STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

November 23, 2012

Stephanie Wenderoth
Nexlink Global Services
Suite A, Building 2
800 Marshall Phelps Road
Windsor, CT 06095

RE: **EM-AT&T-004-120814** – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 224 Lovely Street, Avon, Connecticut.

Dear Ms. Wenderoth:

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

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

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated July 31, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding

the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts MHB

Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Mark W. Zacchio, Chairman Town Council, Town of Avon
Brandon Robertson, Town Manager, Town of Avon
Steven V. Kushner, Town Planner, Town of Avon

CONNECTICUT SITING COUNCIL
NOTICE OF INTENT TO MODIFY AN EXISTING TOWER FACILITY
EXEMPT EM-AT&T-004-120814

Public Utility Environmental Stan § 16-50g - 16-50aa
Regulations of Connecti 16-50j-73

TO BE COMPLETED BY FILER

Date: 7/31/12

ORIGINAL

RECEIVED
AUG 14 2012
CONNECTICUT
SITING COUNCIL

Filer Name and Contact Information
Name: Stephanie Wenderoth
Address: Nexlink Global Services; Suite A Building 2
800 Marshall Phelps Road, Windsor, CT 06095
Phone Number: 401.477.2938

Wireless Carrier: AT&T

Tower Owner: AT&T

Tower Site Address: 224 Lovely Street, Avon CT

Municipality and Name of Chief Elected Official Provided A Copy Of This Notice:
Brandon Robertson; Avon Town Manager

Description of Exempt Modification (including antenna and equipment changes):
Replace existing Antennas with LTE Antennas, add new conduit, RRUs and surge arrestor.

Attachments
X Plans
X Power density calculations if applicable
X Tower structural report if applicable
Y $625.00 Filing Fee

If required:
Municipality w/i 2,500' & Name of Chief Elected Official Provided A Copy Of This Notice:

Underlying Property Owner Provided A Copy Of This Notice:

FOR STAFF USE ONLY

____ Modification will not result in an increase in tower height
____ Modification is within existing site boundaries
____ Modification will not increase noise levels at the site boundary by 6 dbA or more, or to levels that exceed State & local criteria
____ Modification will meet FCC and DEEP MPE limits
____ Modification will not result in significant adverse change in physical or environmental

characteristics of the site

____ Modification will not impair the structural integrity of the facility as determined by PE

____ If yes to all of the above, approval of acknowledgement letter

July 31, 2012

VIA UPS Overnight Delivery

Ms. Linda Roberts, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: AT&T Mobility - Notice of Exempt Modification
224 Lovely Street, Avon CT

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of AT&T Mobility ("AT&T"). AT&T is enhancing the capabilities of its wireless system in Connecticut by implementing LTE technology. In order to do so, AT&T will modify antenna and equipment configurations at a number of existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section I6-50j-73, a copy of this letter and attachments is being sent to the Town Manager of Avon.

AT&T plans to modify the existing facility at 224 Lovely Street, owned by Brighenti Silvio Family LLC (coordinates 41.442742 N, -72.992471 W). Attached are drawings depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation 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 | 6-50j-l 2(b)(2).

1. The height of the overall structure will be unaffected. The existing antennas will be replaced with in the existing the monopole, Additionally, AT&T will install six (6) RRU's and one (1) surge arrestor, one (1) fiber cable and two (2) DC control cables within the existing monopole.

2. The proposed changes will not extend the site boundaries. AT&T will install additional equipment in the existing equipment shelter. Thus, there will no effect on the site compound.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed change 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 environment as calculated for a mixed frequency site. As indicated in the attached

power density calculations, AT&T's operations at the site will result in a power density of 4.26%; the combined site operations will result in a total power density of 15.64%.

Please feel free to call me with any questions or concerns regarding this matter.
Thank you for your consideration.

Respectfully submitted,

AT&T Mobility
Stephanie Wenderoth, Consultant
wenderoths@nexlinkgs.com
401.477.2938

Cc: Brandon Robertson
Avon Town Manager
Town Hall
60 West Main Street
Avon, Ct 06001

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

Calculated Radio Frequency Emissions

at&t

CT1257

(Avon - Lovely Street)

224 Lovely Street, Avon, CT 06001

July 26, 2012

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 stealth tower located at 224 Lovely St in Avon, CT. The coordinates of the tower are 41-47-58.0 N, 72-53-16.3 W.

AT&T is proposing the following modifications:

1) Activate 700 MHz LTE frequencies using existing 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/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

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

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

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
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MetroPCS	83	2140	3	727	0.1138	1.0000	11.38%
AT&T UMTS	107	880	2	875	0.0550	0.5867	0.94%
AT&T UMTS	107	1900	2	1294	0.0813	1.0000	0.81%
AT&T LTE	99	734	1	1117	0.0410	0.4893	0.84%
AT&T GSM	91	880	1	438	0.0190	0.5867	0.32%
AT&T GSM	91	1900	4	777	0.1350	1.0000	1.35%
						Total	**15.64%**

Table 1: Carrier Information[1] [2]

[1] The existing CSC filing for AT&T should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 3/29/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

[2] Antenna height listed for AT&T is in reference to the B&T Engineering Structural Analysis dated July 19, 2012.

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

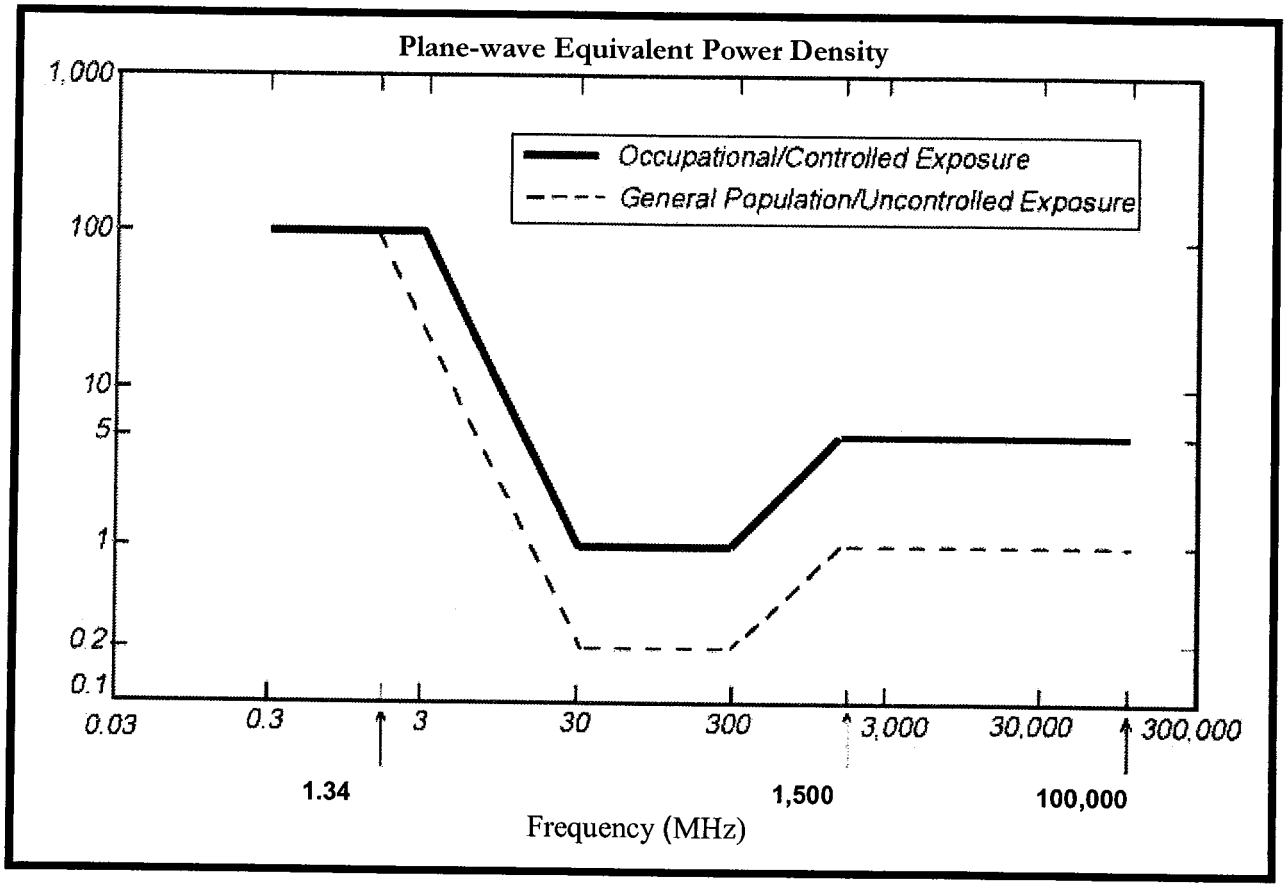


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Nexlink Global Services, Inc.
800 Marshall Phelps Road
Windsor, CT 06095

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

July 19, 2012

B+T No.: 84427.0002

Modification Design
150' Monopole

AT&T DESIGNATION:	Site ID:	61186 (CT2162)
	Site FA:	10035070
	Site Name:	Bethany
	AT&T Project:	MOD LTE W3 012712
ANALYSIS CRITERIA:	Codes:	TIA/EIA-222-F (90 mph fastest mile) IBC 2003 2005 CT Building Code
SITE DATA:		719 Amity Road, Bethany, CT, New Haven County Latitude 41.442742°, Longitude -72.992471° Market MA/RI/VT/NH/ME/CT

Dear Ms. Wenderoth

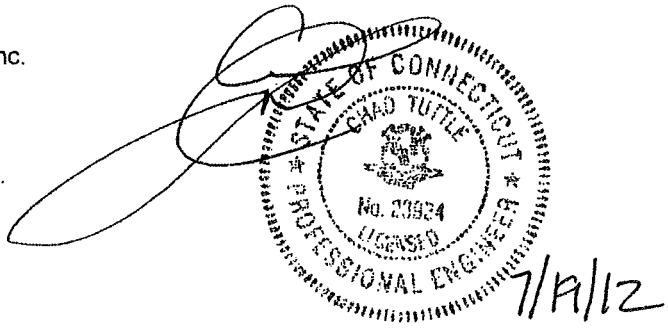
B+T Group is pleased to submit this Structural Modification Report to determine the structural integrity of the aformentioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	**99.7%**	**Pass**
Foundation Ratio with Proposed Equipment:	**75.9%**	**Pass**

We at B+T Group appreciate the opportunity of providing our continuing professioinal 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:	Ali Abbaszadeh
Analysis Reviewed by:	Chad E. Tuttle, P.E.



7/19/12

ANALYSIS RESULTS:

Table 1 - Section Capacity (Summary) - Modified Tower

Component (Tower Section)	% Capacity	Pass / Fail
TP22.58x17.61x0.219	87.5	Pass
TP23.61x22.58x0.377	76.2	Pass
TP27.61x23.61x0.474	84.5	Pass
TP28.39x25.837x0.57	88.5	Pass
TP34x28.39x0.598	99.7	Pass
TP36.34x34x0.658	85.2	Pass
TP38.98x33.994x0.7	93.6	Pass
TP41.56x38.98x0.677	98.5	Pass
TP44.6x41.56x0.695	97.5	Pass

Table 2 - Tower Component Stresses vs. Capacity - Modified Tower

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	92.5	**Pass**
1	Base Plate	Base	53.1	**Pass**
1	Base Foundation	Base	75.9	**Pass**

Structure Rating (max from all components) =	99.7%

Notes:

1) See additional documentation in "Appendix B - Calculations" for calculation supporting the % capacity consumed.
2) Capacities up to 105% are considered acceptable based on analysis methods used.
3) The percent capacities shown above (excluding foundations) include the 1/3 increase in allowable stresses as allowed by TIA/EIA-222-F.

Recommendations:

1) All modifications proposed in this report shall be installed in accordance with the attached drawings (Appendix D) for the determined available structural capacity to be effective.

TOWER ANALYSIS LOADING:

Existing / Reserved Loading

Antenna						Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	Size (in)
AT&T Mobility	**153**	**151**	**3**	**Kathrein**	**800-10121**	**1**	**Platform w/ Rails**	**12**	**1-5/8"**
AT&T Mobility	**153**	**151**	**6**	**CSS**	**DUO1417-8686***				
AT&T Mobility	**153**	**151**	**6**	**ADC**	**CG-PDU-SmPWR**				
AT&T Mobility	**153**	**151**	**12**	**Powerwave**	**LGP21901**				
AT&T Mobility	**153**	**151**	**3**	**Kathrein**	**860-10025**				
City	**150**	**156**	**1**	**Unknown**	**12'x3" Omni**			**1**	**1-1/4"**
City	**150**	**155**	**1**	**Unknown**	**10' Yagi**			**1**	**1-1/4"**
Verizon	**140**	**140**	**3**	**Powerwave**	**P65-15-XL-2**	**1**	**C-PK12S-B 12"-6" LP Platfo**	**12**	**1-5/8"**
Verizon	**140**	**140**	**3**	**Andrew**	**DB845DG65ESX**				
Verizon	**140**	**140**	**3**	**Rymsa**	**MG D3-800T0**				
Sprint	**130**	**130**	**12**	**Decibel**	**DB980F90E-M**	**3**	**T-Arms**	**12**	**1-5/8"**
MetroPCS	**120**	**120**	**6**	**Andrew**	**HBX-6516S-VTM**	**3**	**Standoff**	**12**	**1-5/8"**
MetroPCS	**120**	**120**	**6**	**Andrew**	**ATM200-A20**			**6**	**3/8"**

*(6) DUO1417-8686 & (6) Powerwave Diplexers to be Removed

Proposed Loading

Antenna						Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	Size (in)
AT&T Mobility	**153**	**151**	**6**	**KMW**	**AM-X-CD-16-65-00T**			**2**	
AT&T Mobility	**153**	**151**	**6**	**CCI**	**DTMABP7819VG12A**			**1**	
AT&T Mobility	**153**	**151**	**6**	**Ericsson**	**Unknown**				
AT&T Mobility	**153**	**151**	**1**	**Raycap**	**DC6-48-60-18-8F**				

Future Loading

Antenna						Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity	Type	Quantity	Size (in)

APPENDIX B

CALCULATIONS

APPENDIX A

TOWER ANALYSIS LOADING

ANALYSIS PROCEDURE:

Table 4 - Documents Provided

Document	Description	Date	Source
Tower Data	B+T Engineering Mod Design for AT&T Towers	9/2/2011	On File
Foundation Information	Foundation Mapping BTE Management	2/16/2012	On File
Geotech Report	Information Not Available	N/A	N/A
Loading	Equipment Mod Form	2/3/2012	Siterra
	Previous SA by B&T Engineering, Inc.	6/5/2012	On File
Previous Structural Analysis	B&T Engineering Mod Design for AT&T Towers	9/2/2011	On File

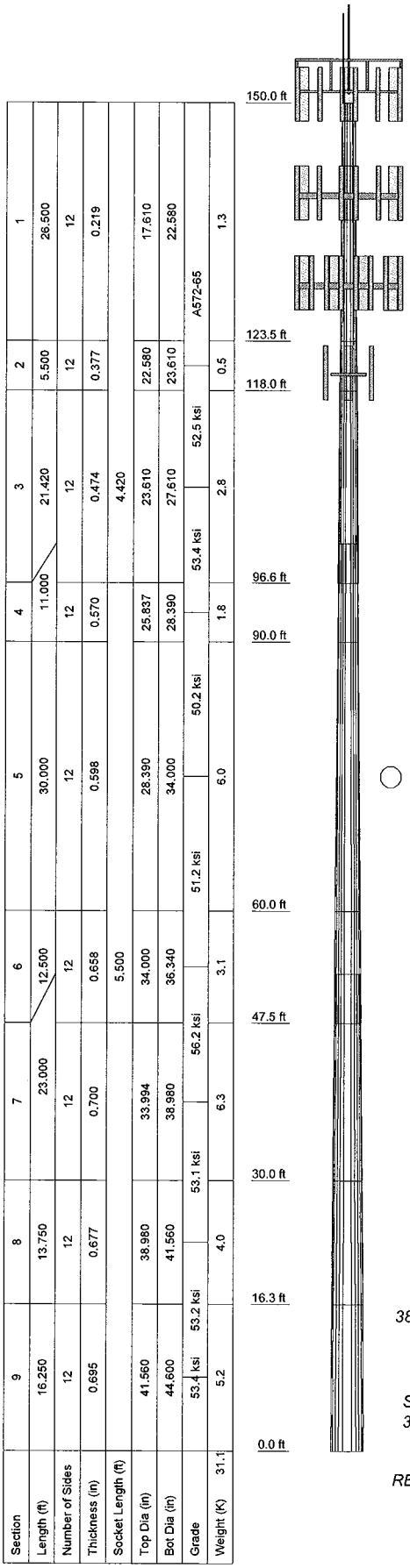
ANALYSIS METHOD:

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.

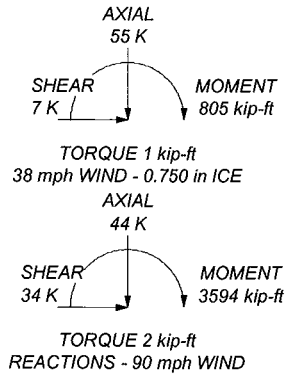
ASSUMPTIONS:

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.

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.



Section	9	8	7	6	5	4	3	2	1
Length (ft)	16.250	13.750	23.000	12.500	30.000	11.000	21.420	5.500	26.500
Number of Sides	12	12	12	12	12	12	12	12	12
Thickness (in)	0.695	0.677	0.700	0.658	0.598	0.570	0.474	0.377	0.219
Socket Length (ft)				5.500			4.420		
Top Dia (in)	41.560	38.980	33.994	34.000	28.390	25.837	23.610	22.580	17.610
Bot Dia (in)	44.600	41.560	38.980	36.340	34.000	28.390	27.610	23.610	22.580
Grade	53.4 ksi	53.2 ksi	53.1 ksi	56.2 ksi	51.2 ksi	50.2 ksi	53.4 ksi	52.5 ksi	A572-65
Weight (K)	5.2	4.0	6.3	3.1	6.0	1.8	2.8	0.5	1.3
Total Weight (K)	31.1								



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' x 3" Omni (City-E)	156	800 10121 w/ Mount Pipe (ATI-E)	151
10' Yagi (City-E)	155	Lightning Rod (E)	150
Platform Mount [LP 713-1] (ATI-E)	153	6' x 2" Mount Pipe (Verizon-E)	140
		6' x 2" Mount Pipe (Verizon-E)	140
6' x 2' Mount Pipe (ATI-E)	153	6' x 2" Mount Pipe (Verizon-E)	140
6' x 2' Mount Pipe (ATI-E)	153	(3) MG D3 800TO w/Mount Pipe (Verizon-E)	140
6' x 2' Mount Pipe (ATI-E)	153		
(2) CG-PDU-SmPWR (ATI-E)	151	(3) DB854DG65ESX w/Mount Pipe (Verizon-E)	140
(4) LGP21901 (ATI-E)	151		
(4) LGP21901 (ATI-E)	151	(3) P65-15-XLH-RR w/Mount Pipe (Verizon-E)	140
(4) LGP21901 (ATI-E)	151		
860 10025 (ATI-E)	151	Platform Mount [LP 303-1] (Verizon-E)	140
860 10025 (ATI-E)	151		
860 10025 (ATI-E)	151	(4) DB980F90E-M w/Mount Pipe (Sprint-E)	130
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (ATI-P)	151	(4) DB980F90E-M w/Mount Pipe (Sprint-E)	130
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (ATI-P)	151	(4) DB980F90E-M w/Mount Pipe (Sprint-E)	130
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (ATI-P)	151	T-Arm Mount [TA 602-3] (Sprint-E)	130
(2) DTMA1819VG12A (ATI-P)	151	(2) HBX-6516DS-VTM w/Mount Pipe (MetroPCS-R)	120
(2) DTMA1819VG12A (ATI-P)	151		
(2) DTMA1819VG12A (ATI-P)	151	(2) HBX-6516DS-VTM w/Mount Pipe (MetroPCS-R)	120
(2) RRUS-11 (ATI-P)	151	(2) HBX-6516DS-VTM w/Mount Pipe (MetroPCS-R)	120
(2) RRUS-11 (ATI-P)	151		
(2) RRUS-11 (ATI-P)	151	(2) ATM200-A20 (MetroPCS-R)	120
DC6-48-60-18-8F (ATI-P)	151	(2) ATM200-A20 (MetroPCS-R)	120
800 10121 w/ Mount Pipe (ATI-E)	151	(2) ATM200-A20 (MetroPCS-R)	120
800 10121 w/ Mount Pipe (ATI-E)	151	Side Arm Mount [SO 103-3] (MetroPCS-R)	120
(2) CG-PDU-SmPWR (ATI-E)	151		
(2) CG-PDU-SmPWR (ATI-E)	151		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	51.2 ksi	51 ksi	65 ksi
52.5 ksi	53 ksi	65 ksi	56.2 ksi	56 ksi	65 ksi
53.4 ksi	53 ksi	65 ksi	53.1 ksi	53 ksi	65 ksi
50.2 ksi	50 ksi	65 ksi	53.2 ksi	53 ksi	65 ksi

TOWER DESIGN NOTES

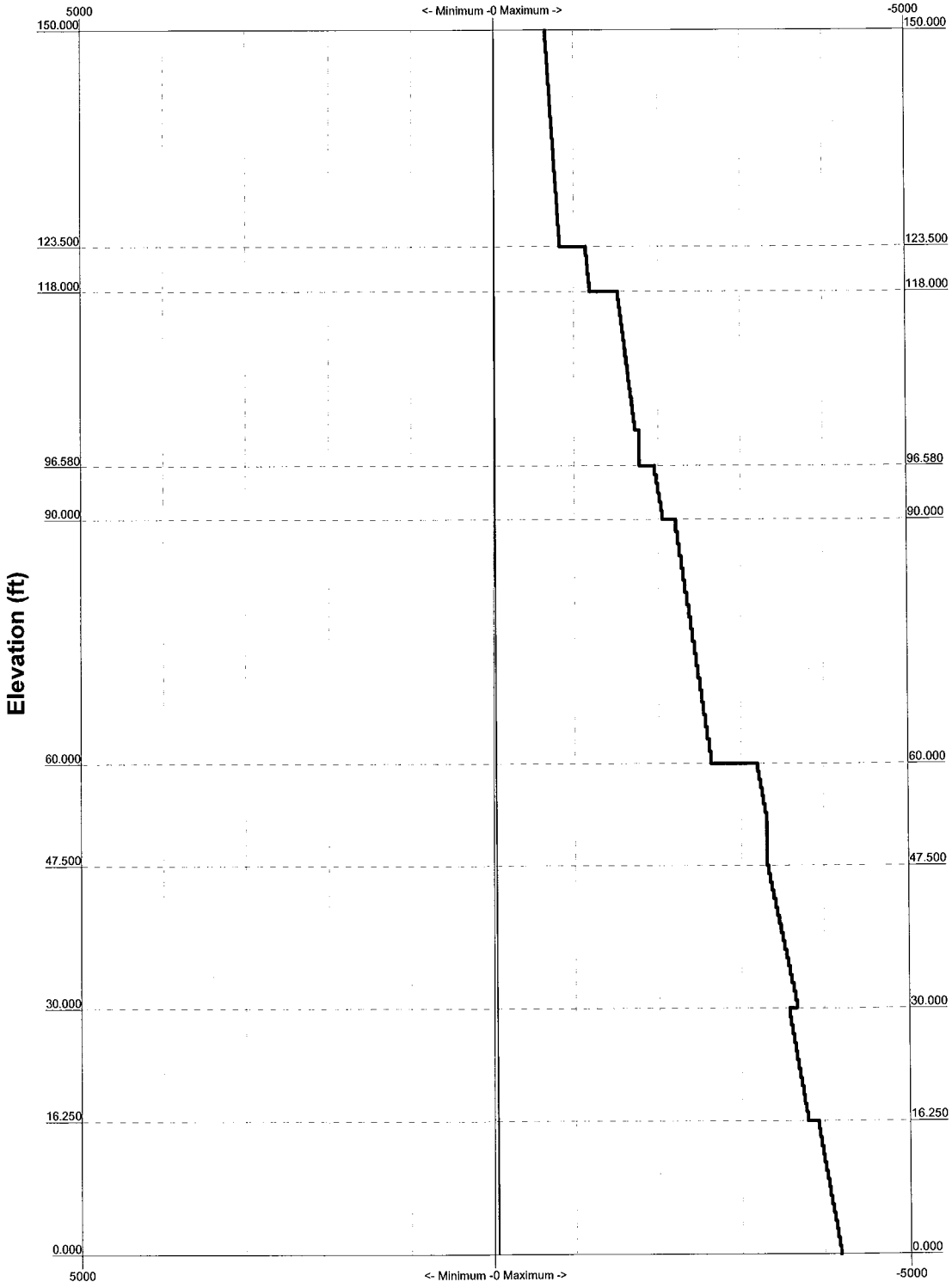
1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 99.7%

BT Engineering
1717 S. Boulder, Suite 300
Tulsa, OK 74145
Phone: (918) 587 - 4630
FAX: (918) 295 - 0265

Job: 84427.002 - BETHANY, CT		
Project: 150' Valmont Monopole/ AT&T Co-Locate		
Client: Nexlinkgs	Drawn by: A. Abbaszadeh	App'd:
Code: TIA/EIA-222-F	Date: 07/19/12	Scale: NTS
Path: S:\BT Engineering\Projects\BTE Management\84427_Bethany\Engineering\tnxTower\84427_002_Bethany_Modified.eri		Dwg No. E-1

TIA/EIA-222-F - 90 mph/38 mph 0.750 in Ice

Leg Capacity ——— **Leg Compression (K)**



BT Engineering
1717 S. Boulder, Suite 300
Tulsa, OK 74145
Phone: (918) 587 - 4630
FAX: (918) 295 - 0265

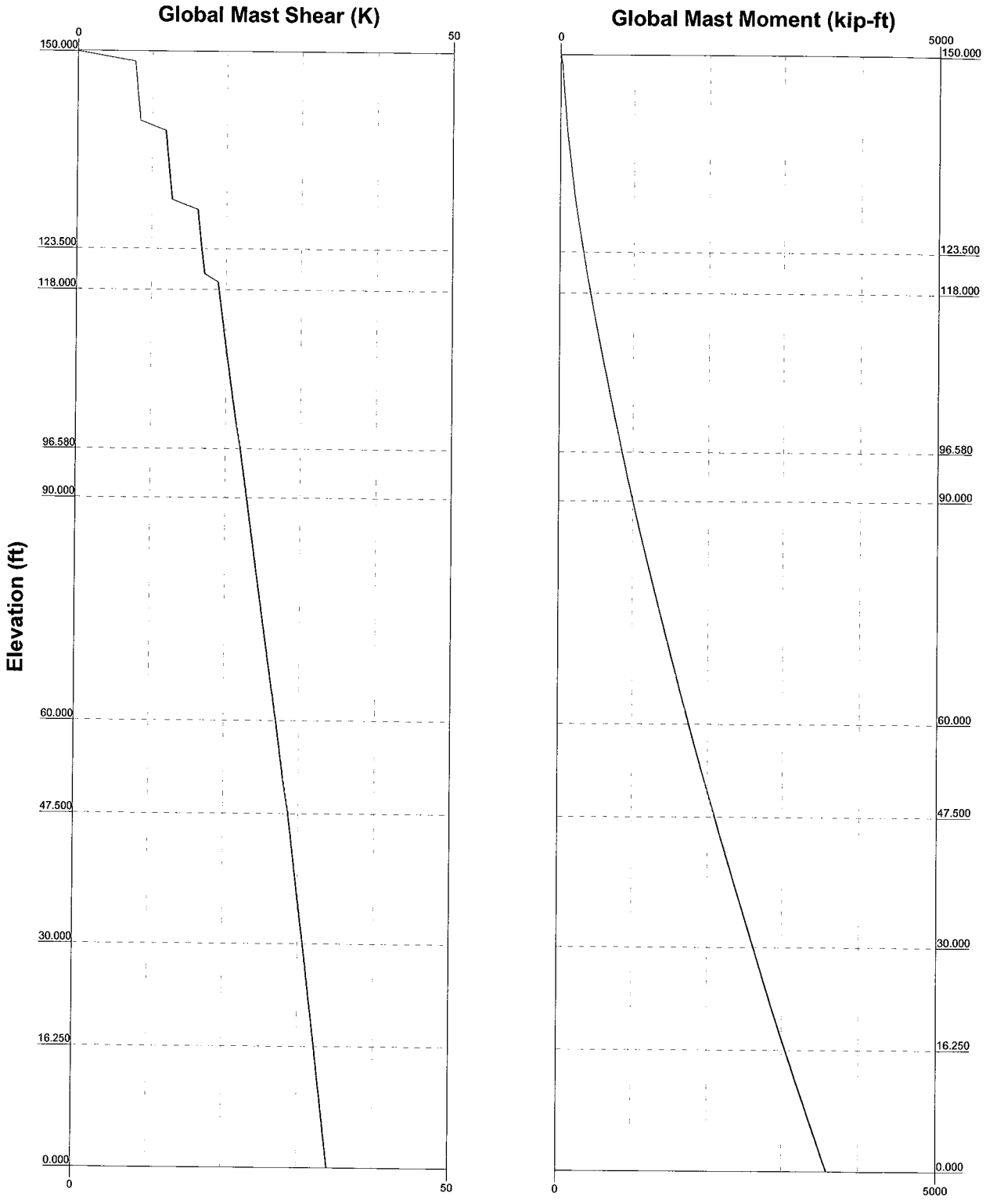
Job: ***84427.002 - BETHANY, CT***			
Project: ***150' Valmont Monopole/ AT&T Co-Locate***			
Client: Nexlinkgs	Drawn by: A. Abbaszadeh	App'd:	
Code: TIA/EIA-222-F	Date: 07/19/12	Scale: NTS	
Path: S:\BAT Engineering\Projects\BTE Management\84427 Bethany\Engineering\BnTower\84427_002 Bethany Modified.tnx		Dwg No. E-3	

TIA/EIA-222-F - 90 mph/38 mph 0.750 in Ice

Vx Vz

Maximum Values

Mx Mz

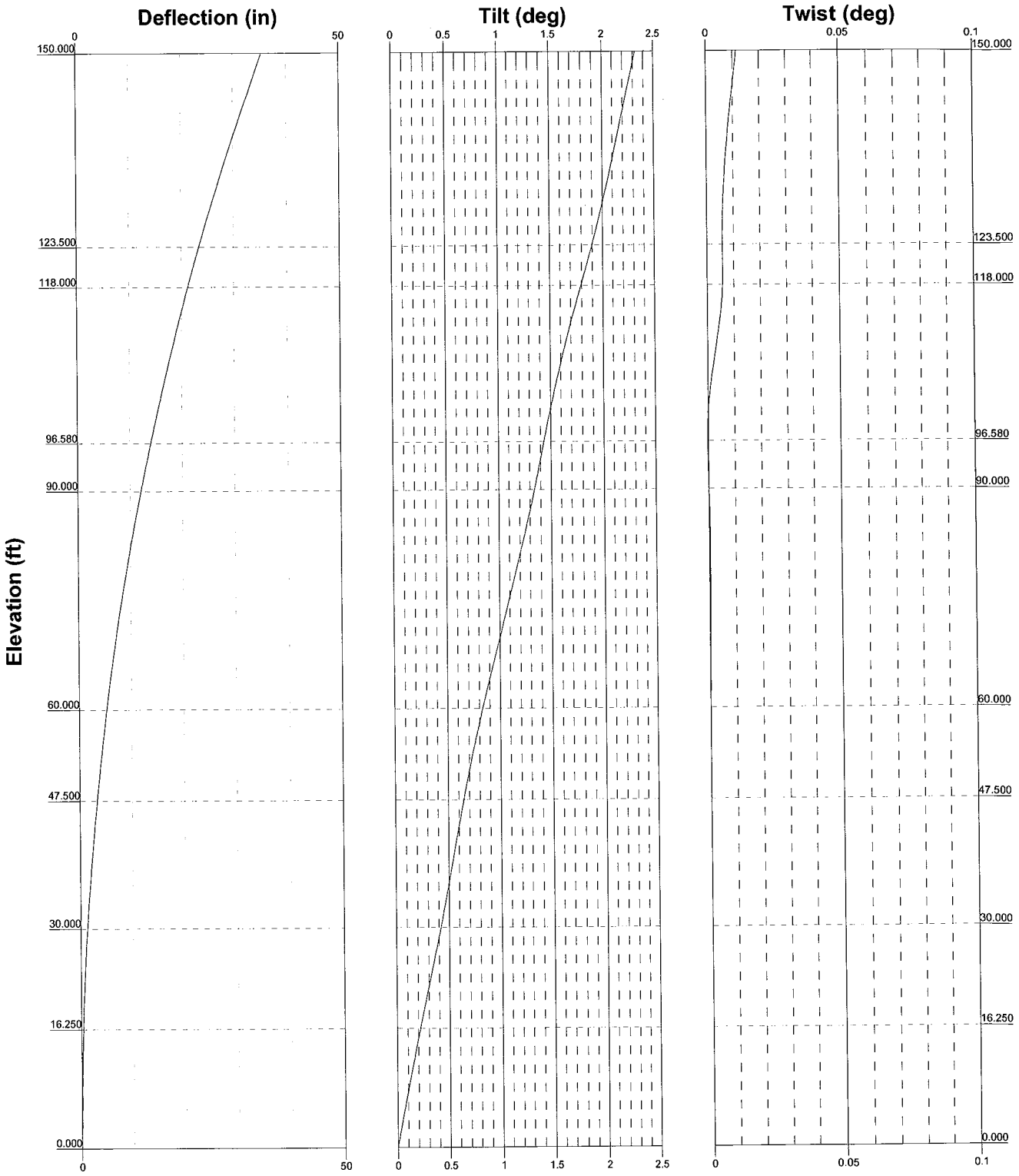


BT Engineering
1717 S. Boulder, Suite 300
Tulsa, OK 74145
Phone: (918) 587 - 4630
FAX: (918) 295 - 0265

Job: 84427.002 - BETHANY, CT		
Project: 150' Valmont Monopole/ AT&T Co-Locate		
Client: Nexlinkgs	Drawn by: A. Abbaszadeh	App'd:
Code: TIA/EIA-222-F	Date: 07/19/12	Scale: NTS
Path: S:\BT Engineering\Projects\BTE Management\84427 Bethany\Engineering\tnxTower\84427.002 Bethany, Modified.en		Dwg No. E-4

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

Maximum Values



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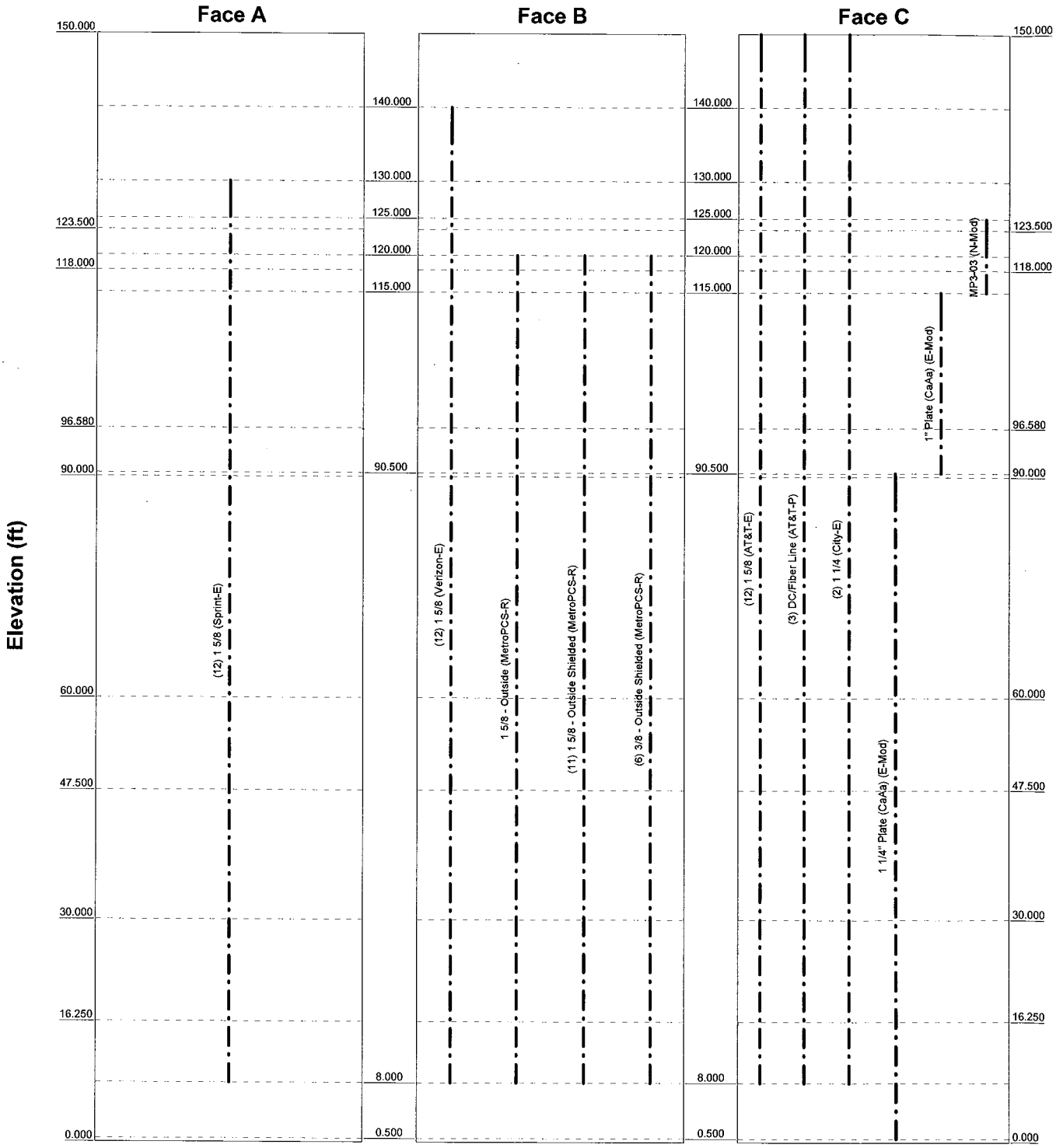
Job: 84427.002 - BETHANY, CT		
Project: 150' Valmont Monopole/ AT&T Co-Locate		
Client: Nexlinkgs	Drawn by: A. Abbaszadeh	App'd:
Code: TIA/EIA-222-F	Date: 07/19/12	Scale: NTS
Path: S:\BT Engineering Projects\BTE Management\84427 Bethany\Engineering\Tnxe\84427-002 Bethany Modified.eri		Dwg No. E-5

Feedline Distribution Chart

0' - 150'

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



BT Engineering
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Job: ***84427.002 - BETHANY, CT***			
Project: ***150' Valmont Monopole/ AT&T Co-Locate***			
Client: Nexlinkgs	Drawn by: A. Abbaszadeh	App'd:	
Code: TIA/EIA-222-F	Date: 07/19/12	Scale: NTS	
Path: S:\BT Engineering\Projects\BTE Management\84427 Bethany\Engineering\ValTower\84427.002 Bethany_Modified.en		Dwg No. E-7	

Tower Input Data

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

Tower is located in New Haven County, Connecticut.
Basic wind speed of 90 mph.
Nominal ice thickness of 0.750 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.

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	150.000-123.500	26.500	0.000	12	17.610	22.580	0.219	0.875	A572-65 (65 ksi)
L2	123.500-118.000	5.500	0.000	12	22.580	23.610	0.377	1.508	52.5 ksi (53 ksi)
L3	118.000-96.580	21.420	4.420	12	23.610	27.610	0.474	1.896	53.4 ksi (53 ksi)
L4	96.580-90.000	11.000	0.000	12	25.837	28.390	0.570	2.278	50.2 ksi (50 ksi)
L5	90.000-60.000	30.000	0.000	12	28.390	34.000	0.598	2.390	51.2 ksi (51 ksi)
L6	60.000-47.500	12.500	5.500	12	34.000	36.340	0.658	2.632	56.2 ksi (56 ksi)
L7	47.500-30.000	23.000	0.000	12	33.994	38.980	0.700	2.800	53.1 ksi (53 ksi)
L8	30.000-16.250	13.750	0.000	12	38.980	41.560	0.677	2.710	53.2 ksi (53 ksi)
L9	16.250-0.000	16.250		12	41.560	44.600	0.695	2.781	53.4 ksi (53 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	18.231	12.253	473.018	6.226	9.122	51.855	958.463	6.030	4.133	18.89
	23.377	15.754	1005.482	8.005	11.696	85.965	2037.380	7.754	5.465	24.977
L2	23.377	26.946	1695.543	7.949	11.696	144.962	3435.630	13.262	5.041	13.376
	24.443	28.196	1942.627	8.317	12.230	158.841	3936.289	13.877	5.317	14.108
L3	24.443	35.305	2412.120	8.283	12.230	197.230	4887.610	17.376	5.057	10.672
	28.584	41.409	3891.982	9.715	14.302	272.129	7886.211	20.380	6.129	12.934
L4	27.810	46.343	3776.446	9.046	13.383	282.173	7652.104	22.809	5.398	9.476
	29.391	51.026	5040.828	9.960	14.706	342.773	10214.085	25.113	6.082	10.678
L5	29.391	53.471	5271.844	9.950	14.706	358.482	10682.186	26.317	6.007	10.054
	35.199	64.265	9152.013	11.958	17.612	519.646	18544.460	31.629	7.511	12.57
L6	35.199	70.644	10024.037	11.936	17.612	569.159	20311.416	34.769	7.349	11.168
	37.622	75.602	12286.135	12.774	18.824	652.680	24895.040	37.209	7.976	12.121
L7	36.428	75.056	10619.683	11.919	17.609	603.079	21518.357	36.940	7.234	10.333
	40.355	86.295	16140.400	13.704	20.192	799.361	32704.826	42.472	8.570	12.242
L8	40.355	83.547	15644.864	13.712	20.192	774.819	31700.735	41.119	8.631	12.742
	43.026	89.174	19024.031	14.636	21.528	883.685	38547.844	43.889	9.323	13.762
L9	43.026	91.491	19501.095	14.630	21.528	905.845	39514.505	45.029	9.275	13.339
	46.173	98.297	24185.056	15.718	23.103	1046.845	49005.480	48.379	10.089	14.511

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 150.000-123.500				1	1	1		
L2 123.500-118.000				1	1	1		
L3 118.000-96.580				1	1	1		
L4 96.580-90.000				1	1	1		
L5 90.000-60.000				1	1	1		
L6 60.000-47.500				1	1	1		
L7 47.500-30.000				1	1	1		
L8 30.000-16.250				1	1	1		
L9 16.250-0.000				1	1	1		

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
1 5/8 (AT&T-E)	C	No	Inside Pole	150.000 - 8.000	12	No Ice 1/2" Ice	0.000 0.000	0.001 0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
DC/Fiber Line (AT&T-P)	C	No	Inside Pole	150.000 - 8.000	3	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
*** *** ***								
1 1/4 (City-E)	C	No	Inside Pole	150.000 - 8.000	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
*****								
1 5/8 (Verizon-E)	B	No	Inside Pole	140.000 - 8.000	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 5/8 (Sprint-E)	A	No	Inside Pole	130.000 - 8.000	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 5/8 - Outside (MetroPCS-R)	B	No	CaAa (Out Of Face)	120.000 - 8.000	1	No Ice	0.198	0.001
						1/2" Ice	0.298	0.003
						1" Ice	0.398	0.005
						2" Ice	0.598	0.011
						4" Ice	0.998	0.030
1 5/8 - Outside Shielded (MetroPCS-R)	B	No	Inside Pole	120.000 - 8.000	11	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
3/8 - Outside Shielded (MetroPCS-R)	B	No	Inside Pole	120.000 - 8.000	6	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
*****								
*****								
1 1/4" Plate (CaAa) (E-Mod)	C	No	CaAa (Out Of Face)	90.500 - 0.500	1	No Ice	0.208	0.000
						1/2" Ice	0.292	0.000
						1" Ice	0.375	0.000
						2" Ice	0.542	0.000
						4" Ice	0.875	0.000
1" Plate (CaAa) (E-Mod)	C	No	CaAa (Out Of Face)	115.000 - 90.500	1	No Ice	0.167	0.000
						1/2" Ice	0.250	0.000
						1" Ice	0.333	0.000
						2" Ice	0.500	0.000
						4" Ice	0.833	0.000
*****								
MP3-03 (N-Mod)	C	No	CaAa (Out Of Face)	125.000 - 115.000	1	No Ice	0.262	0.000
						1/2" Ice	0.345	0.000
						1" Ice	0.428	0.000
						2" Ice	0.595	0.000
						4" Ice	0.928	0.000

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	150.000-123.500	A	0.000	0.000	0.000	0.000	0.081
		B	0.000	0.000	0.000	0.000	0.206
		C	0.000	0.000	0.000	0.393	0.373
L2	123.500-118.000	A	0.000	0.000	0.000	0.000	0.069
		B	0.000	0.000	0.000	0.396	0.095
		C	0.000	0.000	0.000	1.439	0.077
L3	118.000-96.580	A	0.000	0.000	0.000	0.000	0.267
		B	0.000	0.000	0.000	4.241	0.546
		C	0.000	0.000	0.000	3.855	0.301
L4	96.580-90.000	A	0.000	0.000	0.000	0.000	0.082
		B	0.000	0.000	0.000	1.303	0.168
		C	0.000	0.000	0.000	1.118	0.093
L5	90.000-60.000	A	0.000	0.000	0.000	0.000	0.374
		B	0.000	0.000	0.000	5.940	0.765
		C	0.000	0.000	0.000	6.250	0.422
L6	60.000-47.500	A	0.000	0.000	0.000	0.000	0.156
		B	0.000	0.000	0.000	2.475	0.319
		C	0.000	0.000	0.000	2.604	0.176
L7	47.500-30.000	A	0.000	0.000	0.000	0.000	0.218
		B	0.000	0.000	0.000	3.465	0.446
		C	0.000	0.000	0.000	3.646	0.246
L8	30.000-16.250	A	0.000	0.000	0.000	0.000	0.172
		B	0.000	0.000	0.000	2.723	0.351
		C	0.000	0.000	0.000	2.865	0.193
L9	16.250-0.000	A	0.000	0.000	0.000	0.000	0.103
		B	0.000	0.000	0.000	1.634	0.210
		C	0.000	0.000	0.000	3.281	0.116

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	150.000-123.500	A	0.889	0.000	0.000	0.000	0.000	0.081
		B		0.000	0.000	0.000	0.000	0.206
		C		0.000	0.000	0.000	0.615	0.373
L2	123.500-118.000	A	0.876	0.000	0.000	0.000	0.000	0.069
		B		0.000	0.000	0.000	0.747	0.101
		C		0.000	0.000	0.000	2.242	0.077
L3	118.000-96.580	A	0.864	0.000	0.000	0.000	0.000	0.267
		B		0.000	0.000	0.000	7.941	0.612
		C		0.000	0.000	0.000	6.938	0.301
L4	96.580-90.000	A	0.850	0.000	0.000	0.000	0.000	0.082
		B		0.000	0.000	0.000	2.439	0.188
		C		0.000	0.000	0.000	2.065	0.093
L5	90.000-60.000	A	0.827	0.000	0.000	0.000	0.000	0.374
		B		0.000	0.000	0.000	10.902	0.852
		C		0.000	0.000	0.000	10.385	0.422
L6	60.000-47.500	A	0.795	0.000	0.000	0.000	0.000	0.156
		B		0.000	0.000	0.000	4.463	0.353
		C		0.000	0.000	0.000	4.261	0.176
L7	47.500-30.000	A	0.764	0.000	0.000	0.000	0.000	0.218
		B		0.000	0.000	0.000	6.248	0.495
		C		0.000	0.000	0.000	5.965	0.246

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
L8	30.000-16.250	A	0.750	0.000	0.000	0.000	0.000	0.172
		B		0.000	0.000	0.000	4.785	0.386
		C		0.000	0.000	0.000	4.583	0.193
L9	16.250-0.000	A	0.750	0.000	0.000	0.000	0.000	0.103
		B		0.000	0.000	0.000	2.871	0.232
		C		0.000	0.000	0.000	5.250	0.116

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.000-123.500	-0.021	0.012	-0.031	0.018
L2	123.500-118.000	-0.209	0.214	-0.258	0.301
L3	118.000-96.580	0.021	0.240	0.044	0.374
L4	96.580-90.000	0.031	0.238	0.054	0.378
L5	90.000-60.000	-0.012	0.264	0.017	0.401
L6	60.000-47.500	-0.012	0.268	0.016	0.408
L7	47.500-30.000	-0.012	0.269	0.017	0.413
L8	30.000-16.250	-0.012	0.272	0.015	0.412
L9	16.250-0.000	-0.123	0.208	-0.165	0.317

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod (E)	C	From Leg	0.000 0.000 5.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.500 0.750 1.000 1.500 2.500	0.500 0.750 1.000 1.500 2.500	0.100 0.200 0.300 0.500 0.900
*****									
800 10121 w/ Mount Pipe (AT&T-E)	A	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.112 0.167 0.298 0.675
800 10121 w/ Mount Pipe (AT&T-E)	B	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.112 0.167 0.298 0.675
800 10121 w/ Mount Pipe (AT&T-E)	C	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.685 6.182 6.676 7.695 9.858	4.600 5.351 6.046 7.526 10.832	0.066 0.112 0.167 0.298 0.675

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) CG-PDU-SmPWR (AT&T-E)	C	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.285 1.439 1.601 1.951 2.755	0.319 0.417 0.524 0.764 1.347	0.015 0.023 0.032 0.056 0.136
(2) CG-PDU-SmPWR (AT&T-E)	B	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.285 1.439 1.601 1.951 2.755	0.319 0.417 0.524 0.764 1.347	0.015 0.023 0.032 0.056 0.136
(2) CG-PDU-SmPWR (AT&T-E)	A	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.285 1.439 1.601 1.951 2.755	0.319 0.417 0.524 0.764 1.347	0.015 0.023 0.032 0.056 0.136
(4) LGP21901 (AT&T-E)	A	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.184 0.248 0.322 0.494 0.943	0.006 0.008 0.011 0.022 0.066
(4) LGP21901 (AT&T-E)	B	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.184 0.248 0.322 0.494 0.943	0.006 0.008 0.011 0.022 0.066
(4) LGP21901 (AT&T-E)	C	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.184 0.248 0.322 0.494 0.943	0.006 0.008 0.011 0.022 0.066
860 10025 (AT&T-E)	C	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.163 0.229 0.302 0.476 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
860 10025 (AT&T-E)	B	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.163 0.229 0.302 0.476 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
860 10025 (AT&T-E)	A	From Leg	3.000 0.000 0.000	0.000	151.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.163 0.229 0.302 0.476 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (AT&T-P)	C	From Leg	3.000 0.000 0.000	0.000	151.000	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
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (AT&T-P)	B	From Leg	3.000 0.000 0.000	0.000	151.000	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
(2) AM-X-CD-16-65-00T-RET	A	From Leg	3.000 0.000	0.000	151.000	No Ice 1/2" Ice	8.498 9.149	6.304 7.479	0.074 0.136

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
w/ Mount Pipe			0.000			1" Ice	9.767	8.368	0.210
(AT&T-P)						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
(2) DTMA1819VG12A	C	From Leg	3.000	0.000	151.000	No Ice	1.154	0.445	0.013
(AT&T-P)			0.000			1/2" Ice	1.305	0.563	0.020
			0.000			1" Ice	1.464	0.689	0.029
						2" Ice	1.809	0.968	0.054
						4" Ice	2.602	1.629	0.133
(2) DTMA1819VG12A	B	From Leg	3.000	0.000	151.000	No Ice	1.154	0.445	0.013
(AT&T-P)			0.000			1/2" Ice	1.305	0.563	0.020
			0.000			1" Ice	1.464	0.689	0.029
						2" Ice	1.809	0.968	0.054
						4" Ice	2.602	1.629	0.133
(2) DTMA1819VG12A	A	From Leg	3.000	0.000	151.000	No Ice	1.154	0.445	0.013
(AT&T-P)			0.000			1/2" Ice	1.305	0.563	0.020
			0.000			1" Ice	1.464	0.689	0.029
						2" Ice	1.809	0.968	0.054
						4" Ice	2.602	1.629	0.133
(2) RRUS-11	C	From Leg	3.000	0.000	151.000	No Ice	4.424	1.628	0.055
(AT&T-P)			0.000			1/2" Ice	4.708	1.838	0.081
			0.000			1" Ice	5.001	2.057	0.110
						2" Ice	5.613	2.519	0.179
						4" Ice	6.940	3.549	0.368
(2) RRUS-11	B	From Leg	3.000	0.000	151.000	No Ice	4.424	1.628	0.055
(AT&T-P)			0.000			1/2" Ice	4.708	1.838	0.081
			0.000			1" Ice	5.001	2.057	0.110
						2" Ice	5.613	2.519	0.179
						4" Ice	6.940	3.549	0.368
(2) RRUS-11	A	From Leg	3.000	0.000	151.000	No Ice	4.424	1.628	0.055
(AT&T-P)			0.000			1/2" Ice	4.708	1.838	0.081
			0.000			1" Ice	5.001	2.057	0.110
						2" Ice	5.613	2.519	0.179
						4" Ice	6.940	3.549	0.368
DC6-48-60-18-8F	A	From Leg	3.000	0.000	151.000	No Ice	2.216	2.216	0.020
(AT&T-P)			0.000			1/2" Ice	2.436	2.436	0.039
			0.000			1" Ice	2.664	2.664	0.061
						2" Ice	3.146	3.146	0.116
						4" Ice	4.214	4.214	0.268
Platform Mount [LP 713-1]	C	None		0.000	153.000	No Ice	31.270	31.270	1.510
(AT&T-E)						1/2" Ice	39.680	39.680	1.929
						1" Ice	48.090	48.090	2.348
						2" Ice	64.910	64.910	3.186
						4" Ice	98.550	98.550	4.862
6' x 2' Mount Pipe	C	From Leg	3.000	0.000	153.000	No Ice	1.425	1.425	0.022
(AT&T-E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2' Mount Pipe	B	From Leg	3.000	0.000	153.000	No Ice	1.425	1.425	0.022
(AT&T-E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2' Mount Pipe	A	From Leg	3.000	0.000	153.000	No Ice	1.425	1.425	0.022
(AT&T-E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090

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	4.702	4.702	0.231
*** *** ***									
12' x 3" Omni (City-E)	A	From Leg	3.000 0.000 0.000	0.000	156.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.600 4.833 6.083 8.017 11.048	3.600 4.833 6.083 8.017 11.048	0.020 0.046 0.080 0.172 0.455
10' Yagi (City-E)	A	From Leg	3.000 0.000 0.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.000 3.020 4.040 6.080 10.160	2.000 3.020 4.040 6.080 10.160	0.050 0.070 0.090 0.130 0.210
*****									
6' x 2" Mount Pipe (Verizon-E)	C	From Leg	3.000 0.000 0.000	0.000	140.000	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
6' x 2" Mount Pipe (Verizon-E)	B	From Leg	3.000 0.000 0.000	0.000	140.000	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
6' x 2" Mount Pipe (Verizon-E)	A	From Leg	3.000 0.000 0.000	0.000	140.000	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
(3) MG D3 800TO w/Mount Pipe (Verizon-E)	C	From Leg	3.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.337 3.676 4.023 4.832 6.570	2.158 2.482 2.813 3.498 5.012	0.018 0.037 0.061 0.122 0.304
(3) DB854DG65ESX w/Mount Pipe (Verizon-E)	B	From Leg	3.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.593 7.302 7.894 9.108 11.689	4.412 5.449 6.200 7.827 11.299	0.044 0.093 0.152 0.292 0.694
(3) P65-15-XLH-RR w/Mount Pipe (Verizon-E)	A	From Leg	3.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.075 6.635 7.160 8.245 10.555	3.903 4.708 5.389 6.836 10.060	0.052 0.096 0.149 0.277 0.647
Platform Mount [LP 303-1] (Verizon-E)	C	None		0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.660 18.870 23.080 31.500 48.340	14.660 18.870 23.080 31.500 48.340	1.250 1.481 1.713 2.175 3.101
*****									
(4) DB980F90E-M w/Mount Pipe (Sprint-E)	C	From Leg	3.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.371 4.959 5.471 6.522 8.983	3.954 5.045 5.849 7.492 10.977	0.034 0.071 0.118 0.235 0.593
(4) DB980F90E-M w/Mount Pipe (Sprint-E)	B	From Leg	3.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	4.371 4.959 5.471	3.954 5.045 5.849	0.034 0.071 0.118

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" Ice	6.522	7.492	0.235
						4" Ice	8.983	10.977	0.593
(4) DB980F90E-M w/Mount Pipe (Sprint-E)	A	From Leg	3.000 0.000 0.000	0.000	130.000	No Ice	4.371	3.954	0.034
						1/2" Ice	4.959	5.045	0.071
						1" Ice	5.471	5.849	0.118
						2" Ice	6.522	7.492	0.235
						4" Ice	8.983	10.977	0.593
T-Arm Mount [TA 602-3] (Sprint-E)	C	None		0.000	130.000	No Ice	11.590	11.590	0.774
						1/2" Ice	15.440	15.440	0.990
						1" Ice	19.290	19.290	1.206
						2" Ice	26.990	26.990	1.639
						4" Ice	42.390	42.390	2.503
*****									
*****									
(2) HBX-6516DS-VTM w/Mount Pipe (MetroPCS-R)	C	From Leg	2.000 0.000 0.000	0.000	120.000	No Ice	3.768	3.411	0.032
						1/2" Ice	4.244	4.226	0.064
						1" Ice	4.724	4.917	0.106
						2" Ice	5.746	6.350	0.210
						4" Ice	7.927	9.464	0.530
(2) HBX-6516DS-VTM w/Mount Pipe (MetroPCS-R)	B	From Leg	2.000 0.000 0.000	0.000	120.000	No Ice	3.768	3.411	0.032
						1/2" Ice	4.244	4.226	0.064
						1" Ice	4.724	4.917	0.106
						2" Ice	5.746	6.350	0.210
						4" Ice	7.927	9.464	0.530
(2) HBX-6516DS-VTM w/Mount Pipe (MetroPCS-R)	A	From Leg	2.000 0.000 0.000	0.000	120.000	No Ice	3.768	3.411	0.032
						1/2" Ice	4.244	4.226	0.064
						1" Ice	4.724	4.917	0.106
						2" Ice	5.746	6.350	0.210
						4" Ice	7.927	9.464	0.530
(2) ATM200-A20 (MetroPCS-R)	C	From Leg	2.000 0.000 0.000	0.000	120.000	No Ice	0.218	0.163	0.001
						1/2" Ice	0.292	0.233	0.002
						1" Ice	0.375	0.312	0.005
						2" Ice	0.567	0.494	0.015
						4" Ice	1.054	0.964	0.056
(2) ATM200-A20 (MetroPCS-R)	B	From Leg	2.000 0.000 0.000	0.000	120.000	No Ice	0.218	0.163	0.001
						1/2" Ice	0.292	0.233	0.002
						1" Ice	0.375	0.312	0.005
						2" Ice	0.567	0.494	0.015
						4" Ice	1.054	0.964	0.056
(2) ATM200-A20 (MetroPCS-R)	A	From Leg	2.000 0.000 0.000	0.000	120.000	No Ice	0.218	0.163	0.001
						1/2" Ice	0.292	0.233	0.002
						1" Ice	0.375	0.312	0.005
						2" Ice	0.567	0.494	0.015
						4" Ice	1.054	0.964	0.056
Side Arm Mount [SO 103-3] (MetroPCS-R)	C	None		0.000	120.000	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
*****									

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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 123.5	35.348	38	2.323	0.012
L2	123.5 - 118	23.336	38	1.894	0.004
L3	118 - 96.58	21.211	38	1.795	0.004
L4	101 - 90	15.333	38	1.498	0.002
L5	90 - 60	12.038	38	1.340	0.002
L6	60 - 47.5	5.225	38	0.829	0.001
L7	53 - 30	4.088	38	0.722	0.001
L8	30 - 16.25	1.280	38	0.417	0.000
L9	16.25 - 0	0.368	38	0.218	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.000	12' x 3" Omni	38	35.348	2.323	0.012	10662
155.000	10' Yagi	38	35.348	2.323	0.012	10662
153.000	Platform Mount [LP 713-1]	38	35.348	2.323	0.012	10662
151.000	800 10121 w/ Mount Pipe	38	35.348	2.323	0.012	10662
150.000	Lightning Rod	38	35.348	2.323	0.012	10662
140.000	6' x 2" Mount Pipe	38	30.589	2.167	0.009	5330
130.000	(4) DB980F90E-M w/Mount Pipe	38	26.056	2.005	0.006	2664
120.000	(2) HBX-6516DS-VTM w/Mount Pipe	38	21.968	1.831	0.004	2703

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 123.5	113.812	13	7.483	0.040
L2	123.5 - 118	75.247	13	6.109	0.014
L3	118 - 96.58	68.411	13	5.791	0.012
L4	101 - 90	49.483	13	4.835	0.007
L5	90 - 60	38.865	13	4.327	0.006
L6	60 - 47.5	16.881	13	2.678	0.003
L7	53 - 30	13.210	13	2.332	0.002
L8	30 - 16.25	4.139	13	1.347	0.001
L9	16.25 - 0	1.190	13	0.705	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.000	12' x 3" Omni	13	113.812	7.483	0.040	3425
155.000	10' Yagi	13	113.812	7.483	0.040	3425
153.000	Platform Mount [LP 713-1]	13	113.812	7.483	0.040	3425
151.000	800 10121 w/ Mount Pipe	13	113.812	7.483	0.040	3425
150.000	Lightning Rod	13	113.812	7.483	0.040	3425
140.000	6' x 2" Mount Pipe	13	98.542	6.985	0.028	1711
130.000	(4) DB980F90E-M w/Mount Pipe	13	83.986	6.467	0.019	853
120.000	(2) HBX-6516DS-VTM w/Mount Pipe	13	70.845	5.908	0.013	859

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	150 - 148.675	TP22.58x17.61x0.219	26.500	0.000	0.0	39.000	12.428	-2.092	484.684	0.004
	148.675 - 147.35					39.000	12.603	-2.169	491.512	0.004
	147.35 - 146.025					39.000	12.778	-2.247	498.340	0.005
	146.025 - 144.7					39.000	12.953	-2.327	505.168	0.005
	144.7 - 143.375					39.000	13.128	-2.409	511.996	0.005
	143.375 - 142.05					39.000	13.303	-2.492	518.824	0.005
	142.05 - 140.725					39.000	13.478	-2.577	525.652	0.005
	140.725 - 139.4					39.000	13.653	-3.915	532.480	0.007
	139.4 - 138.075					39.000	13.828	-4.006	539.308	0.007
	138.075 - 136.75					39.000	14.004	-4.092	546.136	0.007
	136.75 - 135.425					39.000	14.179	-4.188	552.964	0.008
	135.425 - 134.1					39.000	14.354	-4.286	559.792	0.008
	134.1 - 132.775					39.000	14.529	-4.386	566.621	0.008
	132.775 - 131.45					39.000	14.704	-4.488	573.449	0.008
	131.45 - 130.125					39.000	14.879	-4.592	580.277	0.008
	130.125 - 128.8					39.000	15.054	-5.506	587.105	0.009
	128.8 - 127.475					39.000	15.229	-5.620	593.933	0.009
	127.475 - 126.15					39.000	15.404	-5.737	600.761	0.010
	126.15 - 124.825					39.000	15.579	-5.857	607.589	0.010
	124.825 - 123.5					39.000	15.754	-5.979	614.417	0.010
L2	123.5 - 122.4	TP23.61x22.58x0.377	5.500	0.000	0.0	31.500	27.196	-6.140	856.677	0.007
	122.4 - 121.3					31.500	27.446	-6.295	864.552	0.007
	121.3 - 120.2					31.500	27.696	-6.450	872.427	0.007
	120.2 - 119.1					31.500	27.946	-6.857	880.302	0.008
	119.1 - 118					31.500	28.196	-7.018	888.177	0.008
L3	118 - 117	TP27.61x23.61x0.474	21.420	0.000	0.0	32.040	35.590	-7.198	1140.290	0.006
	117 - 116					32.040	35.875	-7.376	1149.420	0.006
	116 - 115					32.040	36.160	-7.555	1158.550	0.007
	115 - 114					32.040	36.445	-7.736	1167.680	0.007
	114 - 113					32.040	36.729	-7.918	1176.810	0.007
	113 - 112					32.040	37.014	-8.102	1185.940	0.007
	112 - 111					32.040	37.299	-8.287	1195.070	0.007
	111 - 110					32.040	37.584	-8.473	1204.200	0.007
	110 - 109					32.040	37.869	-8.661	1213.330	0.007
	109 - 108					32.040	38.154	-8.850	1222.460	0.007
	108 - 107					32.040	38.439	-9.041	1231.590	0.007
	107 - 106					32.040	38.724	-9.233	1240.720	0.007
	106 - 105					32.040	39.009	-9.427	1249.850	0.008
	105 - 104					32.040	39.294	-9.621	1258.980	0.008
	104 - 103					32.040	39.579	-9.817	1268.110	0.008
	103 - 102					32.040	39.864	-10.015	1277.240	0.008
	102 - 101					32.040	40.149	-10.214	1286.370	0.008

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 $\frac{P}{P_a}$
	101 - 96.58					32.040	41.409	-5.489	1326.730	0.004
L4	101 - 96.58	TP28.39x25.837x0.57	11.000	0.000	0.0	30.120	48.224	-6.260	1452.520	0.004
	96.58 - 95.4833					30.120	48.691	-12.013	1466.590	0.008
	95.4833 - 94.3867					30.120	49.158	-12.265	1480.650	0.008
	94.3867 - 93.29					30.120	49.625	-12.519	1494.710	0.008
	93.29 - 92.1933					30.120	50.092	-12.775	1508.770	0.008
	92.1933 - 91.0967					30.120	50.559	-13.032	1522.830	0.009
	91.0967 - 90					30.120	51.026	-13.292	1536.900	0.009
L5	90 - 88.5	TP34x28.39x0.598	30.000	0.000	0.0	30.720	54.011	-13.658	1659.220	0.008
	88.5 - 87					30.720	54.551	-14.031	1675.800	0.008
	87 - 85.5					30.720	55.090	-14.408	1692.380	0.009
	85.5 - 84					30.720	55.630	-14.788	1708.960	0.009
	84 - 82.5					30.720	56.170	-15.171	1725.530	0.009
	82.5 - 81					30.720	56.709	-15.558	1742.110	0.009
	81 - 79.5					30.720	57.249	-15.947	1758.690	0.009
	79.5 - 78					30.720	57.789	-16.340	1775.270	0.009
	78 - 76.5					30.720	58.328	-16.737	1791.850	0.009
	76.5 - 75					30.720	58.868	-17.136	1808.430	0.009
	75 - 73.5					30.720	59.408	-17.539	1825.010	0.010
	73.5 - 72					30.720	59.947	-17.945	1841.580	0.010
	72 - 70.5					30.720	60.487	-18.354	1858.160	0.010
	70.5 - 69					30.720	61.027	-18.767	1874.740	0.010
	69 - 67.5					30.720	61.566	-19.183	1891.320	0.010
	67.5 - 66					30.720	62.106	-19.602	1907.900	0.010
	66 - 64.5					30.720	62.646	-20.024	1924.480	0.010
	64.5 - 63					30.720	63.185	-20.450	1941.060	0.011
	63 - 61.5					30.720	63.725	-20.878	1957.630	0.011
	61.5 - 60					30.720	64.265	-21.310	1974.210	0.011
L6	60 - 59	TP36.34x34x0.658	12.500	0.000	0.0	33.720	71.040	-21.628	2395.480	0.009
	59 - 58					33.720	71.437	-21.939	2408.850	0.009
	58 - 57					33.720	71.834	-22.252	2422.230	0.009
	57 - 56					33.720	72.230	-22.567	2435.600	0.009
	56 - 55					33.720	72.627	-22.883	2448.980	0.009
	55 - 54					33.720	73.023	-23.201	2462.350	0.009
	54 - 53					33.720	73.420	-23.520	2475.730	0.010
	53 - 47.5					33.720	75.602	-13.219	2549.290	0.005
L7	53 - 47.5	TP38.98x33.994x0.7	23.000	0.000	0.0	31.860	77.744	-13.424	2476.910	0.005
	47.5 - 46.4706					31.860	78.247	-27.012	2492.940	0.011
	46.4706 - 45.4412					31.860	78.750	-27.362	2508.970	0.011
	45.4412 - 44.4118					31.860	79.253	-27.713	2524.990	0.011
	44.4118 - 43.3824					31.860	79.756	-28.067	2541.020	0.011
	43.3824 - 42.3529					31.860	80.259	-28.422	2557.050	0.011
	42.3529 - 41.3235					31.860	80.762	-28.779	2573.070	0.011
	41.3235 - 40.2941					31.860	81.265	-29.137	2589.100	0.011
	40.2941 - 39.2647					31.860	81.768	-29.498	2605.130	0.011
	39.2647 - 38.2353					31.860	82.271	-29.860	2621.150	0.011
	38.2353 - 37.2059					31.860	82.774	-30.224	2637.180	0.011
	37.2059 - 36.1765					31.860	83.277	-30.590	2653.210	0.012

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	K	K	
	36.1765 - 35.1471					31.860	83.780	-30.958	2669.230	0.012
	35.1471 - 34.1176					31.860	84.283	-31.328	2685.260	0.012
	34.1176 - 33.0882					31.860	84.786	-31.700	2701.290	0.012
	33.0882 - 32.0588					31.860	85.289	-32.073	2717.310	0.012
	32.0588 - 31.0294					31.860	85.792	-32.448	2733.340	0.012
	31.0294 - 30					31.860	86.295	-32.825	2749.370	0.012
L8	30 - 28.9423	TP41.56x38.98x0.677	13.750	0.000	0.0	31.920	83.980	-33.205	2680.630	0.012
	28.9423 - 27.8846					31.920	84.412	-33.587	2694.450	0.012
	27.8846 - 26.8269					31.920	84.845	-33.970	2708.260	0.013
	26.8269 - 25.7692					31.920	85.278	-34.356	2722.080	0.013
	25.7692 - 24.7115					31.920	85.711	-34.743	2735.900	0.013
	24.7115 - 23.6538					31.920	86.144	-35.132	2749.720	0.013
	23.6538 - 22.5962					31.920	86.577	-35.522	2763.540	0.013
	22.5962 - 21.5385					31.920	87.010	-35.914	2777.350	0.013
	21.5385 - 20.4808					31.920	87.443	-36.308	2791.170	0.013
	20.4808 - 19.4231					31.920	87.876	-36.703	2804.990	0.013
	19.4231 - 18.3654					31.920	88.309	-37.100	2818.810	0.013
	18.3654 - 17.3077					31.920	88.741	-37.499	2832.630	0.013
	17.3077 - 16.25					31.920	89.174	-37.900	2846.440	0.013
L9	16.25 - 15.2344	TP44.6x41.56x0.695	16.250	0.000	0.0	32.040	91.916	-38.268	2944.990	0.013
	15.2344 - 14.2188					32.040	92.341	-38.637	2958.620	0.013
	14.2188 - 13.2031					32.040	92.767	-39.008	2972.250	0.013
	13.2031 - 12.1875					32.040	93.192	-39.380	2985.880	0.013
	12.1875 - 11.1719					32.040	93.618	-39.754	2999.510	0.013
	11.1719 - 10.1563					32.040	94.043	-40.130	3013.130	0.013
	10.1563 - 9.14063					32.040	94.468	-40.507	3026.760	0.013
	9.14063 - 8.125					32.040	94.894	-40.886	3040.390	0.013
	8.125 - 7.10938					32.040	95.319	-41.266	3054.020	0.014
	7.10938 - 6.09375					32.040	95.744	-41.648	3067.650	0.014
	6.09375 - 5.07813					32.040	96.170	-42.031	3081.280	0.014
	5.07813 - 4.0625					32.040	96.595	-42.416	3094.910	0.014
	4.0625 - 3.04688					32.040	97.021	-42.803	3108.540	0.014
	3.04688 - 2.03125					32.040	97.446	-43.191	3122.170	0.014

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 $\frac{P}{P_a}$
	2.03125 - 1.01563					32.040	97.871	-43.581	3135.800	0.014
	1.01563 - 0					32.040	98.297	-43.972	3149.430	0.014

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	150 - 148.675	TP22.58x17.61x0.219	22.950	5.161	39.000	0.132	0.000	0.000	39.000	0.000
	148.675 - 147.35		33.166	7.252	39.000	0.186	0.000	0.000	39.000	0.000
	147.35 - 146.025		43.541	9.260	39.000	0.237	0.000	0.000	39.000	0.000
	146.025 - 144.7		54.074	幺ㄱ尊 獬徽浥	39.000	0.287	0.000	0.000	39.000	0.000
	144.7 - 143.375		64.769	13.045	39.000	0.334	0.000	0.000	39.000	0.000
	143.375 - 142.05		75.626	14.832	39.000	0.380	0.000	0.000	39.000	0.000
	142.05 - 140.725		86.647	16.552	39.000	0.424	0.000	0.000	39.000	0.000
	140.725 - 139.4		100.073	18.627	39.000	0.478	0.000	0.000	39.000	0.000
	139.4 - 138.075		115.835	21.015	39.000	0.539	0.000	0.000	39.000	0.000
	138.075 - 136.75		131.734	23.303	39.000	0.598	0.000	0.000	39.000	0.000
	136.75 - 135.425		147.886	25.514	39.000	0.654	0.000	0.000	39.000	0.000
	135.425 - 134.1		164.207	27.640	39.000	0.709	0.000	0.000	39.000	0.000
	134.1 - 132.775		180.698	29.683	39.000	0.761	0.000	0.000	39.000	0.000
	132.775 - 131.45		197.363	31.649	39.000	0.812	0.000	0.000	39.000	0.000
	131.45 - 130.125		214.199	33.541	39.000	0.860	0.000	0.000	39.000	0.000
	130.125 - 128.8		235.175	35.970	39.000	0.922	0.000	0.000	39.000	0.000
	128.8 - 127.475		256.740	38.366	39.000	0.984	0.000	0.000	39.000	0.000
	127.475 - 126.15		278.480	40.670	39.000	1.043	0.000	0.000	39.000	0.000
	126.15 - 124.825		300.395	42.885	39.000	1.100	0.000	0.000	39.000	0.000
	124.825 - 123.5		322.486	45.016	39.000	1.154	0.000	0.000	39.000	0.000
L2	123.5 - 122.4	TP23.61x22.58x0.377	340.973	27.705	31.500	0.880	0.000	0.000	31.500	0.000
	122.4 - 121.3		359.611	28.685	31.500	0.911	0.000	0.000	31.500	0.000
	121.3 - 120.2		378.398	29.637	31.500	0.941	0.000	0.000	31.500	0.000
	120.2 - 119.1		398.835	30.677	31.500	0.974	0.000	0.000	31.500	0.000
	119.1 - 118		419.757	31.712	31.500	1.007	0.000	0.000	31.500	0.000
L3	118 - 117	TP27.61x23.61x0.474	438.911	26.274	32.040	0.820	0.000	0.000	32.040	0.000
	117 - 116		458.191	26.990	32.040	0.842	0.000	0.000	32.040	0.000
	116 - 115		477.600	27.688	32.040	0.864	0.000	0.000	32.040	0.000

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 $\frac{f_{by}}{F_{by}}$
	115 - 114		497.138	28.367	32.040	0.885	0.000	0.000	32.040	0.000
	114 - 113		516.806	29.029	32.040	0.906	0.000	0.000	32.040	0.000
	113 - 112		536.603	29.674	32.040	0.926	0.000	0.000	32.040	0.000
	112 - 111		556.532	30.304	32.040	0.946	0.000	0.000	32.040	0.000
	111 - 110		576.591	30.917	32.040	0.965	0.000	0.000	32.040	0.000
	110 - 109		596.782	31.515	32.040	0.984	0.000	0.000	32.040	0.000
	109 - 108		617.106	32.099	32.040	1.002	0.000	0.000	32.040	0.000
	108 - 107		637.563	32.669	32.040	1.020	0.000	0.000	32.040	0.000
	107 - 106		658.152	33.225	32.040	1.037	0.000	0.000	32.040	0.000
	106 - 105		678.876	33.768	32.040	1.054	0.000	0.000	32.040	0.000
	105 - 104		699.734	34.298	32.040	1.070	0.000	0.000	32.040	0.000
	104 - 103		720.727	34.815	32.040	1.087	0.000	0.000	32.040	0.000
	103 - 102		741.857	35.321	32.040	1.102	0.000	0.000	32.040	0.000
	102 - 101		763.122	35.815	32.040	1.118	0.000	0.000	32.040	0.000
	101 - 96.58		413.146	18.218	32.040	0.569	0.000	0.000	32.040	0.000
L4	101 - 96.58	TP28.39x25.837x0.57	445.803	17.493	30.120	0.581	0.000	0.000	30.120	0.000
	96.58 - 95.4833		883.183	33.987	30.120	1.128	0.000	0.000	30.120	0.000
	95.4833 - 94.3867		907.583	34.259	30.120	1.137	0.000	0.000	30.120	0.000
	94.3867 - 93.29		932.133	34.520	30.120	1.146	0.000	0.000	30.120	0.000
	93.29 - 92.1933		956.850	34.772	30.120	1.154	0.000	0.000	30.120	0.000
	92.1933 - 91.0967		981.733	35.013	30.120	1.162	0.000	0.000	30.120	0.000
	91.0967 - 90		1006.767	35.246	30.120	1.170	0.000	0.000	30.120	0.000
L5	90 - 88.5	TP34x28.39x0.598	1041.275	34.156	30.720	1.112	0.000	0.000	30.720	0.000
	88.5 - 87		1076.075	34.595	30.720	1.126	0.000	0.000	30.720	0.000
	87 - 85.5		1111.167	35.020	30.720	1.140	0.000	0.000	30.720	0.000
	85.5 - 84		1146.550	35.430	30.720	1.153	0.000	0.000	30.720	0.000
	84 - 82.5		1182.233	35.827	30.720	1.166	0.000	0.000	30.720	0.000
	82.5 - 81		1218.208	36.211	30.720	1.179	0.000	0.000	30.720	0.000
	81 - 79.5		1254.483	36.583	30.720	1.191	0.000	0.000	30.720	0.000
	79.5 - 78		1291.058	36.943	30.720	1.203	0.000	0.000	30.720	0.000
	78 - 76.5		1327.933	37.292	30.720	1.214	0.000	0.000	30.720	0.000
	76.5 - 75		1365.117	37.629	30.720	1.225	0.000	0.000	30.720	0.000
	75 - 73.5		1402.600	37.957	30.720	1.236	0.000	0.000	30.720	0.000
	73.5 - 72		1440.383	38.274	30.720	1.246	0.000	0.000	30.720	0.000
	72 - 70.5		1478.483	38.582	30.720	1.256	0.000	0.000	30.720	0.000
	70.5 - 69		1516.883	38.881	30.720	1.266	0.000	0.000	30.720	0.000
	69 - 67.5		1555.592	39.171	30.720	1.275	0.000	0.000	30.720	0.000
	67.5 - 66		1594.617	39.452	30.720	1.284	0.000	0.000	30.720	0.000

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 $\frac{f_{by}}{F_{by}}$
	66 - 64.5		1633.950	39.726	30.720	1.293	0.000	0.000	30.720	0.000
	64.5 - 63		1673.600	39.991	30.720	1.302	0.000	0.000	30.720	0.000
	63 - 61.5		1713.558	40.250	30.720	1.310	0.000	0.000	30.720	0.000
	61.5 - 60		1753.833	40.501	30.720	1.318	0.000	0.000	30.720	0.000
L6	60 - 59	TP36.34x34x0.658	1780.858	37.125	33.720	1.101	0.000	0.000	33.720	0.000
	59 - 58		1808.008	37.270	33.720	1.105	0.000	0.000	33.720	0.000
	58 - 57		1835.283	37.411	33.720	1.109	0.000	0.000	33.720	0.000
	57 - 56		1862.692	37.550	33.720	1.114	0.000	0.000	33.720	0.000
	56 - 55		1890.233	37.686	33.720	1.118	0.000	0.000	33.720	0.000
	55 - 54		1917.900	37.820	33.720	1.122	0.000	0.000	33.720	0.000
	54 - 53		1945.692	37.951	33.720	1.125	0.000	0.000	33.720	0.000
	53 - 47.5		1076.333	19.789	33.720	0.587	0.000	0.000	33.720	0.000
L7	53 - 47.5	TP38.98x33.994x0.7	1024.900	18.994	31.860	0.596	0.000	0.000	31.860	0.000
	47.5 - 46.4706		2130.833	38.979	31.860	1.223	0.000	0.000	31.860	0.000
	46.4706 - 45.4412		2160.558	39.014	31.860	1.225	0.000	0.000	31.860	0.000
	45.4412 - 44.4118		2190.400	39.048	31.860	1.226	0.000	0.000	31.860	0.000
	44.4118 - 43.3824		2220.358	39.080	31.860	1.227	0.000	0.000	31.860	0.000
	43.3824 - 42.3529		2250.450	39.109	31.860	1.228	0.000	0.000	31.860	0.000
	42.3529 - 41.3235		2280.658	39.138	31.860	1.228	0.000	0.000	31.860	0.000
	41.3235 - 40.2941		2310.983	39.164	31.860	1.229	0.000	0.000	31.860	0.000
	40.2941 - 39.2647		2341.442	39.189	31.860	1.230	0.000	0.000	31.860	0.000
	39.2647 - 38.2353		2372.017	39.212	31.860	1.231	0.000	0.000	31.860	0.000
	38.2353 - 37.2059		2402.717	39.234	31.860	1.231	0.000	0.000	31.860	0.000
	37.2059 - 36.1765		2433.542	39.254	31.860	1.232	0.000	0.000	31.860	0.000
	36.1765 - 35.1471		2464.483	39.273	31.860	1.233	0.000	0.000	31.860	0.000
	35.1471 - 34.1176		2495.558	39.290	31.860	1.233	0.000	0.000	31.860	0.000
	34.1176 - 33.0882		2526.758	39.307	31.860	1.234	0.000	0.000	31.860	0.000
	33.0882 - 32.0588		2558.083	39.322	31.860	1.234	0.000	0.000	31.860	0.000
	32.0588 - 31.0294		2589.533	39.336	31.860	1.235	0.000	0.000	31.860	0.000
	31.0294 - 30		2621.117	39.348	31.860	1.235	0.000	0.000	31.860	0.000

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 $\frac{f_{by}}{F_{by}}$
L8	30 - 28.9423	TP41.56x38.98x0.677	2653.683	40.673	31.920	1.274	0.000	0.000	31.920	0.000
	28.9423 - 27.8846		2686.383	40.749	31.920	1.277	0.000	0.000	31.920	0.000
	27.8846 - 26.8269		2719.208	40.824	31.920	1.279	0.000	0.000	31.920	0.000
	26.8269 - 25.7692		2752.158	40.896	31.920	1.281	0.000	0.000	31.920	0.000
	25.7692 - 24.7115		2785.233	40.967	31.920	1.283	0.000	0.000	31.920	0.000
	24.7115 - 23.6538		2818.433	41.036	31.920	1.286	0.000	0.000	31.920	0.000
	23.6538 - 22.5962		2851.758	41.104	31.920	1.288	0.000	0.000	31.920	0.000
	22.5962 - 21.5385		2885.208	41.170	31.920	1.290	0.000	0.000	31.920	0.000
	21.5385 - 20.4808		2918.783	41.234	31.920	1.292	0.000	0.000	31.920	0.000
	20.4808 - 19.4231		2952.492	41.297	31.920	1.294	0.000	0.000	31.920	0.000
	19.4231 - 18.3654		2986.325	41.358	31.920	1.296	0.000	0.000	31.920	0.000
	18.3654 - 17.3077		3020.283	41.418	31.920	1.298	0.000	0.000	31.920	0.000
	17.3077 - 16.25		3054.367	41.477	31.920	1.299	0.000	0.000	31.920	0.000
L9	16.25 - 15.2344	TP44.6x41.56x0.695	3087.217	40.517	32.040	1.265	0.000	0.000	32.040	0.000
	15.2344 - 14.2188		3120.183	40.570	32.040	1.266	0.000	0.000	32.040	0.000
	14.2188 - 13.2031		3153.258	40.621	32.040	1.268	0.000	0.000	32.040	0.000
	13.2031 - 12.1875		3186.450	40.672	32.040	1.269	0.000	0.000	32.040	0.000
	12.1875 - 11.1719		3219.750	40.721	32.040	1.271	0.000	0.000	32.040	0.000
	11.1719 - 10.1563		3253.167	40.770	32.040	1.272	0.000	0.000	32.040	0.000
	10.1563 - 9.14063		3286.700	40.817	32.040	1.274	0.000	0.000	32.040	0.000
	9.14063 - 8.125		3320.350	40.863	32.040	1.275	0.000	0.000	32.040	0.000
	8.125 - 7.10938		3354.117	40.908	32.040	1.277	0.000	0.000	32.040	0.000
	7.10938 - 6.09375		3387.992	40.952	32.040	1.278	0.000	0.000	32.040	0.000
	6.09375 - 5.07813		3421.983	40.995	32.040	1.279	0.000	0.000	32.040	0.000
	5.07813 - 4.0625		3456.092	41.036	32.040	1.281	0.000	0.000	32.040	0.000
	4.0625 - 3.04688		3490.317	41.077	32.040	1.282	0.000	0.000	32.040	0.000
	3.04688 - 2.03125		3524.650	41.117	32.040	1.283	0.000	0.000	32.040	0.000
	2.03125 - 1.01563		3559.108	41.156	32.040	1.285	0.000	0.000	32.040	0.000
	1.01563 - 0		3593.683	41.194	32.040	1.286	0.000	0.000	32.040	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	150 - 148.675	TP22.58x17.61x0.219	7.652	0.616	26.000	0.048	0.780	0.083	26.000	0.003
	148.675 - 147.35		7.770	0.617	26.000	0.048	0.780	0.080	26.000	0.003
	147.35 - 146.025		7.890	0.617	26.000	0.048	0.780	0.078	26.000	0.003
	146.025 - 144.7		8.011	0.618	26.000	0.048	0.780	0.076	26.000	0.003
	144.7 - 143.375		8.133	0.620	26.000	0.048	0.779	0.074	26.000	0.003
	143.375 - 142.05		8.257	0.621	26.000	0.049	0.779	0.072	26.000	0.003
	142.05 - 140.725		8.382	0.622	26.000	0.049	0.779	0.070	26.000	0.003
	140.725 - 139.4		11.836	0.867	26.000	0.068	1.136	0.100	26.000	0.004
	139.4 - 138.075		11.961	0.865	26.000	0.068	1.136	0.097	26.000	0.004
	138.075 - 136.75		12.129	0.866	26.000	0.068	1.958	0.163	26.000	0.006
	136.75 - 135.425		12.256	0.864	26.000	0.068	1.957	0.159	26.000	0.006
	135.425 - 134.1		12.385	0.863	26.000	0.067	1.957	0.155	26.000	0.006
	134.1 - 132.775		12.515	0.861	26.000	0.067	1.956	0.151	26.000	0.006
	132.775 - 131.45		12.645	0.860	26.000	0.067	1.956	0.148	26.000	0.006
	131.45 - 130.125		12.777	0.859	26.000	0.067	1.955	0.144	26.000	0.006
	130.125 - 128.8		16.215	1.077	26.000	0.084	1.954	0.141	26.000	0.005
	128.8 - 127.475		16.346	1.073	26.000	0.084	1.954	0.138	26.000	0.005
	127.475 - 126.15		16.479	1.070	26.000	0.084	1.953	0.135	26.000	0.005
	126.15 - 124.825		16.612	1.066	26.000	0.083	1.952	0.131	26.000	0.005
	124.825 - 123.5		16.746	1.063	26.000	0.083	1.951	0.129	26.000	0.005
L2	123.5 - 122.4	TP23.61x22.58x0.377	16.878	0.621	21.000	0.060	1.951	0.074	21.000	0.004
	122.4 - 121.3		17.015	0.620	21.000	0.060	1.948	0.073	21.000	0.003
	121.3 - 120.2		17.153	0.619	21.000	0.060	1.944	0.071	21.000	0.003
	120.2 - 119.1		18.956	0.678	21.000	0.066	1.941	0.070	21.000	0.003
	119.1 - 118		19.094	0.677	21.000	0.066	1.938	0.069	21.000	0.003
L3	118 - 117	TP27.61x23.61x0.474	19.221	0.540	21.360	0.051	1.934	0.054	21.360	0.003
	117 - 116		19.349	0.539	21.360	0.051	1.933	0.053	21.360	0.002
	116 - 115		19.478	0.539	21.360	0.051	1.932	0.052	21.360	0.002
	115 - 114		19.607	0.538	21.360	0.051	1.931	0.051	21.360	0.002
	114 - 113		19.737	0.537	21.360	0.051	1.929	0.051	21.360	0.002
	113 - 112		19.868	0.537	21.360	0.051	1.928	0.050	21.360	0.002
	112 - 111		19.999	0.536	21.360	0.051	1.927	0.049	21.360	0.002
	111 - 110		20.131	0.536	21.360	0.051	1.926	0.048	21.360	0.002
	110 - 109		20.263	0.535	21.360	0.051	1.924	0.047	21.360	0.002
	109 - 108		20.395	0.535	21.360	0.051	1.923	0.047	21.360	0.002
	108 - 107		20.529	0.534	21.360	0.051	1.922	0.046	21.360	0.002
	107 - 106		20.663	0.534	21.360	0.051	1.920	0.045	21.360	0.002

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 $\frac{f_{vt}}{F_{vt}}$
	106 - 105		20.797	0.533	21.360	0.051	1.919	0.045	21.360	0.002
	105 - 104		20.932	0.533	21.360	0.051	1.918	0.044	21.360	0.002
	104 - 103		21.067	0.532	21.360	0.051	1.916	0.043	21.360	0.002
	103 - 102		21.203	0.532	21.360	0.051	1.915	0.043	21.360	0.002
	102 - 101		21.340	0.532	21.360	0.051	1.914	0.042	21.360	0.002
	101 - 96.58		10.758	0.260	21.360	0.025	0.921	0.019	21.360	0.001
L4	101 - 96.58	TP28.39x25.837x0.57	11.285	0.234	20.080	0.024	0.991	0.018	20.080	0.001
	96.58 - 95.4833		22.180	0.456	20.080	0.046	1.907	0.034	20.080	0.002
	95.4833 - 94.3867		22.326	0.454	20.080	0.046	1.905	0.034	20.080	0.002
	94.3867 - 93.29		22.472	0.453	20.080	0.046	1.904	0.033	20.080	0.002
	93.29 - 92.1933		22.619	0.452	20.080	0.046	1.903	0.032	20.080	0.002
	92.1933 - 91.0967		22.767	0.450	20.080	0.046	1.901	0.032	20.080	0.002
	91.0967 - 90		22.916	0.449	20.080	0.045	1.900	0.031	20.080	0.002
L5	90 - 88.5	TP34x28.39x0.598	23.112	0.428	20.480	0.042	1.899	0.029	20.480	0.001
	88.5 - 87		23.307	0.427	20.480	0.042	1.896	0.028	20.480	0.001
	87 - 85.5		23.503	0.427	20.480	0.042	1.894	0.028	20.480	0.001
	85.5 - 84		23.700	0.426	20.480	0.042	1.891	0.027	20.480	0.001
	84 - 82.5		23.898	0.425	20.480	0.042	1.889	0.027	20.480	0.001
	82.5 - 81		24.097	0.425	20.480	0.042	1.886	0.026	20.480	0.001
	81 - 79.5		24.296	0.424	20.480	0.042	1.883	0.026	20.480	0.001
	79.5 - 78		24.497	0.424	20.480	0.042	1.881	0.025	20.480	0.001
	78 - 76.5		24.698	0.423	20.480	0.042	1.878	0.025	20.480	0.001
	76.5 - 75		24.901	0.423	20.480	0.042	1.875	0.024	20.480	0.001
	75 - 73.5		25.104	0.423	20.480	0.042	1.873	0.024	20.480	0.001
	73.5 - 72		25.308	0.422	20.480	0.042	1.870	0.023	20.480	0.001
	72 - 70.5		25.513	0.422	20.480	0.042	1.867	0.023	20.480	0.001
	70.5 - 69		25.719	0.421	20.480	0.042	1.864	0.022	20.480	0.001
	69 - 67.5		25.926	0.421	20.480	0.042	1.862	0.022	20.480	0.001
	67.5 - 66		26.134	0.421	20.480	0.042	1.859	0.022	20.480	0.001
	66 - 64.5		26.342	0.420	20.480	0.042	1.856	0.021	20.480	0.001
	64.5 - 63		26.552	0.420	20.480	0.042	1.853	0.021	20.480	0.001
	63 - 61.5		26.762	0.420	20.480	0.042	1.851	0.020	20.480	0.001
	61.5 - 60		26.973	0.420	20.480	0.042	1.848	0.020	20.480	0.001
L6	60 - 59	TP36.34x34x0.658	27.096	0.381	22.480	0.034	1.845	0.018	22.480	0.001
	59 - 58		27.225	0.381	22.480	0.034	1.843	0.018	22.480	0.001
	58 - 57		27.354	0.381	22.480	0.034	1.841	0.018	22.480	0.001
	57 - 56		27.484	0.380	22.480	0.034	1.840	0.017	22.480	0.001
	56 - 55		27.613	0.380	22.480	0.034	1.838	0.017	22.480	0.001
	55 - 54		27.744	0.380	22.480	0.034	1.836	0.017	22.480	0.001
	54 - 53		27.874	0.380	22.480	0.034	1.834	0.017	22.480	0.001
	53 - 47.5		14.906	0.197	22.480	0.018	0.941	0.008	22.480	0.000
L7	53 - 47.5	TP38.98x33.994x0.7	13.824	0.178	21.240	0.017	0.892	0.008	21.240	0.000
	47.5 - 46.4706		28.828	0.368	21.240	0.035	1.823	0.016	21.240	0.001
	46.4706 - 45.4412		28.945	0.368	21.240	0.035	1.821	0.015	21.240	0.001
	45.4412 - 44.4118		29.062	0.367	21.240	0.035	1.820	0.015	21.240	0.001
	44.4118 - 43.3824		29.180	0.366	21.240	0.035	1.818	0.015	21.240	0.001
	43.3824 - 42.3529		29.299	0.365	21.240	0.035	1.816	0.015	21.240	0.001
	42.3529 - 41.3235		29.418	0.364	21.240	0.035	1.815	0.015	21.240	0.001
	41.3235 - 40.2941		29.537	0.363	21.240	0.035	1.813	0.014	21.240	0.001

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 $\frac{f_{vt}}{F_{vt}}$
	40.2941 - 39.2647		29.657	0.363	21.240	0.035	1.811	0.014	21.240	0.001
	39.2647 - 38.2353		29.777	0.362	21.240	0.035	1.809	0.014	21.240	0.001
	38.2353 - 37.2059		29.898	0.361	21.240	0.035	1.808	0.014	21.240	0.001
	37.2059 - 36.1765		30.019	0.360	21.240	0.034	1.806	0.014	21.240	0.001
	36.1765 - 35.1471		30.140	0.360	21.240	0.034	1.804	0.013	21.240	0.001
	35.1471 - 34.1176		30.262	0.359	21.240	0.034	1.802	0.013	21.240	0.001
	34.1176 - 33.0882		30.384	0.358	21.240	0.034	1.801	0.013	21.240	0.001
	33.0882 - 32.0588		30.506	0.358	21.240	0.034	1.799	0.013	21.240	0.001
	32.0588 - 31.0294		30.629	0.357	21.240	0.034	1.797	0.013	21.240	0.001
	31.0294 - 30		30.752	0.356	21.240	0.034	1.795	0.013	21.240	0.001
L8	30 - 28.9423	TP41.56x38.98x0.677	30.871	0.368	21.280	0.035	1.793	0.013	21.280	0.001
	28.9423 - 27.8846		30.990	0.367	21.280	0.035	1.792	0.013	21.280	0.001
	27.8846 - 26.8269		31.108	0.367	21.280	0.035	1.790	0.013	21.280	0.001
	26.8269 - 25.7692		31.227	0.366	21.280	0.035	1.788	0.012	21.280	0.001
	25.7692 - 24.7115		31.346	0.366	21.280	0.035	1.786	0.012	21.280	0.001
	24.7115 - 23.6538		31.465	0.365	21.280	0.035	1.785	0.012	21.280	0.001
	23.6538 - 22.5962		31.585	0.365	21.280	0.035	1.783	0.012	21.280	0.001
	22.5962 - 21.5385		31.704	0.364	21.280	0.035	1.781	0.012	21.280	0.001
	21.5385 - 20.4808		31.824	0.364	21.280	0.035	1.779	0.012	21.280	0.001
	20.4808 - 19.4231		31.944	0.364	21.280	0.035	1.777	0.012	21.280	0.001
	19.4231 - 18.3654		32.064	0.363	21.280	0.035	1.776	0.012	21.280	0.001
	18.3654 - 17.3077		32.184	0.363	21.280	0.035	1.774	0.011	21.280	0.001
	17.3077 - 16.25		32.305	0.362	21.280	0.035	1.772	0.011	21.280	0.001
L9	16.25 - 15.2344	TP44.6x41.56x0.695	32.415	0.353	21.360	0.034	1.770	0.011	21.360	0.001
	15.2344 - 14.2188		32.527	0.352	21.360	0.034	1.768	0.011	21.360	0.001
	14.2188 - 13.2031		32.639	0.352	21.360	0.033	1.765	0.011	21.360	0.000
	13.2031 - 12.1875		32.752	0.351	21.360	0.033	1.763	0.011	21.360	0.000
	12.1875 - 11.1719		32.864	0.351	21.360	0.033	1.760	0.010	21.360	0.000
	11.1719 - 10.1563		32.977	0.351	21.360	0.033	1.758	0.010	21.360	0.000
	10.1563 - 9.14063		33.090	0.350	21.360	0.033	1.755	0.010	21.360	0.000
	9.14063 - 8.125		33.203	0.350	21.360	0.033	1.753	0.010	21.360	0.000

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 $\frac{f_{vt}}{F_{vt}}$
	8.125 - 7.10938		33.316	0.350	21.360	0.033	1.750	0.010	21.360	0.000
	7.10938 - 6.09375		33.430	0.349	21.360	0.033	1.748	0.010	21.360	0.000
	6.09375 - 5.07813		33.543	0.349	21.360	0.033	1.745	0.010	21.360	0.000
	5.07813 - 4.0625		33.657	0.348	21.360	0.033	1.743	0.010	21.360	0.000
	4.0625 - 3.04688		33.771	0.348	21.360	0.033	1.740	0.010	21.360	0.000
	3.04688 - 2.03125		33.885	0.348	21.360	0.033	1.737	0.010	21.360	0.000
	2.03125 - 1.01563		33.999	0.347	21.360	0.033	1.735	0.009	21.360	0.000
	1.01563 - 0		34.114	0.347	21.360	0.033	1.732	0.009	21.360	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	150 - 148.675	0.004	0.132	0.000	0.048	0.003	0.137 ✔	1.333	H1-3+VT ✔
	148.675 - 147.35	0.004	0.186	0.000	0.048	0.003	0.191 ✔	1.333	H1-3+VT ✔
	147.35 - 146.025	0.005	0.237	0.000	0.048	0.003	0.243 ✔	1.333	H1-3+VT ✔
	146.025 - 144.7	0.005	0.287	0.000	0.048	0.003	0.292 ✔	1.333	H1-3+VT ✔
	144.7 - 143.375	0.005	0.334	0.000	0.048	0.003	0.340 ✔	1.333	H1-3+VT ✔
	143.375 - 142.05	0.005	0.380	0.000	0.049	0.003	0.386 ✔	1.333	H1-3+VT ✔
	142.05 - 140.725	0.005	0.424	0.000	0.049	0.003	0.430 ✔	1.333	H1-3+VT ✔
	140.725 - 139.4	0.007	0.478	0.000	0.068	0.004	0.486 ✔	1.333	H1-3+VT ✔
	139.4 - 138.075	0.007	0.539	0.000	0.068	0.004	0.548 ✔	1.333	H1-3+VT ✔
	138.075 - 136.75	0.007	0.598	0.000	0.068	0.006	0.607 ✔	1.333	H1-3+VT ✔
	136.75 - 135.425	0.008	0.654	0.000	0.068	0.006	0.663 ✔	1.333	H1-3+VT ✔
	135.425 - 134.1	0.008	0.709	0.000	0.067	0.006	0.718 ✔	1.333	H1-3+VT ✔
	134.1 - 132.775	0.008	0.761	0.000	0.067	0.006	0.770 ✔	1.333	H1-3+VT ✔
	132.775 - 131.45	0.008	0.812	0.000	0.067	0.006	0.821 ✔	1.333	H1-3+VT ✔
	131.45 - 130.125	0.008	0.860	0.000	0.067	0.006	0.869	1.333	H1-3+VT ✔

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
	130.125 - 128.8	0.009	0.922	0.000	0.084	0.005	0.934 ✓	1.333	H1-3+VT ✓
	128.8 - 127.475	0.009	0.984	0.000	0.084	0.005	0.995 ✓	1.333	H1-3+VT ✓
	127.475 - 126.15	0.010	1.043	0.000	0.084	0.005	1.055 ✓	1.333	H1-3+VT ✓
	126.15 - 124.825	0.010	1.100	0.000	0.083	0.005	1.111 ✓	1.333	H1-3+VT ✓
	124.825 - 123.5	0.010	1.154	0.000	0.083	0.005	1.166 ✓	1.333	H1-3+VT ✓
L2	123.5 - 122.4	0.007	0.880	0.000	0.060	0.004	0.888 ✓	1.333	H1-3+VT ✓
	122.4 - 121.3	0.007	0.911	0.000	0.060	0.003	0.919 ✓	1.333	H1-3+VT ✓
	121.3 - 120.2	0.007	0.941	0.000	0.060	0.003	0.949 ✓	1.333	H1-3+VT ✓
	120.2 - 119.1	0.008	0.974	0.000	0.066	0.003	0.983 ✓	1.333	H1-3+VT ✓
	119.1 - 118	0.008	1.007	0.000	0.066	0.003	1.016 ✓	1.333	H1-3+VT ✓
L3	118 - 117	0.006	0.820	0.000	0.051	0.003	0.827 ✓	1.333	H1-3+VT ✓
	117 - 116	0.006	0.842	0.000	0.051	0.002	0.850 ✓	1.333	H1-3+VT ✓
	116 - 115	0.007	0.864	0.000	0.051	0.002	0.871 ✓	1.333	H1-3+VT ✓
	115 - 114	0.007	0.885	0.000	0.051	0.002	0.893 ✓	1.333	H1-3+VT ✓
	114 - 113	0.007	0.906	0.000	0.051	0.002	0.914 ✓	1.333	H1-3+VT ✓
	113 - 112	0.007	0.926	0.000	0.051	0.002	0.934 ✓	1.333	H1-3+VT ✓
	112 - 111	0.007	0.946	0.000	0.051	0.002	0.953 ✓	1.333	H1-3+VT ✓
	111 - 110	0.007	0.965	0.000	0.051	0.002	0.973 ✓	1.333	H1-3+VT ✓
	110 - 109	0.007	0.984	0.000	0.051	0.002	0.992 ✓	1.333	H1-3+VT ✓
	109 - 108	0.007	1.002	0.000	0.051	0.002	1.010 ✓	1.333	H1-3+VT ✓
	108 - 107	0.007	1.020	0.000	0.051	0.002	1.028 ✓	1.333	H1-3+VT ✓
	107 - 106	0.007	1.037	0.000	0.051	0.002	1.045 ✓	1.333	H1-3+VT ✓
	106 - 105	0.008	1.054	0.000	0.051	0.002	1.062 ✓	1.333	H1-3+VT ✓
	105 - 104	0.008	1.070	0.000	0.051	0.002	1.079 ✓	1.333	H1-3+VT ✓
	104 - 103	0.008	1.087	0.000	0.051	0.002	1.095 ✓	1.333	H1-3+VT ✓
	103 - 102	0.008	1.102	0.000	0.051	0.002	1.111 ✓	1.333	H1-3+VT ✓

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
	102 - 101	0.008	1.118	0.000	0.051	0.002	1.126 ✓	1.333	H1-3+VT ✓
	101 - 96.58	0.004	0.569	0.000	0.025	0.001	0.573 ✓	1.333	H1-3+VT ✓
L4	101 - 96.58	0.004	0.581	0.000	0.024	0.001	0.585 ✓	1.333	H1-3+VT ✓
	96.58 - 95.4833	0.008	1.128	0.000	0.046	0.002	1.137 ✓	1.333	H1-3+VT ✓
	95.4833 - 94.3867	0.008	1.137	0.000	0.046	0.002	1.146 ✓	1.333	H1-3+VT ✓
	94.3867 - 93.29	0.008	1.146	0.000	0.046	0.002	1.155 ✓	1.333	H1-3+VT ✓
	93.29 - 92.1933	0.008	1.154	0.000	0.046	0.002	1.163 ✓	1.333	H1-3+VT ✓
	92.1933 - 91.0967	0.009	1.162	0.000	0.046	0.002	1.172 ✓	1.333	H1-3+VT ✓
	91.0967 - 90	0.009	1.170	0.000	0.045	0.002	1.179 ✓	1.333	H1-3+VT ✓
L5	90 - 88.5	0.008	1.112	0.000	0.042	0.001	1.121 ✓	1.333	H1-3+VT ✓
	88.5 - 87	0.008	1.126	0.000	0.042	0.001	1.135 ✓	1.333	H1-3+VT ✓
	87 - 85.5	0.009	1.140	0.000	0.042	0.001	1.149 ✓	1.333	H1-3+VT ✓
	85.5 - 84	0.009	1.153	0.000	0.042	0.001	1.162 ✓	1.333	H1-3+VT ✓
	84 - 82.5	0.009	1.166	0.000	0.042	0.001	1.176 ✓	1.333	H1-3+VT ✓
	82.5 - 81	0.009	1.179	0.000	0.042	0.001	1.188 ✓	1.333	H1-3+VT ✓
	81 - 79.5	0.009	1.191	0.000	0.042	0.001	1.200 ✓	1.333	H1-3+VT ✓
	79.5 - 78	0.009	1.203	0.000	0.042	0.001	1.212 ✓	1.333	H1-3+VT ✓
	78 - 76.5	0.009	1.214	0.000	0.042	0.001	1.224 ✓	1.333	H1-3+VT ✓
	76.5 - 75	0.009	1.225	0.000	0.042	0.001	1.235 ✓	1.333	H1-3+VT ✓
	75 - 73.5	0.010	1.236	0.000	0.042	0.001	1.246 ✓	1.333	H1-3+VT ✓
	73.5 - 72	0.010	1.246	0.000	0.042	0.001	1.256 ✓	1.333	H1-3+VT ✓
	72 - 70.5	0.010	1.256	0.000	0.042	0.001	1.266 ✓	1.333	H1-3+VT ✓
	70.5 - 69	0.010	1.266	0.000	0.042	0.001	1.276 ✓	1.333	H1-3+VT ✓
	69 - 67.5	0.010	1.275	0.000	0.042	0.001	1.286 ✓	1.333	H1-3+VT ✓
	67.5 - 66	0.010	1.284	0.000	0.042	0.001	1.295 ✓	1.333	H1-3+VT ✓
	66 - 64.5	0.010	1.293	0.000	0.042	0.001	1.304 ✓	1.333	H1-3+VT ✓

tnxTower	Job	Page
	84427.002 - BETHANY, CT	25 of 27
BT Engineering 1717 S. Boulder, Suite 300 Tulsa, OK 74145 Phone: (918) 587 - 4630 FAX: (918) 295 - 0265	**Project** 150' Valmont Monopole/ AT&T Co-Locate	**Date** 11:01:47 07/19/12
	Client Nexlinkgs	**Designed by** A. Abbaszadeh

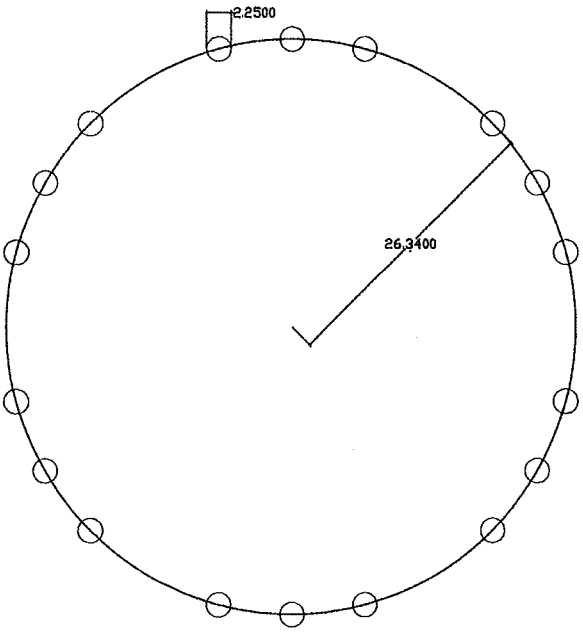
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	64.5 - 63	0.011	1.302	0.000	0.042	0.001	1.313 ✔	1.333	H1-3+VT ✔
	63 - 61.5	0.011	1.310	0.000	0.042	0.001	1.321 ✔	1.333	H1-3+VT ✔
	61.5 - 60	0.011	1.318	0.000	0.042	0.001	1.330 ✔	1.333	H1-3+VT ✔
L6	60 - 59	0.009	1.101	0.000	0.034	0.001	1.110 ✔	1.333	H1-3+VT ✔
	59 - 58	0.009	1.105	0.000	0.034	0.001	1.115 ✔	1.333	H1-3+VT ✔
	58 - 57	0.009	1.109	0.000	0.034	0.001	1.119 ✔	1.333	H1-3+VT ✔
	57 - 56	0.009	1.114	0.000	0.034	0.001	1.123 ✔	1.333	H1-3+VT ✔
	56 - 55	0.009	1.118	0.000	0.034	0.001	1.127 ✔	1.333	H1-3+VT ✔
	55 - 54	0.009	1.122	0.000	0.034	0.001	1.131 ✔	1.333	H1-3+VT ✔
	54 - 53	0.010	1.125	0.000	0.034	0.001	1.135 ✔	1.333	H1-3+VT ✔
	53 - 47.5	0.005	0.587	0.000	0.018	0.000	0.592 ✔	1.333	H1-3+VT ✔
L7	53 - 47.5	0.005	0.596	0.000	0.017	0.000	0.602 ✔	1.333	H1-3+VT ✔
	47.5 - 46.4706	0.011	1.223	0.000	0.035	0.001	1.235 ✔	1.333	H1-3+VT ✔
	46.4706 - 45.4412	0.011	1.225	0.000	0.035	0.001	1.236 ✔	1.333	H1-3+VT ✔
	45.4412 - 44.4118	0.011	1.226	0.000	0.035	0.001	1.237 ✔	1.333	H1-3+VT ✔
	44.4118 - 43.3824	0.011	1.227	0.000	0.035	0.001	1.238 ✔	1.333	H1-3+VT ✔
	43.3824 - 42.3529	0.011	1.228	0.000	0.035	0.001	1.239 ✔	1.333	H1-3+VT ✔
	42.3529 - 41.3235	0.011	1.228	0.000	0.035	0.001	1.240 ✔	1.333	H1-3+VT ✔
	41.3235 - 40.2941	0.011	1.229	0.000	0.035	0.001	1.241 ✔	1.333	H1-3+VT ✔
	40.2941 - 39.2647	0.011	1.230	0.000	0.035	0.001	1.242 ✔	1.333	H1-3+VT ✔
	39.2647 - 38.2353	0.011	1.231	0.000	0.035	0.001	1.242 ✔	1.333	H1-3+VT ✔
	38.2353 - 37.2059	0.011	1.231	0.000	0.035	0.001	1.243 ✔	1.333	H1-3+VT ✔
	37.2059 - 36.1765	0.012	1.232	0.000	0.034	0.001	1.244 ✔	1.333	H1-3+VT ✔
	36.1765 - 35.1471	0.012	1.233	0.000	0.034	0.001	1.245 ✔	1.333	H1-3+VT ✔
	35.1471 - 34.1176	0.012	1.233	0.000	0.034	0.001	1.245 ✔	1.333	H1-3+VT ✔
	34.1176 - 33.0882	0.012	1.234	0.000	0.034	0.001	1.246	1.333	H1-3+VT ✔

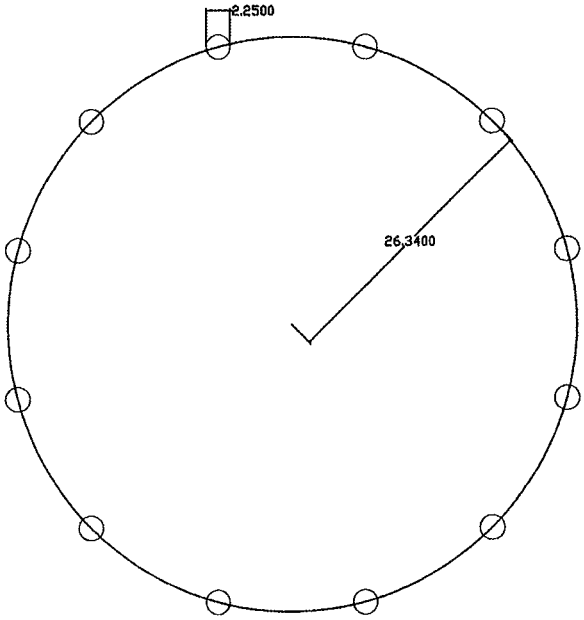
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	33.0882 - 32.0588	0.012	1.234	0.000	0.034	0.001	1.246 ✓	1.333	H1-3+VT ✓
	32.0588 - 31.0294	0.012	1.235	0.000	0.034	0.001	1.247 ✓	1.333	H1-3+VT ✓
	31.0294 - 30	0.012	1.235	0.000	0.034	0.001	1.247 ✓	1.333	H1-3+VT ✓
L8	30 - 28.9423	0.012	1.274	0.000	0.035	0.001	1.287 ✓	1.333	H1-3+VT ✓
	28.9423 - 27.8846	0.012	1.277	0.000	0.035	0.001	1.289 ✓	1.333	H1-3+VT ✓
	27.8846 - 26.8269	0.013	1.279	0.000	0.035	0.001	1.292 ✓	1.333	H1-3+VT ✓
	26.8269 - 25.7692	0.013	1.281	0.000	0.035	0.001	1.294 ✓	1.333	H1-3+VT ✓
	25.7692 - 24.7115	0.013	1.283	0.000	0.035	0.001	1.296 ✓	1.333	H1-3+VT ✓
	24.7115 - 23.6538	0.013	1.286	0.000	0.035	0.001	1.299 ✓	1.333	H1-3+VT ✓
	23.6538 - 22.5962	0.013	1.288	0.000	0.035	0.001	1.301 ✓	1.333	H1-3+VT ✓
	22.5962 - 21.5385	0.013	1.290	0.000	0.035	0.001	1.303 ✓	1.333	H1-3+VT ✓
	21.5385 - 20.4808	0.013	1.292	0.000	0.035	0.001	1.305 ✓	1.333	H1-3+VT ✓
	20.4808 - 19.4231	0.013	1.294	0.000	0.035	0.001	1.307 ✓	1.333	H1-3+VT ✓
	19.4231 - 18.3654	0.013	1.296	0.000	0.035	0.001	1.309 ✓	1.333	H1-3+VT ✓
	18.3654 - 17.3077	0.013	1.298	0.000	0.035	0.001	1.311 ✓	1.333	H1-3+VT ✓
	17.3077 - 16.25	0.013	1.299	0.000	0.035	0.001	1.313 ✓	1.333	H1-3+VT ✓
L9	16.25 - 15.2344	0.013	1.265	0.000	0.034	0.001	1.278 ✓	1.333	H1-3+VT ✓
	15.2344 - 14.2188	0.013	1.266	0.000	0.034	0.001	1.280 ✓	1.333	H1-3+VT ✓
	14.2188 - 13.2031	0.013	1.268	0.000	0.033	0.000	1.281 ✓	1.333	H1-3+VT ✓
	13.2031 - 12.1875	0.013	1.269	0.000	0.033	0.000	1.283 ✓	1.333	H1-3+VT ✓
	12.1875 - 11.1719	0.013	1.271	0.000	0.033	0.000	1.285 ✓	1.333	H1-3+VT ✓
	11.1719 - 10.1563	0.013	1.272	0.000	0.033	0.000	1.286 ✓	1.333	H1-3+VT ✓
	10.1563 - 9.14063	0.013	1.274	0.000	0.033	0.000	1.288 ✓	1.333	H1-3+VT ✓
	9.14063 - 8.125	0.013	1.275	0.000	0.033	0.000	1.289 ✓	1.333	H1-3+VT ✓
	8.125 - 7.10938	0.014	1.277	0.000	0.033	0.000	1.291 ✓	1.333	H1-3+VT ✓
	7.10938 - 6.09375	0.014	1.278	0.000	0.033	0.000	1.292	1.333	H1-3+VT ✓

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
	6.09375 - 5.07813	0.014	1.279	0.000	0.033	0.000	1.293 ✔	1.333	H1-3+VT ✔
	5.07813 - 4.0625	0.014	1.281	0.000	0.033	0.000	1.295 ✔	1.333	H1-3+VT ✔
	4.0625 - 3.04688	0.014	1.282	0.000	0.033	0.000	1.296 ✔	1.333	H1-3+VT ✔
	3.04688 - 2.03125	0.014	1.283	0.000	0.033	0.000	1.297 ✔	1.333	H1-3+VT ✔
	2.03125 - 1.01563	0.014	1.285	0.000	0.033	0.000	1.299 ✔	1.333	H1-3+VT ✔
	1.01563 - 0	0.014	1.286	0.000	0.033	0.000	1.300 ✔	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	150 - 123.5	Pole	TP22.58x17.61x0.219	1	-5.979	819.018	87.5	Pass
L2	123.5 - 118	Pole	TP23.61x22.58x0.377	2	-7.018	1183.940	76.2	Pass
L3	118 - 96.58	Pole	TP27.61x23.61x0.474	3	-10.214	1714.731	84.5	Pass
L4	96.58 - 90	Pole	TP28.39x25.837x0.57	4	-13.292	2048.688	88.5	Pass
L5	90 - 60	Pole	TP34x28.39x0.598	5	-21.310	2631.622	99.7	Pass
L6	60 - 47.5	Pole	TP36.34x34x0.658	6	-23.520	3300.148	85.2	Pass
L7	47.5 - 30	Pole	TP38.98x33.994x0.7	7	-32.825	3664.910	93.6	Pass
L8	30 - 16.25	Pole	TP41.56x38.98x0.677	8	-37.900	3794.304	98.5	Pass
L9	16.25 - 0	Pole	TP44.6x41.56x0.695	9	-43.972	4198.190	97.5	Pass
							Summary	
						Pole (L5)	99.7	Pass
						RATING =	**99.7**	**Pass**





---------- REGIONS ----------

Area: 71.5694
Perimeter: 127.2345
Bounding Box:
Lower Bound: X= -26.5675 Y= -27.4650
Upper Bound: X= 26.5675 Y= 27.4650
Centroid: X= 0.0000 Y= 0.0000
Moments of inertia: X= 24849.9151 Y= 24849.9151
Products of inertia:
XY: 0.0000
Radii of gyration: X= 18.6337 Y= 18.6337

---------- REGIONS ----------

Area: 47.7129
Perimeter: 84.8230
Bounding Box:
Lower Bound: X= -26.5675 Y= -26.5675
Upper Bound: X= 26.5675 Y= 26.5675
Centroid: X= 0.0000 Y= 0.0000
Moments of inertia: X= 16566.6100 Y= 16566.610
Products of inertia:
XY: 0.0000
Radii of gyration: X= 18.6337 Y= 18.6337

$T_{MAX} \Rightarrow \dfrac{3594 \times 12 \times 26.34}{24849.9} \times \dfrac{\pi}{4} \times (2.25)^2 = 181.8^{K}$

$T_{Allow} = 0.33 \times 150 \times 3.98 \times 1\frac{1}{3} = 262.7^{K} \Longrightarrow$ Unity % $= \dfrac{181.8}{262.7} \times 100 = 69.1\%$

M.I (Mod.) $= 24849.9\ in^4$

M.I (Orignal) $= 16566.1\ in^4$

$\dfrac{\text{M.I (Orignal)}}{\text{M.I (Mod)}} = \dfrac{16566.1}{24849.9} = 0.67$

∴ 67% of the total Load will be taken by Orignal bolts.

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#:
Site Name: *Bethany, CT*
App #:

Pole Manufacturer:	*Other*

Reactions		
Moment:	2408	ft-kips
Axial:	29.48	kips
Shear:	22.8	kips

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Data		
Qty:	12	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	52.68	in

Anchor Rod Results

		Rigid
Maximum Rod Tension:	180.4 Kips	Service, ASD
Allowable Tension:	195.0 Kips	Fty*ASIF
Anchor Rod Stress Ratio:	92.5% Pass	

Plate Data		
Diam:	58.67	in
Thick:	2.75	in
Grade:	60	ksi
Single-Rod B-eff:	11.95	in

Base Plate Results

	Flexural Check	Rigid
Base Plate Stress:	31.8 ksi	Service ASD
Allowable Plate Stress:	60.0 ksi	0.75*Fy*ASIF
Base Plate Stress Ratio:	53.1% Pass	Y.L. Length: 28.04

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

Stiffener Results

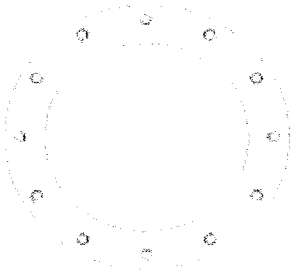
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

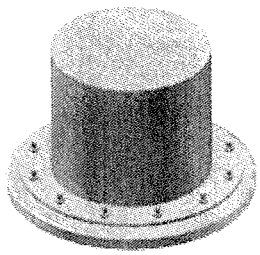
Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Diam:	44.6	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

(Bearing and Stability Checks) Tool for TIA Rev F or G - Application (MP, SST with unitbase)

Site Data

BU#: *Nexlinkgs*
Site Name: *Bethany, CT*
App #: *NA*

Enter Load Factors Below:		
For P (DL)	1.2	<---- Enter Factor
For P,V, and M (WL)	1.35	<---- Enter Factor

Pad & Pier Data		
Base PL Dist. Above Pier:	0	in
Pier Dist. Above Grade:	6	in
Pad Bearing Depth, D:	7.5	ft
Pad Thickness, T:	6	ft
Pad Width=Length, L:	25	ft
Pier Cross Section Shape:	Square	<--Pull Down
Enter Pier Side Width:	6	ft
Concrete Density:	150.0	pcf
Pier Cross Section Area:	36.00	ft^2
Pier Height:	2.00	ft
Soil (above pad) Height:	1.50	ft

Soil Parameters		
Unit Weight, γ:	100.0	pcf
Ultimate Bearing Capacity, qn:	8.00	ksf
Strength Reduct. factor, ϕ:	0.75	
Angle of Friction, Φ:	30.0	degrees
Undrained Shear Strength, Cu:	0.00	ksf
Allowable Bearing: ϕ*qn:	6.00	ksf
Passive Pres. Coeff., Kp	3.00	

Forces/Moments due to Wind and Lateral Soil		
Minimum of (φ*Ultimate Pad Passive Force, Vu):	45.9	kips
Pad Force Location Above D:	2.33	ft
ϕ(Passive Pressure Moment):	107.10	ft-kips
Factored O.T. M(WL), "1.6W":	5219.1	ft-kips
Factored OT (MW-Msoil), M1	5112.00	ft-kips

Resistance due to Foundation Gravity		
Soil Wedge Projection grade, a:	0.87	ft
Sum of Soil Wedges Wt:	3.75	kips
Soil Wedges ecc, K1:	8.32	ft
Ftg+Soil above Pad wt:	661.7	kips
Unfactored (Total ftg-soil Wt):	665.40	kips
1.2D. **No Soil Wedges.**	847.50	kips
0.9D. **With Soil Wedges**	639.00	kips

Resistance due to Cohesion (Vertical)		
ϕ*(1/2*Cu)(Total Vert. Planes)	0.00	kips
Cohesion Force Eccentricity, K2	0.00	ft

Monopole Base Reaction Forces		
TIA Revision:	F	<--Pull Down
Unfactored DL Axial, PD:	44.6	kips
Unfactored WL Axial, PW:	0	kips
Unfactored WL Shear, V:	34	kips
Unfactored WL Moment, M:	3594	ft-kips

Load Factor	Shaft Factored Loads		
1.20	1.2D+1.6W, Pu:	53.52	kips
0.90	0.9D+1.6W, Pu:	40.14	kips
1.35	Vu:	45.9	kips
	Mu:	4851.9	ft-kips

1.2D+1.6W Load Combination, Bearing Results:

(**No Soil Wedges**) [Reaction+Conc+Soil]	847.50	P1="1.2D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil), M1	5112.00	ft-kips

Orthogonal Direction:

ecc1 = M1/P1 = 6.03 ft
Orthogonal qu= 2.66 ksf
qu/ϕ*qn Ratio= **44.41%** Pass

Diagonal Direction:

ecc2 = (0.707M1)/P1 = 4.26 ft
Diagonal qu= 3.12 ksf
qu/ϕ*qn Ratio= **52.07%** Pass

Run <-- Press Upon Completing All Input

Overturning Stability Check

0.9D+1.6W Load Combination, Bearing Results:

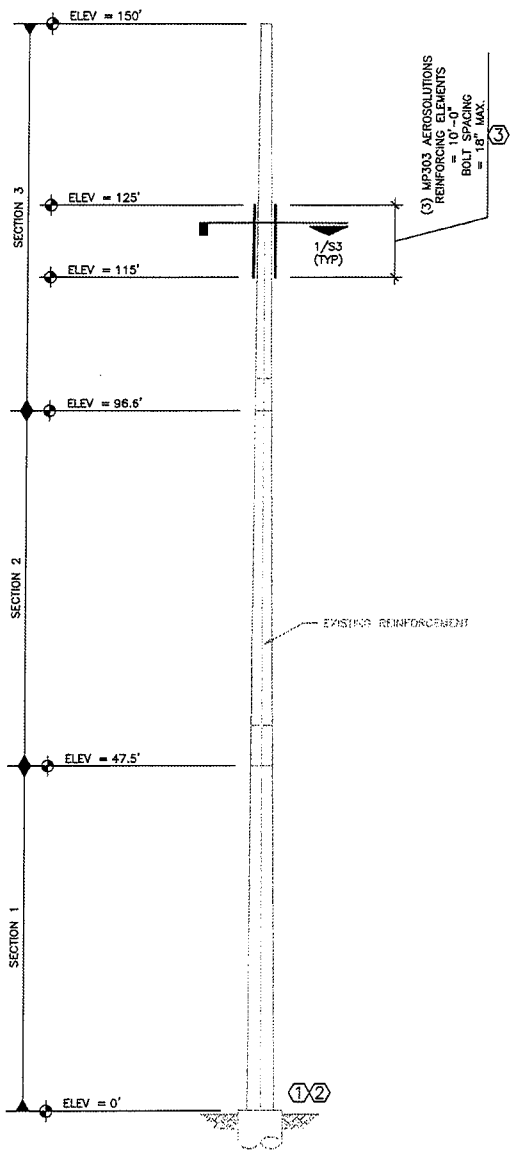
(**w/ Soil Wedges**) [Reaction+Conc+Soil]	639.00	P2="0.9D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil) - 0.9(M of Wedge + M of Cohesion), M2	5083.93	ft-kips

Orthogonal ecc3 = M2/P2 = 7.96 ft
Ortho Non Bearing Length,NBL= 15.91 ft
Orthogonal qu= 2.81 ksf
Diagonal qu= 3.38 ksf

Max Reaction Moment (ft-kips) so that qu=φ*qn = 100% Capacity Rating			
Actual M:	3594.00		
M Orthogonal:	4737.64	**75.86%**	Pass
M Diagonal:	4737.64	**75.86%**	Pass

APPENDIX C

TOWER MODIFICATION DRAWINGS



1 TOWER ELEVATION
SCALE: N.T.S.

ANTENNAS NOT SHOWN FOR CLARITY. EXISTING ANTENNA MOUNTS SHALL BE REMOVED AND MODIFIED AS REQUIRED FOR INSTALLATION OF SHAFT REINFORCIING.

MODIFICATIONS BASED ON STRUCTURAL ANALYSIS FROM B+T ENGINEERING DATED 06/05/12 AND ACCOMPANIED BY ANALYSIS FROM B+T GROUP DATED 07/19/12.

EXISTING MEMBER SCHEDULE

SECTION	NUMBER OF SIDES	THICKNESS	BOTTOM DIAMETER	TOP DIAMETER
1	12	0.375"	44.600"	34.687"
2	12	0.313"	36.340"	26.345"
3	12	0.219"	27.610"	17.610"

TOWER MODIFICATIONS:

1. CONTRACTOR SHALL BUDGET A SITE VISIT TO CHECK CRITICAL DIMENSIONS AND VERIFY UNKNOWN CONDITIONS PRIOR TO STEEL FABRICATION.
2. THE NEW AND EXISTING TRANSMISSION LINES MUST BE DISTRIBUTED AS SHOWN IN THE TX LINE DIST. DIAGRAM RE: DETAIL 2/S1.
3. INSTALL NEW AEROSOLUTIONS REINFORCING ELEMENTS RE: SHEET S3.

* CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR ALL REMOVE AND REPLACE PROCEDURES.
** MODIFICATIONS SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED APPURTENANCES.

GENERAL NOTES

1.1 ALL WORK SHALL COMPLY WITH THE TIA/EIA-222-F STANDARD AS WELL AS ANY OTHER GOVERNING BUILDING CODES.
1.2 FIELD WORK WILL BE DONE AROUND EXISTING COAXIAL CABLE AND EQUIPMENT. ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE.
1.3 A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO ANY FIELD CUTS OR FIELD DRILLED HOLES.
1.4 THE USE OF A GAS TORCH OR WELDER WILL NOT BE PERMITTED ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.
1.5 ALL FIELD CONNECTIONS SHALL BE MADE WITH A325X BOLTS, U.N.O.
1.6 IN LIEU OF TEMPORARY BRACING CONTRACTOR MAY HAVE A STABILITY ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE TOWER IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 mph (3-SEC) PER TIA-1019.

FABRICATION

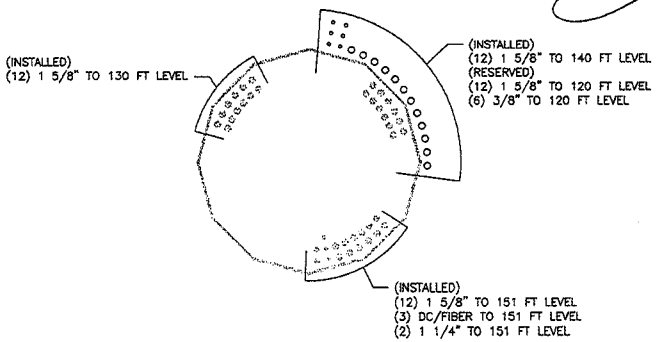
2.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
2.2 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:

	YIELD	ASTM SPECS
A. STEEL SHAPES AND PLATES, U.N.O.	65ksi	A572

2.3 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A153.
2.4 WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E80 SERIES.
2.5 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO B+T GROUP 2 WEEKS PRIOR TO FABRICATION.

KEY NOTES

(#) TOWER MODIFICATION I.D.



2 TX LINE DISTRIBUTION DIAGRAM
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

NEXLINK GLOBAL SERVICES

at&t

ISSUED FOR:

REV	DATE	DESCRIPTION
0	07/19/12	ISSUED FOR CONSTRUCTION

PROJECT NO:	84427.0002
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	VAT
CHECKED BY:	SSC

B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHAD TUTTLE
No. 29924
LICENSED
PROFESSIONAL ENGINEER
7/19/12

BETHANY
61186 (CT2162)
719 AMITY ROAD
BETHANY, CT
EXISTING 150' MONOPOLE

SHEET TITLE
TOWER ELEV., SCHEDULES, TX LINE DIST. DIAGRAM AND GENERAL NOTES

SHEET NUMBER: S1
REVISION: 0

MI CHECKLIST

REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
	PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT.
X	EOR APPROVED SHOP DRAWINGS	FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL PROVIDE APPROVED SHOP DRAWINGS TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	A VISUAL OBSERVATION BY CWI OF A PORTION OF WELDING ON THE PROPOSED STRUCTURAL MEMBERS IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORT (MTR)	MILL CERTIFICATION SHALL BE PROVIDED FOR ALL STEEL AS SPECIFIED IN THE MODIFICATION DRAWINGS AND THIS DOCUMENTATION SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION	CRITICAL SHOP WELDS THAT REQUIRE TESTING ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED WELD INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	NDE REPORT OF MONOPOLE BASE PLATE	A NON-DESTRUCTIVE EXAMINATION OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FOUNDATION INSPECTIONS	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	POST INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED AS SPECIFIED IN THE MODIFICATION DRAWINGS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS INSTALLED AS SPECIFIED IN THE MODIFICATION DRAWINGS FOR INCLUSION IN THE MI REPORT.
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION	A CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST AS NECESSARY ALL FIELD WELDS. A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	EARTHWORK: LIFT AND DENSITY	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED AS SPECIFIED IN THE MODIFICATION DRAWINGS.
N/A	GUY WIRE TENSION REPORT	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT TO THE MI INSPECTOR INDICATING THE TEMPERATURE AND TENSION IN EVERY GUY CABLE AS PART OF PLUMB AND TENSION PROCEDURE FOR INCLUSION IN THE MI REPORT.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACT DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD DUE TO FIELD CONDITIONS.
	POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTORS REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING	POST-INSTALLED ANCHOR RODS SHALL BE TESTED IN ACCORDANCE AS SPECIFIED IN THE MODIFICATION DRAWINGS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI WHICH DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
ADDITIONAL TESTING AND INSPECTIONS:		

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT
N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT

MODIFICATION INSPECTION NOTES:

GENERAL

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT B+T GROUP.

MI INSPECTOR

THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT.

GENERAL CONTRACTOR

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, NEXLINK GLOBAL SERVICES, INC. SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF NEXLINK GLOBAL SERVICES, INC. CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING MI'S

IF THE MODIFICATION INSPECTOR FAILS THE MI ("FAILED MI"), THE GC SHALL WORK WITH NEXLINK GLOBAL SERVICES, INC. TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, WITH NEXLINK GLOBAL SERVICES, INC.'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION
- THE ADDITIONAL COST INCURRED IN THE SECOND SUPERVISION PROCESS WOULD BE BORNE BY THE GENERAL CONTRACTOR.

MI VERIFICATION INSPECTIONS

NEXLINK GLOBAL SERVICES, INC. RESERVES THE RIGHT TO CONDUCT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTION(S) ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - PHOTOS OF MODIFIED SECTIONS INDIVIDUALLY INDICATING ELEVATION
  - FINAL INFIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

NEXLINK GLOBAL SERVICES

at&t

ISSUED FOR:

REV	DATE	DESCRIPTION
0	07/19/12	ISSUED FOR CONSTRUCTION

PROJECT NO:	84427.0002
PROJECT ENG:	ALI ABBASZADEH
DRAWN BY:	VAT
CHECKED BY:	SSC

B+T ENGINEERING, INC.

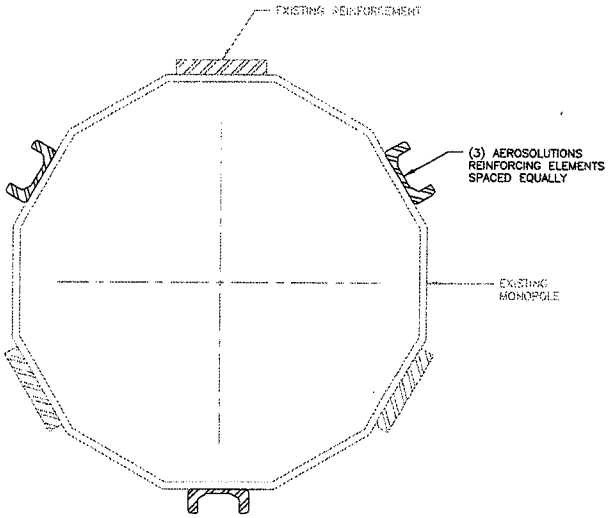
STATE OF CONNECTICUT
ISAAC TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
7/19/12

BETHANY
61186 (CT2162)
719 AMITY ROAD
BETHANY, CT

EXISTING 150'
MONOPOLE

SHEET TITLE
MODIFICATION INSPECTION NOTES AND CHECKLIST

SHEET NUMBER:	REVISION:
S2	0



1 TOWER SECTION (115'-125')
SCALE: N.T.S.

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

NEXLINK GLOBAL SERVICES

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REV	DATE	DESCRIPTION
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PROJECT NO:	84427.0002
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DRAWN BY:	VAT
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B+T ENGINEERING, INC.

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
7/19/12

BETHANY
61186 (CT2162)
719 AMITY ROAD
BETHANY, CT

EXISTING 150'
MONOPOLE

SHEET TITLE
TOWER SECTION
115'-125'

SHEET NUMBER:	REVISION:
S3	0

PROJECT INFORMATION

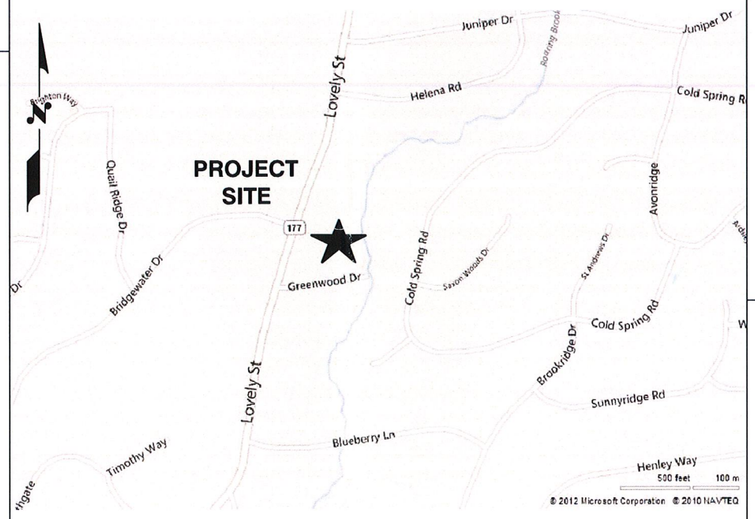
SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
SITE ADDRESS:	224 LOVELY STREET AVON, CT 06001
LATITUDE:	41.799444 N 41° 47' 58.0" N
LONGITUDE:	-72.887861 W -72° 53' 16.3" W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES OR ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT1257
SITE NAME: AVON - 224 LOVELY STREET

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:
HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. 0.3 MI TURN LEFT ONTO CAPITAL BLVD. 0.3 MI TURN LEFT ONTO WEST ST. 0.3 MI TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN. 1.8 MI TAKE EXIT 22N TO MERGE ONTO CT-9 N TOWARD NEW BRITAIN. 11.0 MI TAKE EXIT 32 ON THE LEFT TO MERGE ONTO I-84 W TOWARD WATERBURY. 1.2 MI TAKE EXIT 39 TOWARD CT-4-FARMINGTON. 0.4 MI MERGE ONTO STATE HWY 508. 0.6 MI SLIGHT LEFT ONTO CT-4 WEST. 4.9 MI TURN RIGHT ONTO CT-177 NORTH-CT-4 WEST-MAIN ST.



GENERAL NOTES

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2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

72 HOURS
BEFORE YOU DIG
CALL TOLL FREE 800-922-4455

UNDERGROUND SERVICE ALERT

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT1257
SITE NAME: AVON
224 LOVELY STREET
224 LOVELY STREET
AVON, CT 06001
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	07/23/12	REVISED FOR CONSTRUCTION	DD	DG	SPH
1	04/18/12	ISSUED FOR CONSTRUCTION	PN	DG	SPH
0	03/08/12	ISSUED FOR REVIEW	SF	DG	SPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: SF

STATE OF CONNECTICUT
SAMUEL P. HARRIS
No. 24176
LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE)

JOB NUMBER	DRAWING NUMBER	REV
37457.00	T-1	2

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – NEXLINK
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT AMENDMENTS
ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ'D	REQUIRED		

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SITE NUMBER: CT1257
SITE NAME: AVON
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NO.	DATE	REVISIONS	BY	CHK	APP'D
2	07/23/12	REVISED FOR CONSTRUCTION	DD	DPH	DPH
1	04/18/12	ISSUED FOR CONSTRUCTION	PN	DPH	DPH
0	03/08/12	ISSUED FOR REVIEW	SF	DPH	DPH

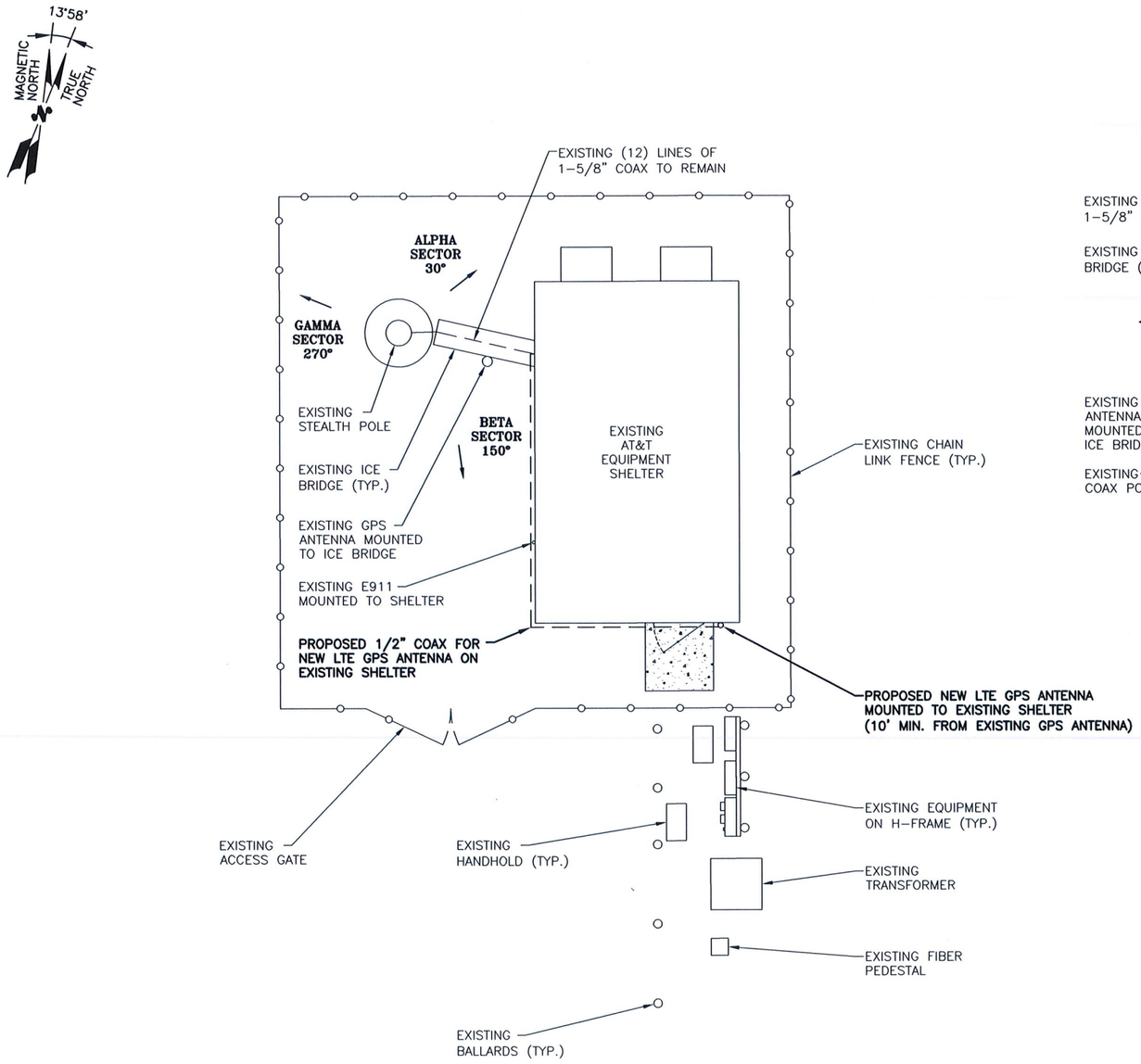
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: SF

STATE OF CONNECTICUT
DANIEL P. HAMM
NO. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES (LTE)

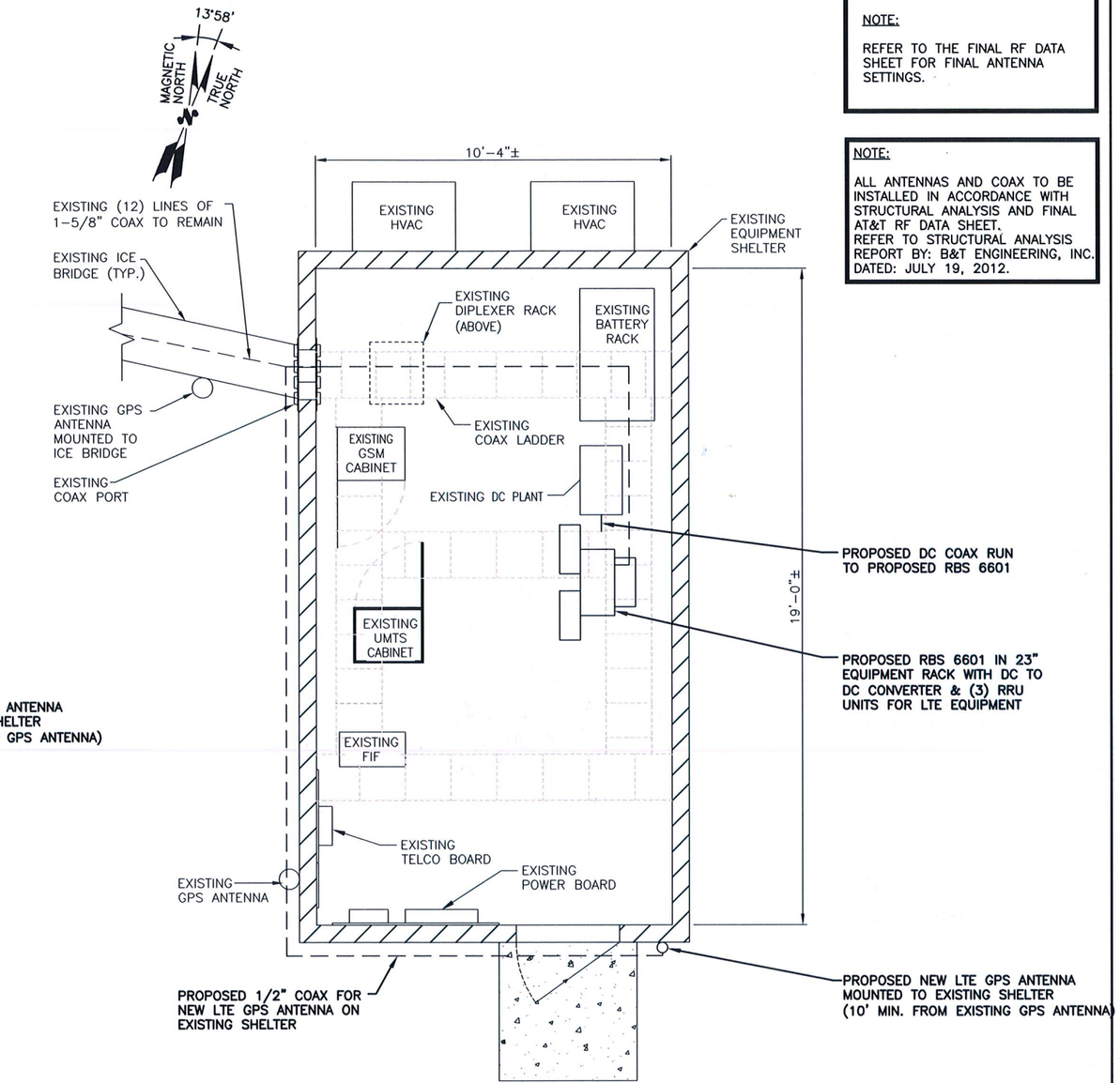
JOB NUMBER: 10257.00
DRAWING NUMBER: GN-1
REV: 2



EQUIPMENT PLAN

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

0 2'-0" 4'-0" 8'-0" 12'-0"



EQUIPMENT PLAN

SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL AT&T RF DATA SHEET.
REFER TO STRUCTURAL ANALYSIS REPORT BY: B&T ENGINEERING, INC. DATED: JULY 19, 2012.

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: SF

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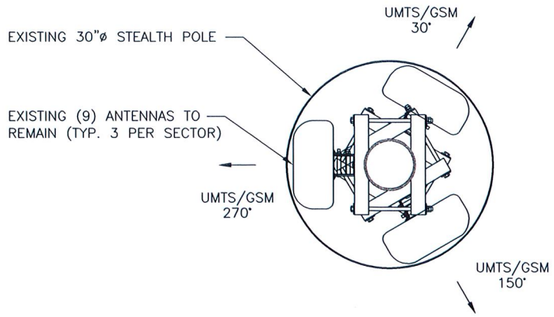
COMPOUND & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
1257.00	A-1	2



EXISTING GSM/UMTS ANTENNA PLAN

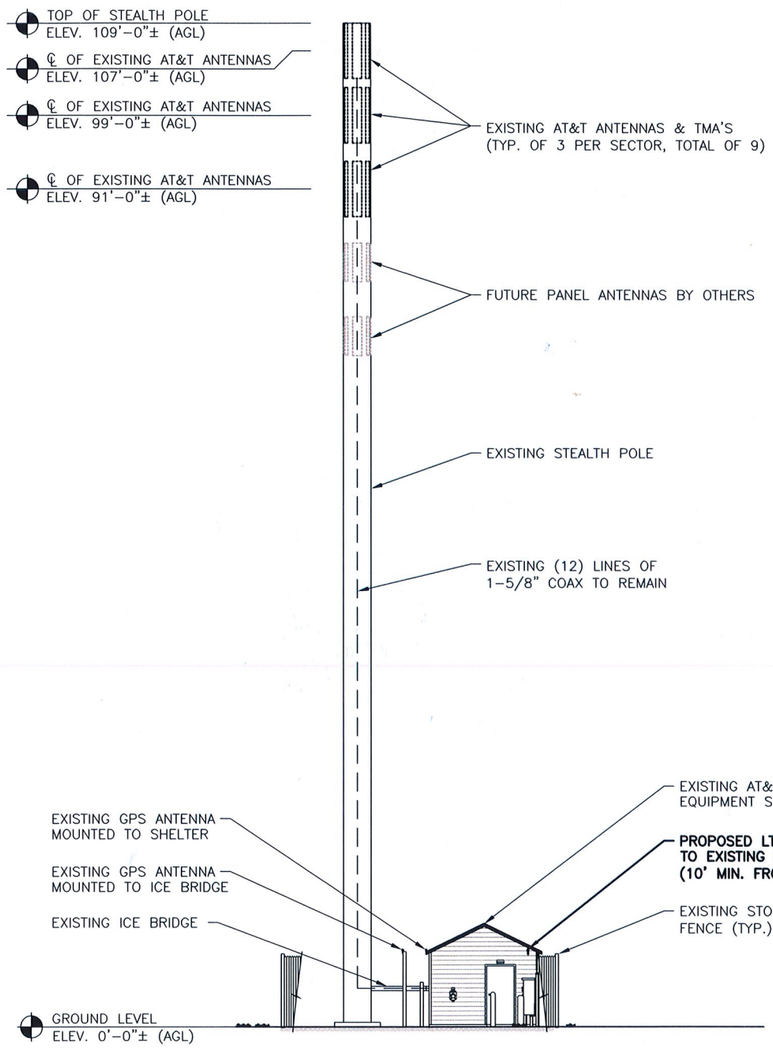
SCALE: N.T.S.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL AT&T RF DATA SHEET.
REFER TO STRUCTURAL ANALYSIS REPORT BY: B&T ENGINEERING, INC. DATED: JULY 19, 2012.



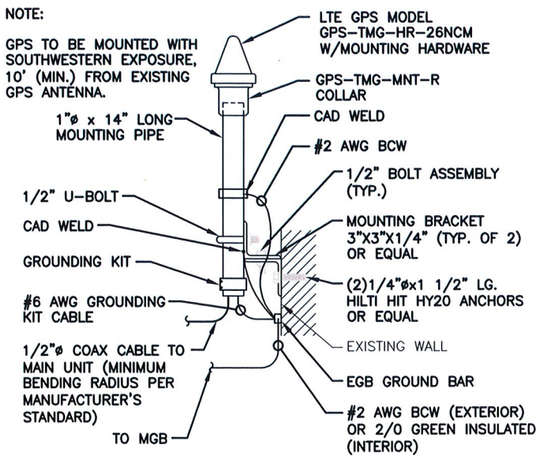
SOUTH ELEVATION

SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

NOTE:

GPS TO BE MOUNTED WITH SOUTHWESTERN EXPOSURE, 10' (MIN.) FROM EXISTING GPS ANTENNA.



GPS MOUNTING DETAIL

SCALE: N.T.S.

NOTES:

1. REFER TO RF CONFIG & SECTOR SCHEMATICS FOR QUANTITY REQUIRED PER SECTOR

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: SF

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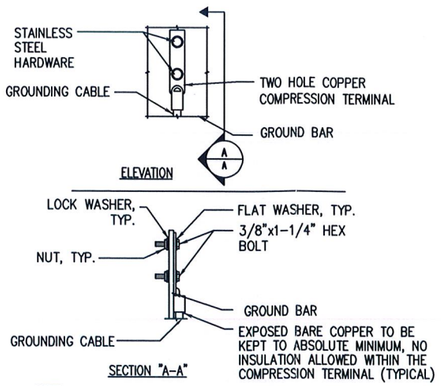
ANTENNA LAYOUT, ELEVATION & DETAILS (LTE)

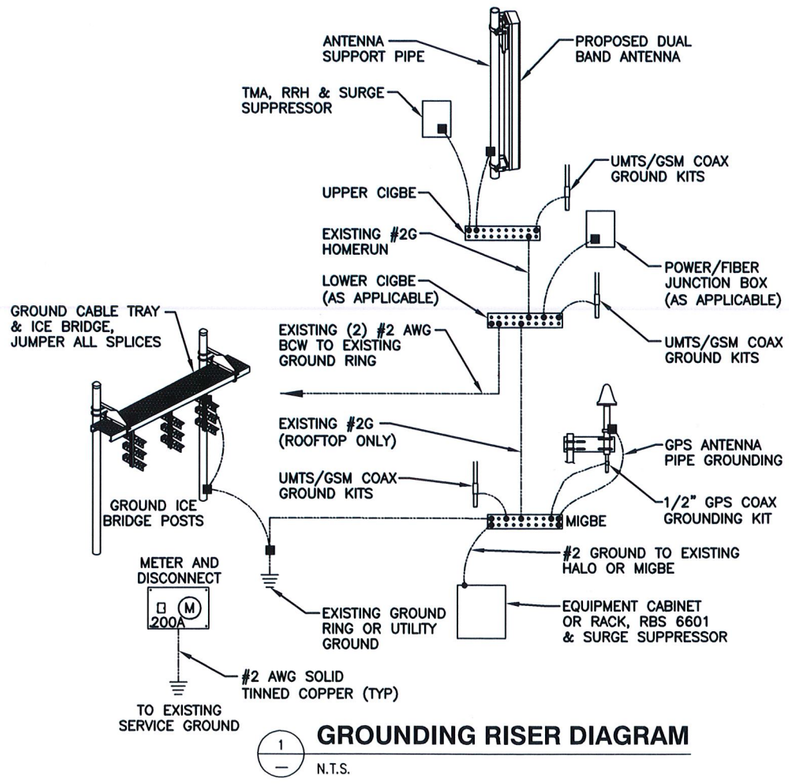
JOB NUMBER	DRAWING NUMBER	REV
1257.00	A-2	2



NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

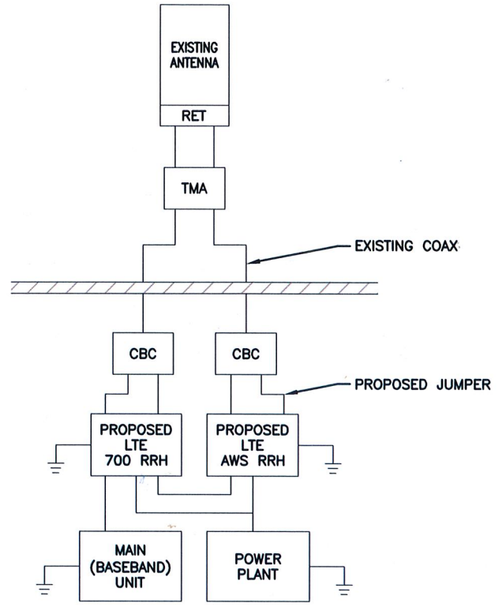
TYPICAL GROUND BAR CONNECTION DETAIL

2 — N.T.S.



GROUNDING RISER DIAGRAM

1 — N.T.S.



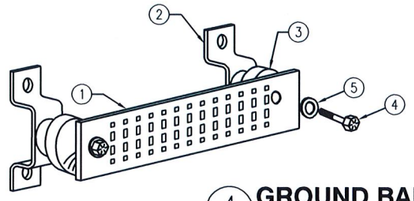
NOTES:

1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S SPECIFICATIONS

PLUMBING DIAGRAM

3 — N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
2	2	———	WALL MTG. BRKT.
3	2	———	INSULATORS
4	4	———	5/8"-11x1" H.H.C.S.
5	4	———	5/8 LOCKWASHER



GROUND BAR - DETAIL

4 — N.T.S.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

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PLUMBING DIAGRAM & GROUNDING DETAILS (LTE)

JOB NUMBER	DRAWING NUMBER	REV
257.00	G-1	2