.00	615.92	1,900.95	0.00	0.00
30.00	605.00	1,880.87	0.00	0.00
35.00	618.83	1,860.80	0.00	0.00
40.00	629.20	1,840.72	0.00	0.00
44.10	520.24	1,494.41	0.00	0.00
45.00	115.44	459.57	0.00	0.00
48.60	467.23	1,826.36	0.00	0.00
50.00	181.25	466.29	0.00	0.00
55.00	655.54	1,654.61	0.00	0.00
60.00	657.23	1,637.88	0.00	0.00
65.00	657.36	1,621.15	0.00	0.00
70.00	656.11	1,604.42	0.00	0.00
75.00	653.85	1,587.69	0.00	0.00
80.00	650.92	1,570.96	0.00	0.00
85.00	645.32	1,471.58	0.00	0.00
86.58	201.72	461.54	0.00	0.00
90.00	442.43	1,324.90	0.00	0.00
90.33	42.35	127.10	0.00	0.00
95.00	600.02	1,243.02	0.00	0.00
100.0	635.78	1,317.92	0.00	0.00
105.0	627.84	1,304.54	0.00	0.00
110.0	619.18	1,291.15	0.00	0.00
115.0	610.12	1,277.77	0.00	0.00
120.0	600.63	1,264.39	0.00	0.00
125.0	589.28	1,100.70	0.00	0.00
126.2	148.50	279.63	0.00	0.00
130.0	428.47	737.94	0.00	0.00
135.0	566.42	983.10	0.00	0.00
140.0	554.20	973.06	0.00	0.00
145.0	1,131.03	1,669.91	0.00	0.00
150.0	528.28	793.12	0.00	0.00
155.0	514.62	783.08	0.00	0.00
160.0	500.53	773.04	0.00	0.00
165.0	772.77	497.29	0.00	0.00
170.0	322.81	362.70	0.00	0.00
175.0	4,550.58	2,484.58	0.00	0.00
180.0	296.40	283.59	0.00	0.00
181.9	3,781.26	3,394.57	0.00	7,565.64
Totals:	29,924.22	55,411.45	0.00	7,565.64

Pole :	302502	Code: ANSI/TIA-222 Rev G	9/17/2012 5:15:26 PM
Location :	Harwinton, CT	Struct Class : II	Page: 8
Height :	181.9 (ft)	Exposure Category : B	
Base Dia :	43.00 (in)	Topographic Category : 1	
Top Dia :	14.50 (in)	Base Elev : 0.000 (ft)	
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		



Load Case: 1.2D + 1.6W — 95.00 mph with No Ice — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

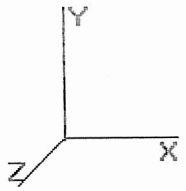
Wind Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.36	-30.02	0.00	-3,572.75	0.00	3,572.75	3,433.77	1,716.88	6,036.76	2,981.33	0.00	0.00	0.590
5.00	-53.27	-29.57	0.00	-3,422.63	0.00	3,422.63	3,397.00	1,698.50	5,857.04	2,892.57	0.11	-0.20	0.575
10.00	-51.21	-29.12	0.00	-3,274.77	0.00	3,274.77	3,359.12	1,679.56	5,677.91	2,804.10	0.43	-0.40	0.560
15.00	-49.18	-28.63	0.00	-3,129.20	0.00	3,129.20	3,320.10	1,660.05	5,499.48	2,715.99	0.96	-0.61	0.545
20.00	-47.16	-28.15	0.00	-2,986.03	0.00	2,986.03	3,279.97	1,639.98	5,321.88	2,628.28	1.71	-0.81	0.530
25.00	-45.18	-27.66	0.00	-2,845.29	0.00	2,845.29	3,238.71	1,619.36	5,145.22	2,541.03	2.66	-1.01	0.515
30.00	-43.21	-27.17	0.00	-2,706.97	0.00	2,706.97	3,196.33	1,598.17	4,969.60	2,454.30	3.83	-1.22	0.499
35.00	-41.27	-26.66	0.00	-2,571.10	0.00	2,571.10	3,152.83	1,576.41	4,795.15	2,368.14	5.22	-1.42	0.484
40.00	-39.36	-26.11	0.00	-2,437.81	0.00	2,437.81	3,108.20	1,554.10	4,621.97	2,282.62	6.81	-1.62	0.468
44.10	-37.84	-25.61	0.00	-2,330.78	0.00	2,330.78	3,070.77	1,535.38	4,481.01	2,213.00	8.27	-1.78	0.455
45.00	-37.35	-25.54	0.00	-2,307.73	0.00	2,307.73	3,062.45	1,531.23	4,450.19	2,197.78	8.61	-1.82	0.445
48.60	-35.49	-25.07	0.00	-2,215.79	0.00	2,215.79	2,379.97	1,189.99	3,474.54	1,715.94	10.04	-1.96	0.501
50.00	-34.98	-24.96	0.00	-2,180.69	0.00	2,180.69	2,371.43	1,185.72	3,439.58	1,698.68	10.63	-2.02	0.496
55.00	-33.26	-24.36	0.00	-2,055.92	0.00	2,055.92	2,340.22	1,170.11	3,315.02	1,637.16	12.85	-2.23	0.476
60.00	-31.57	-23.75	0.00	-1,934.13	0.00	1,934.13	2,307.88	1,153.94	3,191.02	1,575.92	15.29	-2.43	0.456
65.00	-29.89	-23.12	0.00	-1,815.41	0.00	1,815.41	2,274.42	1,137.21	3,067.70	1,515.02	17.94	-2.63	0.436
70.00	-28.25	-22.49	0.00	-1,699.80	0.00	1,699.80	2,239.83	1,119.92	2,945.16	1,454.51	20.81	-2.83	0.416
75.00	-26.62	-21.84	0.00	-1,587.36	0.00	1,587.36	2,204.12	1,102.06	2,823.54	1,394.44	23.88	-3.03	0.396
80.00	-25.02	-21.19	0.00	-1,478.14	0.00	1,478.14	2,167.29	1,083.65	2,702.93	1,334.88	27.15	-3.22	0.376
80.00	-25.02	-21.19	0.00	-1,478.14	0.00	1,478.14	2,167.29	1,083.65	2,702.93	1,334.88	27.15	-3.22	0.407
85.00	-23.54	-20.52	0.00	-1,372.17	0.00	1,372.17	2,129.34	1,064.67	2,583.46	1,275.87	30.62	-3.41	0.386
86.58	-23.05	-20.33	0.00	-1,339.76	0.00	1,339.76	2,117.11	1,058.55	2,545.96	1,257.35	31.76	-3.48	0.380
90.00	-21.73	-19.83	0.00	-1,270.24	0.00	1,270.24	2,090.26	1,045.13	2,465.23	1,217.49	34.30	-3.62	0.359
90.33	-21.57	-19.82	0.00	-1,263.69	0.00	1,263.69	1,547.78	773.89	1,862.15	919.65	34.55	-3.63	0.422
95.00	-20.31	-19.21	0.00	-1,171.13	0.00	1,171.13	1,525.71	762.86	1,787.32	882.69	38.19	-3.81	0.398
100.00	-18.97	-18.55	0.00	-1,075.08	0.00	1,075.08	1,501.00	750.50	1,707.51	843.28	42.29	-4.01	0.371
105.00	-17.66	-17.89	0.00	-982.33	0.00	982.33	1,475.16	737.58	1,628.14	804.08	46.59	-4.21	0.346
110.00	-16.36	-17.23	0.00	-892.88	0.00	892.88	1,448.19	724.10	1,549.32	765.15	51.10	-4.40	0.320
115.00	-15.08	-16.57	0.00	-806.74	0.00	806.74	1,420.11	710.05	1,471.16	726.55	55.80	-4.58	0.295
120.00	-13.82	-15.91	0.00	-723.90	0.00	723.90	1,390.90	695.45	1,393.78	688.34	60.68	-4.75	0.270
120.00	-13.82	-15.91	0.00	-723.90	0.00	723.90	1,390.90	695.45	1,393.78	688.34	60.68	-4.75	0.327
125.00	-12.75	-15.25	0.00	-644.37	0.00	644.37	1,360.57	680.28	1,317.29	650.56	65.74	-4.92	0.298
126.28	-12.46	-15.10	0.00	-624.85	0.00	624.85	1,352.62	676.31	1,297.87	640.97	67.07	-4.97	0.291
126.28	-12.46	-15.10	0.00	-624.85	0.00	624.85	900.61	450.31	868.80	429.07	67.07	-4.97	0.355
130.00	-11.72	-14.64	0.00	-568.68	0.00	568.68	888.95	444.47	835.13	412.44	70.99	-5.11	0.326
135.00	-10.74	-14.03	0.00	-495.46	0.00	495.46	872.29	436.14	789.93	390.12	76.44	-5.31	0.289
140.00	-9.79	-13.41	0.00	-425.33	0.00	425.33	854.50	427.25	744.88	367.87	82.09	-5.49	0.252
140.00	-9.79	-13.41	0.00	-425.33	0.00	425.33	854.50	427.25	744.88	367.87	82.09	-5.49	0.319
145.00	-8.20	-12.15	0.00	-358.28	0.00	358.28	835.60	417.80	700.09	345.75	87.92	-5.65	0.274
150.00	-7.42	-11.57	0.00	-297.53	0.00	297.53	815.57	407.78	655.68	323.81	93.93	-5.84	0.233
155.00	-6.67	-10.99	0.00	-239.70	0.00	239.70	794.42	397.21	611.76	302.12	100.13	-6.00	0.192
160.00	-5.93	-10.43	0.00	-184.74	0.00	184.74	772.14	386.07	568.44	280.73	106.48	-6.15	0.151
160.00	-5.93	-10.43	0.00	-184.74	0.00	184.74	772.14	386.07	568.44	280.73	106.48	-6.15	0.666
165.00	-5.47	-9.63	0.00	-132.61	0.00	132.61	748.74	374.37	525.85	259.70	112.97	-6.26	0.519
170.00	-5.10	-9.30	0.00	-84.46	0.00	84.46	723.19	361.60	483.41	238.74	119.75	-6.66	0.361
175.00	-3.15	-4.50	0.00	-37.97	0.00	37.97	686.95	343.48	435.91	215.28	126.87	-6.93	0.181
180.00	-2.90	-4.17	0.00	-15.49	0.00	15.49	650.71	325.36	390.87	193.04	134.19	-7.06	0.085
181.90	0.00	-3.78	0.00	-7.57	0.00	7.57	636.94	318.47	374.40	184.90	136.99	-7.09	0.041

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



Load Case: 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

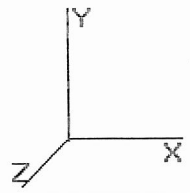
Wind Importance Factor : 1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf		Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	15.364	16.90	294.86	1.000		0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	15.364	16.90	289.27	1.000	*	0.000	5.00	18.373	18.37	496.8	0.0	1,504.7
10.00		1.00	0.70	15.364	16.90	283.69	1.000	*	0.000	5.00	18.022	18.02	487.3	0.0	1,489.6
15.00		1.00	0.70	15.364	16.90	278.10	1.200	*	0.000	5.00	17.671	21.20	573.4	0.0	1,474.5
20.00		1.00	0.70	15.364	16.90	272.52	1.200	*	0.000	5.00	17.319	20.78	562.0	0.0	1,459.5
25.00		1.00	0.70	15.364	16.90	266.94	1.200	*	0.000	5.00	16.968	20.36	550.6	0.0	1,444.4
30.00		1.00	0.70	15.377	16.91	261.46	1.200	*	0.000	5.00	16.617	19.94	539.7	0.0	1,429.4
35.00		1.00	0.73	16.070	17.67	261.57	1.200	*	0.000	5.00	16.265	19.52	552.0	0.0	1,414.3
40.00		1.00	0.76	16.694	18.36	260.79	1.200	*	0.000	5.00	15.914	19.10	561.1	0.0	1,399.3
44.10	Bot - Section 2	1.00	0.78	17.166	18.88	259.61	1.200	*	0.000	4.10	12.788	15.35	463.6	0.0	1,136.2
45.00		1.00	0.78	17.266	18.99	259.30	1.200	*	0.000	0.90	2.824	3.39	103.0	0.0	348.0
48.60	Top - Section 1	1.00	0.80	17.650	19.41	257.85	1.200	*	0.000	3.60	11.182	13.42	416.8	0.0	1,383.2
50.00		1.00	0.81	17.793	19.57	261.83	1.200	*	0.000	1.40	4.299	5.16	161.6	0.0	355.0
55.00		1.00	0.83	18.285	20.11	259.33	1.200	*	0.000	5.00	15.130	18.16	584.3	0.0	1,259.7
60.00		1.00	0.85	18.745	20.61	256.41	1.200	*	0.000	5.00	14.779	17.73	585.1	0.0	1,247.1
65.00		1.00	0.87	19.179	21.09	253.12	1.200	*	0.000	5.00	14.427	17.31	584.4	0.0	1,234.6
70.00		1.00	0.89	19.589	21.54	249.50	1.200	*	0.000	5.00	14.076	16.89	582.4	0.0	1,222.0
75.00		1.00	0.91	19.979	21.97	245.61	1.200	*	0.000	5.00	13.725	16.47	579.1	0.0	1,209.5
80.00	Reinf. Top Reinf	1.00	0.92	20.351	22.38	241.46	1.200	*	0.000	5.00	13.374	16.05	574.8	0.0	1,196.9
85.00		1.00	0.94	20.706	22.77	237.07	1.200	*	0.000	5.00	13.022	15.63	569.5	0.0	1,101.7
86.58	Bot - Section 3	1.00	0.94	20.816	22.89	235.64	1.200	*	0.000	1.58	4.042	4.85	177.7	0.0	345.5
90.00		1.00	0.95	21.047	23.15	232.48	1.200	*	0.000	3.42	8.777	10.53	390.1	0.0	992.3
90.33	Top - Section 2	1.00	0.96	21.069	23.17	232.17	1.200	*	0.000	0.33	0.838	1.01	37.3	0.0	95.2
95.00		1.00	0.97	21.375	23.51	231.74	1.200	*	0.000	4.67	11.697	14.04	528.1	0.0	930.4
100.0		1.00	0.98	21.690	23.86	226.81	1.200	*	0.000	5.00	12.184	14.62	558.2	0.0	986.5
105.0		1.00	1.00	21.995	24.19	221.72	1.200	*	0.000	5.00	11.833	14.20	549.7	0.0	976.5
110.0		1.00	1.01	22.289	24.51	216.47	1.200	*	0.000	5.00	11.482	13.78	540.5	0.0	966.4
115.0		1.00	1.02	22.574	24.83	211.08	1.200	*	0.000	5.00	11.130	13.36	530.7	0.0	956.4
120.0	Reinf. Top Reinf	1.00	1.04	22.850	25.13	205.56	1.200	*	0.000	5.00	10.779	12.93	520.2	0.0	946.3
125.0		1.00	1.05	23.118	25.43	199.91	1.200	*	0.000	5.00	10.428	12.51	509.2	0.0	786.0
126.2	Top - Section 3	1.00	1.05	23.186	25.50	198.45	1.200	*	0.000	1.28	2.613	3.14	128.0	0.0	199.6
130.0		1.00	1.06	23.379	25.71	194.15	1.200	*	0.000	3.72	7.464	8.96	368.5	0.0	524.0
135.0		1.00	1.07	23.632	25.99	188.27	1.200	*	0.000	5.00	9.725	11.67	485.4	0.0	697.8
140.0	Reinf. Top Reinf	1.00	1.08	23.879	26.26	182.29	1.200	*	0.000	5.00	9.374	11.25	472.8	0.0	690.3
145.0	Appertunance(s)	1.00	1.09	24.120	26.53	176.21	1.200	*	0.000	5.00	9.023	10.83	459.6	0.0	552.4
150.0		1.00	1.11	24.355	26.79	170.03	1.200	*	0.000	5.00	8.672	10.41	446.0	0.0	544.9
155.0		1.00	1.12	24.584	27.04	163.77	1.200	*	0.000	5.00	8.320	9.98	432.0	0.0	537.3
160.0	Reinf. Top	1.00	1.13	24.808	27.28	157.42	1.200	*	0.000	5.00	7.969	9.56	417.5	0.0	529.8
165.0	Appertunance(s)	1.00	1.14	25.027	27.53	150.99	1.000		0.000	5.00	7.618	7.62	335.5	0.0	161.5
170.0		1.00	1.15	25.241	27.76	144.47	1.000		0.000	5.00	7.266	7.27	322.8	0.0	154.0
175.0	Appertunance(s)	1.00	1.16	25.451	27.99	137.89	1.000		0.000	5.00	6.915	6.92	309.8	0.0	146.5
180.0		1.00	1.16	25.657	28.22	131.23	1.000		0.000	5.00	6.564	6.56	296.4	0.0	138.9
181.9	Appertunance(s)	1.00	1.17	25.734	28.30	128.68	1.000		0.000	1.90	2.402	2.40	108.8	0.0	50.8
								Totals:		181.90			18,452.1	0.0	36,219.1

* = Cf Adjusted By Linear Load Ra Effect

Pole :	302502	Code: ANSI/TIA-222 Rev G	9/17/2012 5:15:27 PM
Location :	Harwinton, CT	Struct Class : II	Page: 10
Height :	181.9 (ft)	Exposure Category : B	
Base Dia :	43.00 (in)	Topographic Category : 1	
Top Dia :	14.50 (in)	Base Elev : 0.000 (ft)	
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		



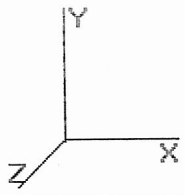
Load Case: 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
145.0	KMW HB-X-WM-17-65-	3	24.120	26.532	0.80	0.80	4.61	0.000	0.000	195.61	0.00	0.00	81.00
145.0	KMW TTA (HB-X-WM-	3	24.120	26.532	0.40	0.80	0.78	0.000	0.000	33.11	0.00	0.00	42.93
145.0	Side Arms	1	24.120	26.532	1.00	1.00	8.50	0.000	0.000	360.83	0.00	0.00	504.00
165.0	RFS APXV18-206517-C	3	25.027	27.530	0.64	0.80	9.93	0.000	0.000	437.23	0.00	0.00	71.28
175.0	Antel BXA-171063-12B	3	25.451	27.996	0.70	0.80	9.99	0.000	0.000	447.48	0.00	0.00	40.50
175.0	Antel BXA-70063-6CF-	3	25.451	27.996	0.62	0.80	13.99	0.000	0.000	626.64	0.00	0.00	45.90
175.0	Antel LPA-80063/6CF	6	25.451	27.996	0.76	0.80	43.73	0.000	0.000	1,958.87	0.00	0.00	145.80
175.0	Flat Low Profile Pla	1	25.451	27.996	1.00	1.00	26.10	0.000	0.000	1,169.13	0.00	0.00	1,350.00
175.0	RFS FD9R6004/2C-3L	6	25.451	27.996	0.40	0.80	0.86	0.000	0.000	38.70	0.00	0.00	16.74
181.9	Allgon 7770.00	6	25.859	28.444	0.58	0.75	19.09	0.000	3.100	868.90	0.00	2,693.60	189.00
181.9	Andrew ABT-DMDF-	1	25.859	28.444	1.00	1.00	0.05	0.000	3.100	2.28	0.00	7.05	0.99
181.9	Ericsson RRUS 11	6	25.859	28.444	0.80	0.80	14.35	0.000	3.100	653.17	0.00	2,024.84	270.00
181.9	KMW AM-X-CD-16-65-	3	25.859	28.444	0.63	0.80	15.66	0.000	3.100	712.75	0.00	2,209.51	130.95
181.9	Platform w/ Handrail	1	25.734	28.307	1.00	1.00	27.20	0.000	0.000	1,231.93	0.00	0.00	1,800.00
181.9	Powerwave LGP21401	6	25.859	28.444	0.58	0.75	4.47	0.000	3.100	203.43	0.00	630.63	76.14
										8,940.07			4,765.23

Pole : 302502	Code: ANSI/TIA-222 Rev G		9/17/2012 5:15:27 PM
Location : Harwinton, CT	Struct Class : II		Page: 11
Height : 181.9 (ft)	Exposure Category : B		
Base Dia : 43.00 (in)	Topographic Category : 1		
Top Dia : 14.50 (in)	Base Elev : 0.000 (ft)		
Shape : 12 Sides			
Taper : 0.162864 (in/ft)			



Load Case: 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 26 Iterations

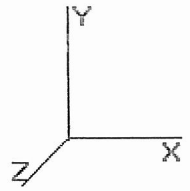
Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Linear Appurtenance Segment Forces (Factored)

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	qz (psf)	Ra	Cf Adjust Factor	F X (lb)	Dead Load (lb)
5.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	3.54	0.00	15.364	0.193	1.278	0.00	0.00
10.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	3.54	0.00	15.364	0.197	1.290	0.00	0.00
15.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.42	15.364	0.200	0.000	65.32	0.00
20.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.42	15.364	0.204	0.000	65.32	0.00
25.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.42	15.364	0.209	0.000	65.32	0.00
30.00	(3) 4.25" Solid Rod	Yes	5.00	0.682	8.50	3.54	2.41	15.377	0.213	0.000	65.35	0.00
35.00	(3) 4.25" Solid Rod	Yes	5.00	0.667	8.50	3.54	2.36	16.070	0.218	0.000	66.80	0.00
40.00	(3) 4.25" Solid Rod	Yes	5.00	0.654	8.50	3.54	2.32	16.694	0.223	0.000	68.09	0.00
44.10	(3) 4.25" Solid Rod	Yes	4.10	0.645	8.50	2.90	1.87	17.166	0.227	0.000	56.62	0.00
45.00	(3) 4.25" Solid Rod	Yes	0.90	0.643	8.50	0.64	0.41	17.266	0.230	0.000	12.46	0.00
48.60	(3) 4.25" Solid Rod	Yes	3.60	0.636	8.50	2.55	1.62	17.650	0.232	0.000	50.41	0.00
50.00	(3) 4.25" Solid Rod	Yes	1.40	0.634	8.50	0.99	0.63	17.793	0.231	0.000	19.68	0.00
55.00	(3) 4.25" Solid Rod	Yes	5.00	0.625	8.50	3.54	2.21	18.285	0.234	0.000	71.26	0.00
60.00	(3) 4.25" Solid Rod	Yes	5.00	0.617	8.50	3.54	2.19	18.745	0.240	0.000	72.15	0.00
65.00	(3) 4.25" Solid Rod	Yes	5.00	0.610	8.50	3.54	2.16	19.179	0.245	0.000	72.98	0.00
70.00	(3) 4.25" Solid Rod	Yes	5.00	0.604	8.50	3.54	2.14	19.589	0.252	0.000	73.76	0.00
75.00	(3) 4.25" Solid Rod	Yes	5.00	0.600	8.50	3.54	2.13	19.979	0.258	0.000	74.72	0.00
80.00	(3) 4.25" Solid Rod	Yes	5.00	0.600	8.50	3.54	2.13	20.351	0.265	0.000	76.11	0.00
85.00	(3) 4.0" Solid Rod	Yes	5.00	0.624	8.00	3.33	2.08	20.706	0.256	0.000	75.83	0.00
86.58	(3) 4.0" Solid Rod	Yes	1.58	0.623	8.00	1.05	0.66	20.816	0.261	0.000	24.03	0.00
90.00	(3) 4.0" Solid Rod	Yes	3.42	0.619	8.00	2.28	1.41	21.047	0.264	0.000	52.29	0.00
90.33	(3) 4.0" Solid Rod	Yes	0.33	0.619	8.00	0.22	0.14	21.069	0.267	0.000	5.05	0.00
95.00	(3) 4.0" Solid Rod	Yes	4.67	0.614	8.00	3.11	1.91	21.375	0.266	0.000	71.96	0.00
100.0	(3) 4.0" Solid Rod	Yes	5.00	0.610	8.00	3.33	2.03	21.690	0.274	0.000	77.61	0.00
105.0	(3) 4.0" Solid Rod	Yes	5.00	0.606	8.00	3.33	2.02	21.995	0.282	0.000	78.16	0.00
110.0	(3) 4.0" Solid Rod	Yes	5.00	0.602	8.00	3.33	2.01	22.289	0.290	0.000	78.68	0.00
115.0	(3) 4.0" Solid Rod	Yes	5.00	0.600	8.00	3.33	2.00	22.574	0.299	0.000	79.46	0.00
120.0	(3) 4.0" Solid Rod	Yes	5.00	0.600	8.00	3.33	2.00	22.850	0.309	0.000	80.43	0.00
125.0	(3) 3.5" Solid Rod	Yes	5.00	0.675	7.00	2.92	1.97	23.118	0.280	0.000	80.13	0.00
126.2	(3) 3.5" Solid Rod	Yes	1.28	0.674	7.00	0.75	0.50	23.186	0.286	0.000	20.54	0.00
130.0	(3) 3.5" Solid Rod	Yes	3.72	0.671	7.00	2.17	1.46	23.379	0.291	0.000	59.95	0.00
135.0	(3) 3.5" Solid Rod	Yes	5.00	0.668	7.00	2.92	1.95	23.632	0.300	0.000	81.01	0.00
140.0	(3) 3.5" Solid Rod	Yes	5.00	0.664	7.00	2.92	1.94	23.879	0.311	0.000	81.43	0.00
145.0	(3) 3" Solid Rod	Yes	5.00	0.771	6.00	2.50	1.93	24.120	0.277	0.000	81.84	0.00
150.0	(3) 3" Solid Rod	Yes	5.00	0.767	6.00	2.50	1.92	24.355	0.288	0.000	82.24	0.00
155.0	(3) 3" Solid Rod	Yes	5.00	0.764	6.00	2.50	1.91	24.584	0.300	0.000	82.63	0.00
160.0	(3) 3" Solid Rod	Yes	5.00	0.760	6.00	2.50	1.90	24.808	0.314	0.000	83.00	0.00
										Totals:	2,252.63	0.00

Pole :	302502	Code: ANSI/TIA-222 Rev G	9/17/2012 5:15:27 PM
Location :	Harwinton, CT	Struct Class : II	Page: 12
Height :	181.9 (ft)	Exposure Category : B	
Base Dia :	43.00 (in)	Topographic Category : 1	
Top Dia :	14.50 (in)	Base Elev : 0.000 (ft)	
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		



Load Case: 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

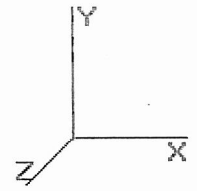
Wind Importance Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	496.82	1,666.95	0.00	0.00
10.00	487.33	1,651.89	0.00	0.00
15.00	638.71	1,636.84	0.00	0.00
20.00	627.32	1,621.78	0.00	0.00
25.00	615.92	1,606.72	0.00	0.00
30.00	605.00	1,591.67	0.00	0.00
35.00	618.83	1,576.61	0.00	0.00
40.00	629.20	1,561.55	0.00	0.00
44.10	520.24	1,269.24	0.00	0.00
45.00	115.44	377.26	0.00	0.00
48.60	467.23	1,500.10	0.00	0.00
50.00	181.25	400.40	0.00	0.00
55.00	655.54	1,421.97	0.00	0.00
60.00	657.23	1,409.42	0.00	0.00
65.00	657.36	1,396.88	0.00	0.00
70.00	656.11	1,384.33	0.00	0.00
75.00	653.85	1,371.78	0.00	0.00
80.00	650.92	1,359.23	0.00	0.00
85.00	645.32	1,264.04	0.00	0.00
86.58	201.72	396.83	0.00	0.00
90.00	442.43	1,103.35	0.00	0.00
90.33	42.35	105.91	0.00	0.00
95.00	600.02	1,082.04	0.00	0.00
100.0	635.78	1,148.79	0.00	0.00
105.0	627.84	1,138.75	0.00	0.00
110.0	619.18	1,128.71	0.00	0.00
115.0	610.12	1,118.68	0.00	0.00
120.0	600.63	1,108.64	0.00	0.00
125.0	589.28	948.30	0.00	0.00
126.2	148.50	241.15	0.00	0.00
130.0	428.47	644.80	0.00	0.00
135.0	566.42	860.10	0.00	0.00
140.0	554.20	852.57	0.00	0.00
145.0	1,131.03	1,342.62	0.00	0.00
150.0	528.28	685.02	0.00	0.00
155.0	514.62	677.50	0.00	0.00
160.0	500.53	669.97	0.00	0.00
165.0	772.77	372.97	0.00	0.00
170.0	322.81	272.02	0.00	0.00
175.0	4,550.58	1,863.44	0.00	0.00
180.0	296.40	212.69	0.00	0.00
181.9	3,781.26	2,545.93	0.00	7,565.64
Totals:	29,644.85	46,589.44	0.00	7,565.64

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



Load Case: 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 26 Iterations

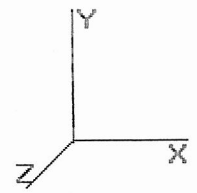
Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.54	-29.73	0.00	-3,532.65	0.00	3,532.65	3,433.77	1,716.88	6,036.76	2,981.33	0.00	0.00	0.582
5.00	-44.77	-29.38	0.00	-3,384.02	0.00	3,384.02	3,397.00	1,698.50	5,857.04	2,892.57	0.11	-0.20	0.567
10.00	-43.02	-29.04	0.00	-3,237.10	0.00	3,237.10	3,359.12	1,679.56	5,677.91	2,804.10	0.42	-0.40	0.553
15.00	-41.29	-28.53	0.00	-3,091.91	0.00	3,091.91	3,320.10	1,660.05	5,499.48	2,715.99	0.95	-0.60	0.537
20.00	-39.57	-28.02	0.00	-2,949.27	0.00	2,949.27	3,279.97	1,639.98	5,321.88	2,628.28	1.69	-0.80	0.522
25.00	-37.88	-27.51	0.00	-2,809.17	0.00	2,809.17	3,238.71	1,619.36	5,145.22	2,541.03	2.63	-1.00	0.507
30.00	-36.21	-27.00	0.00	-2,671.61	0.00	2,671.61	3,196.33	1,598.17	4,969.60	2,454.30	3.79	-1.20	0.492
35.00	-34.55	-26.47	0.00	-2,536.59	0.00	2,536.59	3,152.83	1,576.41	4,795.15	2,368.14	5.15	-1.40	0.476
40.00	-32.93	-25.90	0.00	-2,404.25	0.00	2,404.25	3,108.20	1,554.10	4,621.97	2,282.62	6.73	-1.60	0.461
44.10	-31.63	-25.40	0.00	-2,298.05	0.00	2,298.05	3,070.77	1,535.38	4,481.01	2,213.00	8.17	-1.76	0.448
45.00	-31.22	-25.32	0.00	-2,275.19	0.00	2,275.19	3,062.45	1,531.23	4,450.19	2,197.78	8.51	-1.80	0.438
48.60	-29.69	-24.86	0.00	-2,184.03	0.00	2,184.03	2,379.97	1,189.99	3,474.54	1,715.94	9.92	-1.94	0.493
50.00	-29.24	-24.73	0.00	-2,149.23	0.00	2,149.23	2,371.43	1,185.72	3,439.58	1,698.68	10.50	-1.99	0.488
55.00	-27.76	-24.12	0.00	-2,025.59	0.00	2,025.59	2,340.22	1,170.11	3,315.02	1,637.16	12.70	-2.20	0.468
60.00	-26.30	-23.50	0.00	-1,905.00	0.00	1,905.00	2,307.88	1,153.94	3,191.02	1,575.92	15.10	-2.40	0.448
65.00	-24.85	-22.87	0.00	-1,787.52	0.00	1,787.52	2,274.42	1,137.21	3,067.70	1,515.02	17.72	-2.60	0.428
70.00	-23.42	-22.22	0.00	-1,673.19	0.00	1,673.19	2,239.83	1,119.92	2,945.16	1,454.51	20.55	-2.79	0.409
75.00	-22.02	-21.58	0.00	-1,562.07	0.00	1,562.07	2,204.12	1,102.06	2,823.54	1,394.44	23.57	-2.99	0.389
80.00	-20.62	-20.92	0.00	-1,454.19	0.00	1,454.19	2,167.29	1,083.65	2,702.93	1,334.88	26.80	-3.18	0.369
80.00	-20.62	-20.92	0.00	-1,454.19	0.00	1,454.19	2,167.29	1,083.65	2,702.93	1,334.88	26.80	-3.18	0.400
85.00	-19.35	-20.25	0.00	-1,349.59	0.00	1,349.59	2,129.34	1,064.67	2,583.46	1,275.87	30.23	-3.36	0.379
86.58	-18.94	-20.06	0.00	-1,317.60	0.00	1,317.60	2,117.11	1,058.55	2,545.96	1,257.35	31.35	-3.43	0.373
90.00	-17.84	-19.57	0.00	-1,249.01	0.00	1,249.01	2,090.26	1,045.13	2,465.23	1,217.49	33.86	-3.56	0.352
90.33	-17.70	-19.55	0.00	-1,242.55	0.00	1,242.55	1,547.78	773.89	1,862.15	919.65	34.10	-3.58	0.414
95.00	-16.60	-18.94	0.00	-1,151.25	0.00	1,151.25	1,525.71	762.86	1,787.32	882.69	37.69	-3.76	0.390
100.00	-15.43	-18.28	0.00	-1,056.56	0.00	1,056.56	1,501.00	750.50	1,707.51	843.28	41.73	-3.95	0.364
105.00	-14.28	-17.62	0.00	-965.16	0.00	965.16	1,475.16	737.58	1,628.14	804.08	45.97	-4.15	0.339
110.00	-13.15	-16.96	0.00	-877.07	0.00	877.07	1,448.19	724.10	1,549.32	765.15	50.41	-4.33	0.314
115.00	-12.03	-16.30	0.00	-792.27	0.00	792.27	1,420.11	710.05	1,471.16	726.55	55.04	-4.51	0.289
120.00	-10.93	-15.65	0.00	-710.76	0.00	710.76	1,390.90	695.45	1,393.78	688.34	59.85	-4.68	0.264
120.00	-10.93	-15.65	0.00	-710.76	0.00	710.76	1,390.90	695.45	1,393.78	688.34	59.85	-4.68	0.321
125.00	-10.00	-15.00	0.00	-632.53	0.00	632.53	1,360.57	680.28	1,317.29	650.56	64.84	-4.84	0.292
126.28	-9.75	-14.85	0.00	-613.33	0.00	613.33	1,352.62	676.31	1,297.87	640.97	66.15	-4.89	0.285
126.28	-9.75	-14.85	0.00	-613.33	0.00	613.33	900.61	450.31	868.80	429.07	66.15	-4.89	0.347
130.00	-9.10	-14.39	0.00	-558.10	0.00	558.10	888.95	444.47	835.13	412.44	70.01	-5.03	0.320
135.00	-8.25	-13.78	0.00	-486.15	0.00	486.15	872.29	436.14	789.93	390.12	75.38	-5.23	0.283
140.00	-7.42	-13.17	0.00	-417.27	0.00	417.27	854.50	427.25	744.88	367.87	80.95	-5.40	0.247
140.00	-7.42	-13.17	0.00	-417.27	0.00	417.27	854.50	427.25	744.88	367.87	80.95	-5.40	0.312
145.00	-6.15	-11.93	0.00	-351.43	0.00	351.43	835.60	417.80	700.09	345.75	86.68	-5.56	0.268
150.00	-5.49	-11.36	0.00	-291.77	0.00	291.77	815.57	407.78	655.68	323.81	92.60	-5.75	0.227
155.00	-4.84	-10.79	0.00	-235.00	0.00	235.00	794.42	397.21	611.76	302.12	98.70	-5.91	0.187
160.00	-4.20	-10.23	0.00	-181.06	0.00	181.06	772.14	386.07	568.44	280.73	104.96	-6.05	0.148
160.00	-4.20	-10.23	0.00	-181.06	0.00	181.06	772.14	386.07	568.44	280.73	104.96	-6.05	0.651
165.00	-3.87	-9.44	0.00	-129.92	0.00	129.92	748.74	374.37	525.85	259.70	111.35	-6.16	0.506
170.00	-3.58	-9.11	0.00	-82.72	0.00	82.72	723.19	361.60	483.41	238.74	118.01	-6.56	0.352
175.00	-2.25	-4.38	0.00	-37.18	0.00	37.18	686.95	343.48	435.91	215.28	125.02	-6.81	0.176
180.00	-2.07	-4.06	0.00	-15.28	0.00	15.28	650.71	325.36	390.87	193.04	132.22	-6.95	0.083
181.90	0.00	-3.78	0.00	-7.57	0.00	7.57	636.94	318.47	374.40	184.90	134.98	-6.97	0.041

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



Load Case: 1.2D + 1.0Di + 1.0Wi — 40.00 mph with 1.00 in Radial Ice — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.00

Ice Dead Load Factor : 1.00

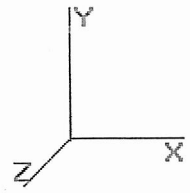
Wind Importance Factor : 1.00
Ice Importance Factor : 1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf		Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	2.724	2.996	0.000	1.200		0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	2.724	2.996	0.000	1.200	*	1.656	5.00	19.753	23.70	71.0	470.0	2,234.9
10.00		1.00	0.70	2.724	2.996	0.000	1.200	*	1.775	5.00	19.501	23.40	70.1	495.7	2,240.5
15.00		1.00	0.70	2.724	2.996	0.000	1.200	*	1.848	5.00	19.211	23.05	69.1	507.3	2,232.0
20.00		1.00	0.70	2.724	2.996	0.000	1.200	*	1.902	5.00	18.905	22.69	68.0	512.7	2,217.3
25.00		1.00	0.70	2.724	2.996	0.000	1.200	*	1.945	5.00	18.589	22.31	66.8	514.5	2,199.1
30.00		1.00	0.70	2.726	2.999	0.000	1.200	*	1.981	5.00	18.268	21.92	65.7	514.0	2,178.5
35.00		1.00	0.73	2.849	3.134	0.000	1.200	*	2.012	5.00	17.942	21.53	67.5	511.7	2,156.1
40.00		1.00	0.76	2.960	3.256	0.000	1.200	*	2.039	5.00	17.613	21.14	68.8	508.2	2,132.5
44.10	Bot - Section 2	1.00	0.78	3.043	3.348	0.000	1.200	*	2.059	4.10	14.194	17.03	57.0	413.7	1,730.7
45.00		1.00	0.78	3.061	3.367	0.000	1.200	*	2.063	0.90	3.133	3.76	12.7	92.2	512.8
48.60	Top - Section 1	1.00	0.80	3.129	3.442	0.000	1.200	*	2.079	3.60	12.429	14.92	51.3	366.0	2,036.5
50.00		1.00	0.81	3.155	3.470	0.000	1.200	*	2.085	1.40	4.786	5.74	19.9	141.9	547.6
55.00		1.00	0.83	3.242	3.566	0.000	1.200	*	2.105	5.00	16.884	20.26	72.2	500.7	1,938.9
60.00		1.00	0.85	3.323	3.656	0.000	1.200	*	2.123	5.00	16.548	19.86	72.6	494.1	1,915.6
65.00		1.00	0.87	3.400	3.740	0.000	1.200	*	2.140	5.00	16.211	19.45	72.8	487.0	1,891.8
70.00		1.00	0.89	3.473	3.820	0.000	1.200	*	2.156	5.00	15.873	19.05	72.8	479.5	1,867.5
75.00		1.00	0.91	3.542	3.896	0.000	1.200	*	2.171	5.00	15.534	18.64	72.6	471.6	1,842.8
80.00	Reinf. Top Reinf	1.00	0.92	3.608	3.969	0.000	1.200	*	2.185	5.00	15.195	18.23	72.4	463.3	1,817.8
85.00		1.00	0.94	3.671	4.038	0.000	1.200	*	2.198	5.00	14.854	17.83	72.0	454.7	1,709.8
86.58	Bot - Section 3	1.00	0.94	3.690	4.059	0.000	1.200	*	2.203	1.58	4.622	5.55	22.5	142.8	536.0
90.00		1.00	0.95	3.731	4.105	0.000	1.200	*	2.211	3.42	10.037	12.04	49.4	309.8	1,486.7
90.33	Top - Section 2	1.00	0.96	3.735	4.109	0.000	1.200	*	2.212	0.33	0.960	1.15	4.7	29.9	142.7
95.00		1.00	0.97	3.789	4.168	0.000	1.200	*	2.223	4.67	13.428	16.11	67.2	414.5	1,455.4
100.0		1.00	0.98	3.845	4.230	0.000	1.200	*	2.234	5.00	14.046	16.86	71.3	434.5	1,536.0
105.0		1.00	1.00	3.899	4.289	0.000	1.200	*	2.245	5.00	13.704	16.44	70.5	424.9	1,513.0
110.0		1.00	1.01	3.952	4.347	0.000	1.200	*	2.256	5.00	13.362	16.03	69.7	415.1	1,489.9
115.0		1.00	1.02	4.002	4.402	0.000	1.200	*	2.266	5.00	13.019	15.62	68.8	405.2	1,466.5
120.0	Reinf. Top Reinf	1.00	1.04	4.051	4.456	0.000	1.200	*	2.276	5.00	12.675	15.21	67.8	395.0	1,443.0
125.0		1.00	1.05	4.099	4.508	0.000	1.200	*	2.285	5.00	12.332	14.80	66.7	384.7	1,269.0
126.2	Top - Section 3	1.00	1.05	4.111	4.522	0.000	1.200	*	2.287	1.28	3.101	3.72	16.8	97.8	322.0
130.0		1.00	1.06	4.145	4.559	0.000	1.200	*	2.294	3.72	8.886	10.66	48.6	278.4	855.4
135.0		1.00	1.07	4.190	4.609	0.000	1.200	*	2.303	5.00	11.644	13.97	64.4	363.6	1,130.3
140.0	Reinf. Top Reinf	1.00	1.08	4.233	4.657	0.000	1.200	*	2.311	5.00	11.300	13.56	63.1	352.9	1,109.5
145.0	Appertunance(s)	1.00	1.09	4.276	4.704	0.000	1.200	*	2.319	5.00	10.955	13.15	61.8	342.0	958.3
150.0		1.00	1.11	4.318	4.749	0.000	1.200	*	2.327	5.00	10.611	12.73	60.5	331.0	937.2
155.0		1.00	1.12	4.358	4.794	0.000	1.200	*	2.335	5.00	10.266	12.32	59.1	319.8	916.0
160.0	Reinf. Top	1.00	1.13	4.398	4.838	0.000	1.200	*	2.342	5.00	9.921	11.90	57.6	308.6	894.8
165.0	Appertunance(s)	1.00	1.14	4.437	4.881	0.000	1.200		2.349	5.00	9.575	11.49	56.1	297.3	512.6
170.0		1.00	1.15	4.475	4.922	0.000	1.200		2.356	5.00	9.230	11.08	54.5	285.8	491.2
175.0	Appertunance(s)	1.00	1.16	4.512	4.963	0.000	1.200		2.363	5.00	8.884	10.66	52.9	274.3	469.6
180.0		1.00	1.16	4.549	5.003	0.000	1.200		2.370	5.00	8.539	10.25	51.3	262.6	447.9
181.9	Appertunance(s)	1.00	1.17	4.562	5.018	0.000	1.200		2.372	1.90	3.153	3.78	19.0	98.1	165.9
							Totals:			181.90			2,419.7	15,367.4	56,951.7

* = Cf Adjusted By Linear Load Ra Effect

Pole :	302502	Code: ANSI/TIA-222 Rev G	9/17/2012 5:15:27 PM
Location :	Harwinton, CT	Struct Class : II	Page: 15
Height :	181.9 (ft)	Exposure Category : B	
Base Dia :	43.00 (in)	Topographic Category : 1	
Top Dia :	14.50 (in)	Base Elev : 0.000 (ft)	
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		



Load Case: 1.2D + 1.0Di + 1.0Wi — 40.00 mph with 1.00 in Radial Ice — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.00

Ice Dead Load Factor : 1.00

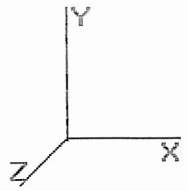
Wind Importance Factor : 1.00
Ice Importance Factor : 1.00

Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
145.0	KMW HB-X-WM-17-65-	3	4.276	4.704	0.80	0.80	10.94	0.000	0.000	51.47	0.00	0.00	588.67
145.0	KMW TTA (HB-X-WM-	3	4.276	4.704	0.40	0.80	1.91	0.000	0.000	9.00	0.00	0.00	214.25
145.0	Side Arms	1	4.276	4.704	1.00	1.00	17.96	0.000	0.000	84.49	0.00	0.00	1,175.37
165.0	RFS APXV18-206517-C	3	4.437	4.881	0.64	0.80	13.19	0.000	0.000	64.37	0.00	0.00	619.95
175.0	Antel BXA-171063-12B	3	4.512	4.963	0.70	0.80	13.59	0.000	0.000	67.45	0.00	0.00	590.07
175.0	Antel BXA-70063-6CF-	3	4.512	4.963	0.62	0.80	17.20	0.000	0.000	85.38	0.00	0.00	794.35
175.0	Antel LPA-80063/6CF	6	4.512	4.963	0.76	0.80	52.03	0.000	0.000	258.23	0.00	0.00	2,644.00
175.0	Flat Low Profile Pla	1	4.512	4.963	1.00	1.00	52.00	0.000	0.000	258.12	0.00	0.00	2,479.07
175.0	RFS FD9R6004/2C-3L	6	4.512	4.963	0.40	0.80	1.69	0.000	0.000	8.37	0.00	0.00	194.50
181.9	Allgon 7770.00	6	4.584	5.043	0.58	0.75	24.17	0.000	3.100	121.91	0.00	377.91	1,445.35
181.9	Andrew ABT-DMDF-	1	4.584	5.043	1.00	1.00	0.21	0.000	3.100	1.05	0.00	3.25	11.56
181.9	Ericsson RRUS 11	6	4.584	5.043	0.40	0.80	8.36	0.000	3.100	42.18	0.00	130.75	1,083.14
181.9	KMW AM-X-CD-16-65-	3	4.584	5.043	0.63	0.80	18.62	0.000	3.100	93.91	0.00	291.11	1,001.25
181.9	Platform w/ Handrail	1	4.562	5.018	1.00	1.00	60.49	0.000	0.000	303.59	0.00	0.00	3,764.96
181.9	Powerwave LGP21401	6	4.584	5.043	0.58	0.75	6.09	0.000	3.100	30.71	0.00	95.21	415.79
										1,480.22			17,022.28

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



Load Case: 1.2D + 1.0Di + 1.0Wi — 40.00 mph with 1.00 in Radial Ice — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.00

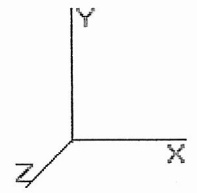
Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00
Ice Importance Factor : 1.00

Linear Appurtenance Segment Forces (Factored)

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	qz (psf)	Ra	Cf Adjust Factor	FX (lb)	Dead Load (lb)
5.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	4.92	0.00	2.724	0.193	1.278	0.00	121.48
10.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	5.02	0.00	2.724	0.197	1.290	0.00	129.86
15.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.08	6.10	2.724	0.200	0.000	18.27	135.13
20.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.13	6.15	2.724	0.204	0.000	18.43	139.04
25.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.16	6.20	2.724	0.209	0.000	18.56	142.18
30.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.19	6.23	2.726	0.213	0.000	18.69	144.81
35.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.22	6.26	2.849	0.218	0.000	19.62	147.09
40.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.24	6.29	2.960	0.223	0.000	20.47	149.10
44.10	(3) 4.25" Solid Rod	Yes	4.10	1.200	8.50	4.31	5.17	3.043	0.227	0.000	17.32	123.48
45.00	(3) 4.25" Solid Rod	Yes	0.90	1.200	8.50	0.95	1.14	3.061	0.230	0.000	3.83	27.16
48.60	(3) 4.25" Solid Rod	Yes	3.60	1.200	8.50	3.80	4.56	3.129	0.232	0.000	15.68	109.51
50.00	(3) 4.25" Solid Rod	Yes	1.40	1.200	8.50	1.48	1.77	3.155	0.231	0.000	6.15	42.71
55.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.30	6.35	3.242	0.234	0.000	22.66	154.04
60.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.31	6.37	3.323	0.240	0.000	23.30	155.43
65.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.33	6.39	3.400	0.245	0.000	23.90	156.72
70.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.34	6.41	3.473	0.252	0.000	24.47	157.92
75.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.35	6.42	3.542	0.258	0.000	25.02	159.06
80.00	(3) 4.25" Solid Rod	Yes	5.00	1.200	8.50	5.36	6.44	3.608	0.265	0.000	25.54	160.13
85.00	(3) 4.0" Solid Rod	Yes	5.00	1.200	8.00	5.17	6.20	3.671	0.256	0.000	25.03	152.15
86.58	(3) 4.0" Solid Rod	Yes	1.58	1.200	8.00	1.63	1.96	3.690	0.261	0.000	7.96	48.17
90.00	(3) 4.0" Solid Rod	Yes	3.42	1.200	8.00	3.54	4.25	3.731	0.264	0.000	17.44	104.70
90.33	(3) 4.0" Solid Rod	Yes	0.33	1.200	8.00	0.34	0.41	3.735	0.267	0.000	1.68	10.11
95.00	(3) 4.0" Solid Rod	Yes	4.67	1.200	8.00	4.84	5.81	3.789	0.266	0.000	24.23	143.80
100.0	(3) 4.0" Solid Rod	Yes	5.00	1.200	8.00	5.20	6.23	3.845	0.274	0.000	26.37	154.81
105.0	(3) 4.0" Solid Rod	Yes	5.00	1.200	8.00	5.20	6.25	3.899	0.282	0.000	26.79	155.62
110.0	(3) 4.0" Solid Rod	Yes	5.00	1.200	8.00	5.21	6.26	3.952	0.290	0.000	27.19	156.39
115.0	(3) 4.0" Solid Rod	Yes	5.00	1.200	8.00	5.22	6.27	4.002	0.299	0.000	27.58	157.14
120.0	(3) 4.0" Solid Rod	Yes	5.00	1.200	8.00	5.23	6.28	4.051	0.309	0.000	27.96	157.86
125.0	(3) 3.5" Solid Rod	Yes	5.00	1.200	7.00	4.82	5.78	4.099	0.280	0.000	26.08	140.53
126.2	(3) 3.5" Solid Rod	Yes	1.28	1.200	7.00	1.23	1.48	4.111	0.286	0.000	6.70	36.02
130.0	(3) 3.5" Solid Rod	Yes	3.72	1.200	7.00	3.59	4.31	4.145	0.291	0.000	19.65	105.01
135.0	(3) 3.5" Solid Rod	Yes	5.00	1.200	7.00	4.84	5.80	4.190	0.300	0.000	26.74	141.74
140.0	(3) 3.5" Solid Rod	Yes	5.00	1.200	7.00	4.84	5.81	4.233	0.311	0.000	27.06	142.32
145.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	4.43	5.32	4.276	0.277	0.000	25.02	125.29
150.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	4.44	5.33	4.318	0.288	0.000	25.30	125.79
155.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	4.45	5.33	4.358	0.300	0.000	25.58	126.27
160.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	4.45	5.34	4.398	0.314	0.000	25.84	126.74
										Totals:	722.13	4,665.29

Pole : 302502	Code: ANSI/TIA-222 Rev G		9/17/2012 5:15:27 PM
Location : Harwinton, CT	Struct Class : II		Page: 17
Height : 181.9 (ft)	Exposure Category : B		
Base Dia : 43.00 (in)	Topographic Category : 1		
Top Dia : 14.50 (in)	Base Elev : 0.000 (ft)		
Shape : 12 Sides			
Taper : 0.162864 (in/ft)			



Load Case: 1.2D + 1.0Di + 1.0Wi — 40.00 mph with 1.00 in Radial Ice — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.00

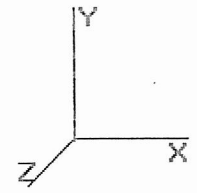
Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00
Ice Importance Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	71.02	2,572.74	0.00	0.00
10.00	70.11	2,586.74	0.00	0.00
15.00	87.34	2,583.54	0.00	0.00
20.00	86.40	2,572.78	0.00	0.00
25.00	85.40	2,557.66	0.00	0.00
30.00	84.42	2,539.68	0.00	0.00
35.00	87.09	2,519.63	0.00	0.00
40.00	89.29	2,498.03	0.00	0.00
44.10	74.34	2,031.62	0.00	0.00
45.00	16.49	578.89	0.00	0.00
48.60	67.02	2,301.83	0.00	0.00
50.00	26.08	650.88	0.00	0.00
55.00	94.90	2,309.37	0.00	0.00
60.00	95.89	2,287.44	0.00	0.00
65.00	96.66	2,264.90	0.00	0.00
70.00	97.24	2,241.84	0.00	0.00
75.00	97.65	2,218.31	0.00	0.00
80.00	97.90	2,194.36	0.00	0.00
85.00	97.01	2,078.39	0.00	0.00
86.58	30.47	652.51	0.00	0.00
90.00	66.87	1,739.41	0.00	0.00
90.33	6.42	167.06	0.00	0.00
95.00	91.39	1,801.36	0.00	0.00
100.0	97.67	1,907.20	0.00	0.00
105.0	97.33	1,885.05	0.00	0.00
110.0	96.89	1,862.67	0.00	0.00
115.0	96.36	1,840.06	0.00	0.00
120.0	95.75	1,817.25	0.00	0.00
125.0	92.80	1,625.92	0.00	0.00
126.2	23.52	413.44	0.00	0.00
130.0	68.27	1,121.37	0.00	0.00
135.0	91.14	1,488.45	0.00	0.00
140.0	90.21	1,468.24	0.00	0.00
145.0	231.82	3,278.23	0.00	0.00
150.0	85.77	1,249.88	0.00	0.00
155.0	84.63	1,229.20	0.00	0.00
160.0	83.44	1,208.40	0.00	0.00
165.0	120.46	1,319.47	0.00	0.00
170.0	54.52	648.52	0.00	0.00
175.0	730.46	7,328.93	0.00	0.00
180.0	51.27	546.24	0.00	0.00
181.9	612.33	7,925.30	0.00	898.23
Totals:	4,622.04	86,112.78	0.00	898.23

Pole :	302502	Code: ANSI/TIA-222 Rev G	9/17/2012 5:15:27 PM
Location :	Harwinton, CT	Struct Class : II	Page: 18
Height :	181.9 (ft)	Exposure Category : B	
Base Dia :	43.00 (in)	Topographic Category : 1	
Top Dia :	14.50 (in)	Base Elev : 0.000 (ft)	
Shape :	12 Sides		
Taper :	0.162864 (in/ft)		



Load Case: 1.2D + 1.0Di + 1.0Wi — 40.00 mph with 1.00 in Radial Ice — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.00

Ice Dead Load Factor : 1.00

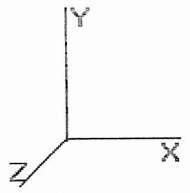
Wind Importance Factor : 1.00
Ice Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-86.11	-4.65	0.00	-607.97	0.00	607.97	3,433.77	1,716.88	6,036.76	2,981.33	0.00	0.00	0.113
5.00	-83.54	-4.63	0.00	-584.73	0.00	584.73	3,397.00	1,698.50	5,857.04	2,892.57	0.02	-0.03	0.110
10.00	-80.95	-4.60	0.00	-561.60	0.00	561.60	3,359.12	1,679.56	5,677.91	2,804.10	0.07	-0.07	0.108
15.00	-78.36	-4.56	0.00	-538.59	0.00	538.59	3,320.10	1,660.05	5,499.48	2,715.99	0.16	-0.10	0.105
20.00	-75.78	-4.51	0.00	-515.79	0.00	515.79	3,279.97	1,639.98	5,321.88	2,628.28	0.29	-0.14	0.102
25.00	-73.22	-4.47	0.00	-493.23	0.00	493.23	3,238.71	1,619.36	5,145.22	2,541.03	0.46	-0.17	0.100
30.00	-70.68	-4.42	0.00	-470.90	0.00	470.90	3,196.33	1,598.17	4,969.60	2,454.30	0.66	-0.21	0.097
35.00	-68.16	-4.36	0.00	-448.81	0.00	448.81	3,152.83	1,576.41	4,795.15	2,368.14	0.90	-0.24	0.094
40.00	-65.66	-4.30	0.00	-427.01	0.00	427.01	3,108.20	1,554.10	4,621.97	2,282.62	1.17	-0.28	0.092
44.10	-63.63	-4.23	0.00	-409.39	0.00	409.39	3,070.77	1,535.38	4,481.01	2,213.00	1.42	-0.31	0.089
45.00	-63.05	-4.23	0.00	-405.58	0.00	405.58	3,062.45	1,531.23	4,450.19	2,197.78	1.48	-0.32	0.087
48.60	-60.75	-4.17	0.00	-390.35	0.00	390.35	2,379.97	1,189.99	3,474.54	1,715.94	1.73	-0.34	0.099
50.00	-60.09	-4.16	0.00	-384.51	0.00	384.51	2,371.43	1,185.72	3,439.58	1,698.68	1.83	-0.35	0.098
55.00	-57.78	-4.09	0.00	-363.70	0.00	363.70	2,340.22	1,170.11	3,315.02	1,637.16	2.22	-0.39	0.094
60.00	-55.49	-4.01	0.00	-343.25	0.00	343.25	2,307.88	1,153.94	3,191.02	1,575.92	2.64	-0.42	0.090
65.00	-53.23	-3.93	0.00	-323.19	0.00	323.19	2,274.42	1,137.21	3,067.70	1,515.02	3.10	-0.46	0.087
70.00	-50.98	-3.85	0.00	-303.53	0.00	303.53	2,239.83	1,119.92	2,945.16	1,454.51	3.60	-0.49	0.083
75.00	-48.76	-3.76	0.00	-284.30	0.00	284.30	2,204.12	1,102.06	2,823.54	1,394.44	4.14	-0.53	0.079
80.00	-46.57	-3.67	0.00	-265.50	0.00	265.50	2,167.29	1,083.65	2,702.93	1,334.88	4.71	-0.56	0.076
80.00	-46.57	-3.67	0.00	-265.50	0.00	265.50	2,167.29	1,083.65	2,702.93	1,334.88	4.71	-0.56	0.082
85.00	-44.49	-3.57	0.00	-247.16	0.00	247.16	2,129.34	1,064.67	2,583.46	1,275.87	5.32	-0.60	0.078
86.58	-43.84	-3.55	0.00	-241.52	0.00	241.52	2,117.11	1,058.55	2,545.96	1,257.35	5.52	-0.61	0.077
90.00	-42.10	-3.47	0.00	-229.40	0.00	229.40	2,090.26	1,045.13	2,465.23	1,217.49	5.97	-0.63	0.073
90.33	-41.93	-3.47	0.00	-228.25	0.00	228.25	1,547.78	773.89	1,862.15	919.65	6.01	-0.64	0.086
95.00	-40.13	-3.39	0.00	-212.03	0.00	212.03	1,525.71	762.86	1,787.32	882.69	6.65	-0.67	0.081
100.00	-38.22	-3.29	0.00	-195.09	0.00	195.09	1,501.00	750.50	1,707.51	843.28	7.37	-0.71	0.076
105.00	-36.33	-3.19	0.00	-178.64	0.00	178.64	1,475.16	737.58	1,628.14	804.08	8.13	-0.74	0.071
110.00	-34.47	-3.09	0.00	-162.69	0.00	162.69	1,448.19	724.10	1,549.32	765.15	8.93	-0.78	0.066
115.00	-32.63	-2.99	0.00	-147.24	0.00	147.24	1,420.11	710.05	1,471.16	726.55	9.76	-0.81	0.061
120.00	-30.81	-2.88	0.00	-132.31	0.00	132.31	1,390.90	695.45	1,393.78	688.34	10.62	-0.84	0.056
120.00	-30.81	-2.88	0.00	-132.31	0.00	132.31	1,390.90	695.45	1,393.78	688.34	10.62	-0.84	0.068
125.00	-29.19	-2.77	0.00	-117.90	0.00	117.90	1,360.57	680.28	1,317.29	650.56	11.52	-0.87	0.062
126.28	-28.77	-2.75	0.00	-114.35	0.00	114.35	1,352.62	676.31	1,297.87	640.97	11.76	-0.88	0.061
126.28	-28.77	-2.75	0.00	-114.35	0.00	114.35	900.61	450.31	868.80	429.07	11.76	-0.88	0.074
130.00	-27.65	-2.68	0.00	-104.11	0.00	104.11	888.95	444.47	835.13	412.44	12.45	-0.91	0.069
135.00	-26.16	-2.58	0.00	-90.69	0.00	90.69	872.29	436.14	789.93	390.12	13.42	-0.94	0.061
140.00	-24.69	-2.48	0.00	-77.78	0.00	77.78	854.50	427.25	744.88	367.87	14.43	-0.98	0.054
140.00	-24.69	-2.48	0.00	-77.78	0.00	77.78	854.50	427.25	744.88	367.87	14.43	-0.98	0.068
145.00	-21.42	-2.21	0.00	-65.37	0.00	65.37	835.60	417.80	700.09	345.75	15.47	-1.01	0.059
150.00	-20.17	-2.11	0.00	-54.34	0.00	54.34	815.57	407.78	655.68	323.81	16.54	-1.04	0.051
155.00	-18.94	-2.01	0.00	-43.80	0.00	43.80	794.42	397.21	611.76	302.12	17.65	-1.07	0.043
160.00	-17.73	-1.91	0.00	-33.74	0.00	33.74	772.14	386.07	568.44	280.73	18.78	-1.10	0.035
160.00	-17.73	-1.91	0.00	-33.74	0.00	33.74	772.14	386.07	568.44	280.73	18.78	-1.10	0.143
165.00	-16.42	-1.78	0.00	-24.18	0.00	24.18	748.74	374.37	525.85	259.70	19.94	-1.12	0.115
170.00	-15.77	-1.73	0.00	-15.28	0.00	15.28	723.19	361.60	483.41	238.74	21.15	-1.19	0.086
175.00	-8.46	-0.85	0.00	-6.63	0.00	6.63	686.95	343.48	435.91	215.28	22.43	-1.24	0.043
180.00	-7.91	-0.79	0.00	-2.39	0.00	2.39	650.71	325.36	390.87	193.04	23.74	-1.26	0.025
181.90	0.00	-0.61	0.00	-0.90	0.00	0.90	636.94	318.47	374.40	184.90	24.24	-1.26	0.005

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



Load Case: 1.0D + 1.0W — 60.00 mph Serviceability — 25 Iterations

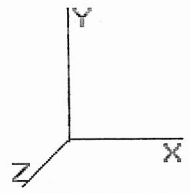
Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Wind Importance Factor : 1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf		Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.742	186.22	1.000		0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.742	182.70	1.000	*	0.000	5.00	18.373	18.37	123.9	0.0	1,591.4
10.00		1.00	0.70	6.129	6.742	179.17	1.000	*	0.000	5.00	18.022	18.02	121.5	0.0	1,574.7
15.00		1.00	0.70	6.129	6.742	175.64	1.200	*	0.000	5.00	17.671	21.20	143.0	0.0	1,557.9
20.00		1.00	0.70	6.129	6.742	172.12	1.200	*	0.000	5.00	17.319	20.78	140.1	0.0	1,541.2
25.00		1.00	0.70	6.129	6.742	168.59	1.200	*	0.000	5.00	16.968	20.36	137.3	0.0	1,524.5
30.00		1.00	0.70	6.134	6.747	165.13	1.200	*	0.000	5.00	16.617	19.94	134.5	0.0	1,507.7
35.00		1.00	0.73	6.410	7.051	165.20	1.200	*	0.000	5.00	16.265	19.52	137.6	0.0	1,491.0
40.00		1.00	0.76	6.659	7.325	164.71	1.200	*	0.000	5.00	15.914	19.10	139.9	0.0	1,474.3
44.10	Bot - Section 2	1.00	0.78	6.848	7.532	163.96	1.200	*	0.000	4.10	12.788	15.35	115.6	0.0	1,196.4
45.00		1.00	0.78	6.887	7.576	163.76	1.200	*	0.000	0.90	2.824	3.39	25.7	0.0	372.2
48.60	Top - Section 1	1.00	0.80	7.040	7.744	162.85	1.200	*	0.000	3.60	11.182	13.42	103.9	0.0	1,479.0
50.00		1.00	0.81	7.098	7.807	165.37	1.200	*	0.000	1.40	4.299	5.16	40.3	0.0	371.9
55.00		1.00	0.83	7.294	8.023	163.79	1.200	*	0.000	5.00	15.130	18.16	145.7	0.0	1,319.2
60.00		1.00	0.85	7.477	8.225	161.94	1.200	*	0.000	5.00	14.779	17.73	145.9	0.0	1,305.2
65.00		1.00	0.87	7.650	8.415	159.86	1.200	*	0.000	5.00	14.427	17.31	145.7	0.0	1,291.3
70.00		1.00	0.89	7.814	8.595	157.58	1.200	*	0.000	5.00	14.076	16.89	145.2	0.0	1,277.4
75.00		1.00	0.91	7.969	8.766	155.12	1.200	*	0.000	5.00	13.725	16.47	144.4	0.0	1,263.4
80.00	Reinf. Top Reinf	1.00	0.92	8.118	8.930	152.50	1.200	*	0.000	5.00	13.374	16.05	143.3	0.0	1,249.5
85.00		1.00	0.94	8.260	9.086	149.73	1.200	*	0.000	5.00	13.022	15.63	142.0	0.0	1,152.9
86.58	Bot - Section 3	1.00	0.94	8.303	9.133	148.83	1.200	*	0.000	1.58	4.042	4.85	44.3	0.0	361.4
90.00		1.00	0.95	8.396	9.235	146.83	1.200	*	0.000	3.42	8.777	10.53	97.3	0.0	1,053.9
90.33	Top - Section 2	1.00	0.96	8.404	9.245	146.63	1.200	*	0.000	0.33	0.838	1.01	9.3	0.0	101.1
95.00		1.00	0.97	8.526	9.379	146.36	1.200	*	0.000	4.67	11.697	14.04	131.6	0.0	967.3
100.0		1.00	0.98	8.652	9.517	143.25	1.200	*	0.000	5.00	12.184	14.62	139.2	0.0	1,024.8
105.0		1.00	1.00	8.774	9.651	140.03	1.200	*	0.000	5.00	11.833	14.20	137.0	0.0	1,013.7
110.0		1.00	1.01	8.891	9.780	136.72	1.200	*	0.000	5.00	11.482	13.78	134.8	0.0	1,002.5
115.0		1.00	1.02	9.005	9.905	133.31	1.200	*	0.000	5.00	11.130	13.36	132.3	0.0	991.4
120.0	Reinf. Top Reinf	1.00	1.04	9.115	10.02	129.82	1.200	*	0.000	5.00	10.779	12.93	129.7	0.0	980.2
125.0		1.00	1.05	9.222	10.14	126.26	1.200	*	0.000	5.00	10.428	12.51	126.9	0.0	818.8
126.2	Top - Section 3	1.00	1.05	9.249	10.17	125.33	1.200	*	0.000	1.28	2.613	3.14	31.9	0.0	207.8
130.0		1.00	1.06	9.326	10.25	122.62	1.200	*	0.000	3.72	7.464	8.96	91.9	0.0	541.7
135.0		1.00	1.07	9.427	10.36	118.91	1.200	*	0.000	5.00	9.725	11.67	121.0	0.0	720.8
140.0	Reinf. Top Reinf	1.00	1.08	9.525	10.47	115.13	1.200	*	0.000	5.00	9.374	11.25	117.9	0.0	712.4
145.0	Appertunance(s)	1.00	1.09	9.621	10.58	111.29	1.200	*	0.000	5.00	9.023	10.83	114.6	0.0	573.7
150.0		1.00	1.11	9.715	10.68	107.39	1.200	*	0.000	5.00	8.672	10.41	111.2	0.0	565.3
155.0		1.00	1.12	9.806	10.78	103.43	1.200	*	0.000	5.00	8.320	9.98	107.7	0.0	557.0
160.0	Reinf. Top	1.00	1.13	9.896	10.88	99.425	1.200	*	0.000	5.00	7.969	9.56	104.1	0.0	548.6
165.0	Appertunance(s)	1.00	1.14	9.983	10.98	95.362	1.000		0.000	5.00	7.618	7.62	83.7	0.0	179.5
170.0		1.00	1.15	10.069	11.07	91.249	1.000		0.000	5.00	7.266	7.27	80.5	0.0	171.1
175.0	Appertunance(s)	1.00	1.16	10.152	11.16	87.089	1.000		0.000	5.00	6.915	6.92	77.2	0.0	162.7
180.0		1.00	1.16	10.234	11.25	82.882	1.000		0.000	5.00	6.564	6.56	73.9	0.0	154.4
181.9	Appertunance(s)	1.00	1.17	10.265	11.29	81.272	1.000		0.000	1.90	2.402	2.40	27.1	0.0	56.5
								Totals:		181.90			4,600.3	0.0	38,007.5

* = Cf Adjusted By Linear Load Ra Effect



Load Case: 1.0D + 1.0W — 60.00 mph Serviceability — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

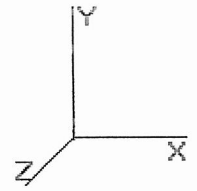
Wind Importance Factor : 1.00

Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
145.0	KMW HB-X-WM-17-65-	3	9.621	10.583	0.80	0.80	4.61	0.000	0.000	48.77	0.00	0.00	90.00
145.0	KMW TTA (HB-X-WM-	3	9.621	10.583	0.40	0.80	0.78	0.000	0.000	8.26	0.00	0.00	47.70
145.0	Side Arms	1	9.621	10.583	1.00	1.00	8.50	0.000	0.000	89.96	0.00	0.00	560.00
165.0	RFS APXV18-206517-C	3	9.983	10.981	0.64	0.80	9.93	0.000	0.000	109.01	0.00	0.00	79.20
175.0	Antel BXA-171063-12B	3	10.152	11.168	0.70	0.80	9.99	0.000	0.000	111.56	0.00	0.00	45.00
175.0	Antel BXA-70063-6CF-	3	10.152	11.168	0.62	0.80	13.99	0.000	0.000	156.23	0.00	0.00	51.00
175.0	Antel LPA-80063/6CF	6	10.152	11.168	0.76	0.80	43.73	0.000	0.000	488.36	0.00	0.00	162.00
175.0	Flat Low Profile Pla	1	10.152	11.168	1.00	1.00	26.10	0.000	0.000	291.47	0.00	0.00	1,500.00
175.0	RFS FD9R6004/2C-3L	6	10.152	11.168	0.40	0.80	0.86	0.000	0.000	9.65	0.00	0.00	18.60
181.9	Allgon 7770.00	6	10.315	11.346	0.58	0.75	19.09	0.000	3.100	216.62	0.00	671.53	210.00
181.9	Andrew ABT-DMDF-	1	10.315	11.346	1.00	1.00	0.05	0.000	3.100	0.57	0.00	1.76	1.10
181.9	Ericsson RRUS 11	6	10.315	11.346	0.80	0.80	14.35	0.000	3.100	162.84	0.00	504.81	300.00
181.9	KMW AM-X-CD-16-65-	3	10.315	11.346	0.63	0.80	15.66	0.000	3.100	177.69	0.00	550.85	145.50
181.9	Platform w/ Handrail	1	10.265	11.292	1.00	1.00	27.20	0.000	0.000	307.13	0.00	0.00	2,000.00
181.9	Powerwave LGP21401	6	10.315	11.346	0.58	0.75	4.47	0.000	3.100	50.72	0.00	157.22	84.60
										2,228.83			5,294.70

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



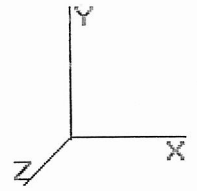
Load Case: 1.0D + 1.0W — 60.00 mph Serviceability — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Wind Importance Factor : 1.00

Linear Appurtenance Segment Forces (Factored)

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	qz (psf)	Ra	Cf Adjust Factor	FX (lb)	Dead Load (lb)
5.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	3.54	0.00	6.129	0.193	1.278	0.00	0.00
10.00	(3) 4.25" Solid Rod	Yes	5.00	0.000	8.50	3.54	0.00	6.129	0.197	1.290	0.00	0.00
15.00	(3) 4.25" Solid Rod	Yes	5.00	1.080	8.50	3.54	3.82	6.129	0.200	0.000	25.78	0.00
20.00	(3) 4.25" Solid Rod	Yes	5.00	1.080	8.50	3.54	3.82	6.129	0.204	0.000	25.78	0.00
25.00	(3) 4.25" Solid Rod	Yes	5.00	1.080	8.50	3.54	3.82	6.129	0.209	0.000	25.78	0.00
30.00	(3) 4.25" Solid Rod	Yes	5.00	1.079	8.50	3.54	3.82	6.134	0.213	0.000	25.80	0.00
35.00	(3) 4.25" Solid Rod	Yes	5.00	1.056	8.50	3.54	3.74	6.410	0.218	0.000	26.37	0.00
40.00	(3) 4.25" Solid Rod	Yes	5.00	1.036	8.50	3.54	3.67	6.659	0.223	0.000	26.88	0.00
44.10	(3) 4.25" Solid Rod	Yes	4.10	1.022	8.50	2.90	2.97	6.848	0.227	0.000	22.35	0.00
45.00	(3) 4.25" Solid Rod	Yes	0.90	1.019	8.50	0.64	0.65	6.887	0.230	0.000	4.92	0.00
48.60	(3) 4.25" Solid Rod	Yes	3.60	1.008	8.50	2.55	2.57	7.040	0.232	0.000	19.90	0.00
50.00	(3) 4.25" Solid Rod	Yes	1.40	1.003	8.50	0.99	1.00	7.098	0.231	0.000	7.77	0.00
55.00	(3) 4.25" Solid Rod	Yes	5.00	0.990	8.50	3.54	3.51	7.294	0.234	0.000	28.13	0.00
60.00	(3) 4.25" Solid Rod	Yes	5.00	0.978	8.50	3.54	3.46	7.477	0.240	0.000	28.48	0.00
65.00	(3) 4.25" Solid Rod	Yes	5.00	0.967	8.50	3.54	3.42	7.650	0.245	0.000	28.81	0.00
70.00	(3) 4.25" Solid Rod	Yes	5.00	0.956	8.50	3.54	3.39	7.814	0.252	0.000	29.11	0.00
75.00	(3) 4.25" Solid Rod	Yes	5.00	0.947	8.50	3.54	3.35	7.969	0.258	0.000	29.40	0.00
80.00	(3) 4.25" Solid Rod	Yes	5.00	0.938	8.50	3.54	3.32	8.118	0.265	0.000	29.68	0.00
85.00	(3) 4.0" Solid Rod	Yes	5.00	0.988	8.00	3.33	3.29	8.260	0.256	0.000	29.93	0.00
86.58	(3) 4.0" Solid Rod	Yes	1.58	0.986	8.00	1.05	1.04	8.303	0.261	0.000	9.48	0.00
90.00	(3) 4.0" Solid Rod	Yes	3.42	0.980	8.00	2.28	2.24	8.396	0.264	0.000	20.64	0.00
90.33	(3) 4.0" Solid Rod	Yes	0.33	0.980	8.00	0.22	0.22	8.404	0.267	0.000	1.99	0.00
95.00	(3) 4.0" Solid Rod	Yes	4.67	0.973	8.00	3.11	3.03	8.526	0.266	0.000	28.41	0.00
100.0	(3) 4.0" Solid Rod	Yes	5.00	0.966	8.00	3.33	3.22	8.652	0.274	0.000	30.64	0.00
105.0	(3) 4.0" Solid Rod	Yes	5.00	0.959	8.00	3.33	3.20	8.774	0.282	0.000	30.85	0.00
110.0	(3) 4.0" Solid Rod	Yes	5.00	0.953	8.00	3.33	3.18	8.891	0.290	0.000	31.06	0.00
115.0	(3) 4.0" Solid Rod	Yes	5.00	0.947	8.00	3.33	3.16	9.005	0.299	0.000	31.25	0.00
120.0	(3) 4.0" Solid Rod	Yes	5.00	0.941	8.00	3.33	3.14	9.115	0.309	0.000	31.44	0.00
125.0	(3) 3.5" Solid Rod	Yes	5.00	1.069	7.00	2.92	3.12	9.222	0.280	0.000	31.63	0.00
126.2	(3) 3.5" Solid Rod	Yes	1.28	1.067	7.00	0.75	0.80	9.249	0.286	0.000	8.11	0.00
130.0	(3) 3.5" Solid Rod	Yes	3.72	1.063	7.00	2.17	2.31	9.326	0.291	0.000	23.66	0.00
135.0	(3) 3.5" Solid Rod	Yes	5.00	1.057	7.00	2.92	3.08	9.427	0.300	0.000	31.98	0.00
140.0	(3) 3.5" Solid Rod	Yes	5.00	1.052	7.00	2.92	3.07	9.525	0.311	0.000	32.15	0.00
145.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	2.50	3.00	9.621	0.277	0.000	31.75	0.00
150.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	2.50	3.00	9.715	0.288	0.000	32.06	0.00
155.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	2.50	3.00	9.806	0.300	0.000	32.36	0.00
160.0	(3) 3" Solid Rod	Yes	5.00	1.200	6.00	2.50	3.00	9.896	0.314	0.000	32.66	0.00
										Totals:	886.99	0.00



Load Case: 1.0D + 1.0W — 60.00 mph Serviceability — 25 Iterations

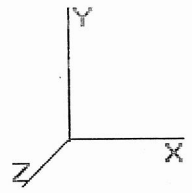
Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00
Wind Importance Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	123.86	1,771.72	0.00	0.00
10.00	121.49	1,754.99	0.00	0.00
15.00	168.74	1,738.26	0.00	0.00
20.00	165.89	1,721.53	0.00	0.00
25.00	163.05	1,704.80	0.00	0.00
30.00	160.33	1,688.07	0.00	0.00
35.00	163.99	1,671.34	0.00	0.00
40.00	166.77	1,654.61	0.00	0.00
44.10	137.93	1,344.30	0.00	0.00
45.00	30.59	404.70	0.00	0.00
48.60	123.81	1,608.85	0.00	0.00
50.00	48.05	422.36	0.00	0.00
55.00	173.79	1,499.52	0.00	0.00
60.00	174.34	1,485.58	0.00	0.00
65.00	174.50	1,471.63	0.00	0.00
70.00	174.30	1,457.69	0.00	0.00
75.00	173.78	1,443.75	0.00	0.00
80.00	172.98	1,429.81	0.00	0.00
85.00	171.91	1,333.22	0.00	0.00
86.58	53.79	418.40	0.00	0.00
90.00	117.91	1,177.20	0.00	0.00
90.33	11.29	112.97	0.00	0.00
95.00	160.06	1,135.70	0.00	0.00
100.0	169.79	1,205.17	0.00	0.00
105.0	167.89	1,194.01	0.00	0.00
110.0	165.81	1,182.86	0.00	0.00
115.0	163.55	1,171.71	0.00	0.00
120.0	161.13	1,160.55	0.00	0.00
125.0	158.56	999.10	0.00	0.00
126.2	40.01	253.98	0.00	0.00
130.0	115.54	675.84	0.00	0.00
135.0	152.99	901.10	0.00	0.00
140.0	150.01	892.73	0.00	0.00
145.0	293.32	1,451.72	0.00	0.00
150.0	143.26	721.05	0.00	0.00
155.0	140.06	712.69	0.00	0.00
160.0	136.75	704.33	0.00	0.00
165.0	192.66	414.41	0.00	0.00
170.0	80.48	302.25	0.00	0.00
175.0	1,134.49	2,070.48	0.00	0.00
180.0	73.90	236.33	0.00	0.00
181.9	942.70	2,828.81	0.00	1,886.17
Totals:	7,716.08	49,530.11	0.00	1,886.17

Pole : 302502
Location : Harwinton, CT
Height : 181.9 (ft)
Base Dia : 43.00 (in)
Top Dia : 14.50 (in)
Shape : 12 Sides
Taper : 0.162864 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev : 0.000 (ft)



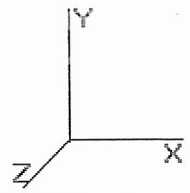
Load Case: 1.0D + 1.0W — 60.00 mph Serviceability — 25 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Wind Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.53	-7.74	0.00	-915.89	0.00	915.89	3,433.77	1,716.88	6,036.76	2,981.33	0.00	0.00	0.157
5.00	-47.75	-7.66	0.00	-877.20	0.00	877.20	3,397.00	1,698.50	5,857.04	2,892.57	0.03	-0.05	0.153
10.00	-45.99	-7.57	0.00	-838.92	0.00	838.92	3,359.12	1,679.56	5,677.91	2,804.10	0.11	-0.10	0.149
15.00	-44.24	-7.44	0.00	-801.05	0.00	801.05	3,320.10	1,660.05	5,499.48	2,715.99	0.25	-0.16	0.145
20.00	-42.51	-7.31	0.00	-763.84	0.00	763.84	3,279.97	1,639.98	5,321.88	2,628.28	0.44	-0.21	0.140
25.00	-40.80	-7.18	0.00	-727.30	0.00	727.30	3,238.71	1,619.36	5,145.22	2,541.03	0.68	-0.26	0.136
30.00	-39.11	-7.04	0.00	-691.42	0.00	691.42	3,196.33	1,598.17	4,969.60	2,454.30	0.98	-0.31	0.132
35.00	-37.43	-6.90	0.00	-656.21	0.00	656.21	3,152.83	1,576.41	4,795.15	2,368.14	1.34	-0.36	0.128
40.00	-35.77	-6.75	0.00	-621.70	0.00	621.70	3,108.20	1,554.10	4,621.97	2,282.62	1.74	-0.41	0.124
44.10	-34.43	-6.62	0.00	-594.01	0.00	594.01	3,070.77	1,535.38	4,481.01	2,213.00	2.12	-0.46	0.120
45.00	-34.02	-6.60	0.00	-588.05	0.00	588.05	3,062.45	1,531.23	4,450.19	2,197.78	2.20	-0.47	0.117
48.60	-32.41	-6.48	0.00	-564.29	0.00	564.29	2,379.97	1,189.99	3,474.54	1,715.94	2.57	-0.50	0.132
50.00	-31.98	-6.44	0.00	-555.22	0.00	555.22	2,371.43	1,185.72	3,439.58	1,698.68	2.72	-0.52	0.131
55.00	-30.48	-6.28	0.00	-523.00	0.00	523.00	2,340.22	1,170.11	3,315.02	1,637.16	3.29	-0.57	0.125
60.00	-28.99	-6.12	0.00	-491.58	0.00	491.58	2,307.88	1,153.94	3,191.02	1,575.92	3.91	-0.62	0.120
65.00	-27.52	-5.95	0.00	-460.98	0.00	460.98	2,274.42	1,137.21	3,067.70	1,515.02	4.59	-0.67	0.114
70.00	-26.06	-5.78	0.00	-431.21	0.00	431.21	2,239.83	1,119.92	2,945.16	1,454.51	5.32	-0.72	0.109
75.00	-24.61	-5.61	0.00	-402.29	0.00	402.29	2,204.12	1,102.06	2,823.54	1,394.44	6.10	-0.77	0.104
80.00	-23.18	-5.44	0.00	-374.22	0.00	374.22	2,167.29	1,083.65	2,702.93	1,334.88	6.94	-0.82	0.098
80.00	-23.18	-5.44	0.00	-374.22	0.00	374.22	2,167.29	1,083.65	2,702.93	1,334.88	6.94	-0.82	0.107
85.00	-21.85	-5.26	0.00	-347.03	0.00	347.03	2,129.34	1,064.67	2,583.46	1,275.87	7.82	-0.87	0.101
86.58	-21.43	-5.21	0.00	-338.71	0.00	338.71	2,117.11	1,058.55	2,545.96	1,257.35	8.11	-0.89	0.099
90.00	-20.25	-5.08	0.00	-320.90	0.00	320.90	2,090.26	1,045.13	2,465.23	1,217.49	8.76	-0.92	0.094
90.33	-20.13	-5.08	0.00	-319.22	0.00	319.22	1,547.78	773.89	1,862.15	919.65	8.83	-0.92	0.110
95.00	-19.00	-4.91	0.00	-295.51	0.00	295.51	1,525.71	762.86	1,787.32	882.69	9.75	-0.97	0.104
100.00	-17.79	-4.74	0.00	-270.95	0.00	270.95	1,501.00	750.50	1,707.51	843.28	10.80	-1.02	0.097
105.00	-16.60	-4.56	0.00	-247.26	0.00	247.26	1,475.16	737.58	1,628.14	804.08	11.89	-1.07	0.090
110.00	-15.41	-4.39	0.00	-224.44	0.00	224.44	1,448.19	724.10	1,549.32	765.15	13.04	-1.12	0.083
115.00	-14.24	-4.21	0.00	-202.51	0.00	202.51	1,420.11	710.05	1,471.16	726.55	14.24	-1.16	0.076
120.00	-13.08	-4.04	0.00	-181.46	0.00	181.46	1,390.90	695.45	1,393.78	688.34	15.48	-1.21	0.070
120.00	-13.08	-4.04	0.00	-181.46	0.00	181.46	1,390.90	695.45	1,393.78	688.34	15.48	-1.21	0.085
125.00	-12.08	-3.86	0.00	-161.28	0.00	161.28	1,360.57	680.28	1,317.29	650.56	16.76	-1.25	0.077
126.28	-11.83	-3.82	0.00	-156.34	0.00	156.34	1,352.62	676.31	1,297.87	640.97	17.10	-1.26	0.075
126.28	-11.83	-3.82	0.00	-156.34	0.00	156.34	900.61	450.31	868.80	429.07	17.10	-1.26	0.092
130.00	-11.15	-3.70	0.00	-142.12	0.00	142.12	888.95	444.47	835.13	412.44	18.10	-1.30	0.084
135.00	-10.25	-3.53	0.00	-123.63	0.00	123.63	872.29	436.14	789.93	390.12	19.48	-1.35	0.075
140.00	-9.36	-3.37	0.00	-105.97	0.00	105.97	854.50	427.25	744.88	367.87	20.92	-1.39	0.065
140.00	-9.36	-3.37	0.00	-105.97	0.00	105.97	854.50	427.25	744.88	367.87	20.92	-1.39	0.082
145.00	-7.92	-3.05	0.00	-89.12	0.00	89.12	835.60	417.80	700.09	345.75	22.40	-1.43	0.071
150.00	-7.20	-2.89	0.00	-73.89	0.00	73.89	815.57	407.78	655.68	323.81	23.92	-1.48	0.060
155.00	-6.49	-2.74	0.00	-59.44	0.00	59.44	794.42	397.21	611.76	302.12	25.49	-1.52	0.050
160.00	-5.78	-2.58	0.00	-45.76	0.00	45.76	772.14	386.07	568.44	280.73	27.10	-1.55	0.039
160.00	-5.78	-2.58	0.00	-45.76	0.00	45.76	772.14	386.07	568.44	280.73	27.10	-1.55	0.171
165.00	-5.37	-2.39	0.00	-32.85	0.00	32.85	748.74	374.37	525.85	259.70	28.75	-1.58	0.134
170.00	-5.07	-2.30	0.00	-20.92	0.00	20.92	723.19	361.60	483.41	238.74	30.46	-1.68	0.095
175.00	-3.03	-1.11	0.00	-9.40	0.00	9.40	686.95	343.48	435.91	215.28	32.26	-1.75	0.048
180.00	-2.80	-1.03	0.00	-3.84	0.00	3.84	650.71	325.36	390.87	193.04	34.11	-1.78	0.024
181.90	0.00	-0.94	0.00	-1.89	0.00	1.89	636.94	318.47	374.40	184.90	34.82	-1.79	0.010



Analysis Summary

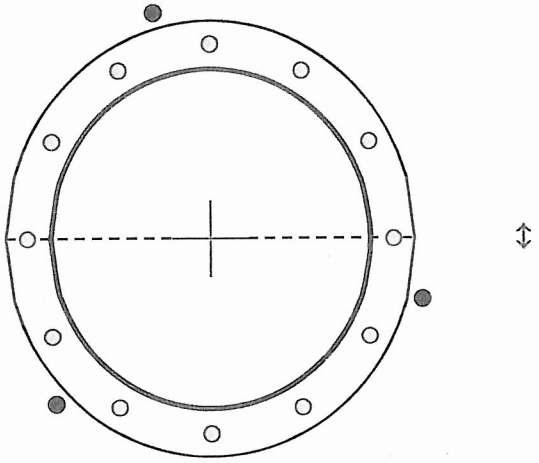
Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	30.02	0.00	55.36	0.00	0.00	3572.75	160.00	0.67
0.9D + 1.6W	29.73	0.00	46.54	0.00	0.00	3532.65	160.00	0.65
1.2D + 1.0Di + 1.0Wi	4.65	0.00	86.11	0.00	0.00	607.97	160.00	0.14
1.0D + 1.0W	7.74	0.00	49.53	0.00	0.00	915.89	160.00	0.17

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Stitch Weld Len (in)	Stitch Weld Spacing (in)	Stitch Weld Size (in)	Stitch Weld Fu (ksi)	Upper Terminal Weld Moment (ft-kips)	Upper Terminal Weld Q (in^3)	Upper Terminal Weld Tot I (in^4)	Upper Terminal Weld Len (in)	Lower Terminal Weld Moment (ft-kips)	Lower Terminal Weld Q (in^3)	Lower Terminal Weld Tot I (in^4)	Lower Terminal Weld Len (in)	Max Member Pu (kip)	Max Member phi Pn (kip)	Max Member Ratio
0.00	80.0	(3) SOL-4 1/4" SOLID	4.00	33.00	0.250	70	1,478.1	257.8	10,643	38.5	3,572.7	345.8	24,627	54.0	610.3	629.7	0.969
80.0	120.	(3) SOL-4" SOLID	4.00	66.00	0.250	70	723.9	190.6	5,853	25.4	1,478.1	228.4	9,830	37.0	416.7	527.1	0.791
120.	140.	(3) SOL-3 1/2" SOLID	4.09	66.00	0.188	70	425.3	130.2	3,394	23.4	723.9	145.9	4,821	31.4	265.6	395.1	0.672
140.	160.	(3) SOL-3" SOLID	4.00	66.00	0.188	70	184.7	84.2	1,956	11.4	425.3	95.7	2,683	21.8	184.1	280.8	0.656

Code Rev.	G	Date	9/14/2012
		Engineer	MO
		Site #	302502
Moment	3577.6 k-ft	Carrier	AT&T
Axial	55.9 k		

Base/Flange Plate	Plate Type	*Baseplate*	*@ 10.0 ft*
	Pole Diameter	43	in
	Pole Thickness		in
	Plate Diameter	55	in
	Plate Thickness	2	in
	Plate Fy	50	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	448.17	k-in
	Applied	259.27	k-in
Stiffeners	#	*0*	*Show*



Bolts	#	*12*	
	Bolt Circle	49.25	in
	(R)adial / (S)quare	R	
	Diameter	2.25	in
	Hole Diameter	2.625	in
	Type	A615-75	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	165.93	k
Reinforcement ●	#	*3*	
	DYW. Circle	59	in
	Offset Angle	105	°
	Type	Other	
	Diameter	2.77	in (equiv. to 4x0.5 HSS)
	Fu	65	ksi
	ϕ_s Resistance	215.22	k
	Applied	345.92	k
Extra Bolts O	#	*3*	
	Bolt Circle	59	in
	(R)adial / (S)quare	R	
	Bolt Gap	0	in
	Offset Angle	15	°
	Diameter	1.41	in (equiv. to (2) 1" bolts)
	Type	A354-BC	
	Fy	105	ksi
	Fu	125	ksi
	ϕ_s Resistance	122.25	k
	Applied	88.88	k

Plate Stress Ratio:
0.58 (Pass)

Bolt Stress Ratio:
0.64 (Pass)

Extra Bolt Stress Ratio:
0.73 (Pass)

Reinforcement Stress Ratio:
1.61 (Fail)

Base/Flange Plate			
	Plate Type	*Flange @ 126.3 ft*	
	Pole Diameter	23.558	in
	Pole Thickness		in
	Plate Diameter	30	in
	Plate Thickness	1.3125	in
	Plate Fy	36	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	64.54	k-in
	Applied	13.21	k-in

Stiffeners			
	#	*0*	*Show*

Bolts			
	#	*16*	
	Bolt Circle	27	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	14.54	k

Reinforcement ●			
	#	*3*	
	DYW. Circle	29.3	in
	Offset Angle	105	°
	Type	Other	
	Diameter	3.50	in (equiv. to 4x0.5 HSS)
	Fu	65	ksi
	$_s$ Resistance	343.96	k
	Applied	255.62	k

Extra Bolts O			
	#	*0*	
	Bolt Circle	59	in
	(R)adial / (S)quare	R	
	Bolt Gap	0	in
	Offset Angle	15	°
	Diameter	1.41	in (equiv. to (2) 1" bolts)
	Type	A354-BC	
	Fy	105	ksi
	Fu	125	ksi
	$_s$ Resistance		k
	Applied		k

Code Rev. G

Date 9/14/2012
Engineer MO
Site # 302502
Carrier AT&T

Moment 626.3 k-ft
Axial 13.0 k

Required Flange Thickness:
0.59 in OK

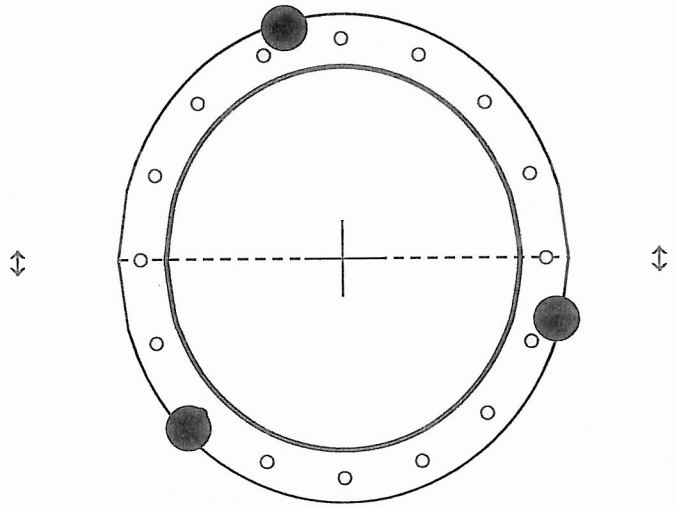


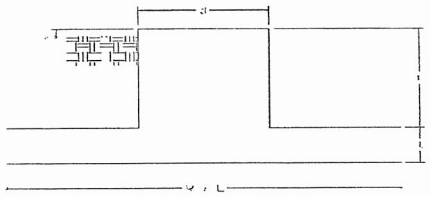
Plate Stress Ratio:
0.20 (Pass)

Bolt Stress Ratio:
0.27 (Pass)

Reinforcement Stress Ratio:
0.74 (Pass)

Site Name:	Harwinton, CT
Site Number:	302502
Engineering Number:	50496421
Engineer:	Z. Medoff
Date:	09/14/12
Tower Type:	MP

Program Last Updated: *8/4/2011*



Design Loads (Factored) - Analysis per TIA-222-G Standards

Foundation Mapped:	N		
Compression/Leg:	k	Concrete Strength (f'_c):	3000 psi
Uplift/Leg:	k	Pad Tension Steel Depth:	20.00 in
Total Shear:	30.0 k	ϕ_{Shear}:	0.75
Moment:	3577.6 k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90
Tower + Appurtenance Weight:	55.9 k	$\phi_{Compression}$:	0.65
Depth to Base of Foundation (l + t - h):	8.00 ft	β:	0.85
Diameter of Pier (d):	10.16 ft	Bottom Pad Rebar Size #:	10
Height of Pier above Ground (h):	0.50	# of Bottom Pad Rebar:	40
Width of Pad (W):	20.00 ft	Pad Bottom Steel Area:	50.80 in^2
Length of Pad (L):	20.00 ft	Pad Steel F_y:	60000 psi
Thickness of Pad (t):	2.00 ft	Top Pad Rebar Size #:	5
Tower Leg Center to Center:	3.58 ft	# of Top Pad Rebar:	40
Number of Tower Legs:	1.0 (1 if MP or GT)	Pad Top Steel Area:	12.40 in^2
Tower Center from Mat Center:	0.00 ft	Pier Rebar Size #:	11
Depth Below Ground Surface to Water Table:	20.00 ft	Pier Steel Area (Single Bar):	1.56 in^2
Unit Weight of Concrete:	150.0 pcf	# of Pier Rebar:	52
Unit Weight of Soil Above Water Table:	120.0 pcf	Pier Steel F_y:	60000 psi
Unit Weight of Water:	62.4 pcf	Pier Cage Diameter:	113.9 in
Unit Weight of Soil Below Water Table:	65.0 pcf	Rebar Strain Limit:	0.008
Friction Angle of Uplift:	20.0 Degrees	Steel Elastic Modulus:	29000 ksi
Ultimate Coefficient of Shear Friction:	0.35	Tie Rebar Size #:	4
Ultimate Compressive Bearing Pressure:	12000.0 psf	Tie Steel Area (Single Bar):	0.20 in^2
Ultimate Passive Pressure on Pad Face:	0.0 psf	Tie Spacing:	12 in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9	Tie Steel F_y:	60000 psi
ϕ_{Soil}:	0.75		

Overturning Moment Usage

Design OTM:	3832.9 k-ft	
OTM Resistance:	4660.8 k-ft	
Design OTM / OTM Resistance:	0.82	Result: OK

Soil Bearing Pressure Usage:

Total Weight (Foundation, Soil, Tower):	475.2 k	
Net Bearing Pressure:	5098 psf	
Nominal Bearing Pressure:	9000 psf	
Net Bearing Pressure/Nominal Bearing Pressure:	0.57	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

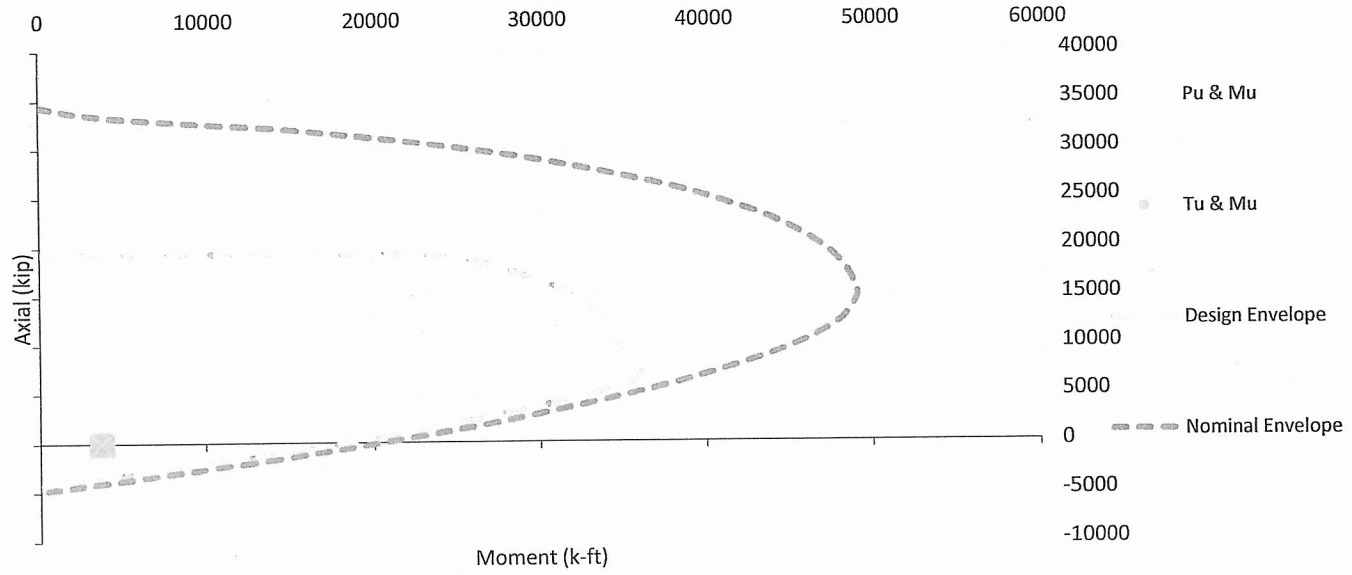
Sliding Factor of Safety

Total Factored Sliding Resistance:	124.8 k	
Sliding Design / Sliding Resistance:	0.24	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	184.1	k
One Way Shear Capacity (ϕV_c):	291.7	k - ACI11.3.1.1
$V_u / \phi V_c$:	0.63	Result: OK
Load Direction Controling Shear Capacity:	Diagonal to Pad Edge	
Lower Steel Pad Factored Moment (M_u):	870.0	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	3550.5	k-ft - ACI10.3
$M_u / \phi M_n$:	0.25	Result: OK
Load Direction Controling Flexural Capacity:	Diagonal to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	395.4	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	1087.2	k-ft
$M_u / \phi M_n$:	0.36	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0106	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0026	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Moment in Pier (M_u):	3772.8	k-ft
Pier Moment Capacity (ϕM_n):	20323.5	k-ft
$M_u / \phi M_n$:	0.19	Result: OK
Factored Shear in Pier (V_u):	30.0	k
Pier Shear Capacity (ϕV_n):	958.3	k
$V_u / \phi V_c$:	0.03	Result: OK
Pier Shear Reinforcement Ratio:	0.0002	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	4380.5	k
$T_u / \phi T_n$:	0.00	Result: OK
Factored Compression in Pier (P_u):	0.0	k
Pier Compression Capacity (ϕP_n):	17889.8	k - ACI10.3.6.2
$P_u / \phi P_n$:	0.00	Result: OK
Pier Compression Reinforcement Ratio:	0.007	OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.19	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



EMPIRE
telecom

February 27, 2015

Mr. John Igoe
American Tower
10 Presidential Way
Woburn, MA 01801

Dear Mr. Igoe:

This letter is to inform you that an application for modification to the cell tower located at 159 Weingart Road, Harwinton CT has been sent to the Connecticut Siting Council for review and also to AT&T Mobility, the owner of the structure.

Thank you,

Kerry Sethares

Kerry Sethares
Site Acquisition Coordinator
Empire Telecom

cc: Mr. Michael Criss
First Selectman, Town of Harwinton

EMPIRE
telecom

March 3, 2015

Mr. Edward F. Jaconette, Jr.
Ms. Kristen L. Jaconette
405 Brushy Plain Road
Branford, CT 06405

Dear Mr. and Ms. Jaconette:

This letter is to inform you that an application for modification to the cell tower located at 405 Brushy Plain Road, Branford CT has been sent to the Connecticut Siting Council for review and also to AT&T Mobility, the owner of the structure.

Thank you,

Kerry Sethares

Kerry Sethares
Site Acquisition Coordinator
Empire Telecom

cc: Mayor, James B. Cosgrove, Town of Branford
Mr. Jose Giner, Director, Planning and Zoning Town of Branford
Mr. John Igoe, American Tower

EMPIRE telecom

February 27, 2015

Candid Associates, LLC
110 Washington Avenue
North Haven, CT 06473

To Whom It May Concern:

This letter is to inform you that an application for modification to the cell site located at 125 Washington Avenue, North Haven, CT has been sent to the Connecticut Siting Council for review and also to AT&T Mobility, the owner of the structure.

Thank you,

Kerry Sethares

Kerry Sethares
Site Acquisition Coordinator
Empire Telecom

cc: Michael Freda
First Selectman, Town of North Haven

EMPIRE telecom

February 27, 2015

Mr. Stephen B. Tripp
23 Wayne Road
Wallingford, CT 06492

Dear Mr. Tripp:

This letter is to inform you that an application for modification to the cell site located at 23 Wayne Road, Wallingford CT has been sent to the Connecticut Siting Council for review and also to AT&T Mobility, the owner of the structure.

Thank you,

Kerry Sethares

Kerry Sethares
Site Acquisition Coordinator
Empire Telecom

cc: William W. Dickinson, Mayor, Town of Walllingford
Kacie Costello, Town Planner

EMPIRE telecom

March 3, 2015

Mr. Charles Dunn
69 Wheeler Street
New Haven, CT 06512

Dear Mr Dunn:

This letter is to inform you that an application for modification to the cell tower located at 69 Wheeler Street, New Haven, CT has been sent to the Connecticut Siting Council for review and also to AT&T Mobility, the owner of the structure.

Thank you,

Kerry Sethares

Kerry Sethares
Site Acquisition Coordinator
Empire Telecom

cc: Toni Harp, Mayor, City of New Haven
Ms. Karyn Gilvarg, A.I.A. Executive Director, City of New Haven