EM-CING-053-121114

Delivered

cingular
raising the bar

New Cingular Wireless PCS, LLC
154 General Patton Dr.
Naugatuck, CT 06770
Phone: (203)-217-6200
Christopher Bisson
Real Estate Consultant

November 13, 2012

RECEIVED
NOV 14 2012
CONNECTICUT
SITING COUNCIL

Hand Delivered

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

RE: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 5 Tyler drive, North Franklin CT, 06254, know to AT&T as site CT1264.

Dear Ms. Roberts:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the state of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell 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 16-50j-73, a copy of this letter and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

UMTS offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration based on the supplied structural modification plan dated 4/26/2012 requiring the restacking of the existing coaxial cables.

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

1. The height of the overall structure will not be affected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound as all proposed equipment will be located in the existing AT&T equipment shelter.
3. The proposed changes will not increase the noise level at the existing facility by 6 decibels or more.
4. Radio Frequency power density may increase due to the use of one or more GSM channels for UMTS transmissions. Moreover, LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons New Cingular Wireless PCS, LLC respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (203)-217-6200 or email CBisson@Transcendwireless.com with questions concerning this matter.
Thank you for your consideration.

Sincerely,

Christopher Bisson
Real Estate Consultant

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

Calculated Radio Frequency Emissions

CT1264

(Franklin CT)

5 Tyler Drive, North Franklin, CT 06254

(a.k.a. Franklin – 5 Tyler Drive)

October 31, 2012

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List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the lattice tower located at 5 Tyler Drive in North Franklin, CT. The coordinates of the tower are 41° 37' 30.8" N, 72° 9' 22.7" W.

AT&T is proposing the following modifications:

1) Install three multi-band (700/850/1900/2100 MHz) antennas (one per sector) for their LTE network.

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.

3. RF Exposure Prediction Methods

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

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

Where:

EIRP = Effective Isotropic Radiated Power

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

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

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

4. Calculation Results

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

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
AT&T	*168*	*880*	*4*	*296*	*0.0151*	*0.5867*	*2.57%*
AT&T	*168*	*1900*	*2*	*427*	*0.0109*	*1.0000*	*1.09%*
AT&T	*168*	*880*	*1*	*500*	*0.0064*	*0.5867*	*1.09%*
AT&T	*168*	*1900*	*1*	*500*	*0.0064*	*1.0000*	*0.64%*
Town of Franklin	187	33	1	100	*0.0010*	*0.2000*	*0.51%*
Town of Franklin	187	450	1	100	*0.0010*	*0.3000*	*0.34%*
Town of Franklin	187	155.9	1	54	*0.0006*	*0.2000*	*0.28%*
AT&T UMTS	168.7	880	2	649	0.0016	0.5867	0.28%
AT&T UMTS	168.7	1900	2	1387	0.0035	1.0000	0.35%
AT&T LTE	168.7	734	1	1615	0.0020	0.4893	0.42%
AT&T GSM	168.7	880	1	324	0.0004	0.5867	0.07%
AT&T GSM	168.7	1900	4	832	0.0042	1.0000	0.42%
						Total	**2.67%**

Table 1: Carrier Information[1] [2] [3]

[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 7/26/2012. 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] In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

[3] Antenna height listed for AT&T is in reference to the Hudson Design Group Structural Analysis dated September 14, 2012.

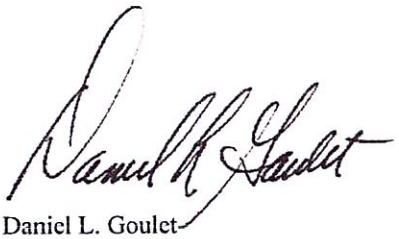
5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **2.67% of the FCC limit**.

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

6. Statement of Certification

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



Daniel L. Goulet
C Squared Systems, LLC

October 31, 2012
Date

Attachment A: References

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

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

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

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

(A) Limits for Occupational/Controlled Exposure[4]

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

(B) Limits for General Population/Uncontrolled Exposure[5]

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

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

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

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

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

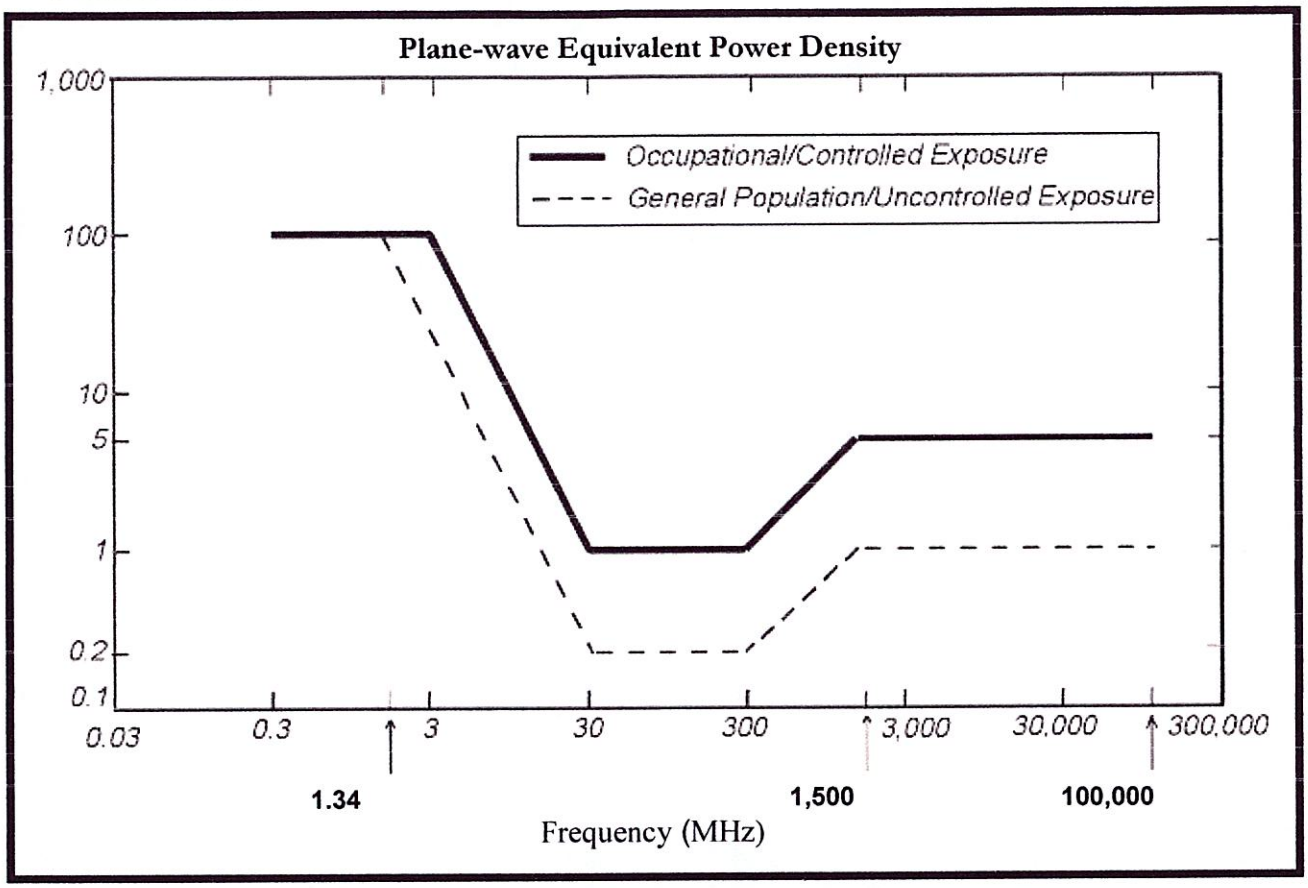
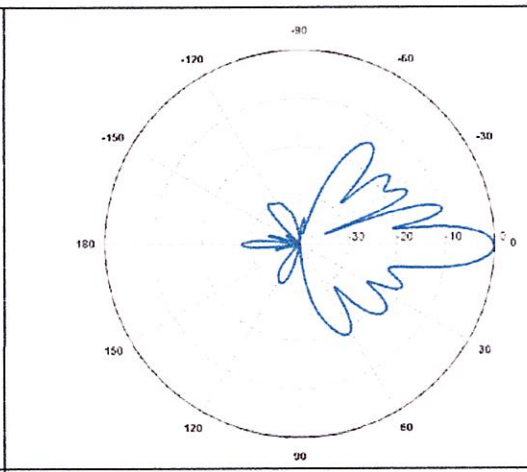


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

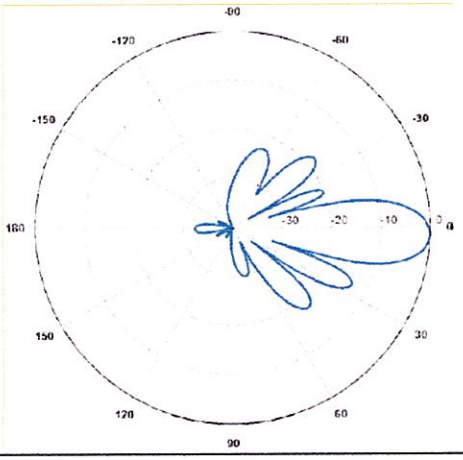
700 MHz

Manufacturer:	Powerwave
Model #:	P65-17-XLH-RR
Frequency Band:	698-806 MHz
Gain:	14.3 dBd
Vertical Beamwidth:	8.4°
Horizontal Beamwidth:	70°
Polarization:	Dual Linear ± 45°
Size L x W x D:	96.0" x 12.0" x 6.0"



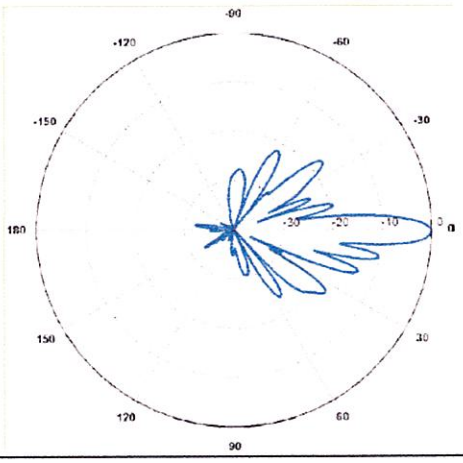
850 MHz

Manufacturer:	Powerwave
Model #:	7750.00
Frequency Band:	824-960 MHz
Gain:	12.1 dBd
Vertical Beamwidth:	14.3°
Horizontal Beamwidth:	69°
Polarization:	Dual Linear ± 45°
Size L x W x D:	55.0" x 11.0" x 5.0"



1900 MHz

Manufacturer:	Powerwave
Model #:	7750.00
Frequency Band:	1710-2170 MHz
Gain:	15.4 dBd
Vertical Beamwidth:	6.6°
Horizontal Beamwidth:	63°
Polarization:	Dual Linear ± 45°
Size L x W x D:	55.0" x 11.0" x 5.0"



STRUCTURAL ANALYSIS REPORT

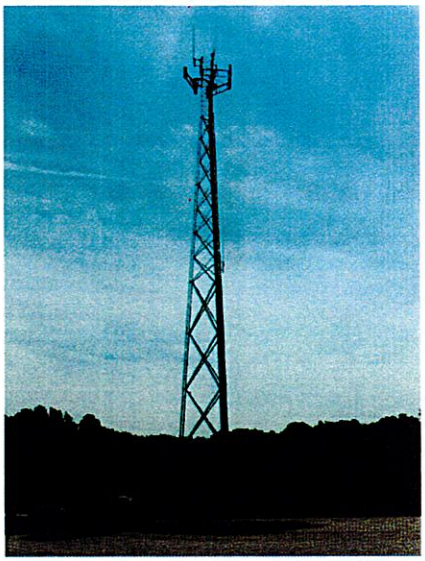
For

CT1264

FRANKLIN CT

5 TYLER DRIVE
NORTH FRANKLIN, CT 06254

Antennas Mounted to the Tower



Prepared for:

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

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

Dated: September 14, 2012

Prepared by:

Hudson Design Group LLC
1600 Osgood Street Building 20 North, Suite 2-101
North Andover, MA 01845
Phone: (978) 557-5553
www.hudsondesigngroupllc.com

STATE OF CONNECTICUT
GI KAI WANG
No. 28220
LICENSED PROFESSIONAL ENGINEER
9/14/12

Hudson Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 180' self supporting tower supporting the proposed AT&T antennas located at elevation 168.7' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

Record drawings of the existing tower prepared by Valmont Industries, Inc., dated February 4, 2010 were available and obtained for our use. This office conducted an on-site visual survey and tower mapping on August 23, 2012 to record dimensional properties of the existing tower and its appurtenances. Attendees included Nick Bestor (HDG – Associate), Bradley Loeb (HDG – Associate) and Nick Marshall (HDG - Associate).

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing tower **is in conformance** with the ANSI/TIA-222-F Standard for the loading considered under the criteria listed in this report. The tower structure is rated at **48.0%** - (Leg at Tower Section T2 from EL.150' to El.170' Controlling).

Hudson Design Group LLC

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Lighting Rod	181.8'	1' Side Mount Standoff
	20' Omni	187.2'	3' Side Mount Standoff
	20' Omni	186.5'	3' Side Mount Standoff
	8' Dipole	183.2'	3' Side Mount Standoff
AT&T	(6) Powerwave 7750 Antennas	168.7'	12' T-Frame
AT&T	(6) TT08-19DB111 TMA	169.5'	12' T-Frame
AT&T	***(3) P65-17-XLH-RR Antennas***	168.7'	12' T-Frame
AT&T	***(6) RRUs***	168.7'	12' T-Frame
AT&T	***Surge Arrestor DC6-48-60-18-8F***	168.7'	Tower Leg
	20' Omni	100.5'	3' Side Mount Standoff

Proposed AT&T Appurtenances shown in Bold.

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(12) 1 5/8" Cables	168.7'	Tower Leg
AT&T	***Fiber Cable***	168.7'	Tower Leg
AT&T	***(2) DC Power Cables***	168.7'	Tower Leg

Proposed AT&T Coax Cables shown in Bold.

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Legs	**48.0 %**	150 – 170	PASS	**Controlling**
Diagonals	47.4 %	150 – 170	PASS	
Top Girt	5.9 %	150 – 170	PASS	
Bottom Girt	6.6 %	150 – 170	PASS	

Hudson Design Group LLC

DESIGN CRITERIA:

1. EIA/TIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

   County: New London
   Wind Load: 85 mph (fastest mile)
   105 mph (3 second gust)
   Nominal Ice Thickness: 0.5 inch

2. Approximate height above grade to proposed antennas: 168.7'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.

2. The tower and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

3. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

4. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

5. The foundation of the tower was not checked due to lack of information. As-built foundation drawings and geotechnical report would be required to determine whether the foundation is capable of supporting the proposed loadings.

Hudson Design Group LLC

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas and RRHs be mounted on the existing T-frame supported by the tower; the proposed surge arrestor be mounted on the tower leg.

Reference HDG's Latest Construction Drawings for all component and connection requirements (attached).

Hudson Design Group LLC

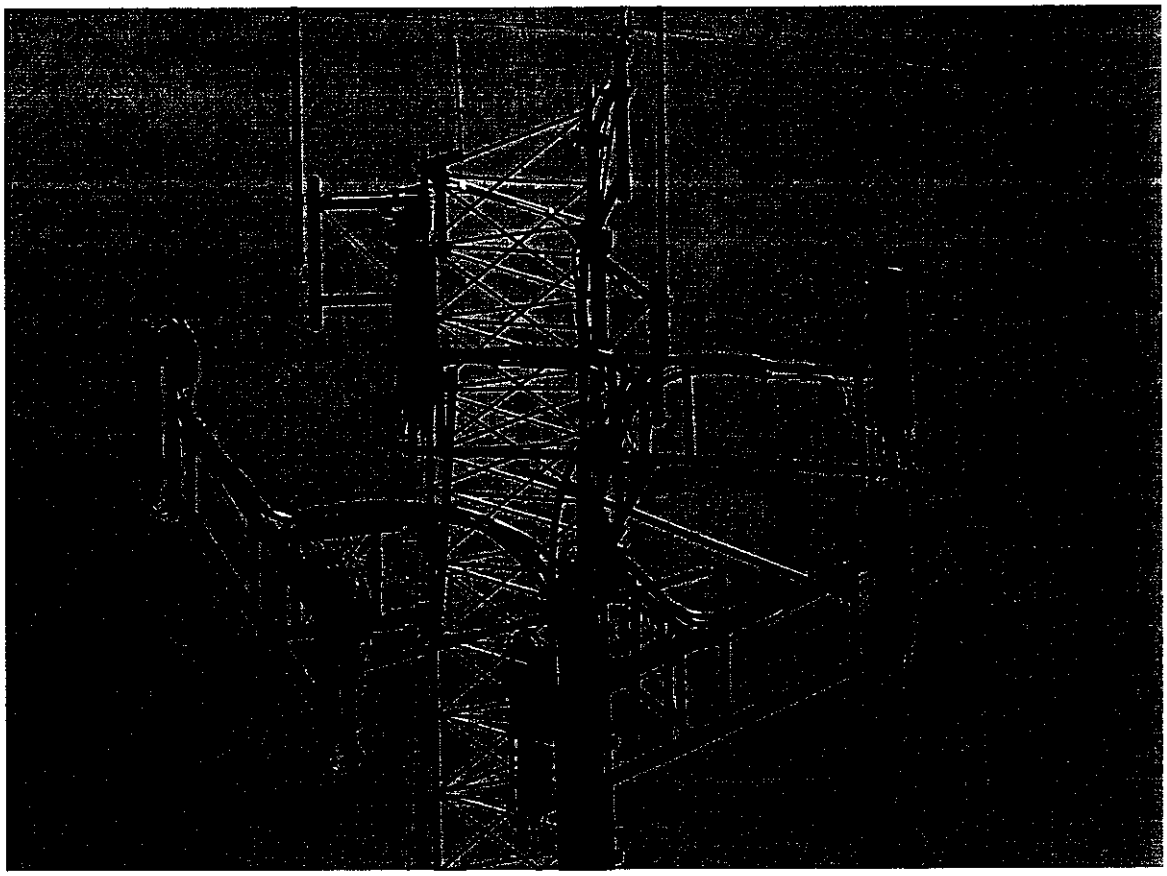
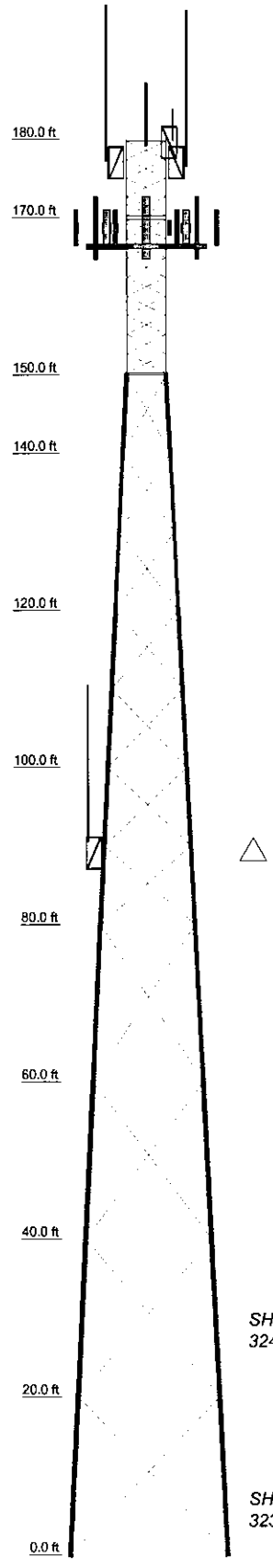


Photo 1: Photo illustrating the Tower with Appurtenances shown.

Hudson Design Group LLC

CALCULATIONS



Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Legs	SR 1 3/4												A	Pirod 105217	Pirod 105218		Pirod 105219		Pirod 105220 (CT1264)	Pirod 105221 (CT1264)
Leg Grade	A572-50																			
Diagonals	SR 7/8												B	L3x3x3/16	L3x3x5/16		2L3 1/2x3 1/2x1/4			
Diagonal Grade	A572-50															A36				
Top Girts	SR 7/8												L3x3x3/16			N.A.				
Bottom Girts	SR 7/8															N.A.				
Face Width (ft)	5					6		8		10		12		14		16		18		20
# Panels @ (ft)	4 @ 2.375				8 @ 2.4375			7 @ 10								4 @ 20				
Weight (lb) 31410.8	578.6				1098.8			1234.4		2016.3		2758.5		3246.3		4349.0		4843.8	5460.4	5541.7

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Omni 3"x20'	187.2	(2) Powerwave 7750 w/mount pipe (ATI - Existing)	168.7
Omni 3"x20'	186.5	Powerwave P65-17-XLH-RR w/mount pipe (ATI - Proposed)	168.7
8' Dipole	183.2	Powerwave P65-17-XLH-RR w/mount pipe (ATI - Proposed)	168.7
Lightning Rod	181.8	Powerwave P65-17-XLH-RR w/mount pipe (ATI - Proposed)	168.7
1' Side Mount Standoff	179.6	(2) Ericsson RRU (ATI - Proposed)	168.7
3' Side Mount Standoff	177	(2) Ericsson RRU (ATI - Proposed)	168.7
3' Side Mount Standoff	177	(2) Ericsson RRU (ATI - Proposed)	168.7
3' Side Mount Standoff	177	Surge Arrestor (DC6-48-60-18-8F) w/mount pipe (ATI - Proposed)	168.7
(2) Powerwave TT08-19DB111-001 (ATI - Existing)	169.5	PiROD 12' T-Frame (ATI - Existing)	166.7
(2) Powerwave TT08-19DB111-001 (ATI - Existing)	169.5	PiROD 12' T-Frame (ATI - Existing)	166.7
(2) Powerwave TT08-19DB111-001 (ATI - Existing)	169.5	PiROD 12' T-Frame (ATI - Existing)	166.7
(2) Powerwave 7750 w/mount pipe (ATI - Existing)	168.7	Omni 3"x20'	100.5
(2) Powerwave 7750 w/mount pipe (ATI - Existing)	168.7	3' Side Mount Standoff (T - Mobile)	89.1

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirod 105245	B	L2 1/2x2 1/2x3/16

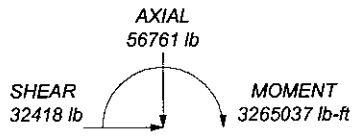
MATERIAL STRENGTH

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

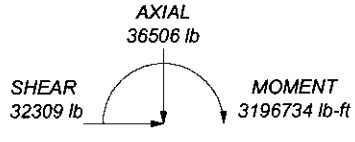
TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 48%

MAX. CORNER REACTIONS AT BASE:
DOWN: 207416 lb
UPLIFT: -168516 lb
SHEAR: 20879 lb



TORQUE 27717 lb-ft
74 mph WIND - 0.5000 in ICE



TORQUE 32302 lb-ft
REACTIONS - 85 mph WIND

Hudson Design Group, LLC
1600 Osgood Street, Building 20 North, Suite 2-101
North Andover, MA 01845
Phone: (978) 557-5553
FAX: (978) 226-5586

Job: *CT 1264 North Franklin, CT*		
Project: *180 ft Self Supporting Tower*		
Client: AT&T	Drawn by: kw	App'd:
Code: TIA/EIA-222-F	Date: 09/14/12	Scale: N
Path: C:\Users\kwang\Documents\Hudson\AAA\CT 1264 - SST (AT&T)\CT 1264\CT 1264.eri		Dwg No.

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 5.00 ft at the top and 20.00 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New London County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Tower Section Geometry

Tower Section	*Tower Elevation*	*Assembly Database*	*Description*	*Section Width*	*Number of Sections*	*Section Length*
	ft			*ft*		*ft*
T1	180.00-170.00			5.00	1	10.00
T2	170.00-150.00			5.00	1	20.00
T3	150.00-140.00			5.00	1	10.00
T4	140.00-120.00			6.00	1	20.00
T5	120.00-100.00			8.00	1	20.00
T6	100.00-80.00			10.00	1	20.00
T7	80.00-60.00			12.00	1	20.00
T8	60.00-40.00			14.00	1	20.00
T9	40.00-20.00			16.00	1	20.00
T10	20.00-0.00			18.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	*Tower Elevation*	*Diagonal Spacing*	*Bracing Type*	*Has K Brace End Panels*	*Has Horizontals*	*Top Girt Offset*	*Bottom Girt Offset*
	ft	*ft*				*in*	*in*
T1	180.00-170.00	2.38	X Brace	No	No	3.0000	3.0000
T2	170.00-150.00	2.44	X Brace	No	No	3.0000	3.0000
T3	150.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T4	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T5	120.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T6	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T7	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T8	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T9	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T10	20.00-0.00	20.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.00-170.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 170.00-150.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 150.00-140.00	Truss Leg	Pirod 105245	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 140.00-120.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T5 120.00-100.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 100.00-80.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T7 80.00-60.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T8 60.00-40.00	Truss Leg	Pirod 105220 (CT1264)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T9 40.00-20.00	Truss Leg	Pirod 105221 (CT1264)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)
T10 20.00-0.00	Truss Leg	Pirod 105221 (CT1264)	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 180.00-170.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 170.00-150.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 150.00-140.00	Equal Angle	L3x3x3/16	A36 (36 ksi)	Pipe		A36 (36 ksi)

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
7/8	C	No	Ar (Leg)	177.00 - 6.00	3	3	1.1100	1.1100		0.54
1 5/8 (AT&T - existing)	C	No	Ar (Leg)	168.70 - 6.00	12	6	1.8000	1.8000		1.04
7/8 **********	C	No	Af (Leg)	89.00 - 6.00	1	1	1.1100	1.1100		0.54

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
FB-L98B-002 (AT&T - proposed)	C	No	Ar (Leg)	168.70 - 6.00	1	1	0.4000	0.4000		0.25
WR-VG122ST-BRDA (AT&T - proposed)	C	No	Ar (Leg)	168.70 - 6.00	2	2	0.4000	0.4000		0.25

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Lightning Rod	B	From Leg	1.00 0.00 0.00	0.0000	181.80	No Ice 1/2" Ice	0.75 1.25	0.75 1.25	10.00 40.00
1' Side Mount Standoff	B	From Leg	0.50 0.00 0.00	0.0000	179.60	No Ice 1/2" Ice	1.00 1.50	1.00 1.50	30.00 50.00
3' Side Mount Standoff	A	From Leg	1.50 0.00 0.00	0.0000	177.00	No Ice 1/2" Ice	1.90 3.30	1.90 3.30	40.00 70.00
3' Side Mount Standoff	B	From Leg	1.50 0.00 0.00	0.0000	177.00	No Ice 1/2" Ice	1.90 3.30	1.90 3.30	40.00 70.00
3' Side Mount Standoff	C	From Leg	1.50 0.00 0.00	0.0000	177.00	No Ice 1/2" Ice	1.90 3.30	1.90 3.30	40.00 70.00
8' Dipole	A	From Leg	3.00 0.00 0.00	0.0000	183.20	No Ice 1/2" Ice	2.40 3.19	2.40 3.19	25.00 42.51
Omni 3"x20'	B	From Leg	3.00 0.00 0.00	0.0000	186.50	No Ice 1/2" Ice	6.00 8.03	6.00 8.03	50.00 93.17
Omni 3"x20'	C	From Leg	3.00 0.00 0.00	0.0000	187.20	No Ice 1/2" Ice	6.00 8.03	6.00 8.03	50.00 93.17
**********									
PiROD 12' T-Frame (AT&T - Existing)	A	From Leg	2.50 0.00 0.00	0.0000	166.70	No Ice 1/2" Ice	12.20 17.60	12.20 17.60	360.00 490.00
PiROD 12' T-Frame (AT&T - Existing)	B	From Leg	2.50 0.00 0.00	0.0000	166.70	No Ice 1/2" Ice	12.20 17.60	12.20 17.60	360.00 490.00
PiROD 12' T-Frame (AT&T - Existing)	C	From Leg	2.50 0.00 0.00	0.0000	166.70	No Ice 1/2" Ice	12.20 17.60	12.20 17.60	360.00 490.00
(2) Powerwave 7750 w/mount pipe (AT&T - Existing)	A	From Leg	4.50 0.00 0.00	0.0000	168.70	No Ice 1/2" Ice	6.25 6.80	4.33 5.18	60.90 107.00
(2) Powerwave 7750 w/mount pipe (AT&T - Existing)	B	From Leg	4.50 0.00 0.00	0.0000	168.70	No Ice 1/2" Ice	6.25 6.80	4.33 5.18	60.90 107.00
(2) Powerwave 7750 w/mount pipe (AT&T - Existing)	C	From Leg	4.50 0.00 0.00	0.0000	168.70	No Ice 1/2" Ice	6.25 6.80	4.33 5.18	60.90 107.00
(2) Powerwave	A	From Leg	4.50	0.0000	169.50	No Ice	0.92	0.75	22.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
TT08-19DB111-001			0.00			1/2" Ice	1.06	0.88	29.63
(AT&T - Existing)			0.00						
(2) Powerwave	B	From Leg	4.50	0.0000	169.50	No Ice	0.92	0.75	22.00
TT08-19DB111-001			0.00			1/2" Ice	1.06	0.88	29.63
(AT&T - Existing)			0.00						
(2) Powerwave	C	From Leg	4.50	0.0000	169.50	No Ice	0.92	0.75	22.00
TT08-19DB111-001			0.00			1/2" Ice	1.06	0.88	29.63
(AT&T - Existing)			0.00						
**********									
Powerwave P65-17-XLH-RR	A	From Leg	4.50	0.0000	168.70	No Ice	11.75	9.39	122.11
w/mount pipe			0.00			1/2" Ice	12.47	10.90	209.23
(AT&T - Proposed)			0.00						
Powerwave P65-17-XLH-RR	B	From Leg	4.50	0.0000	168.70	No Ice	11.75	9.39	122.11
w/mount pipe			0.00			1/2" Ice	12.47	10.90	209.23
(AT&T - Proposed)			0.00						
Powerwave P65-17-XLH-RR	C	From Leg	4.50	0.0000	168.70	No Ice	11.75	9.39	122.11
w/mount pipe			0.00			1/2" Ice	12.47	10.90	209.23
(AT&T - Proposed)			0.00						
(2) Ericsson RRU	A	From Leg	4.50	0.0000	168.70	No Ice	2.07	1.08	44.00
(AT&T - Proposed)			0.00			1/2" Ice	2.26	1.23	58.64
			0.00						
(2) Ericsson RRU	B	From Leg	4.50	0.0000	168.70	No Ice	2.07	1.08	44.00
(AT&T - Proposed)			0.00			1/2" Ice	2.26	1.23	58.64
			0.00						
(2) Ericsson RRU	C	From Leg	4.50	0.0000	168.70	No Ice	2.07	1.08	44.00
(AT&T - Proposed)			0.00			1/2" Ice	2.26	1.23	58.64
			0.00						
Surge Arrestor	B	From Leg	0.50	0.0000	168.70	No Ice	2.45	2.45	38.25
(DC6-48-60-18-8F) w/mount			0.00			1/2" Ice	2.95	2.95	64.62
pipe			0.00						
(AT&T - Proposed)									
**********									
3' Side Mount Standoff	C	From Leg	1.50	0.0000	89.10	No Ice	1.90	1.90	40.00
(T - Mobile)			0.00			1/2" Ice	3.30	3.30	70.00
			0.00						
Omni 3"x20'	C	From Leg	3.00	0.0000	100.50	No Ice	6.00	6.00	50.00
			0.00			1/2" Ice	8.03	8.03	93.17
			0.00						

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 90 deg - No Ice
4	Dead+Wind 180 deg - No Ice
5	Dead+Ice+Temp
6	Dead+Wind 0 deg+Ice+Temp
7	Dead+Wind 90 deg+Ice+Temp
8	Dead+Wind 180 deg+Ice+Temp
9	Dead+Wind 0 deg - Service

Comb. No.	Description
10	Dead+Wind 90 deg - Service
11	Dead+Wind 180 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	8	114229.17	7176.75	-6533.31
	Max. H_x	4	103241.69	8019.20	-7235.99
	Max. H_z	7	-140484.59	-15558.71	7577.79
	Min. Vert	3	-143943.62	-14314.32	6724.61
	Min. H_x	7	-140484.59	-15558.71	7577.79
	Min. H_z	4	103241.69	8019.20	-7235.99
Leg B	Max. Vert	7	179554.66	-15105.30	-7228.24
	Max. H_x	6	-77098.46	8692.98	5672.77
	Max. H_z	6	-77098.46	8692.98	5672.77
	Min. Vert	2	-80843.09	7526.55	4927.00
	Min. H_x	3	168792.39	-16043.16	-7668.96
	Min. H_z	3	168792.39	-16043.16	-7668.96
Leg A	Max. Vert	6	207416.28	-834.93	19748.00
	Max. H_x	4	-168516.05	878.40	-18194.07
	Max. H_z	2	196730.32	-941.98	20857.28
	Min. Vert	4	-168516.05	878.40	-18194.07
	Min. H_x	7	17691.09	-1055.19	-349.55
	Min. H_z	8	-168155.71	734.62	-19819.68

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	36506.17	0.00	-0.00	8807.77	14532.91	-0.00
Dead+Wind 0 deg - No Ice	36506.17	-0.00	-32309.01	-3196700.66	14620.20	-32301.53
Dead+Wind 90 deg - No Ice	36506.17	31407.96	-0.00	8856.37	-3127360.15	19213.72
Dead+Wind 180 deg - No Ice	36506.17	-0.00	31107.61	3129552.16	14611.62	30807.16
Dead+Ice+Temp	56761.16	0.00	-0.00	21243.98	35329.52	-0.06
Dead+Wind 0 deg+Ice+Temp	56761.16	-0.00	-32418.24	-3264844.72	35417.91	-27717.29
Dead+Wind 90 deg+Ice+Temp	56761.16	31719.20	-0.00	21292.07	-3200392.47	16804.66
Dead+Wind 180 deg+Ice+Temp	56761.16	0.00	31486.19	3240252.99	35414.78	26733.93
Dead+Wind 0 deg - Service	36506.17	0.00	-11179.59	-1100395.42	14588.03	-11178.68
Dead+Wind 90 deg - Service	36506.17	10867.81	-0.00	8837.55	-1072601.96	6647.44
Dead+Wind 180 deg - Service	36506.17	0.00	10763.88	1088672.92	14571.26	10661.21

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 170	3.559	11	0.2003	0.0372
T2	170 - 150	3.139	11	0.1986	0.0354
T3	150 - 140	2.324	11	0.1673	0.0323
T4	140 - 120	1.976	9	0.1535	0.0273
T5	120 - 100	1.384	9	0.1211	0.0201
T6	100 - 80	0.911	9	0.0951	0.0140
T7	80 - 60	0.555	9	0.0675	0.0100
T8	60 - 40	0.302	9	0.0459	0.0069
T9	40 - 20	0.140	9	0.0286	0.0043
T10	20 - 0	0.034	9	0.0141	0.0020

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
187.20	Omni 3"x20'	11	3.559	0.2003	0.0372	406675
186.50	Omni 3"x20'	11	3.559	0.2003	0.0372	406675
183.20	8' Dipole	11	3.559	0.2003	0.0372	406675
181.80	Lightning Rod	11	3.559	0.2003	0.0372	406675
179.60	1' Side Mount Standoff	11	3.542	0.2003	0.0371	406675
177.00	3' Side Mount Standoff	11	3.433	0.2005	0.0363	406675
169.50	(2) Powerwave TT08-19DB111-001	11	3.118	0.1982	0.0354	510584
168.70	(2) Powerwave 7750 w/mount pipe	11	3.084	0.1975	0.0354	Inf
166.70	PiROD 12' T-Frame	11	3.000	0.1953	0.0354	251875
100.50	Omni 3"x20'	9	0.922	0.0958	0.0141	40276
89.10	3' Side Mount Standoff	9	0.703	0.0799	0.0116	43988

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	180 - 170	Leg	1 3/4	3	-3345.02	69961.30	4.8	Pass
T2	170 - 150	Leg	1 3/4	36	-33129.40	68975.15	48.0	Pass
T3	150 - 140	Leg	Pirod 105245	91	28992.70	212004.31	20.8	Pass
T4	140 - 120	Leg	Pirod 105217	105	-63520.40	184672.48	34.4	Pass
T5	120 - 100	Leg	Pirod 105218	120	-87890.40	258238.08	34.0	Pass
T6	100 - 80	Leg	Pirod 105218	135	-112714.00	258238.08	43.6	Pass
T7	80 - 60	Leg	Pirod 105219	150	-125801.00	308224.25	40.8	Pass
T8	60 - 40	Leg	Pirod 105220 (CT1264)	159	-153578.00	390259.73	39.4	Pass
T9	40 - 20	Leg	Pirod 105221 (CT1264)	168	-173269.00	482026.11	35.9	Pass
T10	20 - 0	Leg	Pirod 105221 (CT1264)	177	-197521.00	482026.11	41.0	Pass
T1	180 - 170	Diagonal	7/8	11	-640.44	6801.57	9.4	Pass
T2	170 - 150	Diagonal	7/8	44	-3192.84	6735.45	47.4	Pass
T3	150 - 140	Diagonal	L2 1/2x2 1/2x3/16	101	-4368.44	11339.12	38.5	Pass
T4	140 - 120	Diagonal	L3x3x3/16	107	-4771.57	15208.86	31.4	Pass
T5	120 - 100	Diagonal	L3x3x3/16	122	-4681.04	12531.43	37.4	Pass

tnxTower	Job: CT 1264 North Franklin, CT	Page: 7 of 7
Hudson Design Group, LLC 1600 Osgood Street, Building 20 North, Suite 2-101 North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 226-5586	Project: 180 ft Self Supporting Tower	Date: 09:34:01 09/14/12
	Client: AT&T	Designed by: kw

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T6	100 - 80	Diagonal	L3x3x5/16	146	-5745.68	17753.03	32.4	Pass
T7	80 - 60	Diagonal	2L3 1/2x3 1/2x1/4	155	-9658.57	38995.58	24.8	Pass
T8	60 - 40	Diagonal	2L3 1/2x3 1/2x1/4	161	-8417.40	35505.39	23.7	Pass
T9	40 - 20	Diagonal	2L3 1/2x3 1/2x1/4	170	-9367.13	32209.94	29.1	Pass
T10	20 - 0	Diagonal	2L3 1/2x3 1/2x1/4	182	-9663.96	29164.30	33.1	Pass
T1	180 - 170	Top Girt	7/8	4	-107.23	3445.04	3.1	Pass
T2	170 - 150	Top Girt	7/8	37	-201.88	3445.04	5.9	Pass
T3	150 - 140	Top Girt	L3x3x3/16	94	-37.42	16945.10	0.2	Pass
T1	180 - 170	Bottom Girt	7/8	7	-168.33	3445.04	4.9	Pass
T2	170 - 150	Bottom Girt	7/8	40	-228.43	3445.04	6.6	Pass
							Summary	
						Leg (T2)	48.0	Pass
						Diagonal (T2)	47.4	Pass
						Top Girt (T2)	5.9	Pass
						Bottom Girt (T2)	6.6	Pass
						RATING =	**48.0**	**Pass**

PROJECT INFORMATION

SCOPE OF WORK: TELECOMMUNICATIONS FACILITY UPGRADE (LTE):
1. INSTALL (3) NEW LTE ANTENNAS, (6) RRH'S, (1) SURGE ARRESTOR, (1) FIBER LINE, (2) DC POWER LINES & (1) GPS ANTENNA
2. INSTALL (1) LTE 6601 CABINET

SITE ADDRESS: 5 TYLER DRIVE
NORTH FRANKLIN, CT 06254

LATITUDE: 41.62522 N (41° 37' 30.8" N)
LONGITUDE: 72.15631 W (72° 09' 22.7" W)

CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY

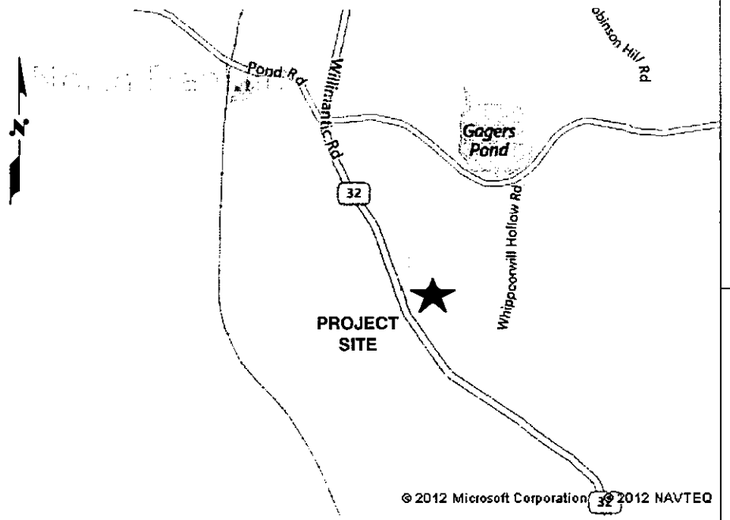
at&t

SITE NUMBER: CT1264
SITE NAME: FRANKLIN CT

DRAWING INDEX

VICINITY MAP

DIRECTION TO SITE:
START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI TURN LEFT ONTO CAPITOL BLVD. 0.2 MI TURN LEFT ONTO WEST ST. 0.2 MI TAKE RAMP LEFT FOR I-91 N. 4.5 MI AT EXIT 25, TAKE RAMP RIGHT FOR CT-3 NORTH TOWARD GLASTONBURY. 2.4 MI TAKE RAMP RIGHT FOR CT-2 EAST TOWARD NORWICH. 31.3 MI AT EXIT 27, TAKE RAMP RIGHT FOR CT-32 NORTH TOWARD WILLIMANTIC / YANTIC. 0.2 MI TURN BACK ON CT-32. 5.5 MI TURN RIGHT ONTO TYLER DR. 74 FT ARRIVE AT 5 TYLER DR, NORTH FRANKLIN, CT 06254.



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.

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455 OR DIAL 811
UNDERGROUND SERVICE ALERT

Hudson Design Group LLC
1600 OSGOOD STREET
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N. ANDOVER, MA 01845
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NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT1264
SITE NAME: FRANKLIN CT

5 TYLER DRIVE
NORTH FRANKLIN, CT 06254
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/12/12	ISSUED FOR CONSTRUCTION	DD	DC	DPH
0	08/01/12	ISSUED FOR REVIEW	RS	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RS

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

AT&T

TITLE SHEET
(LTE)

JOB NUMBER

DRAWING NUMBER: T-1
REV: 1

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	REQUIRED		

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WINDSOR, CT 06095

SITE NUMBER: CT1264
SITE NAME: FRANKLIN CT

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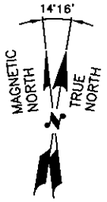
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RS

STATE OF CONNECTICUT
DANIEL P. HARRIS
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE)

JOB NUMBER	DRAWING NUMBER	REV
36201	GN-1	1

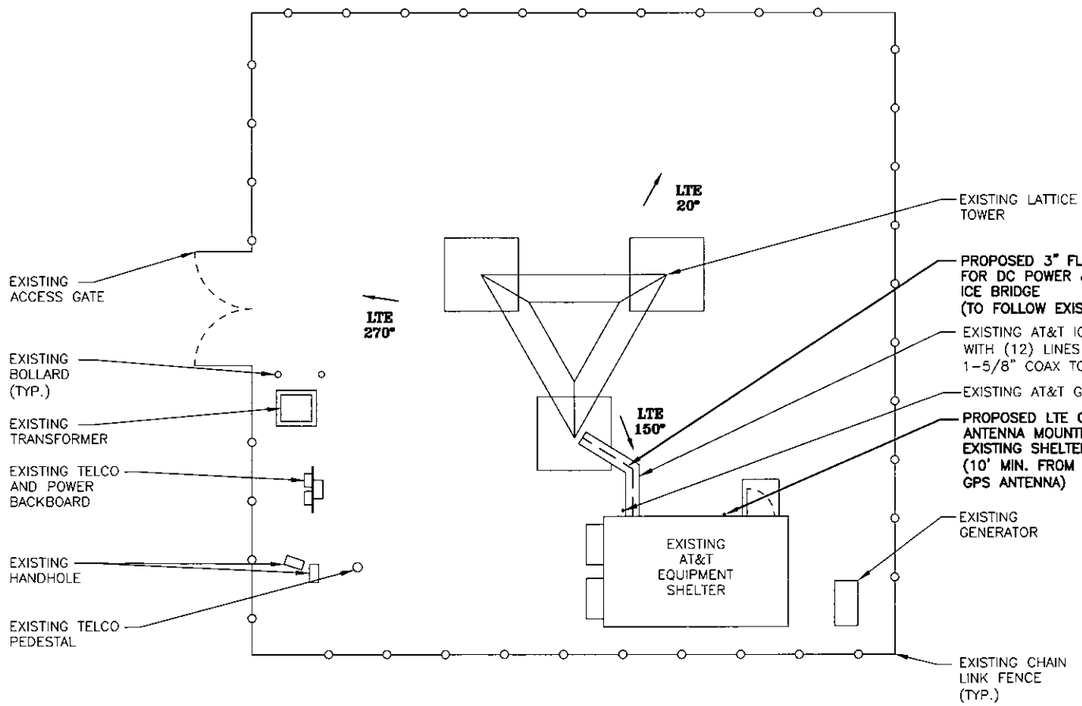


NOTE:

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

NOTE:

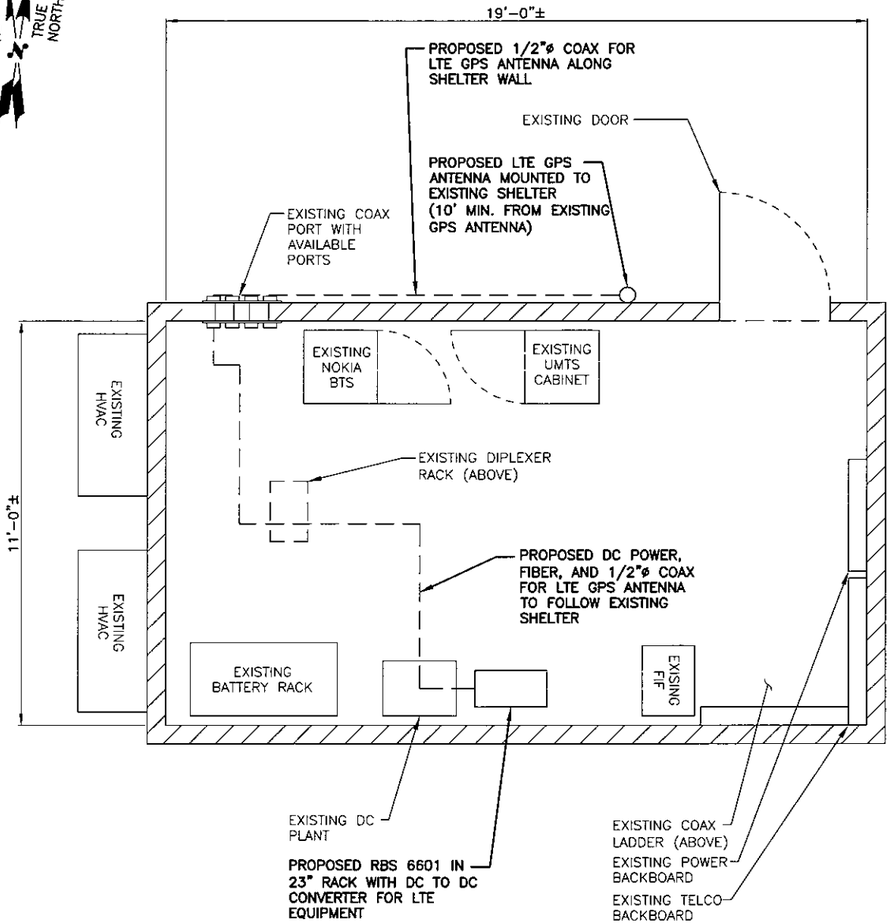
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP LLC, DATED: SEPTEMBER 14, 2012, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



COMPOUND PLAN

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

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



EQUIPMENT PLAN

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

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

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SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: RS

STATE OF CONNECTICUT
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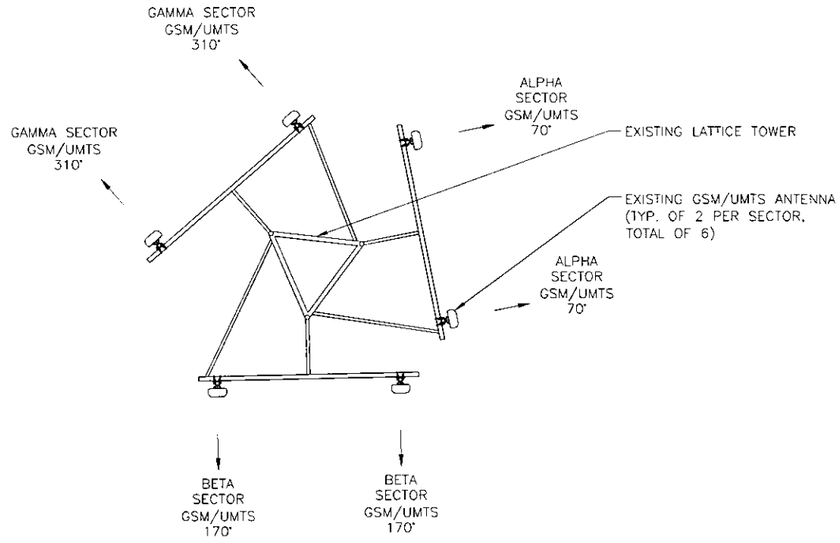
LICENSED PROFESSIONAL ENGINEER

AT&T

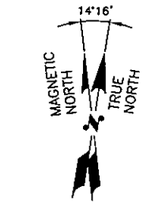
COMPOUND PLAN & EQUIPMENT PLAN (LTE)

SHEET NUMBER	DRAWING NUMBER	REV
1	A-1	1



EXISTING GSM/UMTS ANTENNA PLAN

SCALE: N.T.S.



PROPOSED LTE ANTENNA PLAN

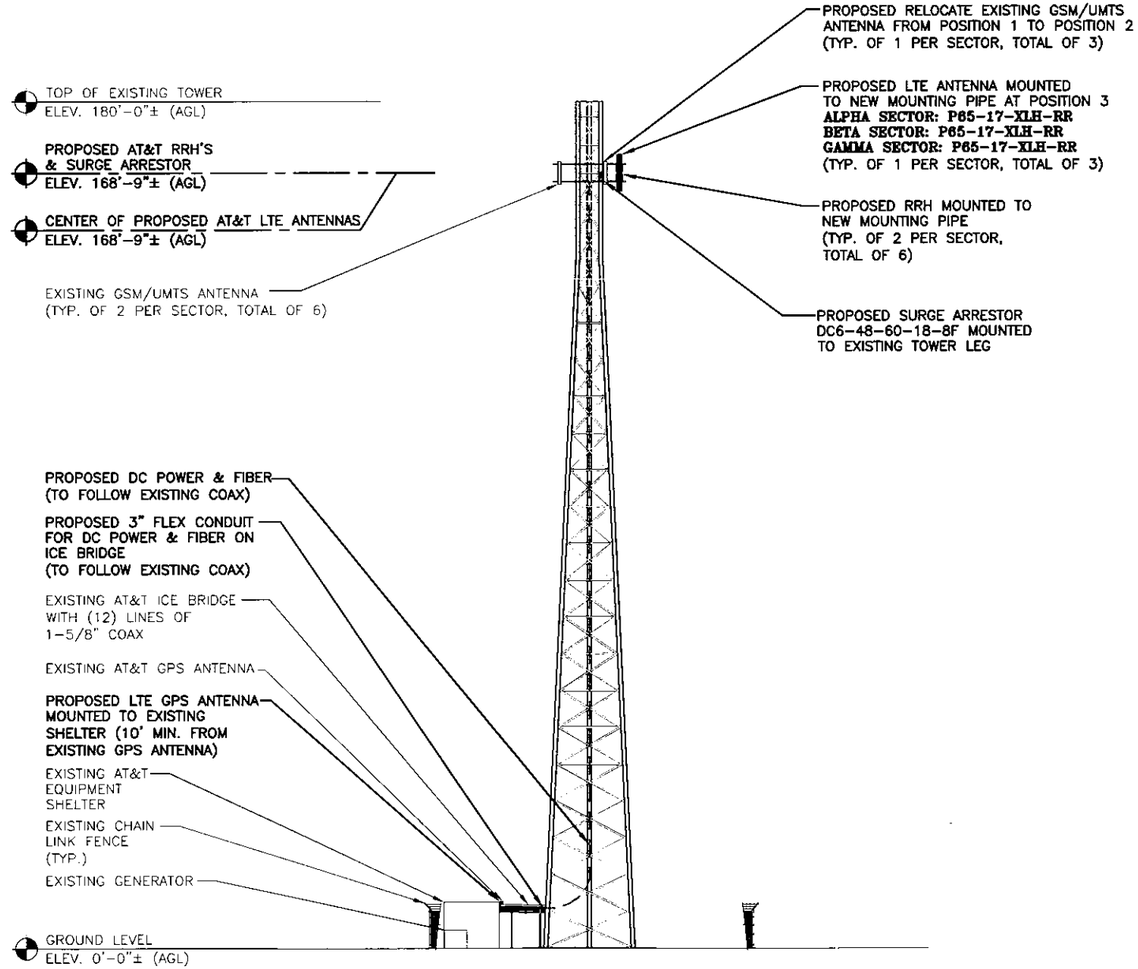
SCALE: N.T.S.

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP LLC, DATED: SEPTEMBER 14, 2012, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

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



SOUTH ELEVATION

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

0 8'-0" 16'-0" 32'-0" 48'-0"

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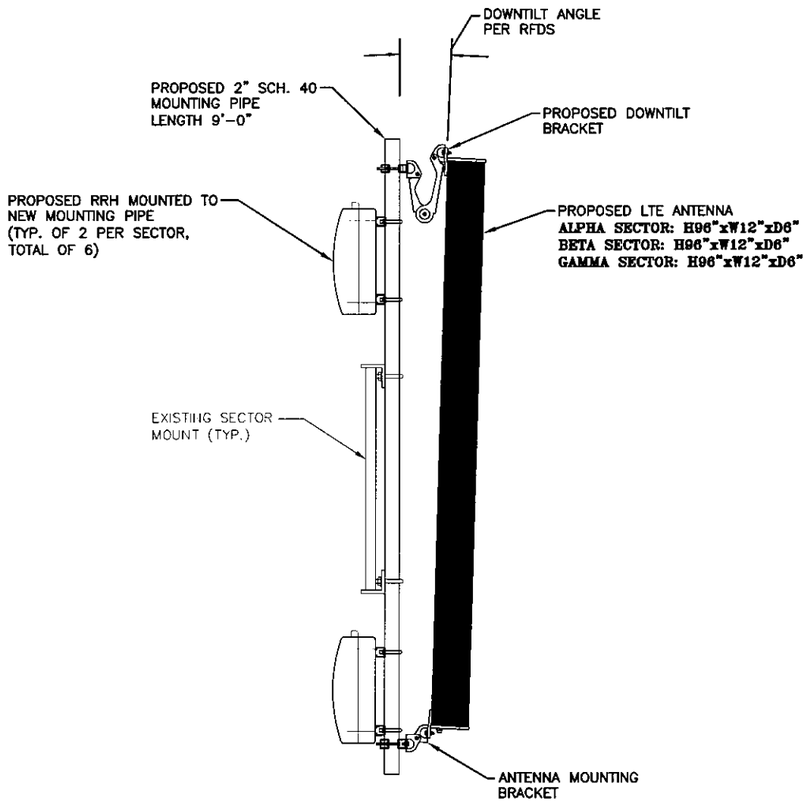
STATE OF CONNECTICUT
DANIEL P. HANNAH
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

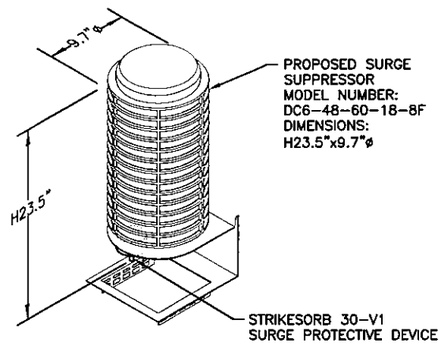
ANTENNA PLAN & ELEVATION (LTE)

JOB NUMBER	DRAWING NUMBER	REV
36201	A-2	1



PROPOSED LTE ANTENNA MOUNTING DETAIL

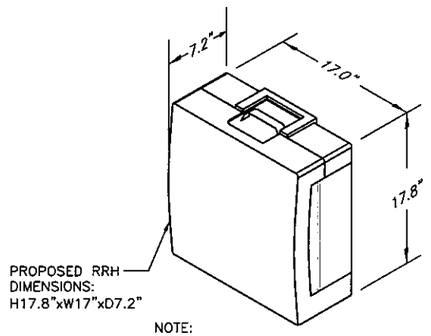
SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL

SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL

SCALE: N.T.S.

NOTE:

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

NOTE:

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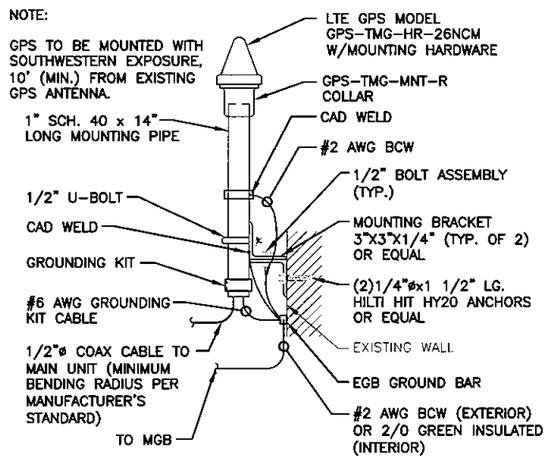

GPS MOUNTING DETAIL

SCALE: N.T.S.

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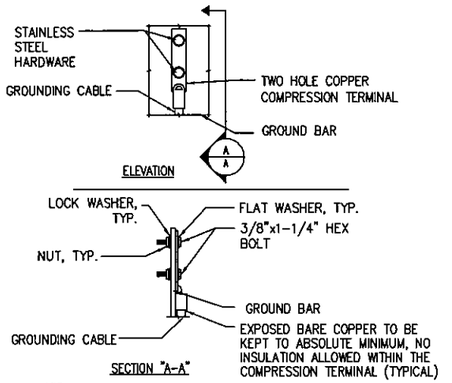
STATE OF CONNECTICUT
DANIEL P. HARMS
LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUT AND ELEVATION (LTE)

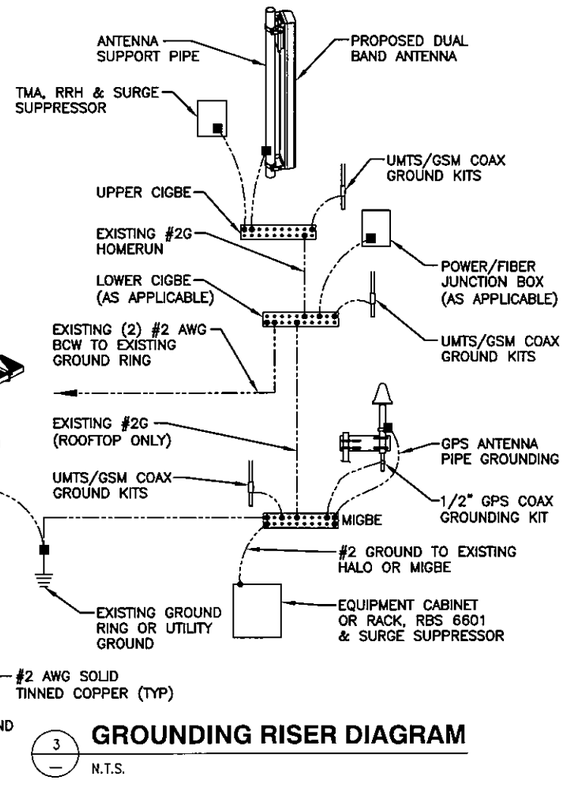
JOB NUMBER	DRAWING NUMBER	REV
64.01	A-3	1



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.

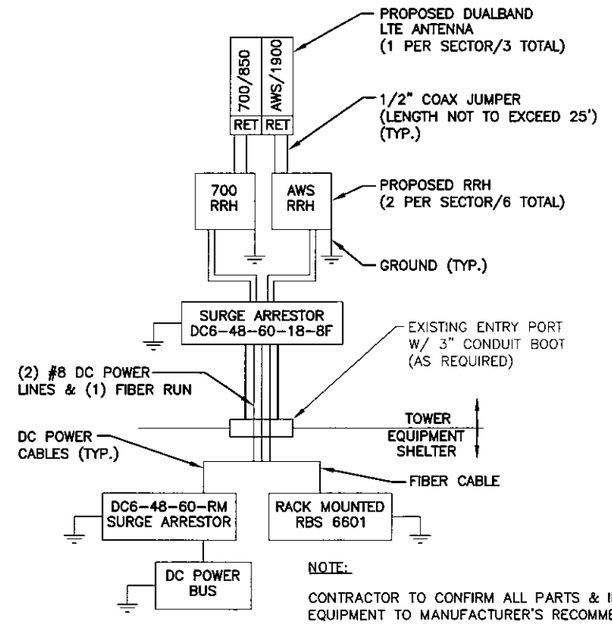
TYPICAL GROUND BAR CONNECTION DETAIL

1 — N.T.S.



GROUNDING RISER DIAGRAM

3 — N.T.S.



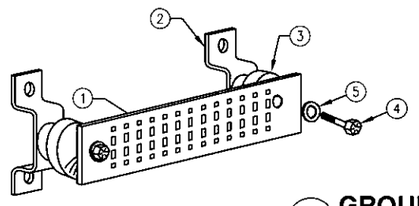
NOTE:

CONTRACTOR TO CONFIRM ALL PARTS & INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

PLUMBING DIAGRAM

2 — 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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AT&T

PLUMBING DIAGRAM & GROUNDING DETAILS (LTE)

JOB NUMBER	DRAWING NUMBER	REV
1264.01	G-1	1