COHEN and WOLF P.C.
ATTORNEYS AT LAW

JULIE D. KOHLER

PLEASE REPLY TO: Bridgeport
WRITER'S DIRECT DIAL: (203) 337-4157
E-Mail Address: jkohler@cohenandwolf.com

June 20, 2013

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification
AT&T/T-Mobile co-location
Site ID CT11378G
335 S. Washington Street, Plainville CT

Dear Attorney Bachman:

This office represents T-Mobile Northeast LLC ("T-Mobile") and has been retained to file exempt modification filings with the Connecticut Siting Council on its behalf.

In this case, the AT&T ("AT&T) owns the existing telecommunications tower and related facility at 335 S. Washington Street, Plainville Connecticut (latitude 41.65310 / longitude -72.87690). T-Mobile intends to replace six antennas and related equipment at this existing telecommunications facility in Plainville ("Plainville Facility"). Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction which 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 Town Manager, Robert E. Lee.

The existing Plainville Facility consists of a 121 foot tall monopole tower. T-Mobile plans to replace six antennas at an elevation of 98.5 feet. (See the plans dated April 22, 2013 attached hereto as Exhibit A). T-Mobile will also upgrade one of its equipment cabinets within the existing compound area near the base of the structure, as well as install hybrid line and reuse existing coax cables. The existing Facility is structurally capable of supporting T-Mobile' proposed modifications, as indicated in the structural analysis dated June 4, 2013 and attached hereto as Exhibit B.

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

1. The proposed modification will not increase the height of the tower. T-Mobile's

1115 Broad Street
P.O. Box 1821
Bridgeport, CT 06601-1821
Tel: (203) 368-0211
Fax: (203) 394-9901

158 Deer Hill Avenue
Danbury, CT 06810
Tel: (203) 792-2771
Fax: (203) 791-8149

320 Post Road West
Westport, CT 06880
Tel: (203) 222-1034
Fax: (203) 227-1373

657 Orange Center Road
Orange, CT 06477
Tel: (203) 298-4066
Fax: (203) 298-4068

replacement antennas will be installed at the 98.5 foot level. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2. The installation of the T-Mobile replacement equipment in the existing compound, as reflected on the attached site plan, will not require an extension of the site boundaries. T-Mobile's proposed equipment will be located entirely within the existing compound area.

3. The proposed modification to the Facility will not increase the noise levels at the existing facility by six decibels or more.

4. The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated June 14, 2013 T-Mobile's operations would add 1.218% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 72.968% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and equipment at the Plainville Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Julie D. Kohler, Esq.

cc: Town of Plainville, Town Manager Robert E. Lee
AT&T Towers
Scott Chase, Northeast Site Solutions

T-MOBILE USA, INC.
12920 SE 38TH STREET
BELLEVUE, WA 98006
(425) 378-4000

2599813
5/6/2013
2000011160

Invoice Number	Inv. Date	Description	Deductions	Voucher	Amount Paid
CT11378G-1	4/17/2013	Exempt Mod Filing Fees	0.00	1100836007	625.00

DO NOT ACCEPT THIS CHECK UNLESS THE FACE FADES FROM BLACK TO RED WITH LOGO IN BACKGROUND. THE BACK OF THIS DOCUMENT HAS HEAT-SENSITIVE INK THAT CHANGES FROM ORANGE TO YELLOW.
COPYBAN CAPTURE+ ANTI-FRAUD PROTECTION

T-MOBILE USA, INC.
12920 SE 38th Street
Bellevue, WA 98006
(425) 378-4000

The Bank of New York Mellon
Pittsburgh, PA
60-160/433

2599813
5/6/2013
VID 2000011160

PAY $625 00 (SIX TWO FIVE CTS CTS)

*$625.00

Six Hundred Twenty Five Dollars Only*******

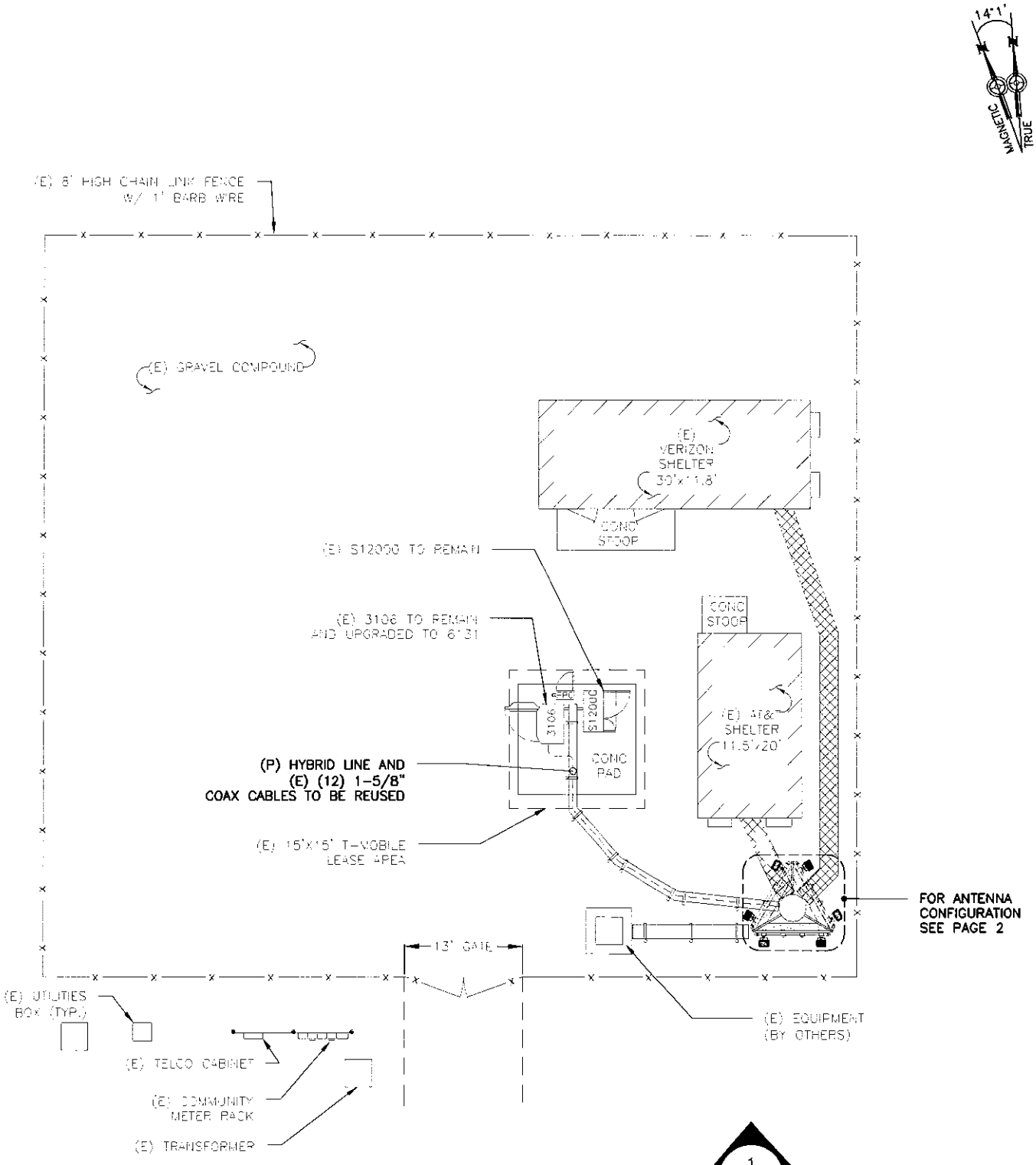
To The Order Of
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN, CT 06051

VOID AFTER 180 DAYS
THIS CHECK CLEARS THROUGH POSITIVE PAY

⑈000259981 3⑈ ⑆043301601⑆ 013⑈8430⑈

THE ORIGINAL DOCUMENT HAS A REFLECTIVE WATERMARK ON THE BACK. HOLD AT AN ANGLE TO VIEW, DO NOT CASH IF MISSING.

EXHIBIT A



COMPOUND PLAN

SCALE: 1/16" = 1'-0"

1 / LE-1

1 / LE-3

Configuration

2C

SUBMITTALS	
LE REV A	04.22.13

ATLANTIS GROUP
1340 Centre Street
Suite 203
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
CT11378G

SITE NAME:
CT378/ATT FT PLAINVILLE2

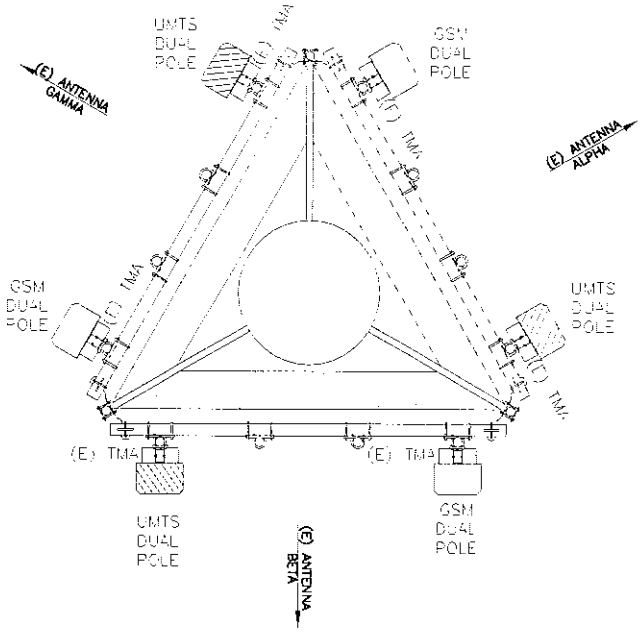
SITE ADDRESS:
335 S. WASHINGTON STREET
PLAINVILLE, CT 06062

NORTHEAST TOWERS
199 BRICKYARD ROAD
FARMINGTON, CT 06032
OFFICE: (860) 677-1999

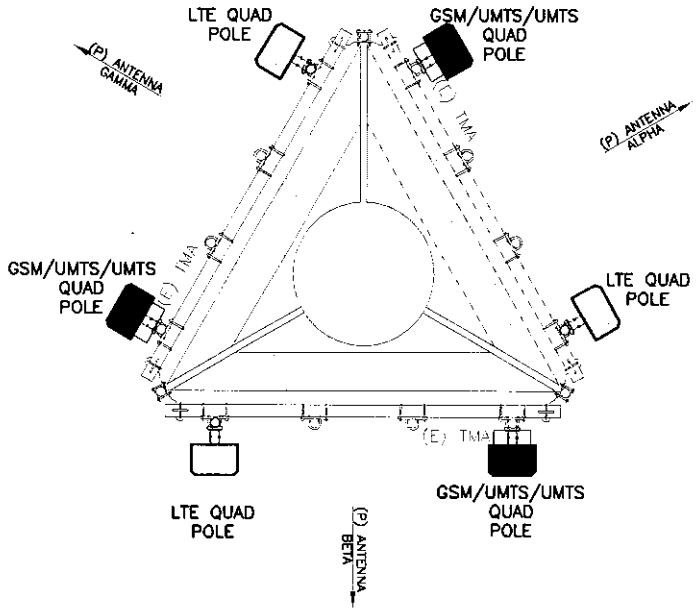
FOR

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159

DRAWN BY: SB | CHECKED BY: SM



EXISTING ANTENNA PLAN



FINAL ANTENNA PLAN

Configuration

2C

SUBMITTALS	
LE REV A	04.22.13

ATLANTIS GROUP
1340 Centre Street
Suite 203
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

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CT11378G

SITE NAME:
CT378/ATT FT PLAINVILLE2

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PLAINVILLE, CT 06062

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199 BRICKYARD ROAD
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OFFICE: (860) 677-1999

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BLOOMFIELD, CT 06002
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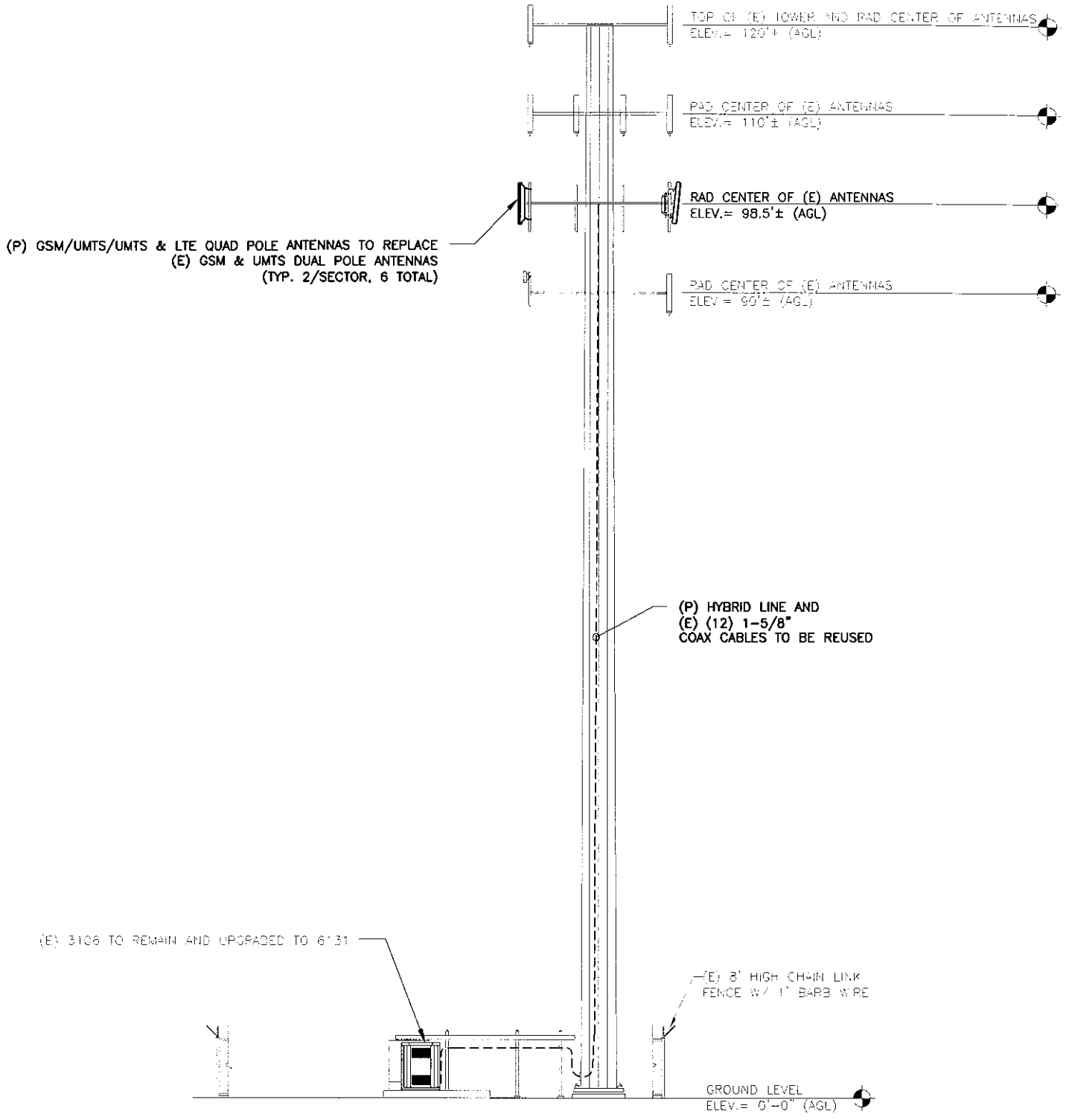
DRAWN BY: SB | CHECKED BY: SM



SOUTH ELEVATION

SCALE: 1/16" = 1'-0"

1
LE-3

Configuration

2C

SUBMITTALS	
LE REV A	04.22.13

ATLANTIS GROUP
1340 Centre Street
Suite 203
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
CT11378G

SITE NAME:
CT378/ATT FT PLAINVILLE2

SITE ADDRESS:
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PLAINVILLE, CT 06062

NORTHEAST TOWERS
199 BRICKYARD ROAD
FARMINGTON, CT 06032
OFFICE: (860) 677-1999

FOR

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159

DRAWN BY: SB | CHECKED BY: SM

EXHIBIT B

AT&T Towers
5405 Windward Parkway
Alpharetta, GA 30004

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119

June 4, 2013

B+T No.: 84679.003.01

STRUCTURAL ANALYSIS
121' Monopole Tower

AT&T DESIGNATION:	Site ID:	83948
	Site FA:	10105805
	Site Name:	Plainville South Washington Street
	AT&T Project:	3_T-Mobile Modification 4-23-2013
ANALYSIS CRITERIA:	Codes:	TIA/EIA-222-F (80 mph fastest mile) IBC 2003 2005 CT State Building Code
SITE DATA:		335 South Washington Street, Plainville, CT, Hartford County Latitude 41.653111°, Longitude -72.876921° Market MA/RI/VT/NH/ME/CT

Ms. Charlotte Malone,

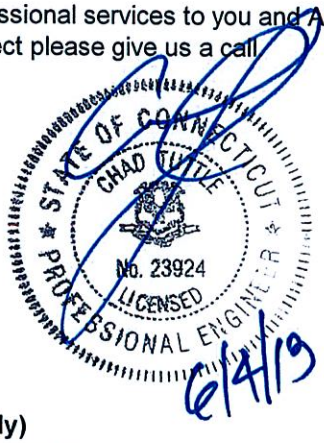
B+T Group is pleased to submit this Structural Analysis Report to determine the structural integrity of the aformentioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	**91.6%**	**Pass**
Foundation Ratio with Proposed Equipment:	**55.6%**	**Pass**

We at B+T Group appreciate the opportunity of providing our continuing professional services to you and AT&T Towers. If you have any questions or need further assistance on this or any other project please give us a call.

Respectfully Submitted by:	B+T Engineering, Inc.
Analysis Prepared by:	Kristin Mears, E.I.
Analysis Reviewed by:	Chad E. Tuttle, P.E.



ANALYSIS RESULTS:

Table 1 - Section Capacity (Summary)

121 - 96	45.8	Pass
96 - 48	**91.0**	Pass
48 - 0	90.3	Pass

Table 2 - Tower Component Stresses vs. Capacity

1	Anchor Rods	Base	56.1	**Pass**
1	Base Plate	Base	91.6	**Pass**
1	Base Foundation	Base	55.6	**Pass**

Notes:
1.) See additional documentation in "Appendix B - Calculations" for calculation supporting the % capacity consumed.

Recommendations:

N/A

ANALYSIS PROCEDURE:

Table 4 - Documents Provided

Tower Data	BTE Job No. 15301	5/23/2012	Siterra
Foundation Information	WEI Project No. 2009-805	6/1/2009	Siterra
Geotech Report	Tectonic W.O. No. 3917.Plainvl	7/15/2005	Siterra
Loading	Site Lease Application	4/30/2013	Siterra
	NOC2	5/16/2013	Siterra
	Previous Analysis by B+T	1/18/2013	On File
Previous Structural Analysis	B+T Group 84679.002.00	1/18/2013	On File
	B+T Group 84679.001	6/28/2012	On File
	B+T Group 84424.0001.0001	6/13/2012	On File

ANALYSIS METHOD:

tnxTower, a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix B.

ASSUMPTIONS:

1. Tower and structures were built in accordance with the manufacturer's specifications.
2. The tower and structures have been maintained in accordance with the manufacturer's specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Appendix A of this report.
4. Mount areas and weights are assumed based on photographs provided.
5. Refer to the base level drawing for transmission line distribution.
6. Manufacturer's drawings were not available. Material grades were assumed or taken from the previous analysis.
7. Nominal thicknesses and sizes were assumed based on measured dimensions provided in the 2012 BTE Mapping. Lap splice lengths were assumed.
8. All existing/reserved loading was taken from previous analysis.
9. Proposed loading was taken from the Site Lease Application.
10. Generic future loading considered.

If any of these assumptions have been made in error, B+T Group should be notified to determine the effect on the structural integrity of the tower.

APPENDIX A

TOWER ANALYSIS LOADING

served Loading

Antenna						Mount		Transmissi	
na Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	
	121	122	6	Powerwave	RA21.7770.00	1	LP Platform	12	
	121	122	6	Powerwave	LGP21401			3	
	121	122	6	Powerwave	LGP13519				
	121	121	3	KMW	AM-X-CD-16-65-00T				
	121	119	6	Ericsson	RBS-6601				
	121	119	1	Raycap	DC6-48-60-18-8F				
	110	112	3	Antel	BXA-171063-8BF	1	LP Platform	12	
	110	112	6	Antel	LPA-80063-4CF			6	
	110	112	3	Antel	BXA-70063-6CF_2				
	98.5	101.5	6*	RFS	APX18-209014	1	LP Platform	12	
	98.5	101.5	3*	Ericsson	KRY 112 89/5				
	98.5	101.5	3*	Ericsson	6.5"x7"x2.75 TMA				
	86.5	89.5	1	Andrew	VHLP2.5-18-DW1	3	Stand-Off Mount	2	2 1
	86.5	89.5	1	Andrew	VHLP2-18-DW1			2	
	86.5	86.5	3	ROHS Com.	LLPX310R-V1				
	76	76	6	Andrew	HBX-6517DS-A1M	3	Sector Frame Mount	12	

o Be Removed

ading

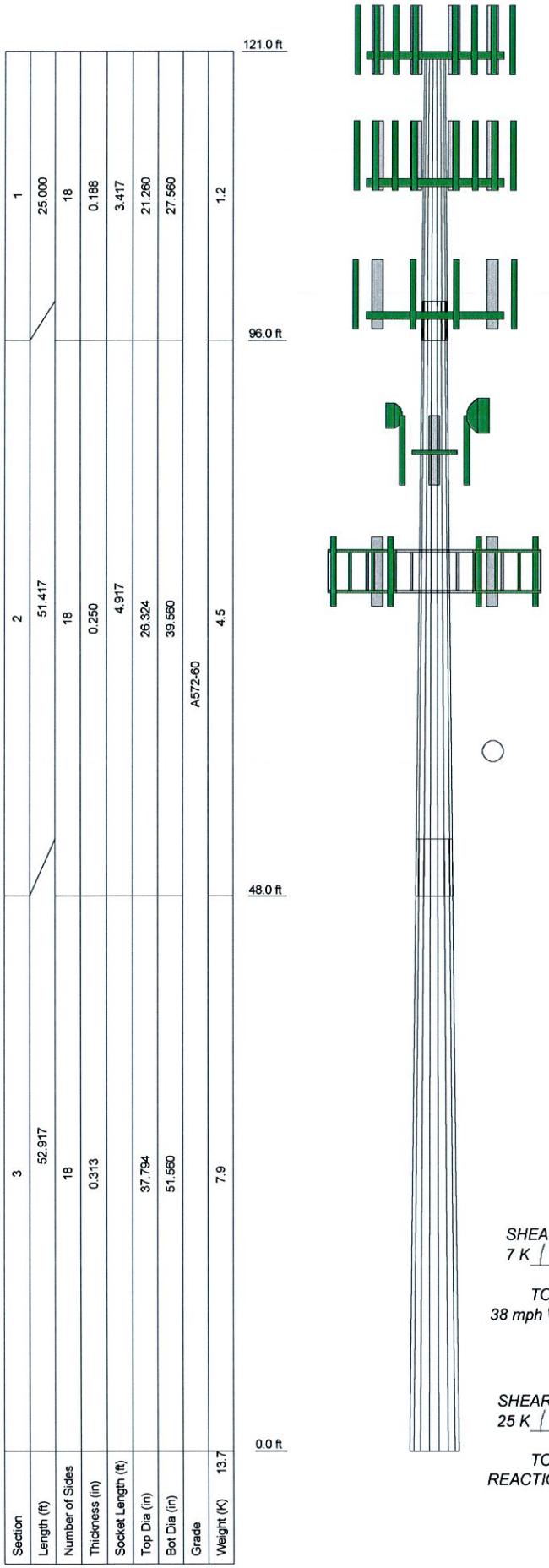
Antenna						Mount		Transmissi	
na Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	
	98.5	100	6	Ericsson	AIR 21			1	
	98.5	100	3	Andrew	OneBase Twin Dual Duplex TMA				

ng

Antenna						Mount		Transmissi	
na Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	
	121	121	3	KMW	AM-X-CD-16-65-00T			6	

APPENDIX B

CALCULATIONS



Section	1	2	3		
Length (ft)	25.000	51.417	52.917		
Number of Sides	18	18	18		
Thickness (in)	0.188	0.250	0.313		
Socket Length (ft)	3.417	4.917			
Top Dia (in)	21.260	26.324	37.794		
Bot Dia (in)	27.560	39.560	51.560		
Grade	A572-60				
Weight (K)	1.2	4.5	7.9	13.7	

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) RA21.7770.00 w/ Mount Pipe (E-ATI)	121	BXA-70063-6CF-2 w/ Mount Pipe (E-Verizon)	110
(2) RA21.7770.00 w/ Mount Pipe (E-ATI)	121	BXA-70063-6CF-2 w/ Mount Pipe (E-Verizon)	110
(2) RA21.7770.00 w/ Mount Pipe (E-ATI)	121	Platform Mount [LP 601-1] (E-Verizon)	110
(2) LGP21401 (E-ATI)	121	(2) AIR 21 (P-T-Mobile)	98.5
(2) LGP21401 (E-ATI)	121	(2) AIR 21 (P-T-Mobile)	98.5
(2) LGP21401 (E-ATI)	121	(2) AIR 21 (P-T-Mobile)	98.5
(2) LGP13519 (E-ATI)	121	ONEBASE TWIN DUAL DUPLEX TMA (P-T-Mobile)	98.5
(2) LGP13519 (E-ATI)	121		
(2) LGP13519 (E-ATI)	121	ONEBASE TWIN DUAL DUPLEX TMA (P-T-Mobile)	98.5
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-ATI)	121	ONEBASE TWIN DUAL DUPLEX TMA (P-T-Mobile)	98.5
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-ATI)	121	(2) 6' x 2" Mount Pipe (E-T-Mobile)	98.5
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-ATI)	121	(2) 6' x 2" Mount Pipe (E-T-Mobile)	98.5
DC6-48-60-18-8F (EATI)	121	(2) 6' x 2" Mount Pipe (E-T-Mobile)	98.5
(2) RBS-6601 (E-ATI)	121	Platform Mount [LP 601-1] (E-T-Mobile)	98.5
(2) RBS-6601 (E-ATI)	121		
(2) RBS-6601 (E-ATI)	121	LLPX310R-V1 w/ Mount Pipe (E-Clearwire)	86.5
AM-X-CD-16-65-00T-RET w/ Mount Pipe (F-ATI)	121	LLPX310R-V1 w/ Mount Pipe (E-Clearwire)	86.5
AM-X-CD-16-65-00T-RET w/ Mount Pipe (F-ATI)	121	LLPX310R-V1 w/ Mount Pipe (E-Clearwire)	86.5
AM-X-CD-16-65-00T-RET w/ Mount Pipe (F-ATI)	121	7'x2" Pipe Mount (E-Clearwire)	86.5
6' x 2" Mount Pipe (E-ATI)	121	7'x2" Pipe Mount (E-Clearwire)	86.5
Platform Mount [LP 601-1] (E-ATI)	121	7'x2" Pipe Mount (E-Clearwire)	86.5
BXA-171063-8BF-EDIN-2 w/ Mount Pipe (E-Verizon)	110	Side Arm Mount [SO 103-3] (E-Clearwire)	86.5
BXA-171063-8BF-EDIN-2 w/ Mount Pipe (E-Verizon)	110	AndrewVHLP2.5-18-DW1 (E)	86.5
BXA-171063-8BF-EDIN-2 w/ Mount Pipe (E-Verizon)	110	AndrewVHLP2-18-DW1 (E)	86.5
(2) LPA-80063/4CF w/ Mount Pipe (E-Verizon)	110	(2) HBX-6517DS-A1M w/ Mount Pipe (MetroPCS-R)	76
(2) LPA-80063/4CF w/ Mount Pipe (E-Verizon)	110	Sector Mount [SM 505-3] (MetroPCS-R)	76
(2) LPA-80063/4CF w/ Mount Pipe (E-Verizon)	110	(2) HBX-6517DS-A1M w/ Mount Pipe (MetroPCS-R)	76
BXA-70063-6CF-2 w/ Mount Pipe (E-Verizon)	110	(2) HBX-6517DS-A1M w/ Mount Pipe (MetroPCS-R)	76

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-60	60 ksi	75 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 91%

AXIAL
50 K

SHEAR
7 K

MOMENT
694 kip-ft

TORQUE 0 kip-ft
38 mph WIND - 1.000 in ICE

AXIAL
27 K

SHEAR
25 K

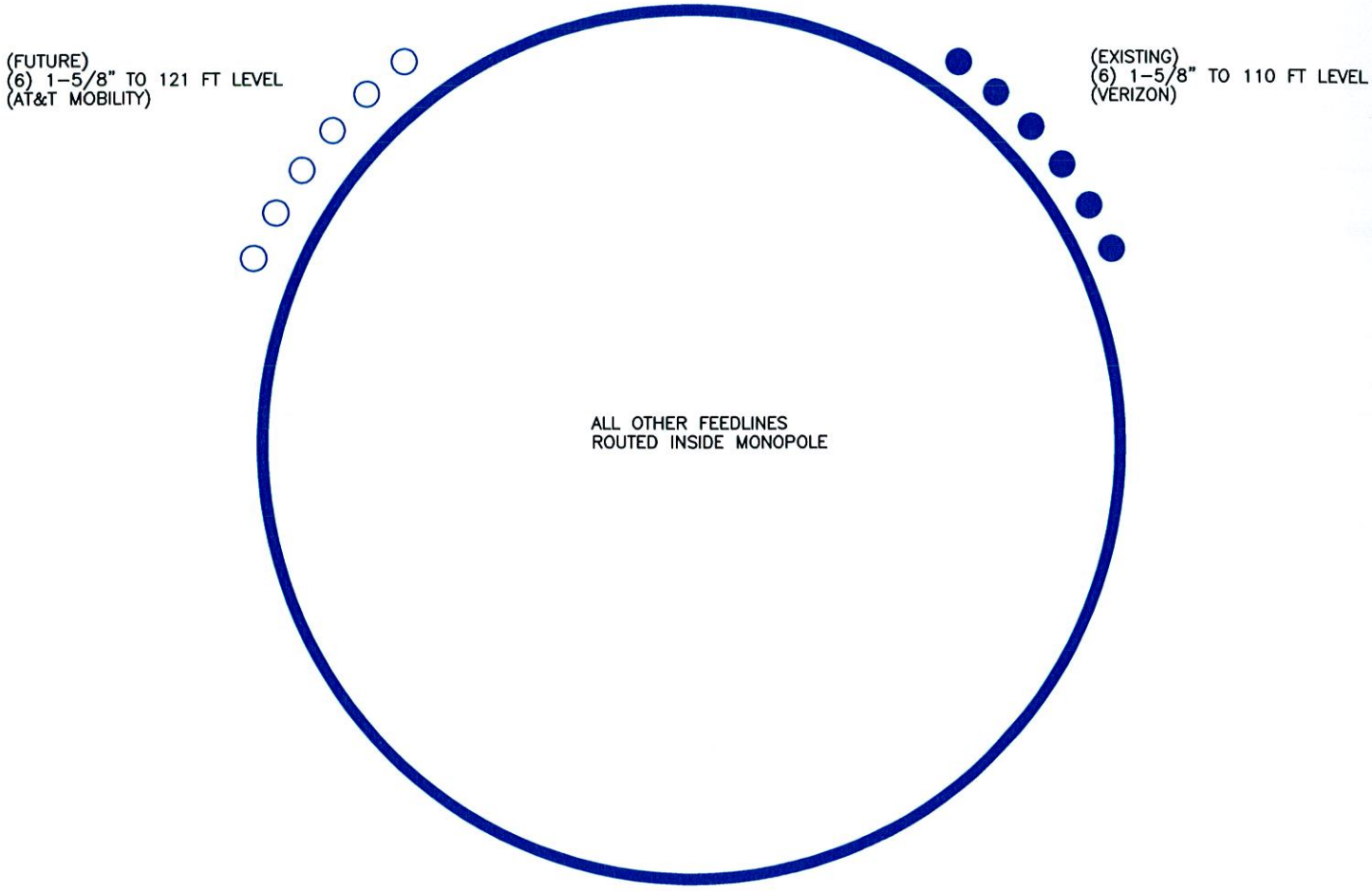
MOMENT
2245 kip-ft

TORQUE 1 kip-ft
REACTIONS - 80 mph WIND

B+T GRP

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job:	**84679.003.01 - Plainville, CT (USID# 83**		
Project:	**3_T-Mobile Modification 4-23-2013**		
Client: AT&T Towers	Drawn by: K. Mears	App'd:	
Code: TIA/EIA-222-F	Date: 06/04/13	Scale: NTS	
Path: S:\Projects\AT&T Towers\84679_83948_Plainville\Engineering\tnxTower\84679_003_01_Plainville_CT.tnx		Dwg No. E-1	

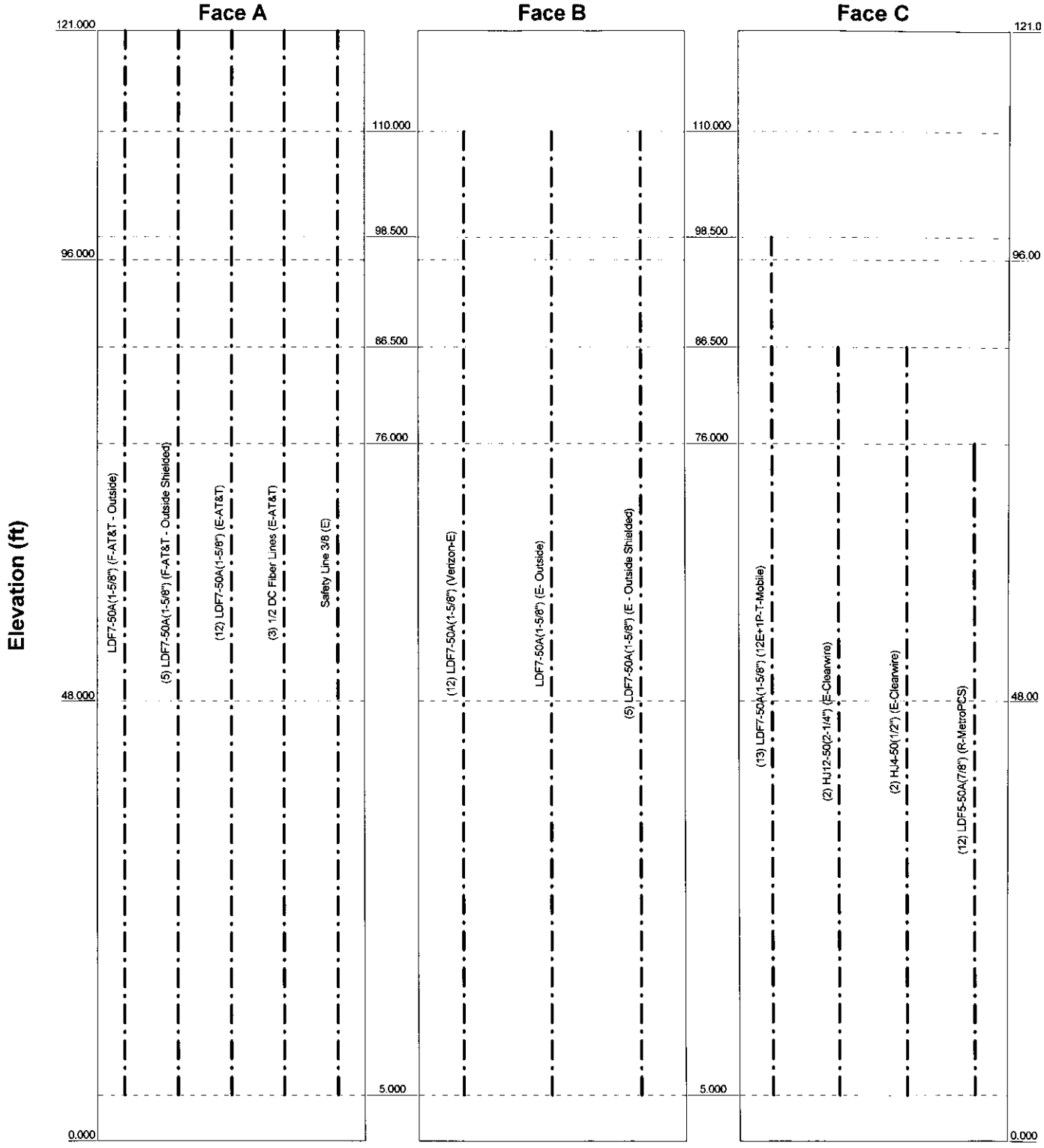


PROJECT#: 84679

NOT TO SCALE

0' - 121'

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



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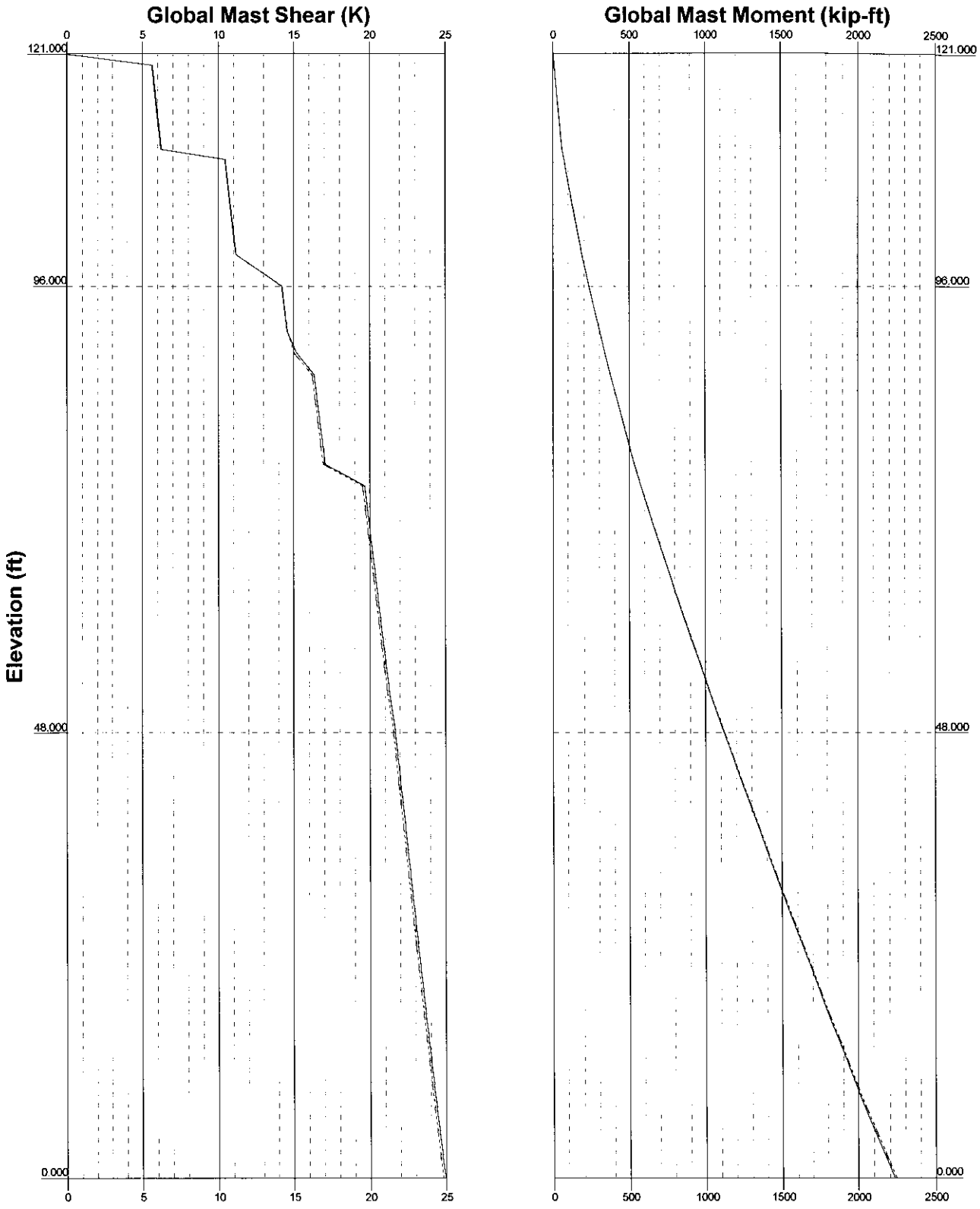
Project: 3_T-Mobile Modification 4-23-2013			
Client: AT&T Towers	Drawn by: K. Mears	App'd:	
Code: TIA/EIA-222-F	Date: 06/04/13	Scale: NTS	
Path:		Dwg No. E-7	

Vx Vz Mx Mz



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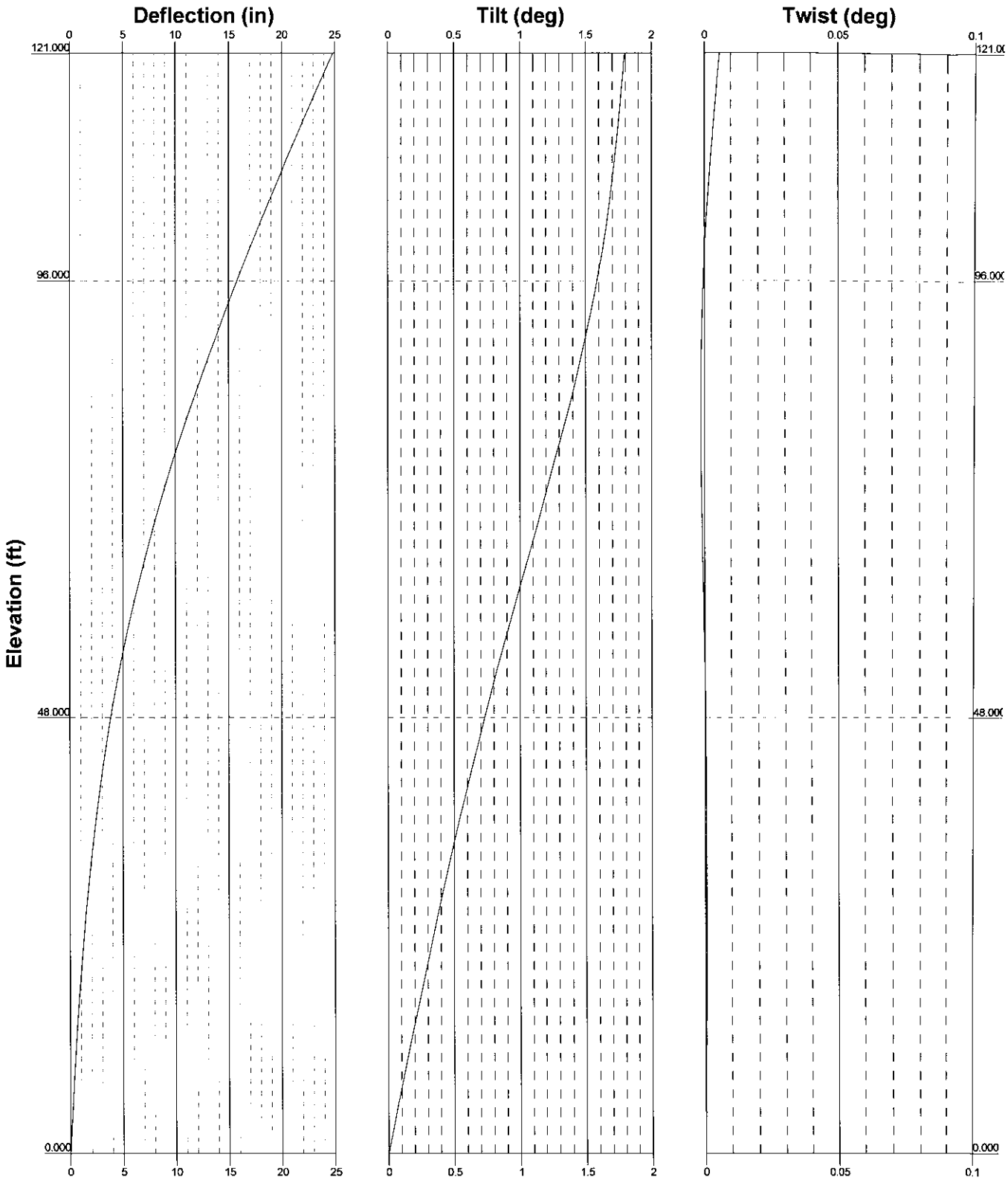
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 84679.003.01 - Plainville, CT (USID# 83			
Project: 3_T-Mobile Modification 4-23-2013			
Client: AT&T Towers	Drawn by: K. Mears	App'd:	
Code: TIA/EIA-222-F	Date: 06/04/13	Scale: NTS	
Path:		Dwg No. E-4	

TIA/EIA-222-F - Service - 50 mph

Maximum Values



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Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 84679.003.01 - Plainville, CT (USID# 83			
Project: 3_T-Mobile Modification 4-23-2013			
Client: AT&T Towers	Drawn by: K. Mears	App'd:	
Code: TIA/EIA-222-F	Date: 06/04/13	Scale: NTS	
Path:		Dwg No. E-5	

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 Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °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 pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Treat Feedline Bundles As Cylinder
	Consider Moments - Horizontals		Assume Legs Pinned		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Calculate Redundant Bracing Forces
	Use Moment Magnification	√	Use Clear Spans For Wind Area		Ignore Redundant Members in FEA
√	Use Code Stress Ratios		Use Clear Spans For KL/r		SR Leg Bolts Resist Compression
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		All Leg Panels Have Same Allowable
√	Escalate Ice	√	Bypass Mast Stability Checks		Offset Girt At Foundation
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Consider Feedline Torque
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Include Angle Block Shear Check
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		**Poles**
	Leg Bolts Are At Top Of Section		SR Members Have Cut Ends	√	Include Shear-Torsion Interaction
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component		Always Use Sub-Critical Flow
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Use Top Mounted Sockets
	Add IBC .6D+W Combination				

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	121.000-96.000	25.000	3.417	18	21.260	27.560	0.188	0.750	A572-60 (60 ksi)
L2	96.000-48.000	51.417	4.917	18	26.324	39.560	0.250	1.000	A572-60 (60 ksi)
L3	48.000-0.000	52.917		18	37.794	51.560	0.313	1.250	A572-60 (60 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	21.588	12.541	703.548	7.481	10.800	65.143	1408.022	6.272	3.412	18.196
	27.985	16.290	1542.017	9.717	14.000	110.140	3086.062	8.147	4.521	24.11
L2	27.623	20.690	1777.064	9.256	13.373	132.889	3556.467	10.347	4.193	16.772
	40.170	31.192	6089.667	13.955	20.096	303.022	12187.346	15.599	6.523	26.09
L3	39.676	37.177	6598.625	13.306	19.199	343.688	13205.933	18.592	6.102	19.526
	52.355	50.831	16866.014	18.193	26.192	643.926	33754.220	25.420	8.525	27.279

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 121.000-96.000				1	1	1		
L2 96.000-48.000				1	1	1		
L3 48.000-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
/										

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 klf
LDF7-50A(1-5/8") (F-AT&T - Outside)	A	No	CaAa (Out Of Face)	121.000 - 5.000	1	No Ice	0.198	0.001
						1/2" Ice	0.298	0.002
						1" Ice	0.398	0.004
						2" Ice	0.598	0.011
						4" Ice	0.998	0.030
LDF7-50A(1-5/8") (F-AT&T - Outside Shielded)	A	No	CaAa (Out Of Face)	121.000 - 5.000	5	No Ice	0.000	0.001
						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030
LDF7-50A(1-5/8") (E-AT&T)	A	No	Inside Pole	121.000 - 5.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
1/2 DC Fiber Lines (E-AT&T)	A	No	Inside Pole	121.000 - 5.000	3	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
/								
LDF7-50A(1-5/8") (Verizon-E)	B	No	Inside Pole	110.000 - 5.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
LDF7-50A(1-5/8") (E- Outside)	B	No	CaAa (Out Of Face)	110.000 - 5.000	1	No Ice	0.198	0.001
						1/2" Ice	0.298	0.002
						1" Ice	0.398	0.004
						2" Ice	0.598	0.011
						4" Ice	0.998	0.030
LDF7-50A(1-5/8") (E - Outside Shielded)	B	No	CaAa (Out Of Face)	110.000 - 5.000	5	No Ice	0.000	0.001
						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030
/								
LDF7-50A(1-5/8") (12E+1P-T-Mobile)	C	No	Inside Pole	98.500 - 5.000	13	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
/								
HJ12-50(2-1/4") (E-Clearwire)	C	No	Inside Pole	86.500 - 5.000	2	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
HJ4-50(1/2") (E-Clearwire)	C	No	Inside Pole	86.500 - 5.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
/								
LDF5-50A(7/8") (R-MetroPCS)	C	No	Inside Pole	76.000 - 5.000	12	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
/								
Safety Line 3/8 (E)	A	No	CaAa (Out Of Face)	121.000 - 5.000	1	No Ice	0.037	0.000
						1/2" Ice	0.137	0.001
						1" Ice	0.238	0.001
						2" Ice	0.437	0.002
						4" Ice	0.838	0.004
/								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	121.000-96.000	A	0.000	0.000	0.000	5.888	0.393
		B	0.000	0.000	0.000	2.772	0.207
		C	0.000	0.000	0.000	0.000	0.027
L2	96.000-48.000	A	0.000	0.000	0.000	11.304	0.755

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	9.504	0.708
		C	0.000	0.000	0.000	0.000	0.731
L3	48.000-0.000	A	0.000	0.000	0.000	10.126	0.676
		B	0.000	0.000	0.000	8.514	0.635
		C	0.000	0.000	0.000	0.000	0.750

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	121.000-96.000	A	1.153	0.000	0.000	0.000	17.416	1.109
		B		0.000	0.000	0.000	6.000	0.591
		C		0.000	0.000	0.000	0.000	0.027
L2	96.000-48.000	A	1.096	0.000	0.000	0.000	33.439	2.130
		B		0.000	0.000	0.000	20.571	2.025
		C		0.000	0.000	0.000	0.000	0.731
L3	48.000-0.000	A	1.000	0.000	0.000	0.000	28.986	1.817
		B		0.000	0.000	0.000	17.944	1.725
		C		0.000	0.000	0.000	0.000	0.750

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	121.000-96.000	0.130	-0.227	0.212	-0.550
L2	96.000-48.000	0.223	-0.177	0.378	-0.491
L3	48.000-0.000	0.206	-0.164	0.366	-0.472

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) RA21.7770.00 w/ Mount Pipe (E-AT&T)	A	From Leg	4.000 0.000 1.000	80.000	121.000	No Ice	7.031	5.002	0.060
						1/2" Ice	7.608	5.960	0.112
						1" Ice	8.165	6.747	0.174
						2" Ice	9.310	8.370	0.322
						4" Ice	11.721	11.872	0.746
(2) RA21.7770.00 w/ Mount Pipe (E-AT&T)	B	From Leg	4.000 0.000 1.000	80.000	121.000	No Ice	7.031	5.002	0.060
						1/2" Ice	7.608	5.960	0.112
						1" Ice	8.165	6.747	0.174
						2" Ice	9.310	8.370	0.322
						4" Ice	11.721	11.872	0.746

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 K
(2) RA21.7770.00 w/ Mount Pipe (E-AT&T)	C	From Leg	4.000 0.000 1.000	90.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.031 7.608 8.165 9.310 11.721	5.002 5.960 6.747 8.370 11.872	0.060 0.112 0.174 0.322 0.746
(2) LGP21401 (E-AT&T)	A	From Leg	4.000 0.000 1.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.288 1.445 1.611 1.969 2.788	0.233 0.313 0.403 0.608 1.121	0.014 0.021 0.030 0.055 0.135
(2) LGP21401 (E-AT&T)	B	From Leg	4.000 0.000 1.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.288 1.445 1.611 1.969 2.788	0.233 0.313 0.403 0.608 1.121	0.014 0.021 0.030 0.055 0.135
(2) LGP21401 (E-AT&T)	C	From Leg	4.000 0.000 1.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.288 1.445 1.611 1.969 2.788	0.233 0.313 0.403 0.608 1.121	0.014 0.021 0.030 0.055 0.135
(2) LGP13519 (E-AT&T)	A	From Leg	4.000 0.000 1.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.338 0.422 0.515 0.726 1.252	0.207 0.280 0.362 0.551 1.034	0.005 0.008 0.012 0.024 0.071
(2) LGP13519 (E-AT&T)	B	From Leg	4.000 0.000 1.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.338 0.422 0.515 0.726 1.252	0.207 0.280 0.362 0.551 1.034	0.005 0.008 0.012 0.024 0.071
(2) LGP13519 (E-AT&T)	C	From Leg	4.000 0.000 1.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.338 0.422 0.515 0.726 1.252	0.207 0.280 0.362 0.551 1.034	0.005 0.008 0.012 0.024 0.071
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe (E-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
DC6-48-60-18-8F (EAT&T)	C	From Leg	4.000 0.000 -2.000	0.000	121.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.266 1.456 1.658 2.093 3.098	1.266 1.456 1.658 2.093 3.098	0.020 0.035 0.053 0.095 0.215
(2) RBS-6601 (E-AT&T)	A	From Leg	4.000 0.000	0.000	121.000	No Ice 1/2" Ice	4.424 4.708	1.186 1.351	0.055 0.081

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			-2.000			1" Ice	5.001	1.526	0.110
						2" Ice	5.613	1.900	0.179
						4" Ice	6.940	2.753	0.368
(2) RBS-6601	B	From Leg	4.000	0.000	121.000	No Ice	4.424	1.186	0.055
(E-AT&T)			0.000			1/2" Ice	4.708	1.351	0.081
			-2.000			1" Ice	5.001	1.526	0.110
						2" Ice	5.613	1.900	0.179
						4" Ice	6.940	2.753	0.368
(2) RBS-6601	C	From Leg	4.000	0.000	121.000	No Ice	4.424	1.186	0.055
(E-AT&T)			0.000			1/2" Ice	4.708	1.351	0.081
			-2.000			1" Ice	5.001	1.526	0.110
						2" Ice	5.613	1.900	0.179
						4" Ice	6.940	2.753	0.368
AM-X-CD-16-65-00T-RET	A	From Leg	4.000	0.000	121.000	No Ice	8.498	6.304	0.074
w/ Mount Pipe			0.000			1/2" Ice	9.149	7.479	0.136
(F-AT&T)			0.000			1" Ice	9.767	8.368	0.210
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
AM-X-CD-16-65-00T-RET	B	From Leg	4.000	0.000	121.000	No Ice	8.498	6.304	0.074
w/ Mount Pipe			0.000			1/2" Ice	9.149	7.479	0.136
(F-AT&T)			0.000			1" Ice	9.767	8.368	0.210
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
AM-X-CD-16-65-00T-RET	C	From Leg	4.000	0.000	121.000	No Ice	8.498	6.304	0.074
w/ Mount Pipe			0.000			1/2" Ice	9.149	7.479	0.136
(F-AT&T)			0.000			1" Ice	9.767	8.368	0.210
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
6' x 2" Mount Pipe	C	From Leg	2.000	0.000	121.000	No Ice	1.425	1.425	0.022
(E-AT&T)			0.000			1/2" Ice	1.925	1.925	0.033
			3.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 601-1]	C	None		0.000	121.000	No Ice	28.470	28.470	1.122
(E-AT&T)						1/2" Ice	33.590	33.590	1.514
						1" Ice	38.710	38.710	1.905
						2" Ice	48.950	48.950	2.689
						4" Ice	69.430	69.430	4.255
/									
BXA-171063-8BF-EDIN-2	A	From Leg	4.000	30.000	110.000	No Ice	3.179	3.353	0.029
w/ Mount Pipe			0.000			1/2" Ice	3.555	3.971	0.059
(E-Verizon)			2.000			1" Ice	3.964	4.595	0.098
						2" Ice	4.853	5.893	0.193
						4" Ice	6.767	8.885	0.487
BXA-171063-8BF-EDIN-2	B	From Leg	4.000	20.000	110.000	No Ice	3.179	3.353	0.029
w/ Mount Pipe			0.000			1/2" Ice	3.555	3.971	0.059
(E-Verizon)			2.000			1" Ice	3.964	4.595	0.098
						2" Ice	4.853	5.893	0.193
						4" Ice	6.767	8.885	0.487
BXA-171063-8BF-EDIN-2	C	From Leg	4.000	30.000	110.000	No Ice	3.179	3.353	0.029
w/ Mount Pipe			0.000			1/2" Ice	3.555	3.971	0.059
(E-Verizon)			2.000			1" Ice	3.964	4.595	0.098
						2" Ice	4.853	5.893	0.193
						4" Ice	6.767	8.885	0.487
(2) LPA-80063/4CF w/	A	From Leg	4.000	30.000	110.000	No Ice	7.248	7.260	0.038
Mount Pipe			0.000			1/2" Ice	7.719	7.957	0.102
(E-Verizon)			2.000			1" Ice	8.200	8.672	0.175

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 K
						2" Ice	9.195	10.156	0.344
						4" Ice	11.320	13.391	0.796
(2) LPA-80063/4CF w/ Mount Pipe (E-Verizon)	B	From Leg	4.000 0.000 2.000	20.000	110.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.248 7.719 8.200 9.195 11.320	7.260 7.957 8.672 10.156 13.391	0.038 0.102 0.175 0.344 0.796
(2) LPA-80063/4CF w/ Mount Pipe (E-Verizon)	C	From Leg	4.000 0.000 2.000	30.000	110.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.248 7.719 8.200 9.195 11.320	7.260 7.957 8.672 10.156 13.391	0.038 0.102 0.175 0.344 0.796
BXA-70063-6CF-2 w/ Mount Pipe (E-Verizon)	A	From Leg	4.000 0.000 2.000	30.000	110.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.801 6.953 7.819 9.601 13.366	0.042 0.100 0.170 0.335 0.803
BXA-70063-6CF-2 w/ Mount Pipe (E-Verizon)	B	From Leg	4.000 0.000 2.000	20.000	110.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.801 6.953 7.819 9.601 13.366	0.042 0.100 0.170 0.335 0.803
BXA-70063-6CF-2 w/ Mount Pipe (E-Verizon)	C	From Leg	4.000 0.000 2.000	30.000	110.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.801 6.953 7.819 9.601 13.366	0.042 0.100 0.170 0.335 0.803
Platform Mount [LP 601-1] (E-Verizon)	C	None		0.000	110.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	28.470 33.590 38.710 48.950 69.430	28.470 33.590 38.710 48.950 69.430	1.122 1.514 1.905 2.689 4.255
/									
(2) AIR 21 (P-T-Mobile)	A	From Leg	4.000 0.000 1.500	60.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.386 6.821 7.264 8.177 10.107	4.157 4.564 4.981 5.839 7.659	0.079 0.120 0.166 0.273 0.556
(2) AIR 21 (P-T-Mobile)	B	From Leg	4.000 0.000 1.500	60.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.386 6.821 7.264 8.177 10.107	4.157 4.564 4.981 5.839 7.659	0.079 0.120 0.166 0.273 0.556
(2) AIR 21 (P-T-Mobile)	C	From Leg	4.000 0.000 1.500	60.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.386 6.821 7.264 8.177 10.107	4.157 4.564 4.981 5.839 7.659	0.079 0.120 0.166 0.273 0.556
ONEBASE TWIN DUAL DUPLEX TMA (P-T-Mobile)	A	From Leg	4.000 0.000 1.500	60.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.674 0.786 0.908 1.176 1.816	0.306 0.392 0.486 0.699 1.231	0.011 0.016 0.022 0.040 0.103
ONEBASE TWIN DUAL DUPLEX TMA (P-T-Mobile)	B	From Leg	4.000 0.000 1.500	60.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice	0.674 0.786 0.908 1.176	0.306 0.392 0.486 0.699	0.011 0.016 0.022 0.040

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 K
						4" Ice	1.816	1.231	0.103
ONEBASE TWIN DUAL DUPLEX TMA (P-T-Mobile)	C	From Leg	4.000 0.000 1.500	60.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.674 0.786 0.908 1.176 1.816	0.306 0.392 0.486 0.699 1.231	0.011 0.016 0.022 0.040 0.103
(2) 6' x 2" Mount Pipe (E-T-Mobile)	A	From Leg	4.000 0.000 0.000	0.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
(2) 6' x 2" Mount Pipe (E-T-Mobile)	B	From Leg	4.000 0.000 0.000	0.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
(2) 6' x 2" Mount Pipe (E-T-Mobile)	C	From Leg	4.000 0.000 0.000	0.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
Platform Mount [LP 601-1] (E-T-Mobile)	C	None		0.000	98.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	28.470 33.590 38.710 48.950 69.430	28.470 33.590 38.710 48.950 69.430	1.122 1.514 1.905 2.689 4.255
/									
LLPX310R-V1 w/ Mount Pipe (E-Clearwire)	A	From Leg	2.000 0.000 0.000	60.000	86.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.704	2.983 3.526 4.086 5.313 8.131	0.045 0.081 0.125 0.232 0.544
LLPX310R-V1 w/ Mount Pipe (E-Clearwire)	B	From Leg	2.000 0.000 0.000	40.000	86.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.704	2.983 3.526 4.086 5.313 8.131	0.045 0.081 0.125 0.232 0.544
LLPX310R-V1 w/ Mount Pipe (E-Clearwire)	C	From Leg	2.000 0.000 0.000	80.000	86.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.704	2.983 3.526 4.086 5.313 8.131	0.045 0.081 0.125 0.232 0.544
7'x2" Pipe Mount (E-Clearwire)	A	From Leg	2.000 0.000 0.000	0.000	86.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.663 2.391 2.825 3.706 5.578	1.663 2.391 2.825 3.706 5.578	0.026 0.039 0.056 0.105 0.266
7'x2" Pipe Mount (E-Clearwire)	B	From Leg	2.000 0.000 0.000	0.000	86.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.663 2.391 2.825 3.706 5.578	1.663 2.391 2.825 3.706 5.578	0.026 0.039 0.056 0.105 0.266
7'x2" Pipe Mount (E-Clearwire)	C	From Leg	2.000 0.000 0.000	0.000	86.500	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.663 2.391 2.825 3.706 5.578	1.663 2.391 2.825 3.706 5.578	0.026 0.039 0.056 0.105 0.266

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 K
Side Arm Mount [SO 103-3] (E-Clearwire)	C	None		0.000	86.500	No Ice	9.500	9.500	0.224
						1/2" Ice	11.800	11.800	0.317
						1" Ice	14.100	14.100	0.410
						2" Ice	18.700	18.700	0.596
						4" Ice	27.900	27.900	0.968
/									
(2) HBX-6517DS-A1M w/ Mount Pipe (MetroPCS-R)	A	From Leg	3.000 0.000 0.000	30.000	76.000	No Ice	5.503	5.019	0.040
						1/2" Ice	6.073	6.221	0.084
						1" Ice	6.615	7.165	0.139
						2" Ice	7.710	9.008	0.275
						4" Ice	10.060	12.895	0.686
(2) HBX-6517DS-A1M w/ Mount Pipe (MetroPCS-R)	B	From Leg	3.000 0.000 0.000	30.000	76.000	No Ice	5.503	5.019	0.040
						1/2" Ice	6.073	6.221	0.084
						1" Ice	6.615	7.165	0.139
						2" Ice	7.710	9.008	0.275
						4" Ice	10.060	12.895	0.686
(2) HBX-6517DS-A1M w/ Mount Pipe (MetroPCS-R)	C	From Leg	3.000 0.000 0.000	30.000	76.000	No Ice	5.503	5.019	0.040
						1/2" Ice	6.073	6.221	0.084
						1" Ice	6.615	7.165	0.139
						2" Ice	7.710	9.008	0.275
						4" Ice	10.060	12.895	0.686
Sector Mount [SM 505-3] (MetroPCS-R)	C	None		0.000	76.000	No Ice	34.860	34.860	1.725
						1/2" Ice	49.790	49.790	2.317
						1" Ice	64.720	64.720	2.909
						2" Ice	94.580	94.580	4.092
						4" Ice	154.300	154.300	6.458
/									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
AndrewVHLP2.5-18-DW1 (E)	B	Paraboloid w/Shroud (HP)	From Leg	2.000 0.000 3.000	-20.000		86.500	2.917	No Ice	6.681	0.048
									1/2" Ice	7.069	0.084
									1" Ice	7.456	0.120
									2" Ice	8.230	0.193
									4" Ice	9.779	0.338
AndrewVHLP2-18-DW1 (E)	C	Paraboloid w/Shroud (HP)	From Leg	2.000 0.000 3.000	50.000		86.500	2.175	No Ice	3.715	0.031
									1/2" Ice	4.006	0.052
									1" Ice	4.296	0.072
									2" Ice	4.876	0.113
									4" Ice	6.037	0.195
/											

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	121 - 96	Pole	Max Tension	14	0.000	0.000	-0.000
			Max. Compression	14	-13.278	0.000	0.325
			Max. Mx	11	-4.755	185.358	-0.153
			Max. My	8	-4.755	0.194	-186.145
			Max. Vy	11	-11.160	185.358	-0.153
			Max. Vx	8	11.187	0.194	-186.145
			Max. Torque	8			-0.516
L2	96 - 48	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-33.094	-1.984	1.197
			Max. Mx	11	-15.274	1018.697	2.789
			Max. My	8	-15.282	-5.430	-1015.181

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	11	-21.281	1018.697	2.789
			Max. Vx	8	21.152	-5.430	-1015.181
			Max. Torque	13			1.039
L3	48 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-49.579	-4.274	2.640
			Max. Mx	11	-26.767	2241.277	7.337
			Max. My	8	-26.767	-13.608	-2231.082
			Max. Vy	11	-24.948	2241.277	7.337
			Max. Vx	8	24.821	-13.608	-2231.082
			Max. Torque	13			0.965

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	18	49.579	-7.432	-0.018
	Max. H_x	11	26.788	24.926	0.080
	Max. H_z	2	26.788	0.110	24.791
	Max. M_x	2	2231.017	0.110	24.791
	Max. M_z	5	2239.989	-24.898	-0.079
	Max. Torsion	13	0.881	12.622	21.462
	Min. Vert	1	26.788	0.000	0.000
	Min. H_x	5	26.788	-24.898	-0.079
	Min. H_z	8	26.788	-0.145	-24.798
	Min. M_x	8	-2231.082	-0.145	-24.798
	Min. M_z	11	-2241.277	24.926	0.080
	Min. Torsion	7	-0.776	-12.593	-21.471

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	26.788	0.000	0.000	-0.280	-0.597	0.000
Dead+Wind 0 deg - No Ice	26.788	-0.110	-24.791	-2231.017	9.107	-0.470
Dead+Wind 30 deg - No Ice	26.788	12.437	-21.413	-1927.062	-1119.467	0.029
Dead+Wind 60 deg - No Ice	26.788	21.582	-12.256	-1103.167	-1941.880	0.417
Dead+Wind 90 deg - No Ice	26.788	24.898	0.079	6.591	-2239.989	0.633
Dead+Wind 120 deg - No Ice	26.788	21.602	12.442	1119.067	-1943.467	0.728
Dead+Wind 150 deg - No Ice	26.788	12.593	21.471	1931.544	-1133.184	0.776
Dead+Wind 180 deg - No Ice	26.788	0.145	24.798	2231.082	-13.608	0.444
Dead+Wind 210 deg - No Ice	26.788	-12.477	21.393	1924.693	1121.889	0.036
Dead+Wind 240 deg - No Ice	26.788	-21.609	12.271	1103.912	1943.164	-0.308
Dead+Wind 270 deg - No Ice	26.788	-24.926	-0.080	-7.337	2241.277	-0.556
Dead+Wind 300 deg - No Ice	26.788	-21.634	-12.448	-1120.192	1945.159	-0.770
Dead+Wind 330 deg - No Ice	26.788	-12.622	-21.462	-1931.277	1134.609	-0.881
Dead+Ice+Temp	49.579	0.000	-0.000	-2.640	-4.274	-0.000
Dead+Wind 0 deg+Ice+Temp	49.579	-0.026	-7.405	-689.929	-2.031	-0.082
Dead+Wind 30 deg+Ice+Temp	49.579	3.715	-6.399	-596.630	-349.059	0.019
Dead+Wind 60 deg+Ice+Temp	49.579	6.442	-3.669	-343.226	-602.096	0.090
Dead+Wind 90 deg+Ice+Temp	49.579	7.432	0.018	-1.097	-693.879	0.119
Dead+Wind 120 deg+Ice+Temp	49.579	6.445	3.712	341.794	-602.313	0.129

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 150 deg+Ice+Temp	49.579	3.751	6.412	592.362	-352.308	0.143
Dead+Wind 180 deg+Ice+Temp	49.579	0.035	7.406	684.694	-7.568	0.076
Dead+Wind 210 deg+Ice+Temp	49.579	-3.725	6.394	590.771	341.264	-0.003
Dead+Wind 240 deg+Ice+Temp	49.579	-6.449	3.672	338.178	593.974	-0.061
Dead+Wind 270 deg+Ice+Temp	49.579	-7.438	-0.018	-4.336	685.751	-0.099
Dead+Wind 300 deg+Ice+Temp	49.579	-6.453	-3.714	-347.323	594.290	-0.140
Dead+Wind 330 deg+Ice+Temp	49.579	-3.758	-6.409	-597.529	344.224	-0.169
Dead+Wind 0 deg - Service	26.788	-0.043	-9.684	-872.376	3.188	-0.185
Dead+Wind 30 deg - Service	26.788	4.858	-8.364	-753.545	-438.019	0.011
Dead+Wind 60 deg - Service	26.788	8.430	-4.788	-431.450	-759.537	0.163
Dead+Wind 90 deg - Service	26.788	9.726	0.031	2.404	-876.084	0.249
Dead+Wind 120 deg - Service	26.788	8.438	4.860	437.322	-760.160	0.286
Dead+Wind 150 deg - Service	26.788	4.919	8.387	754.956	-443.382	0.305
Dead+Wind 180 deg - Service	26.788	0.057	9.687	872.055	-5.690	0.175
Dead+Wind 210 deg - Service	26.788	-4.874	8.357	752.273	438.222	0.014
Dead+Wind 240 deg - Service	26.788	-8.441	4.793	431.397	759.296	-0.121
Dead+Wind 270 deg - Service	26.788	-9.737	-0.031	-3.040	875.845	-0.219
Dead+Wind 300 deg - Service	26.788	-8.451	-4.863	-438.107	760.080	-0.303
Dead+Wind 330 deg - Service	26.788	-4.930	-8.384	-755.197	443.198	-0.346

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-26.788	0.000	0.000	26.788	0.000	0.000%
2	-0.110	-26.788	-24.791	0.110	26.788	24.791	0.000%
3	12.437	-26.788	-21.413	-12.437	26.788	21.413	0.000%
4	21.582	-26.788	-12.256	-21.582	26.788	12.256	0.000%
5	24.898	-26.788	0.079	-24.898	26.788	-0.079	0.000%
6	21.602	-26.788	12.442	-21.602	26.788	-12.442	0.000%
7	12.593	-26.788	21.471	-12.593	26.788	-21.471	0.000%
8	0.145	-26.788	24.798	-0.145	26.788	-24.798	0.000%
9	-12.477	-26.788	21.393	12.477	26.788	-21.393	0.000%
10	-21.609	-26.788	12.271	21.609	26.788	-12.271	0.000%
11	-24.926	-26.788	-0.080	24.926	26.788	0.080	0.000%
12	-21.634	-26.788	-12.448	21.634	26.788	12.448	0.000%
13	-12.622	-26.788	-21.462	12.622	26.788	21.462	0.000%
14	0.000	-49.579	0.000	-0.000	49.579	0.000	0.000%
15	-0.026	-49.579	-7.405	0.026	49.579	7.405	0.000%
16	3.715	-49.579	-6.399	-3.715	49.579	6.399	0.000%
17	6.442	-49.579	-3.669	-6.442	49.579	3.669	0.000%
18	7.432	-49.579	0.018	-7.432	49.579	-0.018	0.000%
19	6.445	-49.579	3.712	-6.445	49.579	-3.712	0.000%
20	3.751	-49.579	6.412	-3.751	49.579	-6.412	0.000%
21	0.035	-49.579	7.406	-0.035	49.579	-7.406	0.000%
22	-3.725	-49.579	6.394	3.725	49.579	-6.394	0.000%
23	-6.449	-49.579	3.672	6.449	49.579	-3.672	0.000%
24	-7.438	-49.579	-0.018	7.438	49.579	0.018	0.000%
25	-6.453	-49.579	-3.714	6.453	49.579	3.714	0.000%
26	-3.758	-49.579	-6.409	3.758	49.579	6.409	0.000%
27	-0.043	-26.788	-9.684	0.043	26.788	9.684	0.000%
28	4.858	-26.788	-8.364	-4.858	26.788	8.364	0.000%
29	8.430	-26.788	-4.788	-8.430	26.788	4.788	0.000%
30	9.726	-26.788	0.031	-9.726	26.788	-0.031	0.000%
31	8.438	-26.788	4.860	-8.438	26.788	-4.860	0.000%
32	4.919	-26.788	8.387	-4.919	26.788	-8.387	0.000%
33	0.057	-26.788	9.687	-0.057	26.788	-9.687	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
34	-4.874	-26.788	8.357	4.874	26.788	-8.357	0.000%
35	-8.441	-26.788	4.793	8.441	26.788	-4.793	0.000%
36	-9.737	-26.788	-0.031	9.737	26.788	0.031	0.000%
37	-8.451	-26.788	-4.863	8.451	26.788	4.863	0.000%
38	-4.930	-26.788	-8.384	4.930	26.788	8.384	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00039533
3	Yes	5	0.00000001	0.00022938
4	Yes	5	0.00000001	0.00022760
5	Yes	4	0.00000001	0.00032540
6	Yes	5	0.00000001	0.00023801
7	Yes	5	0.00000001	0.00022623
8	Yes	4	0.00000001	0.00020527
9	Yes	5	0.00000001	0.00023318
10	Yes	5	0.00000001	0.00023097
11	Yes	4	0.00000001	0.00018796
12	Yes	5	0.00000001	0.00022563
13	Yes	5	0.00000001	0.00024106
14	Yes	4	0.00000001	0.00001461
15	Yes	5	0.00000001	0.00011656
16	Yes	5	0.00000001	0.00018131
17	Yes	5	0.00000001	0.00018055
18	Yes	5	0.00000001	0.00011705
19	Yes	5	0.00000001	0.00018206
20	Yes	5	0.00000001	0.00017967
21	Yes	5	0.00000001	0.00011567
22	Yes	5	0.00000001	0.00017762
23	Yes	5	0.00000001	0.00017735
24	Yes	5	0.00000001	0.00011570
25	Yes	5	0.00000001	0.00017864
26	Yes	5	0.00000001	0.00018214
27	Yes	4	0.00000001	0.00008536
28	Yes	4	0.00000001	0.00083687
29	Yes	4	0.00000001	0.00082935
30	Yes	4	0.00000001	0.00007259
31	Yes	4	0.00000001	0.00090151
32	Yes	4	0.00000001	0.00081440
33	Yes	4	0.00000001	0.00006701
34	Yes	4	0.00000001	0.00086229
35	Yes	4	0.00000001	0.00085195
36	Yes	4	0.00000001	0.00005665
37	Yes	4	0.00000001	0.00081289
38	Yes	4	0.00000001	0.00091880

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	121 - 96	24.807	37	1.796	0.004
L2	99.417 - 48	16.949	37	1.628	0.002
L3	52.917 - 0	4.619	37	0.821	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
121.000	(2) RA21.7770.00 w/ Mount Pipe	37	24.807	1.796	0.004	18785
110.000	BXA-171063-8BF-EDIN-2 w/ Mount Pipe	37	20.721	1.724	0.003	8538
98.500	(2) AIR 21	37	16.634	1.618	0.002	4352
89.500	AndrewVHLP2.5-18-DW1	37	13.676	1.496	0.002	3783
86.500	LLPX310R-V1 w/ Mount Pipe	37	12.745	1.448	0.002	3640
76.000	(2) HBX-6517DS-A1M w/ Mount Pipe	37	9.729	1.264	0.001	3209

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	121 - 96	63.371	12	4.590	0.009
L2	99.417 - 48	43.314	12	4.163	0.005
L3	52.917 - 0	11.814	12	2.100	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
121.000	(2) RA21.7770.00 w/ Mount Pipe	12	63.371	4.590	0.010	7438
110.000	BXA-171063-8BF-EDIN-2 w/ Mount Pipe	12	52.945	4.408	0.008	3380
98.500	(2) AIR 21	12	42.511	4.136	0.006	1721
89.500	AndrewVHLP2.5-18-DW1	12	34.957	3.824	0.005	1493
86.500	LLPX310R-V1 w/ Mount Pipe	12	32.580	3.703	0.005	1435
76.000	(2) HBX-6517DS-A1M w/ Mount Pipe	12	24.875	3.232	0.003	1263

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	121 - 96 (1)	TP27.56x21.26x0.188	25.000	0.000	0.0	36.000	15.778	-4.755	567.994	0.008
L2	96 - 48 (2)	TP39.56x26.324x0.25	51.417	0.000	0.0	36.000	30.188	-15.271	1086.770	0.014
L3	48 - 0 (3)	TP51.56x37.794x0.313	52.917	0.000	0.0	35.190	50.831	-26.767	1788.750	0.015

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	121 - 96 (1)	TP27.56x21.26x0.188	186.145	21.625	36.000	0.601	0.000	0.000	36.000	0.000
L2	96 - 48 (2)	TP39.56x26.324x0.25	1020.058	43.137	36.000	1.198	0.000	0.000	36.000	0.000
L3	48 - 0 (3)	TP51.56x37.794x0.313	2244.658	41.831	35.190	1.189	0.000	0.000	35.190	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	121 - 96 (1)	TP27.56x21.26x0.188	11.187	0.709	24.000	0.060	0.509	0.029	24.000	0.001
L2	96 - 48 (2)	TP39.56x26.324x0.25	21.317	0.706	24.000	0.059	0.863	0.018	24.000	0.001
L3	48 - 0 (3)	TP51.56x37.794x0.313	24.983	0.491	24.000	0.041	0.774	0.007	24.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	121 - 96 (1)	0.008	0.601	0.000	0.060	0.001	0.610 ✔	1.333	H1-3+VT ✔
L2	96 - 48 (2)	0.014	1.198	0.000	0.059	0.001	1.213 ✔	1.333	H1-3+VT ✔
L3	48 - 0 (3)	0.015	1.189	0.000	0.041	0.000	1.204 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	121 - 96	Pole	TP27.56x21.26x0.188	1	-4.755	757.136	45.8	Pass
L2	96 - 48	Pole	TP39.56x26.324x0.25	2	-15.271	1448.664	91.0	Pass
L3	48 - 0	Pole	TP51.56x37.794x0.313	3	-26.767	2384.404	90.3	Pass
							Summary	
						Pole (L2)	91.0	Pass
						RATING =	**91.0**	**Pass**

Program Version 6.0.4.0 - 1/27/2012 File: 84679_003_01_Plainville_CT.eri

PROJECT	**83948 - Plainville South Washington Street, CT**			
SUBJECT	**Base Analysis**			
DATE	**06/04/13**	PAGE	1	OF 1

B&T Engineering, Inc.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Circular Base Plate & Anchor Rods - TIA-222-F

Base Reactions:

Moment:	2245	(k-ft)
Axial:	27	(k)
Shear:	25	(k)

Anchor Rod Data:

Qty:	16				
Diam:	2.25	(in)			
Rod Material:	A615-J				
Strength (Fu):	100	(ksi)	Anchor Rod Tension:	109.5	(k)
Yield (Fy):	75	(ksi)	Allowable Tension:	195.0	(k)
Bolt Circle:	60.6	(in)	Anchor Rod Capacity:	56.1%	Pass

Base Plate Data:

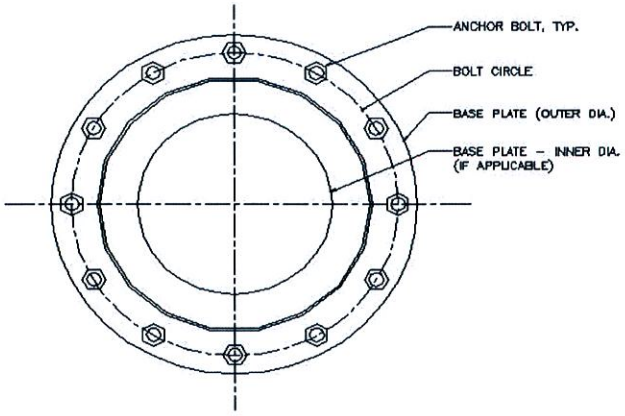
Diam:	66	(in)	Base Plate Stress:	45.8	(ksi)
Thick:	2.00	(in)	Allowable Stress:	50.0	(ksi)
Grade:	50	(ksi)	Base Plate Capacity:	91.6%	Pass

Pole Data:

Diam:	51.56	(in)		
Thick:	0.31	(in)		
Grade:	60	(ksi)		
# of Sides:	18			
Fu:	75	(ksi)	Punching Shear Capacity:	n/a

Stiffener Data:

Qty:	None			
Wld Type:				
Groove Depth:		(in)		
Groove Angle:		(degrees)		
Fillet H. Weld:		(in)		
Fillet V. Weld:		(in)		
Width:		(in)		
Height:		(in)	Horizontal Weld:	n/a
Thick:		(in)	Vertical Weld:	n/a
Notch:		(in)	Plate Flex + Shear:	n/a
Grade:		(ksi)	Plate Tension + Shear:	n/a
Weld Str.:		(ksi)	Plate Compression:	n/a



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B&T Engineering

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* CAISSON - Pier Foundations Analysis and Design - Copyright Power Line Systems, Inc. 1993-2010 *

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Project Title: 84679.003.01 PLAINVILLE, CT (USID# 83948)
Project Notes: 121' Monopole - 7' Dia, 32.5' Depth (32' Bearing)

Calculation Method: Full 8CD

******* I N P U T D A T A

Pier Properties

Diameter (ft)	Distance of Top of Pier above Ground (ft)	Concrete Strength (ksi)	Steel Yield Strength (ksi)
7.00	0.50		

Soil Properties

Layer	Type	Thickness (ft)	Depth at Top of Layer (ft)	Density (lbs/ft^3)	CU (psf)	KP	PHI (deg)
1	Clay	3.50	0.00	55.0			
2	Sand	9.50	3.50	55.0		3.390	32.98
3	Sand	6.00	13.00	45.0		2.770	28.00
4	Sand	4.00	19.00	55.0		3.390	32.98
5	Sand	29.00	23.00	40.0		2.770	28.00

Design (Factored) Loads at Top of Pier

Moment (ft-k)	Axial Load (kips)	Shear Load (kips)	Additional Safety Factor Against Soil Failure
2245.0	27.0	25.00	3.60

Soil Interaction = 2.0/3.6 = 55.6% → OK

******* R E S U L T S

Calculated Pier Properties

Length (ft)	Weight (kips)	End Bearing Pressure (psf)
32.500	187.612	701.6

Ultimate Resisting Forces Along Pier

Type	Distance of Top of Layer to Top of Pier (ft)	Thickness (ft)	Density (lbs/ft^3)	CU (psf)	KP	Force (kips)	Arm (ft)
Clay	0.50	3.50	55.0			0.00	2.25
Sand	4.00	9.50	55.0		3.390	306.87	9.66
Sand	13.50	6.00	45.0		2.770	296.67	16.66
Sand	19.50	3.41	55.0		3.390	261.77	21.25
Sand	22.91	0.59	55.0		3.390	-50.04	23.21
Sand	23.50	9.00	40.0		2.770	-725.09	28.19

Shear and Moments Along Pier

Distance below Top of Pier (ft)	Shear (with Safety Factor) (kips)	Moment (with Safety Factor) (ft-k)	Shear (without Safety Factor) (kips)	Moment (without Safety Factor) (ft-k)
0.00	90.2	8134.4	25.1	2259.6
3.25	90.2	8427.5	25.1	2341.0
6.50	43.7	8667.6	12.1	2407.7
9.75	-53.3	8663.1	-14.8	2406.4
13.00	-191.7	8276.1	-53.3	2298.9
16.25	-341.0	7411.8	-94.7	2058.8
19.50	-513.4	6031.0	-142.6	1675.3
22.75	-761.9	3969.8	-211.6	1102.7
26.00	-542.6	1816.6	-150.7	504.6
29.25	-283.6	467.5	-78.8	129.9
32.50	0.0	0.0	0.0	0.0

Mmax = 2437.7 k-ft; Use this moment in the DSMC Sheet.

Moment Capacity of Drilled Concrete Shaft (Caisson) for TIA Rev F or G

Note: Shaft assumed to have ties, not spiral, transverse reinforcing

Site Data

USID#: *83948*

Site Name: *Plainville South Washington Street,*

Maximum Shaft Superimposed Forces		
TIA Revision:	F	
Max. Service Shaft M:	2437.7	ft-kips (* Note)
Max. Service Shaft P:	27	kips
Max Axial Force Type:	Comp.	

(*) Note: Max Shaft Superimposed Moment does not necessarily equal to the shaft top reaction moment

Enter Load Factors Below:		
For M (WL)	1.3	<---- Enter Factor
For P (DL)	1.3	<---- Enter Factor

Load Factor	Shaft Factored Loads		
1.30	Mu:	3169.01	ft-kips
1.30	Pu:	35.1	kips

Pier Properties

Concrete:

Pier Diameter =	7.0	ft
Concrete Area =	5541.8	in^2

Reinforcement:

Clear Cover to **Tie**=	3.00	in
Horiz. **Tie** Bar Size=	4	
Vert. Cage Diameter =	6.30	ft
Vert. Cage Diameter =	75.59	in
Vertical Bar Size =	11	
Bar Diameter =	1.41	in
Bar Area =	1.56	in^2
Number of Bars =	27	
As Total=	42.12	in^2
A s/ Aconc, Rho:	0.0076	0.76%

Material Properties		
Concrete Comp. strength, f'c =	3000	psi
Reinforcement yield strength, Fy =	60	ksi
Reinforcing Modulus of Elasticity, E =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	
ACI 318 Code		
Select Analysis ACI Code=	2008	
Seismic Properties		
Seismic Design Category =	B	
Seismic Risk =	**Low**	

Solve (Run) <-- Press Upon Completing All Input

ACI 10.5 , ACI 21.10.4, and IBC 1810.

Min As for Flexural, Tension Controlled, Shafts:

(3)*(Sqrt(f'c)/Fy:	0.0027
200 / Fy:	0.0033

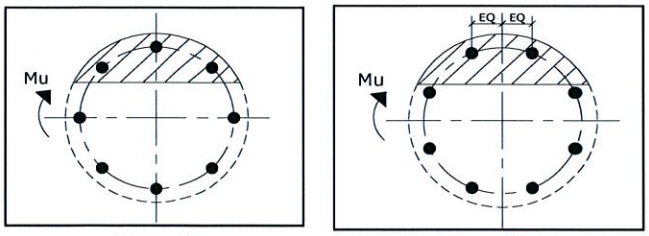
Soil Interaction controls foundation capacity

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	0.76%	OK

Results:

Governing Orientation Case: **2**



Case 1 Case 2

Dist. From Edge to Neutral Axis:	**15.22**	in
Extreme Steel Strain, εt:	**0.0127**	
εt > 0.0050, Tension Controlled		
Reduction Factor,φ:	**0.900**	

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	8606.68	kips
at Mu=(ϕ=0.65)Mn=	5238.98	ft-kips
Max Tu, (φ=0.9) Tn =	2274.48	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	35.10	kips
Drilled Shaft Moment Capacity, φMn:	**6506.50**	ft-kips
Drilled Shaft Superimposed Mu:	**3169.01**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	48.7%

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC SAFETY
DIVISION OF FIRE, EMERGENCY AND BUILDING SERVICES
OFFICE OF THE STATE BUILDING INSPECTOR

August 27, 2007

Derek J. Creaser EIT
Hudson Design Group
46 Beechwood Drive
North Andover, MA 01845

Dear Mr. Creaser,

The following is offered in response to your August 22, 2007 letter to me in which you seek clarification of the correlation between Appendix K of the 2003 International Building Code portion of the 2005 State Building Code and the provisions of the TIA/EIA-222-F-96 standard for the design of towers.

Question: Is it the intent of the 2005 State Building Code to require the use of the Appendix K wind speeds when utilizing Exception 5 to Section 1609.1.1, which allows use of the TIA/EIA-222-F-96 standard?

Answer: No. The appropriate wind speeds to use when utilizing the TIA/EIA standard would be the wind speeds incorporated in the standard itself.

Regards,

Christopher R. Laux, A.I.A.
State Building Inspector

Telephone (860) 685-8310
1111 Country Club Road
Middletown, CT 06457
http://www.ct.gov/dps
An Equal Opportunity Employer

EXHIBIT C

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11378G

ATT FT Plainville 2
335 S. Washington Street
Plainville, CT 06062

June 14, 2013

EBI Project Number: 62137568

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

June 14, 2013

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Re: Emissions Values for Site: CT11378G - ATT FT Plainville 2

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 335 S. Washington Street, Plainville, CT, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μW/cm2). The general population exposure limit for the cellular band is 567 μW/cm2, and the general population exposure limit for the PCS band is 1000 μW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 335 S. Washington Street, Plainville, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, the actual antenna pattern gain value in the direction of the sample area was used. For this report the sample point is a 6 foot person standing at the base of the tower

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (1935.000 MHz—to 1945.000 MHz) were considered for each sector of the proposed installation.
2) 2 UMTS channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
3) 2 LTE channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
6) The antenna used in this modeling is the Ericsson AIR21 for LTE, UMTS and GSM. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.6 dBd gain value at its main lobe. Actual antenna gain values were used for all calculations as per the manufacturers specifications

7) The antenna mounting height centerline of the proposed antennas is **98.5 feet** above ground level (AGL)
8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT11378G - ATT FT Plainville 2
Site Addresss	335 S. Washington Street, Plainville, CT 06062
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	98.5	92.5	None	0	0	48.326044	2.030504	0.20305%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	98.5	92.5	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	98.5	92.5	1-5/8"	0	0	24.163022	1.015252	0.10153%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	98.5	92.5	1-5/8"	0	0	24.163022	1.015252	0.10153%
														Sector total Power Density Value:			0.406%

Sector 2

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	98.5	92.5	None	0	0	48.326044	2.030504	0.20305%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	98.5	92.5	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	98.5	92.5	1-5/8"	0	0	24.163022	1.015252	0.10153%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	98.5	92.5	1-5/8"	0	0	24.163022	1.015252	0.10153%
														Sector total Power Density Value:			0.406%

Sector 3

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	98.5	92.5	None	0	0	48.326044	2.030504	0.20305%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	98.5	92.5	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	98.5	92.5	1-5/8"	0	0	24.163022	1.015252	0.10153%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	98.5	92.5	1-5/8"	0	0	24.163022	1.015252	0.10153%
														Sector total Power Density Value:			0.406%

Site Composite MPE %	
Carrier	MPE %
T-Mobile	1.218%
AT&T	21.710%
Verizon Wireless	26.590%
Clearwire	2.400%
MetroPCS	21.050%
Total Site MPE %	**72.968%**

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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the T-Mobile facility are **1.218 % (0.406% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **72.968%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803