



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

ORIGINAL

August 30, 2012

RECEIVED
AUG 31 2012
CONNECTICUT
SITING COUNCIL

VIA OVERNIGHT COURIER

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

Re: New Cingular Wireless PCS, LLC – Exempt Modification
93 Old Amity Road (Meyers Road), Bethany, Connecticut

Dear Ms. Roberts:

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

AT&T plans to modify the existing wireless communications facility owned by American Tower and located at 93 Old Amity Road (a/k/a 9 Meyers Road), Bethany (coordinates 41°-24'-17" N, 73°-00'-00" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration, subject to modifications detailed in the attached structural documentation. Also included is a power density report reflecting the modification to AT&T's operations at the site.

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

1. AT&T will add three (3) mounting frames, relocate three (3) existing UMTS/GSM antennas and add three (3) LTE panel antennas and six (6) RRUs to the frames at a center line of approximately 165'. Three (3) surge arrestors will be mounted

behind the LTE antennas and one (1) surge arrestor will be mounted to the tower at the top of the cable run. AT&T will also place a DC power and fiber run from the equipment to the antennas along the existing coaxial cable run. These changes will not extend the height of the approximately 337.5' structure.

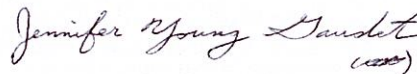
2. AT&T will remove and replace one (1) cabinet on the existing concrete pad, and will add two (2) cabinets stacked on a new 3' x 3' concrete pad adjacent to the existing equipment. AT&T will also mount a new GPS antenna to the existing ice bridge post. These changes will be within the existing compound and will have no effect on the site boundaries.

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

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by C Squared Systems, LLC, AT&T's operations at the site will result in a power density of approximately 1.19%; the combined site operations will result in a total power density of approximately 21.27%.

Please feel free to contact me by phone at (860) 798-7454 or by e-mail at jgaudet@hpcwireless.com with questions concerning this matter. Thank you for your consideration.

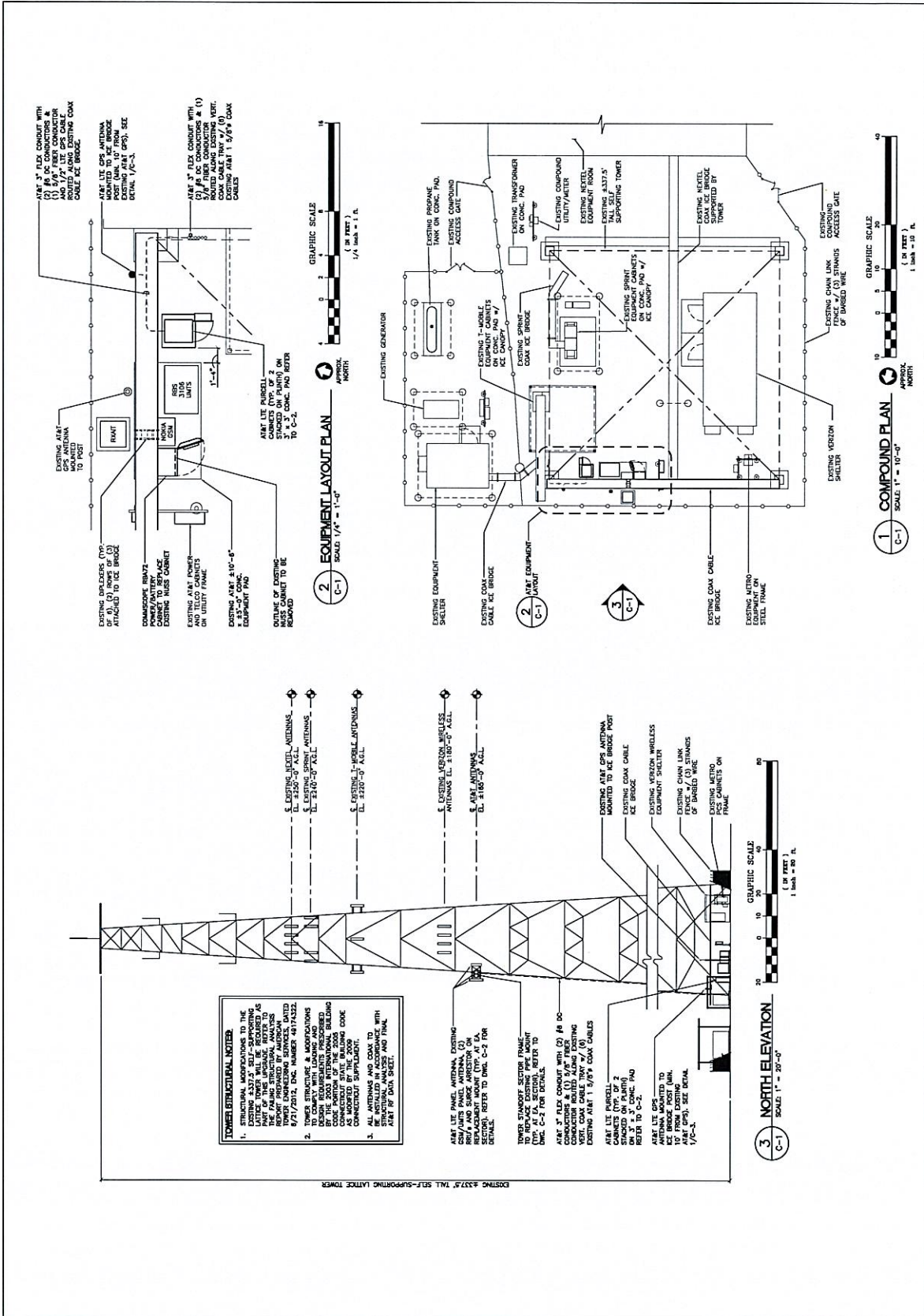
Respectfully yours,



Jennifer Young Gaudet

Attachments

cc: Honorable Derryln Gorski, First Selectman, Town of Bethany
American Tower (underlying property owner)



1. ANTENNA PLAN - EXISTING
SCALE: 1/8" = 1'-0"
GRAPHIC SCALE
APPROX. NORTH

2. TYP. SECTOR ELEVATION - EXISTING
SCALE: 1/2" = 1'-0"
GRAPHIC SCALE

3. ANTENNA PLAN - PROPOSED
SCALE: 1/8" = 1'-0"
C-2

4. TYP. SECTOR ELEVATION - PROPOSED
SCALE: 1/2" = 1'-0"
C-2

5. PURCELL CABINET MOUNTING DETAIL
NOT TO SCALE

6. RBS CABINET PAD DETAIL
NOT TO SCALE

7. COMMSCOPE POWER CABINET DETAIL
NOT TO SCALE



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 337.5 ft AT&T Tag Type 'H' Self Supported Tower

ATC Site Name : Bethany CT, CT

ATC Site Number : 88008

Proposed Carrier : AT&T Mobility

Carrier Site Name : Bethany South

Carrier Site Number : 10070931/CT5632

County : New Haven

Eng. Number : 49174322

Date : June 21, 2012

Usage : 102%

Result : Fail

Submitted by:
Avery B. Long, E.I.
Design Engineer

American Tower Engineering Services
400 Regency Forest Drive
Cary, NC 27518
Phone: 919-468-0112





AMERICAN TOWER®
C O R P O R A T I O N

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Avery B. Long, E.I.
Design Engineer

American Tower Engineering Services
400 Regency Forest Drive
Cary, NC 27518
Phone: 919-468-0112

Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 337.5 ft AT&T Tag Type 'H' Self Supported Tower located at 93 Old Amity Rd., Bethany, CT 06524, New Haven County (ATC site #88008). The tower was originally designed and manufactured to AT&T Tag Type 'H' standards in 1966 by the Flint Steel Corporation. Tower geometry and member information was taken from a structural analysis by CSEI (Eng. #73115244, dated November 18, 2002). The tower has been modified per design by ATC (Project #44269933, dated January 6, 2010).

Analysis

The tower was analyzed using Semaan Engineering Solutions, Inc., Software.

Basic Wind Speed: 85 mph (Fastest Mile)

Radial Ice: 74 mph (Fastest Mile) w/ 1/2" ice

Code: ANSI/TIA/EIA-222-F / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendments

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax (in)	Carrier
338.0	1	Rohde & Schwarz ADD090	Platform w/ Handrails	(2) 7/8	US Treasury
	--	--		(1) 7/8	Unknown
320.0	--	--	Catwalk	--	--
310.0	1	Sinclair SC381-HL	Sector Frame	(2) 7/8	US Treasury
	1	Sinclair SC281-L			
287.5	--	--	Rest Platform	--	--
275.0	1	Sinclair SC281-L	Sector Frame	(1) 7/8	US Treasury
250.0	12	Decibel DB844H90E-XY	Sector Frames	(12) 1 5/8	Sprint Nextel
240.0	9	DAPA 58000X	Sector Frames	(9) 1 5/8	
237.0	--	--	Working Platform	--	--
220.0	6	Remec S20057A1	Sector Frames	(12) 1 5/8 (1) 0.315	T-Mobile
	3	RFS APX16PV-16PVL-E-00			
	6	RCU			
200.0	--	--	Rest Platform	--	--
194.0	1	Andrew DB616E-BC	Side Arm	(1) 1 1/4	US Treasury
180.0	6	RFS FD9R6004/1C-3L	Sector Frames	(12) 1 5/8 (1) 1/2	Verizon
	3	Powerwave P65-16-XL-2			
	3	Ryma MGD3-800TX			
	6	Andrew DB844H90E-A			
	1	GPS			
165.0	6	Allgon 7770.00	Sector Frames	(12) 1 5/8*	AT&T Mobility
	6	Powerwave LGP21401			
150.0	--	--	Rest Platform	--	--
125.0	--	--	Working Platform	--	--
100.0	3	RFS APXV18-206517S-C	Leg	(6) 1 5/8	Metro PCS
48.0	1	GPS	Leg	(1) 1/2	Sprint Nextel
20.0	1	GPS	Leg	(1) 1/2	
	1	Nortel NTGB01MA	Leg	(1) 7/8	Metro PCS

* Coax double-stacked in a 6-on-6 configuration.

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax (in)	Carrier
165.0	3	Raycap DC2-48-60-0-9E	Sector Frames	(1) 3" Cond. (1) 10mm (2) 19.7mm	AT&T Mobility
	3	Allgon LGP 21901			
	1	Raycap FC12-PC6-10E			
	6	Ericsson RRUS 11 (Band 12)			
	2	Andrew SBNH-1D6565C			
	1	KMW AM-X-CD-16-65-00T-RET			

Stack proposed conduit on top of or behind existing coax such that it is shielded from the wind.

Results

The maximum structure usage is: 102%

Leg Forces	Current Analysis Reactions
Uplift (Kips)	344.2
Axial (Kips)	462.1

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required. These calculations are located after the software output within this analysis. The foundations & anchor bolts have a safety factor greater than or equal to 2.

Conclusion

Based on the analysis results, the structure **does not** meet requirements per the ANSI/TIA/EIA-222-F standard and the 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendments.

The tower and foundation can support the existing and proposed equipment after the modifications listed below are completed:

- Reinforce tower diagonals from 150 ft to 175 ft.
- Reinforce outermost trussed diagonals from 93 ft to 100 ft.
- Reinforce trussed horizontal at 93 ft.

If you have any questions or require additional information, please call 919-466-5069.

Standard Conditions

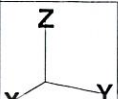
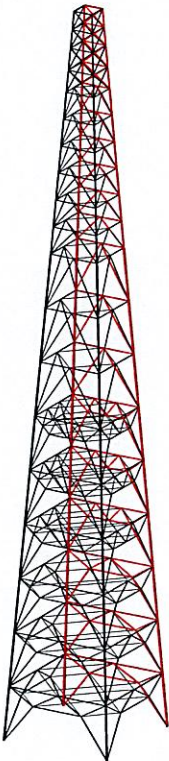
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

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



Project Name : 88008 - Bethany CT, CT
Project Notes : 337.5' AT&T 24' Supported Tower
Project File : S:\12 - ATC\88008\491743_2 - AT&T Mobility\88008-at&t-05152012.tow
Date run : 11:06:40 AM Thursday, June 21, 2012
By :
Tower Version : 12.1.12
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

The model has 0 warnings.

Member check option: TIA/EIA 202-F

Connection rupture check: Not Checked

Crossing diagonal check: Fixed

Included angle check: None

Climbing load check: None

Redundant members checked with: Actual Force

Loads from file: s:\12 - atc\88008\491743_2 - at&t mobility\88008-at&t-05152012.eia

*** Analysis Results:

Maximum element usage is 102.30% for Angle "LD 19K" in load case "W -45" NG

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint	Long. Force	Trans. Force	Vert. Force	Shear Force	Tran. Moment	Long. Moment	Vert. Moment	Bending Force	Usage
		(kips)	(kips)	(kips)	(kips)	(ft-k)	(ft-k)	(ft-k)		
W 0	OP	-44.89	-24.08	314.60	50.94	-0.45	-4.72	-2.56	4.74	0.00
W 0	OX	-43.83	-14.41	-137.30	36.85	0.54	-5.16	2.33	5.19	0.00
W 0	OXY	-34.03	-14.14	-137.09	36.85	0.54	-5.16	2.33	5.19	0.00
W 180	OP	-34.96	13.54	-198.33	37.49	-0.39	-5.34	-2.32	5.35	0.00
W 180	OX	34.96	13.40	-197.51	37.44	-0.39	-5.37	-2.33	5.39	0.00
W 180	OXY	34.03	-14.01	-195.40	36.80	0.54	-5.19	-2.34	5.22	0.00
W 180	OP	43.83	24.55	309.61	50.24	0.26	4.58	-2.57	4.58	0.00
W 180	OX	44.89	-13.94	-112.78	50.88	-0.45	4.75	2.57	4.78	0.00
W 45	OP	-51.12	-51.31	462.07	72.43	3.65	-3.61	0.20	6.14	0.00
W 45	OX	-21.60	-11.03	56.38	24.25	4.25	-3.55	3.85	5.84	0.00
W 45	OXY	-41.62	-11.48	-343.62	58.76	4.36	-4.38	-0.20	6.18	0.00
W 45	OP	-10.89	-41.62	55.65	24.02	3.52	-3.85	5.48	0.00	0.00
W 45	OX	-22.37	11.45	59.03	25.14	-4.40	-3.67	-3.85	5.73	0.00
W 45	OXY	-50.25	51.73	459.43	72.18	-3.80	-3.48	-0.00	5.15	0.00
W 45	OP	-10.25	-30.89	56.24	23.36	-3.42	-3.08	3.86	5.32	0.00
W 45	OXY	-42.25	41.05	-344.21	58.91	-4.25	-4.51	0.01	6.20	0.00
W 90	OP	-23.96	-45.08	314.93	51.06	4.76	0.48	2.57	4.78	0.00
W 90	OX	13.45	-35.10	-137.93	37.49	-0.39	-5.37	-2.32	5.39	0.00
W 90	OXY	-14.18	-33.89	-196.75	36.74	5.14	-0.55	-2.34	5.17	0.00
W 90	OP	24.72	-43.65	310.24	50.16	4.52	-0.21	-2.56	4.52	0.00
W 90	OX	13.37	-35.09	-136.85	37.55	-0.39	-5.38	-2.32	5.41	0.00
W 90	OXY	-23.90	45.08	313.85	51.02	-4.78	0.48	-2.57	4.80	0.00
W 90	OP	24.64	43.65	309.28	50.12	-4.54	-0.22	2.57	4.54	0.00
W 90	OX	-14.10	-33.90	-135.79	36.71	-5.14	0.55	2.34	5.19	0.00
W 0	OP	-39.64	-21.68	295.47	45.18	-1.72	-2.68	-2.16	3.19	0.00
W 0	OX	-38.58	22.25	291.81	44.53	1.52	-2.51	2.16	2.94	0.00
W 0	OXY	-11.80	-21.61	-151.13	31.06	-1.73	-2.00	0.21	3.00	0.00
W 0	OP	-29.59	11.23	-151.87	31.65	-1.67	-5.90	-1.99	6.13	0.00
W 180	OP	29.59	11.04	-149.35	31.58	-1.67	5.95	2.00	6.18	0.00
W 180	OX	29.74	-11.62	-145.77	31.00	1.59	-5.78	-2.01	6.55	0.00
W 180	OXY	38.58	22.06	289.45	44.44	1.52	-2.56	-2.17	2.98	0.00
W 180	OP	39.63	-21.48	292.96	45.08	-1.73	2.73	2.17	3.23	0.00
W 180	OX	-45.15	-16.34	431.79	65.40	1.88	-1.84	0.00	2.63	0.00
W 180	OXY	-19.62	-9.20	69.97	21.67	-0.79	-3.59	5.38	0.00	0.00
W 45	OP	-36.49	-36.37	-286.48	51.52	5.16	-5.19	-0.00	7.32	0.00
W 45	OX	-9.08	-19.44	68.59	21.45	1.77	-5.03	-3.39	5.33	0.00
W 45	OXY	-20.41	9.60	-13.01	21.45	-0.31	-1.91	-3.39	5.66	0.00
W 45	OP	-45.37	46.74	428.76	65.14	-2.03	-1.71	-0.01	2.66	0.00
W 45	OX	-8.51	19.04	69.11	20.85	-1.68	-4.90	3.40	5.18	0.00
W 45	OXY	-37.06	-36.97	-286.60	51.65	-0.50	-5.31	0.21	7.34	0.00
W 90	OP	-21.58	-39.82	295.79	45.29	2.72	1.76	2.17	3.24	0.00
W 90	OX	11.13	-29.71	-151.21	31.73	5.94	1.66	1.99	6.17	0.00
W 90	OXY	-11.83	-28.62	-150.82	30.97	-5.71	-0.81	-2.00	6.59	0.00
W 90	OP	22.27	-38.39	290.52	44.38	2.49	-1.49	-2.16	2.90	0.00
W 90	OX	11.02	29.70	-149.67	31.68	-5.97	1.66	-1.99	6.20	0.00
W 90	OXY	-44.46	19.82	294.26	45.23	-2.75	1.76	-2.17	3.26	0.00
W 90	OP	22.16	38.39	289.14	44.33	-2.52	-1.49	2.17	2.93	0.00
W 90	OX	-11.72	28.62	-149.44	30.93	-5.74	-1.81	2.01	6.02	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support	Origin	Leg Force	Residual	Shear	Residual	Shear	Residual	Shear	Total	Total	Total
			Joint	Member	Leg Dir.	Perpendicular	Horizontal	Horizontal	Long. Tran. Vert.	Force	Force	Force
						(kips)	To Leg	To Leg	To Leg	- Long. To Leg	- Tran. To Leg	- Force Force Force
						(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
W 0	OP	1P	1P	317.497		25.178		25.245		24.910		4.096
W 0	OX	1X	1X	314.389		24.485		24.553		-4.905		-43.83
W 0	OXY	1Y	1Y	-197.934		21.519		21.568		1.623		-34.03
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
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W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY	1Y	1Y	-347.497		22.971		22.972		17.877		-10.89
W 90	OP	1P	1P	56.092		24.041		24.042		-15.038		-22.37
W 90	OX	1X	1X	464.044		30.798		30.922		-22.545		-50.25
W 90	OXY	1Y	1Y	56.696		22.239		22.240		-17.420		-10.25
W 90	OP	1P	1P	295.168		21.016		21.069		19.190		-12.25
W 90	OX	1X	1X	294.590		20.358		20.384		-25.073		-23.96
W 90	OXY	1Y	1Y	318.040		25.320		25.387		3.980		29.59
W 180	OP	1P	1P	-198.781		22.448		22.496		-0.922		34.96
W 180	OX	1X	1X	-197.655		21.627		21.676		-1.598		34.03
W 180	OXY	1Y	1Y	315.698		24.587		24.635		-24.168		-43.83
W 45	OP	1P	1P	466.698		30.798		30.922		21.957		-51.12
W 45	OX	1X	1X	428.766		27.781		27.893		19.657		-41.62
W 45	OXY</											

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress
Printed capacities do not include EIA allowable stress increase for wind load cases.
Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage
which may not necessarily be the same as that which produces maximum force.

Group	Group Angle
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Group Summary (Tension Portion):

Page 2/3

Horiz 4	B/B 13.5"x2.5"x0.25"	DAL 3.5X2.5X0.25	36.0	97.63	Comp	45.15	H 7X	37.449	W -90	62.208	0.000	0.000	0.000	13.057	0	0.000	0
Horiz 5	B/B 13.5"x2.5"x0.25"	DAL 3.5X2.5X0.25	36.0	88.80	Comp	41.68	H 9X	34.567	W -90	62.208	0.000	0.000	0.000	11.998	0	0.000	0
Horiz 6	B/B 13.5"x2.5"x0.25"	DAL 3X2.5X0.25	36.0	93.19	Comp	39.35	H 11P	29.808	W 90	56.808	0.000	0.000	0.000	10.940	0	0.000	0
Horiz 7	B/B 13.5"x2.5"x0.25"	DAL 3X2.5X0.25	36.0	69.60	Comp	18.64	H 14P	14.120	W 0	56.808	0.000	0.000	0.000	14.852	0	0.000	0
Horiz 8	B/B 13.5"x2.5"x0.25"	DAL 3X2.5X0.25	36.0	45.85	Comp	14.47	H 16P	10.959	W 0	56.808	0.000	0.000	0.000	13.234	0	0.000	0
Horiz 9	B/B 12.5"x2.5"x0.25"	DAE 2.5X2.5X0.25	36.0	48.14	Comp	13.94	H 18V	9.857	W 180	51.408	0.000	0.000	0.000	11.444	0	0.000	0
Horiz 10	B/B 12.5"x2.5"x0.25"	DAE 2.5X2.5X0.25	36.0	36.33	Comp	11.58	H 20V	7.935	W 180	51.408	0.000	0.000	0.000	10.852	0	0.000	0
Horiz 11	B/B 12.5"x2.5"x0.25"	DAE 2.5X2.5X0.25	36.0	26.79	Comp	9.51	H 22V	6.516	W 180	51.408	0.000	0.000	0.000	10.058	0	0.000	0
Horiz 12	B/B 12.5"x2.5"x0.25"	DAE 2.5X2.5X0.25	36.0	19.49	Comp	7.75	H 24V	5.310	W 180	51.408	0.000	0.000	0.000	9.264	0	0.000	0
Horiz 13	B/B 12.5"x2.5"x0.25"	DAE 2.5X2.5X0.25	36.0	17.94	Comp	7.84	H 26V	5.377	W 0	51.408	0.000	0.000	0.000	8.470	0	0.000	0
Horiz 14	B/B 12.5"x2.5"x0.25"	DAE 2.5X2.5X0.25	36.0	12.17	Comp	6.06	H 27X	4.154	W -90	51.408	0.000	0.000	0.000	7.676	0	0.000	0
Horiz 15	B/B 12.5"x2.5"x0.25"	DAE 2.5X2.5X0.25	36.0	9.55	Comp	5.93	H 29X	4.068	W -90	51.408	0.000	0.000	0.000	6.882	0	0.000	0
Horiz 16	L 3" x 2.5" x 0.25"	SAU 3X2.5X0.25	36.0	6.62	Comp	4.34	H 31P	1.6399	45 Ice	28.296	0.000	0.000	0.000	12.472	0	0.000	0
Horiz 17	B/B 13.5"x2.5"x0.25"	DAL 3X2.5X0.25	36.0	1.33	Tens	1.33	H 33P	1.006	W 0 Ice	56.808	0.000	0.000	0.000	11.181	0	0.000	0
Horiz 18	L 3" x 2.5" x 0.25"	SAU 3X2.5X0.25	36.0	1.69	Tens	1.69	H 35P	0.639	W 0 Ice	28.296	0.000	0.000	0.000	10.090	0	0.000	0
Horiz 19	CSK11.5	CSK11.5	36.0	1.05	Comp	0.40	H 37P	0.393	W 90	73.008	0.000	0.000	0.000	9.000	0	0.000	0
LD 1	B/B 13"x2.5"x0.3125"	DAL 3X2.5X0.31	36.0	71.97	Comp	23.48	LD 2Y	21.906W	-45 Ice	69.984	0.000	0.000	0.000	14.066	0	0.000	0
LD 2	B/B 14"x3"x0.3125"	DAL 4X3X0.31	36.0	86.17	Comp	37.08	LD 3P	44.637	W -90	90.288	0.000	0.000	0.000	14.066	0	0.000	0
LD 4	B/B 13"x3"x0.25"	DAL 3X2X0.25	36.0	89.28	Comp	26.69	LD 8V	19.292	W -45	51.408	0.000	0.000	0.000	13.384	0	0.000	0
LD 5	B/B 14"x3"x0.25"	DAL 4X3X0.25	36.0	94.28	Comp	44.69	LD 9P	43.504	W -90	73.008	0.000	0.000	0.000	13.384	0	0.000	0
LD 7	B/B 12.5"x2.5"x0.375"	DAE 2.5X2.5X0.38	36.0	70.79	Comp	18.04	LD 14V	19.031	W -45	74.952	0.000	0.000	0.000	12.716	0	0.000	0
LD 8	B/B 13.5"x3"x0.25"	DAL 3.5X3X0.25	36.0	87.72	Comp	46.79	LD 15P	42.176	W -90	67.008	0.000	0.000	0.000	12.716	0	0.000	0
LD 10	B/B 12.5"x2"x0.25"	DAL 2.5X2X0.25	36.0	102.30	Comp	33.42	LD 20Y	20.500	W -45	46.008	0.000	0.000	0.000	11.381	0	0.000	0 NG
LD 11	B/B 12.5"x2"x0.25"	DAL 2.5X2X0.25	36.0	86.13	Comp	43.57	LD 21P	26.727	W -90	46.008	0.000	0.000	0.000	8.160	0	0.000	0
LD 12	B/B 12.5"x2"x0.25"	DAL 3X2X0.25	36.0	89.01	Comp	49.56	LD 23X	33.973	W -90	51.408	0.000	0.000	0.000	9.604	0	0.000	0
LD 13	B/B 12.5"x2"x0.25"	DAL 2.5X2X0.25	36.0	93.92	Comp	32.27	LD 26Y	19.794	W -45	46.008	0.000	0.000	0.000	10.793	0	0.000	0
LD 14	B/B 12.5"x2"x0.25"	DAL 2.5X2X0.25	36.0	81.95	Comp	42.91	LD 27P	26.324	W -90	46.008	0.000	0.000	0.000	8.014	0	0.000	0
LD 15	B/B 12.5"x2"x0.25"	DAE 2.5X2.5X0.25	36.0	99.31	Comp	47.41	LD 29X	32.494	W -90	51.408	0.000	0.000	0.000	9.253	0	0.000	0
LD 16	B/B 12.5"x2"x0.25"	DAL 2.5X2X0.25	36.0	80.46	Comp	30.63	LD 32Y	18.791	W -45	46.008	0.000	0.000	0.000	10.229	0	0.000	0
LD 17	B/B 12.5"x2"x0.25"	DAL 2.5X2X0.25	36.0	78.14	Comp	40.57	LD 33P	24.884	W -90	46.008	0.000	0.000	0.000	7.876	0	0.000	0
LD 18	B/B 12.5"x2"x0.25"	DAL 2.5X2X0.25	36.0	97.60	Comp	49.63	LD 35X	30.446	W -90	46.008	0.000	0.000	0.000	8.919	0	0.000	0
LH 1	B/B 12.5"x3"x0.25"	DAS 3X2.5X0.25	36.0	58.87	Comp	16.48	LH 1V	12.483	W 0 Ice	56.808	0.000	0.000	0.000	24.350	0	0.000	0
LH 2	B/B 12.5"x3"x0.25"	DAS 3X2.5X0.25	36.0	37.12	Comp	8.09	LH 3V	6.131	W 0	56.808	0.000	0.000	0.000	22.762	0	0.000	0
LH 3	B/B 12.5"x3"x0.25"	DAS 3X2.5X0.25	36.0	35.77	Comp	8.62	LH 5V	6.528	W 0	56.808	0.000	0.000	0.000	21.174	0	0.000	0
LH 4	B/B 12.5"x3"x0.25"	DAS 3X2.5X0.25	36.0	100.83	Comp	29.74	LH 8V	22.527	W -45	56.808	0.000	0.000	0.000	10.647	0	0.000	0 NG
LH 5	B/B 12.5"x3"x0.25"	DAS 3X2.5X0.25	36.0	90.37	Comp	27.89	LH 10V	21.119	W -45	56.808	0.000	0.000	0.000	8.820	0	0.000	0
LH 6	B/B 12.5"x3"x0.25"	DAS 3X2.5X0.25	36.0	71.74	Comp	25.32	LH 12V	19.178	W -45	56.808	0.000	0.000	0.000	8.993	0	0.000	0
DIM 1	Dummy Bracing Member	DIM 0.1X0.1X1	36.0	0.00	0.00	0.00	BR 13X	0.897	W -45	6.216	0.000	0.000	0.000	20.961	0	0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Element	Element	Usage #	Label	Type
W 0	101.05	D 14P	Angle	NG	
W 180	101.36	D 14V	Angle	NG	
W 45	98.82	LD 19P	Angle		
W -45	102.30	LD 19X	Angle	NG	
W 90	101.66	D 13P	Angle	NG	
W -90	101.97	D 13X	Angle	NG	
W 0 Ice	90.09	D 14P	Angle		
W 180 Ice	90.57	D 14V	Angle		
W 45 Ice	89.12	LD 19P	Angle		
W -45 Ice	91.61	LD 19X	Angle		
W 90 Ice	90.61	D 13P	Angle		
W -90 Ice	91.04	D 13X	Angle		

*** Weight of structure (lbs):
Weight of Angles/Section DLF: 176113.2
Total: 176113.2

*** End of Report

Site # 88008
Name Bethany CT, CT

Engineer: ABL
Date: 06/21/12

Windspeed: No Ice, 85 mph
Carried A&T Mobility

Taper: -0.12/7037
FW @ Base: 51.875 ft

Taper Change: 337.5 ft
FW @ Top: 9 ft

Joint Label		Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (ft or Blank)
0		XY-Symmetry	25.9375	25.9375	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	
1		XY-Symmetry	24.34953704	24.34953704	25	Free	Free	Free	Free	Free	Free	
2		XY-Symmetry	22.76157407	22.76157407	50	Free	Free	Free	Free	Free	Free	
3		XY-Symmetry	21.17361111	21.17361111	75	Free	Free	Free	Free	Free	Free	
4		XY-Symmetry	19.58564815	19.58564815	100	Free	Free	Free	Free	Free	Free	
5		XY-Symmetry	17.99768519	17.99768519	125	Free	Free	Free	Free	Free	Free	
6		XY-Symmetry	16.40972222	16.40972222	150	Free	Free	Free	Free	Free	Free	
7		XY-Symmetry	14.82175926	14.82175926	175	Free	Free	Free	Free	Free	Free	
8		XY-Symmetry	13.2337963	13.2337963	200	Free	Free	Free	Free	Free	Free	
9		XY-Symmetry	11.64583333	11.64583333	225	Free	Free	Free	Free	Free	Free	
10		XY-Symmetry	10.05787037	10.05787037	250	Free	Free	Free	Free	Free	Free	
11		XY-Symmetry	8.469907407	8.469907407	275	Free	Free	Free	Free	Free	Free	
12		XY-Symmetry	6.881944444	6.881944444	300	Free	Free	Free	Free	Free	Free	
13		XY-Symmetry	5.293538889	5.293538889	325	Free	Free	Free	Free	Free	Free	
14		XY-Symmetry	3.70511667	3.70511667	350	Free	Free	Free	Free	Free	Free	
15		XY-Symmetry	2.117361111	2.117361111	375	Free	Free	Free	Free	Free	Free	
16		XY-Symmetry	0.528549383	0.528549383	400	Free	Free	Free	Free	Free	Free	
17		XY-Symmetry	0.0	0	425	Free	Free	Free	Free	Free	Free	
18		XY-Symmetry	0.0	0	450	Free	Free	Free	Free	Free	Free	
19		XY-Symmetry	0.0	0	475	Free	Free	Free	Free	Free	Free	
A1		Y-Symmetry	24.34953704	0	25	Free	Free	Free	Free	Free	Free	
A2		X-Symmetry	22.76157407	0	50	Free	Free	Free	Free	Free	Free	
A3		Y-Symmetry	21.17361111	0	75	Free	Free	Free	Free	Free	Free	
A4		X-Symmetry	19.58564815	0	100	Free	Free	Free	Free	Free	Free	
A5		Y-Symmetry	17.99768519	0	125	Free	Free	Free	Free	Free	Free	
A6		X-Symmetry	16.40972222	0	150	Free	Free	Free	Free	Free	Free	
A7		Y-Symmetry	14.82175926	0	175	Free	Free	Free	Free	Free	Free	
A8		X-Symmetry	13.2337963	0	200	Free	Free	Free	Free	Free	Free	
A9		Y-Symmetry	11.64583333	0	225	Free	Free	Free	Free	Free	Free	
A10		X-Symmetry	10.05787037	0	250	Free	Free	Free	Free	Free	Free	
A11		Y-Symmetry	8.469907407	0	275	Free	Free	Free	Free	Free	Free	
A12		X-Symmetry	6.881944444	0	300	Free	Free	Free	Free	Free	Free	
A13		Y-Symmetry	5.293538889	0	325	Free	Free	Free	Free	Free	Free	
A14		X-Symmetry	3.70511667	0	350	Free	Free	Free	Free	Free	Free	
A15		Y-Symmetry	2.117361111	0	375	Free	Free	Free	Free	Free	Free	
A16		X-Symmetry	0.528549383	0	400	Free	Free	Free	Free	Free	Free	
A17		Y-Symmetry	0.0	0	425	Free	Free	Free	Free	Free	Free	
A18		X-Symmetry	0.0	0	450	Free	Free	Free	Free	Free	Free	
A19		Y-Symmetry	0.0	0	475	Free	Free	Free	Free	Free	Free	
A20		X-Symmetry	0.0	0	500	Free	Free	Free	Free	Free	Free	
A21		Y-Symmetry	0.0	0	525	Free	Free	Free	Free	Free	Free	
A22		X-Symmetry	0.0	0	550	Free	Free	Free	Free	Free	Free	
A23		Y-Symmetry	0.0	0	575	Free	Free	Free	Free	Free	Free	
A24		X-Symmetry	0.0	0	600	Free	Free	Free	Free	Free	Free	
A25		Y-Symmetry	0.0	0	625	Free	Free	Free	Free	Free	Free	
A26		X-Symmetry	0.0	0	650	Free	Free	Free	Free	Free	Free	
A27		Y-Symmetry	0.0	0	675	Free	Free	Free	Free	Free	Free	
A28		X-Symmetry	0.0	0	700	Free	Free	Free	Free	Free	Free	
A29		Y-Symmetry	0.0	0	725	Free	Free	Free	Free	Free	Free	
A30		X-Symmetry	0.0	0	750	Free	Free	Free	Free	Free	Free	
H1		XY-Symmetry	24.79607222	12.17476852	17.97	Free	Free	Free	Free	Free	Free	
H2		XY-Symmetry	23.20810926	11.38078704	42.97	Free	Free	Free	Free	Free	Free	
H5		XY-Symmetry	21.6201463	10.58680556	67.97	Free	Free	Free	Free	Free	Free	
H6		XY-Symmetry	20.03218333	10.64674074	92.97	Free	Free	Free	Free	Free	Free	
H9		XY-Symmetry	18.4442037	9.81972963	117.97	Free	Free	Free	Free	Free	Free	
H10		XY-Symmetry	16.85625741	8.99772963	142.97	Free	Free	Free	Free	Free	Free	
H13		XY-Symmetry	15.2625741	8.1972963	168.5625741	Free	Free	Free	Free	Free	Free	
H14		XY-Symmetry	13.6752926	7.3925926	194.11736111	Free	Free	Free	Free	Free	Free	
H15		XY-Symmetry	12.0811667	6.58564815	219.675925926	Free	Free	Free	Free	Free	Free	
H16		XY-Symmetry	10.4869907407	5.77925926	245.227222222	Free	Free	Free	Free	Free	Free	
H17		XY-Symmetry	8.891944444	4.972222222	270.781111111	Free	Free	Free	Free	Free	Free	
H18		XY-Symmetry	7.2968519	4.166666667	296.333333333	Free	Free	Free	Free	Free	Free	
H19		XY-Symmetry	5.69907407	3.35925926	321.888888889	Free	Free	Free	Free	Free	Free	
H20		XY-Symmetry	4.097222222	2.5468519	347.444444444	Free	Free	Free	Free	Free	Free	
H21		XY-Symmetry	2.4953704	1.7337963	373.0	Free	Free	Free	Free	Free	Free	
H22		XY-Symmetry	0.892722222	0.925925926	398.555555556	Free	Free	Free	Free	Free	Free	
H23		XY-Symmetry	0.288888889	0.311111111	424.0	Free	Free	Free	Free	Free	Free	
H24		XY-Symmetry	0.0	0	449.5	Free	Free	Free	Free	Free	Free	

Notes:

1. Built up Horiz. w/A
2. Built up Horiz. w/M
3. Typical A brace
4. Typical X brace

Drop: Use only for types 1 & 2

Sections: 19

Legs

Site No.:	88008
Engineer:	ABL
Date:	06/21/2012
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter or Length (in)	Thickness ^[2] (in)	F _y (ksi)
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1.125	36
5	100.0-125.0	L	8	1	36
6	125.0-150.0	L	8	1	36
7	150.0-175.0	L	8	0.875	36
8	175.0-200.0	L	8	0.75	36
9	200.0-225.0	L	8	0.75	36
10	225.0-237.5	L	6	0.875	36
11	237.5-250.0	L	6	0.75	36
12	250.0-262.5	L	6	0.75	36
13	262.5-275.0	L	6	0.5625	36
14	275.0-287.5	L	6	0.5625	36
15	287.5-300.0	L	6	0.4375	36
16	300.0-310.2	L	5	0.4375	36
17	310.2-320.3	L	5	0.4375	36
18	320.3-328.9	L	5	0.3125	36
19	328.9-337.5	L	5	0.3125	36

Notes:

^[1] Type of Leg Shape: R = Round or P = Bent Plate or S = Schifflerized Angle. L = Even Leg

^[2] For Solid Round Leg Shapes Thickness Equals Zero.

^[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88008
Engineer:	ABL
Date:	06/21/2012
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.375	36	
2	25.00-50.00	2L		3	4	0.25	36	
3	50.00-75.00	2L		3	4	0.25	36	
4	75.00-100.0	2L		3	3.5	0.25	36	
5	100.0-125.0	2L		3	3.5	0.25	36	
6	125.0-150.0	2L		2.5	3.5	0.25	36	
7	150.0-175.0	2L		2.5	3	0.25	36	
8	175.0-200.0	2L		2.5	3	0.25	36	
9	200.0-225.0	2L		2.5	3	0.25	36	
10	225.0-237.5	2L		2.5	2.5	0.25	36	
11	237.5-250.0	2L		2.5	2.5	0.25	36	
12	250.0-262.5	2L		2.5	2.5	0.25	36	
13	262.5-275.0	2L		2.5	2	0.25	36	
14	275.0-287.5	2L		2.5	2	0.25	36	
15	287.5-300.0	2L		2.5	2	0.25	36	
16	300.0-310.2	L		3.5	3.5	0.25	36	Y
17	310.2-320.3	L		3.5	3.5	0.25	36	Y
18	320.3-328.9	L		3	3	0.25	36	Y
19	328.9-337.5	L		3	3	0.25	36	Y

Notes:

^[1] Type of Diagonal Shape: R = Round, L = Single-Angle or 2L = Double-Angle.

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88008
Engineer:	ABL
Date:	06/21/2012
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	
1	0.000-25.00	2L		4	3	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3	2.5	0.25	36	
4	75.00-100.0	2L		3.5	2.5	0.25	36	
5	100.0-125.0	2L		3.5	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		3	2.5	0.25	36	
8	175.0-200.0	2L		3	2.5	0.25	36	
9	200.0-225.0	2L		2.5	2.5	0.25	36	
10	225.0-237.5	2L		2.5	2.5	0.25	36	
11	237.5-250.0	2L		2.5	2.5	0.25	36	
12	250.0-262.5	2L		2.5	2.5	0.25	36	
13	262.5-275.0	2L		2.5	2.5	0.25	36	
14	275.0-287.5	2L		2.5	2.5	0.25	36	
15	287.5-300.0	2L		2.5	2.5	0.25	36	
16	300.0-310.2	L		3	2.5	0.25	36	
17	310.2-320.3	2L		3	2.5	0.25	36	
18	320.3-328.9	L		3	2.5	0.25	36	
19	328.9-337.5	C		8	11.5		36	

Notes:

^[1] Type of Horizontal Shape: R = Round, L = Single-Angle, 2L = Double-Angle, C = Channel, W = W Shape

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88008
Engineer:	ABL
Date:	06/21/2012
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.
Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)
1	0.000-25.00	2L		3	2.5	0.3125	36
2	0.000-25.00	2L		4	3	0.3125	36
3	25.00-50.00	2L		3	2	0.25	36
4	25.00-50.00	2L		4	3	0.25	36
5	50.00-75.00	2L		2.5	2.5	0.375	36
6	50.00-75.00	2L		3.5	3	0.25	36
7	75.00-100.0	2L		2.5	2	0.25	36
8	75.00-100.0	2L		2.5	2	0.25	36
9	75.00-100.0	2L		3	2	0.25	36
10	100.0-125.0	2L		2.5	2	0.25	36
11	100.0-125.0	2L		2.5	2	0.25	36
12	100.0-125.0	2L		2.5	2.5	0.25	36
13	125.0-150.0	2L		2.5	2	0.25	36
14	125.0-150.0	2L		2.5	2	0.25	36
15	125.0-150.0	2L		2.5	2	0.25	36

Notes:

^[1] Type of Diagonal Shape: R = Round, L = Single-Angle or 2L = Double-Angle.

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Site No.:	88008
Engineer:	ABL
Date:	06/21/2012
Carrier:	AT&T Mobility

[illegible]

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Dishes

Site No.:	88008
Engineer:	ABL
Date:	06/21/12
Carrier:	AT&T Mobility

Dish Types		Joint Orientation	
S	Standard	XY	Y
R	Standard w/ Radome		
H	High Performance		
G	Grid	X	P

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)

Site No.: Engineer:	88008 ABL	Date: Carrier:	06/21/12 AT&T Mobility
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Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
Aband 1	0	337.5	1	Round	1.11	3.5	0.544	No	No
USCG 1	0	337.5	2	Round	1.11	3.5	0.544	No	No
USCG 2	0	310	2	Round	1.11	3.5	0.544	No	No
USCG 3	0	275	1	Round	1.11	3.5	0.544	No	No
Sprint Nextel 1	0	250	12	Round	1.98	6.2	1.08	Yes	Yes
Sprint Nextel 2	0	240	1	Round	7.92	30.0	9.72	No	No
T-Mobile	0	220	1	Round	11.88	30.0	12.96	No	No
T-Mobile 2	0	220	1	Round	0.315	1.0	0.064	No	No
US Treasury 1	0	194	1	Round	1.55	4.9	0.664	No	No
Verizon 1	0	180	1	Round	11.88	30.0	12.96	Yes	Yes
Verizon 2	0	180	1	Round	0.63	2.0	0.144	No	No
AT&T Mobility 1	0	165	1	Round	11.88	30.0	12.96	No	No
Metro PCS	0	100	6	Round	1.98	6.2	1.08	No	No
Sprint Nextel 3	0	48	1	Round	0.63	2.0	0.144	No	No
Sprint Nextel 4	0	20	1	Round	0.63	2.0	0.144	Yes	Yes
AT&T Mobility 2	0	165	1	Round	3.5	11.0	7.58	No	No
AT&T Mobility 3	0	165	1	Round	0.39	1.2	0.07	No	No
AT&T Mobility 4	0	165	1	Round	0.78	4.0	0.59	No	No
Metro PCS	0	20	1	Round	1.09	3.4	0.144	No	No

Site #: 88008
Name: AT&T Mobility

Engineer:
Date:

ABL
06/21/12

Section Label	Section Color	Joint Defining Bottom Section	Dead Load Adj. Factor				Adj. Factor Flat	Adj. Factor Round	Area Multiplier	Weight Multiplier
0.000-25.00		0P	1.585195713				1.320996427	1.320996427	1	1.2
25.00-50.00		1P	1.590007719				1.325006432	1.325006432	1	1.2
50.00-75.00		2P	1.605588167				1.337990139	1.337990139	1	1.2
75.00-100.0		3P	1.478926854				1.232439045	1.232439045	1	1.2
100.0-125.0		4P	1.47824734				1.227353945	1.227353945	1	1.2
125.0-150.0		5P	1.47553471				1.229612258	1.229612258	1	1.2
150.0-175.0		6P	1.545180868				1.287650723	1.287650723	1	1.2
175.0-200.0		7P	1.527887654				1.273239712	1.273239712	1	1.2
200.0-225.0		8P	1.516391419				1.263659516	1.263659516	1	1.2
225.0-237.5		9P	1.478249179				1.231874316	1.231874316	1	1.2
237.5-250.0		10P	1.471209196				1.226007664	1.226007664	1	1.2
250.0-262.5		11P	1.464012143				1.220010119	1.220010119	1	1.2
262.5-275.0		12P	1.456672479				1.213893733	1.213893733	1	1.2
275.0-287.5		13P	1.449208368				1.20767364	1.20767364	1	1.2
287.5-300.0		14P	1.441641869				1.201368224	1.201368224	1	1.2
300.0-310.2		15P	1.384856588				1.154047156	1.154047156	1	1.2
310.2-320.3		16P	1.436421012				1.19701751	1.19701751	1	1.2
320.3-328.9		17P	1.393105127				1.160920939	1.160920939	1	1.2
328.9-337.5		18P	1.346209977				1.121841647	1.121841647	1	1.2

Site #:	88008
Name:	AT&T Mobility

Engineer:	ABL
Date:	06/21/12

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S4	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S5	L 8" x 8" x 1"	SAE	8X8X1	A 36	Beam	Leg	None
Leg S6	L 8" x 8" x 1"	SAE	8X8X1	A 36	Beam	Leg	None
Leg S7	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S8	L 8" x 8" x 0.75"	SAE	8X8X0.75	A 36	Beam	Leg	None
Leg S9	L 8" x 8" x 0.75"	SAE	8X8X0.75	A 36	Beam	Leg	None
Leg S10	L 6" x 6" x 0.875"	SAE	6X6X0.88	A 36	Beam	Leg	None
Leg S11	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S12	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S13	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S14	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S15	L 6" x 6" x 0.4375"	SAE	6X6X0.44	A 36	Beam	Leg	None
Leg S16	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S17	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S18	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Leg S19	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Diag S1	B/B L3"x4"x0.375"	DAS	4X3X0.38	A 36	Beam	Other	None
Diag S2	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S3	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S4	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	A 36	Beam	Other	None
Diag S5	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	A 36	Beam	Other	None
Diag S6	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S7	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
Diag S8	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
Diag S9	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S14	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S15	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S16	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	T-Only	Other	None
Diag S17	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	T-Only	Other	None
Diag S18	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	T-Only	Other	None
Diag S19	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	T-Only	Other	None
Horiz 1	B/B L4"x3"x0.25"	DAL	4X3X0.25	A 36	Beam	Other	None
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 4	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 5	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 7	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 8	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 14	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 15	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 17	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 18	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 19	C8x11.5	CHN	C8x11.5	A 36	Beam	Other	None
LD 1	B/B L3"x2.5"x0.3125"	DAL	3X2.5X0.31	A 36	Beam	Other	None
LD 2	B/B L4"x3"x0.3125"	DAL	4X3X0.31	A 36	Beam	Other	None
LD 4	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 5	B/B L4"x3"x0.25"	DAL	4X3X0.25	A 36	Beam	Other	None
LD 7	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	A 36	Beam	Other	None
LD 8	B/B L3.5"x3"x0.25"	DAL	3.5X3X0.25	A 36	Beam	Other	None
LD 10	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 12	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 14	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 15	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
LD 16	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 17	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 18	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
LH 3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
LH 4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
LH 5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
LH 6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	A 36	Beam	Fictitious	None

Site #:	88008
Name:	AT&T Mobility

Engineer:	ABL
Date:	06/21/12

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
L 1	Leg S1		XY-Symmetry	0P	1P	1	4	0.2812	0.2812	0.2812
L 2	Leg S2		XY-Symmetry	1P	2P	1	4	0.2812	0.2812	0.2812
L 3	Leg S3		XY-Symmetry	2P	3P	1	4	0.2812	0.2812	0.2812
L 4	Leg S4		XY-Symmetry	3P	4P	1	4	0.2812	0.2812	0.2812
L 5	Leg S5		XY-Symmetry	4P	5P	1	4	0.2812	0.2812	0.2812
L 6	Leg S6		XY-Symmetry	5P	6P	1	4	0.2812	0.2812	0.2812
L 7	Leg S7		XY-Symmetry	6P	7P	1	4	0.33333333	0.33333333	0.33333333
L 8	Leg S8		XY-Symmetry	7P	8P	1	4	0.33333333	0.33333333	0.33333333
L 9	Leg S9		XY-Symmetry	8P	9P	1	4	0.33333333	0.33333333	0.33333333
L 10	Leg S10		XY-Symmetry	9P	10P	1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P	1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P	1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P	1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P	1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P	1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P	1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P	1	4	0.5	0.5	0.5
L 18	Leg S18		XY-Symmetry	17P	18P	1	4	0.5	0.5	0.5
L 19	Leg S19		XY-Symmetry	18P	19P	1	4	0.5	0.5	0.5
D 1	Diag S1		XY-Symmetry	0P	H2P	1	6	0.33333333	0.66666667	0.33333333
D 2	Diag S1		XY-Symmetry	0P	H1P	1	6	0.33333333	0.66666667	0.33333333
D 3	Diag S2		XY-Symmetry	1P	H6P	1	6	0.33333333	0.66666667	0.33333333
D 4	Diag S2		XY-Symmetry	1P	H5P	1	6	0.33333333	0.66666667	0.33333333
D 5	Diag S3		XY-Symmetry	2P	H10P	1	6	0.33333333	0.66666667	0.33333333
D 6	Diag S3		XY-Symmetry	2P	H9P	1	6	0.33333333	0.66666667	0.33333333
D 7	Diag S4		XY-Symmetry	3P	H14P	1	6	0.33333333	0.66666667	0.33333333
D 8	Diag S4		XY-Symmetry	3P	H13P	1	6	0.33333333	0.66666667	0.33333333
D 9	Diag S5		XY-Symmetry	4P	H18P	1	6	0.33333333	0.66666667	0.33333333
D 10	Diag S5		XY-Symmetry	4P	H17P	1	6	0.33333333	0.66666667	0.33333333
D 11	Diag S6		XY-Symmetry	5P	H22P	1	6	0.33333333	0.66666667	0.33333333
D 12	Diag S6		XY-Symmetry	5P	H21P	1	6	0.33333333	0.66666667	0.33333333
D 13	Diag S7		XY-Symmetry	6P	A13P	1	6	0.3	0.6	0.3
D 14	Diag S7		XY-Symmetry	6P	A14P	1	6	0.3	0.6	0.3
D 15	Diag S8		XY-Symmetry	7P	A15P	1	6	0.3	0.6	0.3
D 16	Diag S8		XY-Symmetry	7P	A16P	1	6	0.3	0.6	0.3
D 17	Diag S9		XY-Symmetry	8P	A17P	1	6	0.3	0.6	0.3
D 18	Diag S9		XY-Symmetry	8P	A18P	1	6	0.3	0.6	0.3
D 19	Diag S10		XY-Symmetry	9P	A19P	1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P	1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P	1	6	0.5	1	0.5
D 22	Diag S11		XY-Symmetry	10P	A22P	1	6	0.5	1	0.5
D 23	Diag S12		XY-Symmetry	11P	A23P	1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P	1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P	1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P	1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	A27P	1	6	0.5	1	0.5
D 28	Diag S14		XY-Symmetry	13P	A28P	1	6	0.5	1	0.5
D 29	Diag S15		XY-Symmetry	14P	A29P	1	6	0.5	1	0.5
D 30	Diag S15		XY-Symmetry	14P	A30P	1	6	0.5	1	0.5
D 31	Diag S16		XY-Symmetry	15P	16Y	1	6	0.52	0.75	0.52
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	0.52	0.75	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y	2	5	0.52	0.75	0.52
D 34	Diag S17		XY-Symmetry	16P	17X	2	5	0.52	0.75	0.52
D 35	Diag S18		XY-Symmetry	17P	18Y	2	5	0.52	0.75	0.52
D 36	Diag S18		XY-Symmetry	17P	18X	2	5	0.52	0.75	0.52
D 37	Diag S19		XY-Symmetry	18P	19Y	2	5	0.52	0.75	0.52
D 38	Diag S19		XY-Symmetry	18P	19X	2	5	0.52	0.75	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.5	0.5	0.5
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.5	0.5	0.5
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.45	0.45	0.45

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.45	0.45	0.45
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	0.9	0.9	0.9
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	0.9	0.9	0.9
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	1	1	1
H 12	Horiz 6		XY-Symmetry	6P	A12P	1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P	1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P	1	6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P	1	6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P	1	6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P	1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P	1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P	1	6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P	1	6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P	1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P	1	6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P	1	6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P	1	6	1	1	1
H 27	Horiz 14		XY-Symmetry	14P	A27P	1	6	1	1.2	1
H 28	Horiz 14		XY-Symmetry	14P	A28P	1	6	1	1.2	1
H 29	Horiz 15		XY-Symmetry	15P	A29P	1	6	1	1.07	1
H 30	Horiz 15		XY-Symmetry	15P	A30P	1	6	1	1.07	1
H 31	Horiz 16		Y-Symmetry	16P	16X	3	6	0.5	0.52	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y	3	6	0.5	0.52	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X	1	6	0.5	1	0.5
H 34	Horiz 17		X-Symmetry	17P	17Y	1	6	0.5	1	0.5
H 35	Horiz 18		Y-Symmetry	18P	18X	3	6	0.5	0.6	0.5
H 36	Horiz 18		X-Symmetry	18P	18Y	3	6	0.5	0.6	0.5
H 37	Horiz 19		Y-Symmetry	19P	19X	3	6	1	1	1
H 38	Horiz 19		X-Symmetry	19P	19Y	3	6	1	1	1
H 45	Horiz 4		Y-Symmetry	A7P	A7X	1	6	1	1	1
H 46	Horiz 4		X-Symmetry	A8P	A8Y	1	6	1	1	1
H 47	Horiz 5		Y-Symmetry	A9P	A9X	1	6	1	1	1
H 48	Horiz 5		X-Symmetry	A10P	A10Y	1	6	1	1	1
H 49	Horiz 6		Y-Symmetry	A11P	A11X	1	6	1	1	1
H 50	Horiz 6		X-Symmetry	A12P	A12Y	1	6	1	1	1
LH 1	LH 1		Y-Symmetry	H1P	H1X	1	6	0.5	1	0.5
LH 2	LH 1		X-Symmetry	H2P	H2Y	1	6	0.5	1	0.5
LH 3	LH 2		Y-Symmetry	H5P	H5X	1	6	0.5	1	0.5
LH 4	LH 2		X-Symmetry	H6P	H6Y	1	6	0.5	1	0.5
LH 5	LH 3		Y-Symmetry	H9P	H9X	1	6	0.5	1	0.5
LH 6	LH 3		X-Symmetry	H10P	H10Y	1	6	0.5	1	0.5
LH 7	LH 4		XY-Symmetry	H13P	H15P	1	6	0.94	1.88	0.94
LH 8	LH 4		XY-Symmetry	H14P	H16P	1	6	0.94	1.88	0.94
LH 9	LH 5		XY-Symmetry	H17P	H19P	1	6	0.94	1.88	0.94
LH 10	LH 5		XY-Symmetry	H18P	H20P	1	6	0.94	1.88	0.94
LH 11	LH 6		XY-Symmetry	H21P	H23P	1	6	0.94	1.88	0.94
LH 12	LH 6		XY-Symmetry	H22P	H24P	1	6	0.94	1.88	0.94
LD 1	LD 1		XY-Symmetry	H1P	1P	1	6	0.904	0.904	0.904
LD 2	LD 1		XY-Symmetry	H2P	1P	1	6	0.904	0.904	0.904
LD 3	LD 2		XY-Symmetry	H1P	A1P	1	6	0.904	0.904	0.904
LD 4	LD 2		XY-Symmetry	H2P	A2P	1	6	0.904	0.904	0.904
LD 7	LD 4		XY-Symmetry	H5P	2P	1	6	0.904	0.904	0.904
LD 8	LD 4		XY-Symmetry	H6P	2P	1	6	0.904	0.904	0.904
LD 9	LD 5		XY-Symmetry	H5P	A3P	1	6	0.904	0.904	0.904
LD 10	LD 5		XY-Symmetry	H6P	A4P	1	6	0.904	0.904	0.904
LD 13	LD 7		XY-Symmetry	H9P	3P	1	6	0.904	0.904	0.904

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
LD 14	LD 7		XY-Symmetry	H10P	3P	1	6	0.904	0.904	0.904
LD 15	LD 8		XY-Symmetry	H9P	A5P	1	6	0.904	0.904	0.904
LD 16	LD 8		XY-Symmetry	H10P	A6P	1	6	0.904	0.904	0.904
LD 19	LD 10		XY-Symmetry	H13P	4P	1	6	0.83	0.83	0.83
LD 20	LD 10		XY-Symmetry	H14P	4P	1	6	0.83	0.83	0.83
LD 21	LD 11		XY-Symmetry	H13P	A7P	1	6	0.85	0.85	0.85
LD 22	LD 11		XY-Symmetry	H14P	A8P	1	6	0.85	0.85	0.85
LD 23	LD 12		XY-Symmetry	A7P	H15P	1	6	0.86	0.86	0.86
LD 24	LD 12		XY-Symmetry	A8P	H16P	1	6	0.86	0.86	0.86
LD 25	LD 13		XY-Symmetry	H17P	5P	1	6	0.83	0.83	0.83
LD 26	LD 13		XY-Symmetry	H18P	5P	1	6	0.83	0.83	0.83
LD 27	LD 14		XY-Symmetry	H17P	A9P	1	6	0.85	0.85	0.85
LD 28	LD 14		XY-Symmetry	H18P	A10P	1	6	0.85	0.85	0.85
LD 29	LD 15		XY-Symmetry	A9P	H19P	1	6	0.86	0.86	0.86
LD 30	LD 15		XY-Symmetry	A10P	H20P	1	6	0.86	0.86	0.86
LD 31	LD 16		XY-Symmetry	H21P	6P	1	6	0.83	0.83	0.83
LD 32	LD 16		XY-Symmetry	H22P	6P	1	6	0.83	0.83	0.83
LD 33	LD 17		XY-Symmetry	H21P	A11P	1	6	0.85	0.85	0.85
LD 34	LD 17		XY-Symmetry	H22P	A12P	1	6	0.85	0.85	0.85
LD 35	LD 18		XY-Symmetry	A11P	H23P	1	6	0.86	0.86	0.86
LD 36	LD 18		XY-Symmetry	A12P	H24P	1	6	0.86	0.86	0.86
BR 1	DUM 1		XY-Symmetry	A1P	A2P	1	4	1	1	1
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 10	DUM 1		XY-Symmetry	A9P	A10XY	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 12	DUM 1		XY-Symmetry	A11P	A12XY	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1
BR 27	DUM 1		XY-Symmetry	A27P	A28P	1	4	1	1	1
BR 29	DUM 1		XY-Symmetry	A29P	A30P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P	1	4	1	1	1
BR 73	DUM 1		XY-Symmetry	H17P	H18P	1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 74	DUM 1		XY-Symmetry	H17P	H18XY	1	4	1	1	1
BR 75	DUM 1		XY-Symmetry	H19P	H20P	1	4	1	1	1
BR 76	DUM 1		XY-Symmetry	H21P	H22P	1	4	1	1	1
BR 77	DUM 1		XY-Symmetry	H21P	H22XY	1	4	1	1	1
BR 78	DUM 1		XY-Symmetry	H23P	H24P	1	4	1	1	1

Point Loads

Tower Height:	337.5	ft
Gh:	1.08	
Wind Speed:	85.00	m
Wind Speed (Ice):	73.61	m
Radial Ice Diameter:	0.5	in

Site No.:	88008
Engineer:	ABL
Date:	06/21/2012
Carrier:	AT&T Mobility

KS-15676 Horn Antennas: ~128 ft²[illegible]

[illegible]

Site: 88008
Carrier: AT&T Mobility

Engineer: ABL
Date: 06/21/12

Load Case Description	Dead Load Factor	Wind Load Factor	Ice Load Factor	Strength Factor	Allowable Stress Inc. Factor	Basic Wind Speed	Wind Dir.	Ice Thick.	Ice Density	Temp.	Point Loads
W 0	1.1	1	1	1	1.333333333	85	0	0	56	50	
W 180	1.1	1	1	1	1.333333333	85	180	0	56	50	
W 45	1.1	1	1	1	1.333333333	85	45	0	56	50	
W -45	1.1	1	1	1	1.333333333	85	-45	0	56	50	
W 90	1.1	1	1	1	1.333333333	85	90	0	56	50	
W -90	1.1	1	1	1	1.333333333	85	-90	0	56	50	
W 0 Ice	1.1	1	1	1	1.333333333	73.61	0	0.5	56	10	
W 180 Ice	1.1	1	1	1	1.333333333	73.61	180	0.5	56	10	
W 45 Ice	1.1	1	1	1	1.333333333	73.61	45	0.5	56	10	
W -45 Ice	1.1	1	1	1	1.333333333	73.61	-45	0.5	56	10	
W 90 Ice	1.1	1	1	1	1.333333333	73.61	90	0.5	56	10	
W -90 Ice	1.1	1	1	1	1.333333333	73.61	-90	0.5	56	10	

Angle:	0
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No Ice

Joint Label	Force X-Dir (lbs)	Force Y-Dir (lbs)	Force Vertical (lbs)	Moment X-Axis (ft.-lbs)	Moment Y-Axis (ft.-lbs)	Moment Z-Axis (ft.-lbs)
19P	1477.42	0.00	1588.2			
19X	728.39	0.00	1500			
19Y	728.39	0.00	1500			
19XY	728.39	0.00	1500			
16P	795.88	0.00	347			
16X	0.00	0.00	0			
16Y	0.00	0.00	0			
16XY	0.00	0.00	0			
16P	396.36	0.00	79			
16X	0.00	0.00	0			
16Y	0.00	0.00	0			
16XY	0.00	0.00	0			
13P	932.38	0.00	379			
13X	0.00	0.00	0			
13Y	0.00	0.00	0			
13XY	0.00	0.00	0			
11P	745.10	0.00	356			
11X	745.10	0.00	356			
11Y	745.10	0.00	356			
11XY	0.00	0.00	0			
10P	545.87	0.00	332.4			
10X	545.87	0.00	332.4			
10Y	545.87	0.00	332.4			
10XY	0.00	0.00	0			
9P	597.68	0.00	439.6			
9X	597.68	0.00	439.6			
9Y	597.68	0.00	439.6			
9XY	0.00	0.00	0			
7P	506.92	0.00	326.2			
7X	506.92	0.00	326.2			
7Y	506.92	0.00	326.2			
7XY	0.00	0.00	0			
7P	266.81	0.00	52.8			
7X	266.81	0.00	52.8			
7Y	266.81	0.00	52.8			
7XY	0.00	0.00	0			
7P	592.95	0.00	420			
7X	592.95	0.00	420			
7Y	592.95	0.00	420			
7XY	0.00	0.00	0			
4P	111.96	0.00	26.4			
4X	111.96	0.00	26.4			
4Y	111.96	0.00	26.4			
4XY	0.00	0.00	0			
2P	22.24	0.00	5			
2X	0.00	0.00	0			
2Y	0.00	0.00	0			
2XY	0.00	0.00	0			
1P	21.76	0.00	6			
1X	0.00	0.00	0			
1Y	0.00	0.00	0			
1XY	0.00	0.00	0			
8P	428.86	0.00	201			
8X	0.00	0.00	0			
8Y	0.00	0.00	0			
8XY	0.00	0.00	0			

With Ice

Joint Label	Force X-Dir (lbs)	Force Y-Dir (lbs)	Force Vertical (lbs)
19P	1324.39	0.00	2235.659954
19X	737.45	0.00	1950
19Y	737.45	0.00	1950
19XY	737.45	0.00	1950
16P	785.30	0.00	489.8321759
16X	0.00	0.00	0
16Y	0.00	0.00	0
16XY	0.00	0.00	0
16P	358.13	0.00	169.6435185
16X	0.00	0.00	0
16Y	0.00	0.00	0
16XY	0.00	0.00	0
13P	902.27	0.00	559.6435185
13X	0.00	0.00	0
13Y	0.00	0.00	0
13XY	0.00	0.00	0
11P	695.64	0.00	551.1944444
11X	695.64	0.00	551.1944444
11Y	695.64	0.00	551.1944444
11XY	0.00	0.00	0
10P	528.68	0.00	468.4843056
10X	528.68	0.00	468.4843056
10Y	528.68	0.00	468.4843056
10XY	0.00	0.00	0
9P	577.04	0.00	590.6459722
9X	577.04	0.00	590.6459722
9Y	577.04	0.00	590.6459722
9XY	0.00	0.00	0
7P	483.76	0.00	470.5924074
7X	483.76	0.00	470.5924074
7Y	483.76	0.00	470.5924074
7XY	0.00	0.00	0
7P	237.22	0.00	103.2677778
7X	237.22	0.00	103.2677778
7Y	237.22	0.00	103.2677778
7XY	0.00	0.00	0
7P	557.57	0.00	590.2685185
7X	557.57	0.00	590.2685185
7Y	557.57	0.00	590.2685185
7XY	0.00	0.00	0
4P	97.65	0.00	53.12833333
4X	97.65	0.00	53.12833333
4Y	97.65	0.00	53.12833333
4XY	0.00	0.00	0
2P	22.52	0.00	6.5
2X	0.00	0.00	0
2Y	0.00	0.00	0
2XY	0.00	0.00	0
1P	22.31	0.00	9.476851852
1X	0.00	0.00	0
1Y	0.00	0.00	0
1XY	0.00	0.00	0
8P	424.36	0.00	306.5451389
8X	0.00	0.00	0
8Y	0.00	0.00	0
8XY	0.00	0.00	0

17P	525.86	0.00	1000
17X	525.86	0.00	1000
17Y	525.86	0.00	1000
17XY	525.86	0.00	1000
10P	263.25	0.00	625
10X	263.25	0.00	625
10Y	263.25	0.00	625
10XY	263.25	0.00	625
6P	616.00	0.00	1000
6X	0.00	0.00	0
6Y	0.00	0.00	0
6XY	0.00	0.00	0
5P	438.55	0.00	1000
5X	438.55	0.00	1000
5Y	0.00	0.00	0
5XY	0.00	0.00	0
7P	13.08	0.00	21.5
7X	13.08	0.00	21.5
7Y	13.08	0.00	21.5
7XY	0.00	0.00	0
7P	120.52	0.00	125
7X	94.63	0.00	100
7Y	94.63	0.00	100
7XY	0.00	0.00	0
7P	426.12	0.00	109.3
7X	253.57	0.00	60.8
7Y	0.00	0.00	0
7XY	0.00	0.00	0
8P	401.26	0.00	500
8X	0.00	0.00	0
8Y	0.00	0.00	0
8XY	0.00	0.00	0
14P	445.10	0.00	500
14X	0.00	0.00	0
14Y	0.00	0.00	0
14XY	0.00	0.00	0

17P	532.40	0.00	1300
17X	532.40	0.00	1300
17Y	532.40	0.00	1300
17XY	532.40	0.00	1300
10P	266.53	0.00	812.5
10X	266.53	0.00	812.5
10Y	266.53	0.00	812.5
10XY	266.53	0.00	812.5
6P	623.67	0.00	1300
6X	0.00	0.00	0
6Y	0.00	0.00	0
6XY	0.00	0.00	0
5P	444.01	0.00	1300
5X	444.01	0.00	1300
5Y	0.00	0.00	0
5XY	0.00	0.00	0
7P	12.09	0.00	31.515
7X	12.09	0.00	31.515
7Y	12.09	0.00	31.515
7XY	0.00	0.00	0
7P	117.75	0.00	171.26625
7X	95.81	0.00	130
7Y	95.81	0.00	130
7XY	0.00	0.00	0
7P	382.98	0.00	189.7177315
7X	208.29	0.00	126.6677315
7Y	0.00	0.00	0
7XY	0.00	0.00	0
8P	406.26	0.00	650
8X	0.00	0.00	0
8Y	0.00	0.00	0
8XY	0.00	0.00	0
14P	450.64	0.00	650
14X	0.00	0.00	0
14Y	0.00	0.00	0
14XY	0.00	0.00	0

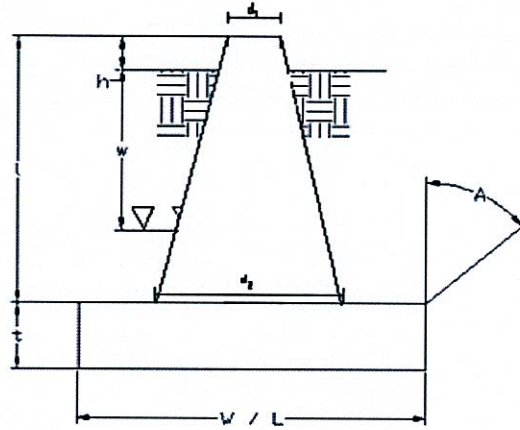
Foundation

Design Loads (Factored)

Site No.:	88008
Engineer:	ABL
Date:	06/21/12
Carrier:	AT&T Mobility

Compression/Leg:	462.07 k
Uplift/Leg:	344.21 k

Face Width @ Top of Pier (d_t):	4.00 ft
Face Width @ Bottom of Pier (d_b):	7.50 ft
Total Length of Pier (l):	7.25 ft
Height of Pedestal Above Ground (h):	0.50 ft
Width of Pad (W):	21.50 ft
Length of Pad (L):	21.50 ft
Thickness of Pad (t):	2.50 ft
Water Table Depth (w):	20 ft
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Soil (Above Water Table):	131.0 pcf
Unit Weight of Soil (Below Water Table):	65.0 pcf
Friction Angle of Uplift (A):	0 °
Allowable Compressive Bearing Pressure:	8700 psf
Allowable Skin Friction:	630 psf



Volume Pier (Total):	247.10	ft³
Volume Pad (Total):	1155.63	ft³
Volume Soil (Total):	2881.58	ft³
Volume Pier (Buoyant):	0.00	ft³
Volume Pad (Buoyant):	0.00	ft³
Volume Soil (Buoyant):	0.00	ft³
Weight Pier:	37.07	k
Weight Pad:	173.34	k
Weight Soil:	377.49	k

Ultimate Skin Friction:	135.45 k
Difference in Soil Volume 1:	993.04 ft³
Difference in Soil Volume 2:	168.92 ft³
Difference in Soil Weight:	152.22 k

Uplift Check

Uplift Resistance (k)	Ratio	Result
361.67	0.95	OK

Axial Check

Axial Resistance (k)	Ratio	Result
4021.58	0.11	OK

Anchor Bolt Check

Bolt Description: (6) 2-1/4" A36

ϕR_{nt}	Ratio	Result
456.60	0.75	OK



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ATC TOWER SERVICES, INC.
400 REGENCY FOREST DRIVE
CARY, NORTH CAROLINA 27518
PHONE: (919) 468-0112 / FAX: (919) 466-5040

88008 - BETHANY CT, CONNECTICUT

337.5 FT AT&T TAG TYPE "H" SELF SUPPORT TOWER MODIFICATIONS

PROJECT DESCRIPTION:
THE MODIFICATIONS PRESENTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER 49174332 DATED 06/21/12. SATISFACTORY COMPLETION OF THE WORK INDICATED ON THESE DRAWINGS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED.

AS-BUILT SIGN-OFF

DESCRIPTION	SIGNATURE	DATE
CONTRACTOR NAME		
CONTRACTOR REP. (PRINT NAME)		
CONTRACTOR REP. (SIGNATURE)		
REDEVELOPMENT P.M. (PRINT NAME)		
REDEVELOPMENT P.M. (SIGNATURE)		

PROJECT SUMMARY

ATC PROJECT NUMBER: 49174333
CUSTOMER: AT&T MOBILITY
CUSTOMER SITE NUMBER: 10070931/CT5632
CUSTOMER SITE NAME: BETHANY SOUTH
SITE ADDRESS: 93 OLD AMITY ROAD
BETHANY, CT 06524
DATE: 06/29/12
REVISION: 0

SHEET

BOM
IGN
A-1
A-2
A-3
F-1

SHEET TITLE

BILL OF MATERIALS (1 PAGE)
IBC GENERAL NOTES
MODIFICATION PROFILE
TRUSS DIAGONAL & SUB-HORIZONTAL INSTALLATION DETAILS
DIAGONAL UPGRADE INSTALLATION DETAILS
ANGLE FABRICATION DETAILS

REV.

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I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the state of Connecticut.

[illegible]

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ATC TOWER SERVICES, INC.
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SUITE 300
CARY, NC 27518
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FAX: (919) 466-3415
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[illegible]

REV.	DESCRIPTION	BY	DATE
0.	FIRST ISSUE	DMB	06/29/12

ATC SITE NUMBER
88008

ATC SITE NAME:
BETHANY CT

CONNECTICUT

SITE ADDRESS:
93 OLD AMITY ROAD



DRAWN BY:	DMB
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APPROVED BY:	S A W
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DATE DRAWN:	06/29/12
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491/4333	
AIC JOB NO.	
SHEET TITLE	

BILL OF MATERIALS

SHEET NUMBER:	BOM	REV. #	0
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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	DMB	06/29/12

ATC SITE NUMBER:
88008

ATC SITE NAME:
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CONNECTICUT

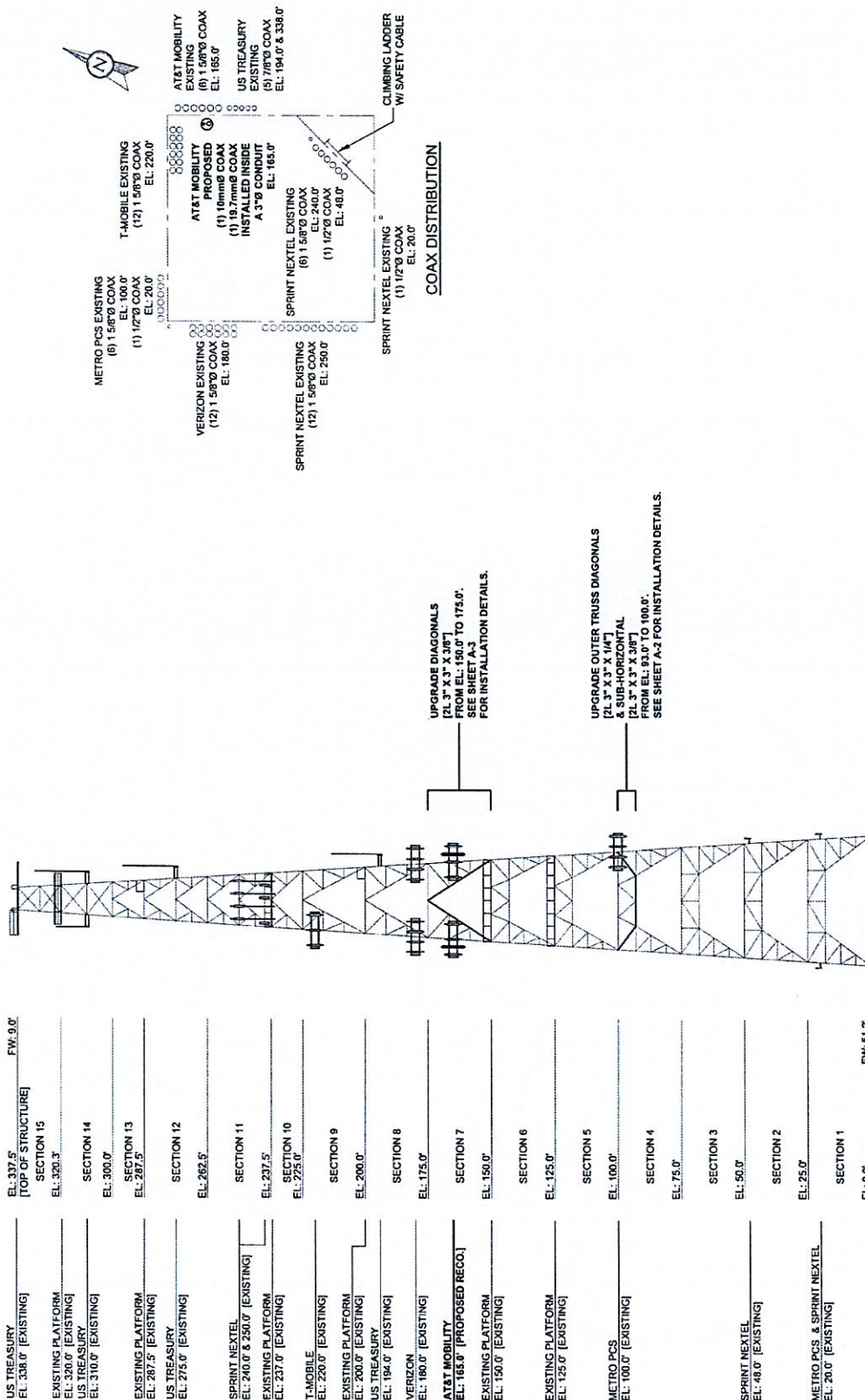
SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY CT 06524



DRAWN BY:	DMB
APPROVED BY:	<i>SAW</i>
DATE DRAWN:	06/29/12
ATC JOB NO:	49174333
SHEET TITLE:	

MODIFICATION PROFILE

SHEET NUMBER:	REV. #
A-1	0



TOWER ELEVATION VIEW



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1	FIRST ISSUE	DMB	06/26/12
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ATC SITE NUMBER: 880008

ATC SITE NAME: BETHANY CT

CONNECTICUT

SITE ADDRESS: 93 OLD AMITY ROAD
 BETHANY, CT 06524



DRAWN BY: DMB

APPROVED BY: *[Signature]*

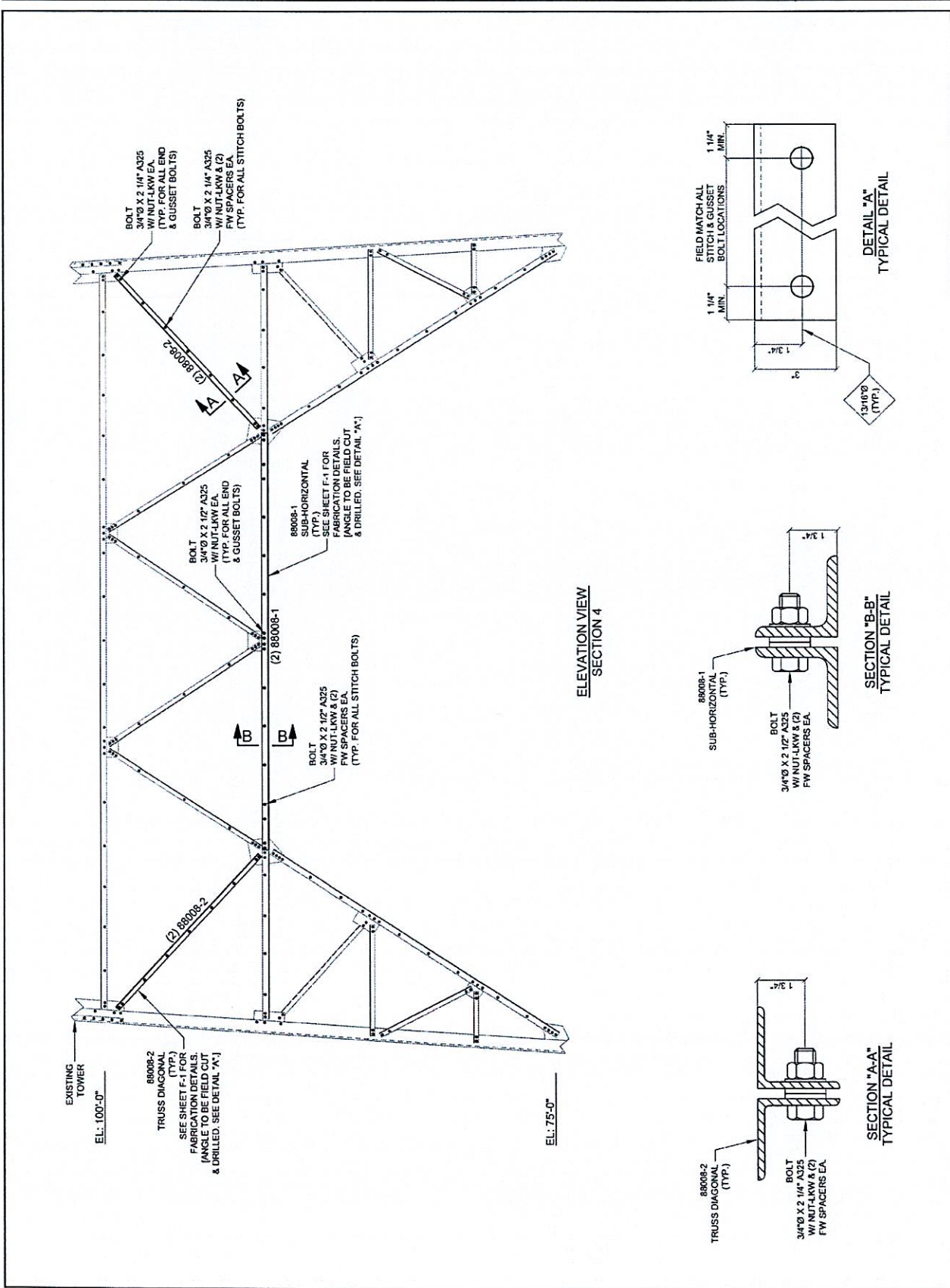
DATE DRAWN: 06/26/12

ATC JOB NO.: 4874333

SHEET TITLE: TRUSS DIAGONAL & SUB-HORIZONTAL INSTALLATION DETAILS

SHEET NUMBER: A-2

REV. # 0





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ATC TOWER SERVICES, INC.
 400 REGENCY FOREST DRIVE
 SUITE 300
 CARLETON, NJ 07633
 PHONE: (919) 468-0412
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ATC SITE NUMBER: 88008
 ATC SITE NAME: BETHANY CT
 CONNECTICUT
 SITE ADDRESS: 93 OLD AMITY ROAD
 BETHANY, CT 06524

REV. DESCRIPTION BY DATE

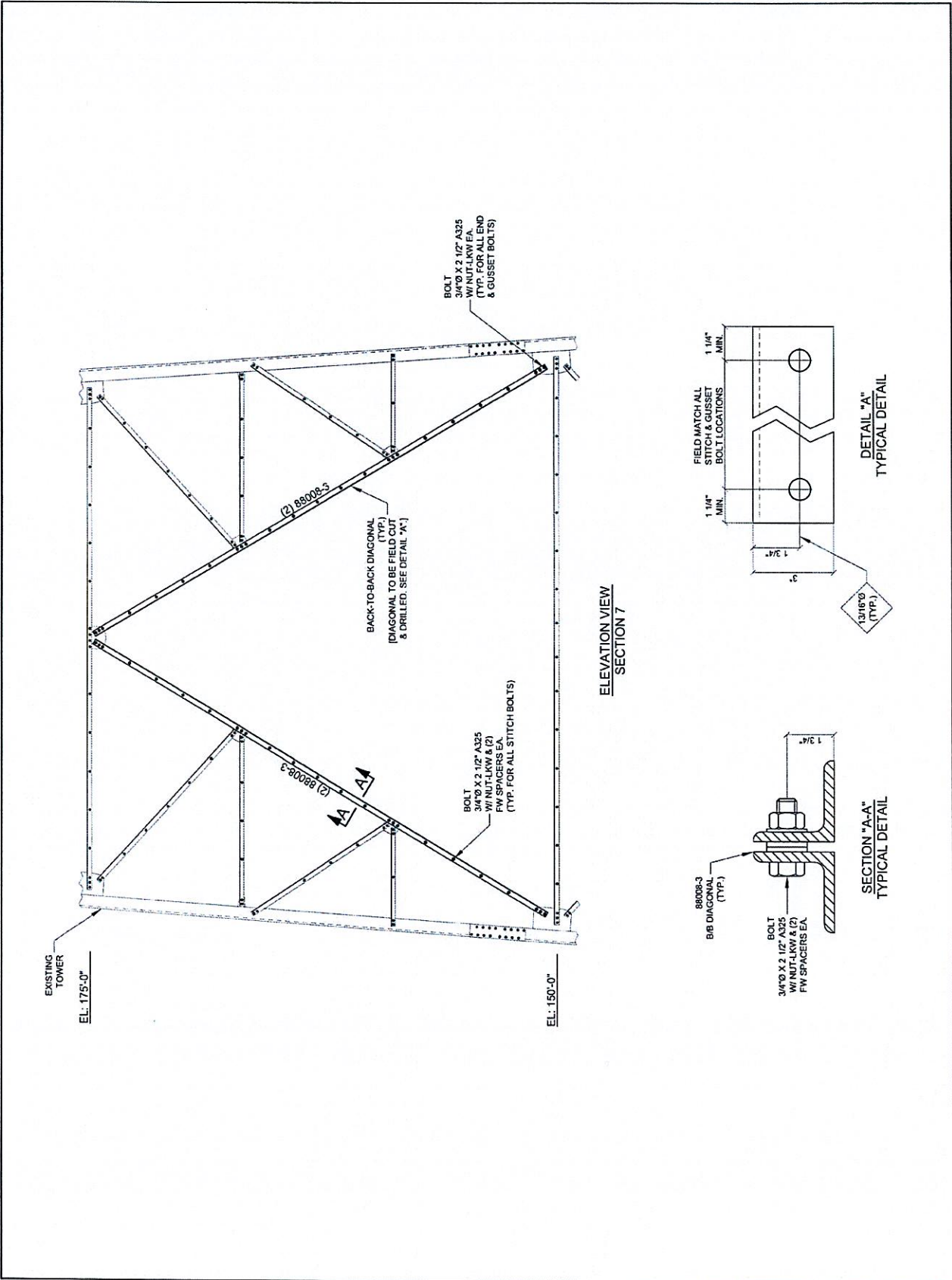
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1	FIRST ISSUE	DMR	09/29/12



DRAWN BY: DMB
 APPROVED BY: SAJJ
 DATE DRAWN: 09/29/12
 ATC JOB NO.: 09174333
 SHEET TITLE: DIAGONAL UPGRADE INSTALLATION DETAILS

SHEET NUMBER: A-3

REV. # 0





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

Calculated Radio Frequency Emissions



(Bethany South)

93 Old Amity Road, Bethany, CT 06524

(a.k.a. 9 Meyers Road/93 Old Amity Road)

August 16, 2012

Table of Contents

1. Introduction.....	1
2. FCC Guidelines for Evaluating RF Radiation Exposure Limits.....	1
3. RF Exposure Prediction Methods.....	2
4. Calculation Results	3
5. Conclusion	4
6. Statement of Certification.....	4
Attachment A: References	5
Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)	6
Attachment C: AT&T Antenna Data Sheets and Electrical Patterns.....	8

List of Tables

Table 1: Carrier Information.....	3
Table 2: FCC Limits for Maximum Permissible Exposure (MPE)	6

List of Figures

Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE).....	7
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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the lattice tower located at 93 Old Amity Road, Bethany, CT. The coordinates of the tower are 41° 24' 17.2" N, 72° 59' 59.96" W.

AT&T is proposing the following modifications:

- 1) Install three 700 MHz LTE antennas (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

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

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

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

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

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

3. RF Exposure Prediction Methods

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

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

Where:

EIRP = Effective Isotropic Radiated Power

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

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

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

4. Calculation Results

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

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	%MPE
Cingular GSM	165	1900	2	654	0.0173	1.0000	1.73%
Cingular UMTS	165	880	1	500	0.0066	0.5867	1.13%
Pocket	100	2130	3	631	0.0681	1.0000	6.81%
Verizon	180	869	9	210	0.0210	0.5793	3.62%
Verizon	180	1970	3	387	0.0129	1.0000	1.29%
Verizon	180	757	1	605	0.0067	0.5047	1.33%
Indus'l Commcns	345	855			0.0091	0.5700	1.59%
Sprint	240	1900	11	122	0.0084	1.0000	0.84%
Nextel	250	851	9	100	0.0091	0.5673	1.60%
T-Mobile	220	1935	8	137	0.0091	1.0000	0.91%
Rescue 21	275	165.313	5	158.5	0.0038	0.2000	1.88%
Rescue 21	310	412.975	1	158.5	0.0006	0.2753	0.22%
AT&T UMTS	165	880	2	565	0.0015	0.5867	0.25%
AT&T UMTS	165	1900	2	875	0.0023	1.0000	0.23%
AT&T LTE	165	734	1	1375	0.0018	0.4893	0.37%
AT&T GSM	165	880	1	283	0.0004	0.5867	0.06%
AT&T GSM	165	1900	4	525	0.0028	1.0000	0.28%
						Total	21.27%

Table 1: Carrier Information^{1 2 3}

¹ The existing CSC filing for Cingular should be removed and replaced with the updated AT&T technologies and values provided in Table 1. In the event that the number of transmitters and ERP's are not known for other operators, the %MPE is taken directly from the existing CSC database. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

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

³ Antenna height listed for AT&T is based on the American Tower Corporation Structural Analysis Report dated June 21, 2012.

5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **21.27% of the FCC limit**.

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

6. Statement of Certification

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



Daniel L. Goulet
C Squared Systems, LLC

August 16, 2012

Date

Attachment A: References

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

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

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

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

(A) Limits for Occupational/Controlled Exposure⁴

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

(B) Limits for General Population/Uncontrolled Exposure⁵

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

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

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

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

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

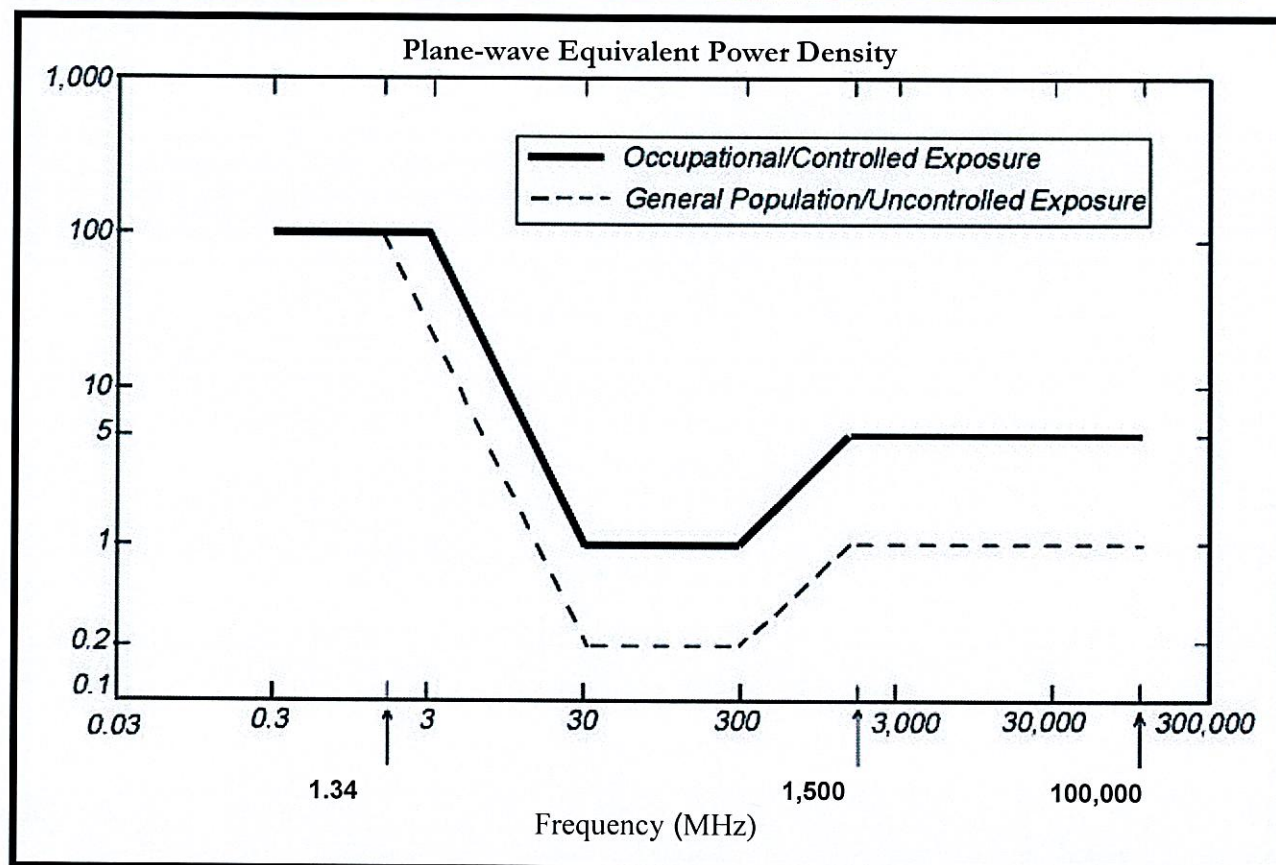
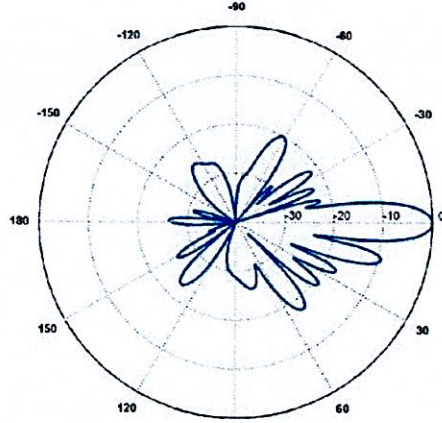
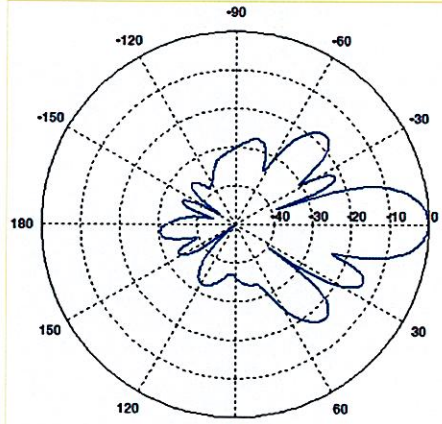
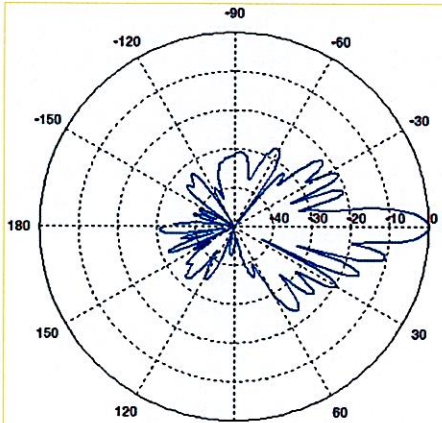


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

700 MHz Manufacturer: Andrew Model #: SBNH-1D6565C Frequency Band: 698-806 MHz Gain: 13.6 dBd Vertical Beamwidth: 8.6° Horizontal Beamwidth: 71° Polarization: Dual Linear $\pm 45^\circ$ Size L x W x D: 96.42" x 11.85" x 7.1"	 A polar plot showing the radiation pattern for 700 MHz. The plot is circular with concentric dashed lines representing gain levels. The main beam is oriented horizontally towards the right (0 degrees). The pattern shows a primary lobe with several side lobes, indicating a directional antenna.
850 MHz Manufacturer: Powerwave Model #: 7770 Frequency Band: 824-896 MHz Gain: 11.5 dBd Vertical Beamwidth: 15° Horizontal Beamwidth: 82° Polarization: Dual Linear $\pm 45^\circ$ Size L x W x D: 55.0" x 11.0" x 5.0"	 A polar plot showing the radiation pattern for 850 MHz. The main beam is oriented horizontally towards the right (0 degrees). The pattern is more spread out than the 700 MHz pattern, with a wider horizontal beamwidth and more prominent side lobes.
1900 MHz Manufacturer: Powerwave Model #: 7770 Frequency Band: 1850-1990 MHz Gain: 13.4 dBd Vertical Beamwidth: 7° Horizontal Beamwidth: 86° Polarization: Dual Linear $\pm 45^\circ$ Size L x W x D: 55.0" x 11.0" x 5.0"	 A polar plot showing the radiation pattern for 1900 MHz. The main beam is oriented horizontally towards the right (0 degrees). The pattern is very directional with a very narrow vertical beamwidth and a wide horizontal beamwidth, showing a dense cluster of side lobes.