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

August 20, 2013

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

RE: **EM-VER-008-130802** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 719 Amity Road, Bethany, 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:

- Any deviation from the proposed modification as specified in this notice and supporting materials with the 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;
- Within 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 July 31, 2013. 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,

Melanie A. Bachman
Acting Executive Director

MAB/CDM/jb

c: The Honorable Derrylyn Gorski, First Selectman, Town of Bethany
Isabel Kearns, Zoning Enforcement Officer, Town of Bethany
Christopher B. Fisher, Esq., AT&T

CSC
CONNECTICUT SITING COUNCIL

ROBINSON & COLE LLP

KENNETH C. BALDWIN

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Hartford, CT 06103-3597
Main (860) 275-8200
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kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

July 31, 2013

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

Re: **Notice of Exempt Modification – Facility Modification**
719 Amity Road, Bethany, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 140-foot level on an existing 150-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 2010. Cellco now intends to replace three (3) of its existing antennas with three (3) model BXA-70063-6CF LTE antennas, at the same 140-foot level. Attached behind Tab 1 are the specifications for Cellco's 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 Derrylyn Gorski, First Selectman of the Town of Bethany. The Town of Bethany 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 140-foot level on the existing 150-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 boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels 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 to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative power density table for Cellco's modified facility is included behind Tab 2.

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 Cellco's proposed modifications. (*See* Structural Analysis Report attached behind 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:
Derrylyn Gorski, Bethany First Selectman
Sandy M. Carter

TAB 1

BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

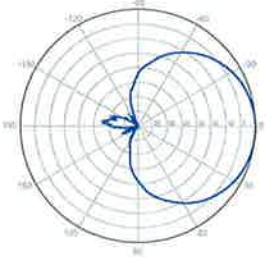
Replace "X" with desired electrical downtilt.

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

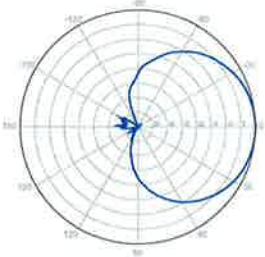
Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	13°	11°
Gain	14.0 dBd (16.1 dBi)	14.5 dBd (16.6 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (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 m² Side: 0.24 m²	Front: 5.5 ft² Side: 2.6 ft²
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

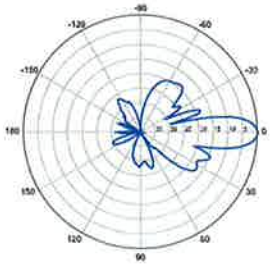


Horizontal | 750 MHz

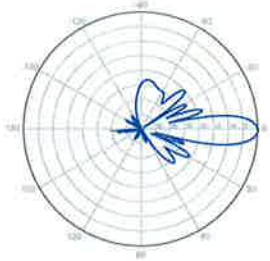


Horizontal | 850 MHz

BXA-70063-6CF-EDIN-0

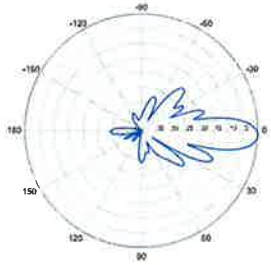


0° | Vertical | 750 MHz

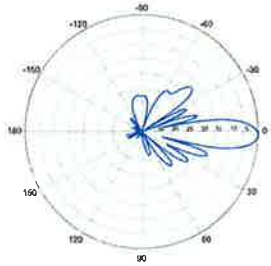


0° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-2



2° | Vertical | 750 MHz

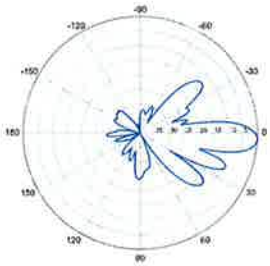


2° | Vertical | 850 MHz

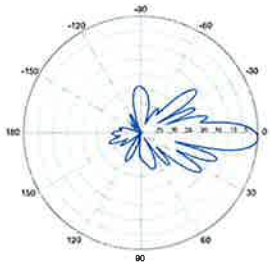
BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

BXA-70063-6CF-EDIN-3

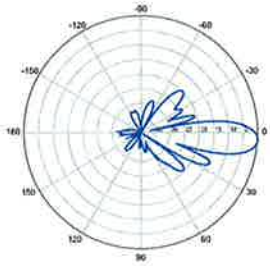


3° | Vertical | 750 MHz

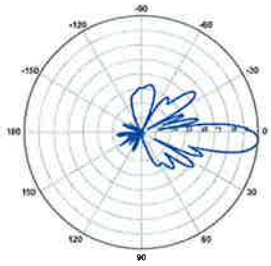


3° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-4

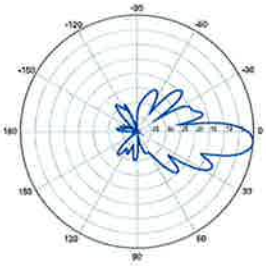


4° | Vertical | 750 MHz

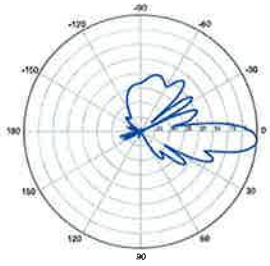


4° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-5

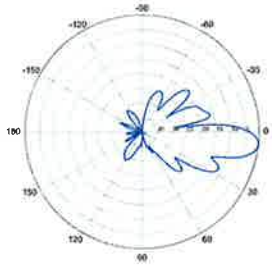


5° | Vertical | 750 MHz

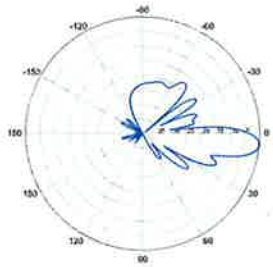


5° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-6

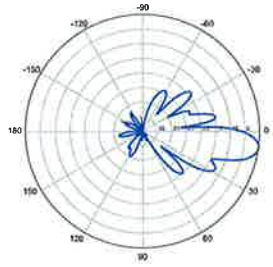


6° | Vertical | 750 MHz

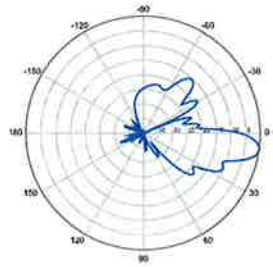


6° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-8

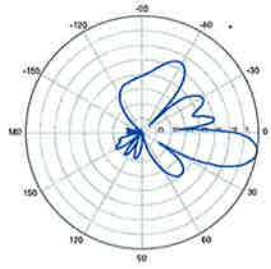


8° | Vertical | 750 MHz

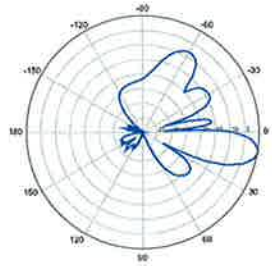


8° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-10



10° | Vertical | 750 MHz



10° | Vertical | 850 MHz

TAB 2

	General	Power	Density					
Site Name: Bethany N								
Tower Height: Verizon @ 140ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Sprint CDMA/LTE	2	693	130.4	0.0293	1900	1.0000	2.93%	
*Sprint CDMA/LTE	1	390	130.4	0.0082	850	0.5667	1.46%	
*Beth Fire Dept			160	0.0008	33.54	0.2000	0.42%	
*Beth Hwy Dept			160	0.0014	155.835	0.2000	0.70%	
*AT&T UMTS	2	1077	151	0.0340	1900	1.0000	3.40%	
*AT&T UMTS	2	565	151	0.0178	880	0.5867	3.04%	
*AT&T GSM	1	491	151	0.0077	880	0.5867	1.32%	
*AT&T GSM	4	813	151	0.0513	1900	1.0000	5.13%	
*AT&T LTE	1	1313	151	0.0207	734	0.4893	4.23%	
*MetroPCS	3	727	120	0.0545	2140	1.0000	5.45%	
Verizon PCS	**7**	**418**	**140**	**0.0537**	**1970**	**1.0000**	**5.37%**	
Verizon Cellular	**9**	**290**	**140**	**0.0479**	**869**	**0.5793**	**8.27%**	
Verizon AWS	**1**	**1750**	**140**	**0.0321**	**2145**	**1.0000**	**3.21%**	
Verizon 700	**1**	**814**	**140**	**0.0149**	**698**	**0.4653**	**3.21%**	
								48.12%
* Source: Siting Council								

TAB 3

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

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
Kevin Clements
1117 Perimeter Center W, Suite W303
Atlanta, GA 30328
(678) 781-5061
kclements@gpdgroup.com

GPD# 2013723.01.61186.03 Rev 1
May 31, 2013

REVISED STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	**Site USID:**	**61186**
	Site FA:	**10035070**
	Site Name:	**BETHANY**
	AT&T Project:	**4_Verizon Modification 4-11-13**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2006 IBC, ASCE 7-05 & 2005 CBC** **90-mph (fastest mile) with 0" ice** **38-mph (fastest mile) with 3/4" ice**
SITE DATA:		**719 Amity Road, Bethany, CT 06524, New Haven County** **Latitude 41° 26' 33.871" N, Longitude 72° 59' 32.896" W** **Market: New England** **150' Modified Valmont Monopole**

Ms. Charlotte Malone,

GPD is pleased to submit this Revised 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:	87.8%	Pass
Foundation Ratio with Proposed Equipment:	55.7%	Pass

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

Respectfully submitted,

John N. Kabak, P.E.
Connecticut #: 28336

SUMMARY & RESULTS

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

Modifications designed by B&T Engineering (Project #: 83154.003a, dated 2/21/12) were considered in this analysis.
Modifications designed by B&T Engineering (Project #: 84427.0002, dated 7/19/12) were considered in this analysis.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	87.8%	Pass
Anchor Rods	79.3%	Pass
Base Plate	46.3%	Pass
Foundation	55.7%	Pass

ANALYSIS METHOD

TnxTower (Version 6.1.0.9), 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 and is being completed without the benefit of a recent site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Notice of Co-location Form	Verizon Co-location document, uploaded 5/9/2013	Siterra
Site Lease Application	Verizon Application, uploaded 4/24/2013	Siterra
Tower Design	Not Provided	N/A
Foundation Investigation	Not Provided	N/A
Geotechnical Report	WEI Project #: 2008-653, dated 10/31/2008	Siterra
Modification Drawings	B&T Engineering Project #: 83154.003a, dated 2/21/2012	Siterra
Modification Drawings	B&T Engineering Project #: 84427.0002, dated 7/19/2012	Siterra
Post Modification Inspection	B&T Engineering Project #: 83154.004, dated 8/3/2012	Siterra
Previous Structural Analysis	GPD Job #: 2013723.61186.01, dated 2/1/2013	Siterra

ASSUMPTIONS

This revised 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 shaft sizes and shapes 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.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous Structural Analysis by GPD (Job #: 2013723.61186.01, dated 2/1/2013), site photos and the provided Notice of co-location form and is assumed to be accurate.
12. The existing AT&T loading varies between the previous structural analysis by GPD (Job #: 2013723.61186.01, dated 2/1/2013) and the provided Notice of co-location form. The existing AT&T loading was modeled based on the previous analysis.
13. The AT&T future loading has been modeled based on the generic future loading scenario.

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 Revised 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 in excess of the specified code recommended amount, 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	BETHANY
Site Number	61186
FA Number	10035070
Date of Analysis	5/31/2013
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)	MP	
Tower Height (top of steel AGL)	150'	
Tower Manufacturer	Valmont	
Tower Model	n/a	
Tower Design	n/a	
Foundation Investigation	TEP Project #: 120571.04	2/16/2012
Geotech Report	WEI Project #: 2008.653	10/31/2008
Tower Mapping	n/a	
Previous Structural Analysis	GPD Job #: 2013723.61186.01	2/1/2013
Modifications Design	B+T Group Job #: 84427.0002	7/19/2012
Modifications Design	B&T Engineering Project #: 83154.003a	2/21/2012

Design Parameters

Design Code Used	TIA/EIA-222-F, 2006 IBC & 2006 CBC
Location of Tower (County, State)	New Haven, CT
Basic Wind Speed (mph)	90 - fastest
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 (%)	87.6%
Base Plate (%)	79.3%
Foundation (%)	55.7%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Pole	65
Base Plate	60
Anchor Rods	75/150

Modifications designed by B&T Engineering (Project #: 83154.003a, dated 2/21/12) were considered in this analysis.
Modifications designed by B&T Engineering (Project #: 84427.0002, dated 7/19/12) were 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 Internal/External
City	150	156	1	Omni	Unknown	12' Omni				Pipe Mounted to Platform	1	Unknown	1-1/4"	Internal
City	150	155	1	Yagi	Unknown	10' Yagi					1	Unknown	1-1/4"	Internal
AT&T Mobility	150	151	3	Panel	Kathrein	800 10121	21/139/260	1	Unknown	12' Platform w/ rails	12	Unknown	1-5/8"	Internal
AT&T Mobility	150	151	6	Panel	KMW	AM-X-CD-16-65-00T	21/139/260			on same mount	2	Power cable	3/4"	Internal
AT&T Mobility	150	151	6	TMA	ADC	CG1900DD				behind the antennas	1	Fiber cable	3/8"	Internal
AT&T Mobility	150	151	6	TMA	CCI	DTMABP7819VG12A				behind the antennas	1	RET cable	3/8"	Internal
AT&T Mobility	150	151	12	Diplexer	Powerwave	LGP21901				behind the antennas				
AT&T Mobility	150	151	3	RET	Kathrein	860 10025				below the antennas				
AT&T Mobility	150	151	6	RRU	Ericsson	RRUS-11				on same mount				
AT&T Mobility	150	151	1	Surge	Raycap	DC6-48-60-18-8F				on same mount				
Verizon	140	140	3	Panel	Powerwave	P65-15-XL-2	0/120/240	1	Unknown	12' LP Platform	12	Unknown	1-5/8"	Internal
Verizon	140	140	3	Panel	Andrew	DB854DG65ESX	0/120/240			on the same mount				
Verizon	140	140	3	Panel	Rymsa	MG D3-800T0	0/120/240			on the same mount				
Sprint	130.4	130.4	6	Panel	Decibel	DB980F90E-M	30/150/270	3	Unknown	12' T-Arms	6	Unknown	1-5/8"	Internal
Sprint	130.4	130.4	3	Panel	RFS	APXV9PP18-C-A20	10/150/250			on the existing mount	1	Unknown	1/2"	Internal
Sprint	130.4	130.4	3	RRU	Alcatel Lucent	800 MHz				on the existing mount	3	Hybrid	1-1/4"	Internal
Sprint	130.4	130.4	3	RRU	Alcatel Lucent	1900 MHz				on the existing mount				
Sprint	130.4	130.4	3	Filter	Andrew	800 MHz 2x50w				behind RRU				
Sprint	130.4	130.4	1	GPS	Pctel	TMG-HR-26NCM				on the existing mount				
Metro PCS	122	122	6	Panel	Andrew	HBX-6516DS-VTM	30/140/270	3	Unknown	5' Standoffs	12	Unknown	1-5/8"	External
Metro PCS	122	122	6	RET	Andrew	ATM200-A20				below the antennas	6	Unknown	3/8"	External

Note: (3) P65-15-XL-2 at 140' shall be removed prior to the installation of the proposed loading. The remaining existing 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 Internal/External
Verizon	140	140	3	Panel	Powerwave	BXA-70063-6CF	0/120/240			on the existing mount				

Note: The proposed loding shall be in addition to the remaining existing 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 Internal/External
AT&T Mobility	150	151	3	Panel	KMW	AM-X-CD-16-65-00T	21/139/260			on the existing mount	6	LDF7-50A	1-5/8"	Internal

Note: The future loading shall be in addition to the existing/reserved loading at the same elevation.

APPENDIX B

tnxTower Output File

tnxTower	Job: 61186 BETHANY	Page: 1 of 9
GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2013723.01.61186.03 Rev 1	Date: 13:25:35 05/31/13
	Client: AT&T Mobility	Designed by: twillman

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New Haven 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.
TOWER RATING: 87.6%.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole 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 Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Step Pegs	C	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.00	2.72
						1/2" Ice	0.00	3.51
						1" Ice	0.00	4.92
						2" Ice	0.00	9.56
						4" Ice	0.00	26.18
Safety Line 3/8	C	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.00	0.22
						1/2" Ice	0.00	0.75
						1" Ice	0.00	1.28
						2" Ice	0.00	2.34
						4" Ice	0.00	4.46
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	150.00 - 8.00	18	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
3/4" DC Power Line	C	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
3/8" Fiber Cable	C	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.10
						1/2" Ice	0.00	0.10
						1" Ice	0.00	0.10
						2" Ice	0.00	0.10
						4" Ice	0.00	0.10
RET Cable	C	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
						2" Ice	0.00	0.08
						4" Ice	0.00	0.08
LDF6-50A (1-1/4	C	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.66

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
FOAM)						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
LDF7-50A (1-5/8	B	No	Inside Pole	140.00 - 8.00	12	No Ice	0.00	0.82
FOAM)						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF7-50A (1-5/8	A	No	Inside Pole	130.40 - 8.00	6	No Ice	0.00	0.82
FOAM)						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
1-1/4" Hybrid Cable	A	No	Inside Pole	130.40 - 8.00	3	No Ice	0.00	1.00
						1/2" Ice	0.00	1.00
						1" Ice	0.00	1.00
						2" Ice	0.00	1.00
						4" Ice	0.00	1.00
LDF4-50A (1/2 FOAM)	A	No	Inside Pole	130.40 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
LDF7-50A (1-5/8	B	No	CaAa (Out Of	122.00 - 8.00	1	No Ice	0.20	0.82
FOAM)			Face)			1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04
LDF7-50A (1-5/8	B	No	CaAa (Out Of	122.00 - 8.00	11	No Ice	0.00	0.82
FOAM)			Face)			1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF2-50 (3/8 FOAM)	C	No	CaAa (Out Of	122.00 - 8.00	6	No Ice	0.00	0.08
			Face)			1/2" Ice	0.00	0.65
						1" Ice	0.00	1.84
						2" Ice	0.00	6.04
						4" Ice	0.00	21.78

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
4' Lightning Rod	C	From Leg	0.00 0.00 2.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.10 0.51 0.89 1.41 2.57	0.10 0.51 0.89 1.41 2.57	108.0000 109.8724 114.3664 131.8301 204.9367
12' Omni	C	From Leg	4.00 0.00 6.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.00 4.23 5.47 7.69 10.71	3.00 4.23 5.47 7.69 10.71	20.0000 42.3029 72.3435 156.2484 423.6292

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
10' Yagi	A	From Leg	4.00 0.00 5.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.00 3.02 4.07 5.70 8.26	2.00 3.02 4.07 5.70 8.26	50.0000 65.5007 87.4664 151.4036 363.5775
Sabre 12' LP Platform w/Rails	C	None		0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	32.03 38.71 45.39 58.75 85.47	32.03 38.71 45.39 58.75 85.47	1343.3000 1800.0900 2256.8800 3170.4600 4997.6200
800 10121 w/ Mount Pipe	A	From Centroid-Leg	3.76 1.37 1.00	21.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.47 5.89 6.33 7.23 9.13	4.34 4.97 5.61 6.98 10.17	62.7292 107.8301 159.1002 282.9053 641.3028
800 10121 w/ Mount Pipe	B	From Centroid-Leg	3.76 1.37 1.00	19.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.47 5.89 6.33 7.23 9.13	4.34 4.97 5.61 6.98 10.17	62.7292 107.8301 159.1002 282.9053 641.3028
800 10121 w/ Mount Pipe	C	From Centroid-Leg	3.76 1.37 1.00	20.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.47 5.89 6.33 7.23 9.13	4.34 4.97 5.61 6.98 10.17	62.7292 107.8301 159.1002 282.9053 641.3028
(3) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe	A	From Centroid-Leg	3.76 1.37 1.00	21.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.73 7.20 7.68 8.66 10.74	5.32 6.03 6.76 8.26 11.54	51.2500 106.0131 167.2737 312.1956 718.8010
(3) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe	B	From Centroid-Leg	3.76 1.37 1.00	19.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.73 7.20 7.68 8.66 10.74	5.32 6.03 6.76 8.26 11.54	51.2500 106.0131 167.2737 312.1956 718.8010
(3) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe	C	From Centroid-Leg	3.76 1.37 1.00	20.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.73 7.20 7.68 8.66 10.74	5.32 6.03 6.76 8.26 11.54	51.2500 106.0131 167.2737 312.1956 718.8010
(2) CG1900DD	A	From Centroid-Leg	3.76 1.37 1.00	21.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.32 0.42 0.52 0.76 1.35	10.0000 19.3400 28.4470 53.0380 133.1770
(2) CG1900DD	B	From Centroid-Leg	3.76 1.37 1.00	19.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.32 0.42 0.52 0.76 1.35	10.0000 19.3400 28.4470 53.0380 133.1770
(2) CG1900DD	C	From Centroid-Leg	3.76 1.37 1.00	20.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.32 0.42 0.52 0.76 1.35	10.0000 19.3400 28.4470 53.0380 133.1770
(2) DTMABP7819VG12A	A	From Centroid-Le	3.76 1.37	21.0000	150.00	No Ice 1/2" Ice	0.00 0.00	0.44 0.56	20.0000 26.1190

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		g	1.00					1" Ice	0.00	0.69	35.1100
								2" Ice	0.00	0.97	59.4910
								4" Ice	0.00	1.63	139.2860
(2) DTMABP7819VG12A	B	From Centroid-Le	3.76	1.37		19.0000	150.00	No Ice	0.00	0.44	20.0000
		g	1.00					1/2" Ice	0.00	0.56	26.1190
								1" Ice	0.00	0.69	35.1100
								2" Ice	0.00	0.97	59.4910
								4" Ice	0.00	1.63	139.2860
(2) DTMABP7819VG12A	C	From Centroid-Le	3.76	1.37		20.0000	150.00	No Ice	0.00	0.44	20.0000
		g	1.00					1/2" Ice	0.00	0.56	26.1190
								1" Ice	0.00	0.69	35.1100
								2" Ice	0.00	0.97	59.4910
								4" Ice	0.00	1.63	139.2860
(4) LGP21901	A	From Centroid-Le	3.76	1.37		21.0000	150.00	No Ice	0.00	0.18	5.5000
		g	1.00					1/2" Ice	0.00	0.25	7.9150
								1" Ice	0.00	0.32	11.4120
								2" Ice	0.00	0.49	22.4320
								4" Ice	0.00	0.94	66.0160
(4) LGP21901	B	From Centroid-Le	3.76	1.37		19.0000	150.00	No Ice	0.00	0.18	5.5000
		g	1.00					1/2" Ice	0.00	0.25	7.9150
								1" Ice	0.00	0.32	11.4120
								2" Ice	0.00	0.49	22.4320
								4" Ice	0.00	0.94	66.0160
(4) LGP21901	C	From Centroid-Le	3.76	1.37		20.0000	150.00	No Ice	0.00	0.18	5.5000
		g	1.00					1/2" Ice	0.00	0.25	7.9150
								1" Ice	0.00	0.32	11.4120
								2" Ice	0.00	0.49	22.4320
								4" Ice	0.00	0.94	66.0160
(2) RRUS 11	A	From Centroid-Le	3.76	1.37		21.0000	150.00	No Ice	3.25	1.37	50.7000
		g	1.00					1/2" Ice	3.49	1.55	71.4998
								1" Ice	3.74	1.74	95.3348
								2" Ice	4.27	2.14	152.8885
								4" Ice	5.43	3.04	312.9748
(2) RRUS 11	B	From Centroid-Le	3.76	1.37		19.0000	150.00	No Ice	3.25	1.37	50.7000
		g	1.00					1/2" Ice	3.49	1.55	71.4998
								1" Ice	3.74	1.74	95.3348
								2" Ice	4.27	2.14	152.8885
								4" Ice	5.43	3.04	312.9748
(2) RRUS 11	C	From Centroid-Le	3.76	1.37		20.0000	150.00	No Ice	3.25	1.37	50.7000
		g	1.00					1/2" Ice	3.49	1.55	71.4998
								1" Ice	3.74	1.74	95.3348
								2" Ice	4.27	2.14	152.8885
								4" Ice	5.43	3.04	312.9748
DC6-48-60-18-8F Surge Suppression Unit	C	From Centroid-Le	3.76	1.37		20.0000	150.00	No Ice	1.47	1.47	32.8000
		g	1.00					1/2" Ice	1.67	1.67	50.5151
								1" Ice	1.88	1.88	70.7246
								2" Ice	2.33	2.33	119.2374
								4" Ice	3.38	3.38	252.9151
860 10025	A	From Centroid-Le	3.76	1.37		21.0000	150.00	No Ice	0.18	0.15	1.2000
		g	1.00					1/2" Ice	0.25	0.21	2.8531
								1" Ice	0.33	0.29	5.4829
								2" Ice	0.51	0.47	14.4506
								4" Ice	0.98	0.93	52.6628
860 10025	B	From Centroid-Le	3.76	1.37		19.0000	150.00	No Ice	0.18	0.15	1.2000
		g	1.00					1/2" Ice	0.25	0.21	2.8531
								1" Ice	0.33	0.29	5.4829
								2" Ice	0.51	0.47	14.4506

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	0.98	0.93	52.6628
860 10025	C	From Centroid-Leg	3.76 1.37 1.00	20.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.18 0.25 0.33 0.51 0.98	0.15 0.21 0.29 0.47 0.93	1.2000 2.8531 5.4829 14.4506 52.6628
MTS 12.5' LP Platform	C	None		0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.66 18.87 23.08 31.50 48.34	14.66 18.87 23.08 31.50 48.34	1250.0000 1481.3300 1712.6600 2175.3200 3100.6400
BXA-70063-6CF w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.73 8.27 8.81 9.93 12.27	5.49 6.23 6.99 8.55 11.97	45.9500 104.0970 170.2618 325.5140 762.1763
BXA-70063-6CF w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.73 8.27 8.81 9.93 12.27	5.49 6.23 6.99 8.55 11.97	45.9500 104.0970 170.2618 325.5140 762.1763
BXA-70063-6CF w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.73 8.27 8.81 9.93 12.27	5.49 6.23 6.99 8.55 11.97	45.9500 104.0970 170.2618 325.5140 762.1763
DB854DG65ESX w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.07 6.53 7.00 7.96 10.03	3.86 4.48 5.10 6.48 9.54	40.0000 80.4030 132.8810 257.9990 616.1970
DB854DG65ESX w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.07 6.53 7.00 7.96 10.03	3.86 4.48 5.10 6.48 9.54	40.0000 80.4030 132.8810 257.9990 616.1970
DB854DG65ESX w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.07 6.53 7.00 7.96 10.03	3.86 4.48 5.10 6.48 9.54	40.0000 80.4030 132.8810 257.9990 616.1970
MG D3-800TO w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.59 3.98 4.39 5.33 7.35	3.74 4.38 5.04 6.42 9.52	58.0267 97.5408 144.1806 253.7974 578.3710
MG D3-800TO w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.59 3.98 4.39 5.33 7.35	3.74 4.38 5.04 6.42 9.52	58.0267 97.5408 144.1806 253.7974 578.3710
MG D3-800TO w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.59 3.98 4.39 5.33 7.35	3.74 4.38 5.04 6.42 9.52	58.0267 97.5408 144.1806 253.7974 578.3710
12' T-Arm - Round (GPD)	A	From Leg	1.73	30.0000	130.40	No Ice	4.70	2.33	333.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			1.00				1/2" Ice	5.33	2.96	400.0000
			0.00				1" Ice	6.00	3.60	467.0000
							2" Ice	6.67	4.87	533.0000
							4" Ice	8.33	7.41	600.0000
12' T-Arm - Round (GPD)	B	From Leg	1.73		30.0000	130.40	No Ice	4.70	2.33	333.0000
			1.00				1/2" Ice	5.33	2.96	400.0000
			0.00				1" Ice	6.00	3.60	467.0000
							2" Ice	6.67	4.87	533.0000
							4" Ice	8.33	7.41	600.0000
12' T-Arm - Round (GPD)	C	From Leg	1.73		30.0000	130.40	No Ice	4.70	2.33	333.0000
			1.00				1/2" Ice	5.33	2.96	400.0000
			0.00				1" Ice	6.00	3.60	467.0000
							2" Ice	6.67	4.87	533.0000
							4" Ice	8.33	7.41	600.0000
(2) DB980F90E-M w/Mount Pipe	A	From Leg	3.46		30.0000	130.40	No Ice	4.37	3.95	34.0500
			2.00				1/2" Ice	4.96	5.04	73.5170
			0.00				1" Ice	5.47	5.85	119.5498
							2" Ice	6.52	7.49	234.9441
							4" Ice	8.98	10.98	593.0742
(2) DB980F90E-M w/Mount Pipe	B	From Leg	3.46		30.0000	130.40	No Ice	4.37	3.95	34.0500
			2.00				1/2" Ice	4.96	5.04	73.5170
			0.00				1" Ice	5.47	5.85	119.5498
							2" Ice	6.52	7.49	234.9441
							4" Ice	8.98	10.98	593.0742
(2) DB980F90E-M w/Mount Pipe	C	From Leg	3.46		30.0000	130.40	No Ice	4.37	3.95	34.0500
			2.00				1/2" Ice	4.96	5.04	73.5170
			0.00				1" Ice	5.47	5.85	119.5498
							2" Ice	6.52	7.49	234.9441
							4" Ice	8.98	10.98	593.0742
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	3.46		10.0000	130.40	No Ice	8.26	6.71	78.9000
			2.00				1/2" Ice	8.81	7.66	144.3056
			0.00				1" Ice	9.36	8.49	217.4688
							2" Ice	10.50	10.20	390.3379
							4" Ice	12.88	13.98	872.8391
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	3.46		30.0000	130.40	No Ice	8.26	6.71	78.9000
			2.00				1/2" Ice	8.81	7.66	144.3056
			0.00				1" Ice	9.36	8.49	217.4688
							2" Ice	10.50	10.20	390.3379
							4" Ice	12.88	13.98	872.8391
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	3.46		10.0000	130.40	No Ice	8.26	6.71	78.9000
			2.00				1/2" Ice	8.81	7.66	144.3056
			0.00				1" Ice	9.36	8.49	217.4688
							2" Ice	10.50	10.20	390.3379
							4" Ice	12.88	13.98	872.8391
800 MHz RRU	A	From Leg	3.46		10.0000	130.40	No Ice	2.40	1.59	53.0000
			2.00				1/2" Ice	2.61	1.77	71.2713
			0.00				1" Ice	2.83	1.96	92.3685
							2" Ice	3.30	2.37	143.8185
							4" Ice	4.34	3.30	289.1852
800 MHz RRU	B	From Leg	3.46		30.0000	130.40	No Ice	2.40	1.59	53.0000
			2.00				1/2" Ice	2.61	1.77	71.2713
			0.00				1" Ice	2.83	1.96	92.3685
							2" Ice	3.30	2.37	143.8185
							4" Ice	4.34	3.30	289.1852
800 MHz RRU	C	From Leg	3.46		10.0000	130.40	No Ice	2.40	1.59	53.0000
			2.00				1/2" Ice	2.61	1.77	71.2713
			0.00				1" Ice	2.83	1.96	92.3685

tnxTower	Job	Page
	61186 BETHANY	7 of 9
GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project 2013723.01.61186.03 Rev 1	Date 13:25:35 05/31/13
	Client AT&T Mobility	Designed by twillman

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	3.30	2.37	143.8185
						4" Ice	4.34	3.30	289.1852
800 MHz External Notch Filter	A	From Leg	3.46 2.00 0.00	10.0000	130.40	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	11.0000 16.8143 24.2575 44.8079 114.0099
800 MHz External Notch Filter	B	From Leg	3.46 2.00 0.00	30.0000	130.40	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	11.0000 16.8143 24.2575 44.8079 114.0099
800 MHz External Notch Filter	C	From Leg	3.46 2.00 0.00	10.0000	130.40	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	11.0000 16.8143 24.2575 44.8079 114.0099
1900 MHz RRU	A	From Leg	3.46 2.00 0.00	10.0000	130.40	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.78 3.01 3.25 3.76 4.87	1.50 1.69 1.89 2.32 3.28	44.0000 62.6019 84.1204 136.6852 285.3704
1900 MHz RRU	B	From Leg	3.46 2.00 0.00	30.0000	130.40	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.78 3.01 3.25 3.76 4.87	1.50 1.69 1.89 2.32 3.28	44.0000 62.6019 84.1204 136.6852 285.3704
1900 MHz RRU	C	From Leg	3.46 2.00 0.00	10.0000	130.40	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.78 3.01 3.25 3.76 4.87	1.50 1.69 1.89 2.32 3.28	44.0000 62.6019 84.1204 136.6852 285.3704
GPS-TMG-HR-26N	C	From Leg	3.46 2.00 0.00	0.0000	130.40	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.16 0.21 0.28 0.44 0.86	0.16 0.21 0.28 0.44 0.86	0.6000 2.3707 5.0748 14.0607 51.7881
Kenwood 5' Standoff	A	From Leg	0.87 0.50 0.00	30.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.70 7.00 8.30 10.90 16.10	0.60 0.90 1.20 1.80 3.00	78.0000 106.0000 134.0000 190.0000 302.0000
Kenwood 5' Standoff	B	From Leg	0.94 0.34 0.00	20.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.70 7.00 8.30 10.90 16.10	0.60 0.90 1.20 1.80 3.00	78.0000 106.0000 134.0000 190.0000 302.0000
Kenwood 5' Standoff	C	From Leg	0.87 0.50 0.00	30.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.70 7.00 8.30 10.90 16.10	0.60 0.90 1.20 1.80 3.00	78.0000 106.0000 134.0000 190.0000 302.0000
(2) HBX-6516DS-VTM w/ mount pipe	A	From Leg	4.33 2.50 0.00	30.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.53 3.91 4.33 5.22 7.14	3.17 3.80 4.43 5.75 8.68	28.1500 60.6468 98.7877 194.9091 493.6701

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) HBX-6516DS-VTM w/ mount pipe	B	From Leg	4.69 1.71 0.00	20.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.53 3.91 4.33 5.22 7.14	3.17 3.80 4.43 5.75 8.68	28.1500 60.6468 98.7877 194.9091 493.6701
(2) HBX-6516DS-VTM w/ mount pipe	C	From Leg	4.33 2.50 0.00	30.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.53 3.91 4.33 5.22 7.14	3.17 3.80 4.43 5.75 8.68	28.1500 60.6468 98.7877 194.9091 493.6701
(2) ATM200-A20	A	From Leg	4.33 2.50 0.00	30.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.12 0.19 0.27 0.45 0.96	0.12 0.19 0.27 0.45 0.96	0.5300 2.2280 4.7711 13.0031 46.3271
(2) ATM200-A20	B	From Leg	4.69 1.71 0.00	20.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.12 0.19 0.27 0.45 0.96	0.12 0.19 0.27 0.45 0.96	0.5300 2.2280 4.7711 13.0031 46.3271
(2) ATM200-A20	C	From Leg	4.33 2.50 0.00	30.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.12 0.19 0.27 0.45 0.96	0.12 0.19 0.27 0.45 0.96	0.5300 2.2280 4.7711 13.0031 46.3271

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	4' Lightning Rod	33	34.553	2.2396	0.0055	11052
140.00	MTS 12.5' LP Platform	33	29.937	2.1186	0.0036	5526
130.40	12' T-Arm - Round (GPD)	33	25.705	1.9826	0.0021	2818
122.00	Kenwood 5' Standoff	33	22.312	1.8349	0.0014	3253

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	150 - 125	Pole	TP22.2899x17.61x0.2188	1	-6675.2500	59632.1535	81.3	Pass
L2	125 - 120	Pole	TP23.2259x22.2899x0.3575	2	-7602.1699	108395.1608	*	Pass
L3	120 - 115	Pole	TP24.1619x23.2259x0.6352	3	-8573.0801	209710.2173	*	Pass
L4	115 - 96.58	Pole	TP27.61x24.1619x0.4601	4	-11006.7002	212758.7882	*	Pass
L5	96.58 - 90	Pole	TP28.4001x26.3451x0.5419	5	-13822.4004	297048.3737	*	Pass
L6	90 - 60	Pole	TP34.0047x28.4001x0.5689	6	-21088.6992	539169.1516	*	Pass

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GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2013723.01.61186.03 Rev 1	Date: 13:25:35 05/31/13
	Client: AT&T Mobility	Designed by: twillman

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
L7	60 - 47.5	Pole	TP36.34x34.0047x0.6377	7	-23096.4004	674111.4020	*	Pass
L8	47.5 - 30	Pole	TP38.9891x34.6875x0.6664	8	-31580.6992	950994.1525	*	Pass
L9	30 - 20	Pole	TP40.8594x38.9891x0.6506	9	-34924.6992	1072305.1455	*	Pass
L10	20 - 0	Pole	TP44.6x40.8594x0.7707	10	-42072.1016	1645175.2017	*	Pass

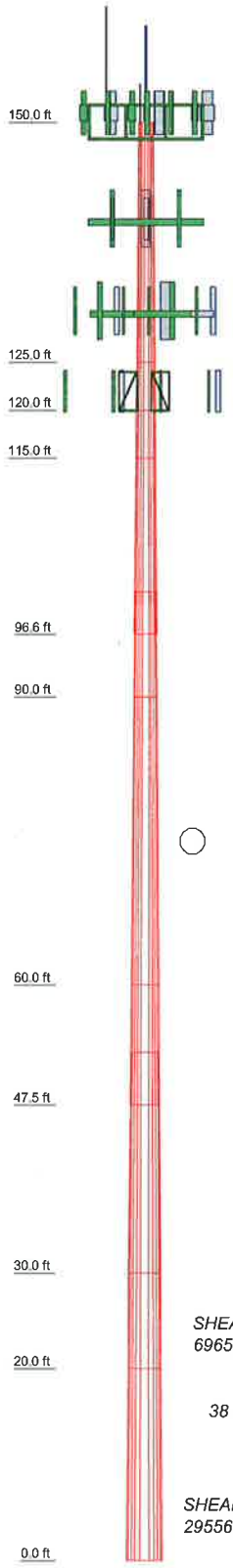
Summary	ELC:	Existing + Proposed + Future
Pole (L6)	87.8*	Pass
Rating =	87.8*	Pass

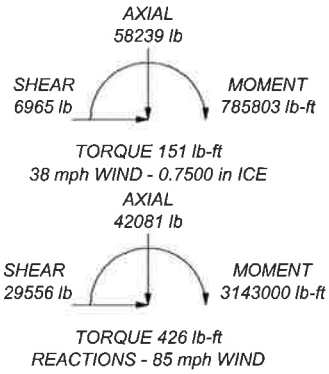
*See Appendix C for the adjusted modified capacities

APPENDIX C

Tower Elevation Drawing & Modification Calculations

Section	1	2	3	4	5	6	7	8	9	10
Length (ft)	25.00	5.00	5.00	18.42	11.00	30.00	12.50	23.00	10.00	20.00
Number of Sides	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.2188	0.3575	0.6352	0.4601	0.5419	0.5689	0.6377	0.6664	0.6506	0.7707
Socket Length (ft)				4.42			5.50			
Top Dia (in)	17.6100	22.2899	23.2258	24.1619	26.3451	28.4001	34.0047	34.6875	38.9891	40.8594
Bot Dia (in)	22.2899	23.2259	24.1619	27.6100	28.4001	34.0047	36.3400	38.9891	40.8594	44.6000
Grade	A572-65	52.383319ksi	52.383319ksi	50.16504ksi	50.587672ksi	50.838807ksi	51.993535ksi	53.848939ksi	54.166893ksi	54.393889ksi
Weight (lb)	1182.3	415.2	726.5	2219.1	1664.0	5440.0	2837.4	5787.2	2678.7	6237.1
29187.6										





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	150	DB854DG65ESX w/ Mount Pipe	140
12' Omni	150	DB854DG65ESX w/ Mount Pipe	140
10' Yagi	150	DB854DG65ESX w/ Mount Pipe	140
Sabre 12' LP Platform w/Rails	150	MG D3-800TO w/ Mount Pipe	140
800 10121 w/ Mount Pipe	150	MG D3-800TO w/ Mount Pipe	140
800 10121 w/ Mount Pipe	150	MG D3-800TO w/ Mount Pipe	140
800 10121 w/ Mount Pipe	150	12' T-Arm - Round (GPD)	130.4
(3) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe	150	12' T-Arm - Round (GPD)	130.4
		12' T-Arm - Round (GPD)	130.4
(3) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe	150	(2) DB980F90E-M w/Mount Pipe	130.4
		(2) DB980F90E-M w/Mount Pipe	130.4
(3) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe	150	(2) DB980F90E-M w/Mount Pipe	130.4
		APXVSPP18-C-A20 w/ Mount Pipe	130.4
(2) CG1900DD	150	APXVSPP18-C-A20 w/ Mount Pipe	130.4
(2) CG1900DD	150	APXVSPP18-C-A20 w/ Mount Pipe	130.4
(2) CG1900DD	150	800 MHz RRU	130.4
(2) DTMABP7819VG12A	150	800 MHz RRU	130.4
(2) DTMABP7819VG12A	150	800 MHz RRU	130.4
(2) DTMABP7819VG12A	150	800 MHz External Notch Filter	130.4
(4) LGP21901	150	800 MHz External Notch Filter	130.4
(4) LGP21901	150	800 MHz External Notch Filter	130.4
(4) LGP21901	150	1900 MHz RRU	130.4
(2) RRUS 11	150	1900 MHz RRU	130.4
(2) RRUS 11	150	1900 MHz RRU	130.4
(2) RRUS 11	150	GPS-TMG-HR-26N	130.4
DC6-48-60-18-8F Surge Suppression Unit	150	Kenwood 5' Standoff	122
		Kenwood 5' Standoff	122
860 10025	150	Kenwood 5' Standoff	122
860 10025	150	(2) HBX-6516DS-VTM w/ mount pipe	122
860 10025	150	(2) HBX-6516DS-VTM w/ mount pipe	122
MTS 12.5' LP Platform	140	(2) HBX-6516DS-VTM w/ mount pipe	122
BXA-70063-6CF w/ Mount Pipe	140	(2) ATM200-A20	122
BXA-70063-6CF w/ Mount Pipe	140	(2) ATM200-A20	122
BXA-70063-6CF w/ Mount Pipe	140	(2) ATM200-A20	122

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	51.993535ksi	52 ksi	67 ksi
52.383319ksi	52 ksi	67 ksi	53.848939ksi	54 ksi	69 ksi
50.16504ksi	50 ksi	65 ksi	54.166893ksi	54 ksi	69 ksi
50.587672ksi	51 ksi	66 ksi	54.393889ksi	54 ksi	69 ksi
50.838807ksi	51 ksi	66 ksi	60.698034ksi	61 ksi	76 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven 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: 87.8%

GPD Group
520 South Main Street, Suite 2531
Akron, OH 44311
Phone: (330) 572-2100
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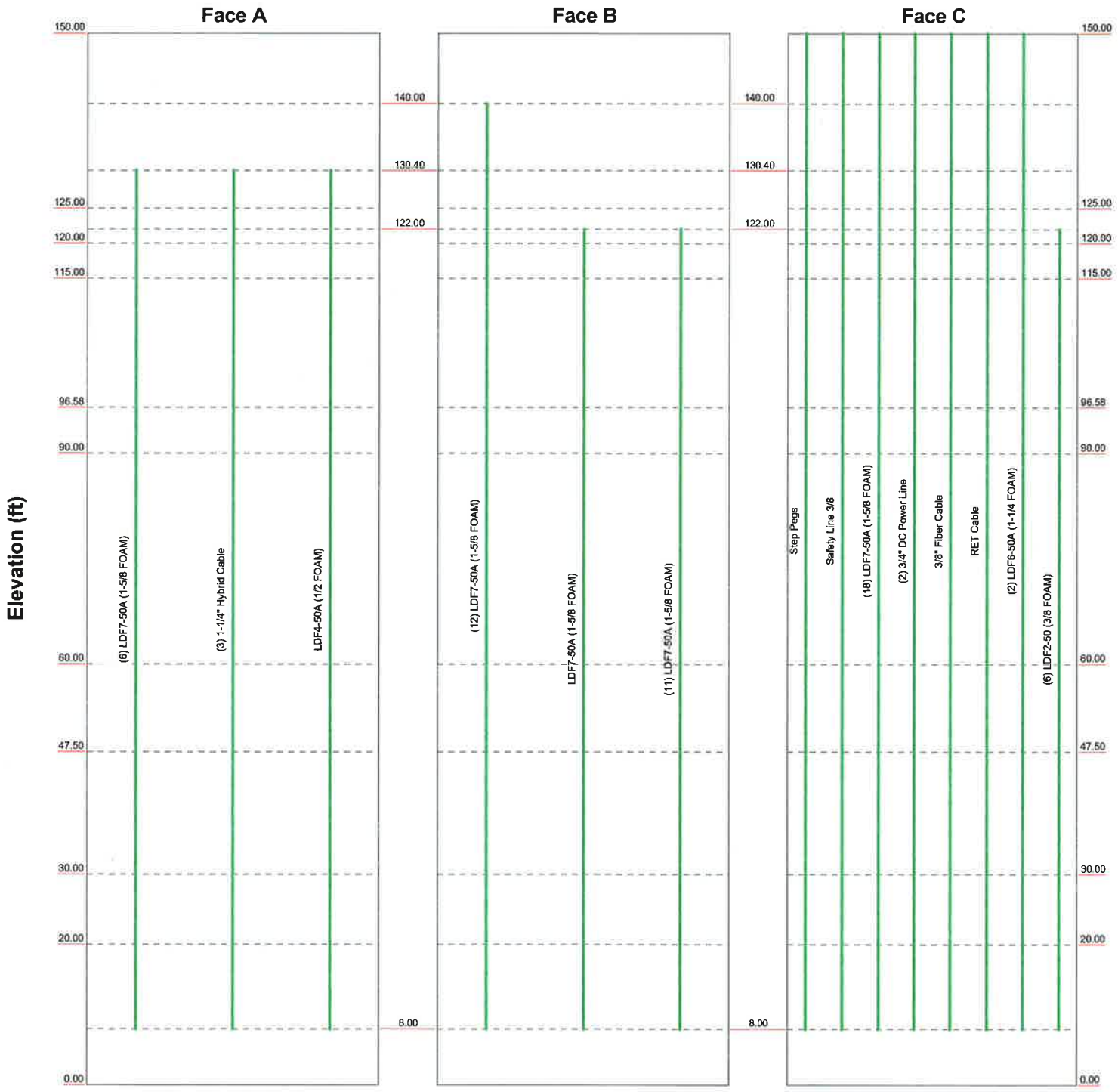
Job: 61186 BETHANY			
Project: 2013723.01.61186.03 Rev 1			
Client: AT&T Mobility	Drawn by: twillman	App'd:	
Code: TIA/EIA-222-F	Date: 05/31/13	Scale: NTS	
Path:		Dwg No. E-1	

Feedline Distribution Chart
0' - 150'

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



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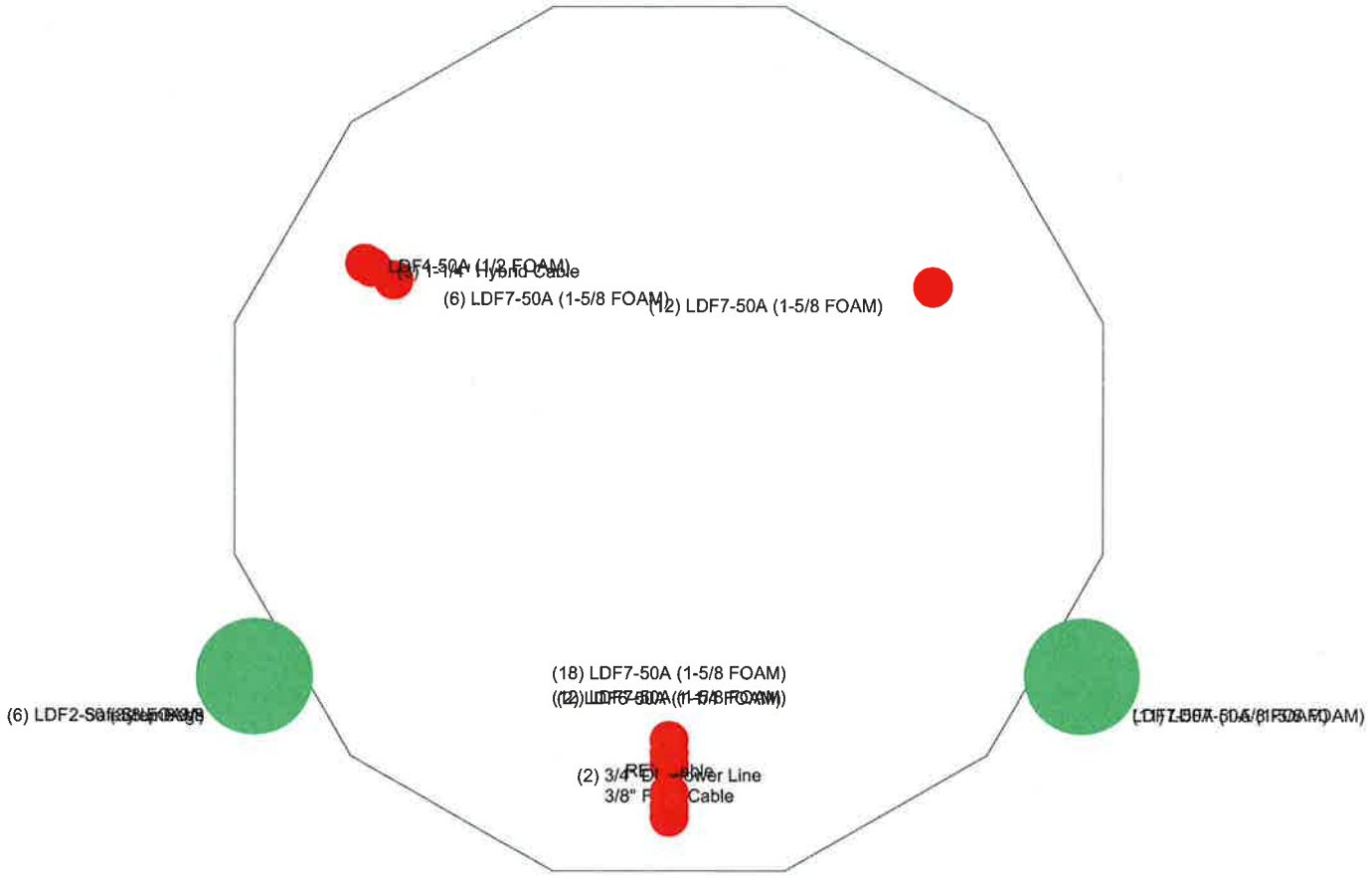
Code: TIA/EIA-222-F	Date: 05/31/13	Scale: NTS	
Path:		Dwg No. E-7	

Feedline Plan

Round Flat App In Face App Out Face



GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job: 61186 BETHANY		
	Project: 2013723.01.61186.03 Rev 1		
	Client: AT&T Mobility	Drawn by: twillman	App'd:
	Code: TIA/EIA-222-F	Date: 05/31/13	Scale: NTS
	Path:		Dwg No E-7

Reinforcement 1

Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	30	3	MS-850	F	0	T&C
30	60	3	MS-850	F	0	T&C
60	90	3	MS-650	F	0	T&C
90	120	3	MS-600	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 2

Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	20	1	MS-850	F	0	T&C
115	125	3	MP303	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

1

Reinforcement 3

Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Bottom Elevation	Top Elevation	Original Thickness	Original Yield Stress	Original Ultimate Stress	Reinforced Shaft Capacity	Reinf. 1 QTY	Reinf. 1 Type	Rein. 1 Capacity	Reinf. 2 QTY	Reinf. 2 Type	Rein. 2 Capacity	Reinf. 3 QTY	Reinf. 3 Type	Rein. 3 Capacity	Control Stress Ratio	Top Height	Section Length	Lap Splice	# of Sides	Top Diameter	Bottom Diameter	Equivalent Shaft Thickness	Equivalent Shaft Fy	Equivalent Weight Mult.	Top Elevation Failure	Bottom Elevation Failure	Section Failure %	
125.0000	150.0000	0.2188	65	80	70.6%										**70.6%**	150.0000	25.0000	0.0000	12	17.6100	22.2899	0.2188	65.0	1.00				1
120.0000	125.0000	0.2188	65	80	51.7%				3	MP303	63.1%				**63.1%**	125.0000	5.0000	0.0000	12	22.2899	23.2259	0.3575	52.4	0.95				2
115.0000	120.0000	0.2188	65	80	35.3%	3	MS-600	44.6%	3	MP303	42.6%				**44.6%**	120.0000	5.0000	0.0000	12	23.2259	24.1619	0.6352	50.1	0.91				3
96.5800	115.0000	0.2188	65	80	61.7%	3	MS-600	78.0%							**78.0%**	115.0000	18.4200	4.4200	12	24.1619	27.6100	0.4601	50.3	0.94				4
90.0000	101.0000	0.3125	65	80	61.4%	3	MS-600	78.1%							**78.1%**	101.8000	11.0000	0.0000	12	26.3451	28.4001	0.5419	50.4	0.95				5
60.0000	90.0000	0.3125	65	80	70.5%	3	MS-650	87.8%							**87.8%**	90.0000	30.0000	0.0000	12	28.4001	34.0047	0.5689	53.3	0.95				6
47.5000	60.0000	0.3125	65	80	65.1%	3	MS-850	78.3%							**78.3%**	60.0000	12.5000	5.5000	12	34.0047	36.3400	0.6377	53.0	0.94				7
30.0000	53.0000	0.3750	65	80	68.4%	3	MS-850	82.1%							**82.1%**	53.0000	23.0000	0.0000	12	34.6875	38.9891	0.6664	53.1	0.95				8
20.0000	30.0000	0.3750	65	80	71.1%	3	MS-850	85.2%							**85.2%**	30.0000	10.0000	0.0000	12	38.9891	40.8594	0.6506	53.2	0.96				9
0.0000	20.0000	0.3750	65	80	78.9%	3	MS-850	83.3%	1	MS-850	24.6%				**83.3%**	20.0000	20.0000	0.0000	12	40.8594	44.6000	0.6353	56.7	1.06				10
																												11
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APPENDIX D

Anchor Rod & Base Plate Calculations

GPD GROUP

Anchor Rod and Base Plate Stresses
61186 BETHANY
2013723.01.61186.02 Rev 1

*Overturning Moment =	2085.75	k*ft
Axial Force =	42.08	k
Shear Force =	29.56	k

Acceptable Stress Ratio =	105.0%

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of anchor rod forces used in the analysis below.

Anchor Rods		
Number of Rods =	12	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	52.68	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in^2
Max Tension on Rod =	154.72	kips
Max Compression on Rod =	161.73	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	**79.3%**	**OK**

Base Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Outside Diameter =	58.67	in
Plate Thickness =	2.75	in
wcalc =	28.04	in
wmax =	41.13	in
w =	28.04	in
S =	35.34	in^3
fb =	27.81	ksi
Fb =	60	ksi
BP Capacity =	**46.3%**	**OK**

Stiffeners		
Configuration =	None	

Pole		
Pole Diameter =	44.6	in
Number of Sides =	12	
Thickness =	0.375	in
Pole Yield Strength =	65	ksi

	M=	3143 k-ft	P=	42.081 k										
Bolt ø	D from Centroid (in)		Quantity of Bolts		Area (in^2)		Unbraced Length (in)				Bolt Force		Tension	Compression
2.25	D_1	26.34	N_1	2	A_1	3.98	L_1	1	P_1*	52.68	P_1	159.10	154.89	161.73
2.25	D_2	25.4425	N_2	2	A_2	3.98	L_2	1	P_1*	49.15	P_2	153.68	149.47	156.31
2.25	D_3	22.8111	N_3	4	A_3	3.98	L_3	1	P_1*	79.02	P_3	137.78	133.58	140.41
2.25	D_4	18.6252	N_4	2	A_4	3.98	L_4	1	P_1*	26.34	P_4	112.50	108.29	115.13
2.25	D_5	13.17	N_5	4	A_5	3.98	L_5	1	P_1*	26.34	P_5	79.55	75.34	82.18
2.25	D_6	6.8173	N_6	2	A_6	3.98	L_6	1	P_1*	3.53	P_6	41.18	36.97	43.81
	D_7		N_7		A_7	0.00	L_7		P_1*		P_7			
									P_1*total	237.06				

	M=	3143 k-ft	P=	42.081 k										
Bolt ø	D from Centroid (in)		Quantity of Bolts		Area (in^2)		Unbraced Length (in)				Bolt Compression		Tension	Compression
2.25	D_1	26.34	N_1	2	A_1	3.98	L_1	1	P_1*	52.68	P_1	159.10	156.76	161.44
2.25	D_2	25.4425	N_2	4	A_2	3.98	L_2	1	P_1*	98.30	P_2	153.68	151.34	156.02
2.25	D_3	18.6252	N_3	4	A_3	3.98	L_3	1	P_1*	52.68	P_3	112.50	110.16	114.84
2.25	D_4	13.17	N_4	4	A_4	3.98	L_4	1	P_1*	26.34	P_4	79.55	77.21	81.89
2.25	D_5	6.8173	N_5	4	A_5	3.98	L_5	1	P_1*	7.06	P_5	41.18	38.84	43.52
	D_6		N_6		A_6	0.00	L_6		P_1*		P_6			
	D_7		N_7		A_7	0.00	L_7		P_1*		P_7			
	D_8		N_8		A_8	0.00	L_8		P_1*		P_8			
									P_1*total	237.06				

APPENDIX E

Foundation Analysis

GPD GROUP

Mat Foundation Analysis
61186 BETHANY
2013723.01.61186.03 Rev 1

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	No
Max Capacity	1.05

Tower Reactions		
Moment, M	3143	k-ft
Axial, P	42.081	k
Shear, V	29.556	k

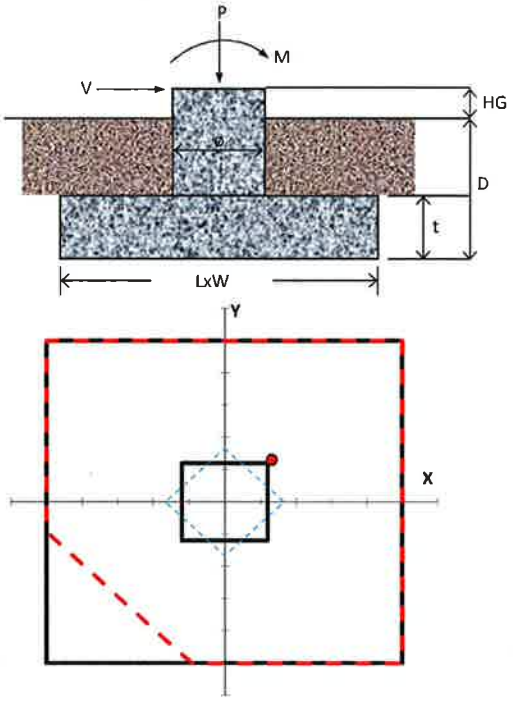
Pad & Pier Geometry		
Pier Width, ø	6	ft
Pad Length, L	25	ft
Pad Width, W	25	ft
Pad Thickness, t	6	ft
Depth, D	7.5	ft
Height Above Grade, HG	0.5	ft

Pad & Pier Reinforcing		
Rebar Fy	60	ksi
Concrete Fc'	3	ksi
Clear Cover	3	in
Reinforced Top & Bottom?	Yes	
Pad Reinforcing Size	# 7	
Pad Quantity Per Layer	10	
Pier Rebar Size	# 8	
Pier Quantity of Rebar	10	

Soil Properties		
Soil Type	Granular	
Soil Unit Weight	110	pcf
Angle of Friction, ø	38	°
Bearing Type	Gross	
Ultimate Bearing	15	ksf
Water Table Depth	20	ft
Frost Depth	3	ft

Bearing Summary			Load Case
Qxmax	2.42	ksf	1D+1W
Qymax	2.42	ksf	1D+1W
Qmax @ 45°	3.01	ksf	1D+1W
$Q_{(all)\ Gross}$	7.50	ksf	
Controlling Capacity	**40.1%**	**Pass**	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	2.70	≥1.5	1D+1W
FS(ot)y	2.70	≥1.5	1D+1W
Controlling Capacity	**55.7%**	**Pass**	



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

August 6, 2013

The Honorable Derrylyn Gorski
First Selectman
Town of Bethany
Town Hall
40 Peck Road
Bethany, CT 06524-3338

RE: **EM-VER-008-130802** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 719 Amity Road, Bethany, Connecticut.

Dear First Selectman Gorski:

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 August 20, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

Melanie Bachman
Acting Executive Director

MB/jb

c: Isabel Kearns, Zoning Enforcement Officer, Town of Bethany