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KENNETH C. BALDWIN

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Also admitted in Massachusetts

ORIGINAL

January 15, 2014

David Martin
Siting Analyst
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **EM-VER-085-120924 – Cellco Partnership d/b/a Verizon Wireless**
230 Guinea Road, Monroe, Connecticut

Dear Mr. Martin:

On October 23, 2012, the Siting Council acknowledged receipt of Cellco's notice of intent to modify its telecommunications facility at 230 Guinea Road in Monroe. The modification involved the replacement of certain antennas and the installation of additional coax cables.

As a condition of the acknowledgement, Cellco was required to provide the Council with a letter stating that the recommendations specified in the structural report were implemented. Attached is a Tower Modification Certification Letter verifying that these conditions have been satisfied. All construction associated with these modifications has now been completed.

If you have any questions please do not hesitate to contact me or Rachel Mayo.

Sincerely,

Kenneth C. Baldwin

Attachment
Copy to:
Sandy M. Carter
Brian Ragozzine
Mark Gauger

12691928-v1

CENTEK engineering

Centered on Solutions℠

January 10, 2014

Mr. Mark Gauger
Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

Re: Existing Telecommunications Facility Tower Modification Certification Letter

Project:	**Verizon ~ Monroe** 230 Guinea Road Monroe, CT
Tower Owner:	**AT&T Towers** 5405 Windward Pkwy Alpharetta, GA 30004
Engineer:	**GPD Group** 1117 Perimeter Center West, Suite W303, Atlanta, GA 30338

Centek Project No.: 13008.021

Dear Mr. Gauger,

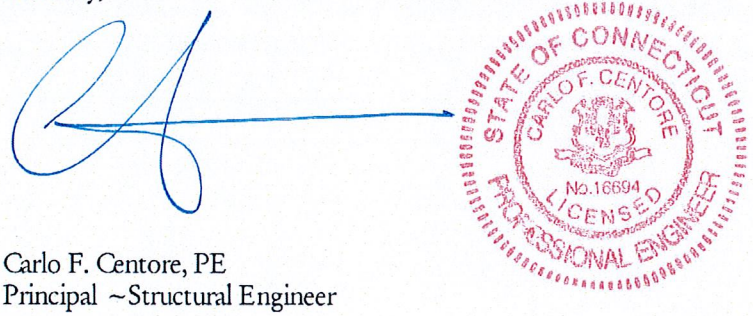
We are providing this "Existing Telecommunications Facility Tower Modification Certification Letter" with regard to the antenna upgrade by Verizon Wireless at the above referenced project.

The following are the basis for substantiating compliance with the GPR Group Structural Analysis Report (GPD Project No. 2012767.37) dated June 21, 2012:

- Review of the GPD Structural Analysis Report dated 06/21/2012.
- Field observations by Centek personnel of the coax installation on 01/09/2014 which determined all coax lines were installed in general compliance with the recommendations of the structural analysis report prepared by GPD Group on 06/21/2012.

The work under this Contract has been reviewed and found, to the Engineer's best knowledge, information and belief, to be completed in general compliance with the documents referenced above.

Sincerely,



Carlo F. Centore, PE
Principal ~Structural Engineer

CC: Rachel Mayo, Tim Parks, Steve Schadler

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

October 23, 2012

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

RE: **EM-VER-085-120924**- Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 230 Guinea Road, Monroe, Connecticut.

Dear Attorney Baldwin:

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:

- The coax lines shall be installed in accordance with the recommendations made in the Structural Analysis Report prepared by GPD Group dated June 21, 2012 and stamped by David Granger;
- Following the installation of the proposed equipment, Verizon shall provide documentation certifying that the installation complied with the engineer's recommendation;
- 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 less 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 September 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 the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

LRoberts

Linda Roberts
Executive Director

LR/CDM/jbw

c: The Honorable Stephen Vavrek, First Selectman, Town of Monroe
David Killeen, Planning Administrator, Town of Monroe
Christopher B. Fisher, Esq., AT&T

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
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www.ct.gov/csc

October 1, 2012

The Honorable Stephen Vavrek
First Selectman
Town of Monroe
Town Hall
7 Fan Hill Road
Monroe, CT 06468-1800

RE: **EM-VER-085-120924**- Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 230 Guinea Road, Monroe, Connecticut.

Dear First Selectman Vavrek:

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

If you have any questions or comments regarding this proposal, please call me or inform the Council by October 16, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

LRoberts

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: David Killeen, Planning Administrator, Town of Monroe

CSC
CONNECTICUT SITING COUNCIL

ROBINSON & COL

EM-VER-085-120924

KENNETH C. BALDWIN

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Also admitted in Massachusetts

September 20, 2012

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

Re: **Notice of Exempt Modification – Antenna Swap**
230 Guinea Road, Monroe, Connecticut

Dear Ms. Roberts:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 218-foot level on an existing 240-foot tower at the above-referenced address. The tower is owned by AT&T. Cellco's use of the tower was approved by the Council in 2000. Cellco now intends to replace all of its existing antennas with six (6) model LPA-80080-6CF cellular antennas; three (3) model LPA-171085-8BF PCS antennas; two (2) model BXA-70063-6CF LTE antennas; and one (1) model BXA-70073-4CF LTE antenna, all at the same 218-foot level. Cellco also intend to install six (6) additional coax cables on the exterior of the tower. Attached behind Tab 1 are the specifications for the replacement antennas.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Steve Vavrek, First Selectman of the Town of Monroe. The Town of Monroe is the owner of the property on which the tower is located.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas will be located at the 218-foot level on the existing 240-foot tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundaries.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative General Power Density table for Cellco's modified facility is included behind Tab 2.

Also attached is a Structural Analysis Report confirming that the tower and foundation can support Cellco's proposed modifications. (See Tab 3).

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Steve Vavrek, Monroe First Selectman
Sandy Carter

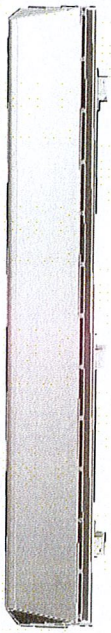
Amphenol ANTENNA SOLUTIONS

LPA-80080-6CF-EDIN-X

V-Pol | Log Periodic | 80° | 14.0 dBd

Replace "X" with desired electrical downtilt.

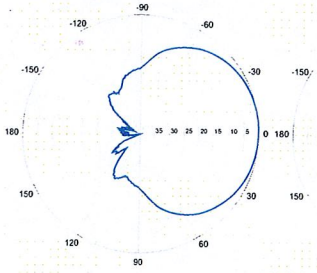
Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.



Electrical Characteristics		
Frequency bands	806-960 MHz	
Polarization	Vertical	
Horizontal beamwidth	80°	
Vertical beamwidth	10°	
Gain	14.0 dBd (16.1 dBi)	
Electrical downtilt (X)	0, 2, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.4:1	
Upper sidelobe suppression (0°)	-22.6 dB	
Null fill	10% (-20.0 dB)	
Input power	500 W	
Lightning protection	Direct Ground	
Connector(s)	1 Port / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1800 x 140 x 335 mm	70.9 x 5.5 x 13.2 in
Depth of antenna with z-bracket	375 mm	14.8 in
Weight without mounting brackets	9.5 kg	21.0 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.25 m² Side: 0.61 m²	Front: 2.7 ft² Side: 6.6 ft²
Wind load @ 161 km/hr (100 mph)	Front: 415 N Side: 878 N	Front: 93 lbf Side: 198 lbf

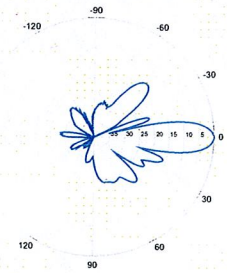
Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit (0-20°)	21700000	50-102 mm 2.0-4.0 in	11 kg 25 lbs
Lock-Down Brace	If the lock-down brace is used, the maximum diameter of the mounting pipe is 88.9 mm or 3.5 in.		

LPA-80080-6CF-EDIN-X



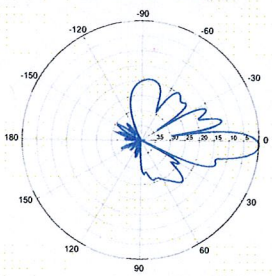
Horizontal | 750 MHz

LPA-80080-6CF-EDIN-0



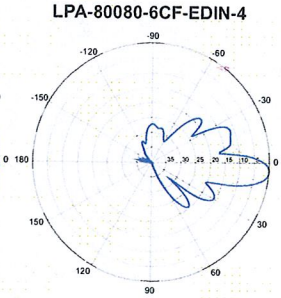
0° | Vertical

LPA-80080-6CF-EDIN-2



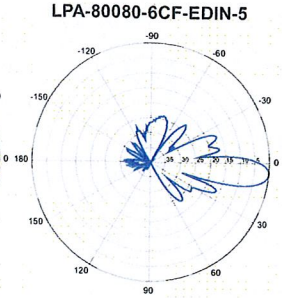
2° | Vertical

LPA-80080-6CF-EDIN-4



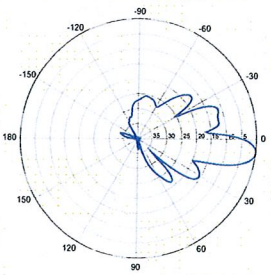
4° | Vertical

LPA-80080-6CF-EDIN-5



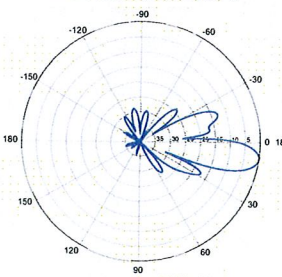
5° | Vertical

LPA-80080-6CF-EDIN-6



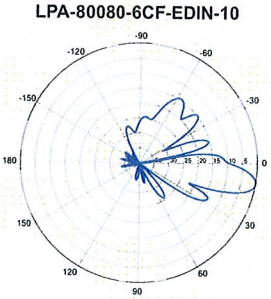
6° | Vertical

LPA-80080-6CF-EDIN-8



8° | Vertical

LPA-80080-6CF-EDIN-10

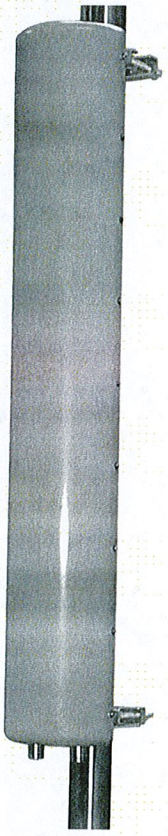


10° | Vertical

BXA-171085-8BF-EDIN-X

Replace "X" with desired electrical downtilt.

X-Pol | FET Panel | 85° | 16.4 dBi

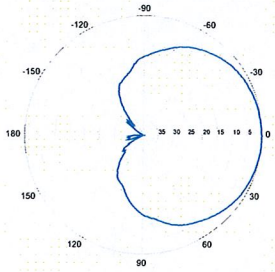


Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	88°	85°	80°
Vertical beamwidth	7°	7°	7°
Gain	13.5 dBd / 15.6 dBi	13.9 dBd / 16.0 dBi	14.3 dBd / 16.4 dBi
Electrical downtilt (X)	0, 2, 4		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back isolation	> 30 dB		
In-band isolation	> 28 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN / Female / Bottom		
Operating temperature	-40° to +60° C / -40° to +140° F		

Mechanical Characteristics		
Dimensions Length x Width x Depth	1232 x 154 x 105 mm	48.5 x 6.1 x 4.1 in
Depth with t-brackets	133 mm	5.2 in
Weight without mounting brackets	4.8 kg	10.5 lbs
Survival wind speed	296 km/hr	184 mph
Wind area	Front: 0.19 m² Side: 0.14 m²	Front: 2.0 ft² Side: 1.5 ft²
Wind load @ 161 km/hr (100 mph)	Front: 281 N Side: 223 N	Front: 63 lbf Side: 50 lbf

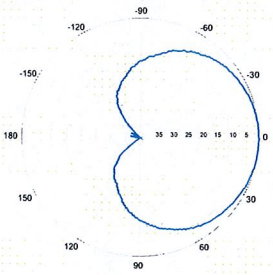
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171085-8BF-EDIN-X-FP		

BXA-171085-8BF-EDIN-X



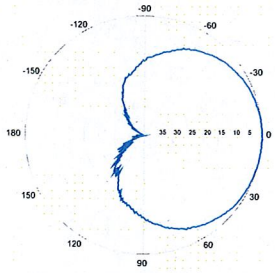
Horizontal | 1710-1880 MHz

BXA-171085-8BF-EDIN-X



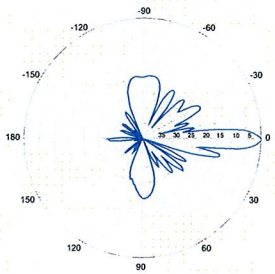
Horizontal | 1850-1990 MHz

BXA-171085-8BF-EDIN-X



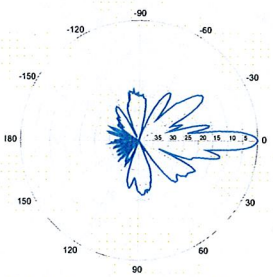
Horizontal | 1920-2170 MHz

BXA-171085-8BF-EDIN-0



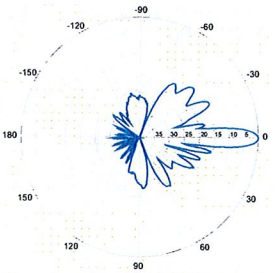
0° | Vertical | 1710-1880 MHz

BXA-171085-8BF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171085-8BF-EDIN-0

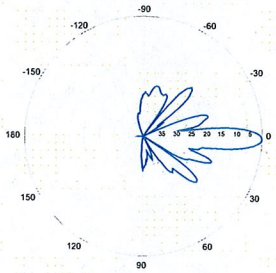


0° | Vertical | 1920-2170 MHz

BXA-171085-8BF-EDIN-X

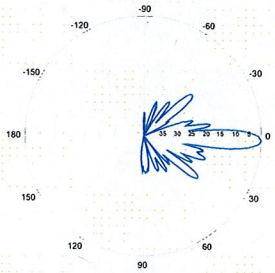
X-Pol | FET Panel | 85° | 16.4 dBi

BXA-171085-8BF-EDIN-2



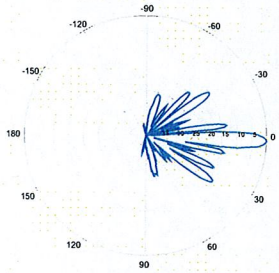
2° | Vertical | 1710-1880 MHz

BXA-171085-8BF-EDIN-2



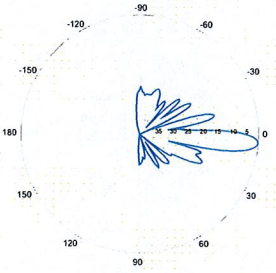
2° | Vertical | 1850-1990 MHz

BXA-171085-8BF-EDIN-2



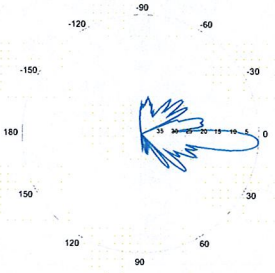
2° | Vertical | 1920-2170 MHz

BXA-171085-8BF-EDIN-4



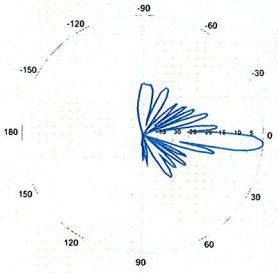
4° | Vertical | 1710-1880 MHz

BXA-171085-8BF-EDIN-4



4° | Vertical | 1850-1990 MHz

BXA-171085-8BF-EDIN-4



4° | Vertical | 1920-2170 MHz

Amphenol ANTENNA SOLUTIONS

BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

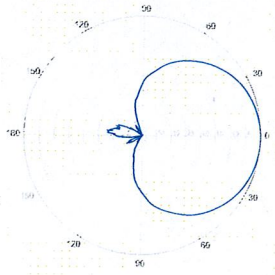
Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

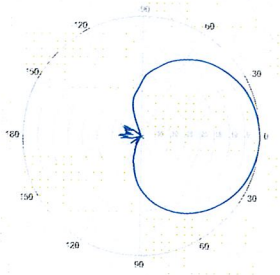
Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	13°	11°
Gain	14.0 dBd (16.1 dBi)	14.5 dBd (16.6 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-18.3 dB	-18.2 dB
Front-to-back ratio (+/-30°)	-33.4 dB	-36.3 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -25 dB	
Input power with EDIN connectors	500 W	
Input power with NE connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in
Depth with z-brackets	172 mm	6.8 in
Weight without mounting brackets	7.9 kg	17 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.51 m^2 Side: 0.24 m^2	Front: 5.5 ft^2 Side: 2.6 ft^2
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf

Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-6CF-EDIN-X-FP		

BXA-70063-6CF-EDIN-X

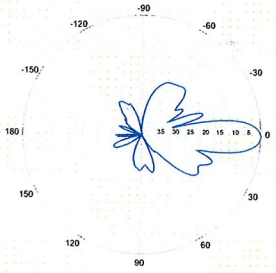


Horizontal | 750 MHz

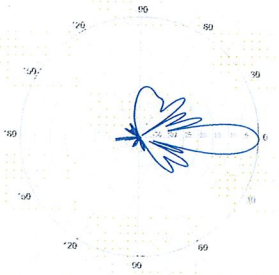


Horizontal | 850 MHz

BXA-70063-6CF-EDIN-0



0° | Vertical | 750 MHz



0° | Vertical | 850 MHz

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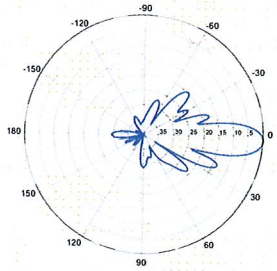
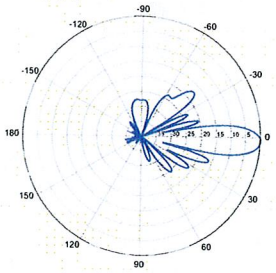


2° | Vertical | 750 MHz



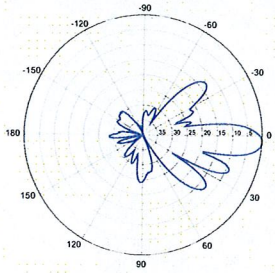
2° | Vertical | 850 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

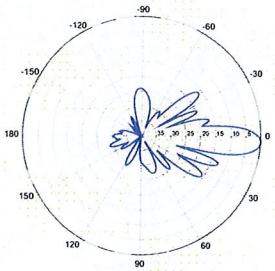
BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

BXA-70063-6CF-EDIN-3



3° | Vertical | 750 MHz



3° | Vertical | 850 MHz

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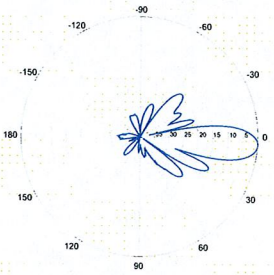
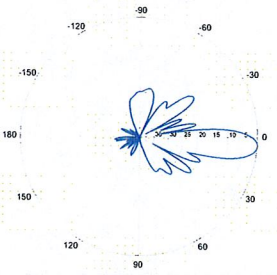


4° | Vertical | 750 MHz



4° | Vertical | 850 MHz

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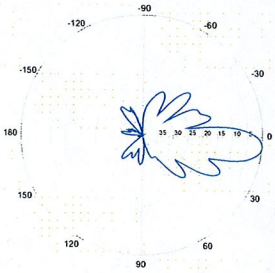
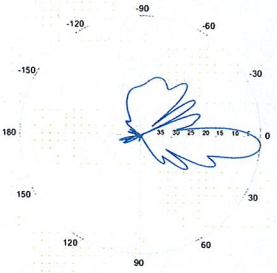


5° | Vertical | 750 MHz



5° | Vertical | 850 MHz

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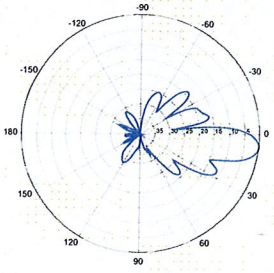
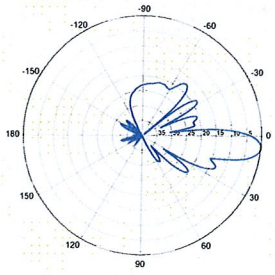


6° | Vertical | 750 MHz



6° | Vertical | 850 MHz

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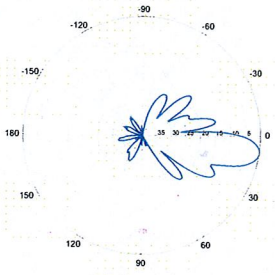
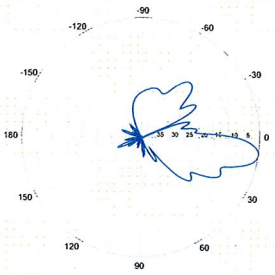
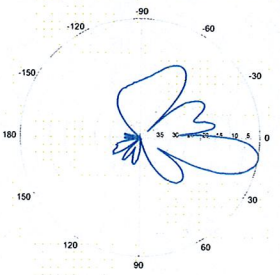


8° | Vertical | 750 MHz

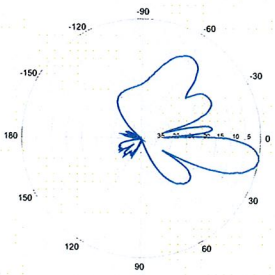


8° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-10



10° | Vertical | 750 MHz



10° | Vertical | 850 MHz

Amphenol ANTENNA SOLUTIONS

BXA-70063-4CF-EDIN-X

X-Pol | FET Panel | 63° | 13.0 dBd

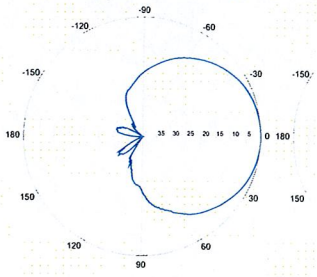
Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	17°	15°
Gain	12.5 dBd (14.6 dBi)	13.0 dBd (15.1 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 9, 10, 12, 14	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-16.3 dB	-22.1 dB
Front-to-back ratio (+/-30°)	-36.1 dB	-34.9 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -30 dB	
Input power with EDIN connectors	500 W	
Input power with NE connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1205 x 285 x 133 mm	47.4 x 11.2 x 5.2 in
Depth with z-brackets	173 mm	6.8 in
Weight without mounting brackets	4.5 kg	9.9 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.34 m² Side: 0.16 m²	Front: 3.7 ft² Side: 1.7 ft²
Wind load @ 161 km/hr (100 mph)	Front: 498 N Side: 260 N	Front: 111 lbf Side: 55 lbf

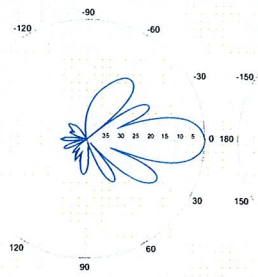
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting & Downtilt Bracket Kit	36210006	40-115 mm 1.57-4.5 in	4.1 kg 9 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-4CF-EDIN-X-FP		

BXA-70063-4CF-EDIN-X



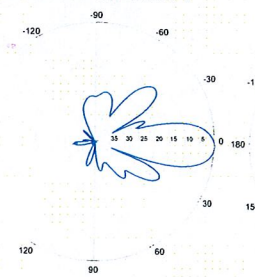
Horizontal | 750 MHz

BXA-70063-4CF-EDIN-0



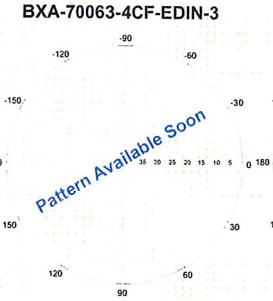
0° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-2



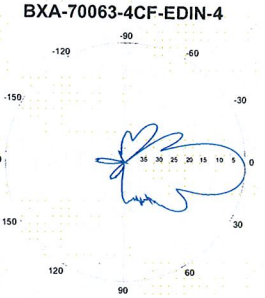
2° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-3

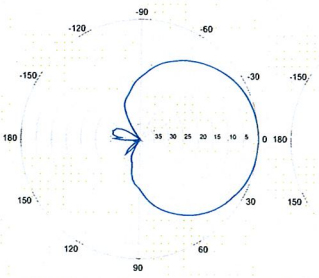


3° | Vertical | 750 MHz

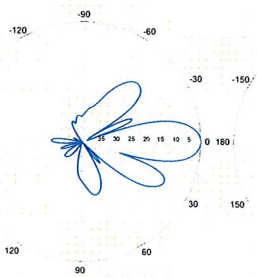
BXA-70063-4CF-EDIN-4



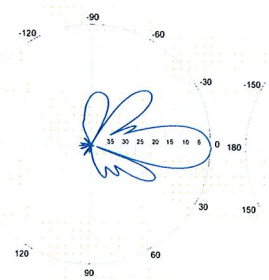
4° | Vertical | 750 MHz



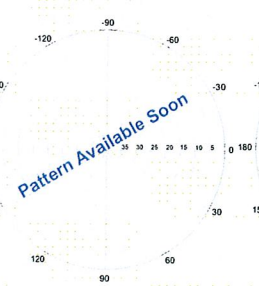
Horizontal | 850 MHz



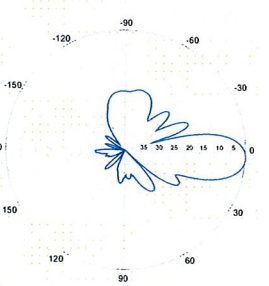
0° | Vertical | 850 MHz



2° | Vertical | 850 MHz



3° | Vertical | 850 MHz

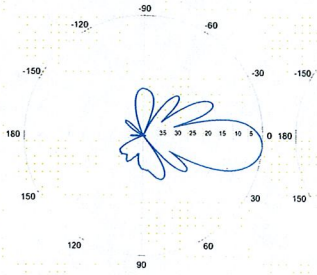


4° | Vertical | 850 MHz

BXA-70063-4CF-EDIN-X

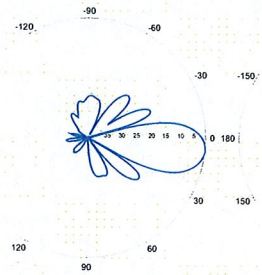
X-Pol | FET Panel | 63° | 13.0 dBd

BXA-70063-4CF-EDIN-5



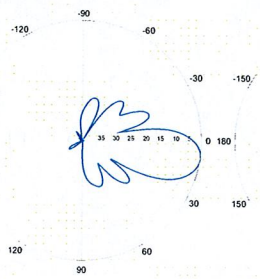
5° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-6



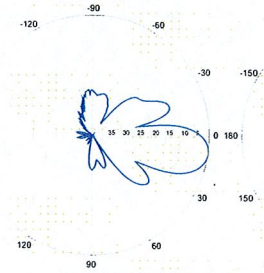
6° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-8



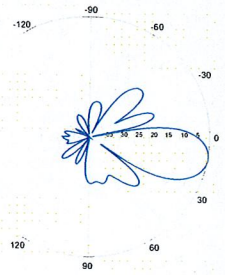
8° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-9

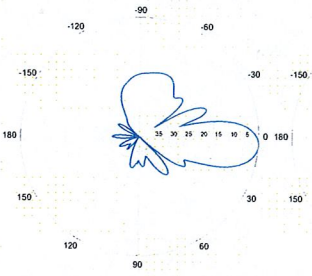


9° | Vertical | 750 MHz

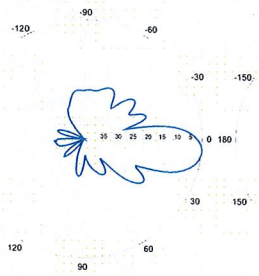
BXA-70063-4CF-EDIN-10



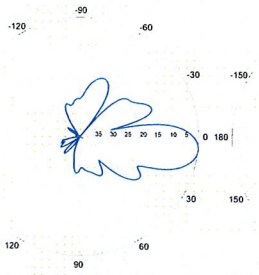
10° | Vertical | 750 MHz



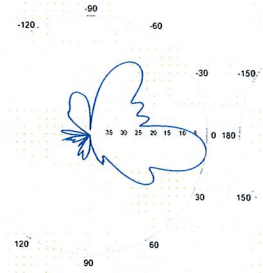
5° | Vertical | 850 MHz



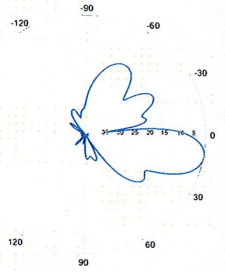
6° | Vertical | 850 MHz



8° | Vertical | 850 MHz

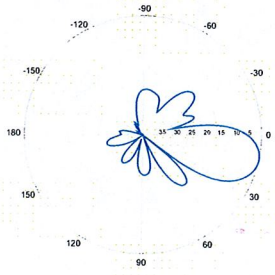


9° | Vertical | 850 MHz

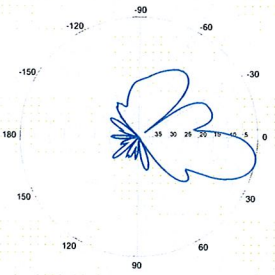


10° | Vertical | 850 MHz

BXA-70063-4CF-EDIN-12

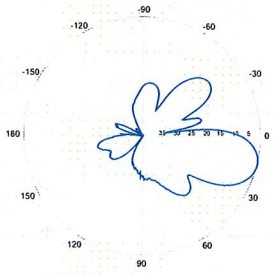


12° | Vertical | 750 MHz

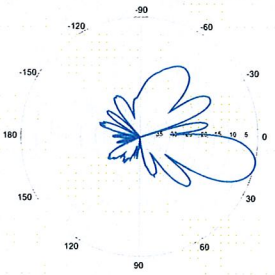


12° | Vertical | 850 MHz

BXA-70063-4CF-EDIN-14



14° | Vertical | 750 MHz



14° | Vertical | 850 MHz

	General	Power	Density					
Site Name: Monroe								
Tower Height: Verizon @ 218Ft.								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*PageNet				0.0127	931.5	0.6210	2.05%	
*RAW Mobile Data				0.0008	936	0.6240	0.13%	
*Nextel			222	0.0142	858	0.5720	2.48%	
*AT&T UMTS	2	565	236	0.0073	880	0.5867	1.24%	
*AT&T UMTS	2	875	236	0.0113	1900	1.0000	1.13%	
*AT&T GSM	1	296	236	0.0019	880	0.5867	0.33%	
*AT&T LTE	1	1117	236	0.0072	734	0.4893	1.47%	
Verizon PCS	**15**	**206**	**218**	**0.0234**	**1970**	**1.0000**	**2.34%**	
Verizon Cellular	**9**	**227**	**218**	**0.0155**	**869**	**0.5793**	**2.67%**	
Verizon AWS	**1**	**500**	**218**	**0.0038**	**2145**	**1.0000**	**0.38%**	
Verizon 700	**1**	**757**	**218**	**0.0057**	**698**	**0.4653**	**1.23%**	
								15.44%
* Source: Siting Council								

AT&T Towers
5405 Windward Pkwy
Alpharetta, GA 30004
(770) 708-6100

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.

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1117 Perimeter Center West, Suite W303
Atlanta, GA 30338
(678) 781-5061
kclements@gpdgroup.com

GPD# 2012767.37
June 21, 2012

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	Site USID:	60427
	Site FA:	10035068
	Site Name:	MONROE-GUINEA ROAD
	AT&T Project:	Verizon Modification 5-10-2012
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, ASCE 7, 2003 IBC & 2005 CTBC** **85-mph w/ 0" ice** **37-mph w/ 3/4" of ice**
SITE DATA:		**230 Guinea Road, Monroe, CT 06468, Fairfield County** **Latitude 41° 20' 30.670" N, Longitude 73° 16' 28.297" W** **Market: New England** **240' Rohn Self Support Tower**

Ms. Charlotte Malone,

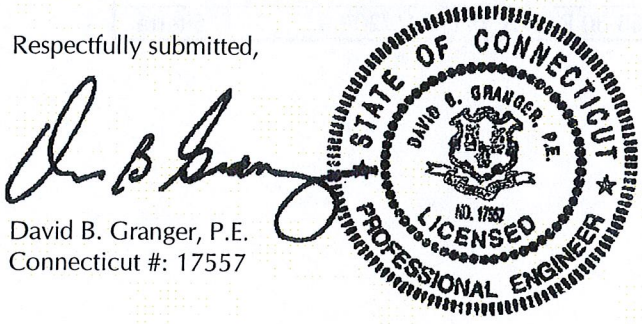
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	97.4%	Pass
Foundation Ratio with Proposed Equipment:	88.9%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



David B. Granger, P.E.
Connecticut #: 17557

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by Verizon to AT&T. This report was commissioned by Ms. Charlotte Malone of AT&T.

Modifications designed by GPD Job #: 2009268.80 Rev. A, dated 10/20/09, have been considered in this analysis.

The proposed coax shall be stacked on top of the existing coax to 218' in a six on nine configuration on tower Face B in order for the analysis results to be valid. Refer to Appendix C for the proposed coax layout.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Legs	86.3%	Pass
Diagonals	97.4%	Pass
Horizontals	66.7%	Pass
Member Bolts	94.3%	Pass
Anchor Rods	58.8%	Pass
Foundation	88.9%	Pass

ANALYSIS METHOD

TNX Tower (Version 6.0.4.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information.

DOCUMENTS PROVIDED

Document	Remarks	Source
Preliminary Tower Summary	Verizon Co-location Document	Siterra
Site Lease Application	Verizon Application, dated 5/9/2012	Siterra
Tower Design	Not Provided	N/A
Foundation Design	Not Provided	N/A
Foundation Investigation	WEI Project # 2009-901, dated 9/16/2009	Siterra
Geotechnical Investigation	WEI Project # 2009-901, dated 9/16/2009	Siterra
Previous Structural Analysis	GPD Project #: 2012702.21, dated 3/8/2012	Siterra
Tower Mapping	GPD & Patriot Towers Job #: 2009269.52, dated 9/9/2009	Siterra
Modification Drawings	GPD Job #: 2009268.80 Rev. A, dated 10/20/09	Siterra

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shape are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations. If no data is available, the foundation system is not verified.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
8. All existing loading was obtained from the previous structural analysis by GPD Project #: 2012702.21, dated 3/8/2012, site photos and the provided preliminary tower summary form and is assumed to be accurate.
9. The proposed Tower Mounted Amplifiers are assumed to be installed behind antennas.
10. The existing AT&T loading as found in the preliminary tower summary differs from the tower mapping by GPD & Patriot Towers, dated 9/9/09. The existing AT&T loading is based on the tower mapping.
11. The proposed coax shall be stacked on top of the existing coax to 218' in a six on nine configuration on tower Face B in order for the analysis results to be valid. Refer to Appendix C for the proposed coax layout.
12. The AT&T future coax sizes and quantity along with the squid have been assumed based on previous LTE experience.
13. Leg A is assumed to be at 0 degrees based on satellite imagery.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a recent site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	MONROE-GUINEA ROAD
Site Number	60427
FA Number	10035068
Date of Analysis	6/21/2012
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	SST	
Tower Height (top of steel AGL)	240'	
Tower Manufacturer	Rohn	
Tower Model	n/a	
Tower Design	Rohn File #: 25692JC	7/5/1990
Foundation Design	n/a	
Geotech Investigation	WEI Project No. 2009-901	9/16/2009
Previous Analysis	GPD Job #: 2012702.21	3/8/2012
Tower Mapping	GPD & Patriot Towers Job # 2009269.52	9/9/2009
Modification Drawings	GPD Job#: 209268.80 rev. A	10/20/2009
Foundation Mapping	WEI Project No. 2009-901	9/16/2009

Design Parameters

Design Code Used	TIA/EIA-222-F, 2003 IBC, ASCE 7 & 2005 CTBC
Location of Tower (County, State)	Fairfield, CT
Basic Wind Speed (mph)	85
Ice Thickness (in)	0.75
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	97.4%
Anchor Rod (%)	58.8%
Foundation (%)	88.9%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Leg	50
Diagonals	50/36
Horizontals	50/36
Member Bolts	A325
Anchor Rods	A354-BC

Modifications designed by GPD Job #: 2009268.80 Rev. A, dated 10/20/09, have been considered in this analysis.

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Unknown	240	240	1	Omni	Unknown	8' Omni		3	unknown	6' Standoffs	1	Unknown	1/2"	Face C
Unknown	240	240	1	FM	Unknown	FM Antenna				on the same mount				
AT&T Mobility	236	236	6	Panel	Powerwave	RA21.7770.00	19/138/253	3	unknown	10' T-Frames	12	Unknown	1-5/8"	Face C
AT&T Mobility	236	236	6	Diplexer	Powerwave	LGP13519				on same mounts				
AT&T Mobility	236	236	6	TMA	Powerwave	LGP21401				on same mounts				
Nextel	226	226	9	Panel	Decibel	DB844H90E-XY	40/160/280	3	unknown	10' T-Frames	9	Unknown	1-5/8"	Face A
Verizon Wireless	215	218	6	Panel	Andrew	DB846H80E-SX	30/140/270	3	unknown	6'x10' Boom Gate	9	Unknown	1-5/8"	Face B
Verizon Wireless	215	218	6	Panel	Andrews	DB948F85T2E-M	30/140/270			on same mounts	3	Unknown	1-5/8"	Face C
AT&T Mobility	201	207	2	Omni	unknown	12' Omni		2	unknown	4' Standoffs	2	Unknown	7/8"	Face A

Note: Prior to installation of the proposed loading, the antennas at 218' shall be removed. The remaining equipment shall be reused.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Verizon	215	218	3	Panel	Antel	BXA-171085-8BF	30/160/270			on the existing mounts	6	LDF7-50A	1-5/8"	Face B
Verizon	215	218	6	Panel	Antel	LPA-80080-6CF	30/160/270			on the existing mounts				
Verizon	215	218	2	Panel	Antel	BXA-70063-6CF_2	30/270			on the existing mounts				
Verizon	215	218	1	Panel	Antel	BXA-70063-4CF	160			on the existing mounts				

Note: The proposed loading is in addition to the remaining existing/reserved loading at the same elevation.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
AT&T Mobility	236	236	3	Panel	Powerwave	P65-16-XLH-RR	19/138/253			on the existing mounts	2	DC Power	3/4"	Face C
AT&T Mobility	236	236	6	RRU	Ericsson	RRUS 11				on the existing mounts	1	Fiber	1/2"	Face C
AT&T Mobility	236	236	1	Squid	Raycap	DC6-48-60-18-8F				on the existing mounts				

Note: The future loading is in addition to the existing loading at the same elevation.

APPENDIX B

TNX Tower Output File

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 242.00 ft above the ground line.
The base of the tower is set at an elevation of 2.00 ft above the ground line.
The face width of the tower is 6.56 ft at the top and 30.18 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement* ft	*Face Offset* in	*Lateral Offset (Frac FW)*	#	# *Per Row*	*Clear Spacing* in	*Width or Diameter* in	*Perimeter* in	*Weight* plf
Climbing Ladder	C	No	Af (Leg)	200.00 - 8.00	0.0000	0	1	1	0.2500	0.0000	0.0000	7.90
Safety Line 3/8	C	No	Af (Leg)	200.00 - 8.00	0.0000	0	1	1	0.2500	0.3750	1.1800	0.22
Step Pegs	A	No	Ar (Leg)	200.00 - 8.00	0.0000	0	1	1	0.8000	0.0000		2.72
Step Pegs	B	No	Ar (Leg)	140.00 - 8.00	0.0000	0	1	1	0.8000	0.0000		2.72
Step Pegs	C	No	Ar (Leg)	140.00 - 8.00	0.0000	0	1	1	0.8000	0.0000		2.72
Step Pegs	A	No	Ar (Leg)	240.00 - 200.00	0.0000	0	1	1	0.8000	0.8000		2.72
Feedline Ladder (Af)	A	Yes	Af (CfAe)	226.00 - 8.00	0.0000	-0.4	1	1	3.0000	3.0000	12.0000	8.40
LDF5-50A (7/8 FOAM)	A	Yes	Ar (CfAe)	201.00 - 8.00	0.0000	-0.45	2	2	1.0000	1.0900		0.33
LDF7-50A (1-5/8 FOAM)	A	Yes	Ar (CfAe)	226.00 - 8.00	0.0000	-0.4	9	9	1.0000	1.9800		0.82
Feedline Ladder (Af)	B	Yes	Af (CfAe)	215.00 - 8.00	0.0000	-0.4	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A (1-5/8 FOAM)	B	Yes	Ar (CfAe)	215.00 - 8.00	0.0000	-0.4	15	9	1.0000	1.9800		0.82
1/2" Fiber Cable	C	Yes	Ar (CfAe)	236.00 - 8.00	4.0000	-0.4	1	1	0.6300	0.0000		0.15
3/4" DC Power Line	C	Yes	Ar (CfAe)	236.00 - 8.00	4.0000	-0.38	2	2	0.7500	0.0000		0.33
Feedline Ladder (Af)	C	Yes	Af (CfAe)	236.00 - 8.00	0.0000	-0.4	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CfAe)	215.00 - 8.00	0.0000	-0.4	15	9	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	Yes	Ar (CfAe)	236.00 - 215.00	0.0000	-0.4	12	6	1.0000	1.9800		0.82
3/4" Conduit	C	Yes	Ar (CfAe)	240.00 - 8.00	0.0000	0.48	1	1	0.7500	0.7500		0.50
LDF4-50A (1/2 FOAM)	C	Yes	Ar (CfAe)	242.00 - 10.00	0.0000	-0.43	1	1	0.6300	0.6300		0.15

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Flash Beacon	C	None		0.0000	240.00	No Ice	3.00	3.00	100.00
						1/2" Ice	4.50	4.50	150.00
						1" Ice	6.00	6.00	200.00
						2" Ice	9.00	9.00	300.00
						4" Ice	15.00	15.00	500.00
6' Standoff	A	From Leg	3.00 0.00 0.00	0.0000	240.00	No Ice	2.72	12.93	145.70
						1/2" Ice	4.11	17.82	223.26
						1" Ice	5.50	22.71	300.83
						2" Ice	8.28	32.49	455.95
						4" Ice	13.84	52.05	766.20
6' Standoff	B	From Leg	3.00 0.00 0.00	0.0000	240.00	No Ice	2.72	12.93	145.70
						1/2" Ice	4.11	17.82	223.26
						1" Ice	5.50	22.71	300.83
						2" Ice	8.28	32.49	455.95
						4" Ice	13.84	52.05	766.20
6' Standoff	C	From Leg	3.00 0.00 0.00	0.0000	240.00	No Ice	2.72	12.93	145.70
						1/2" Ice	4.11	17.82	223.26
						1" Ice	5.50	22.71	300.83
						2" Ice	8.28	32.49	455.95
						4" Ice	13.84	52.05	766.20
8' Omni	B	From Leg	3.00 0.00 -4.00	0.0000	242.00	No Ice	1.60	1.60	20.00
						1/2" Ice	2.42	2.42	32.45
						1" Ice	3.24	3.24	50.14
						2" Ice	4.23	4.23	101.86
						4" Ice	6.32	6.32	274.93
FM Antenna	B	From Leg	3.00 0.00 0.00	0.0000	242.00	No Ice	0.79	0.79	10.00
						1/2" Ice	0.91	0.91	18.78
						1" Ice	1.04	1.04	29.51
						2" Ice	1.32	1.32	57.57
						4" Ice	2.00	2.00	145.59
10' T-Frame	A	From Leg	0.50 0.00 0.00	19.0000	236.00	No Ice	8.83	3.05	268.16
						1/2" Ice	12.37	7.13	388.19
						1" Ice	15.91	9.21	508.22
						2" Ice	22.99	19.37	748.28
						4" Ice	37.15	31.69	1228.40
10' T-Frame	B	From Leg	0.50 0.00 0.00	18.0000	236.00	No Ice	8.83	3.05	268.16
						1/2" Ice	12.37	7.13	388.19
						1" Ice	15.91	9.21	508.22
						2" Ice	22.99	19.37	748.28
						4" Ice	37.15	31.69	1228.39
10' T-Frame	C	From Leg	0.50 0.00 0.00	13.0000	236.00	No Ice	8.83	3.05	268.16
						1/2" Ice	12.37	7.13	388.19
						1" Ice	15.91	9.21	508.22
						2" Ice	22.99	19.37	748.28
						4" Ice	37.15	31.69	1228.39
(2) RA21.7770.00 w/ 2"x5.5' mountpipe	A	From Leg	1.00 0.00 0.00	19.0000	236.00	No Ice	6.80	4.78	60.08
						1/2" Ice	7.30	5.57	109.47
						1" Ice	7.81	6.30	168.93
						2" Ice	8.85	7.83	310.94
						4" Ice	11.05	11.15	716.48
(2) RA21.7770.00 w/ 2"x5.5' mountpipe	B	From Leg	1.00 0.00	18.0000	236.00	No Ice	6.80	4.78	60.08
						1/2" Ice	7.30	5.57	109.47

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	7.81	6.30	168.93
						2" Ice	8.85	7.83	310.94
						4" Ice	11.05	11.15	716.48
(2) RA21.7770.00 w/ 2"x5.5' mountpipe	C	From Leg	1.00 0.00 0.00	13.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.80 7.30 7.81 8.85 11.05	4.78 5.57 6.30 7.83 11.15	60.08 109.47 168.93 310.94 716.48
(2) LGP21401	A	From Leg	1.00 0.00 0.00	19.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.29 1.45 1.61 1.97 2.79	0.23 0.31 0.40 0.61 1.12	14.10 21.26 30.32 54.89 135.29
(2) LGP21401	B	From Leg	1.00 0.00 0.00	18.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.29 1.45 1.61 1.97 2.79	0.23 0.31 0.40 0.61 1.12	14.10 21.26 30.32 54.89 135.29
(2) LGP21401	C	From Leg	1.00 0.00 0.00	13.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.29 1.45 1.61 1.97 2.79	0.23 0.31 0.40 0.61 1.12	14.10 21.26 30.32 54.89 135.29
(2) LGP13519	A	From Leg	1.00 0.00 0.00	19.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.34 0.42 0.51 0.73 1.25	0.21 0.28 0.36 0.55 1.03	5.30 8.02 11.91 23.96 70.63
(2) LGP13519	B	From Leg	1.00 0.00 0.00	18.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.34 0.42 0.51 0.73 1.25	0.21 0.28 0.36 0.55 1.03	5.30 8.02 11.91 23.96 70.63
(2) LGP13519	C	From Leg	1.00 0.00 0.00	13.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.34 0.42 0.51 0.73 1.25	0.21 0.28 0.36 0.55 1.03	5.30 8.02 11.91 23.96 70.63
P65-16-XLH-RR w/ 2"x5.5' mountpipe	A	From Leg	1.00 0.00 0.00	19.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.40 8.95 9.51 10.65 13.03	6.01 6.85 7.65 9.29 12.80	83.08 142.71 213.12 379.18 841.36
P65-16-XLH-RR w/ 2"x5.5' mountpipe	B	From Leg	1.00 0.00 0.00	18.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.40 8.95 9.51 10.65 13.03	6.01 6.85 7.65 9.29 12.80	83.08 142.71 213.12 379.18 841.36
P65-16-XLH-RR w/ 2"x5.5' mountpipe	C	From Leg	1.00 0.00 0.00	13.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.40 8.95 9.51 10.65 13.03	6.01 6.85 7.65 9.29 12.80	83.08 142.71 213.12 379.18 841.36
(2) RRUS-11	A	From Leg	1.00 0.00 0.00	19.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.42 4.71 5.00 5.61	1.19 1.35 1.53 1.90	55.00 80.77 109.98 179.45

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						4" Ice	6.94	2.75	368.09
(2) RRUS-11	B	From Leg	1.00 0.00 0.00	18.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.42 4.71 5.00 5.61 6.94	1.19 1.35 1.53 1.90 2.75	55.00 80.77 109.98 179.45 368.09
(2) RRUS-11	C	From Leg	1.00 0.00 0.00	13.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.42 4.71 5.00 5.61 6.94	1.19 1.35 1.53 1.90 2.75	55.00 80.77 109.98 179.45 368.09
DC6-48-60-18-8F Surge Suppression Unit	A	From Leg	1.00 0.00 0.00	19.0000	236.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	32.80 50.52 70.72 119.24 252.92
10' T-Frame	A	From Leg	0.50 0.00 0.00	0.0000	226.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.83 12.37 15.91 22.99 37.15	3.05 7.13 9.21 19.37 31.69	268.16 388.19 508.22 748.28 1228.40
10' T-Frame	B	From Leg	0.50 0.00 0.00	0.0000	226.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.83 12.37 15.91 22.99 37.15	3.05 7.13 9.21 19.37 31.69	268.16 388.19 508.22 748.28 1228.40
10' T-Frame	C	From Leg	0.50 0.00 0.00	0.0000	226.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.83 12.37 15.91 22.99 37.15	3.05 7.13 9.21 19.37 31.69	268.16 388.19 508.22 748.28 1228.40
(3) DB844H90E-XY w/ Mount Pipe	A	From Leg	1.00 0.00 0.00	40.0000	226.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.10 3.44 3.81 4.60 6.27	4.65 5.27 5.91 7.24 10.26	29.21 64.92 108.59 214.71 526.46
(3) DB844H90E-XY w/ Mount Pipe	B	From Leg	1.00 0.00 0.00	40.0000	226.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.10 3.44 3.81 4.60 6.27	4.65 5.27 5.91 7.24 10.26	29.21 64.92 108.59 214.71 526.46
(3) DB844H90E-XY w/ Mount Pipe	C	From Leg	1.00 0.00 0.00	40.0000	226.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.10 3.44 3.81 4.60 6.27	4.65 5.27 5.91 7.24 10.26	29.21 64.92 108.59 214.71 526.46
Rohn 12' Boom Gate	A	From Leg	1.73 1.00 0.00	30.0000	215.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.80 21.01 27.22 39.64 64.48	6.72 9.55 12.38 18.04 29.36	300.00 447.40 594.80 889.60 1479.20
Rohn 12' Boom Gate	B	From Leg	1.53 1.29 0.00	40.0000	215.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.80 21.01 27.22 39.64 64.48	6.72 9.55 12.38 18.04 29.36	300.00 447.40 594.80 889.60 1479.20
Rohn 12' Boom Gate	C	From Leg	1.73	30.0000	215.00	No Ice	14.80	6.72	300.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			1.00 0.00			1/2" Ice	21.01	9.55	447.40
						1" Ice	27.22	12.38	594.80
						2" Ice	39.64	18.04	889.60
						4" Ice	64.48	29.36	1479.20
BXA-171085-8BF w/ Mount Pipe	A	From Leg	3.46 2.00 3.00	30.0000	215.00	No Ice	3.41	3.58	32.40
						1/2" Ice	3.88	4.38	64.64
						1" Ice	4.35	5.06	106.00
						2" Ice	5.36	6.47	208.30
						4" Ice	7.52	9.64	522.07
BXA-171085-8BF w/ Mount Pipe	B	From Leg	3.06 2.57 3.00	40.0000	215.00	No Ice	3.41	3.58	32.40
						1/2" Ice	3.88	4.38	64.64
						1" Ice	4.35	5.06	106.00
						2" Ice	5.36	6.47	208.30
						4" Ice	7.52	9.64	522.07
BXA-171085-8BF w/ Mount Pipe	C	From Leg	3.46 2.00 3.00	30.0000	215.00	No Ice	3.41	3.58	32.40
						1/2" Ice	3.88	4.38	64.64
						1" Ice	4.35	5.06	106.00
						2" Ice	5.36	6.47	208.30
						4" Ice	7.52	9.64	522.07
(2) LPA-80080/6CF w/ Mount Pipe	A	From Leg	3.46 2.00 3.00	30.0000	215.00	No Ice	4.35	10.51	42.90
						1/2" Ice	4.79	11.56	104.60
						1" Ice	5.25	12.49	177.42
						2" Ice	6.17	14.40	348.65
						4" Ice	8.11	18.43	824.28
(2) LPA-80080/6CF w/ Mount Pipe	B	From Leg	3.06 2.57 3.00	40.0000	215.00	No Ice	4.35	10.51	42.90
						1/2" Ice	4.79	11.56	104.60
						1" Ice	5.25	12.49	177.42
						2" Ice	6.17	14.40	348.65
						4" Ice	8.11	18.43	824.28
(2) LPA-80080/6CF w/ Mount Pipe	C	From Leg	3.46 2.00 3.00	30.0000	215.00	No Ice	4.35	10.51	42.90
						1/2" Ice	4.79	11.56	104.60
						1" Ice	5.25	12.49	177.42
						2" Ice	6.17	14.40	348.65
						4" Ice	8.11	18.43	824.28
BXA-70063-6CF-2 w/Mount Pipe	A	From Leg	3.46 2.00 3.00	30.0000	215.00	No Ice	7.77	5.18	39.33
						1/2" Ice	8.31	6.11	93.42
						1" Ice	8.86	6.92	158.45
						2" Ice	9.99	8.59	313.53
						4" Ice	12.35	12.13	754.65
BXA-70063-4CF w/ Mount Pipe	B	From Leg	3.06 2.57 3.00	40.0000	215.00	No Ice	5.75	4.24	44.64
						1/2" Ice	6.26	4.91	90.62
						1" Ice	6.78	5.59	144.67
						2" Ice	7.85	7.06	275.42
						4" Ice	10.14	10.28	646.88
BXA-70063-6CF-2 w/Mount Pipe	C	From Leg	3.46 2.00 3.00	30.0000	215.00	No Ice	7.77	5.18	39.33
						1/2" Ice	8.31	6.11	93.42
						1" Ice	8.86	6.92	158.45
						2" Ice	9.99	8.59	313.53
						4" Ice	12.35	12.13	754.65
4' Side Arm Mount	B	From Leg	1.00 0.00 0.00	0.0000	201.00	No Ice	0.98	2.18	42.00
						1/2" Ice	1.70	3.80	62.37
						1" Ice	2.42	5.42	82.75
						2" Ice	3.86	8.66	123.49
						4" Ice	6.74	15.14	204.99
4' Side Arm Mount	C	From Leg	1.00 0.00 0.00	0.0000	201.00	No Ice	0.98	2.18	42.00
						1/2" Ice	1.70	3.80	62.37
						1" Ice	2.42	5.42	82.75

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						2" Ice	3.86	8.66	123.49
						4" Ice	6.74	15.14	204.99
12' Omni	B	From Leg	2.00 0.00 6.00	0.0000	201.00	No Ice	3.00	3.00	20.00
						1/2" Ice	4.23	4.23	42.30
						1" Ice	5.47	5.47	72.34
						2" Ice	7.69	7.69	156.25
						4" Ice	10.71	10.71	423.63
12' Omni	C	From Leg	2.00 0.00 6.00	0.0000	201.00	No Ice	3.00	3.00	20.00
						1/2" Ice	4.23	4.23	42.30
						1" Ice	5.47	5.47	72.34
						2" Ice	7.69	7.69	156.25
						4" Ice	10.71	10.71	423.63
Side Light	A	From Leg	1.00 0.00 0.00	0.0000	120.00	No Ice	0.33	0.33	7.00
						1/2" Ice	0.47	0.47	7.05
						1" Ice	0.60	0.60	7.10
						2" Ice	0.87	0.87	7.20
						4" Ice	1.40	1.40	7.40
Side Light	B	From Leg	1.00 0.00 0.00	0.0000	120.00	No Ice	0.33	0.33	7.00
						1/2" Ice	0.47	0.47	7.05
						1" Ice	0.60	0.60	7.10
						2" Ice	0.87	0.87	7.20
						4" Ice	1.40	1.40	7.40
Side Light	C	From Leg	1.00 0.00 0.00	0.0000	120.00	No Ice	0.33	0.33	7.00
						1/2" Ice	0.47	0.47	7.05
						1" Ice	0.60	0.60	7.10
						2" Ice	0.87	0.87	7.20
						4" Ice	1.40	1.40	7.40
17' Side Light Mount	A	From Face	0.00 0.00 0.00	0.0000	120.00	No Ice	2.27	2.27	62.00
						1/2" Ice	3.42	3.42	1152.47
						1" Ice	4.58	4.58	2263.97
						2" Ice	6.93	6.93	4550.64
						4" Ice	11.78	11.78	9382.99
17' Side Light Mount	C	From Face	0.00 0.00 0.00	0.0000	120.00	No Ice	2.27	2.27	62.00
						1/2" Ice	3.42	3.42	1152.47
						1" Ice	4.58	4.58	2263.97
						2" Ice	6.93	6.93	4550.64
						4" Ice	11.78	11.78	9382.99

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
242.00	8' Omni	35	7.895	0.3214	0.0115	262443
240.00	Flash Beacon	35	7.758	0.3206	0.0114	262443
236.00	10' T-Frame	35	7.485	0.3188	0.0112	218703
226.00	10' T-Frame	35	6.808	0.3126	0.0108	82001
215.00	Rohn 12' Boom Gate	35	6.081	0.3002	0.0103	44302
201.00	4' Side Arm Mount	35	5.203	0.2766	0.0089	27733
120.00	Side Light	35	1.665	0.1337	0.0032	41899

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
242.00	8' Omni	10	22.776	0.9282	0.0331	93518
240.00	Flash Beacon	10	22.382	0.9257	0.0329	93518
236.00	10' T-Frame	10	21.595	0.9204	0.0324	77931
226.00	10' T-Frame	10	19.640	0.9023	0.0313	29218
215.00	Rohn 12' Boom Gate	10	17.539	0.8663	0.0299	15484
201.00	4' Side Arm Mount	10	15.007	0.7981	0.0259	9601
120.00	Side Light	10	4.804	0.3854	0.0093	14532

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	242	Leg	A325N	0.7500	4	3165.82	19438.60	0.163 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	3378.16	3806.25	0.888 ✓	1.333	Member Block Shear
		Top Girt	A325N	0.5000	1	99.30	3806.25	0.026 ✓	1.333	Member Block Shear
T2	222	Leg	A325N	0.8750	4	10292.40	26458.10	0.389 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	4524.34	3806.25	1.189 ✓	1.333	Member Block Shear
		Top Girt	A325N	0.5000	1	404.05	3806.25	0.106 ✓	1.333	Member Block Shear
T3	202	Leg	A325N	0.8750	4	16726.30	26458.10	0.632 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	4948.60	4123.34	1.200 ✓	1.333	Bolt Shear
T4	182	Leg	A325N	1.0000	4	22606.80	34557.50	0.654 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	5185.79	4123.34	1.258 ✓	1.333	Bolt Shear
T5	162	Leg	A325N	1.0000	4	28069.00	34557.50	0.812 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	5515.14	5437.50	1.014 ✓	1.333	Member Bearing
T6	142	Leg	A325N	1.0000	6	21910.10	34557.50	0.634 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	6619.45	6442.72	1.027 ✓	1.333	Bolt Shear
T7	122	Leg	A325N	1.0000	6	25309.40	34557.50	0.732 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	7256.62	6442.72	1.126 ✓	1.333	Bolt Shear
T8	102	Leg	A325N	1.0000	6	28674.20	34557.50	0.830 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	7958.38	9277.52	0.858 ✓	1.333	Bolt Shear
T9	82	Leg	A325N	1.0000	6	32012.20	34557.50	0.926 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	8677.04	9277.52	0.935 ✓	1.333	Bolt Shear
T10	62	Leg	A325N	1.0000	8	26488.30	34557.40	0.767 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	9423.42	9277.52	1.016 ✓	1.333	Bolt Shear
T11	42	Leg	A325N	1.0000	8	26666.10	34555.30	0.772 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	3	5523.51	9277.52	0.595 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	4454.73	9277.52	0.480 ✓	1.333	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T12	22	Anchor Rods	A354-BC	1.0000	10	25400.90	32397.70	0.784 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	3	5345.89	9277.52	0.576 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	4551.25	9277.52	0.491 ✓	1.333	Bolt Shear

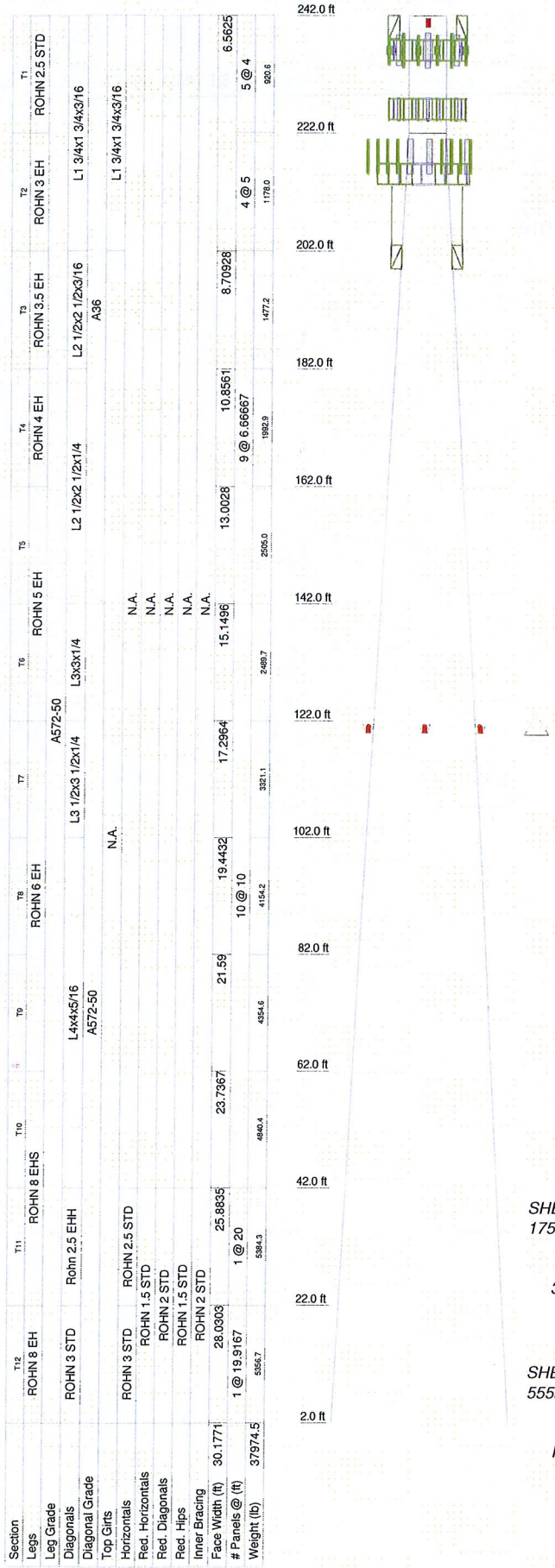
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	242 - 222	Leg	ROHN 2.5 STD	1	-15855.90	55076.63	28.8	Pass
T2	222 - 202	Leg	ROHN 3 EH	37	-47457.80	96050.91	49.4	Pass
T3	202 - 182	Leg	ROHN 3.5 EH	67	-75950.90	110260.29	68.9	Pass
T4	182 - 162	Leg	ROHN 4 EH	88	-102873.00	139062.55	74.0	Pass
T5	162 - 142	Leg	ROHN 5 EH	109	-128649.00	206280.41	62.4	Pass
T6	142 - 122	Leg	ROHN 5 EH	130	-151527.00	177435.62	85.4	Pass
T7	122 - 102	Leg	ROHN 6 EH	145	-176719.00	264284.57	66.9	Pass
T8	102 - 82	Leg	ROHN 6 EH	160	-202260.00	264284.57	76.5	Pass
T9	82 - 62	Leg	ROHN 6 EH	175	-227950.00	264284.57	86.3	Pass
T10	62 - 42	Leg	ROHN 8 EHS	190	-253910.00	332522.17	76.4	Pass
T11	42 - 22	Leg	ROHN 8 EHS	205	-259517.00	332522.17	78.0	Pass
T12	22 - 2	Leg	ROHN 8 EH	238	-310281.00	435619.05	71.2	Pass
T1	242 - 222	Diagonal	L1 3/4x1 3/4x3/16	7	-3435.88	7821.62	43.9	Pass
T2	222 - 202	Diagonal	L1 3/4x1 3/4x3/16	43	-4303.58	4417.18	97.4	Pass
T3	202 - 182	Diagonal	L2 1/2x2 1/2x3/16	70	-4924.80	8132.31	60.6	Pass
T4	182 - 162	Diagonal	L2 1/2x2 1/2x1/4	91	-5185.79	8014.73	64.7	Pass
T5	162 - 142	Diagonal	L2 1/2x2 1/2x1/4	113	-5579.89	6273.35	88.9	Pass
T6	142 - 122	Diagonal	L3x3x1/4	134	-6619.45	7441.73	89.0	Pass
T7	122 - 102	Diagonal	L3 1/2x3 1/2x1/4	149	-7256.62	10077.20	72.0	Pass
T8	102 - 82	Diagonal	L4x4x5/16	164	-7958.38	15666.21	50.8	Pass
T9	82 - 62	Diagonal	L4x4x5/16	179	-8677.04	13308.66	65.2	Pass
T10	62 - 42	Diagonal	L4x4x5/16	194	-9423.42	11574.75	81.4	Pass
T11	42 - 22	Diagonal	Rohn 2.5 EHH	212	-16570.50	26597.75	62.3	Pass
T12	22 - 2	Diagonal	ROHN 3 STD	245	-16037.70	26710.79	60.0	Pass
T11	42 - 22	Horizontal	ROHN 2.5 STD	208	-8909.46	13355.46	66.7	Pass
T12	22 - 2	Horizontal	ROHN 3 STD	241	-9102.51	22365.74	40.7	Pass
T1	242 - 222	Top Girt	L1 3/4x1 3/4x3/16	5	-97.70	2708.74	3.6	Pass
T2	222 - 202	Top Girt	L1 3/4x1 3/4x3/16	41	-408.32	2708.74	15.1	Pass
T11	42 - 22	Redund Horz 1 Bracing	ROHN 1.5 STD	210	-4501.43	11292.50	39.9	Pass
T12	22 - 2	Redund Horz 1 Bracing	ROHN 1.5 STD	243	-5381.95	9692.24	55.5	Pass
T11	42 - 22	Redund Diag 1 Bracing	ROHN 2 STD	211	-4045.97	7705.17	52.5	Pass
T12	22 - 2	Redund Diag 1 Bracing	ROHN 2 STD	244	-4562.53	7307.29	62.4	Pass
T11	42 - 22	Redund Hip 1 Bracing	ROHN 1.5 STD	233	-44.36	10226.11	0.4	Pass
T12	22 - 2	Redund Hip 1 Bracing	ROHN 1.5 STD	266	-38.61	8723.63	0.4	Pass
T11	42 - 22	Redund Hip Diagonal Bracing	ROHN 1.5 STD	232	-28.30	1379.58	2.1	Pass
T12	22 - 2	Redund Hip Diagonal Bracing	ROHN 1.5 STD	265	-28.34	1263.45	2.2	Pass
T11	42 - 22	Inner Bracing	ROHN 2 STD	237	-8.69	4122.03	0.6	Pass
T12	22 - 2	Inner Bracing	ROHN 2 STD	270	-8.57	3514.81	0.6	Pass
							Summary	

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
						Leg (T9)	86.3	Pass
						Diagonal (T2)	97.4	Pass
						Horizontal (T11)	66.7	Pass
						Top Girt (T2)	15.1	Pass
						Redund Horz 1 Bracing (T12)	55.5	Pass
						Redund Diag 1 Bracing (T12)	62.4	Pass
						Redund Hip 1 Bracing (T12)	0.4	Pass
						Redund Hip Diagonal Bracing (T12)	2.2	Pass
						Inner Bracing (T11)	0.6	Pass
						Bolt Checks	94.3	Pass
						RATING =	**97.4**	**Pass**

APPENDIX C

Tower Elevation Drawing



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
8' Omni	242	10' T-Frame	226
FM Antenna	242	10' T-Frame	226
6' Standoff	240	(3) DB844H90E-XY w/ Mount Pipe	226
6' Standoff	240	(3) DB844H90E-XY w/ Mount Pipe	226
Flash Beacon	240	(3) DB844H90E-XY w/ Mount Pipe	226
6' Standoff	240	Rohn 12' Boom Gate	215
10' T-Frame	236	Rohn 12' Boom Gate	215
10' T-Frame	236	Rohn 12' Boom Gate	215
10' T-Frame	236	BXA-171085-8BF w/ Mount Pipe	215
(2) RA21.7770.00 w/ 2"x5.5' mountpipe	236	BXA-171085-8BF w/ Mount Pipe	215
(2) RA21.7770.00 w/ 2"x5.5' mountpipe	236	BXA-171085-8BF w/ Mount Pipe	215
(2) RA21.7770.00 w/ 2"x5.5' mountpipe	236	(2) LPA-80080/6CF w/ Mount Pipe	215
(2) LGP21401	236	(2) LPA-80080/6CF w/ Mount Pipe	215
(2) LGP21401	236	(2) LPA-80080/6CF w/ Mount Pipe	215
(2) LGP21401	236	BXA-70063-6CF-2 w/Mount Pipe	215
(2) LGP13519	236	BXA-70063-4CF w/ Mount Pipe	215
(2) LGP13519	236	BXA-70063-6CF-2 w/Mount Pipe	215
(2) LGP13519	236	4' Side Arm Mount	201
P65-16-XLH-RR w/ 2"x5.5' mountpipe	236	4' Side Arm Mount	201
P65-16-XLH-RR w/ 2"x5.5' mountpipe	236	12' Omni	201
P65-16-XLH-RR w/ 2"x5.5' mountpipe	236	12' Omni	201
(2) RRUS-11	236	Side Light	120
(2) RRUS-11	236	Side Light	120
(2) RRUS-11	236	Side Light	120
DC6-48-60-18-8F Surge Suppression Unit	236	17' Side Light Mount	120
		17' Side Light Mount	120
10' T-Frame	226		

MATERIAL STRENGTH

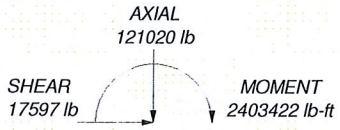
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

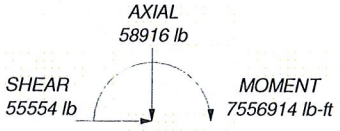
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 97.4%

MAX. CORNER REACTIONS AT BASE:
DOWN: 308797 lb
SHEAR: 33379 lb

UPLIFT: -252718 lb
SHEAR: 28722 lb



TORQUE 4032 lb-ft
38 mph WIND - 0.7500 in ICE



TORQUE 10149 lb-ft
REACTIONS - 85 mph WIND

GPD GROUP
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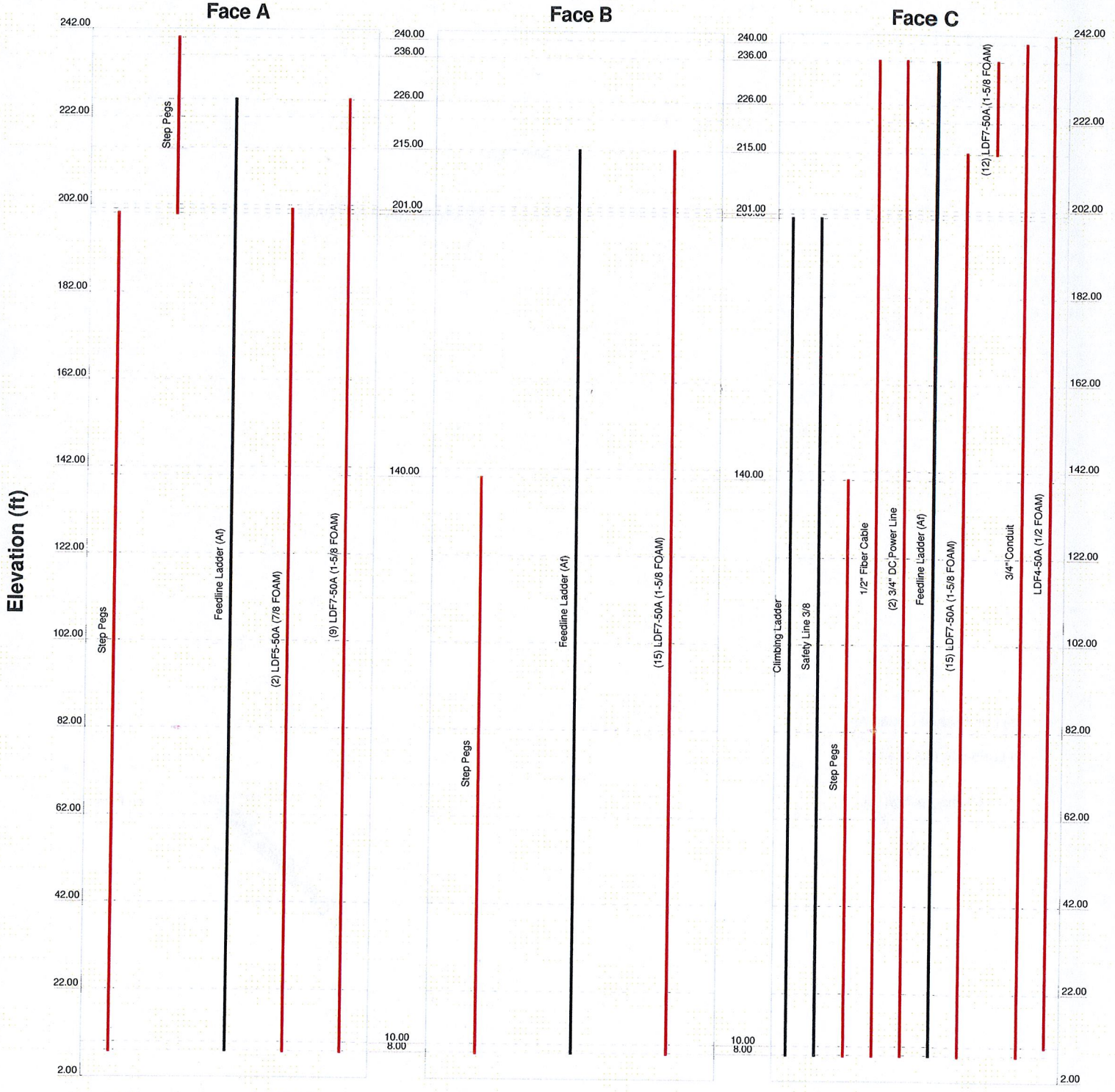
Job: *60427 MONROE-GUINEA ROAD*			
Project: *2012767.37*			
Client: AT&T Mobility	Drawn by: mmoeller	App'd:	
Code: TIA/EIA-222-F	Date: 06/21/12	Scale: NTS	
Path: O:\2012\2012767\37\tnx\60427.eri		Dwg No. E-1	

Feedline Distribution Chart
2' - 242'

Round | Flat | App In Face | App Out Face | Truss Leg



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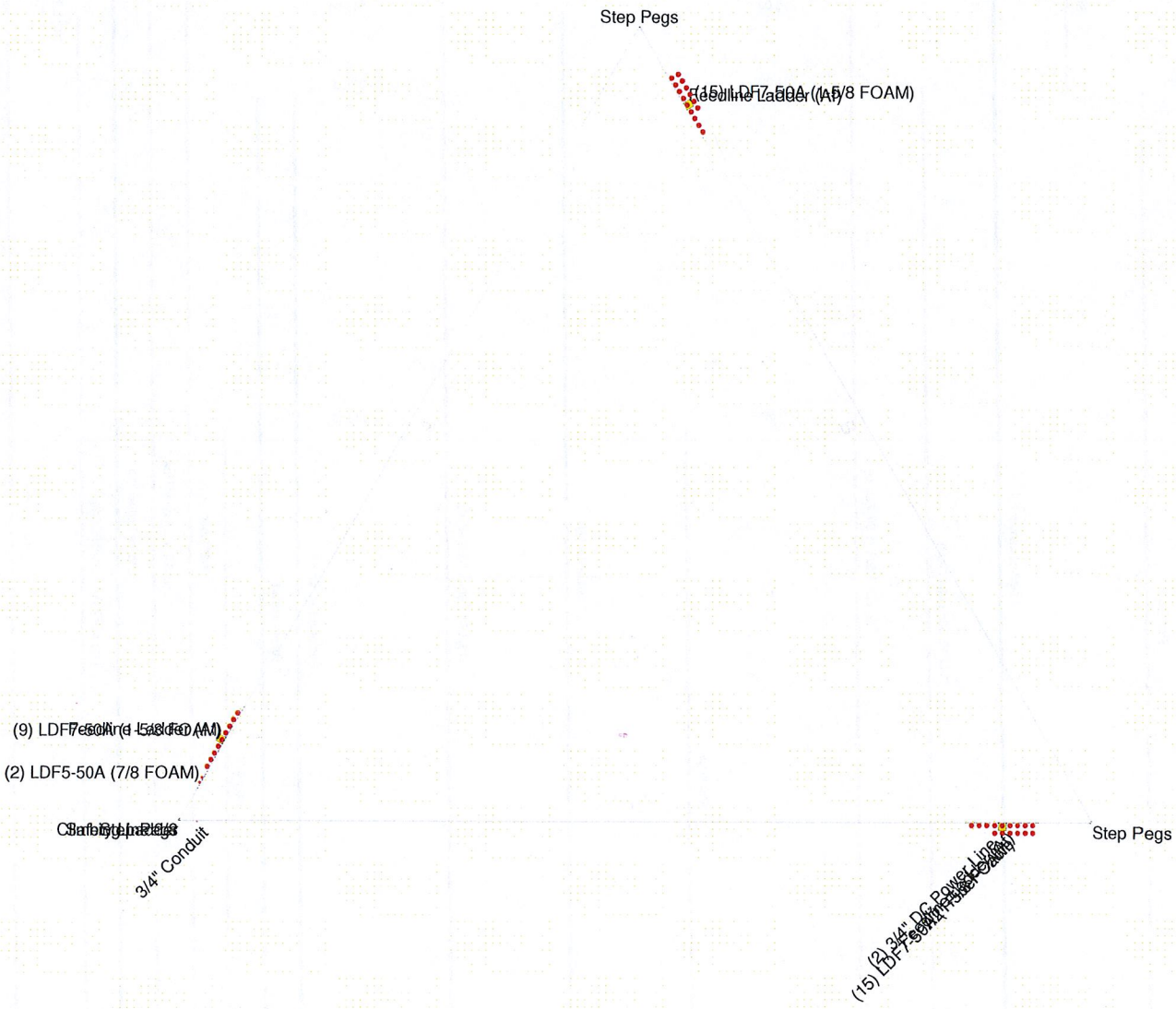
Job: ***60427 MONROE-GUINEA ROAD***			
Project: ***2012767.37***			
Client: AT&T Mobility	Drawn by: mmoeller	App'd:	
Code: TIA/EIA-222-F	Date: 06/21/12	Scale: NTS	
Path: O:\2012\2012767\37\tnx\60427.eri		Dwg No. E-7	

Feedline Plan

Round Flat App In Face App Out Face



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Job: *60427 MONROE-GUINEA ROAD*			
Project: *2012767.37*			
Client: AT&T Mobility	Drawn by: mmoeller	App'd:	
Code: TIA/EIA-222-F	Date: 06/21/12	Scale: NTS	
Path: O:\2012\2012767\37\tnx\60427.eri		Dwg No. E-7	

APPENDIX D

Foundation Analysis

520 South Main Street • Suite 2531 • Akron, Ohio 44311• PHONE 330-572-2100 • FAX 330-572-2101

GPD GROUP
Engineers • Architects • Planners

2012767.37
Sheet No. 1 Of 1

Calculated By MM Date 6/21/2012
Checked By __Date

Individual Pad and Pier Uplift Check

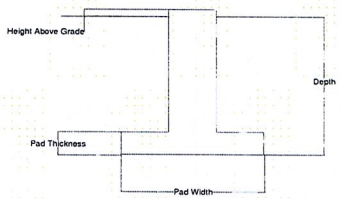
TIA/EIA-222-F

RISA REACTIONS

Uplift	253	k

PAD & PIER DIMENSIONS

Pier Shape	Circular	
Pier Height Above Grade	2.00	ft
Pier Diameter/Width	4.00	ft
Pad Width	16.00	ft
Pad Length	16.00	ft
Pad Thickness	3.00	ft
Depth to Bottom of Pad	9.00	ft



SOIL PROPERTIES

Soil Type	Granular	
Water Table Depth	99.0	ft
Average Friction Angle	34.0	

Soil Layer	Soil Layer Thickness (ft)		Soil Unit Weight (kcf)	Concrete Dry Unit Weight (kcf)	Soil Weight (k)	Vertical Shear Resistance (k)	Frictional Resistance (k)
1 (neglected)	3.50		0.120	0.150	193.88	0.00	0.00
2	2.50		0.120	0.150	90.36	0.00	0.00
3	3.00		0.120	0.150	0.00	0.00	76.17
					0.00	0.00	0.00
					0.00	0.00	0.00
					0.00	0.00	0.00
					0.00	0.00	0.00
					0.00	0.00	0.00
					0.00	0.00	0.00
					0.00	0.00	0.00
Totals	9				284.24	0.00	76.17

CALCULATIONS

Wc=	130.28	k
(Wc+Ws)/1.5 + (Vr+Fr)/2 or Ws/2+Wc/1.25+(Vr+Fr)/2)	284.43	k
Capacity=	**88.9% OK**	

GPD GROUP

Mat Foundation Analysis
60427 Monroe-Guinea Road
2012767.37

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Rock
Foundation Type	Mono Pad
Pier Type	Round
Reinforcing Known	No
Max Capacity	1

Tower Reactions		
Moment, M	0	k-ft
Axial, P	308.797	k
Shear, V	33.379	k

Pad & Pier Geometry		
Pier Diameter, ø	4	ft
Pad Length, L	16	ft
Pad Width, W	16	ft
Pad Thickness, t	3	ft
Depth, D	9	ft
Height Above Grade, HG	2	ft

Pad & Pier Reinforcing		
Rebar Fy	60	ksi
Concrete Fc'	3	ksi
Clear Cover		in
Reinforced Top & Bottom?	Yes	
Pad Reinforcing Size	# 7	
Pad Quantity Per Layer		
Pier Rebar Size	# 8	
Pier Quantity of Rebar		

Soil Properties		
Soil Type	Granular	
Soil Unit Weight	120	pcf
Angle of Friction, ø	34	°
Bearing Type	Net	
Ultimate Bearing	60	ksf
Water Table Depth	99	ft
Frost Depth	3.5	ft

Bearing Summary			Load Case
Qxmax	2.42	ksf	1D+1W
Qymax	2.42	ksf	1D+1W
Qmax @ 45°	2.92	ksf	1D+1W
$Q_{(all)\ Gross}$	30.54	ksf	
Controlling Capacity	**9.6%**	**Pass**	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	321.86	≥1.5	1D+1W
FS(ot)y	321.86	≥1.5	1D+1W
Controlling Capacity	**0.5%**	**Pass**