

EM-T-MOBILE-101-130529

Transcend Wireless
48 Spruce Street
Oakland, NJ 07436
Phone: (203) 217-6200
Chris Bisson
Real Estate Consultant

ORIGINAL

05/15/2013

Hand Delivered

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

RECEIVED
MAY 29 2013
CONNECTICUT
SITING COUNCIL

RE: T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 2 Dwight Street, North Haven, CT. Known to T-Mobile Northeast LLC as site CT11398A.

Dear Ms. Roberts:

In order to accommodate technological changes, implement Global System for Mobile Communications Access ("GSM") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the state of Connecticut, T-Mobile Northeast LLC plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

GSM employs Spread-Spectrum technology and special coding scheme to allow multiple users to be multiplexed over the same physical channel. LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

As part of the project the new multi-mode 800/1900 antenna will replace existing antennas. These antennas will provide more flexibility for optimization by allowing fast and easy electrical tilt adjustment from remote location and will enable the transmission of multiple technologies from a single antenna. As T-Mobile Northeast LLC network evolves to meet the demands of its customers, it is essential for T-Mobile Northeast LLC to install modern equipment and antennas in order to provide reliable wireless voice and data services. The proposed equipment will include multi-mode radios that will allow T-Mobile Northeast LLC to transmit at different frequencies using different technologies, including LTE technology. Likewise, the proposed antennas are quad-pole multi-band

high gain antennas that will allow T-Mobile Northeast LLC to operate using its multiple frequency bands and technologies, including LTE technology. The proposed equipment and antennas will improve the reliability, coverage and capacity of T-Mobile Northeast LLC voice and data networks across T-Mobile Northeast LLC various FCC licensed frequency bands and significantly increase the data speeds of T-Mobile Northeast LLC 's network by utilizing the latest LTE technology. Without the proposed modifications T-Mobile Northeast LLC will be unable to provide reliable wireless voice and data service using the latest technologies.

T-Mobile Northeast LLC will have an interim (testing) period during the modification/installation prior to the final configuration. This antenna configuration is shown on the attached drawings of the planned modifications. Also included is the power density calculation reflecting the change in T-Mobile Northeast LLC operations at the site and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

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

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

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

Please feel free to call me at (203) 217-6200 or email
with questions concerning this matter.

Thank you for your consideration.

Sincerely,

Chris Bisson
(203) 217-6200

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

T-Mobile Existing Facility

Site ID: CT11398A

**North Haven Route 15
2 Dwight Street
North Haven, CT 06473**

May 28, 2013

EBI Project Number: 62136243



EBI Consulting

environmental | engineering | due diligence

May 28, 2013

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

Re: Emissions Values for Site: **CT11398A - North Haven Route 15**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 2 Dwight Street, North Haven, CT, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 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 limit for the cellular band is $567 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band 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 T-Mobile Wireless antenna facility located at 2 Dwight Street, North Haven, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, the actual antenna pattern gain value in the direction of the sample area was used. For this report the sample point is a 6 foot person standing at the base of the tower

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

- 1) 2 GSM channels (1935.000 MHz—to 1945.000 MHz / 1980.000 MHz—to 1985.000 MHz) were considered for each sector of the proposed installation.
- 2) 2 UMTS channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
- 3) 2 LTE channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
- 4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
- 6) The antenna used in this modeling is the Ericsson AIR21 for LTE, UMTS and GSM. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.6 dBi gain value at its main lobe. Actual antenna gain values were used for all calculations as per the manufacturers specifications

- 7) The antenna mounting height centerline of the proposed antennas is **130 feet** above ground level (AGL)
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Site ID	CT11398A - North Haven Route 15
Site Address	2 Dwight Street, North Haven, CT 06473
Site Type	Monopole

Sector 1													
Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBi)	Antenna Height (ft)	Antenna analysis height	Cable Size	Cable Loss (dB)
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	130	124	None	0
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-	0	0	0	-3.95	130	124	None	0
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	130	124	1-5/8"	0
2b	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	130	124	1-5/8"	0
Sector total Power Density Value:													0.226%
Sector 2													
Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBi)	Antenna Height (ft)	Antenna analysis height	Cable Size	Cable Loss (dB)
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	130	124	None	0
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-	0	0	0	-3.95	130	124	None	0
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	130	124	1-5/8"	0
2b	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	130	124	1-5/8"	0
Sector total Power Density Value:													0.226%
Sector 3													
Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBi)	Antenna Height (ft)	Antenna analysis height	Cable Size	Cable Loss (dB)
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	130	124	None	0
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-	0	0	0	-3.95	130	124	None	0
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	130	124	1-5/8"	0
2b	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	130	124	1-5/8"	0
Sector total Power Density Value:													0.226%

Site Composite MPE %		
Carrier	MPE %	
T-Mobile	0.678%	
Sprint Nextel	5.780%	
Clearwire	0.950%	
MetroPCS	8.440%	
Total Site MPE %	15.848%	

Summary

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

The anticipated Maximum Composite contributions from the T-Mobile facility are **0.678% (0.226% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **15.848%** 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 within the allowable 100% threshold standard per the federal government.



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



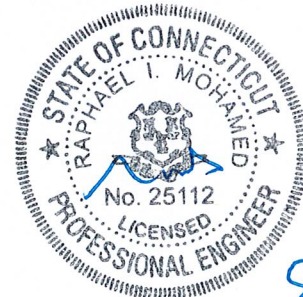
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 150 ft Monopole
ATC Site Name : North Haven CT 2, CT
ATC Site Number : 302539
Engineering Number : 53059121
Proposed Carrier : T-Mobile
Carrier Site Name : N/A
Carrier Site Number : CT11398A
Site Location : 4 Dwight Street
North Haven, CT 06473-1138
41.421944,-72.847200
County : New Haven
Date : April 26, 2013
Max Usage : 65%
Result : Pass

Tsega Melesse
Design Engineer

Tsega M. Melesse-19730



5/6/13



Eng. Number 53059121
April 26, 2013

Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Proposed Equipment	2
Structure Usages	3
Foundations	3
Deflection, Twist, and Sway.....	3
Standard Conditions	4
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	Valmont Drawing #DC1777Z, dated June 29, 1994
Foundation Drawing	SAC Engineering Site #027, dated July 20, 1994
Geotechnical Report	GEOservices Project #21-07254, dated November 28, 2007

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	110 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G, Addendum 2 / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact me via email at tsega.melesse@americantower.com or call 919-466-5046.



Existing and Reserved Equipment

Mount Elev. ¹ (ft)	Qty.	Antenna	Mount Type	Lines	Carrier
150.0	9	48" x 12" Panel	T-Arms	(12) 1 5/8" Coax (2) 1/2" Coax	Sprint Nextel
	3	72" x 12" Panel			
	2	Andrew VHLP2-18			
140.0	3	Argus LPX310R	Side Arms	(6) 5/16" Coax (3) 1/2" Coax (1) 2" Conduit	Clearwire
	1	DragonWave A-ANT-11G-2.5-C			
	1	DragonWave A-ANT-18G-2-C			
	1	DragonWave A-ANT-23G-1-C			
	3	DragonWave Horizon Compact			
	3	NextNet BTS-2500			
120.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	Metro PCS

Proposed Equipment

Elevation ¹ (ft)		Qty.	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
125.0	130.0	3	Ericsson AIR 21, 1.3M, B2A B4P	Low Profile Platform	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	T-Mobile
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Ericsson KRY 112 144/1			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	61%	Pass
Shaft	65%	Pass
Base Plate	42%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,567.2	4,815.7	2,936.7	61%
Shear (Kips)	30.5	41.2	30.4	74%

* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
125.0	0.945	0.817

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



Standard Conditions

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

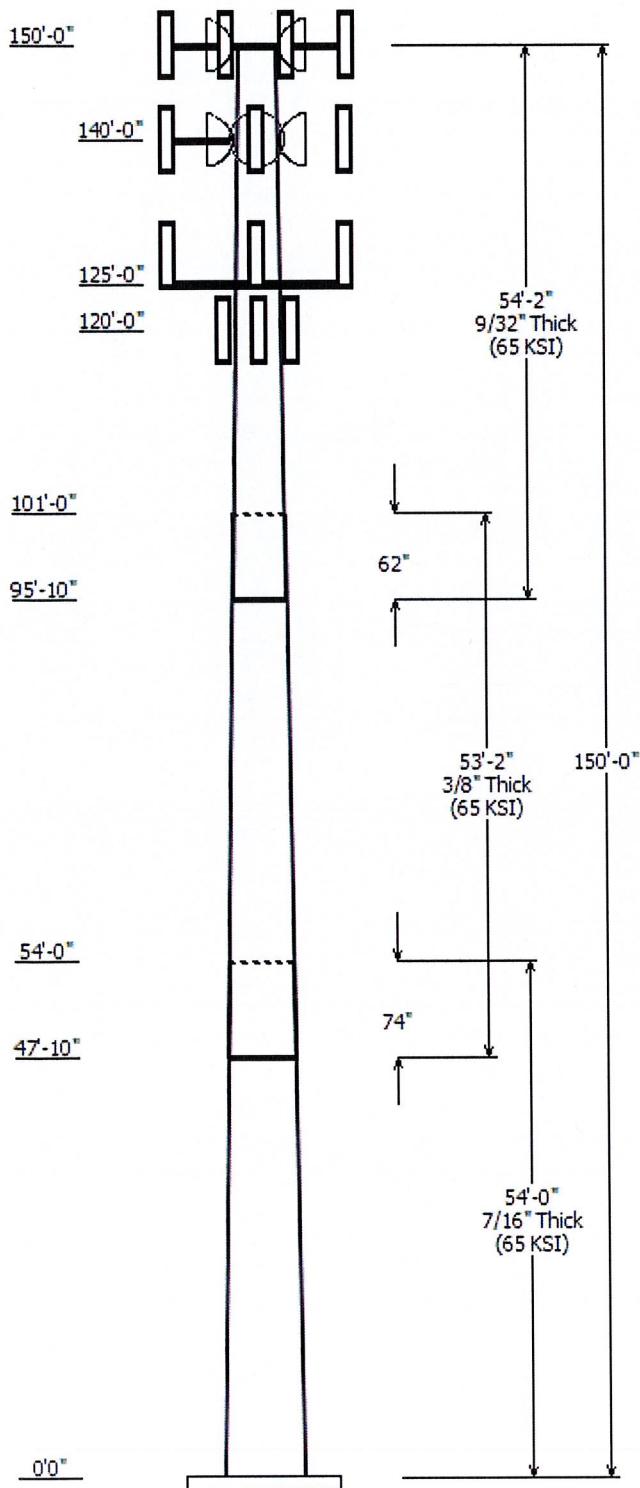
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements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

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

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Job Information

Pole : 302539 Code: ANSI/TIA-222 Rev G
 Description : 150 ft Valmont Monopole
 Client : T-Mobile Struct Class : II
 Location : North Haven CT 2, CT
 Shape : 12 Sides Exposure : B
 Height : 150.00 (ft) Topo : 1
 Base Elev (ft): 0.00
 Taper: 0.18201(in/ft)

Sections Properties

Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Top	Flats Bottom				
1	54.000	39.77	49.60	0.438	0.000	0.182016	65
2	53.167	31.96	41.64	0.375	74.000	0.182016	65
3	54.167	23.61	33.46	0.281	62.000	0.182016	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	150.000	3	Round T-Arm
150.000	150.000	2	Andrew VHLP2-18
150.000	150.000	3	72" x 12" Panel
150.000	150.000	9	48" x 12" Panel
140.000	140.000	1	Side Arms
140.000	140.000	1	DragonWave A-ANT-23G-1-C
140.000	140.000	1	DragonWave A-ANT-11G-2.5-C
140.000	140.000	1	DragonWave A-ANT-18G-2-C
140.000	140.000	3	NextNet BTS-2500
140.000	140.000	3	Argus LPX310R
140.000	140.000	3	DragonWave Horizon Compact
125.000	125.000	1	Round Low Profile Platform
125.000	130.000	3	Ericsson KRY 112 144/1
125.000	130.000	3	Ericsson AIR 21, 1.3M, B4A B2P
125.000	130.000	3	Ericsson AIR 21, 1.3M, B2A B4P
120.000	120.000	3	RFS APXV18-206517S-C

Linear Appurtenance

Elev (ft)		Description	Exposed To Wind
From	To		
0.000	120.0	1 5/8" Coax	No
0.000	125.0	1 1/4" Hybriflex	No
0.000	125.0	1 5/8" Coax	No
0.000	140.0	1/2" Coax	No
0.000	140.0	2" Conduit	No
0.000	140.0	5/16" Coax	No
0.000	150.0	1 5/8" Coax	No
0.000	150.0	1/2" Coax	No

Load Cases

1.2D + 1.6W	110.00 mph with No Ice
0.9D + 1.6W	110.00 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50.00 mph with 0.75 in Radial Ice
1.0D + 1.0W	60.00 mph Serviceability

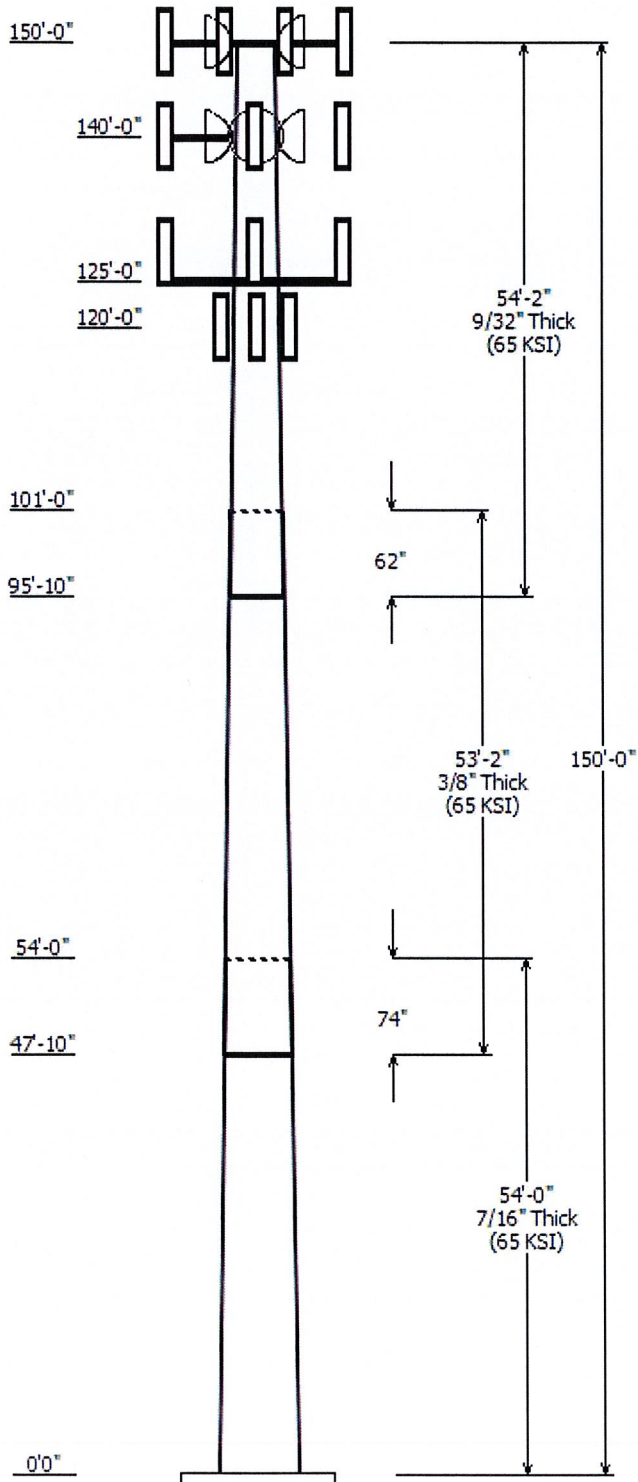
Reactions

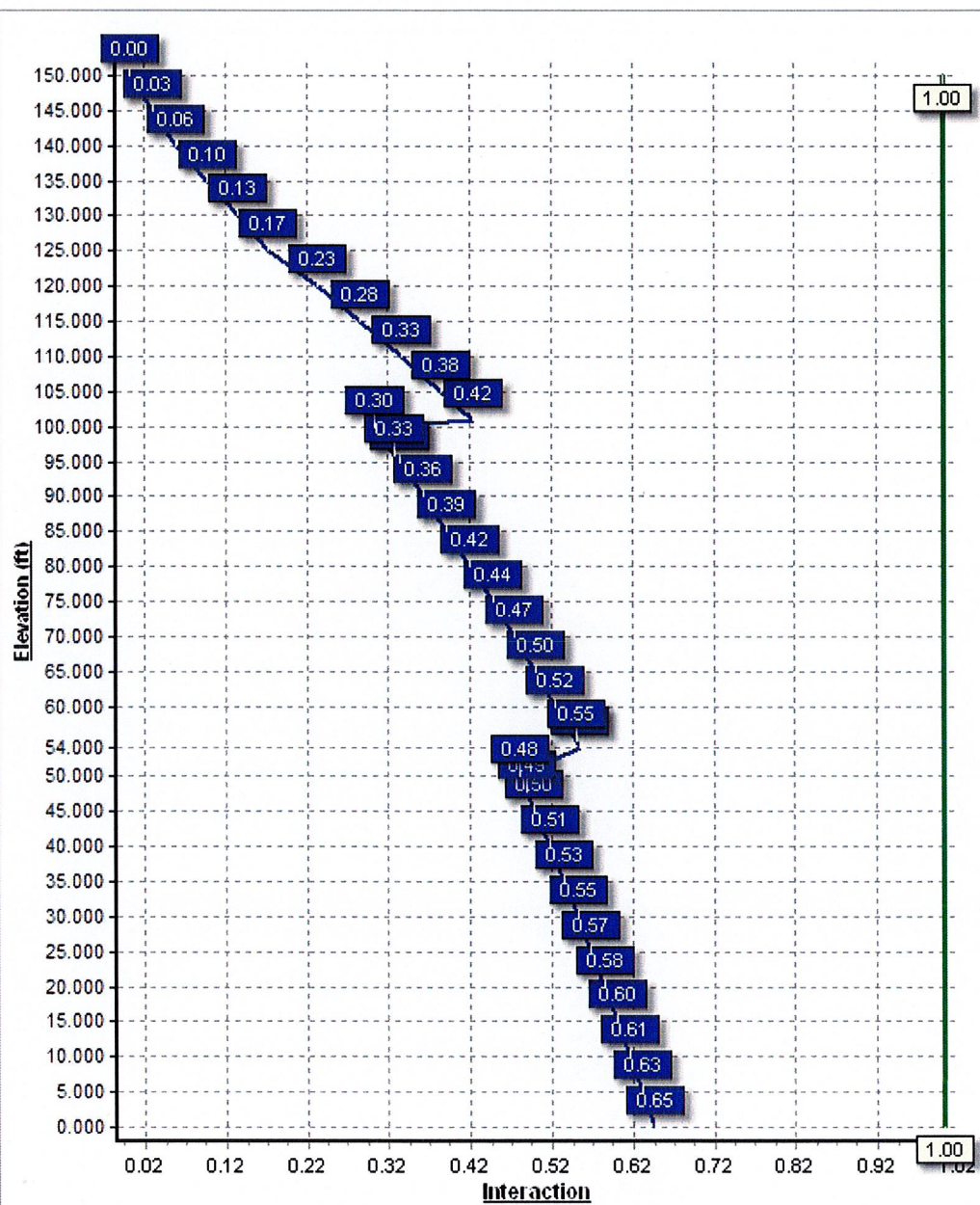
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2936.69	30.39	38.78

0.9D + 1.6W	2912.99	30.38	29.07
1.2D + 1.0Di + 1.0Wi	520.19	5.20	55.39
1.0D + 1.0W	543.53	5.65	32.35

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	140.00	13.975	0.853
1.0D + 1.0W	140.00	13.975	0.853
1.0D + 1.0W	140.00	13.975	0.853
1.0D + 1.0W	150.00	15.771	0.860



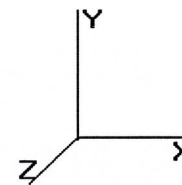


Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:40 AM
 Page: 1

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom				Top				W/t Ratio	D/t Ratio	Taper (in/ft)
							Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)			
1-12	54.000	0.4375	65		0.00	11,454	49.60	0.00	69.26	21365.7	28.23	113.37	39.77	54.00	55.41	10942.2	0.182016
2-12	53.167	0.3750	65	Slip	74.00	7,958	41.64	47.83	49.83	10832.4	27.61	111.05	31.96	101.00	38.15	4859.3	0.182016
3-12	54.167	0.2813	65	Slip	62.00	4,717	33.46	95.83	30.06	4225.4	29.74	119.00	23.61	150.00	21.13	1467.6	0.182016
Shaft Weight						24,129											

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAa (sf)	CaAa Factor	Weight (lb)	Ice CaAa (sf)	CaAa Factor	Distance From Face (ft)	Vert Ecc (ft)
150.00	48" x 12" Panel	9	30.00	5.600	0.67	163.31	6.052	0.67	0.000	0.000
150.00	72" x 12" Panel	3	45.00	8.400	0.67	236.65	9.429	0.67	0.000	0.000
150.00	Andrew VHLP2-18	2	31.00	4.690	1.00	74.28	7.964	1.00	0.000	0.000
150.00	Round T-Arm	3	250.00	9.700	0.67	459.43	17.961	0.67	0.000	0.000
140.00	Argus LPX310R	3	13.23	2.080	0.82	71.34	2.830	0.82	0.000	0.000
140.00	DragonWave A-ANT-11G-2.5-	1	47.60	8.670	1.00	174.49	10.389	1.00	0.000	0.000
140.00	DragonWave A-ANT-18G-2-C	1	27.10	4.690	1.00	124.22	5.958	1.00	0.000	0.000
140.00	DragonWave A-ANT-23G-1-C	1	15.00	1.610	1.00	50.16	2.363	1.00	0.000	0.000
140.00	DragonWave Horizon	3	10.60	0.430	0.50	40.57	0.659	0.50	0.000	0.000
140.00	NextNet BTS-2500	3	35.00	2.120	0.67	91.61	2.358	0.67	0.000	0.000
140.00	Side Arms	1	560.00	8.500	1.00	1,025.89	15.571	1.00	0.000	0.000
125.00	Ericsson AIR 21, 1.3M, B2A	3	83.00	6.530	0.83	248.40	7.127	0.83	0.000	5.000
125.00	Ericsson AIR 21, 1.3M, B4A	3	81.50	6.580	0.83	246.86	7.172	0.83	0.000	5.000
125.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	26.94	0.628	0.50	0.000	5.000
125.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,137.49	40.591	1.00	0.000	0.000
120.00	RFS APXV18-206517S-C	3	26.40	5.160	0.80	140.70	6.379	0.80	0.000	0.000
Totals		43	4148.89			9,818.14			Number of Loadings :	16

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Exposed Width (in)	Exposed To Wind
0.00	150.00	(12) 1 5/8" Coax	0.00	N
0.00	150.00	(2) 1/2" Coax	0.00	N
0.00	140.00	(3) 1/2" Coax	0.00	N
0.00	140.00	(1) 2" Conduit	0.00	N
0.00	140.00	(6) 5/16" Coax	0.00	N
0.00	125.00	(1) 1 1/4" Hybriflex	0.00	N
0.00	125.00	(12) 1 5/8" Coax	0.00	N
0.00	120.00	(6) 1 5/8" Coax	0.00	N

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev: 0.000 (ft)

Copyright © 2007-2011 by American Tower Corporation. All rights reserved.

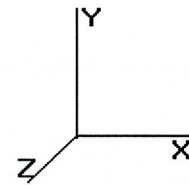
Segment Properties (Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	S (in3)	Weight (lb)
0.00		0.4375	49.600	69.257	21,365.7	28.23	113.37	73.9	832.2	0.0
5.00		0.4375	48.690	67.975	20,200.9	27.68	111.29	74.5	801.5	1,167.4
10.00		0.4375	47.780	66.693	19,079.3	27.12	109.21	75.1	771.4	1,145.6
15.00		0.4375	46.870	65.411	18,000.1	26.56	107.13	75.7	741.9	1,123.8
20.00		0.4375	45.959	64.129	16,962.2	26.00	105.05	76.4	713.0	1,102.0
25.00		0.4375	45.049	62.847	15,965.1	25.45	102.97	77.0	684.6	1,080.2
30.00		0.4375	44.139	61.565	15,007.8	24.89	100.89	77.6	656.9	1,058.4
35.00		0.4375	43.229	60.283	14,089.6	24.33	98.81	78.2	629.6	1,036.6
40.00		0.4375	42.319	59.001	13,209.7	23.77	96.73	78.8	603.0	1,014.7
45.00		0.4375	41.409	57.719	12,367.1	23.22	94.65	79.4	577.0	992.9
47.83	Bot - Section 2	0.4375	40.893	56.992	11,906.0	22.90	93.47	79.7	562.5	553.0
50.00		0.4375	40.499	56.437	11,561.2	22.66	92.57	80.0	551.5	783.8
54.00	Top - Section 1	0.3750	40.521	48.476	9,972.4	26.81	108.06	75.5	475.4	1,427.0
55.00		0.3750	40.339	48.256	9,837.3	26.68	107.57	75.6	471.1	164.6
60.00		0.3750	39.429	47.158	9,180.5	26.03	105.14	76.3	449.8	811.7
65.00		0.3750	38.519	46.059	8,553.5	25.38	102.72	77.0	429.0	793.0
70.00		0.3750	37.609	44.960	7,955.7	24.73	100.29	77.7	408.7	774.3
75.00		0.3750	36.699	43.861	7,386.5	24.08	97.86	78.5	388.8	755.6
80.00		0.3750	35.789	42.762	6,845.1	23.43	95.44	79.2	369.5	736.9
85.00		0.3750	34.878	41.663	6,330.8	22.78	93.01	79.9	350.7	718.2
90.00		0.3750	33.968	40.564	5,843.0	22.13	90.58	80.6	332.3	699.5
95.00		0.3750	33.058	39.465	5,380.8	21.48	88.16	81.3	314.4	680.8
95.83	Bot - Section 3	0.3750	32.907	39.282	5,306.3	21.37	87.75	81.4	311.5	111.6
100.0		0.3750	32.148	38.366	4,943.7	20.83	85.73	81.9	297.1	971.7
101.0	Top - Section 2	0.2813	32.529	29.204	3,876.3	28.85	115.66	73.3	230.2	229.8
105.0		0.2813	31.801	28.545	3,619.7	28.15	113.07	74.0	219.9	393.0
110.0		0.2813	30.891	27.721	3,315.1	27.29	109.83	75.0	207.3	478.6
115.0		0.2813	29.980	26.896	3,028.1	26.42	106.60	75.9	195.1	464.6
120.0		0.2813	29.070	26.072	2,758.2	25.55	103.36	76.8	183.3	450.6
125.0		0.2813	28.160	25.248	2,504.8	24.68	100.13	77.8	171.8	436.6
130.0		0.2813	27.250	24.424	2,267.4	23.82	96.89	78.7	160.7	422.6
135.0		0.2813	26.340	23.600	2,045.5	22.95	93.65	79.7	150.0	408.5
140.0		0.2813	25.430	22.775	1,838.6	22.08	90.42	80.6	139.7	394.5
145.0		0.2813	24.520	21.951	1,646.1	21.22	87.18	81.6	129.7	380.5
150.0		0.2813	23.610	21.127	1,467.6	20.35	83.95	81.9	120.1	366.5
										24,129.1

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:40 AM
 Page: 3



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

Load Case: 1.2D + 1.6W

110.00 mph with No Ice

23 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Shaft Segment Forces (Factored)

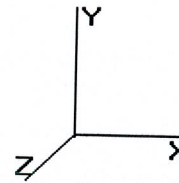
Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	20.599	22.65	393.81	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	20.599	22.65	386.59	1.000	0.000	5.00	21.199	21.20	768.6	0.0	1,400.9
10.00		1.00	0.70	20.599	22.65	379.36	1.000	0.000	5.00	20.807	20.81	754.3	0.0	1,374.7
15.00		1.00	0.70	20.599	22.65	372.14	1.000	0.000	5.00	20.414	20.41	740.1	0.0	1,348.6
20.00		1.00	0.70	20.599	22.65	364.91	1.000	0.000	5.00	20.022	20.02	725.9	0.0	1,322.4
25.00		1.00	0.70	20.599	22.65	357.68	1.000	0.000	5.00	19.629	19.63	711.6	0.0	1,296.2
30.00		1.00	0.70	20.616	22.67	350.61	1.000	0.000	5.00	19.236	19.24	698.0	0.0	1,270.0
35.00		1.00	0.73	21.545	23.69	351.02	1.000	0.000	5.00	18.844	18.84	714.5	0.0	1,243.9
40.00		1.00	0.76	22.383	24.62	350.25	1.000	0.000	5.00	18.451	18.45	726.9	0.0	1,217.7
45.00		1.00	0.78	23.149	25.46	348.53	1.000	0.000	5.00	18.059	18.06	735.7	0.0	1,191.5
47.83	Bot - Section 2	1.00	0.80	23.556	25.91	347.21	1.000	0.000	2.83	10.059	10.06	417.0	0.0	663.6
50.00		1.00	0.81	23.856	26.24	346.04	1.000	0.000	2.17	7.747	7.75	325.3	0.0	940.5
54.00	Top - Section 1	1.00	0.82	24.386	26.82	343.58	1.000	0.000	4.00	14.109	14.11	605.6	0.0	1,712.4
55.00		1.00	0.83	24.515	26.96	349.40	1.000	0.000	1.00	3.488	3.49	150.5	0.0	197.5
60.00		1.00	0.85	25.132	27.64	345.79	1.000	0.000	5.00	17.205	17.20	761.0	0.0	974.0
65.00		1.00	0.87	25.713	28.28	341.69	1.000	0.000	5.00	16.812	16.81	760.8	0.0	951.6
70.00		1.00	0.89	26.263	28.89	337.17	1.000	0.000	5.00	16.419	16.42	759.0	0.0	929.1
75.00		1.00	0.91	26.786	29.46	332.27	1.000	0.000	5.00	16.027	16.03	755.6	0.0	906.7
80.00		1.00	0.92	27.285	30.01	327.03	1.000	0.000	5.00	15.634	15.63	750.8	0.0	884.3
85.00		1.00	0.94	27.761	30.53	321.49	1.000	0.000	5.00	15.242	15.24	744.7	0.0	861.8
90.00		1.00	0.95	28.219	31.04	315.67	1.000	0.000	5.00	14.849	14.85	737.5	0.0	839.4
95.00		1.00	0.97	28.658	31.52	309.59	1.000	0.000	5.00	14.456	14.46	729.2	0.0	817.0
95.83	Bot - Section 3	1.00	0.97	28.729	31.60	308.56	1.000	0.000	0.83	2.371	2.37	119.9	0.0	134.0
100.0		1.00	0.98	29.081	31.98	303.28	1.000	0.000	4.17	11.895	11.90	608.8	0.0	1,166.1
101.0	Top - Section 2	1.00	0.99	29.164	32.08	301.99	1.000	0.000	1.00	2.814	2.81	144.4	0.0	275.8
105.0		1.00	1.00	29.489	32.43	302.10	1.000	0.000	4.00	11.100	11.10	576.1	0.0	471.6
110.0		1.00	1.01	29.884	32.87	295.41	1.000	0.000	5.00	13.521	13.52	711.2	0.0	574.4
115.0		1.00	1.02	30.266	33.29	288.54	1.000	0.000	5.00	13.129	13.13	699.3	0.0	557.5
120.0	Appertunance(s)	1.00	1.04	30.636	33.69	281.48	1.000	0.000	5.00	12.736	12.74	686.7	0.0	540.7
125.0	Appertunance(s)	1.00	1.05	30.995	34.09	274.27	1.000	0.000	5.00	12.344	12.34	673.4	0.0	523.9
130.0		1.00	1.06	31.345	34.47	266.89	1.000	0.000	5.00	11.951	11.95	659.3	0.0	507.1
135.0		1.00	1.07	31.684	34.85	259.37	1.000	0.000	5.00	11.559	11.56	644.6	0.0	490.2
140.0	Appertunance(s)	1.00	1.08	32.015	35.21	251.72	1.000	0.000	5.00	11.166	11.17	629.2	0.0	473.4
145.0		1.00	1.09	32.338	35.57	243.93	1.000	0.000	5.00	10.773	10.77	613.2	0.0	456.6
150.0	Appertunance(s)	1.00	1.11	32.653	35.91	236.01	1.000	0.000	5.00	10.381	10.38	596.6	0.0	439.8
Totals:									150.00			21,435.0	0.0	28,954.9

302539
 North Haven CT 2, CT
 : 150.0 (ft)
 : 49.60 (in)
 Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:40 AM
 Page: 4

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 1.2D + 1.6W

110.00 mph with No Ice

23 Iterations

Gust Response Factor : 1.10
 Dead Load Factor : 1.20
 Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Discrete Appurtenance Segment Forces (Factored)

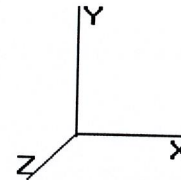
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
120.0	RFS APXV18-206517S-	3	30.636	33.699	0.80	1.00	12.38	0.000	0.000	667.74	0.00	0.00	95.04
125.0	Ericsson AIR 21, 1.3	3	31.345	34.479	0.83	1.00	16.26	0.000	5.000	896.99	0.00	4,484.95	298.80
125.0	Ericsson AIR 21, 1.3	3	31.345	34.479	0.83	1.00	16.38	0.000	5.000	903.86	0.00	4,519.29	293.40
125.0	Ericsson KRY 112 144	3	31.345	34.479	0.50	1.00	0.62	0.000	5.000	33.93	0.00	169.64	39.60
125.0	Round Low Profile PI	1	30.995	34.095	1.00	1.00	21.70	0.000	0.000	1,183.77	0.00	0.00	1,800.00
140.0	Argus LPX310R	3	32.015	35.217	0.66	0.80	4.09	0.000	0.000	230.65	0.00	0.00	47.63
140.0	DragonWave A-ANT-	1	32.015	35.217	0.80	0.80	6.94	0.000	0.000	390.82	0.00	0.00	57.12
140.0	DragonWave A-ANT-	1	32.015	35.217	0.80	0.80	3.75	0.000	0.000	211.41	0.00	0.00	32.52
140.0	DragonWave A-ANT-	1	32.015	35.217	0.80	0.80	1.29	0.000	0.000	72.57	0.00	0.00	18.00
140.0	DragonWave Horizon	3	32.015	35.217	0.40	0.80	0.52	0.000	0.000	29.08	0.00	0.00	38.16
140.0	NextNet BTS-2500	3	32.015	35.217	0.54	0.80	3.41	0.000	0.000	192.08	0.00	0.00	126.00
140.0	Side Arms	1	32.015	35.217	1.00	1.00	8.50	0.000	0.000	478.95	0.00	0.00	672.00
150.0	48" x 12" Panel	9	32.653	35.918	0.54	0.80	27.01	0.000	0.000	1,552.48	0.00	0.00	324.00
150.0	72" x 12" Panel	3	32.653	35.918	0.54	0.80	13.51	0.000	0.000	776.24	0.00	0.00	162.00
150.0	Andrew VHLP2-18	2	32.653	35.918	0.80	0.80	7.50	0.000	0.000	431.25	0.00	0.00	74.40
150.0	Round T-Arm	3	32.653	35.918	0.50	0.75	14.62	0.000	0.000	840.34	0.00	0.00	900.00
										8,892.17			4,978.67

39
 North Haven CT 2, CT
 50.0 (ft)
 49.60 (in)
 : 23.61 (in)
 pe : 12 Sides
 aper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev: 0.000 (ft)

4/26/2013 11:27:40 AM
 Page: 5

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 1.2D + 1.6W

110.00 mph with No Ice

23 Iterations

Gust Response Factor : 1.10
 Dead Load Factor : 1.20
 Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Applied Segment Forces Summary

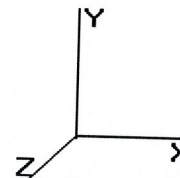
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	768.57	1,582.52	0.00	0.00
10.00	754.33	1,556.34	0.00	0.00
15.00	740.10	1,530.17	0.00	0.00
20.00	725.87	1,503.99	0.00	0.00
25.00	711.64	1,477.82	0.00	0.00
30.00	697.99	1,451.64	0.00	0.00
35.00	714.54	1,425.47	0.00	0.00
40.00	726.86	1,399.29	0.00	0.00
45.00	735.74	1,373.11	0.00	0.00
47.83	417.03	766.48	0.00	0.00
50.00	325.28	1,019.22	0.00	0.00
54.00	605.56	1,857.66	0.00	0.00
55.00	150.49	233.82	0.00	0.00
60.00	760.99	1,155.62	0.00	0.00
65.00	760.82	1,133.18	0.00	0.00
70.00	758.96	1,110.75	0.00	0.00
75.00	755.56	1,088.31	0.00	0.00
80.00	750.77	1,065.87	0.00	0.00
85.00	744.71	1,043.44	0.00	0.00
90.00	737.47	1,021.00	0.00	0.00
95.00	729.15	998.57	0.00	0.00
95.83	119.89	164.23	0.00	0.00
100.0	608.82	1,317.43	0.00	0.00
101.0	144.44	312.10	0.00	0.00
105.0	576.10	616.91	0.00	0.00
110.0	711.16	755.98	0.00	0.00
115.0	699.34	739.15	0.00	0.00
120.0	1,354.46	817.36	0.00	0.00
125.0	3,691.91	3,107.78	0.00	9,173.88
130.0	659.30	594.12	0.00	0.00
135.0	644.55	577.29	0.00	0.00
140.0	2,234.74	1,551.89	0.00	0.00
145.0	613.16	517.42	0.00	0.00
150.0	4,196.89	1,960.99	0.00	0.00
Totals:	30,327.21	38,826.90	0.00	9,173.88

539
North Haven CT 2, CT
150.0 (ft)
49.60 (in)
4: 23.61 (in)
ape: 12 Sides
aper: 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
Struct Class : II
Exposure Category : B
Topographic Category : 1
Base Elev: 0.000 (ft)

4/26/2013 11:27:40 AM
Page: 6

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 1.2D + 1.6W

110.00 mph with No Ice

23 Iterations

Gust Response Factor : 1.10

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.78	-30.39	0.00	-2,936.69	0.00	2,936.69	4,607.63	2,303.82	9,341.89	4,613.61	0.00	0.00	0.645
5.00	-37.10	-29.75	0.00	-2,784.73	0.00	2,784.73	4,559.53	2,279.76	9,071.72	4,480.18	0.10	-0.19	0.630
10.00	-35.45	-29.10	0.00	-2,636.00	0.00	2,636.00	4,510.02	2,255.01	8,802.46	4,347.20	0.40	-0.38	0.614
15.00	-33.83	-28.46	0.00	-2,490.50	0.00	2,490.50	4,459.11	2,229.56	8,534.26	4,214.75	0.91	-0.57	0.599
20.00	-32.24	-27.83	0.00	-2,348.19	0.00	2,348.19	4,406.80	2,203.40	8,267.28	4,082.90	1.61	-0.76	0.583
25.00	-30.68	-27.19	0.00	-2,209.07	0.00	2,209.07	4,353.08	2,176.54	8,001.69	3,951.73	2.51	-0.95	0.566
30.00	-29.15	-26.57	0.00	-2,073.10	0.00	2,073.10	4,297.96	2,148.98	7,737.64	3,821.33	3.61	-1.15	0.549
35.00	-27.66	-25.91	0.00	-1,940.26	0.00	1,940.26	4,241.44	2,120.72	7,475.29	3,691.77	4.92	-1.34	0.532
40.00	-26.20	-25.24	0.00	-1,810.70	0.00	1,810.70	4,183.52	2,091.76	7,214.81	3,563.12	6.42	-1.53	0.515
45.00	-24.78	-24.53	0.00	-1,684.51	0.00	1,684.51	4,124.19	2,062.09	6,956.34	3,435.48	8.11	-1.71	0.496
47.83	-23.99	-24.13	0.00	-1,615.01	0.00	1,615.01	4,089.95	2,044.97	6,810.83	3,363.62	9.16	-1.82	0.486
50.00	-22.93	-23.82	0.00	-1,562.74	0.00	1,562.74	4,063.46	2,031.73	6,700.05	3,308.90	10.01	-1.90	0.478
54.00	-21.06	-23.18	0.00	-1,467.48	0.00	1,467.48	3,292.85	1,646.42	5,449.39	2,691.25	11.67	-2.05	0.552
55.00	-20.78	-23.07	0.00	-1,444.30	0.00	1,444.30	3,284.08	1,642.04	5,410.01	2,671.80	12.10	-2.09	0.547
60.00	-19.58	-22.33	0.00	-1,328.98	0.00	1,328.98	3,239.39	1,619.70	5,213.74	2,574.87	14.40	-2.29	0.522
65.00	-18.40	-21.58	0.00	-1,217.33	0.00	1,217.33	3,193.31	1,596.65	5,018.66	2,478.53	16.90	-2.49	0.497
70.00	-17.26	-20.83	0.00	-1,109.42	0.00	1,109.42	3,145.81	1,572.91	4,824.91	2,382.84	19.61	-2.68	0.471
75.00	-16.14	-20.08	0.00	-1,005.25	0.00	1,005.25	3,096.92	1,548.46	4,632.66	2,287.90	22.52	-2.87	0.445
80.00	-15.06	-19.32	0.00	-904.86	0.00	904.86	3,046.62	1,523.31	4,442.07	2,193.77	25.63	-3.05	0.418
85.00	-14.00	-18.56	0.00	-808.25	0.00	808.25	2,994.92	1,497.46	4,253.30	2,100.54	28.92	-3.23	0.390
90.00	-12.97	-17.81	0.00	-715.44	0.00	715.44	2,941.82	1,470.91	4,066.50	2,008.29	32.40	-3.40	0.361
95.00	-11.99	-17.04	0.00	-626.41	0.00	626.41	2,887.31	1,443.66	3,881.84	1,917.09	36.05	-3.57	0.331
95.83	-11.81	-16.92	0.00	-612.21	0.00	612.21	2,878.09	1,439.05	3,851.28	1,902.00	36.67	-3.59	0.326
100.00	-10.51	-16.25	0.00	-541.70	0.00	541.70	2,827.97	1,413.98	3,694.98	1,824.81	39.86	-3.72	0.301
101.00	-10.19	-16.09	0.00	-525.45	0.00	525.45	1,925.36	962.68	2,560.99	1,264.78	40.65	-3.75	0.421
105.00	-9.58	-15.50	0.00	-461.07	0.00	461.07	1,901.32	950.66	2,471.43	1,220.55	43.84	-3.87	0.383
110.00	-8.83	-14.77	0.00	-383.56	0.00	383.56	1,870.02	935.01	2,359.93	1,165.48	47.98	-4.04	0.334
115.00	-8.11	-14.03	0.00	-309.73	0.00	309.73	1,837.31	918.65	2,249.09	1,110.74	52.29	-4.18	0.283
120.00	-7.37	-12.64	0.00	-239.56	0.00	239.56	1,803.20	901.60	2,139.06	1,056.40	56.74	-4.31	0.231
125.00	-4.54	-8.73	0.00	-167.19	0.00	167.19	1,767.68	883.84	2,030.00	1,002.54	61.31	-4.42	0.169
130.00	-3.98	-8.03	0.00	-123.55	0.00	123.55	1,730.77	865.38	1,922.07	949.24	65.98	-4.50	0.133
135.00	-3.45	-7.34	0.00	-83.40	0.00	83.40	1,692.45	846.22	1,815.44	896.58	70.73	-4.57	0.095
140.00	-2.08	-4.99	0.00	-46.68	0.00	46.68	1,652.72	826.36	1,710.25	844.63	75.53	-4.61	0.057
145.00	-1.61	-4.34	0.00	-21.71	0.00	21.71	1,611.60	805.80	1,606.68	793.48	80.37	-4.64	0.028
150.00	0.00	-4.20	0.00	0.00	0.00	0.00	1,557.27	778.64	1,493.56	737.61	85.24	-4.65	0.000

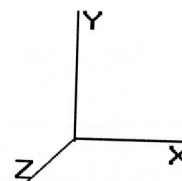
Role : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:40 AM

Page: 7

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 0.9D + 1.6W

110.00 mph with No Ice (Reduced DL)

23 Iterations

Gust Response Factor : 1.10

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Wind Importance Factor : 1.00

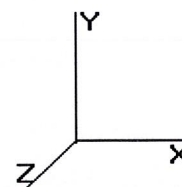
Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	20.599	22.65	393.81	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	20.599	22.65	386.59	1.000	0.000	5.00	21.199	21.20	768.6	0.0	1,050.7
10.00		1.00	0.70	20.599	22.65	379.36	1.000	0.000	5.00	20.807	20.81	754.3	0.0	1,031.1
15.00		1.00	0.70	20.599	22.65	372.14	1.000	0.000	5.00	20.414	20.41	740.1	0.0	1,011.4
20.00		1.00	0.70	20.599	22.65	364.91	1.000	0.000	5.00	20.022	20.02	725.9	0.0	991.8
25.00		1.00	0.70	20.599	22.65	357.68	1.000	0.000	5.00	19.629	19.63	711.6	0.0	972.2
30.00		1.00	0.70	20.616	22.67	350.61	1.000	0.000	5.00	19.236	19.24	698.0	0.0	952.5
35.00		1.00	0.73	21.545	23.69	351.02	1.000	0.000	5.00	18.844	18.84	714.5	0.0	932.9
40.00		1.00	0.76	22.383	24.62	350.25	1.000	0.000	5.00	18.451	18.45	726.9	0.0	913.3
45.00		1.00	0.78	23.149	25.46	348.53	1.000	0.000	5.00	18.059	18.06	735.7	0.0	893.6
47.83	Bot - Section 2	1.00	0.80	23.556	25.91	347.21	1.000	0.000	2.83	10.059	10.06	417.0	0.0	497.7
50.00		1.00	0.81	23.856	26.24	346.04	1.000	0.000	2.17	7.747	7.75	325.3	0.0	705.4
54.00	Top - Section 1	1.00	0.82	24.386	26.82	343.58	1.000	0.000	4.00	14.109	14.11	605.6	0.0	1,284.3
55.00		1.00	0.83	24.515	26.96	349.40	1.000	0.000	1.00	3.488	3.49	150.5	0.0	148.1
60.00		1.00	0.85	25.132	27.64	345.79	1.000	0.000	5.00	17.205	17.20	761.0	0.0	730.5
65.00		1.00	0.87	25.713	28.28	341.69	1.000	0.000	5.00	16.812	16.81	760.8	0.0	713.7
70.00		1.00	0.89	26.263	28.89	337.17	1.000	0.000	5.00	16.419	16.42	759.0	0.0	696.9
75.00		1.00	0.91	26.786	29.46	332.27	1.000	0.000	5.00	16.027	16.03	755.6	0.0	680.0
80.00		1.00	0.92	27.285	30.01	327.03	1.000	0.000	5.00	15.634	15.63	750.8	0.0	663.2
85.00		1.00	0.94	27.761	30.53	321.49	1.000	0.000	5.00	15.242	15.24	744.7	0.0	646.4
90.00		1.00	0.95	28.219	31.04	315.67	1.000	0.000	5.00	14.849	14.85	737.5	0.0	629.5
95.00		1.00	0.97	28.658	31.52	309.59	1.000	0.000	5.00	14.456	14.46	729.2	0.0	612.7
95.83	Bot - Section 3	1.00	0.97	28.729	31.60	308.56	1.000	0.000	0.83	2.371	2.37	119.9	0.0	100.5
100.0		1.00	0.98	29.081	31.98	303.28	1.000	0.000	4.17	11.895	11.90	608.8	0.0	874.6
101.0	Top - Section 2	1.00	0.99	29.164	32.08	301.99	1.000	0.000	1.00	2.814	2.81	144.4	0.0	206.8
105.0		1.00	1.00	29.489	32.43	302.10	1.000	0.000	4.00	11.100	11.10	576.1	0.0	353.7
110.0		1.00	1.01	29.884	32.87	295.41	1.000	0.000	5.00	13.521	13.52	711.2	0.0	430.8
115.0		1.00	1.02	30.266	33.29	288.54	1.000	0.000	5.00	13.129	13.13	699.3	0.0	418.2
120.0	Appertunance(s)	1.00	1.04	30.636	33.69	281.48	1.000	0.000	5.00	12.736	12.74	686.7	0.0	405.5
125.0	Appertunance(s)	1.00	1.05	30.995	34.09	274.27	1.000	0.000	5.00	12.344	12.34	673.4	0.0	392.9
130.0		1.00	1.06	31.345	34.47	266.89	1.000	0.000	5.00	11.951	11.95	659.3	0.0	380.3
135.0		1.00	1.07	31.684	34.85	259.37	1.000	0.000	5.00	11.559	11.56	644.6	0.0	367.7
140.0	Appertunance(s)	1.00	1.08	32.015	35.21	251.72	1.000	0.000	5.00	11.166	11.17	629.2	0.0	355.1
145.0		1.00	1.09	32.338	35.57	243.93	1.000	0.000	5.00	10.773	10.77	613.2	0.0	342.4
150.0	Appertunance(s)	1.00	1.11	32.653	35.91	236.01	1.000	0.000	5.00	10.381	10.38	596.6	0.0	329.8
Totals:									150.00			21,435.0	0.0	21,716.2

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



4/26/2013 11:27:40 AM
 Page: 8

Load Case: 0.9D + 1.6W

110.00 mph with No Ice (Reduced DL)

23 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Discrete Appurtenance Segment Forces (Factored)

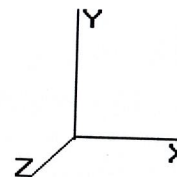
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
120.0	RFS APXV18-206517S-	3	30.636	33.699	0.80	1.00	12.38	0.000	0.000	667.74	0.00	0.00	71.28
125.0	Ericsson AIR 21, 1.3	3	31.345	34.479	0.83	1.00	16.26	0.000	5.000	896.99	0.00	4,484.95	224.10
125.0	Ericsson AIR 21, 1.3	3	31.345	34.479	0.83	1.00	16.38	0.000	5.000	903.86	0.00	4,519.29	220.05
125.0	Ericsson KRY 112 144	3	31.345	34.479	0.50	1.00	0.62	0.000	5.000	33.93	0.00	169.64	29.70
125.0	Round Low Profile PI	1	30.995	34.095	1.00	1.00	21.70	0.000	0.000	1,183.77	0.00	0.00	1,350.00
140.0	Argus LPX310R	3	32.015	35.217	0.66	0.80	4.09	0.000	0.000	230.65	0.00	0.00	35.72
140.0	DragonWave A-ANT-	1	32.015	35.217	0.80	0.80	6.94	0.000	0.000	390.82	0.00	0.00	42.84
140.0	DragonWave A-ANT-	1	32.015	35.217	0.80	0.80	3.75	0.000	0.000	211.41	0.00	0.00	24.39
140.0	DragonWave A-ANT-	1	32.015	35.217	0.80	0.80	1.29	0.000	0.000	72.57	0.00	0.00	13.50
140.0	DragonWave Horizon	3	32.015	35.217	0.40	0.80	0.52	0.000	0.000	29.08	0.00	0.00	28.62
140.0	NextNet BTS-2500	3	32.015	35.217	0.54	0.80	3.41	0.000	0.000	192.08	0.00	0.00	94.50
140.0	Side Arms	1	32.015	35.217	1.00	1.00	8.50	0.000	0.000	478.95	0.00	0.00	504.00
150.0	48" x 12" Panel	9	32.653	35.918	0.54	0.80	27.01	0.000	0.000	1,552.48	0.00	0.00	243.00
150.0	72" x 12" Panel	3	32.653	35.918	0.54	0.80	13.51	0.000	0.000	776.24	0.00	0.00	121.50
150.0	Andrew VHLP2-18	2	32.653	35.918	0.80	0.80	7.50	0.000	0.000	431.25	0.00	0.00	55.80
150.0	Round T-Arm	3	32.653	35.918	0.50	0.75	14.62	0.000	0.000	840.34	0.00	0.00	675.00
										8,892.17			3,734.00

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:40 AM
 Page: 9

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 0.9D + 1.6W

110.00 mph with No Ice (Reduced DL)

23 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Applied Segment Forces Summary

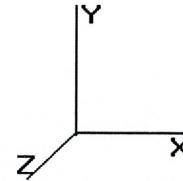
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	768.57	1,186.89	0.00	0.00
10.00	754.33	1,167.26	0.00	0.00
15.00	740.10	1,147.63	0.00	0.00
20.00	725.87	1,127.99	0.00	0.00
25.00	711.64	1,108.36	0.00	0.00
30.00	697.99	1,088.73	0.00	0.00
35.00	714.54	1,069.10	0.00	0.00
40.00	726.86	1,049.47	0.00	0.00
45.00	735.74	1,029.84	0.00	0.00
47.83	417.03	574.86	0.00	0.00
50.00	325.28	764.42	0.00	0.00
54.00	605.56	1,393.25	0.00	0.00
55.00	150.49	175.36	0.00	0.00
60.00	760.99	866.71	0.00	0.00
65.00	760.82	849.89	0.00	0.00
70.00	758.96	833.06	0.00	0.00
75.00	755.56	816.23	0.00	0.00
80.00	750.77	799.41	0.00	0.00
85.00	744.71	782.58	0.00	0.00
90.00	737.47	765.75	0.00	0.00
95.00	729.15	748.92	0.00	0.00
95.83	119.89	123.17	0.00	0.00
100.0	608.82	988.07	0.00	0.00
101.0	144.44	234.07	0.00	0.00
105.0	576.10	462.68	0.00	0.00
110.0	711.16	566.98	0.00	0.00
115.0	699.34	554.36	0.00	0.00
120.0	1,354.46	613.02	0.00	0.00
125.0	3,691.91	2,330.83	0.00	9,173.88
130.0	659.30	445.59	0.00	0.00
135.0	644.55	432.97	0.00	0.00
140.0	2,234.74	1,163.92	0.00	0.00
145.0	613.16	388.06	0.00	0.00
150.0	4,196.89	1,470.74	0.00	0.00
Totals:	30,327.21	29,120.18	0.00	9,173.88

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

4/26/2013 11:27:40 AM
 Page: 10



Load Case: 0.9D + 1.6W

110.00 mph with No Ice (Reduced DL)

23 Iterations

Gust Response Factor : 1.10
 Dead Load Factor : 0.90
 Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Calculated Forces

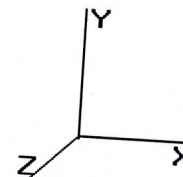
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-29.07	-30.38	0.00	-2,912.99	0.00	2,912.99	4,607.63	2,303.82	9,341.89	4,613.61	0.00	0.00	0.638
5.00	-27.79	-29.70	0.00	-2,761.12	0.00	2,761.12	4,559.53	2,279.76	9,071.72	4,480.18	0.10	-0.19	0.623
10.00	-26.53	-29.02	0.00	-2,612.63	0.00	2,612.63	4,510.02	2,255.01	8,802.46	4,347.20	0.40	-0.38	0.607
15.00	-25.29	-28.36	0.00	-2,467.51	0.00	2,467.51	4,459.11	2,229.56	8,534.26	4,214.75	0.90	-0.57	0.591
20.00	-24.08	-27.70	0.00	-2,325.72	0.00	2,325.72	4,406.80	2,203.40	8,267.28	4,082.90	1.60	-0.76	0.575
25.00	-22.89	-27.05	0.00	-2,187.22	0.00	2,187.22	4,353.08	2,176.54	8,001.69	3,951.73	2.49	-0.95	0.559
30.00	-21.73	-26.40	0.00	-2,051.98	0.00	2,051.98	4,297.96	2,148.98	7,737.64	3,821.33	3.58	-1.13	0.542
35.00	-20.59	-25.73	0.00	-1,919.98	0.00	1,919.98	4,241.44	2,120.72	7,475.29	3,691.77	4.87	-1.32	0.525
40.00	-19.48	-25.04	0.00	-1,791.32	0.00	1,791.32	4,183.52	2,091.76	7,214.81	3,563.12	6.36	-1.51	0.508
45.00	-18.41	-24.33	0.00	-1,666.11	0.00	1,666.11	4,124.19	2,062.09	6,956.34	3,435.48	8.04	-1.70	0.490
47.83	-17.81	-23.92	0.00	-1,597.19	0.00	1,597.19	4,089.95	2,044.97	6,810.83	3,363.62	9.08	-1.80	0.479
50.00	-17.01	-23.60	0.00	-1,545.36	0.00	1,545.36	4,063.46	2,031.73	6,700.05	3,308.90	9.92	-1.88	0.471
54.00	-15.60	-22.98	0.00	-1,450.94	0.00	1,450.94	3,292.85	1,646.42	5,449.39	2,691.25	11.56	-2.03	0.544
55.00	-15.38	-22.85	0.00	-1,427.97	0.00	1,427.97	3,284.08	1,642.04	5,410.01	2,671.80	11.99	-2.07	0.539
60.00	-14.47	-22.11	0.00	-1,313.71	0.00	1,313.71	3,239.39	1,619.70	5,213.74	2,574.87	14.26	-2.27	0.515
65.00	-13.58	-21.36	0.00	-1,203.17	0.00	1,203.17	3,193.31	1,596.65	5,018.66	2,478.53	16.74	-2.46	0.490
70.00	-12.71	-20.61	0.00	-1,096.37	0.00	1,096.37	3,145.81	1,572.91	4,824.91	2,382.84	19.42	-2.65	0.464
75.00	-11.87	-19.85	0.00	-993.34	0.00	993.34	3,096.92	1,548.46	4,632.66	2,287.90	22.30	-2.84	0.438
80.00	-11.05	-19.09	0.00	-894.09	0.00	894.09	3,046.62	1,523.31	4,442.07	2,193.77	25.37	-3.02	0.411
85.00	-10.25	-18.34	0.00	-798.62	0.00	798.62	2,994.92	1,497.46	4,253.30	2,100.54	28.63	-3.20	0.384
90.00	-9.48	-17.59	0.00	-706.93	0.00	706.93	2,941.82	1,470.91	4,066.50	2,008.29	32.07	-3.37	0.355
95.00	-8.75	-16.83	0.00	-619.00	0.00	619.00	2,887.31	1,443.66	3,881.84	1,917.09	35.69	-3.53	0.326
95.83	-8.61	-16.71	0.00	-604.98	0.00	604.98	2,878.09	1,439.05	3,851.28	1,902.00	36.30	-3.56	0.321
100.00	-7.64	-16.05	0.00	-535.34	0.00	535.34	2,827.97	1,413.98	3,694.98	1,824.81	39.46	-3.68	0.296
101.00	-7.40	-15.90	0.00	-519.29	0.00	519.29	1,925.36	962.68	2,560.99	1,264.78	40.24	-3.71	0.415
105.00	-6.94	-15.31	0.00	-455.68	0.00	455.68	1,901.32	950.66	2,471.43	1,220.55	43.40	-3.83	0.377
110.00	-6.38	-14.58	0.00	-379.11	0.00	379.11	1,870.02	935.01	2,359.93	1,165.48	47.49	-3.99	0.329
115.00	-5.84	-13.86	0.00	-306.19	0.00	306.19	1,837.31	918.65	2,249.09	1,110.74	51.75	-4.14	0.279
120.00	-5.31	-12.48	0.00	-236.88	0.00	236.88	1,803.20	901.60	2,139.06	1,056.40	56.15	-4.27	0.227
125.00	-3.25	-8.62	0.00	-165.33	0.00	165.33	1,767.68	883.84	2,030.00	1,002.54	60.68	-4.37	0.167
130.00	-2.84	-7.94	0.00	-122.21	0.00	122.21	1,730.77	865.38	1,922.07	949.24	65.30	-4.45	0.130
135.00	-2.46	-7.26	0.00	-82.53	0.00	82.53	1,692.45	846.22	1,815.44	896.58	69.99	-4.52	0.094
140.00	-1.47	-4.94	0.00	-46.22	0.00	46.22	1,652.72	826.36	1,710.25	844.63	74.75	-4.56	0.056
145.00	-1.13	-4.30	0.00	-21.51	0.00	21.51	1,611.60	805.80	1,606.68	793.48	79.54	-4.59	0.028
150.00	0.00	-4.20	0.00	0.00	0.00	0.00	1,557.27	778.64	1,493.56	737.61	84.34	-4.60	0.000

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:40 AM
 Page : 11

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 1.2D + 1.0Di + 1.0Wi

50.00 mph with 0.75 in Radial Ice

Gust Response Factor : 1.10

Dead Load Factor : 1.20

Wind Load Factor : 1.00

Ice Dead Load Factor : 1.00

22 Iterations

Wind Importance Factor : 1.00
 Ice Importance Factor : 1.00

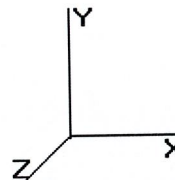
Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.682	0.000	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.682	0.000	1.200	1.242	5.00	22.234	26.68	124.9	401.7	1,802.6
10.00		1.00	0.70	4.256	4.682	0.000	1.200	1.331	5.00	21.916	26.30	123.1	423.4	1,798.1
15.00		1.00	0.70	4.256	4.682	0.000	1.200	1.386	5.00	21.569	25.88	121.2	433.2	1,781.8
20.00		1.00	0.70	4.256	4.682	0.000	1.200	1.427	5.00	21.211	25.45	119.2	437.8	1,760.2
25.00		1.00	0.70	4.256	4.682	0.000	1.200	1.459	5.00	20.845	25.01	117.1	439.3	1,735.6
30.00		1.00	0.70	4.260	4.686	0.000	1.200	1.486	5.00	20.475	24.57	115.1	438.9	1,709.0
35.00		1.00	0.73	4.451	5.087	0.000	1.200	1.509	5.00	20.101	24.12	118.1	437.1	1,680.9
40.00		1.00	0.76	4.625	5.261	0.000	1.200	1.529	5.00	19.726	23.67	120.4	434.1	1,651.8
45.00	Bot - Section 2	1.00	0.78	4.783	5.354	0.000	1.200	1.547	5.00	19.348	23.22	122.1	430.3	1,621.8
47.83		1.00	0.80	4.867	5.422	0.000	1.200	1.557	2.83	10.794	12.95	69.3	242.4	906.0
50.00	Top - Section 1	1.00	0.81	4.929	5.542	0.000	1.200	1.564	2.17	8.312	9.97	54.1	187.8	1,128.3
54.00		1.00	0.82	5.039	5.572	0.000	1.200	1.576	4.00	15.160	18.19	100.8	343.5	2,055.9
55.00		1.00	0.83	5.065	5.712	0.000	1.200	1.579	1.00	3.751	4.50	25.1	85.7	283.2
60.00		1.00	0.85	5.193	5.844	0.000	1.200	1.592	5.00	18.532	22.24	127.0	422.9	1,396.9
65.00		1.00	0.87	5.313	5.969	0.000	1.200	1.605	5.00	18.150	21.78	127.3	416.9	1,368.5
70.00		1.00	0.89	5.426	6.088	0.000	1.200	1.617	5.00	17.767	21.32	127.3	410.6	1,339.7
75.00		1.00	0.91	5.534	6.201	0.000	1.200	1.628	5.00	17.384	20.86	127.0	404.0	1,310.7
80.00		1.00	0.92	5.637	6.309	0.000	1.200	1.639	5.00	17.000	20.40	126.5	397.0	1,281.3
85.00		1.00	0.94	5.736	6.413	0.000	1.200	1.649	5.00	16.616	19.94	125.8	389.8	1,251.6
90.00	Bot - Section 3	1.00	0.95	5.830	6.513	0.000	1.200	1.658	5.00	16.231	19.48	124.9	382.3	1,221.7
95.00		1.00	0.97	5.921	6.529	0.000	1.200	1.667	5.00	15.846	19.02	123.8	374.7	1,191.6
95.83	Top - Section 2	1.00	0.98	5.936	6.609	0.000	1.200	1.669	0.83	2.603	3.12	20.4	62.2	196.2
100.0		1.00	0.99	6.008	6.628	0.000	1.200	1.676	4.17	13.059	15.67	103.6	310.8	1,476.9
101.0		1.00	1.00	6.026	6.702	0.000	1.200	1.678	1.00	3.094	3.71	24.6	74.3	350.0
105.0		1.00	1.01	6.093	6.792	0.000	1.200	1.684	4.00	12.223	14.67	98.3	291.9	763.5
110.0	Appertunance(s)	1.00	1.02	6.174	6.879	0.000	1.200	1.692	5.00	14.931	17.92	121.7	356.7	931.1
115.0	Appertunance(s)	1.00	1.04	6.253	6.963	0.000	1.200	1.699	5.00	14.545	17.45	120.1	348.3	905.9
120.0		1.00	1.05	6.330	7.044	0.000	1.200	1.707	5.00	14.158	16.99	118.3	339.8	880.6
125.0		1.00	1.06	6.404	7.124	0.000	1.200	1.714	5.00	13.772	16.53	116.4	331.2	855.1
130.0	Appertunance(s)	1.00	1.07	6.476	7.201	0.000	1.200	1.720	5.00	13.385	16.06	114.4	322.4	829.5
135.0		1.00	1.08	6.546	7.276	0.000	1.200	1.727	5.00	12.998	15.60	112.3	313.5	803.8
140.0	Appertunance(s)	1.00	1.09	6.615	7.350	0.000	1.200	1.733	5.00	12.610	15.13	110.1	304.5	777.9
145.0		1.00	1.11	6.681	7.421	0.000	1.200	1.739	5.00	12.223	14.67	107.8	295.4	752.0
150.0	Appertunance(s)	1.00	1.11	6.746	7.421	0.000	1.200	1.745	5.00	11.835	14.20	105.4	286.2	725.9
Totals:								150.00				3,613.6	11,570.5	40,525.4

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



4/26/2013 11:27:40 AM
 Page: 12

Load Case: 1.2D + 1.0Di + 1.0Wi 50.00 mph with 0.75 in Radial Ice

22 Iterations

Gust Response Factor : 1.10
 Dead Load Factor : 1.20
 Wind Load Factor : 1.00

Ice Dead Load Factor : 1.00

Wind Importance Factor : 1.00
 Ice Importance Factor : 1.00

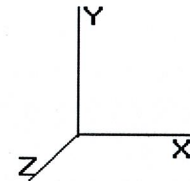
Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
120.0	RFS APXV18-206517S-	3	6.330	6.963	0.80	1.00	15.31	0.000	0.000	106.60	0.00	0.00	437.95
125.0	Ericsson AIR 21, 1.3	3	6.476	7.124	0.83	1.00	17.75	0.000	5.000	126.42	0.00	632.11	795.01
125.0	Ericsson AIR 21, 1.3	3	6.476	7.124	0.83	1.00	17.86	0.000	5.000	127.21	0.00	636.07	789.48
125.0	Ericsson KRY 112 144	3	6.476	7.124	0.50	1.00	0.94	0.000	5.000	6.72	0.00	33.58	87.41
125.0	Round Low Profile PI	1	6.404	7.044	1.00	1.00	40.59	0.000	0.000	285.94	0.00	0.00	2,237.49
140.0	Argus LPX310R	3	6.615	7.276	0.66	0.80	5.57	0.000	0.000	40.52	0.00	0.00	221.96
140.0	DragonWave A-ANT-	1	6.615	7.276	0.80	0.80	8.31	0.000	0.000	60.47	0.00	0.00	114.61
140.0	DragonWave A-ANT-	1	6.615	7.276	0.80	0.80	4.77	0.000	0.000	34.68	0.00	0.00	101.64
140.0	DragonWave A-ANT-	1	6.615	7.276	0.80	0.80	1.89	0.000	0.000	13.76	0.00	0.00	43.06
140.0	DragonWave Horizon	3	6.615	7.276	0.40	0.80	0.79	0.000	0.000	5.75	0.00	0.00	128.07
140.0	NextNet BTS-2500	3	6.615	7.276	0.54	0.80	3.79	0.000	0.000	27.59	0.00	0.00	295.84
140.0	Side Arms	1	6.615	7.276	1.00	1.00	15.57	0.000	0.000	113.30	0.00	0.00	1,017.89
150.0	48" x 12" Panel	9	6.746	7.421	0.54	0.80	29.19	0.000	0.000	216.65	0.00	0.00	1,523.82
150.0	72" x 12" Panel	3	6.746	7.421	0.54	0.80	15.16	0.000	0.000	112.52	0.00	0.00	736.96
150.0	Andrew VHLP2-18	2	6.746	7.421	0.80	0.80	12.74	0.000	0.000	94.56	0.00	0.00	104.88
150.0	Round T-Arm	3	6.746	7.421	0.50	0.75	27.08	0.000	0.000	200.93	0.00	0.00	1,336.28
										1,573.64			9,972.34

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



4/26/2013 11:27:40 AM

Page: 13

Load Case: 1.2D + 1.0Di + 1.0Wi	50.00 mph with 0.75 in Radial Ice	22 Iterations
Gust Response Factor : 1.10	Ice Dead Load Factor : 1.00	Wind Importance Factor : 1.00
Dead Load Factor : 1.20		Ice Importance Factor : 1.00
Wind Load Factor : 1.00		

Applied Segment Forces Summary

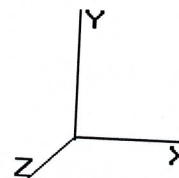
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	124.91	1,984.17	0.00	0.00
10.00	123.12	1,979.72	0.00	0.00
15.00	121.18	1,963.36	0.00	0.00
20.00	119.16	1,941.77	0.00	0.00
25.00	117.10	1,917.16	0.00	0.00
30.00	115.12	1,890.56	0.00	0.00
35.00	118.11	1,862.52	0.00	0.00
40.00	120.41	1,833.39	0.00	0.00
45.00	122.15	1,803.40	0.00	0.00
47.83	69.35	1,008.91	0.00	0.00
50.00	54.08	1,207.03	0.00	0.00
54.00	100.82	2,201.20	0.00	0.00
55.00	25.08	319.49	0.00	0.00
60.00	127.02	1,578.48	0.00	0.00
65.00	127.28	1,550.10	0.00	0.00
70.00	127.26	1,521.35	0.00	0.00
75.00	126.99	1,492.26	0.00	0.00
80.00	126.50	1,462.88	0.00	0.00
85.00	125.80	1,433.23	0.00	0.00
90.00	124.91	1,403.35	0.00	0.00
95.00	123.85	1,373.24	0.00	0.00
95.83	20.39	226.46	0.00	0.00
100.0	103.57	1,628.20	0.00	0.00
101.0	24.61	386.36	0.00	0.00
105.0	98.30	908.83	0.00	0.00
110.0	121.69	1,112.68	0.00	0.00
115.0	120.06	1,087.49	0.00	0.00
120.0	224.90	1,500.11	0.00	0.00
125.0	662.70	4,916.56	0.00	1,301.75
130.0	114.42	916.54	0.00	0.00
135.0	112.31	890.81	0.00	0.00
140.0	406.19	2,788.02	0.00	0.00
145.0	107.80	812.80	0.00	0.00
150.0	730.07	4,488.68	0.00	0.00
Totals:	5,187.21	55,391.11	0.00	1,301.75

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:40 AM
 Page : 14

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 1.2D + 1.0Di + 1.0Wi

50.00 mph with 0.75 in Radial Ice

Gust Response Factor : 1.10
 Dead Load Factor : 1.20
 Wind Load Factor : 1.00

Ice Dead Load Factor : 1.00

22 Iterations

Wind Importance Factor : 1.00
 Ice Importance Factor : 1.00

Calculated Forces

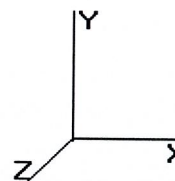
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.39	-5.20	0.00	-520.19	0.00	520.19	4,607.63	2,303.82	9,341.89	4,613.61	0.00	0.00	0.125
5.00	-53.40	-5.11	0.00	-494.17	0.00	494.17	4,559.53	2,279.76	9,071.72	4,480.18	0.02	-0.03	0.122
10.00	-51.42	-5.02	0.00	-468.62	0.00	468.62	4,510.02	2,255.01	8,802.46	4,347.20	0.07	-0.07	0.119
15.00	-49.45	-4.92	0.00	-443.55	0.00	443.55	4,459.11	2,229.56	8,534.26	4,214.75	0.16	-0.10	0.116
20.00	-47.51	-4.83	0.00	-418.95	0.00	418.95	4,406.80	2,203.40	8,267.28	4,082.90	0.29	-0.14	0.113
25.00	-45.59	-4.73	0.00	-394.82	0.00	394.82	4,353.08	2,176.54	8,001.69	3,951.73	0.45	-0.17	0.110
30.00	-43.70	-4.64	0.00	-371.17	0.00	371.17	4,297.96	2,148.98	7,737.64	3,821.33	0.64	-0.20	0.107
35.00	-41.83	-4.53	0.00	-347.99	0.00	347.99	4,241.44	2,120.72	7,475.29	3,691.77	0.87	-0.24	0.104
40.00	-40.00	-4.43	0.00	-325.32	0.00	325.32	4,183.52	2,091.76	7,214.81	3,563.12	1.14	-0.27	0.101
45.00	-38.19	-4.32	0.00	-303.17	0.00	303.17	4,124.19	2,062.09	6,956.34	3,435.48	1.45	-0.31	0.098
47.83	-37.18	-4.25	0.00	-290.94	0.00	290.94	4,089.95	2,044.97	6,810.83	3,363.62	1.63	-0.33	0.096
50.00	-35.97	-4.20	0.00	-281.73	0.00	281.73	4,063.46	2,031.73	6,700.05	3,308.90	1.78	-0.34	0.094
54.00	-33.77	-4.10	0.00	-264.91	0.00	264.91	3,292.85	1,646.42	5,449.39	2,691.25	2.08	-0.37	0.109
55.00	-33.45	-4.09	0.00	-260.81	0.00	260.81	3,284.08	1,642.04	5,410.01	2,671.80	2.16	-0.37	0.108
60.00	-31.87	-3.97	0.00	-240.38	0.00	240.38	3,239.39	1,619.70	5,213.74	2,574.87	2.57	-0.41	0.103
65.00	-30.32	-3.85	0.00	-220.54	0.00	220.54	3,193.31	1,596.65	5,018.66	2,478.53	3.02	-0.45	0.098
70.00	-28.80	-3.73	0.00	-201.31	0.00	201.31	3,145.81	1,572.91	4,824.91	2,382.84	3.50	-0.48	0.094
75.00	-27.30	-3.60	0.00	-182.68	0.00	182.68	3,096.92	1,548.46	4,632.66	2,287.90	4.03	-0.52	0.089
80.00	-25.84	-3.48	0.00	-164.67	0.00	164.67	3,046.62	1,523.31	4,442.07	2,193.77	4.58	-0.55	0.084
85.00	-24.41	-3.35	0.00	-147.29	0.00	147.29	2,994.92	1,497.46	4,253.30	2,100.54	5.18	-0.58	0.078
90.00	-23.00	-3.22	0.00	-130.54	0.00	130.54	2,941.82	1,470.91	4,066.50	2,008.29	5.80	-0.61	0.073
95.00	-21.63	-3.09	0.00	-114.43	0.00	114.43	2,887.31	1,443.66	3,881.84	1,917.09	6.46	-0.64	0.067
95.83	-21.40	-3.07	0.00	-111.85	0.00	111.85	2,878.09	1,439.05	3,851.28	1,902.00	6.57	-0.65	0.066
100.00	-19.78	-2.96	0.00	-99.05	0.00	99.05	2,827.97	1,413.98	3,694.98	1,824.81	7.15	-0.67	0.061
101.00	-19.39	-2.93	0.00	-96.09	0.00	96.09	1,925.36	962.68	2,560.99	1,264.78	7.29	-0.68	0.086
105.00	-18.48	-2.83	0.00	-84.37	0.00	84.37	1,901.32	950.66	2,471.43	1,220.55	7.86	-0.70	0.079
110.00	-17.37	-2.70	0.00	-70.22	0.00	70.22	1,870.02	935.01	2,359.93	1,165.48	8.61	-0.73	0.070
115.00	-16.28	-2.58	0.00	-56.70	0.00	56.70	1,837.31	918.65	2,249.09	1,110.74	9.39	-0.75	0.060
120.00	-14.78	-2.34	0.00	-43.82	0.00	43.82	1,803.20	901.60	2,139.06	1,056.40	10.19	-0.78	0.050
125.00	-9.88	-1.61	0.00	-30.83	0.00	30.83	1,767.68	883.84	2,030.00	1,002.54	11.02	-0.80	0.036
130.00	-8.96	-1.48	0.00	-22.78	0.00	22.78	1,730.77	865.38	1,922.07	949.24	11.86	-0.81	0.029
135.00	-8.07	-1.36	0.00	-15.36	0.00	15.36	1,692.45	846.22	1,815.44	896.58	12.72	-0.83	0.022
140.00	-5.29	-0.92	0.00	-8.55	0.00	8.55	1,652.72	826.36	1,710.25	844.63	13.59	-0.83	0.013
145.00	-4.48	-0.80	0.00	-3.98	0.00	3.98	1,611.60	805.80	1,606.68	793.48	14.47	-0.84	0.008
150.00	0.00	-0.73	0.00	0.00	0.00	0.00	1,557.27	778.64	1,493.56	737.61	15.35	-0.84	0.000

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:41 AM
 Page: 15

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



Load Case: 1.0D + 1.0W

60.00 mph Serviceability

21 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

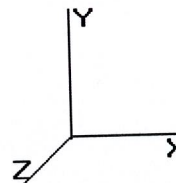
Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.742	214.81	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.742	210.86	1.000	0.000	5.00	21.199	21.20	142.9	0.0	1,167.4
10.00		1.00	0.70	6.129	6.742	206.92	1.000	0.000	5.00	20.807	20.81	140.3	0.0	1,145.6
15.00		1.00	0.70	6.129	6.742	202.98	1.000	0.000	5.00	20.414	20.41	137.6	0.0	1,123.8
20.00		1.00	0.70	6.129	6.742	199.04	1.000	0.000	5.00	20.022	20.02	135.0	0.0	1,102.0
25.00		1.00	0.70	6.129	6.742	195.10	1.000	0.000	5.00	19.629	19.63	132.3	0.0	1,080.2
30.00		1.00	0.70	6.134	6.747	191.24	1.000	0.000	5.00	19.236	19.24	129.8	0.0	1,058.4
35.00		1.00	0.73	6.410	7.051	191.47	1.000	0.000	5.00	18.844	18.84	132.9	0.0	1,036.6
40.00		1.00	0.76	6.659	7.325	191.04	1.000	0.000	5.00	18.451	18.45	135.2	0.0	1,014.7
45.00		1.00	0.78	6.887	7.576	190.11	1.000	0.000	5.00	18.059	18.06	136.8	0.0	992.9
47.83	Bot - Section 2	1.00	0.80	7.008	7.709	189.38	1.000	0.000	2.83	10.059	10.06	77.5	0.0	553.0
50.00		1.00	0.81	7.098	7.807	188.75	1.000	0.000	2.17	7.747	7.75	60.5	0.0	783.8
54.00	Top - Section 1	1.00	0.82	7.255	7.981	187.41	1.000	0.000	4.00	14.109	14.11	112.6	0.0	1,427.0
55.00		1.00	0.83	7.294	8.023	190.58	1.000	0.000	1.00	3.488	3.49	28.0	0.0	164.6
60.00		1.00	0.85	7.477	8.225	188.61	1.000	0.000	5.00	17.205	17.20	141.5	0.0	811.7
65.00		1.00	0.87	7.650	8.415	186.38	1.000	0.000	5.00	16.812	16.81	141.5	0.0	793.0
70.00		1.00	0.89	7.814	8.595	183.91	1.000	0.000	5.00	16.419	16.42	141.1	0.0	774.3
75.00		1.00	0.91	7.969	8.766	181.24	1.000	0.000	5.00	16.027	16.03	140.5	0.0	755.6
80.00		1.00	0.92	8.118	8.930	178.38	1.000	0.000	5.00	15.634	15.63	139.6	0.0	736.9
85.00		1.00	0.94	8.260	9.086	175.36	1.000	0.000	5.00	15.242	15.24	138.5	0.0	718.2
90.00		1.00	0.95	8.396	9.235	172.18	1.000	0.000	5.00	14.849	14.85	137.1	0.0	699.5
95.00		1.00	0.97	8.526	9.379	168.87	1.000	0.000	5.00	14.456	14.46	135.6	0.0	680.8
95.83	Bot - Section 3	1.00	0.97	8.548	9.402	168.30	1.000	0.000	0.83	2.371	2.37	22.3	0.0	111.6
100.0		1.00	0.98	8.652	9.517	165.42	1.000	0.000	4.17	11.895	11.90	113.2	0.0	971.7
101.0	Top - Section 2	1.00	0.99	8.677	9.544	164.72	1.000	0.000	1.00	2.814	2.81	26.9	0.0	229.8
105.0		1.00	1.00	8.774	9.651	164.78	1.000	0.000	4.00	11.100	11.10	107.1	0.0	393.0
110.0		1.00	1.01	8.891	9.780	161.13	1.000	0.000	5.00	13.521	13.52	132.2	0.0	478.6
115.0		1.00	1.02	9.005	9.905	157.38	1.000	0.000	5.00	13.129	13.13	130.0	0.0	464.6
120.0	Appertunance(s)	1.00	1.04	9.115	10.02	153.53	1.000	0.000	5.00	12.736	12.74	127.7	0.0	450.6
125.0	Appertunance(s)	1.00	1.05	9.222	10.14	149.60	1.000	0.000	5.00	12.344	12.34	125.2	0.0	436.6
130.0		1.00	1.06	9.326	10.25	145.58	1.000	0.000	5.00	11.951	11.95	122.6	0.0	422.6
135.0		1.00	1.07	9.427	10.36	141.47	1.000	0.000	5.00	11.559	11.56	119.9	0.0	408.5
140.0	Appertunance(s)	1.00	1.08	9.525	10.47	137.30	1.000	0.000	5.00	11.166	11.17	117.0	0.0	394.5
145.0		1.00	1.09	9.621	10.58	133.05	1.000	0.000	5.00	10.773	10.77	114.0	0.0	380.5
150.0	Appertunance(s)	1.00	1.11	9.715	10.68	128.73	1.000	0.000	5.00	10.381	10.38	110.9	0.0	366.5
Totals:									150.00			3,985.9	0.0	24,129.1

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



4/26/2013 11:27:41 AM
 Page: 16

Load Case: 1.0D + 1.0W

60.00 mph Serviceability

21 Iterations

Gust Response Factor : 1.10
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Wind Importance Factor : 1.00

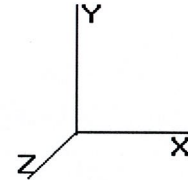
Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Ka	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
120.0	RFS APXV18-206517S-	3	9.115	10.026	0.80	1.00	12.38	0.000	0.000	124.17	0.00	0.00	79.20
125.0	Ericsson AIR 21, 1.3	3	9.326	10.258	0.83	1.00	16.26	0.000	5.000	166.80	0.00	833.98	249.00
125.0	Ericsson AIR 21, 1.3	3	9.326	10.258	0.83	1.00	16.38	0.000	5.000	168.07	0.00	840.36	244.50
125.0	Ericsson KRY 112 144	3	9.326	10.258	0.50	1.00	0.62	0.000	5.000	6.31	0.00	31.54	33.00
125.0	Round Low Profile PI	1	9.222	10.144	1.00	1.00	21.70	0.000	0.000	220.12	0.00	0.00	1,500.00
140.0	Argus LPX310R	3	9.525	10.478	0.66	0.80	4.09	0.000	0.000	42.89	0.00	0.00	39.69
140.0	DragonWave A-ANT-	1	9.525	10.478	0.80	0.80	6.94	0.000	0.000	72.67	0.00	0.00	47.60
140.0	DragonWave A-ANT-	1	9.525	10.478	0.80	0.80	3.75	0.000	0.000	39.31	0.00	0.00	27.10
140.0	DragonWave A-ANT-	1	9.525	10.478	0.80	0.80	1.29	0.000	0.000	13.50	0.00	0.00	15.00
140.0	DragonWave Horizon	3	9.525	10.478	0.40	0.80	0.52	0.000	0.000	5.41	0.00	0.00	31.80
140.0	NextNet BTS-2500	3	9.525	10.478	0.54	0.80	3.41	0.000	0.000	35.72	0.00	0.00	105.00
140.0	Side Arms	1	9.525	10.478	1.00	1.00	8.50	0.000	0.000	89.06	0.00	0.00	560.00
150.0	48" x 12" Panel	9	9.715	10.686	0.54	0.80	27.01	0.000	0.000	288.69	0.00	0.00	270.00
150.0	72" x 12" Panel	3	9.715	10.686	0.54	0.80	13.51	0.000	0.000	144.34	0.00	0.00	135.00
150.0	Andrew VHLP2-18	2	9.715	10.686	0.80	0.80	7.50	0.000	0.000	80.19	0.00	0.00	62.00
150.0	Round T-Arm	3	9.715	10.686	0.50	0.75	14.62	0.000	0.000	156.26	0.00	0.00	750.00
										1,653.50			4,148.89

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev: 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



4/26/2013 11:27:41 AM
 Page: 17

Load Case: 1.0D + 1.0W

60.00 mph Serviceability

21 Iterations

Gust Response Factor : 1.10
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Wind Importance Factor : 1.00

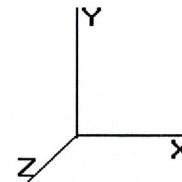
Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	142.92	1,318.77	0.00	0.00
10.00	140.27	1,296.95	0.00	0.00
15.00	137.62	1,275.14	0.00	0.00
20.00	134.98	1,253.33	0.00	0.00
25.00	132.33	1,231.51	0.00	0.00
30.00	129.79	1,209.70	0.00	0.00
35.00	132.87	1,187.89	0.00	0.00
40.00	135.16	1,166.07	0.00	0.00
45.00	136.81	1,144.26	0.00	0.00
47.83	77.55	638.73	0.00	0.00
50.00	60.49	849.35	0.00	0.00
54.00	112.60	1,548.05	0.00	0.00
55.00	27.98	194.85	0.00	0.00
60.00	141.51	963.02	0.00	0.00
65.00	141.48	944.32	0.00	0.00
70.00	141.13	925.62	0.00	0.00
75.00	140.50	906.93	0.00	0.00
80.00	139.61	888.23	0.00	0.00
85.00	138.48	869.53	0.00	0.00
90.00	137.13	850.83	0.00	0.00
95.00	135.59	832.14	0.00	0.00
95.83	22.29	136.86	0.00	0.00
100.0	113.21	1,097.85	0.00	0.00
101.0	26.86	260.08	0.00	0.00
105.0	107.13	514.09	0.00	0.00
110.0	132.24	629.98	0.00	0.00
115.0	130.04	615.96	0.00	0.00
120.0	251.86	681.13	0.00	0.00
125.0	686.51	2,589.82	0.00	1,705.89
130.0	122.60	495.10	0.00	0.00
135.0	119.86	481.08	0.00	0.00
140.0	415.55	1,293.24	0.00	0.00
145.0	114.02	431.18	0.00	0.00
150.0	780.41	1,634.16	0.00	0.00
Totals:	5,639.36	32,355.75	0.00	1,705.89

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



4/26/2013 11:27:41 AM

Page: 18

Load Case: 1.0D + 1.0W

60.00 mph Serviceability

21 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

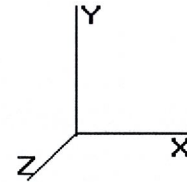
Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-32.35	-5.65	0.00	-543.53	0.00	543.53	4,607.63	2,303.82	9,341.89	4,613.61	0.00	0.00	0.125
5.00	-31.03	-5.52	0.00	-515.29	0.00	515.29	4,559.53	2,279.76	9,071.72	4,480.18	0.02	-0.04	0.122
10.00	-29.73	-5.40	0.00	-487.67	0.00	487.67	4,510.02	2,255.01	8,802.46	4,347.20	0.07	-0.07	0.119
15.00	-28.45	-5.28	0.00	-460.67	0.00	460.67	4,459.11	2,229.56	8,534.26	4,214.75	0.17	-0.11	0.116
20.00	-27.20	-5.16	0.00	-434.27	0.00	434.27	4,406.80	2,203.40	8,267.28	4,082.90	0.30	-0.14	0.113
25.00	-25.96	-5.04	0.00	-408.48	0.00	408.48	4,353.08	2,176.54	8,001.69	3,951.73	0.46	-0.18	0.109
30.00	-24.75	-4.92	0.00	-383.29	0.00	383.29	4,297.96	2,148.98	7,737.64	3,821.33	0.67	-0.21	0.106
35.00	-23.56	-4.80	0.00	-358.69	0.00	358.69	4,241.44	2,120.72	7,475.29	3,691.77	0.91	-0.25	0.103
40.00	-22.39	-4.67	0.00	-334.71	0.00	334.71	4,183.52	2,091.76	7,214.81	3,563.12	1.19	-0.28	0.099
45.00	-21.25	-4.54	0.00	-311.36	0.00	311.36	4,124.19	2,062.09	6,956.34	3,435.48	1.50	-0.32	0.096
47.83	-20.61	-4.46	0.00	-298.51	0.00	298.51	4,089.95	2,044.97	6,810.83	3,363.62	1.70	-0.34	0.094
50.00	-19.76	-4.40	0.00	-288.84	0.00	288.84	4,063.46	2,031.73	6,700.05	3,308.90	1.85	-0.35	0.092
54.00	-18.21	-4.29	0.00	-271.23	0.00	271.23	3,292.85	1,646.42	5,449.39	2,691.25	2.16	-0.38	0.106
55.00	-18.01	-4.26	0.00	-266.94	0.00	266.94	3,284.08	1,642.04	5,410.01	2,671.80	2.24	-0.39	0.105
60.00	-17.05	-4.13	0.00	-245.62	0.00	245.62	3,239.39	1,619.70	5,213.74	2,574.87	2.66	-0.42	0.101
65.00	-16.10	-3.99	0.00	-224.98	0.00	224.98	3,193.31	1,596.65	5,018.66	2,478.53	3.13	-0.46	0.096
70.00	-15.17	-3.85	0.00	-205.04	0.00	205.04	3,145.81	1,572.91	4,824.91	2,382.84	3.63	-0.50	0.091
75.00	-14.27	-3.71	0.00	-185.79	0.00	185.79	3,096.92	1,548.46	4,632.66	2,287.90	4.17	-0.53	0.086
80.00	-13.38	-3.57	0.00	-167.25	0.00	167.25	3,046.62	1,523.31	4,442.07	2,193.77	4.74	-0.56	0.081
85.00	-12.51	-3.43	0.00	-149.41	0.00	149.41	2,994.92	1,497.46	4,253.30	2,100.54	5.35	-0.60	0.075
90.00	-11.66	-3.29	0.00	-132.26	0.00	132.26	2,941.82	1,470.91	4,066.50	2,008.29	5.99	-0.63	0.070
95.00	-10.82	-3.15	0.00	-115.82	0.00	115.82	2,887.31	1,443.66	3,881.84	1,917.09	6.67	-0.66	0.064
95.83	-10.69	-3.13	0.00	-113.20	0.00	113.20	2,878.09	1,439.05	3,851.28	1,902.00	6.78	-0.66	0.063
100.00	-9.59	-3.00	0.00	-100.17	0.00	100.17	2,827.97	1,413.98	3,694.98	1,824.81	7.37	-0.69	0.058
101.00	-9.33	-2.97	0.00	-97.17	0.00	97.17	1,925.36	962.68	2,560.99	1,264.78	7.52	-0.69	0.082
105.00	-8.82	-2.87	0.00	-85.27	0.00	85.27	1,901.32	950.66	2,471.43	1,220.55	8.11	-0.72	0.075
110.00	-8.19	-2.73	0.00	-70.95	0.00	70.95	1,870.02	935.01	2,359.93	1,165.48	8.88	-0.75	0.065
115.00	-7.57	-2.59	0.00	-57.30	0.00	57.30	1,837.31	918.65	2,249.09	1,110.74	9.67	-0.77	0.056
120.00	-6.89	-2.34	0.00	-44.33	0.00	44.33	1,803.20	901.60	2,139.06	1,056.40	10.50	-0.80	0.046
125.00	-4.31	-1.61	0.00	-30.94	0.00	30.94	1,767.68	883.84	2,030.00	1,002.54	11.34	-0.82	0.033
130.00	-3.82	-1.49	0.00	-22.87	0.00	22.87	1,730.77	865.38	1,922.07	949.24	12.21	-0.83	0.026
135.00	-3.34	-1.36	0.00	-15.45	0.00	15.45	1,692.45	846.22	1,815.44	896.58	13.09	-0.84	0.019
140.00	-2.05	-0.92	0.00	-8.65	0.00	8.65	1,652.72	826.36	1,710.25	844.63	13.98	-0.85	0.011
145.00	-1.62	-0.80	0.00	-4.02	0.00	4.02	1,611.60	805.80	1,606.68	793.48	14.87	-0.86	0.006
150.00	0.00	-0.78	0.00	0.00	0.00	0.00	1,557.27	778.64	1,493.56	737.61	15.77	-0.86	0.000

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

4/26/2013 11:27:41 AM
 Page: 19



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

Analysis Summary

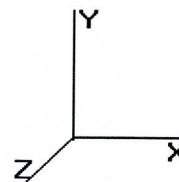
Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	30.39	0.00	38.78	0.00	0.00	2936.69	0.00	0.65
0.9D + 1.6W	30.38	0.00	29.07	0.00	0.00	2912.99	0.00	0.64
1.2D + 1.0Di + 1.0Wi	5.20	0.00	55.39	0.00	0.00	520.19	0.00	0.12
1.0D + 1.0W	5.65	0.00	32.35	0.00	0.00	543.53	0.00	0.12

Pole : 302539
 Location : North Haven CT 2, CT
 Height : 150.0 (ft)
 Base Dia : 49.60 (in)
 Top Dia : 23.61 (in)
 Shape : 12 Sides
 Taper : 0.182016 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

4/26/2013 11:27:41 AM
 Page: 20



Base Summary

Reactions

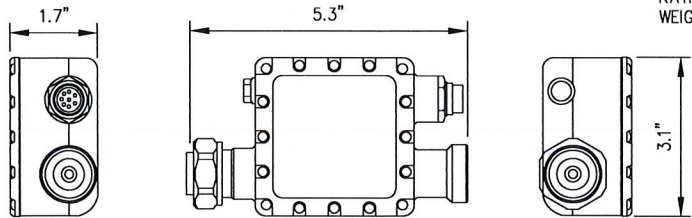
Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
3,567.20	35.90	30.50	2,936.69	55.39	30.39	82.32

Base Plate

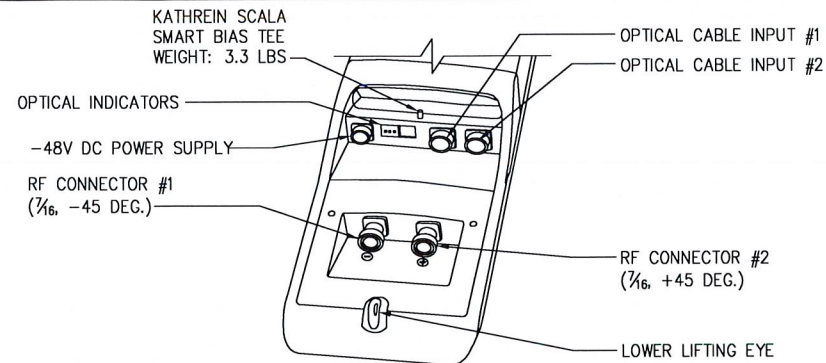
Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
60.0	2.750	63.850	Polygon	12	0.00	9.968	428.55	1017.64	0.42

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
57.85	16	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	155.75	260.00	0.61	148.83	260.00	0.59



1 SMART BIAS-TEE DETAIL
-- NOT TO SCALE



2 ANTENNA CONNECTION INTERFACE
-- NOT TO SCALE

NOTES:

1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER T-MOBILE SPECIFICATIONS (SEE RF SCHEDULE/C-3)
2. SEE RF SCHEDULE/C-3 FOR CABLE AND JUMPER LENGTHS.
3. IF NEW GPS ADDED TO SITE, CAP AND WEATHERPROOF ANY UNUSED COAX FOR FUTURE USE.
4. TRIM POWER JUMPERS PER MANU. SPECS TO CORRECT LENGTH FOR CONNECTION.
5. COIL EXCESS FIBER IN CABINET BASE.

(P) SMART BIAS-TEE
(1) PER SECTOR, (3) TOTAL

(E) UMTS JUMPERS (TO ANTENNA)
(2) PER SECTOR, (6) TOTAL

(P) AISG CABLE
(1) PER SECTOR, (3) TOTAL

(E) UMTS TMA
(1) PER SECTOR, (3) TOTAL

(E) COAX JUMPERS (TO FEED LMUs AS NECESSARY, SEE NOTE 3)
(2) PER SECTOR, (6) TOTAL

(E) UMTS JUMPERS (TO TMA)
(2) PER SECTOR, (6) TOTAL

(E) COAX (TO FEED LMUs AS NECESSARY, SEE NOTE 3)
(2) PER SECTOR, (6) TOTAL

(E) UMTS COAX
(2) PER SECTOR, (6) TOTAL

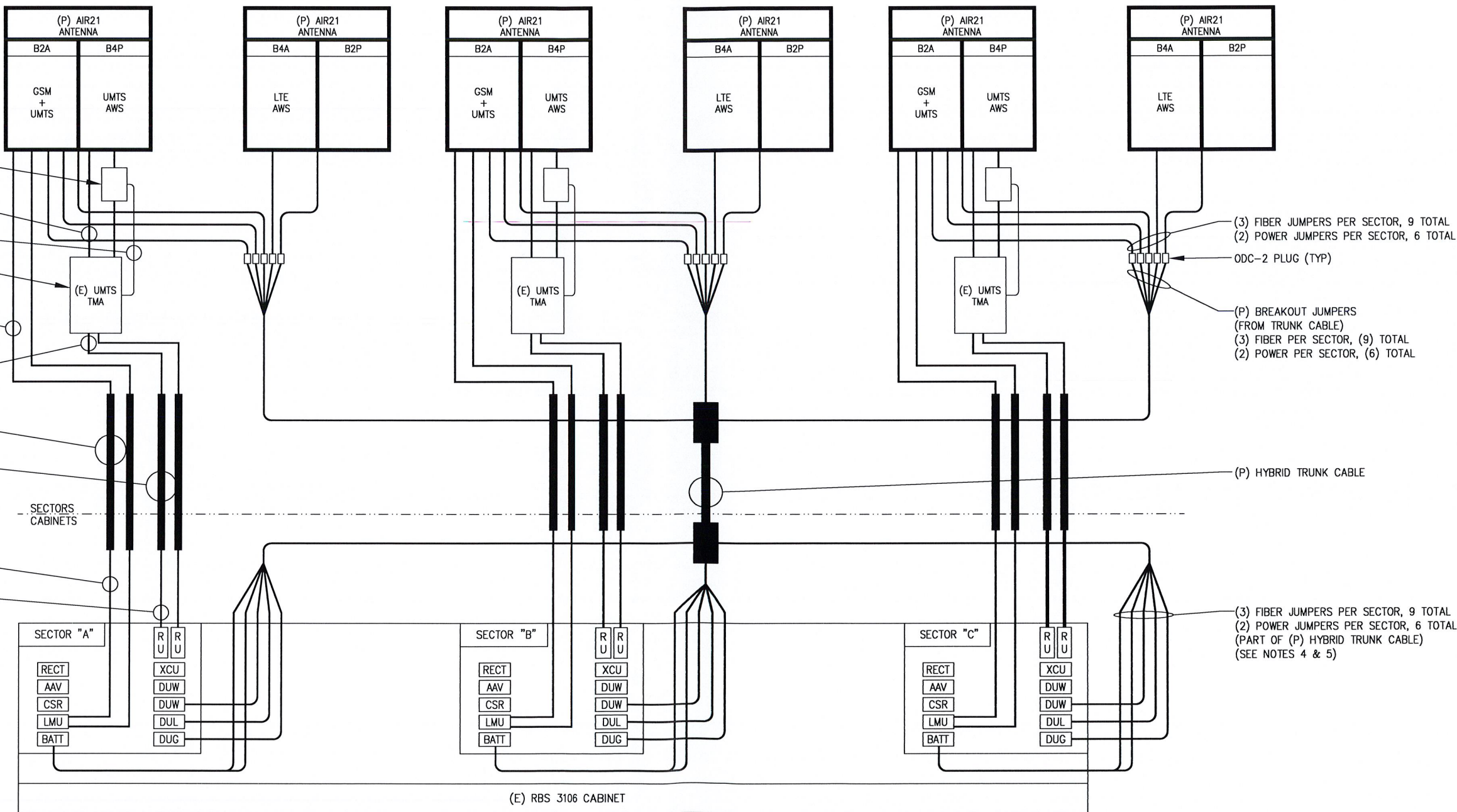
(E) JUMPER (TO FEED LMUs AS NECESSARY, SEE NOTE 3)
(2) PER SECTOR, (6) TOTAL

(E) UMTS JUMPERS (TO COAX)
(2) PER SECTOR, (6) TOTAL

SECTOR "A"
(VIEW FROM BEHIND)

SECTOR "B"
(VIEW FROM BEHIND)

SECTOR "C"
(VIEW FROM BEHIND)



3 2C CONFIGURATION COAX/FIBER PLUMBING DIAGRAM
-- NOT TO SCALE

SUBMITTALS		
DATE	DESCRIPTION	REVISION
04/18/13	REVIEW	A
04/25/13	FOR PERMIT	0
05/3/13	REVISED PER COMMENTS	1

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 317-0977
DRAWN BY: MJB
CHECKED BY: AJD



THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NAME
CT11398A
CT11398A NORTH HAVEN_RT 15
2 DWIGHT STREET
NORTH HAVEN, CT 06473

SHEET TITLE
**COAX/FIBER
PLUMBING
DIAGRAM**

SHEET NUMBER
E-2

SHEET 7 OF 8 SHEETS

ELECTRICAL NOTES:

- WORK INCLUDED
1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
 - B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
 - C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
 - D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
 - E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
 - F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
 2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
 2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
 3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
 4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
 5. GENERAL
 - A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
 - B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
 6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
 - A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
 - B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
 - C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
 - D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
 - E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.
- GUARANTEE
1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS

1. AS-BUILT DRAWINGS:
 - A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
 - A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT T-MOBILE AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
 - B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON.
SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
 - A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
 - B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
 - C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
 - D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
 - E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
 - F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
 - G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
 - I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
 - J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
 - K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

- L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
- M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
- N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0" OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
- O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
- P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/ THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8
8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

WIRING DEVICES

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.
- DISCONNECT SWITCHES AND FUSES
 1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
 2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
 3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.
 4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
 - A. GENERAL ELECTRIC COMPANY
 - B. SQUARE-D
 5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

INSTALLATION

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
 - A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
 - B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

GENERAL NOTES:

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

CLEANUP

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
 - A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
 - B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
 - C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR
 - A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.
 - B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
 - C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

CHANGE ORDER PROCEDURE:

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

ADMINISTRATION

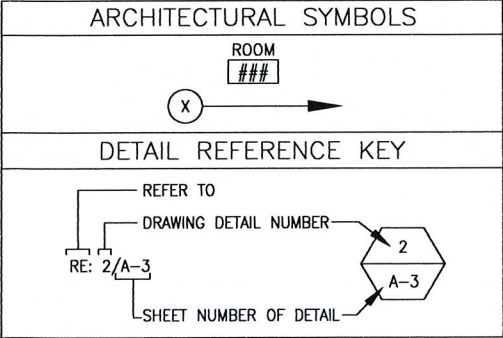
1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

INSURANCE AND BONDS

1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

ABBREVIATIONS

ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLC	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR Ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MW	MICROWAVE DISH
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
(P)	PROPOSED
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SS	STAINLESS STEEL
STL	STEEL
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TYP	TYPICAL
VIF	VERIFY IN FIELD
UON	UNLESS OTHERWISE NOTED
WWF	WELDED WIRE FABRIC
W/	WITH

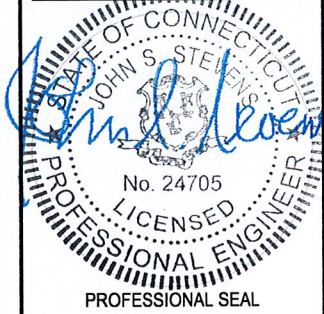


SUBMITTALS

DATE	DESCRIPTION	REVISION
04/18/13	REVIEW	A
04/25/13	FOR PERMIT	0
05/3/13	REVISED PER COMMENTS	1

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	317-0977
DRAWN BY:	MJB
CHECKED BY:	AJD



THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NAME
CT11398A
CT11398A_NORTH HAVEN_RT 15
2 DWIGHT STREET
NORTH HAVEN, CT 06473

SHEET TITLE

GENERAL AND ELECTRICAL NOTES

SHEET NUMBER

N-1