



Tim Whalen, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (781) 375- 8318
twhalen@clinellc.com

April 12, 2016

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

**RE: Notice of Exempt Modification // Site Number: CT2268
23 Spring Hill Lane, Bethel CT 06801 (Site Name: Bethel Spring Street)
N 41.3622061 // W -73.3965800**

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (`AT&T_) currently maintains (9) antennas at the (122) foot level of the existing (125) foot monopole tower at 23 Spring Hill Lane. The tower and property is owned by Blue Sky Towers LLC. AT&T now intends to replace (3) panel antennas for its LTE upgrade. These antennas would be installed at the (122) foot level of the tower. AT&T also intends to install (6) remote radio units, (1) surge arrestor, (2) DC power lines and (1) fiber line.

The current proposal involves a (3) antenna swap only; There will be no antennas added.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectman of Bethel, Matthew Knickerbocker, as well as the tower and ground owner, Blue Sky Towers LLC.

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

Attached to accommodate this filing are construction drawings dated 4/5/2016 by Com Ex Consultants, a structural analysis dated 3/25/2016 by Bennett & Pless, Inc. and an Emissions Analysis Report dated 3/2/2016, by EBI Consulting.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading as shown in the attached structural analysis dated 3/25/2016 by Bennett & Pless, Inc.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Tim Whalen, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (781) 375- 8318
twhalen@centerlincommunications.com

Attachments

cc: First Selectman of Bethel, Matthew Knickerbocker - as elected official
Blue Sky Towers LLC- as tower owner and Property Owner



Structural Analysis Report

Structure : 125 foot Monopole
BST Site Name : Spring Hill
BST Site Number : CT-5003
Proposed Carrier : AT&T
Site Location : 38 Spring Hill Road
Bethel, Connecticut 06801
41.3622, -73.3967
Date : May 25, 2016
Max Member Stress Level : 100%
Result : PASS

Prepared by:
Bennett & Pless, Inc.



03/25/2016

Table of Contents

Introduction.....1

Supporting Documents.....1

Design Criteria.....1

Final Proposed Equipment Loading for AT&T2

Analysis Results.....2

Assumptions.....2

Conclusions3

Standard Conditions4

Disclaimer of Warranties4

Appendix A (Calculations) Attached

Appendix B (Collocation Application) Attached

Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the new loads proposed by AT&T. The objective of the analysis is to determine if the existing structure is in conformance with the current codes and standards for the proposed equipment installation.

Supporting Documents

The following documents were made available for our structural analysis.

Tower Information	Ramaker & Associates SA dated July 15, 2014 Structural Analysis by Bennett & Pless, April 10, 2015
Foundation Information	Foundation Information was not available.
Geotechnical Information	Geotechnical Information was not available.
Equipment Information	Engineered Tower Solutions Mapping dated November 21, 2014 Structural Analysis by Bennett & Pless, April 10, 2015 Collocation Application from BlueSky Tower, December 28, 2015
Tower Reinforcement Information	Tower has not been previously reinforced.

Design Criteria

The tower was analyzed using tnxTower (Version 7.0.5.1) tower analysis software using the following design criteria.

State Building Code	Connecticut (CBC 2005)
TIA/EIA Standard Code	Rev G
Basic Wind Speed	100 MPH
Basic Wind Speed w/ Ice	50 MPH w/ 0.75" Ice
Steel Grade	65 ksi Pole, 50 ksi Base Plate, Anchor Bolts A615 Grade 75
Topographic Category	1
Exposure Category	C
Tower Class	II

Final Proposed Equipment Loading for AT&T

The following proposed loading was obtained from the collocation application provided by Blue Sky Tower. (December 28, 2015):

Antenna/Equipment					Coax	
Mount	RAD	Qty.	Antenna	Type	Qty.	Size/Type
122	-	1	Low Platform	Mount	12	1 5/8" Coax Fiber Cable Fiber Cable DC Cable DC Cable
	122	3	Powerwave 7770 w/ Mount Pipe	Panel		
		1	CCI HPA-65R-BUU-H8*	Panel		
		2	CCI HPA-65R-BUU-H6*	Panel		
		3	Powerwave P65-16-XLH-RR	Panel		
		6	Powerwave LGP21401	TMA		
		3	Ericsson RRUS-11	RRU		
		3	Ericsson RRUS-11	RRU		
		3	Ericsson RRUS-32	RRU		
		1	Raycap DC6-48-60-18-8F	Squid		
		1	Raycap DC6-48-60-18-8F	Squid		

Note: Proposed equipment is shown in bold.

*Note: The existing (3) Powerwave 7770 will be replaced by the proposed panels shown above.

Note: All additional equipment considered in the analysis is listed on the tower profile.

Analysis Results

Based on the foregoing information, our structural analysis determined that **the existing tower is structurally capable of supporting the proposed equipment loads without modification.** The existing foundations have not been evaluated. Due to the high level of stress at the base of the tower, a foundation and geotechnical mapping is recommended to determine if the foundation can adequately support the proposed installation.

Assumptions

The following assumptions were used in this structural analysis:

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. All member connections are assumed to have been designed to meet the load carrying capacity of the connected member.
3. Antenna mount loads have been estimated based on general information obtained in the field.
4. The mounts for the proposed antennas have been analyzed and designed by others.
5. See additional assumptions contained in the report attached.

Conclusions

The existing tower described above **has sufficient capacity** to support the proposed loading based on the TIA/EIA-222-G Standard referenced by the State Building Code. The foundation could not be evaluated. No foundation or geotechnical information was available at the time of analysis.

We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance please call us anytime at 605-540-4620.

Sincerely,

Analysis by:



Chunhui Song, EIT
Design Engineer

Reviewed by:

Michael T. De Boer, PE
Senior Technical Director



03/25/2016

Standard Conditions

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

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and its components, or relevant information.
- Information from drawings in possession of Bennett & Pless, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Bennett & Pless and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in an uncorroded condition and have not deteriorated; and we, therefore, consider that their capacity has not significantly changed from the original design condition.

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

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

Disclaimer of Warranties

Bennett & Pless. makes no warranties, expressed or implied, in connection with this report, and disclaims any liability arising from the ability of the existing structure to support the design loads for which it was originally designed. Bennett & Pless. will not be responsible whatsoever for or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Bennett & Pless pursuant to this report will be limited to the total fee received for preparation of this report.

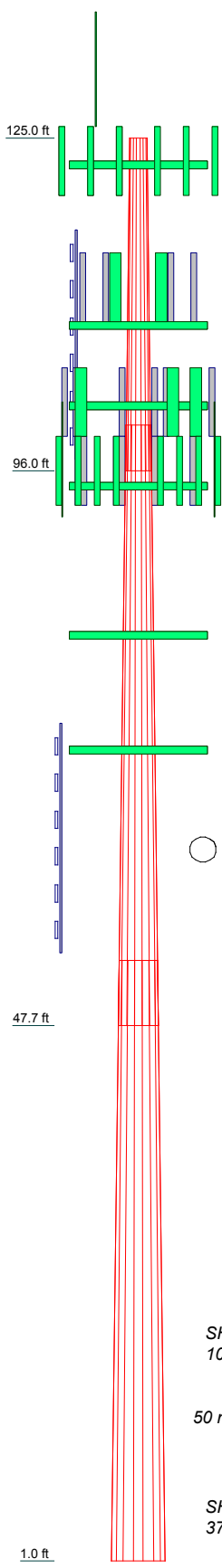
Appendix A

Calculations

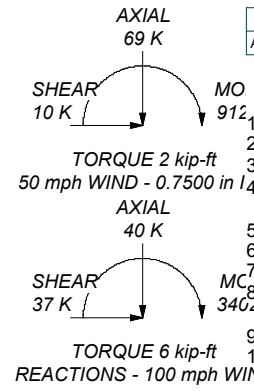
DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
15' Omni (tower)	123	800MHz 2X50W RRH W/FILTER (Sprint)	105.5
LP 303-1 (ATT)	123	IBC1900HB-2 (Sprint)	105.5
8'x2.4" Pipe Mounts (ATT)	123	IBC1900HB-2 (Sprint)	105.5
8'x2.4" Pipe Mounts (ATT)	123	IBC1900HB-2 (Sprint)	105.5
8'x2.4" Pipe Mounts (ATT)	123	LP 303-1 (T-Mobile)	102
7770 w/ Mount Pipe (ATT)	123	(3) 8'x2.4" Pipe Mounts (T-Mobile)	102
7770 w/ Mount Pipe (ATT)	123	(3) 8'x2.4" Pipe Mounts (T-Mobile)	102
7770 w/ Mount Pipe (ATT)	123	(3) 8'x2.4" Pipe Mounts (T-Mobile)	102
HPA-65R-BUU-H8 w/ Mount Pipe (ATT)	123	(2) Kathrein 81010020R4B (T-Mobile)	102
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	123	(2) Kathrein 81010020R4B (T-Mobile)	102
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	123	(2) Kathrein 81010020R4B (T-Mobile)	102
P65-16-XLH-RR w/Mount Pipe (ATT)	123	14' 16 element dipole (T-Mobile)	102
P65-16-XLH-RR w/Mount Pipe (ATT)	123	LNx6515DS-VTM w/Pipe (T-Mobile)	102
P65-16-XLH-RR w/Mount Pipe (ATT)	123	LNx6515DS-VTM w/Pipe (T-Mobile)	102
P65-16-XLH-RR w/Mount Pipe (ATT)	123	LNx6515DS-VTM w/Pipe (T-Mobile)	102
(2) LGP21401 (ATT)	123	RRUS 11 (T-Mobile)	102
(2) LGP21401 (ATT)	123	RRUS 11 (T-Mobile)	102
(2) LGP21401 (ATT)	123	RRUS 11 (T-Mobile)	102
RRUS-11 (ATT)	123	X7C-FRO-660-VR0 w/ pipe mount (Verizon)	96
RRUS-11 (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
RRUS-11 (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
RRUS 32 B30 (ATT)	123	BXA-80063-6CF w/ pipe mount (Verizon)	96
RRUS 32 B30 (ATT)	123	800 10736V01 w/ Mount Pipe (Verizon)	96
RRUS-11 (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
RRUS-11 (ATT)	123	BXA-80080-6CF w/ pipe mount (Verizon)	96
RRUS-11 (ATT)	123	800 10736V01 w/ Mount Pipe (Verizon)	96
DC6-48-60-18-8F (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
DC6-48-60-18-8F (ATT)	123	(2) WWX063X19G00 w/ pipe mount (Verizon)	96
LP 303-1 (Sprint)	112	BXA-80080-6CF w/ pipe mount (Verizon)	96
(4) 8'x2.4" Pipe Mounts (Sprint)	112	RRH2x60 - AWS (Verizon)	96
(4) 8'x2.4" Pipe Mounts (Sprint)	112	RRH2x60 - AWS (Verizon)	96
(4) 8'x2.4" Pipe Mounts (Sprint)	112	RRH2x60 - AWS (Verizon)	96
APXVSP18-C (Sprint)	112	ALU RH 2x60 700 (Verizon)	96
APXVSP18-C (Sprint)	112	ALU RH 2x60 700 (Verizon)	96
APXVSP18-C (Sprint)	112	ALU RH 2x60 700 (Verizon)	96
APXV9TM14-ALU-120 (Sprint)	112	ALU RH 2x60 - PCS (Verizon)	96
APXV9TM14-ALU-120 (Sprint)	112	ALU RH 2x60 - PCS (Verizon)	96
APXV9TM14-ALU-120 (Sprint)	112	ALU RH 2x60 - PCS (Verizon)	96
TD-RRH 8x20 (Sprint)	112	Raycap DB-T1-6Z-8AB-0Z (Verizon)	96
TD-RRH 8x20 (Sprint)	112	Raycap DB-T1-6Z-8AB-0Z (Verizon)	96
TD-RRH 8x20 (Sprint)	112	Raycap DB-T1-6Z-8AB-0Z (Verizon)	96
TD-RRH 8x20 (Sprint)	112	Raycap DB-T1-6Z-8AB-0Z (Verizon)	96
Tri-Antenna Mount (Sprint)	105.5	LP 303-1	95
1900MHz 4x40W RRH (Sprint)	105.5	10' Omni (Verizon)	92
1900MHz 4x40W RRH (Sprint)	105.5	10' Omni (Verizon)	92
1900MHz 4x40W RRH (Sprint)	105.5	LP 303-1	82
1900MHz 4x40W RRH (Sprint)	105.5	LP 303-1	72
1900MHz 4x40W RRH (Sprint)	105.5	15' Dipole	72
800MHz 2X50W RRH W/FILTER (Sprint)	105.5		
800MHz 2X50W RRH W/FILTER (Sprint)	105.5		

Section	1	2	3
Length (ft)	28.96	52.29	52.34
Number of Sides	18	18	18
Thickness (in)	0.1875	0.2500	0.3125
Socket Length (ft)	3.92	5.67	39.0494
Top Dia (in)	18.0000	25.3203	55.0000
Bot Dia (in)	26.9000	41.2800	
Grade		A572-65	
Weight (K)	1.3	4.7	8.3



ALL REACTIONS ARE FACTORED



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
9. Welds are fabricated with ER-70S-6 electrodes.
10. TOWER RATING: 99.9%

<p>bennett&pless</p> <p>Experience Structural Expertise</p>	<p>Bennett & Pless</p> <p>550 River Drive</p> <p>North Sioux City, SD 57049</p> <p>Phone: 605-540-4621</p> <p>FAX: 678-990-8701</p>	<p>Job: CT-5003 125' Tapered Monopole</p>		
		<p>Project: Spring Hill, CT (Verizon)</p>	<p>Client: Blue Sky Towers</p>	<p>Drawn by: Chunhui Song</p>
		<p>Code: TIA-222-G</p>	<p>Date: 03/25/16</p>	<p>Scale: NTS</p>
		<p>Path:</p>		<p>Dwg No. E-1</p>

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 1 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Tower Input Data

There is a pole section.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 100 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..

Welds are fabricated with ER-70S-6 electrodes..

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
√ Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	125.00-96.04	28.96	3.92	18	18.0000	26.9000	0.1875	0.7500	A572-65 (65 ksi)

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	2 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

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
L2	96.04-47.67	52.29	5.67	18	25.3203	41.2800	0.2500	1.0000	A572-65 (65 ksi)
L3	47.67-1.00	52.34		18	39.0494	55.0000	0.3125	1.2500	A572-65 (65 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	I/Q in ²	w in	w/t
L1	18.2777	10.6007	424.9328	6.3234	9.1440	46.4712	850.4248	5.3013	2.8380	15.136
L2	27.3150	15.8973	1433.1421	9.4829	13.6652	104.8753	2868.1699	7.9501	4.4044	23.49
L3	41.9168	32.5573	6924.5082	14.5657	20.9702	330.2064	13858.1278	16.2817	6.8253	27.301
	41.4064	38.4222	7284.0012	13.7516	19.8371	367.1906	14577.5869	19.2147	6.3227	20.233
	55.8485	54.2432	20495.5041	19.4141	27.9400	733.5542	41017.9768	27.1267	9.1300	29.216

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	Double Angle Stitch Bolt Spacing Redundants in
L1 125.00-96.04				1	1	1			
L2 96.04-47.67				1	1	1			
L3 47.67-1.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	CAAA ft ² /ft	Weight plf
1 5/8" coax (ATT)	A	No	Inside Pole	123.00 - 2.00	12	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
Fiber Cable (ATT)	A	No	Inside Pole	123.00 - 2.00	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
Fiber Cable (ATT)	A	No	Inside Pole	123.00 - 2.00	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
DC Cable (0.8" Dia) (ATT)	A	No	Inside Pole	123.00 - 2.00	2	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
DC Cable (0.8" Dia) (ATT)	A	No	Inside Pole	123.00 - 2.00	2	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
1 5/8" coax (Sprint)	B	No	Inside Pole	117.00 - 2.00	6	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00
HB058-M12-XXXF(5/8") (Sprint)	B	No	Inside Pole	117.00 - 2.00	1	No Ice	0.00
						1/2" Ice	0.00
						1" Ice	0.00

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 3 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _{AA}		Weight plf
						In Face	Out Face	
1 5/8" coax (T-Mobile)	C	No	Inside Pole	102.00 - 2.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
1 7/16" Coax (T-Mobile)	C	No	Inside Pole	102.00 - 2.00	1	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
1 5/8" (1.63", 41.3 mm) Fiber (T-Mobile)	C	No	Inside Pole	102.00 - 2.00	2	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
1 5/8" coax (Verizon)	C	No	Inside Pole	92.00 - 2.00	14	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
1 5/8" coax (dipole)	A	No	Inside Pole	72.00 - 2.00	1	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	125.00-96.04	A	0.000	0.000	0.000	0.000	0.34
		B	0.000	0.000	0.000	0.000	0.14
		C	0.000	0.000	0.000	0.000	0.09
L2	96.04-47.67	A	0.000	0.000	0.000	0.000	0.64
		B	0.000	0.000	0.000	0.000	0.31
		C	0.000	0.000	0.000	0.000	1.37
L3	47.67-1.00	A	0.000	0.000	0.000	0.000	0.62
		B	0.000	0.000	0.000	0.000	0.30
		C	0.000	0.000	0.000	0.000	1.35

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} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	125.00-96.04	A	1.691	0.000	0.000	0.000	0.000	0.34
		B		0.000	0.000	0.000	0.000	0.14
		C		0.000	0.000	0.000	0.000	0.09
L2	96.04-47.67	A	1.618	0.000	0.000	0.000	0.000	0.64
		B		0.000	0.000	0.000	0.000	0.31
		C		0.000	0.000	0.000	0.000	1.37
L3	47.67-1.00	A	1.454	0.000	0.000	0.000	0.000	0.62
		B		0.000	0.000	0.000	0.000	0.30
		C		0.000	0.000	0.000	0.000	1.35

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
---------------	----------------------	-------------	-------------------------	--------------------------	-----------------------

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	4 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
15' Omni (tower)	C	From Leg	3.50	0.0000	123.00	No Ice	3.75	3.75	0.10
			0.00			1/2" Ice	5.28	5.28	0.13
			8.00			1" Ice	6.83	6.83	0.17
LP 303-1 (ATT)	C	None		0.0000	123.00	No Ice	17.46	17.46	1.35
						1/2" Ice	22.44	22.44	1.62
						1" Ice	27.42	27.42	1.90
8'x2.4" Pipe Mounts (ATT)	A	From Leg	4.00	0.0000	123.00	No Ice	1.92	1.92	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
8'x2.4" Pipe Mounts (ATT)	B	From Leg	4.00	0.0000	123.00	No Ice	1.92	1.92	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
8'x2.4" Pipe Mounts (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	1.92	1.92	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
7770 w/ Mount Pipe (ATT)	B	From Leg	4.00	0.0000	123.00	No Ice	6.86	5.23	0.08
			0.00			1/2" Ice	7.65	6.41	0.14
			0.00			1" Ice	8.44	7.59	0.20
7770 w/ Mount Pipe (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	6.86	5.23	0.08
			0.00			1/2" Ice	7.65	6.41	0.14
			0.00			1" Ice	8.44	7.59	0.20
7770 w/ Mount Pipe (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	6.86	5.23	0.08
			0.00			1/2" Ice	7.65	6.41	0.14
			0.00			1" Ice	8.44	7.59	0.20
HPA-65R-BUU-H8 w/ Mount Pipe (ATT)	A	From Leg	4.00	0.0000	123.00	No Ice	13.21	9.58	0.10
			0.00			1/2" Ice	13.90	11.05	0.20
			0.00			1" Ice	14.59	12.50	0.30
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	B	From Leg	4.00	0.0000	123.00	No Ice	9.49	6.67	0.06
			0.00			1/2" Ice	9.96	7.44	0.13
			0.00			1" Ice	10.43	8.21	0.21
CCI HPA-65R-BUU-H6 w/ Pipe Mount (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	9.49	6.67	0.06
			0.00			1/2" Ice	9.96	7.44	0.13
			0.00			1" Ice	10.43	8.21	0.21
P65-16-XLH-RR w/Mount Pipe (ATT)	A	From Leg	4.00	0.0000	123.00	No Ice	8.13	5.95	0.07
			0.00			1/2" Ice	8.59	6.75	0.13
			0.00			1" Ice	9.05	7.53	0.20
P65-16-XLH-RR w/Mount Pipe (ATT)	B	From Leg	4.00	0.0000	123.00	No Ice	8.13	5.95	0.07
			0.00			1/2" Ice	8.59	6.75	0.13
			0.00			1" Ice	9.05	7.53	0.20
P65-16-XLH-RR w/Mount Pipe (ATT)	C	From Leg	4.00	0.0000	123.00	No Ice	8.13	5.95	0.07
			0.00			1/2" Ice	8.59	6.75	0.13
			0.00			1" Ice	9.05	7.53	0.20
(2) LGP21401 (ATT)	A	From Leg	3.00	0.0000	123.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
(2) LGP21401 (ATT)	B	From Leg	3.00	0.0000	123.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
(2) LGP21401 (ATT)	C	From Leg	3.00	0.0000	123.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
RRUS-11	A	From Leg	3.00	0.0000	123.00	No Ice	2.94	1.25	0.06

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job		CT-5003 125' Tapered Monopole					Page		5 of 22
	Project		Spring Hill, CT (Verizon)					Date		10:47:36 03/25/16
	Client		Blue Sky Towers					Designed by		Chunhui Song

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz Lateral ft	Vert ft					
(ATT)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS-11	B	From Leg	3.00		0.0000	123.00	No Ice	2.94	1.25
(ATT)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS-11	C	From Leg	3.00		0.0000	123.00	No Ice	2.94	1.25
(ATT)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS 32 B30	A	From Leg	3.00		0.0000	123.00	No Ice	2.69	1.57
(ATT)			0.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
RRUS 32 B30	B	From Leg	3.00		0.0000	123.00	No Ice	2.69	1.57
(ATT)			0.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
RRUS 32 B30	C	From Leg	3.00		0.0000	123.00	No Ice	2.69	1.57
(ATT)			0.00			1/2" Ice	2.91	1.76	0.08
			0.00			1" Ice	3.14	1.95	0.10
RRUS-11	A	From Leg	3.00		0.0000	123.00	No Ice	2.94	1.25
(ATT)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS-11	B	From Leg	3.00		0.0000	123.00	No Ice	2.94	1.25
(ATT)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
RRUS-11	C	From Leg	3.00		0.0000	123.00	No Ice	2.94	1.25
(ATT)			0.00			1/2" Ice	3.17	1.41	0.07
			0.00			1" Ice	3.40	1.57	0.09
DC6-48-60-18-8F	A	From Leg	2.00		0.0000	123.00	No Ice	2.20	2.20
(ATT)			0.00			1/2" Ice	2.40	2.40	0.04
			0.00			1" Ice	2.60	2.60	0.07
DC6-48-60-18-8F	B	From Leg	2.00		0.0000	123.00	No Ice	2.20	2.20
(ATT)			0.00			1/2" Ice	2.40	2.40	0.04
			0.00			1" Ice	2.60	2.60	0.07

LP 303-1	C	From Leg	0.00		0.0000	112.00	No Ice	17.46	17.46
(Sprint)			0.00			1/2" Ice	22.44	22.44	1.62
			-3.00			1" Ice	27.42	27.42	1.90
(4) 8'x2.4" Pipe Mounts	A	From Face	3.50		0.0000	112.00	No Ice	1.92	1.92
(Sprint)			0.00			1/2" Ice	2.75	2.75	0.03
			-3.00			1" Ice	3.41	3.41	0.05
(4) 8'x2.4" Pipe Mounts	B	From Face	3.50		0.0000	112.00	No Ice	1.92	1.92
(Sprint)			0.00			1/2" Ice	2.75	2.75	0.03
			-3.00			1" Ice	3.41	3.41	0.05
(4) 8'x2.4" Pipe Mounts	C	From Face	3.50		0.0000	112.00	No Ice	1.92	1.92
(Sprint)			0.00			1/2" Ice	2.75	2.75	0.03
			-3.00			1" Ice	3.41	3.41	0.05
APXVSPP18-C	A	From Face	3.50		0.0000	112.00	No Ice	8.02	5.28
(Sprint)			2.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVSPP18-C	B	From Face	3.50		0.0000	112.00	No Ice	8.02	5.28
(Sprint)			2.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVSPP18-C	C	From Face	3.50		0.0000	112.00	No Ice	8.02	5.28
(Sprint)			2.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXV9TM14-ALU-120	A	From Face	3.50		0.0000	112.00	No Ice	6.90	3.61
(Sprint)			-2.00			1/2" Ice	7.35	3.97	0.09
			0.00			1" Ice	7.80	4.33	0.13

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	6 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
APXV9TM14-ALU-120 (Sprint)	B	From Face	3.50	0.0000		112.00	No Ice 6.90	3.61	0.06
			-2.00				1/2" Ice 7.35	3.97	0.09
			0.00				1" Ice 7.80	4.33	0.13
APXV9TM14-ALU-120 (Sprint)	C	From Face	3.50	0.0000		112.00	No Ice 6.90	3.61	0.06
			-2.00				1/2" Ice 7.35	3.97	0.09
			0.00				1" Ice 7.80	4.33	0.13
TD-RRH 8x20 (Sprint)	A	From Face	3.50	0.0000		112.00	No Ice 4.32	1.41	0.07
			-2.00				1/2" Ice 4.60	1.61	0.09
			0.00				1" Ice 4.88	1.81	0.12
TD-RRH 8x20 (Sprint)	B	From Face	3.50	0.0000		112.00	No Ice 4.32	1.41	0.07
			-2.00				1/2" Ice 4.60	1.61	0.09
			0.00				1" Ice 4.88	1.81	0.12
TD-RRH 8x20 (Sprint)	C	From Face	3.50	0.0000		112.00	No Ice 4.32	1.41	0.07
			-2.00				1/2" Ice 4.60	1.61	0.09
			0.00				1" Ice 4.88	1.81	0.12
Tri-Antenna Mount (Sprint)	A	From Face	0.50	0.0000		105.50	No Ice 5.00	5.00	0.27
			0.00				1/2" Ice 6.00	6.00	0.29
			-1.00				1" Ice 7.00	7.00	0.31
1900MHz 4x40W RRH (Sprint)	A	From Face	1.00	0.0000		105.50	No Ice 2.71	2.61	0.06
			-1.00				1/2" Ice 2.95	2.84	0.08
			-1.00				1" Ice 3.19	3.07	0.11
1900MHz 4x40W RRH (Sprint)	A	From Face	1.00	0.0000		105.50	No Ice 2.71	2.61	0.06
			1.00				1/2" Ice 2.95	2.84	0.08
			-1.00				1" Ice 3.19	3.07	0.11
1900MHz 4x40W RRH (Sprint)	B	From Face	1.00	0.0000		105.50	No Ice 2.71	2.61	0.06
			-1.00				1/2" Ice 2.95	2.84	0.08
			-1.00				1" Ice 3.19	3.07	0.11
1900MHz 4x40W RRH (Sprint)	B	From Face	1.00	0.0000		105.50	No Ice 2.71	2.61	0.06
			1.00				1/2" Ice 2.95	2.84	0.08
			-1.00				1" Ice 3.19	3.07	0.11
1900MHz 4x40W RRH (Sprint)	C	From Face	1.00	0.0000		105.50	No Ice 2.71	2.61	0.06
			-1.00				1/2" Ice 2.95	2.84	0.08
			-1.00				1" Ice 3.19	3.07	0.11
1900MHz 4x40W RRH (Sprint)	C	From Face	1.00	0.0000		105.50	No Ice 2.71	2.61	0.06
			1.00				1/2" Ice 2.95	2.84	0.08
			-1.00				1" Ice 3.19	3.07	0.11
800MHz 2X50W RRH W/FILTER (Sprint)	A	From Face	1.00	0.0000		105.50	No Ice 2.06	1.93	0.06
			1.00				1/2" Ice 2.24	2.11	0.09
			2.00				1" Ice 2.43	2.29	0.11
800MHz 2X50W RRH W/FILTER (Sprint)	B	From Face	1.00	0.0000		105.50	No Ice 2.06	1.93	0.06
			1.00				1/2" Ice 2.24	2.11	0.09
			2.00				1" Ice 2.43	2.29	0.11
800MHz 2X50W RRH W/FILTER (Sprint)	C	From Face	1.00	0.0000		105.50	No Ice 2.06	1.93	0.06
			1.00				1/2" Ice 2.24	2.11	0.09
			2.00				1" Ice 2.43	2.29	0.11
IBC1900HB-2 (Sprint)	A	None		0.0000		105.50	No Ice 1.13	0.71	0.04
							1/2" Ice 1.27	0.84	0.05
							1" Ice 1.42	0.97	0.06
IBC1900HB-2 (Sprint)	B	None		0.0000		105.50	No Ice 1.13	0.71	0.04
							1/2" Ice 1.27	0.84	0.05
							1" Ice 1.42	0.97	0.06
IBC1900HB-2 (Sprint)	C	None		0.0000		105.50	No Ice 1.13	0.71	0.04
							1/2" Ice 1.27	0.84	0.05
							1" Ice 1.42	0.97	0.06

LP 303-1 (T-Mobile)	C	None		0.0000		102.00	No Ice 17.46	17.46	1.35
							1/2" Ice 22.44	22.44	1.62

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	7 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
(3) 8'x2.4" Pipe Mounts (T-Mobile)	A	From Face	3.50	0.0000	102.00	1" Ice	27.42	27.42	1.90
			0.00			No Ice	1.92	1.92	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
(3) 8'x2.4" Pipe Mounts (T-Mobile)	B	From Face	3.50	0.0000	102.00	No Ice	1.92	1.92	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
			0.00			No Ice	1.92	1.92	0.02
(3) 8'x2.4" Pipe Mounts (T-Mobile)	C	From Face	3.50	0.0000	102.00	1/2" Ice	2.75	2.75	0.03
			0.00			1" Ice	3.41	3.41	0.05
			0.00			No Ice	1.92	1.92	0.02
			0.00			1/2" Ice	2.75	2.75	0.03
(2) Kathrein 81010020R4B (T-Mobile)	A	From Face	3.50	0.0000	102.00	1" Ice	3.41	3.41	0.05
			0.00			No Ice	6.00	4.00	0.06
			0.00			1/2" Ice	7.50	5.50	0.11
			0.00			1" Ice	9.00	7.00	0.16
(2) Kathrein 81010020R4B (T-Mobile)	B	From Face	3.50	0.0000	102.00	No Ice	6.00	4.00	0.06
			0.00			1/2" Ice	7.50	5.50	0.11
			0.00			1" Ice	9.00	7.00	0.16
			0.00			No Ice	6.00	4.00	0.06
(2) Kathrein 81010020R4B (T-Mobile)	C	From Face	3.50	0.0000	102.00	1/2" Ice	7.50	5.50	0.11
			0.00			1" Ice	9.00	7.00	0.16
			0.00			No Ice	6.00	4.00	0.06
			0.00			1/2" Ice	7.50	5.50	0.11
14' 16 element dipole (T-Mobile)	A	From Face	3.50	0.0000	102.00	1" Ice	9.00	7.00	0.16
			-3.00			No Ice	5.25	5.25	0.08
			5.00			1/2" Ice	6.50	6.50	0.10
			0.00			1" Ice	7.75	7.75	0.13
LNX6515DS-VTM w/Pipe (T-Mobile)	A	From Face	3.50	0.0000	102.00	No Ice	11.80	11.30	0.13
			-3.00			1/2" Ice	0.00	0.00	0.17
			0.00			1" Ice	0.00	0.00	0.21
			0.00			No Ice	11.80	11.30	0.13
LNX6515DS-VTM w/Pipe (T-Mobile)	B	From Face	3.50	0.0000	102.00	1/2" Ice	0.00	0.00	0.17
			-3.00			1" Ice	0.00	0.00	0.21
			0.00			No Ice	11.80	11.30	0.13
			0.00			1/2" Ice	0.00	0.00	0.17
LNX6515DS-VTM w/Pipe (T-Mobile)	C	From Face	3.50	0.0000	102.00	1" Ice	0.00	0.00	0.21
			-3.00			No Ice	11.80	11.30	0.13
			0.00			1/2" Ice	0.00	0.00	0.17
			0.00			1" Ice	0.00	0.00	0.21
RRUS 11 (T-Mobile)	A	From Face	2.50	0.0000	102.00	No Ice	2.78	1.19	0.05
			-3.00			1/2" Ice	2.99	1.33	0.07
			0.00			1" Ice	3.21	1.49	0.10
			0.00			No Ice	2.78	1.19	0.05
RRUS 11 (T-Mobile)	B	From Face	2.50	0.0000	102.00	1/2" Ice	2.99	1.33	0.07
			-3.00			1" Ice	3.21	1.49	0.10
			0.00			No Ice	2.78	1.19	0.05
			0.00			1/2" Ice	2.99	1.33	0.07
RRUS 11 (T-Mobile)	C	From Face	2.50	0.0000	102.00	1" Ice	3.21	1.49	0.10
			-3.00			No Ice	2.78	1.19	0.05
			0.00			1/2" Ice	2.99	1.33	0.07
			0.00			1" Ice	3.21	1.49	0.10

LP 303-1	C	None		0.0000	95.00	No Ice	17.46	17.46	1.35
						1/2" Ice	22.44	22.44	1.62
						1" Ice	27.42	27.42	1.90
*****Antennas*****									
X7C-FRO-660-VR0 w/ pipe mount (Verizon)	A	From Leg	4.00	0.0000	96.00	No Ice	10.51	7.88	0.09
			0.00			1/2" Ice	11.16	8.91	0.17
			0.00			1" Ice	11.79	9.81	0.26
(2) WWX063X19G00 w/ pipe mount (Verizon)	A	From Leg	4.00	0.0000	96.00	No Ice	9.04	7.57	0.07
			0.00			1/2" Ice	9.67	8.61	0.15
			0.00			1" Ice	10.29	9.52	0.23
BXA-80063-6CF w/ pipe mount (Verizon)	A	From Leg	4.00	0.0000	96.00	No Ice	8.04	6.17	0.06
			0.00			1/2" Ice	8.67	7.18	0.12
			0.00			1" Ice	9.28	8.06	0.19
800 10736V01 w/ Mount Pipe (Verizon)	B	From Leg	4.00	0.0000	96.00	No Ice	11.63	7.30	0.07
			0.00			1/2" Ice	12.35	8.81	0.15
			0.00			1" Ice	13.07	10.33	0.24

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	8 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
(2) WWX063X19G00 w/ pipe mount (Verizon)	B	From Leg	4.00	0.00	0.0000	96.00	No Ice 9.04	7.57	0.07
			0.00	0.00			1/2" Ice 9.67	8.61	0.15
			0.00	0.00			1" Ice 10.29	9.52	0.23
BXA-80080-6CF w/ pipe mount (Verizon)	B	From Leg	4.00	0.00	0.0000	96.00	No Ice 6.08	6.57	0.06
			0.00	0.00			1/2" Ice 6.62	7.59	0.12
			0.00	0.00			1" Ice 7.15	8.47	0.18
800 10736V01 w/ Mount Pipe (Verizon)	C	From Leg	4.00	0.00	0.0000	96.00	No Ice 11.63	7.30	0.07
			0.00	0.00			1/2" Ice 12.35	8.81	0.15
			0.00	0.00			1" Ice 13.07	10.33	0.24
(2) WWX063X19G00 w/ pipe mount (Verizon)	C	From Leg	4.00	0.00	0.0000	96.00	No Ice 9.04	7.57	0.07
			0.00	0.00			1/2" Ice 9.67	8.61	0.15
			0.00	0.00			1" Ice 10.29	9.52	0.23
BXA-80080-6CF w/ pipe mount (Verizon)	C	From Leg	4.00	0.00	0.0000	96.00	No Ice 6.08	6.57	0.06
			0.00	0.00			1/2" Ice 6.62	7.59	0.12
			0.00	0.00			1" Ice 7.15	8.47	0.18

RRH2x60 - AWS (Verizon)	C	From Leg	3.00	0.00	0.0000	96.00	No Ice 3.96	2.16	0.06
			0.00	0.00			1/2" Ice 4.27	2.44	0.08
			0.00	0.00			1" Ice 4.58	2.72	0.10
RRH2x60 - AWS (Verizon)	C	From Leg	3.00	0.00	0.0000	96.00	No Ice 3.96	2.16	0.06
			0.00	0.00			1/2" Ice 4.27	2.44	0.08
			0.00	0.00			1" Ice 4.58	2.72	0.10
RRH2x60 - AWS (Verizon)	C	From Leg	3.00	0.00	0.0000	96.00	No Ice 3.96	2.16	0.06
			0.00	0.00			1/2" Ice 4.27	2.44	0.08
			0.00	0.00			1" Ice 4.58	2.72	0.10
ALU RH 2x60 700 (Verizon)	A	From Leg	3.00	0.00	0.0000	96.00	No Ice 2.29	1.21	0.05
			0.00	0.00			1/2" Ice 2.49	1.36	0.07
			0.00	0.00			1" Ice 2.70	1.53	0.09
ALU RH 2x60 700 (Verizon)	A	From Leg	3.00	0.00	0.0000	96.00	No Ice 2.29	1.21	0.05
			0.00	0.00			1/2" Ice 2.49	1.36	0.07
			0.00	0.00			1" Ice 2.70	1.53	0.09
ALU RH 2x60 700 (Verizon)	A	From Leg	3.00	0.00	0.0000	96.00	No Ice 2.29	1.21	0.05
			0.00	0.00			1/2" Ice 2.49	1.36	0.07
			0.00	0.00			1" Ice 2.70	1.53	0.09
ALU RH 2x60 - PCS (Verizon)	B	From Leg	3.00	0.00	0.0000	96.00	No Ice 2.94	1.25	0.06
			0.00	0.00			1/2" Ice 3.17	1.41	0.07
			0.00	0.00			1" Ice 3.41	1.59	0.10
ALU RH 2x60 - PCS (Verizon)	B	From Leg	3.00	0.00	0.0000	96.00	No Ice 2.94	1.25	0.06
			0.00	0.00			1/2" Ice 3.17	1.41	0.07
			0.00	0.00			1" Ice 3.41	1.59	0.10
ALU RH 2x60 - PCS (Verizon)	B	From Leg	3.00	0.00	0.0000	96.00	No Ice 2.94	1.25	0.06
			0.00	0.00			1/2" Ice 3.17	1.41	0.07
			0.00	0.00			1" Ice 3.41	1.59	0.10
Raycap DB-T1-6Z-8AB-0Z (Verizon)	A	From Leg	2.00	0.00	0.0000	96.00	No Ice 5.60	5.60	0.04
			0.00	0.00			1/2" Ice 6.60	6.60	0.06
			0.00	0.00			1" Ice 7.60	7.60	0.08
Raycap DB-T1-6Z-8AB-0Z (Verizon)	A	From Leg	2.00	0.00	0.0000	96.00	No Ice 5.60	5.60	0.04
			0.00	0.00			1/2" Ice 6.60	6.60	0.06
			0.00	0.00			1" Ice 7.60	7.60	0.08
10' Omni (Verizon)	B	From Leg	6.50	0.00	0.0000	92.00	No Ice 2.50	2.50	0.08
			0.00	0.00			1/2" Ice 3.53	3.53	0.09
			5.00	0.00			1" Ice 4.58	4.58	0.12
10' Omni (Verizon)	C	From Leg	6.50	0.00	0.0000	92.00	No Ice 2.50	2.50	0.08
			0.00	0.00			1/2" Ice 3.53	3.53	0.09
			5.00	0.00			1" Ice 4.58	4.58	0.12

LP 303-1	C	None			0.0000	82.00	No Ice 17.46	17.46	1.35

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	9 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
						1/2" Ice	22.44	22.44	1.62
						1" Ice	27.42	27.42	1.90

LP 303-1	C	None			0.0000	72.00	No Ice 17.46	17.46	1.35
							1/2" Ice 22.44	22.44	1.62
							1" Ice 27.42	27.42	1.90
15' Dipole	A	From Face	3.50		0.0000	72.00	No Ice 3.50	3.50	0.02
			-5.00				1/2" Ice 5.50	5.50	0.03
			-8.00				1" Ice 7.50	7.50	0.03

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _{AA} In Face	C _{AA} Out Face
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
L1 125.00-96.04	109.56	1.29	31	55.015	A	0.000	55.015	55.015	100.00	0.000	0.000
					B	0.000	55.015		100.00	0.000	0.000
					C	0.000	55.015		100.00	0.000	0.000
L2 96.04-47.67	70.53	1.176	28	138.747	A	0.000	138.747	138.747	100.00	0.000	0.000
					B	0.000	138.747		100.00	0.000	0.000
					C	0.000	138.747		100.00	0.000	0.000
L3 47.67-1.00	24.23	0.939	23	189.120	A	0.000	189.120	189.120	100.00	0.000	0.000
					B	0.000	189.120		100.00	0.000	0.000
					C	0.000	189.120		100.00	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation	z	K _Z	q _z	t _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _{AA} In Face	C _{AA} Out Face
ft	ft		psf	in	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
L1 125.00-96.04	109.56	1.29	8	1.6912	63.178	A	0.000	63.178	63.178	100.00	0.000	0.000
						B	0.000	63.178		100.00	0.000	0.000
						C	0.000	63.178		100.00	0.000	0.000
L2 96.04-47.67	70.53	1.176	7	1.6184	152.381	A	0.000	152.381	152.381	100.00	0.000	0.000
						B	0.000	152.381		100.00	0.000	0.000
						C	0.000	152.381		100.00	0.000	0.000
L3 47.67-1.00	24.23	0.939	6	1.4544	201.708	A	0.000	201.708	201.708	100.00	0.000	0.000
						B	0.000	201.708		100.00	0.000	0.000
						C	0.000	201.708		100.00	0.000	0.000

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 10 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Tower Pressure - Service

$$G_H = 1.100$$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 125.00-96.04	109.56	1.29	10	55.015	A	0.000	55.015	55.015	100.00	0.000	0.000
					B	0.000	55.015		100.00	0.000	0.000
					C	0.000	55.015		100.00	0.000	0.000
L2 96.04-47.67	70.53	1.176	9	138.747	A	0.000	138.747	138.747	100.00	0.000	0.000
					B	0.000	138.747		100.00	0.000	0.000
					C	0.000	138.747		100.00	0.000	0.000
L3 47.67-1.00	24.23	0.939	7	189.120	A	0.000	189.120	189.120	100.00	0.000	0.000
					B	0.000	189.120		100.00	0.000	0.000
					C	0.000	189.120		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
L1 125.00-96.04	0.57	1.31	A	1	0.65	31	1	1	55.015	1.23	42.62	C
			B	1	0.65		1	1	55.015			
			C	1	0.65		1	1	55.015			
L2 96.04-47.67	2.32	4.67	A	1	0.65	28	1	1	138.747	2.83	58.44	C
			B	1	0.65		1	1	138.747			
			C	1	0.65		1	1	138.747			
L3 47.67-1.00	2.27	8.25	A	1	0.65	23	1	1	189.120	3.05	65.40	C
			B	1	0.65		1	1	189.120			
			C	1	0.65		1	1	189.120			
Sum Weight:	5.15	14.22						OTM	401.44 kip-ft	7.11		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
L1 125.00-96.04	0.57	1.31	A	1	0.65	31	1	1	55.015	1.23	42.62	C
			B	1	0.65		1	1	55.015			
			C	1	0.65		1	1	55.015			
L2 96.04-47.67	2.32	4.67	A	1	0.65	28	1	1	138.747	2.83	58.44	C
			B	1	0.65		1	1	138.747			
			C	1	0.65		1	1	138.747			
L3 47.67-1.00	2.27	8.25	A	1	0.65	23	1	1	189.120	3.05	65.40	C
			B	1	0.65		1	1	189.120			
			C	1	0.65		1	1	189.120			

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	11 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
Sum Weight:	5.15	14.22						OTM	401.44 kip-ft	7.11		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
L1 125.00-96.04	0.57	1.31	A	1	0.65	31	1	1	55.015	1.23	42.62	C
			B	1	0.65		1	1	55.015			
			C	1	0.65		1	1	55.015			
L2 96.04-47.67	2.32	4.67	A	1	0.65	28	1	1	138.747	2.83	58.44	C
			B	1	0.65		1	1	138.747			
			C	1	0.65		1	1	138.747			
L3 47.67-1.00	2.27	8.25	A	1	0.65	23	1	1	189.120	3.05	65.40	C
			B	1	0.65		1	1	189.120			
			C	1	0.65		1	1	189.120			
Sum Weight:	5.15	14.22						OTM	401.44 kip-ft	7.11		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
L1 125.00-96.04	0.57	2.77	A	1	1.2	8	1	1	63.178	0.65	22.59	C
			B	1	1.2		1	1	63.178			
			C	1	1.2		1	1	63.178			
L2 96.04-47.67	2.32	8.10	A	1	1.2	7	1	1	152.381	1.43	29.62	C
			B	1	1.2		1	1	152.381			
			C	1	1.2		1	1	152.381			
L3 47.67-1.00	2.27	12.39	A	1	1.2	6	1	1	201.708	1.50	32.19	C
			B	1	1.2		1	1	201.708			
			C	1	1.2		1	1	201.708			
Sum Weight:	5.15	23.25						OTM	205.55 kip-ft	3.59		

Tower Forces - With Ice - Wind 60 To Face

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	12 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
L1 125.00-96.04	0.57	2.77	A	1	1.2	8	1	1	63.178	0.65	22.59	C
			B	1	1.2		1	1	63.178			
			C	1	1.2		1	1	63.178			
L2 96.04-47.67	2.32	8.10	A	1	1.2	7	1	1	152.381	1.43	29.62	C
			B	1	1.2		1	1	152.381			
			C	1	1.2		1	1	152.381			
L3 47.67-1.00	2.27	12.39	A	1	1.2	6	1	1	201.708	1.50	32.19	C
			B	1	1.2		1	1	201.708			
			C	1	1.2		1	1	201.708			
Sum Weight:	5.15	23.25						OTM	205.55 kip-ft	3.59		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
L1 125.00-96.04	0.57	2.77	A	1	1.2	8	1	1	63.178	0.65	22.59	C
			B	1	1.2		1	1	63.178			
			C	1	1.2		1	1	63.178			
L2 96.04-47.67	2.32	8.10	A	1	1.2	7	1	1	152.381	1.43	29.62	C
			B	1	1.2		1	1	152.381			
			C	1	1.2		1	1	152.381			
L3 47.67-1.00	2.27	12.39	A	1	1.2	6	1	1	201.708	1.50	32.19	C
			B	1	1.2		1	1	201.708			
			C	1	1.2		1	1	201.708			
Sum Weight:	5.15	23.25						OTM	205.55 kip-ft	3.59		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
L1 125.00-96.04	0.57	1.31	A	1	0.65	10	1	1	55.015	0.40	13.73	C
			B	1	0.65		1	1	55.015			
			C	1	0.65		1	1	55.015			
L2 96.04-47.67	2.32	4.67	A	1	0.65	9	1	1	138.747	0.91	18.82	C
			B	1	0.65		1	1	138.747			
			C	1	0.65		1	1	138.747			
L3 47.67-1.00	2.27	8.25	A	1	0.65	7	1	1	189.120	0.98	21.07	C
			B	1	0.65		1	1	189.120			
			C	1	0.65		1	1	189.120			
Sum Weight:	5.15	14.22						OTM	129.31 kip-ft	2.29		

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 13 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
L1 125.00-96.04	0.57	1.31	A	1	0.65	10	1	1	55.015	0.40	13.73	C
			B	1	0.65		1	1	55.015			
			C	1	0.65		1	1	55.015			
L2 96.04-47.67	2.32	4.67	A	1	0.65	9	1	1	138.747	0.91	18.82	C
			B	1	0.65		1	1	138.747			
			C	1	0.65		1	1	138.747			
L3 47.67-1.00	2.27	8.25	A	1	0.65	7	1	1	189.120	0.98	21.07	C
			B	1	0.65		1	1	189.120			
			C	1	0.65		1	1	189.120			
Sum Weight:	5.15	14.22						OTM	129.31 kip-ft	2.29		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
L1 125.00-96.04	0.57	1.31	A	1	0.65	10	1	1	55.015	0.40	13.73	C
			B	1	0.65		1	1	55.015			
			C	1	0.65		1	1	55.015			
L2 96.04-47.67	2.32	4.67	A	1	0.65	9	1	1	138.747	0.91	18.82	C
			B	1	0.65		1	1	138.747			
			C	1	0.65		1	1	138.747			
L3 47.67-1.00	2.27	8.25	A	1	0.65	7	1	1	189.120	0.98	21.07	C
			B	1	0.65		1	1	189.120			
			C	1	0.65		1	1	189.120			
Sum Weight:	5.15	14.22						OTM	129.31 kip-ft	2.29		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Leg Weight	14.22					
Bracing Weight	0.00					
Total Member Self-Weight	14.22					
Total Weight	33.40			1.42	2.65	
Wind 0 deg - No Ice		0.02	-22.90	-2039.31	-0.13	-3.59
Wind 30 deg - No Ice		11.51	-19.84	-1767.29	-1024.61	-2.53

<p>tnxTower</p> <p>Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701</p>	<p>Job</p> <p>CT-5003 125' Tapered Monopole</p>	<p>Page</p> <p>14 of 22</p>
	<p>Project</p> <p>Spring Hill, CT (Verizon)</p>	<p>Date</p> <p>10:47:36 03/25/16</p>
	<p>Client</p> <p>Blue Sky Towers</p>	<p>Designed by</p> <p>Chunhui Song</p>

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Wind 60 deg - No Ice		19.91	-11.47	-1021.35	-1773.84	-0.79
Wind 90 deg - No Ice		22.98	-0.02	-1.36	-2047.06	1.15
Wind 120 deg - No Ice		19.89	11.43	1019.37	-1771.06	2.79
Wind 150 deg - No Ice		11.47	19.82	1767.35	-1019.80	3.68
Wind 180 deg - No Ice		-0.02	22.90	2042.14	5.43	3.59
Wind 210 deg - No Ice		-11.51	19.84	1770.13	1029.91	2.53
Wind 240 deg - No Ice		-19.91	11.47	1024.19	1779.14	0.79
Wind 270 deg - No Ice		-22.98	0.02	4.20	2052.36	-1.15
Wind 300 deg - No Ice		-19.89	-11.43	-1016.54	1776.36	-2.79
Wind 330 deg - No Ice		-11.47	-19.82	-1764.51	1025.10	-3.68
Member Ice	9.03					
Total Weight Ice	61.25			3.18	5.07	
Wind 0 deg - Ice		0.00	-9.71	-835.33	4.97	-1.88
Wind 30 deg - Ice		4.86	-8.41	-723.04	-414.56	-1.23
Wind 60 deg - Ice		8.42	-4.86	-416.16	-721.65	-0.25
Wind 90 deg - Ice		9.72	-0.00	3.08	-834.02	0.80
Wind 120 deg - Ice		8.42	4.86	422.35	-721.55	1.63
Wind 150 deg - Ice		4.86	8.41	729.30	-414.38	2.03
Wind 180 deg - Ice		-0.00	9.71	841.69	5.18	1.88
Wind 210 deg - Ice		-4.86	8.41	729.41	424.71	1.23
Wind 240 deg - Ice		-8.42	4.86	422.53	731.80	0.25
Wind 270 deg - Ice		-9.72	0.00	3.29	844.16	-0.80
Wind 300 deg - Ice		-8.42	-4.86	-415.98	731.69	-1.63
Wind 330 deg - Ice		-4.86	-8.41	-722.93	424.53	-2.03
Total Weight	33.40			1.42	2.65	
Wind 0 deg - Service		0.01	-7.38	-655.91	1.75	-1.15
Wind 30 deg - Service		3.71	-6.39	-568.29	-328.24	-0.81
Wind 60 deg - Service		6.41	-3.69	-328.02	-569.57	-0.26
Wind 90 deg - Service		7.40	-0.01	0.52	-657.57	0.37
Wind 120 deg - Service		6.41	3.68	329.31	-568.67	0.90
Wind 150 deg - Service		3.69	6.38	570.23	-326.69	1.19
Wind 180 deg - Service		-0.01	7.38	658.75	3.55	1.15
Wind 210 deg - Service		-3.71	6.39	571.13	333.54	0.81
Wind 240 deg - Service		-6.41	3.69	330.86	574.87	0.26
Wind 270 deg - Service		-7.40	0.01	2.31	662.87	-0.37
Wind 300 deg - Service		-6.41	-3.68	-326.47	573.97	-0.90
Wind 330 deg - Service		-3.69	-6.38	-567.40	331.99	-1.19

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	15 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

<i>Comb. No.</i>	<i>Description</i>
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
L1	125 - 96.04	Pole	Max Tension	48	0.00	0.00	0.00
			Max. Compression	26	-25.05	5.63	-2.88
			Max. Mx	20	-10.03	236.01	-1.87
			Max. My	14	-10.06	3.54	-232.45
			Max. Vy	20	-19.40	236.01	-1.87
			Max. Vx	14	19.32	3.54	-232.45
			Max. Torque	25			4.43
			Max Tension	1	0.00	0.00	0.00
L2	96.04 - 47.67	Pole	Max. Compression	26	-49.98	6.38	-3.95
			Max. Mx	20	-24.84	1582.33	-4.37
			Max. My	14	-24.85	5.88	-1572.89
			Max. Vy	20	-32.53	1582.33	-4.37
			Max. Vx	14	32.39	5.88	-1572.89
			Max. Torque	25			5.80
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.71	6.47	-4.01
L3	47.67 - 1	Pole	Max. Mx	20	-40.05	3400.94	-6.44

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	16 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-40.05	7.99	-3384.48
			Max. Vy	20	-36.81	3400.94	-6.44
			Max. Vx	14	36.68	7.99	-3384.48
			Max. Torque	25			5.79

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	68.71	9.72	-0.00
	Max. H _x	20	40.08	36.77	-0.04
	Max. H _z	3	30.06	-0.04	36.64
	Max. M _x	2	3380.87	-0.04	36.64
	Max. M _z	8	3394.18	-36.77	0.04
	Max. Torsion	25	5.78	18.35	31.71
	Min. Vert	17	30.06	18.42	-31.75
	Min. H _x	8	40.08	-36.77	0.04
	Min. H _z	15	30.06	0.04	-36.64
	Min. M _x	14	-3384.48	0.04	-36.64
	Min. M _z	20	-3400.94	36.77	-0.04
	Min. Torsion	13	-5.78	-18.35	-31.71

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	33.40	-0.00	0.00	1.48	2.77	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	40.08	0.04	-36.64	-3380.87	-1.28	-5.64
0.9 Dead+1.6 Wind 0 deg - No Ice	30.06	0.04	-36.64	-3349.57	-2.12	-5.64
1.2 Dead+1.6 Wind 30 deg - No Ice	40.08	18.42	-31.75	-2929.96	-1699.45	-4.00
0.9 Dead+1.6 Wind 30 deg - No Ice	30.06	18.42	-31.75	-2902.89	-1684.33	-4.00
1.2 Dead+1.6 Wind 60 deg - No Ice	40.08	31.86	-18.35	-1693.51	-2941.32	-1.29
0.9 Dead+1.6 Wind 60 deg - No Ice	30.06	31.86	-18.35	-1678.06	-2914.53	-1.28
1.2 Dead+1.6 Wind 90 deg - No Ice	40.08	36.77	-0.04	-2.84	-3394.18	1.76
0.9 Dead+1.6 Wind 90 deg - No Ice	30.06	36.77	-0.04	-3.26	-3363.15	1.77
1.2 Dead+1.6 Wind 120 deg - No Ice	40.08	31.83	18.29	1689.10	-2936.72	4.34
0.9 Dead+1.6 Wind 120 deg - No Ice	30.06	31.83	18.29	1672.78	-2909.98	4.36
1.2 Dead+1.6 Wind 150 deg - No Ice	40.08	18.35	31.71	2928.96	-1691.44	5.76
0.9 Dead+1.6 Wind 150 deg - No Ice	30.06	18.35	31.71	2900.99	-1676.40	5.78

<p>tnxTower</p> <p>Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701</p>	<p>Job</p> <p>CT-5003 125' Tapered Monopole</p>	<p>Page</p> <p>17 of 22</p>
	<p>Project</p> <p>Spring Hill, CT (Verizon)</p>	<p>Date</p> <p>10:47:36 03/25/16</p>
	<p>Client</p> <p>Blue Sky Towers</p>	<p>Designed by</p> <p>Chunhui Song</p>

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.6 Wind 180 deg - No Ice	40.08	-0.04	36.64	3384.48	7.99	5.64
0.9 Dead+1.6 Wind 180 deg - No Ice	30.06	-0.04	36.64	3352.23	7.05	5.65
1.2 Dead+1.6 Wind 210 deg - No Ice	40.08	-18.42	31.75	2933.59	1706.17	4.00
0.9 Dead+1.6 Wind 210 deg - No Ice	30.06	-18.42	31.75	2905.57	1689.28	4.00
1.2 Dead+1.6 Wind 240 deg - No Ice	40.08	-31.86	18.35	1697.13	2948.06	1.30
0.9 Dead+1.6 Wind 240 deg - No Ice	30.06	-31.86	18.35	1680.73	2919.50	1.29
1.2 Dead+1.6 Wind 270 deg - No Ice	40.08	-36.77	0.04	6.44	3400.94	-1.76
0.9 Dead+1.6 Wind 270 deg - No Ice	30.06	-36.77	0.04	5.91	3368.12	-1.78
1.2 Dead+1.6 Wind 300 deg - No Ice	40.08	-31.83	-18.29	-1685.52	2943.46	-4.34
0.9 Dead+1.6 Wind 300 deg - No Ice	30.06	-31.83	-18.29	-1670.15	2914.94	-4.36
1.2 Dead+1.6 Wind 330 deg - No Ice	40.08	-18.35	-31.71	-2925.37	1698.16	-5.76
0.9 Dead+1.6 Wind 330 deg - No Ice	30.06	-18.35	-31.71	-2898.35	1681.35	-5.78
1.2 Dead+1.0 Ice+1.0 Temp	68.71	-0.00	0.00	4.01	6.47	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	68.71	0.00	-9.71	-899.70	6.43	-1.86
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	68.71	4.86	-8.41	-778.68	-445.75	-1.23
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	68.71	8.42	-4.86	-447.92	-776.74	-0.27
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	68.71	9.72	-0.00	3.94	-897.85	0.76
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	68.71	8.42	4.86	455.83	-776.63	1.58
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	68.71	4.86	8.41	786.67	-445.56	1.99
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	68.71	-0.00	9.71	907.81	6.66	1.86
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	68.71	-4.86	8.41	786.79	458.84	1.23
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	68.71	-8.42	4.86	456.03	789.84	0.28
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	68.71	-9.72	0.00	4.16	910.95	-0.75
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	68.71	-8.42	-4.86	-447.73	789.72	-1.58
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	68.71	-4.86	-8.41	-778.57	458.64	-1.99
Dead+Wind 0 deg - Service	33.40	0.01	-7.38	-676.33	1.89	-1.15
Dead+Wind 30 deg - Service	33.40	3.71	-6.39	-585.98	-338.40	-0.82
Dead+Wind 60 deg - Service	33.40	6.41	-3.69	-338.21	-587.26	-0.26
Dead+Wind 90 deg - Service	33.40	7.40	-0.01	0.58	-678.01	0.36
Dead+Wind 120 deg - Service	33.40	6.41	3.68	339.62	-586.33	0.89
Dead+Wind 150 deg - Service	33.40	3.69	6.38	588.06	-336.79	1.18
Dead+Wind 180 deg - Service	33.40	-0.01	7.38	679.34	3.75	1.15
Dead+Wind 210 deg - Service	33.40	-3.71	6.39	588.99	344.04	0.82
Dead+Wind 240 deg - Service	33.40	-6.41	3.69	341.23	592.90	0.26
Dead+Wind 270 deg - Service	33.40	-7.40	0.01	2.44	683.65	-0.36
Dead+Wind 300 deg - Service	33.40	-6.41	-3.68	-336.61	591.97	-0.89
Dead+Wind 330 deg - Service	33.40	-3.69	-6.38	-585.05	342.43	-1.18

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job	CT-5003 125' Tapered Monopole	Page	18 of 22
	Project	Spring Hill, CT (Verizon)	Date	10:47:36 03/25/16
	Client	Blue Sky Towers	Designed by	Chunhui Song

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-33.40	0.00	0.00	33.40	0.00	0.000%
2	0.04	-40.08	-36.64	-0.04	40.08	36.64	0.000%
3	0.04	-30.06	-36.64	-0.04	30.06	36.64	0.000%
4	18.42	-40.08	-31.75	-18.42	40.08	31.75	0.000%
5	18.42	-30.06	-31.75	-18.42	30.06	31.75	0.000%
6	31.86	-40.08	-18.35	-31.86	40.08	18.35	0.000%
7	31.86	-30.06	-18.35	-31.86	30.06	18.35	0.000%
8	36.77	-40.08	-0.04	-36.77	40.08	0.04	0.000%
9	36.77	-30.06	-0.04	-36.77	30.06	0.04	0.000%
10	31.83	-40.08	18.29	-31.83	40.08	-18.29	0.000%
11	31.83	-30.06	18.29	-31.83	30.06	-18.29	0.000%
12	18.35	-40.08	31.71	-18.35	40.08	-31.71	0.000%
13	18.35	-30.06	31.71	-18.35	30.06	-31.71	0.000%
14	-0.04	-40.08	36.64	0.04	40.08	-36.64	0.000%
15	-0.04	-30.06	36.64	0.04	30.06	-36.64	0.000%
16	-18.42	-40.08	31.75	18.42	40.08	-31.75	0.000%
17	-18.42	-30.06	31.75	18.42	30.06	-31.75	0.000%
18	-31.86	-40.08	18.35	31.86	40.08	-18.35	0.000%
19	-31.86	-30.06	18.35	31.86	30.06	-18.35	0.000%
20	-36.77	-40.08	0.04	36.77	40.08	-0.04	0.000%
21	-36.77	-30.06	0.04	36.77	30.06	-0.04	0.000%
22	-31.83	-40.08	-18.29	31.83	40.08	18.29	0.000%
23	-31.83	-30.06	-18.29	31.83	30.06	18.29	0.000%
24	-18.35	-40.08	-31.71	18.35	40.08	31.71	0.000%
25	-18.35	-30.06	-31.71	18.35	30.06	31.71	0.000%
26	0.00	-68.71	0.00	0.00	68.71	-0.00	0.000%
27	0.00	-68.71	-9.71	-0.00	68.71	9.71	0.000%
28	4.86	-68.71	-8.41	-4.86	68.71	8.41	0.000%
29	8.42	-68.71	-4.86	-8.42	68.71	4.86	0.000%
30	9.72	-68.71	-0.00	-9.72	68.71	0.00	0.000%
31	8.42	-68.71	4.86	-8.42	68.71	-4.86	0.000%
32	4.86	-68.71	8.41	-4.86	68.71	-8.41	0.000%
33	-0.00	-68.71	9.71	0.00	68.71	-9.71	0.000%
34	-4.86	-68.71	8.41	4.86	68.71	-8.41	0.000%
35	-8.42	-68.71	4.86	8.42	68.71	-4.86	0.000%
36	-9.72	-68.71	0.00	9.72	68.71	-0.00	0.000%
37	-8.42	-68.71	-4.86	8.42	68.71	4.86	0.000%
38	-4.86	-68.71	-8.41	4.86	68.71	8.41	0.000%
39	0.01	-33.40	-7.38	-0.01	33.40	7.38	0.000%
40	3.71	-33.40	-6.39	-3.71	33.40	6.39	0.000%
41	6.41	-33.40	-3.69	-6.41	33.40	3.69	0.000%
42	7.40	-33.40	-0.01	-7.40	33.40	0.01	0.000%
43	6.41	-33.40	3.68	-6.41	33.40	-3.68	0.000%
44	3.69	-33.40	6.38	-3.69	33.40	-6.38	0.000%
45	-0.01	-33.40	7.38	0.01	33.40	-7.38	0.000%
46	-3.71	-33.40	6.39	3.71	33.40	-6.39	0.000%
47	-6.41	-33.40	3.69	6.41	33.40	-3.69	0.000%
48	-7.40	-33.40	0.01	7.40	33.40	-0.01	0.000%
49	-6.41	-33.40	-3.68	6.41	33.40	3.68	0.000%
50	-3.69	-33.40	-6.38	3.69	33.40	6.38	0.000%

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 19 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	6	0.0000001	0.00000656
3	Yes	5	0.0000001	0.00006394
4	Yes	6	0.0000001	0.00003338
5	Yes	6	0.0000001	0.00000933
6	Yes	6	0.0000001	0.00003667
7	Yes	6	0.0000001	0.00001045
8	Yes	5	0.0000001	0.00005500
9	Yes	5	0.0000001	0.00002370
10	Yes	6	0.0000001	0.00003952
11	Yes	6	0.0000001	0.00001143
12	Yes	6	0.0000001	0.00003218
13	Yes	6	0.0000001	0.00000894
14	Yes	6	0.0000001	0.00000687
15	Yes	5	0.0000001	0.00006694
16	Yes	6	0.0000001	0.00003917
17	Yes	6	0.0000001	0.00001124
18	Yes	6	0.0000001	0.00003551
19	Yes	6	0.0000001	0.00000999
20	Yes	5	0.0000001	0.00006218
21	Yes	5	0.0000001	0.00002669
22	Yes	6	0.0000001	0.00003297
23	Yes	6	0.0000001	0.00000918
24	Yes	6	0.0000001	0.00004068
25	Yes	6	0.0000001	0.00001181
26	Yes	4	0.0000001	0.00003996
27	Yes	6	0.0000001	0.00002352
28	Yes	6	0.0000001	0.00003219
29	Yes	6	0.0000001	0.00003340
30	Yes	6	0.0000001	0.00002131
31	Yes	6	0.0000001	0.00003743
32	Yes	6	0.0000001	0.00003314
33	Yes	6	0.0000001	0.00002403
34	Yes	6	0.0000001	0.00003832
35	Yes	6	0.0000001	0.00003590
36	Yes	6	0.0000001	0.00002203
37	Yes	6	0.0000001	0.00003371
38	Yes	6	0.0000001	0.00003912
39	Yes	5	0.0000001	0.00000817
40	Yes	5	0.0000001	0.00000938
41	Yes	5	0.0000001	0.00001148
42	Yes	4	0.0000001	0.00007729
43	Yes	5	0.0000001	0.00001513
44	Yes	5	0.0000001	0.00000993
45	Yes	5	0.0000001	0.00000834
46	Yes	5	0.0000001	0.00001497
47	Yes	5	0.0000001	0.00001103
48	Yes	4	0.0000001	0.00008072
49	Yes	5	0.0000001	0.00000977
50	Yes	5	0.0000001	0.00001676

Maximum Tower Deflections - Service Wind

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 20 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 96.04	18.293	47	1.3143	0.0122
L2	99.96 - 47.67	11.657	47	1.1705	0.0069
L3	53.34 - 1	3.000	47	0.5453	0.0017

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
123.00	15' Omni	47	17.745	1.3060	0.0117	27043
112.00	LP 303-1	47	14.760	1.2547	0.0093	10401
105.50	Tri-Antenna Mount	47	13.054	1.2144	0.0079	6934
102.00	LP 303-1	47	12.165	1.1879	0.0072	5910
96.00	X7C-FRO-660-VR0 w/ pipe mount	47	10.699	1.1323	0.0062	5174
95.00	LP 303-1	47	10.463	1.1218	0.0060	5119
92.00	10' Omni	47	9.768	1.0885	0.0056	4963
82.00	LP 303-1	47	7.614	0.9608	0.0043	4505
72.00	LP 303-1	47	5.726	0.8167	0.0032	4125

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 96.04	90.385	20	6.4600	0.0602
L2	99.96 - 47.67	57.773	20	5.7885	0.0338
L3	53.34 - 1	14.909	18	2.7099	0.0085

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
123.00	15' Omni	20	87.692	6.4224	0.0579	5784
112.00	LP 303-1	20	73.034	6.1879	0.0457	2223
105.50	Tri-Antenna Mount	20	64.649	5.9989	0.0390	1480
102.00	LP 303-1	20	60.271	5.8722	0.0356	1260
96.00	X7C-FRO-660-VR0 w/ pipe mount	20	53.049	5.6040	0.0304	1096
95.00	LP 303-1	20	51.884	5.5531	0.0297	1083
92.00	10' Omni	20	48.455	5.3907	0.0276	1045
82.00	LP 303-1	20	37.803	4.7645	0.0212	936
72.00	LP 303-1	20	28.446	4.0538	0.0159	847

Compression Checks

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 21 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	125 - 96.04 (1)	TP26.9x18x0.1875	28.96	0.00	0.0	15.1803	-10.03	1026.07	0.010
L2	96.04 - 47.67 (2)	TP41.28x25.3203x0.25	52.29	0.00	0.0	31.1841	-24.84	1984.88	0.013
L3	47.67 - 1 (3)	TP55x39.0494x0.3125	52.34	0.00	0.0	54.2432	-40.05	3272.70	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	125 - 96.04 (1)	TP26.9x18x0.1875	236.44	538.47	0.439	0.00	538.47	0.000
L2	96.04 - 47.67 (2)	TP41.28x25.3203x0.25	1583.05	1606.43	0.985	0.00	1606.43	0.000
L3	47.67 - 1 (3)	TP55x39.0494x0.3125	3401.67	3688.18	0.922	0.00	3688.18	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u K	φV _n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u kip-ft	φT _n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	125 - 96.04 (1)	TP26.9x18x0.1875	19.41	513.03	0.038	0.55	1078.26	0.001
L2	96.04 - 47.67 (2)	TP41.28x25.3203x0.25	32.53	992.44	0.033	1.30	3216.78	0.000
L3	47.67 - 1 (3)	TP55x39.0494x0.3125	36.81	1636.35	0.022	1.30	7385.38	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	125 - 96.04 (1)	0.010	0.439	0.000	0.038	0.001	0.450	1.000	4.8.2 ✓
L2	96.04 - 47.67 (2)	0.013	0.985	0.000	0.033	0.000	0.999	1.000	4.8.2 ✓
L3	47.67 - 1 (3)	0.012	0.922	0.000	0.022	0.000	0.935	1.000	4.8.2 ✓

tnxTower Bennett & Pless 550 River Drive North Sioux City, SD 57049 Phone: 605-540-4621 FAX: 678-990-8701	Job CT-5003 125' Tapered Monopole	Page 22 of 22
	Project Spring Hill, CT (Verizon)	Date 10:47:36 03/25/16
	Client Blue Sky Towers	Designed by Chunhui Song

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L1	125 - 96.04	Pole	TP26.9x18x0.1875	1	-10.03	1026.07	45.0	Pass	
L2	96.04 - 47.67	Pole	TP41.28x25.3203x0.25	2	-24.84	1984.88	99.9	Pass	
L3	47.67 - 1	Pole	TP55x39.0494x0.3125	3	-40.05	3272.70	93.5	Pass	
							Summary		
							Pole (L2)	99.9	Pass
							RATING =	99.9	Pass

Job	CT-5003	Page	1 of 1
Project	125' Tapered Monopole	Date	3/25/2016 11:12
Client	BlueSky Tower	Design	CS

MONOPOLE SPLICE BOLT & SPLICE PLATE ANALYSIS

Design / Analysis in Accordance to TIA/EIA-222-G

FACTORED SPLICE LOADS

Bottom Width:	55.00	in
Moment:	3402.00	k-ft
Axial:	40.00	kips
Shear:	37.00	kips

Baseft SPLICE PLATE PROPERTIES

Plate Type	A572-50		
	Fy	50.0	ksi
	Fu	65.0	ksi
Plate Width	68.50	in	
Plate Thk	1.75	in	
Weld Type	Butt	(Butt or Lap)	
Bolt Pattern	R	Round or Square	
Stiffeners	Y	Yes or No	
No. Stiffeners	1	/ bolt (1 or 2)	
Stiffener Hgt	20.00	in	
Stiffener Thk	1.50	in	

Baseft SPLICE BOLT PROPERTIES

Bolt Type	A325 (≥ 1 1/8")		
	Fy	74.0	ksi
	Fu	105.0	ksi
Bolt Diameter	2.250	in	(57.2 mm)
# of Bolts	12		
Bolt Circle	61.75		[TOO SMALL] (1,568 mm)

RESULTS

Baseft SPLICE PLATE		
Base Plate Stress	27.8	ksi
Base Plate Capacity	45.0	ksi
Stress Ratio	61.7%	
Passes		
Baseft SPLICE BOLTS		
Anchor Bolt Force (Cu)	223.7	kips
Anchor Bolt Force (Tu)	217.0	kips
Anchor Bolt Capacity (Fu)	255.8	kips
Stress Ratio	87.5%	
Combined Stress Ratio	88.7%	
Passes		

Base ft SPLICE

CALCULATIONS:

FORCES:

M =	40824	k-in	ABFT = My/lb - P/n =	217.04	kips	ALLOWABLE TENSION FORCE
y =	30.875	in	ABFC = My/lb + P/n =	223.71	kips	ALLOWABLE COMPRESSION FORCE
Ib =	5720	in ⁴				
P =	40.00	kips				
n =	12					

NOTE: Round Bolt Pattern Formula is nearly identical to the Square Bolt Pattern and used for all calculations.

BOLT CAPACITIES:

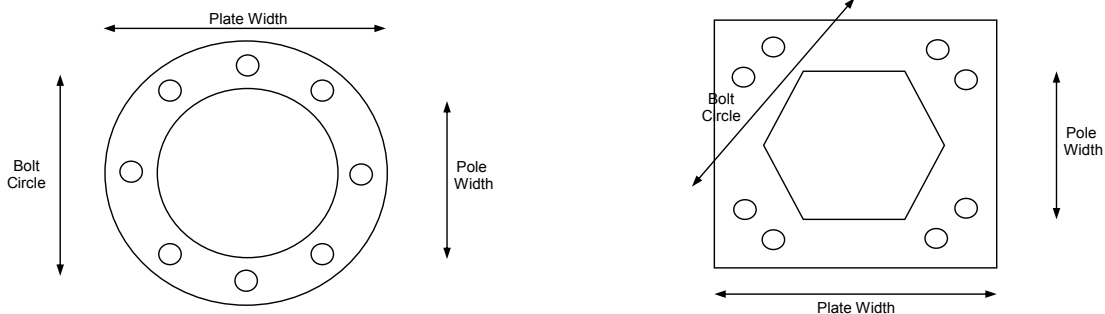
AG =	3.976	in ² - Gross Area	ΦRnt = 0.75AEFu =	255.76	kips	ULTIMATE STRENGTH (NET AREA)
AE =	3.248	in ² - Net Area	(Vu/ΦRnt)+(Tu/ΦRnt) =	88.7%		COMBINED SHEAR & TENSION

PLATE CAPACITIES:

Larm =	3.375	in [BC - Pole Width] / 2	Seff =	7.146	in ³	
beff 1 =	14.000	in [8T]	Mr =	755.007	k-in	FACTORED MOMENT
beff 2 =	16.166	in [Bolt c/c Distance]	Mf / Seff =	105.657	ksi	FACTORED PLATE STRESS
t =	1.750	in [Thickness]	0.90 fy =	45.000	ksi	FACTORED PLATE CAPACITY

STIFFENERS:

beff 3 =	16.166	in [Stiffener c/c Distance]	leff =	175.106	in ⁴	
t (per side) =	0.750	in [Thickness]	Seff =	27.179	in ⁴	
H (per side) =	6.667	in [Effective Height taken as 1/3]				<i>Stiffened Plate</i>
Area =	38.291	in ²	Mf / Seff =	27.779	ksi	FACTORED PLATE STRESS
y =	1.974	in	0.90 fy =	45.000	ksi	FACTORED PLATE CAPACITY



Appendix B
Collocation Application



Collocation Application

Installation Type: Anchor Collocation Add to Existing

BlueSky Towers, LLC Info

Contact: Sean Gormley Site Number: CT-5003
Email: collos@blueskytower.com Site Name: Spring Hill Lane
Office: 508-530-3580 Submittal Date: 12/28/2015
Fax: 508-530-3564 Revision Date(s):

PLEASE SUBMIT THIS APPLICATION VIA E-MAIL. Send only final LE's, CD's structural, etc with Application

Applicant Information

Applicant Name: New Cingular Wireless PCS, LLC Primary Contact/Agent Name: Tim Whalen
Applicant Site Name: Bethel Spring Street Contact/Agent Company Name: Centerline Communications
Applicant Site Number: CT2268 Contact/Agent Number: 781 375 8318
Proposed ON AIR Date: ASAP Contact/Agent Fax: 508 819 3017
Applicant Legal Entity: New Cingular Wireless PCS, LLC Contact Email: twhalen@clinell.com
Notice Address for Site License:

Applicant Contact Information

Leasing Contact Name: Email: Number:
RF Contact Name: Email: Number:
Construction Contact Name: Email: Number:
Emergency Contact Name: Email: Number:
Account Payable Contact Name: Email: Number:

Tower Information

Latitude: 41d 21m 43.94196s N Structure Type: Monopole
Longitude: 73d -23m -47.688s W Structure Height:
RMSL: FT
Site Address: 23 Spring Hill Lane, Bethel CT

EQUIPMENT SPECIFICATIONS

Summary of Work to be Completed:

Table with 5 columns: Equipment Type, SECTOR 1, SECTOR 2, SECTOR 3, SECTOR 4. Rows include Antenna Manufacturer, Antenna Model#, Antenna Dimensions, Antenna Weight, Antenna Quantity, Dish Manufacturer, Dish Model#, Dish Diam/Weight/Mount hgt or location, Azimuths, Total# Of Lines For Equipment in Column, Line Type, Diameter Of Coax Cables (in), Transmitter/Receiver Type/RRU/Junction Boxes, Qty Of Transmitters/Receivers/RRUs/Junction Boxes, Manufacturer, Type & Model, Removing Equipment (if Applicable), Transmit Frequency (Mhz), Receive Frequency (Mhz), Antenna Gain (Db), Type of Technology, TX Power Output, ERP (Watts), Electric Service Required (Amps/Volts).

Will RRU's be located behind antennas:

GROUND SPACE REQUIREMENTS - No Change

Table with 2 columns: Description, DIMS: L(ft) W(ft) OR H(ft). Rows include Existing Lease Area, New/Add'l Lease Area being requested, New/Add'l Rooftop Lease Area being requested, Shelter, Concrete Pad for Shelter, Cabinets, Concrete Pad for Cabinets, Cabinet/Shelter Manufacturer/Model.

POWER REQUIREMENTS

Power Provided by: Electrical Service Provider: Electrical Service Telephone Number:
Average Monthly Power Consumption: KWH units
Telco/Interconnect Requirements: POTS T1 MICROWAVE FIBER OPTICS
Fiber Provider:

BACK-UP POWER INFORMATION

Generator Required: Generation Location: Fuel Type:
Generator Ground Space Requirement: DIMS: L(ft) W(ft) H(ft)
BST Generator: Generator Owner: Shared Generator Peak Usage: KW
Generator Capacity: KW Generator Make: Generator Model:
Fuel Tank Location: Fuel Tank Size: DIMS: L(ft) W(ft) Fuel Tank Size: Gallons
Pad for Fuel Tank (if required) DIMS: L(ft) W(ft)

Before submitting application, this section MUST be addressed:

Attach manufacturer's equipment specifications for antennas, RRU's, mounts, and all struct loading info for analysis. Cabinets & shelters if available

Scope of Work Summary:
Swap Existing Powerwave 7770 in position 2 of each sector (3 total) with CCI HPA 65R-BUU
• Alpha will receive CCI HPA 65R-BUU H8
• Beta and Gamma will receive CCI HPA 65R-BUU H6
Adding (1) RRUS 11 per sector (3 total)
Adding (1) RRUS 32 per Sector (3 total)
Add (1) fiber trunk
Add (2) DC cables
Add 2nd Squid

Final Configuration after work is completed:

Final Configurations Include:
• (9) Panel Antennas
• (3) Powerwave 770 (existing)
• (1) CCI 65R-BUU-H8 (new)
• (2) CCI 65R-BUU-H6 (new)
• (3) Powerwave P65-16-XLH-RR (existing)
• (6) TMAs (existing)
(6) RRUS 11 (3 new, 3 existing)
(3) RRUS 32 (new)
(2) Squids (1 new, 1 existing)
(12) Coax (existing)
(4) DC lines (2 new, 2 existing)
(2) Fiber Cable (1 new, 1 existing)

www.blueskytower.com

Existing Equipment

Comments: (SG) Will need SA, CDs.

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

AT&T Existing Facility

Site ID: CT2268

Bethel Spring Street
23 Spring Hill Road
Bethel, CT 06801

March 2, 2016

EBI Project Number: 6216000898

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	19.66 %

March 2, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2268 – Bethel Spring Street**

EBI Consulting was directed to analyze the proposed AT&T facility located at **23 Spring Hill Road, Bethel, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **23 Spring Hill Road, Bethel, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

- 1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 2 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **CCI HPA-65R-BUU-H6, CCI HPA-65R-BUU-H8 and the Powerwave 7770.00** for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerline of the proposed antennas is **122 feet** above ground level (AGL).
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	122 feet	Height (AGL):	122 feet	Height (AGL):	122 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	0.74	Antenna B1 MPE%	0.74	Antenna C1 MPE%	0.74
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	CCI OPA-65R-BUU-H8	Make / Model:	CCI OPA-65R-BUU-H6	Make / Model:	CCI OPA-65R-BUU-H6
Gain:	14.05 / 15.55 dBd	Gain:	14.05 / 15.55 dBd	Gain:	14.05 / 15.55 dBd
Height (AGL):	122 feet	Height (AGL):	122 feet	Height (AGL):	122 feet
Frequency Bands	850 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 2300 MHz (WCS)	Frequency Bands	850 MHz / 2300 MHz (WCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	7,356.23	ERP (W):	6,137.01	ERP (W):	6,137.01
Antenna A2 MPE%	2.59	Antenna B2 MPE%	2.09	Antenna C2 MPE%	2.09
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Powerwave P65-16-XLH-RR	Make / Model:	Powerwave P65-16-XLH-RR	Make / Model:	Powerwave P65-16-XLH-RR
Gain:	12.7 / 15.1 dBd	Gain:	12.7 / 15.1 dBd	Gain:	12.7 / 15.1 dBd
Height (AGL):	122 feet	Height (AGL):	122 feet	Height (AGL):	122 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	6,117.63	ERP (W):	6,117.63	ERP (W):	6,117.63
Antenna A3 MPE%	2.32	Antenna B3 MPE%	2.32	Antenna C3 MPE%	2.32

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	5.64 %
Bethel PD	0.00 %
Thomas Refuse	0.00 %
Utility Cmcns	0.00 %
Valley Cmcns	0.00 %
Yanke Gas	0.00 %
T-Mobile	4.46 %
Sprint	1.38 %
Nextel	2.44 %
Verizon Wireless	5.74 %
Site Total MPE %:	19.66 %

AT&T Sector 1 Total:	5.64 %
AT&T Sector 2 Total:	4.66 %
AT&T Sector 3 Total:	4.66 %
Site Total:	19.66 %

AT&T _ Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	122	2.21	850	567	0.39 %
AT&T 1900 MHz (PCS) UMTS	2	656.33	122	3.51	1900	1000	0.35 %
AT&T 850 MHz LTE	2	1524.58	122	8.15	850	567	1.44 %
AT&T 2300 MHz (WCS) LTE	2	2153.53	122	11.51	2300	1000	1.15 %
AT&T 700 MHz LTE	2	1117.25	122	5.97	700	467	1.28 %
AT&T 1900 MHz (PCS) LTE	2	1941.56	122	10.37	1900	1000	1.04 %
						Total:	5.64 %

Summary

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

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector 1:	5.64 %
Sector 2:	4.66 %
Sector 3 :	4.66 %
AT&T Maximum Total (per sector):	5.64 %
Site Total:	19.66 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **19.66%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

PROJECT INFORMATION

- SCOPE OF WORK:
- REMOVE (1) EXISTING GSM ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO BE REMOVED.
 - NEW AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW ANTENNAS; (6) EXISTING LTE/UMTS ANTENNAS TO REMAIN (2 PER SECTOR)
 - AT&T RRUs: (2) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (6) NEW RRUs; (2) EXISTING RRU PER SECTOR TO REMAIN, FOR A TOTAL OF (6) EXISTING RRUs.
 - AT&T CABLING: (1) PROPOSED FIBER TRUNK, AND (2) PROPOSED DC TRUNKS

SITE ADDRESS: 23 SPRING HILL LANE
BETHEL, CT 06801

LATITUDE: 41.3622061 41° 21' 43.94196"N
LONGITUDE: -73.3965800 -73° 23' 47.688"W

USID: 83428

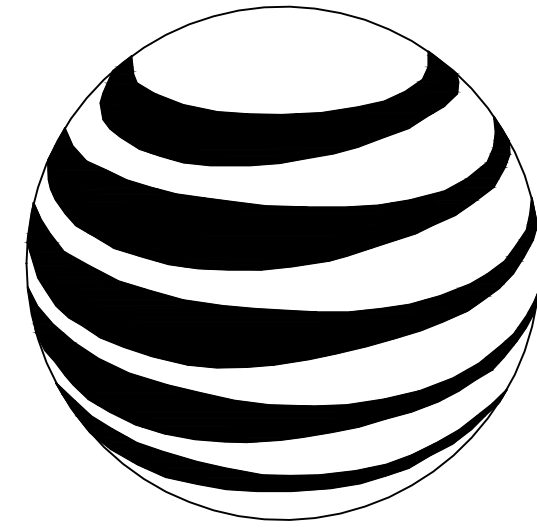
TOWER OWNER:

TYPE OF SITE: MONOPOLE/INDOOR EQUIPMENT

MONOPOLE HEIGHT: 125'-0"±
RAD CENTER: 122'-0"±

CURRENT USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

PROPOSED USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY



at&t
MOBILITY

FA CODE: 10090874
SITE NUMBER: CT2268
SITE NAME: BETHEL SPRING STREET

PROJECT TEAM

CLIENT REPRESENTATIVE

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

SITE ACQUISITION:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

ZONING:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

ENGINEERING:

COMPANY: COM-EX CONSULTANTS, LLC
ADDRESS: 115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
CONTACT: NICHOLAS D. BARILE, P.E.
PHONE: 862-209-4300
EMAIL: nbarile@comexconsultants.com

RF ENGINEER:

COMPANY: AT&T MOBILITY - NEW ENGLAND
ADDRESS: 550 COCHITUATE ROAD
SUITE 550 13 & 14
FRAMINGHAM, MA 01701
CONTACT: CAMERON SYME
PHONE: 508-596-7146
EMAIL: cs6970@att.com

CONSTRUCTION MANAGEMENT:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: GRZEGORZ "GREG" DORMAN
PHONE: 484-683-1750
EMAIL: gdorman@empiretelecomm.com

VICINITY MAP

1. TAKE I-84W. 2. TAKE EXIT 10 FOR US-6W TOWARD NEWTOWN/SANDY HOOK. 3. TURN RIGHT ONTO CT-34W/US-6W/CHURCH HILL ROAD. 4. TURN LEFT ONTO MAIN STREET. 5. TAKE FIRST RIGHT ONTO CT-302W/SUGAR STREET. 6. TURN LEFT ONTO HIGHLAND AVENUE. 7. CONTINUE STRAIGHT ONTO GOVERNORS LANE. 8. TURN RIGHT ONTO SPRING HILL LANE. 9. TURN LEFT ONTO ACCESS ROAD AT 23 SPRING HILL LANE, AND FOLLOW TO TOWER.



DRAWING INDEX

		REV.
T-1	TITLE SHEET	0
GN-1	GROUNDING & GENERAL NOTES	0
A-1	COMPOUND LAYOUT	0
A-2	EQUIPMENT LAYOUTS	0
A-3	ANTENNA LAYOUTS & ELEVATIONS	0
A-4	DETAILS	0
A-5	ANTENNA MOUNTING DETAILS	0
G-1	GROUNDING, ONE-LINE DIAGRAM & DETAILS	0

GENERAL NOTES

- THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
- 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.
- 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.

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

DISCIPLINE:	NAME:	DATE:
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		



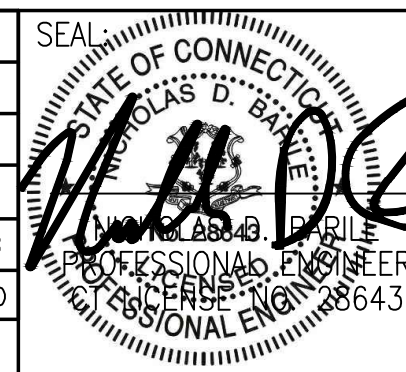
CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800-922-4455 OR DIAL 811



SITE NUMBER: CT2268
SITE NAME: BETHEL SPRING STREET
23 SPRING HILL LANE
BETHEL, CONNECTICUT 06801
FAIRFIELD COUNTY



0	04/05/16	ISSUED AS FINAL	AM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AM	DRAWN BY: AM		



AT&T		
DRAWING TITLE: TITLE SHEET		
JOB NUMBER: 15138-EMP	DRAWING NUMBER: T-1	REV: 0

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. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
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 WITH STAINLESS STEEL HARDWARE 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 AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').
14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR - EMPIRE TELECOM
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER - AT&T MOBILITY
 OEM - ORIGINAL EQUIPMENT MANUFACTURER
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 (EMPIRE TELECOM).
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. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. 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.
8. 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. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR
9. 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.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF 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.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
14. 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). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
16. 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.
17. 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 MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. SINCE THE CELL SITE MAY BE 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 REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

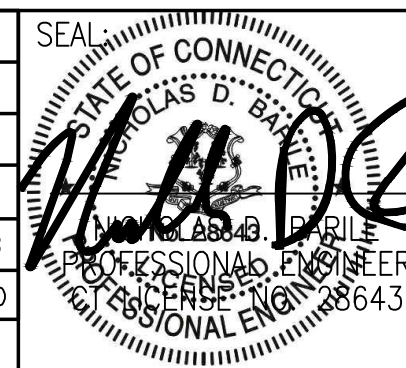
19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
 - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
 - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS
20. 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, THIRTEENTH EDITION
 - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
 - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
 - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
 - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
 - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
 - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS
21. 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.
22. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.
23. INFORMATION SHOWN ON THIS SET OF PLANS TAKEN FROM DRAWINGS PREPARED BY CHA ENGINEERING FOR A RECENT UPGRADE DATED 04/05/2011. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.



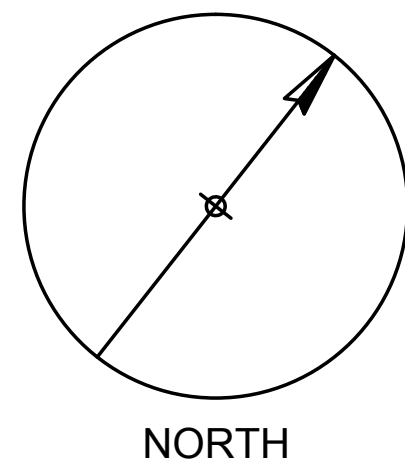
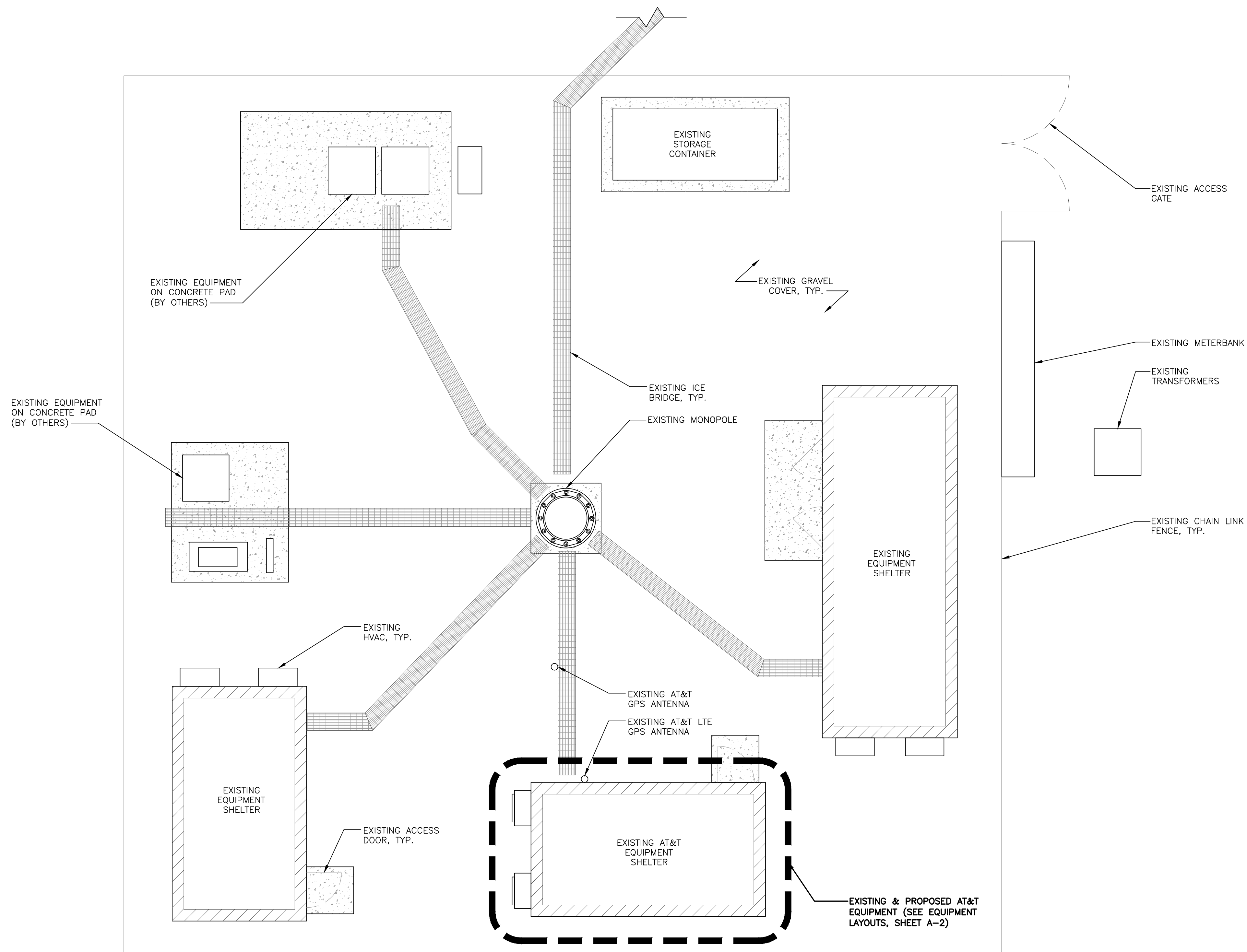
SITE NUMBER: CT2268
SITE NAME: BETHEL SPRING STREET
 23 SPRING HILL LANE
 BETHEL, CONNECTICUT 06801
 FAIRFIELD COUNTY



0	04/05/16	ISSUED AS FINAL	AM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: AM	DRAWN BY: AM	

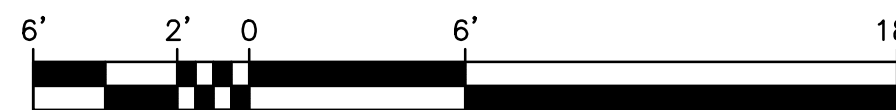


AT&T		
DRAWING TITLE: GROUNDING & GENERAL NOTES		
JOB NUMBER 15138-EMP	DRAWING NUMBER GN-1	REV 0



COMPOUND LAYOUT

SCALE: 3/16" = 1'-0"



3/16 Inch = 1 Foot

NOTE:
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

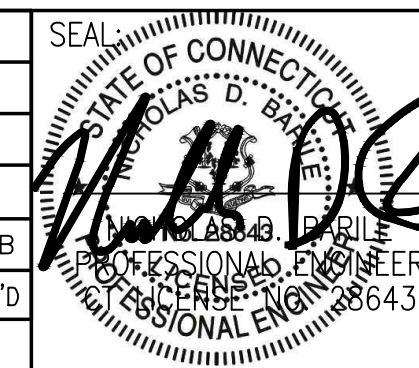
COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

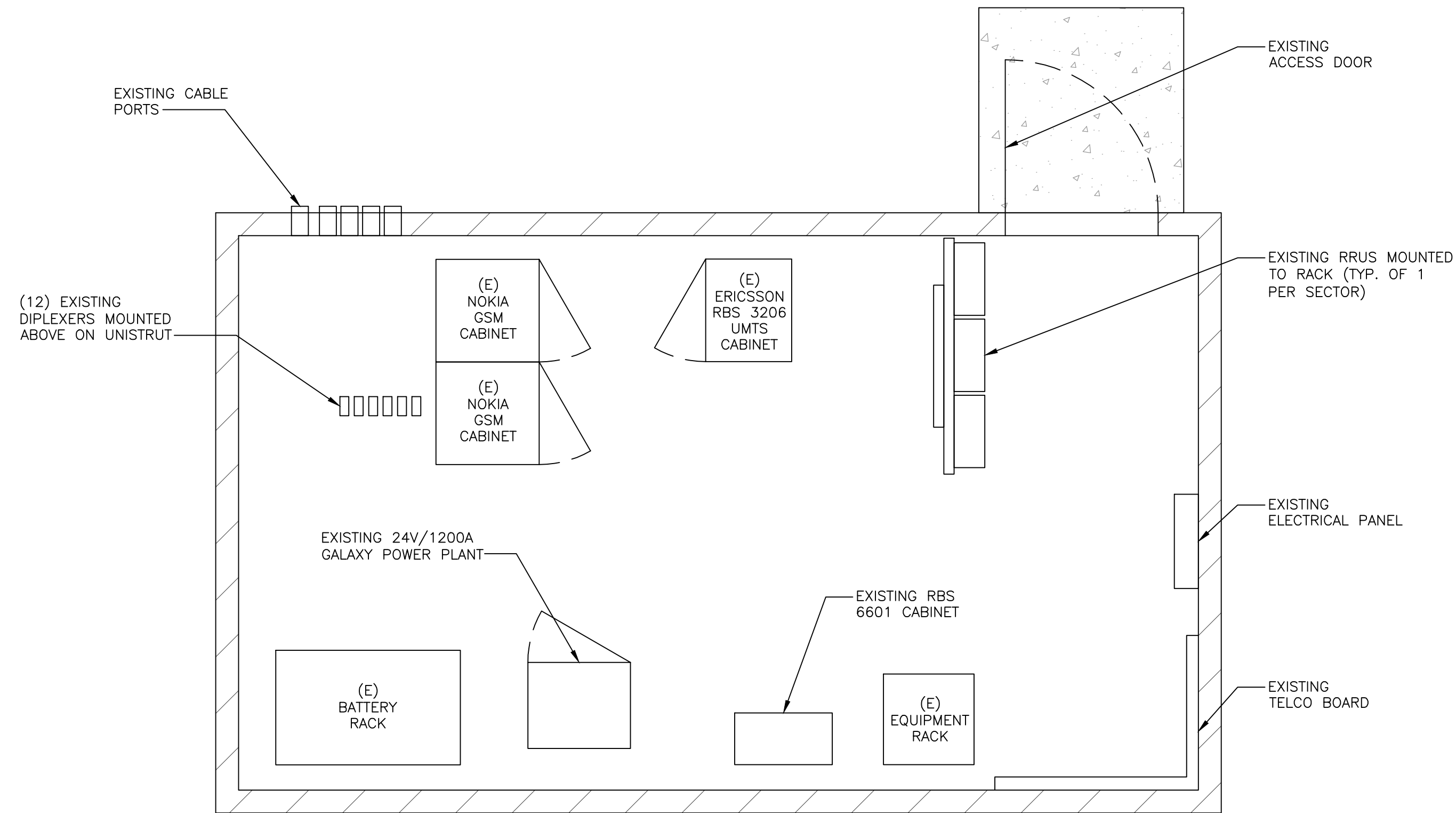
SITE NUMBER: CT2268
SITE NAME: BETHEL SPRING STREET
23 SPRING HILL LANE
BETHEL, CONNECTICUT 06801
FAIRFIELD COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

0	04/05/16	ISSUED AS FINAL	AM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AM	DRAWN BY: AM		



AT&T		
DRAWING TITLE: COMPOUND LAYOUT		
JOB NUMBER 15138-EMP	DRAWING NUMBER A-1	REV 0

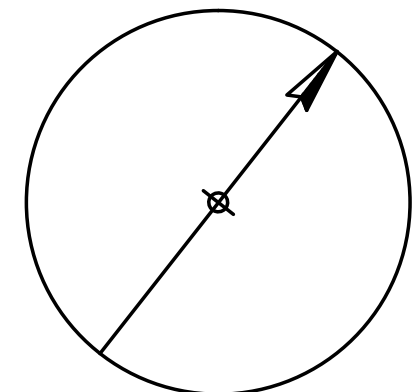


EXISTING EQUIPMENT LAYOUT

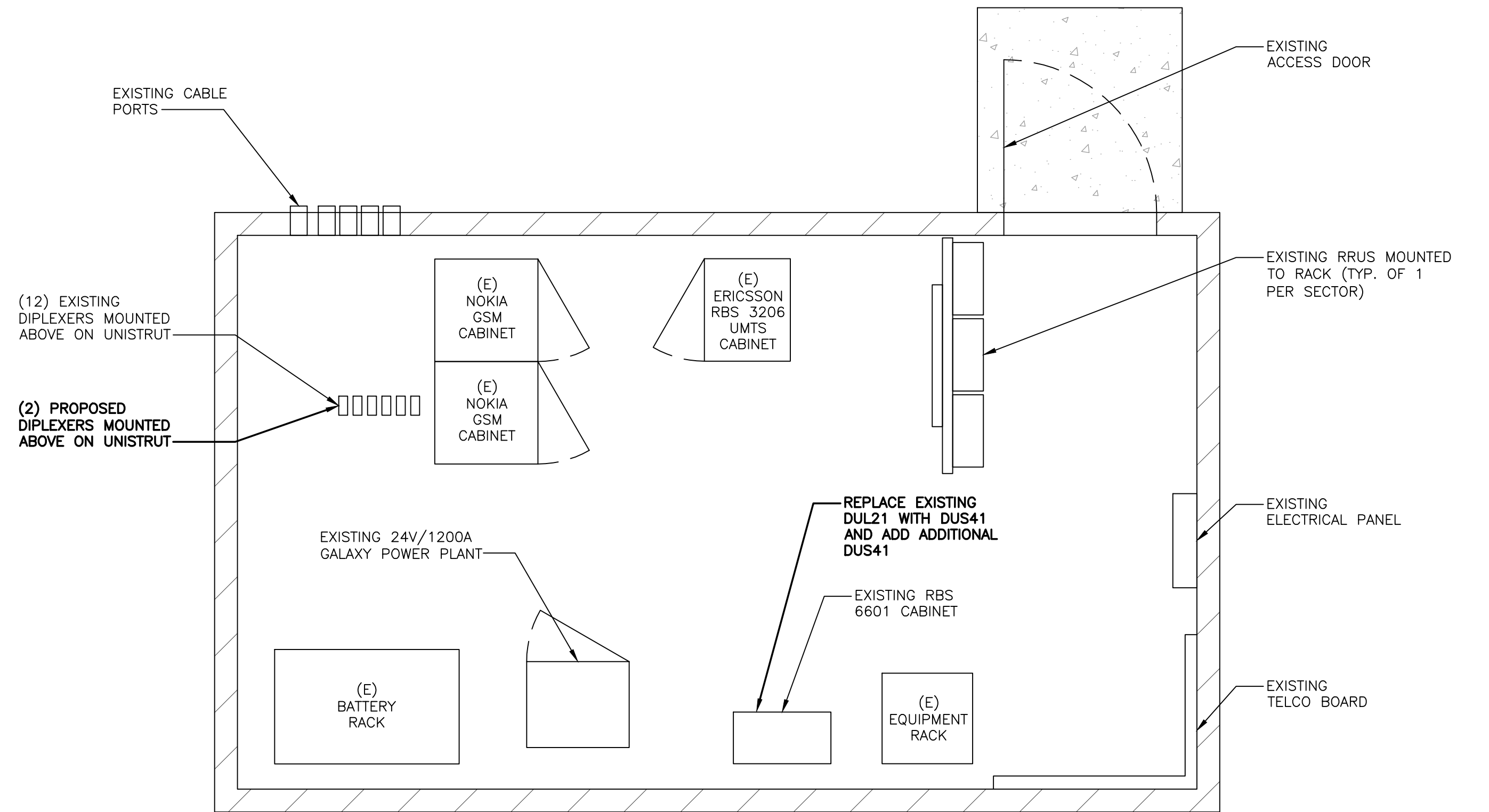
SCALE: 1" = 2'-0"



(IN FEET)
1/2 Inch = 1 Foot



NORTH

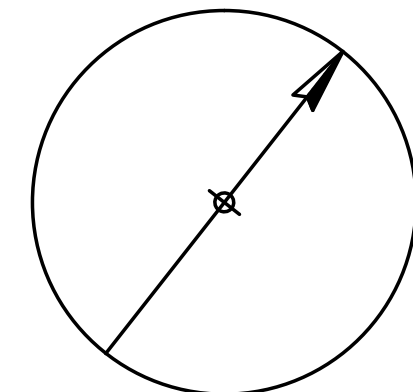


PROPOSED EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"



(IN FEET)
1/2 Inch = 1 Foot



NORTH

NO GROUND EQUIPMENT MODIFICATIONS ARE BEING MADE AS PART OF THIS SCOPE. EXISTING GROUND EQUIPMENT CONFIGURATION TO REMAIN.

COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

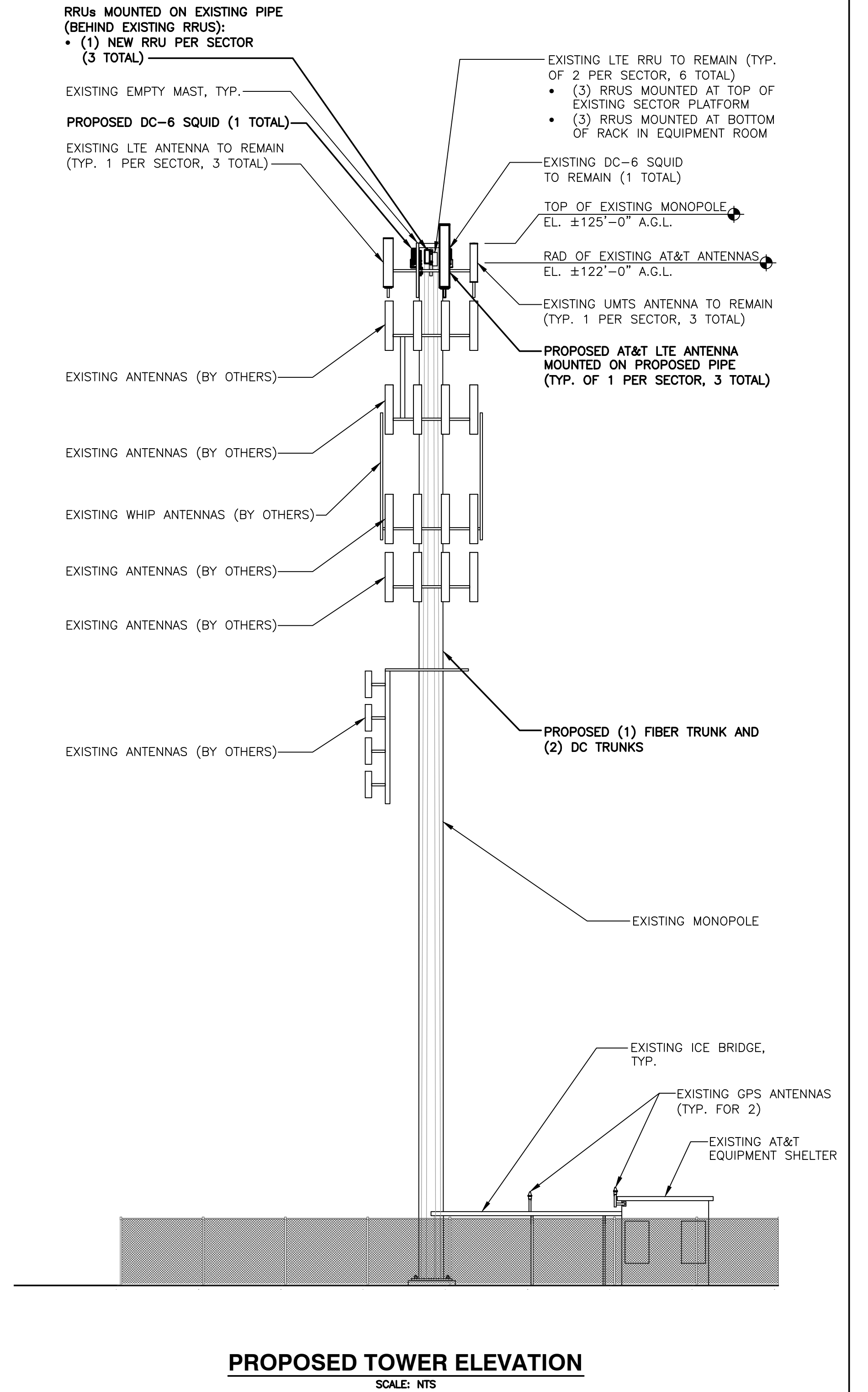
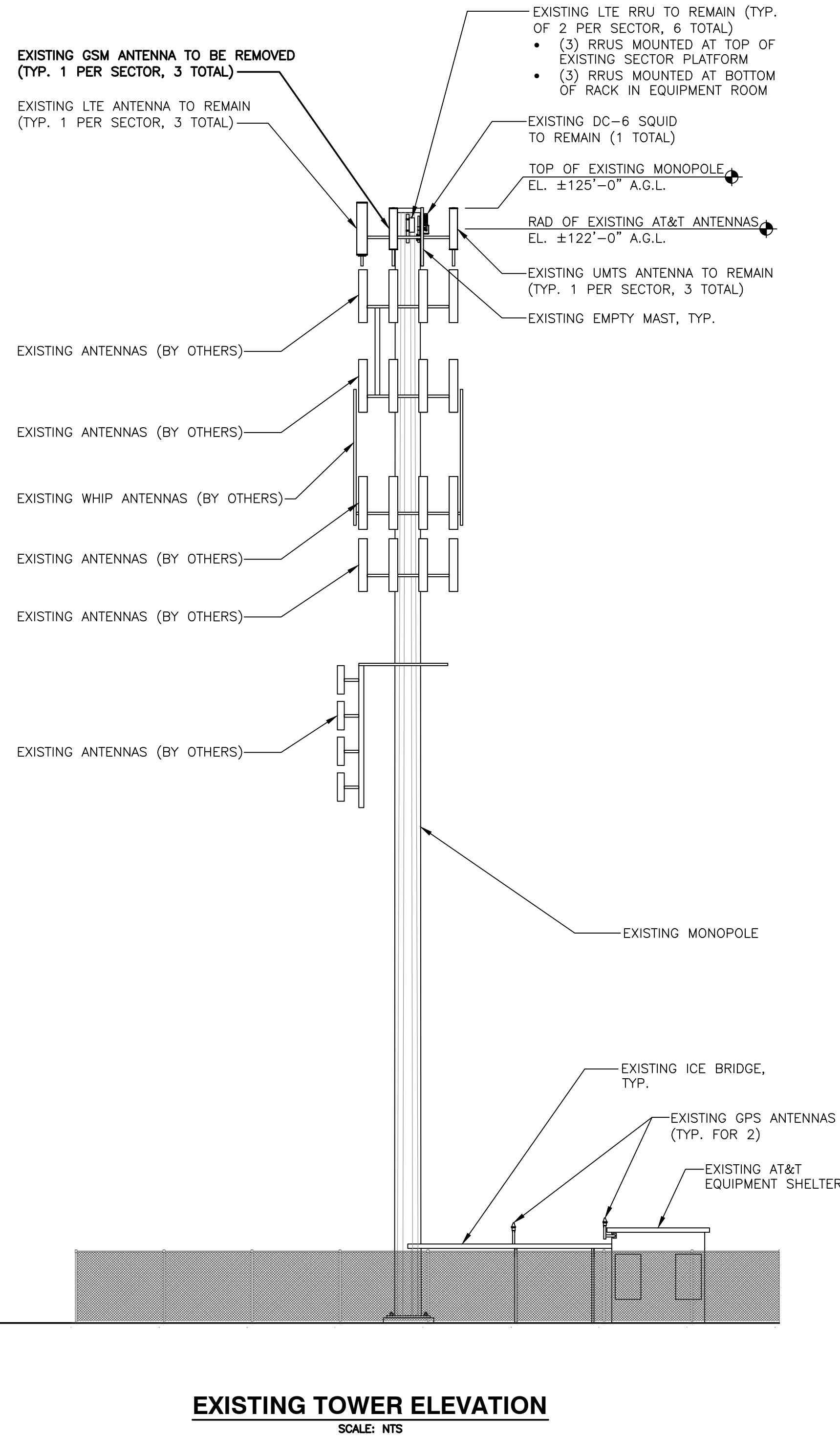
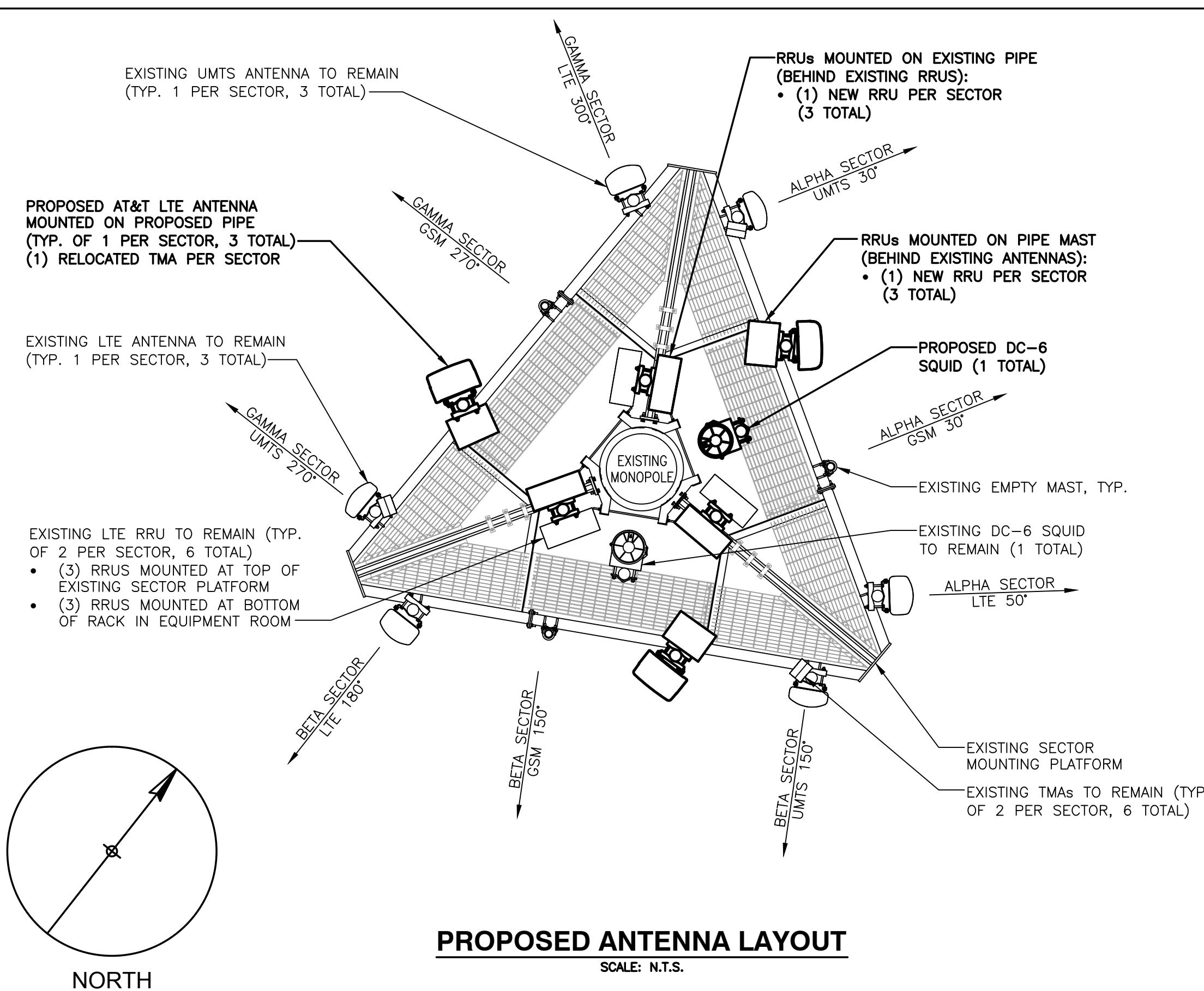
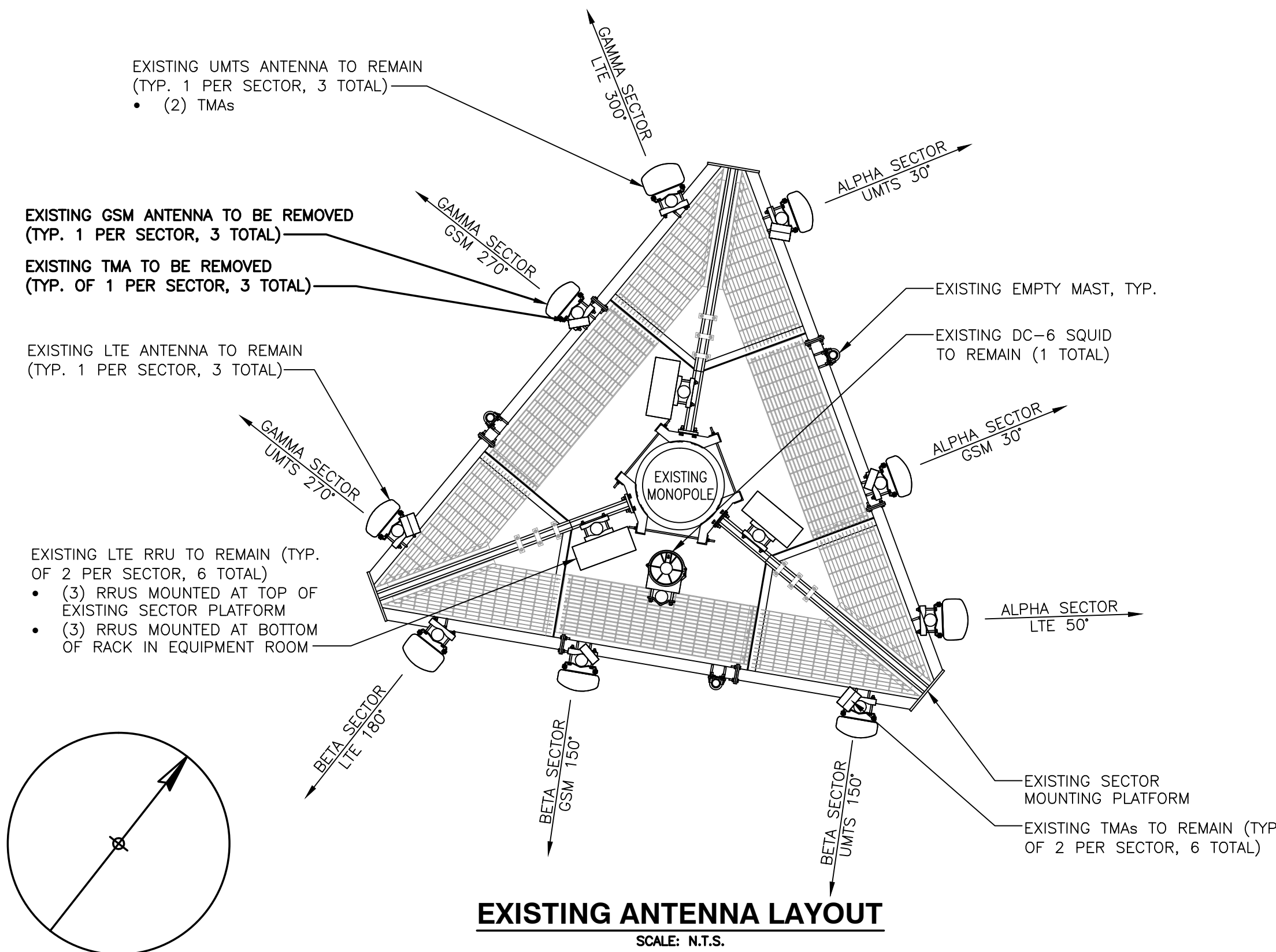
SITE NUMBER: CT2268
SITE NAME: BETHEL SPRING STREET
23 SPRING HILL LANE
BETHEL, CONNECTICUT 06801
FAIRFIELD COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

0	04/05/16	ISSUED AS FINAL	AM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AM	DRAWN BY: AM		

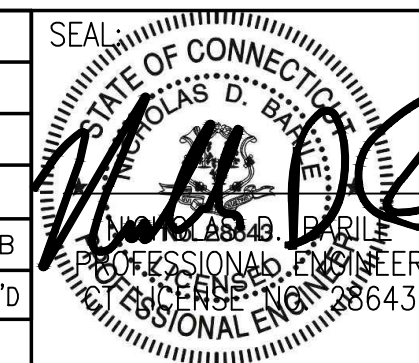
SEAL
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
NO. 38643
DATE 04/05/16

AT&T		
DRAWING TITLE: EQUIPMENT LAYOUTS		
JOB NUMBER 15138-EMP	DRAWING NUMBER A-2	REV 0

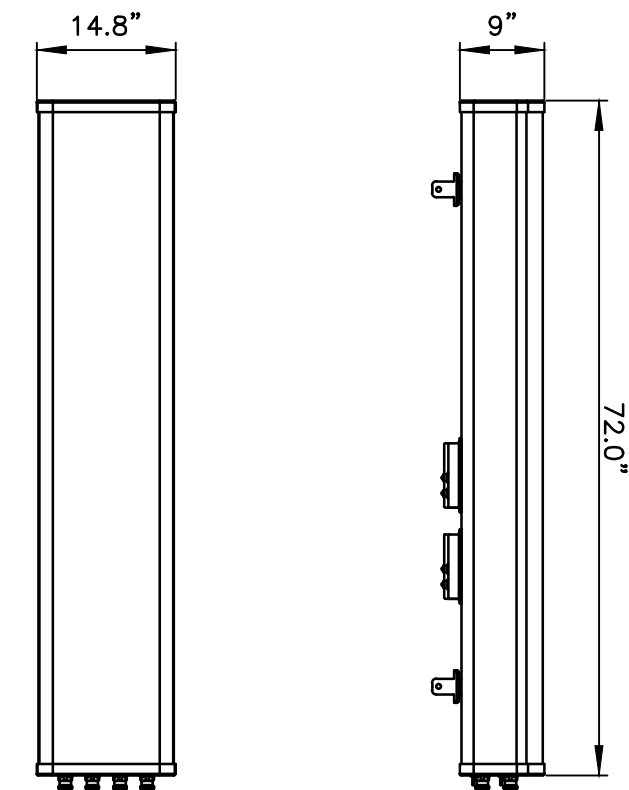


PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.

0	04/05/16	ISSUED AS FINAL	AM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AM	DRAWN BY: AM		

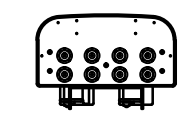


AT&T		
DRAWING TITLE: ANTENNA LAYOUTS & ELEVATIONS		
JOB NUMBER 15138-EMP	DRAWING NUMBER A-3	REV 0



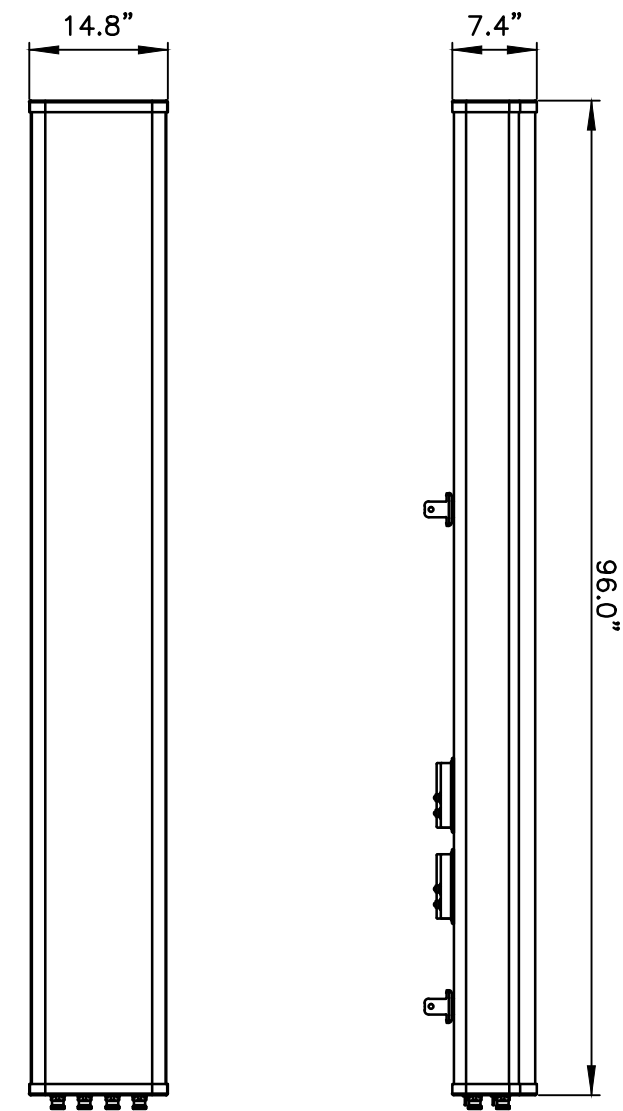
FRONT VIEW

SIDE VIEW



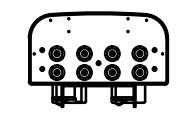
BOTTOM VIEW

MANUFACTURER	CCI
MODEL	HPA-65R-BUU-H6
WEIGHT	50.7 LBS



FRONT VIEW

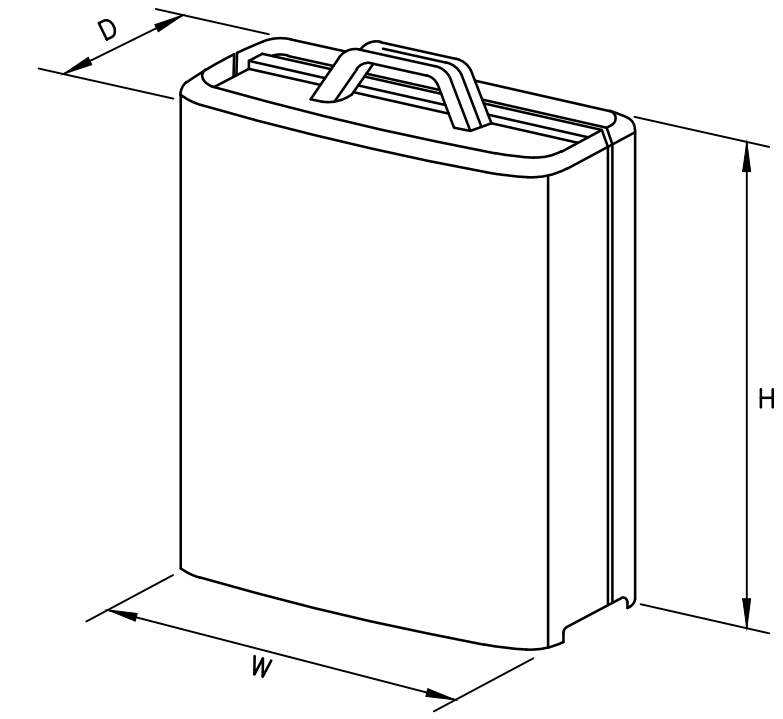
SIDE VIEW



BOTTOM VIEW

MANUFACTURER	CCI
MODEL	HPA-65R-BUU-H8
WEIGHT	68.0 LBS

LTE ANTENNA DETAIL
SCALE: N.T.S.

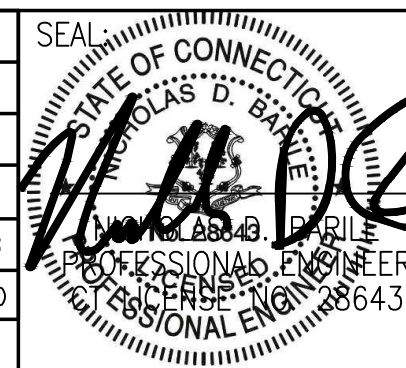


MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-32	29.9" x 13.3" x 9.5"	77 LBS

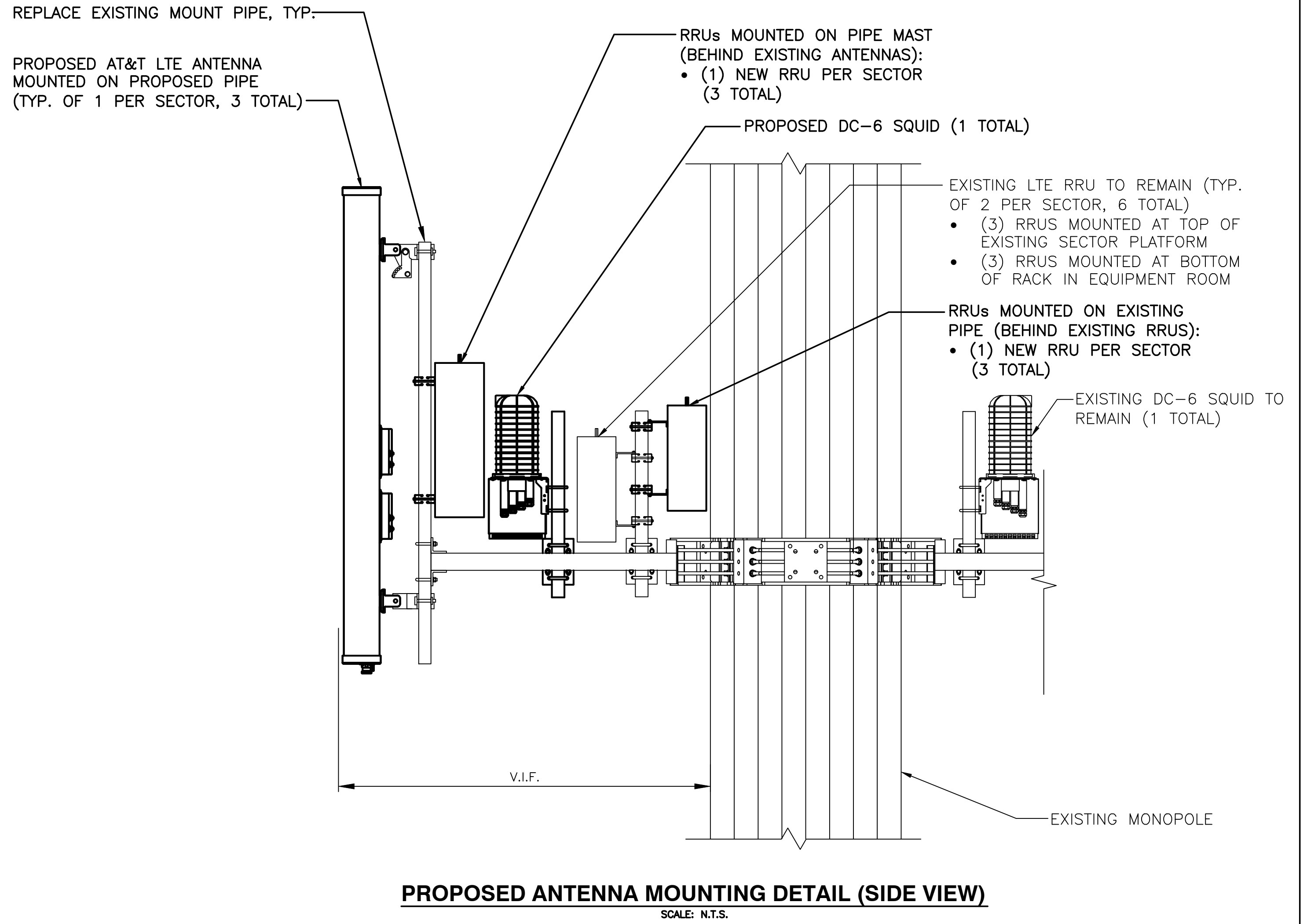
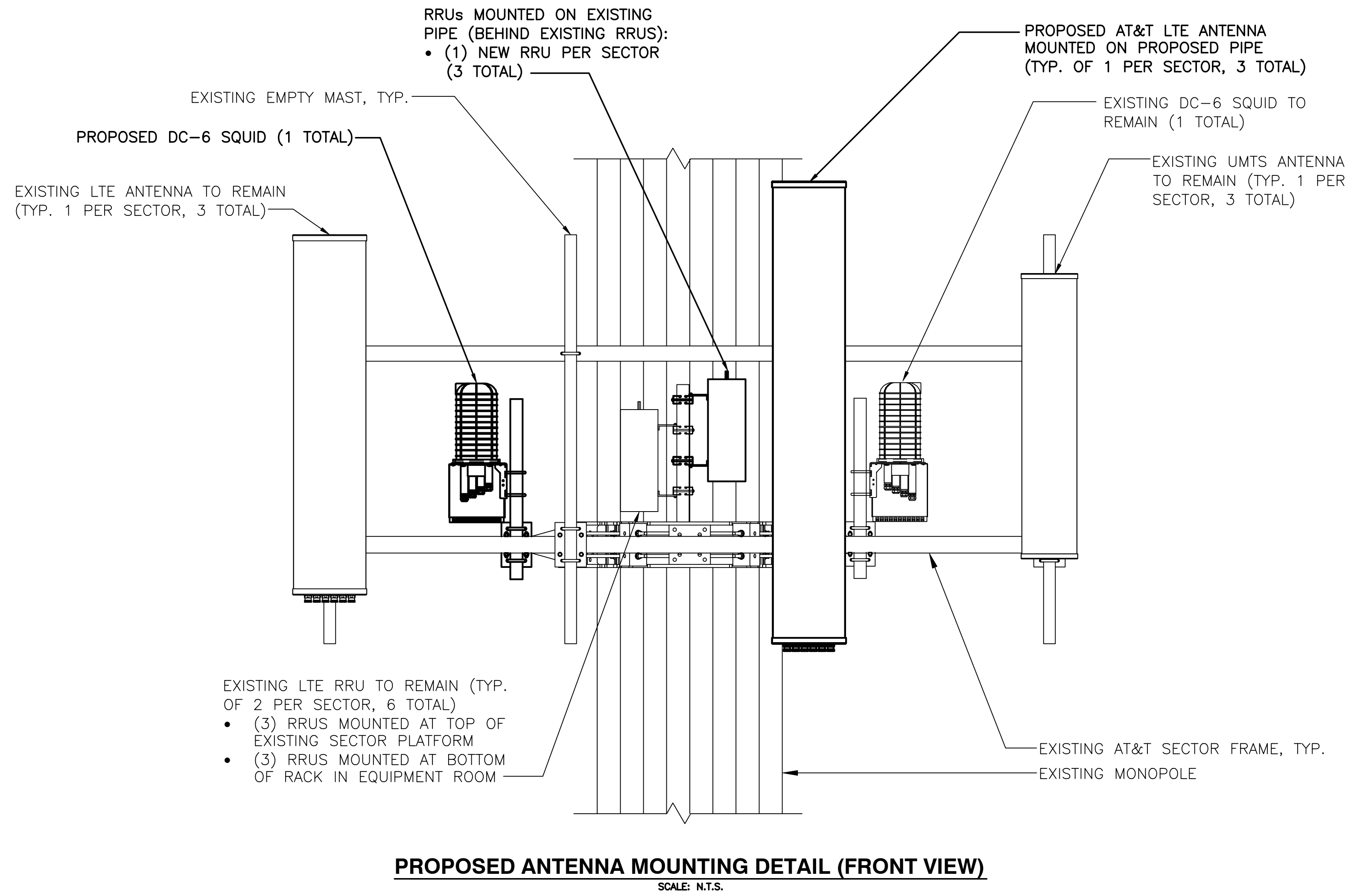
*DENOTES EXISTING.

RRUS DETAIL
SCALE: N.T.S.

0	04/05/16	ISSUED AS FINAL	AM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: AM		DRAWN BY: AM



AT&T		
DRAWING TITLE: DETAILS		
JOB NUMBER	DRAWING NUMBER	REV
15138-EMP	A-4	0



EXISTING ANTENNA SCHEDULE				
SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	-	-	-
	A3	POWERWAVE	7770	55"x11"x5"
	A4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	-	-	-
	B3	POWERWAVE	7770	55"x11"x5"
	B4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	-	-	-
	G3	POWERWAVE	7770	55"x11"x5"
	G4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"

FINAL ANTENNA SCHEDULE				
SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	CCI	HPA-65R-BUU-H8	92.4"x14.8"x7.4"
	A3	-	-	-
	A4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	CCI	HPA-65R-BUU-H6	72"x14.8"x9"
	B3	-	-	-
	B4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	CCI	HPA-65R-BUU-H6	72"x14.8"x9"
	G3	-	-	-
	G4	POWERWAVE	P65-16-XLH-RR	72"x12"x6"

PROPOSED RRU SCHEDULE					
SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS-11	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
BETA	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS-11	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
GAMMA	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS-11	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		

PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.

COM-EX
 Consultants
 115 ROUTE 46
 SUITE E39
 MOUNTAIN LAKES, NJ 07046
 PHONE: 862.209.4300
 FAX: 862.209.4301

EMPIRE
 telecom
 16 ESQUIRE ROAD
 BILLERICA, MA 01821

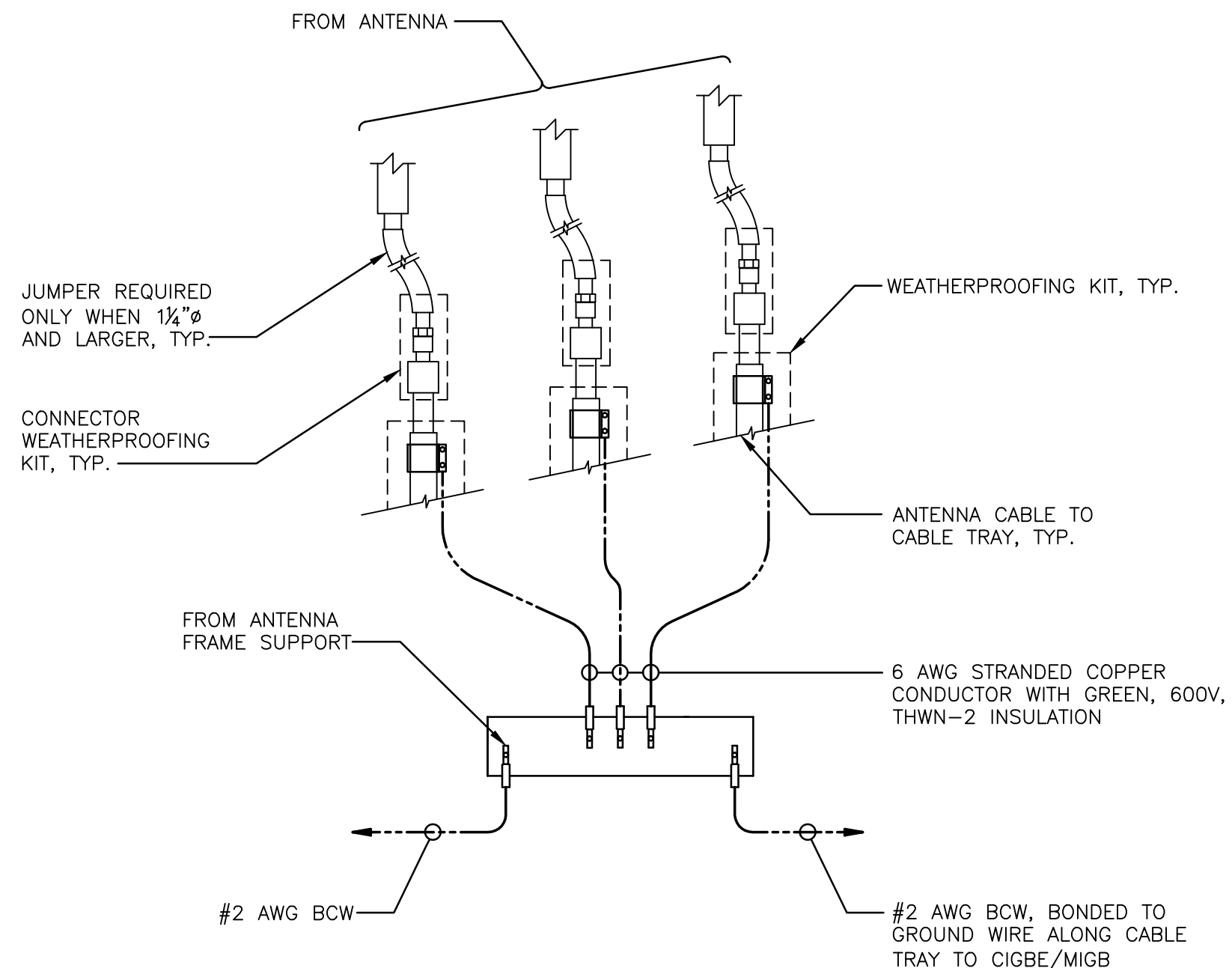
SITE NUMBER: CT2268
SITE NAME: BETHEL SPRING STREET
 23 SPRING HILL LANE
 BETHEL, CONNECTICUT 06801
 FAIRFIELD COUNTY

at&t
 MOBILITY
 550 COCHITUATE ROAD
 FRAMINGHAM, MA 01701

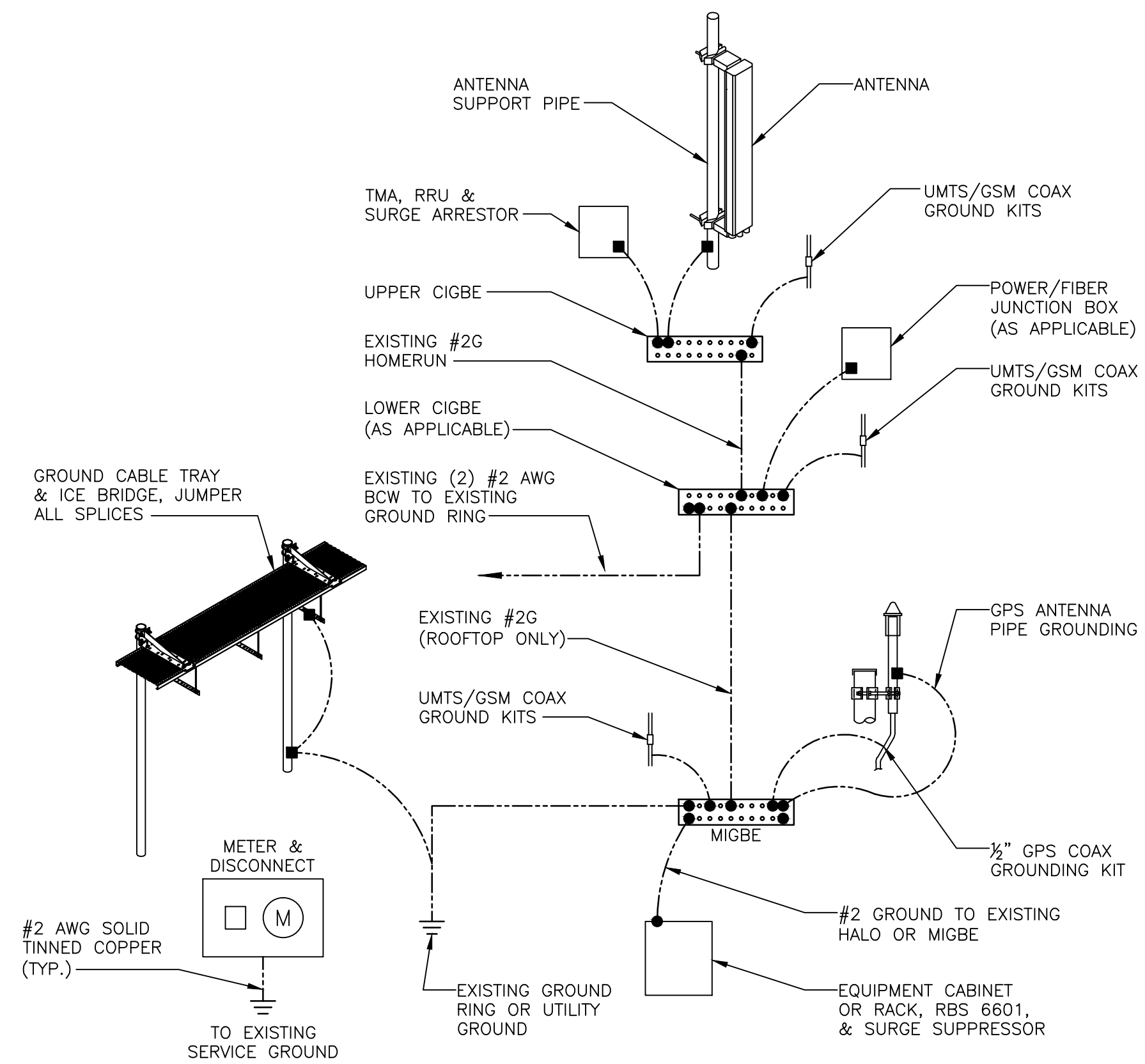
0	04/05/16	ISSUED AS FINAL	AM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AM	DRAWN BY: AM		

SEAL
 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 38643

AT&T
 DRAWING TITLE:
ANTENNA MOUNTING DETAILS
 JOB NUMBER: 15138-EMP
 DRAWING NUMBER: A-5
 REV: 0



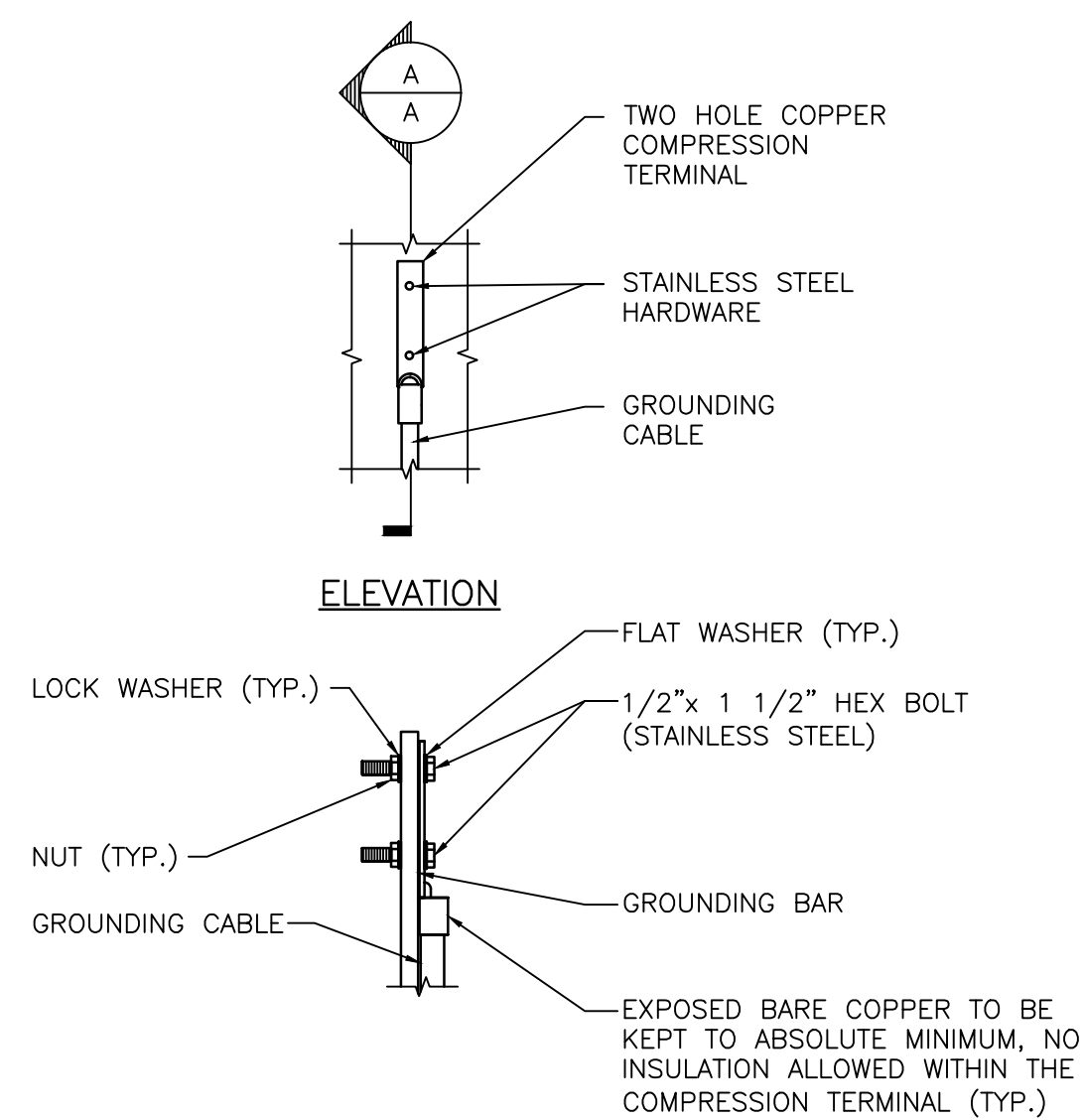
GROUND WIRE TO GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



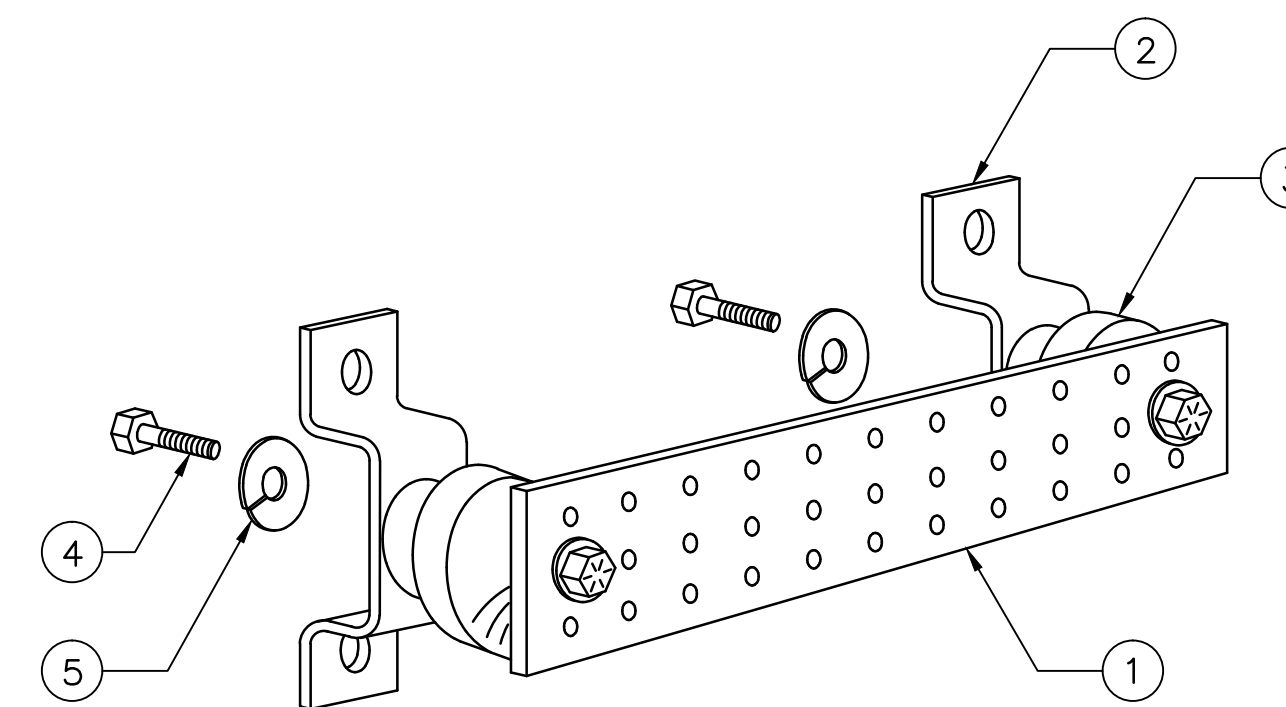
GROUNDING RISER DIAGRAM
SCALE: N.T.S.

X:\ComEx Denville\New Jersey\2015\AT&T\Empire\15138-EMP CTLO2268 - LTE 3C\09 Maps - Scans - Images\PLUMBING DIAGRAM.tif

TYPICAL PLUMBING DIAGRAM (PER SECTOR)
SCALE: N.T.S.



TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x 1/4")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	5/8"-11x1" H.H.C.S.
5	4	5/8" LOCK WASHER

NOTES:

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)

GROUND BAR DETAIL
SCALE: N.T.S.