



10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430

PHONE: 201.684.0055
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June 7, 2016

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

Notice of Exempt Modification
168 Catoona Lane, Stamford, CT 06902
Latitude- 41.05283800
Longitude- -73.56314400

Dear Ms. Bachman,

T-Mobile currently maintains (9) existing antennas at the 265' level of the existing 301' monopole at 168 Catoona Lane in Stamford, Connecticut. The tower is owned by American Tower Corporation. The property is also owned by American Tower. T-Mobile now intends to replace (3) existing antennas with (3) new 1900 MHz antennas. These antennas would be installed at the same 265' level of the tower. T-Mobile also intends to install (3) new fiber cables.

This facility was not originally approved by the Connecticut Siting Council and after speaking with Norman Cole, Land Use Bureau Chief for the City of Stamford, the city does not retain records for the approval of the tower. After a discussion regarding the T-Mobile modification and the planned scope-of-work, it was agreed there are no conditions from the City that would prevent this modification.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to the Honorable David Martin, Mayor for the City of Stamford, as well as tower and property owner American Tower.

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

1. The proposed modification will not result in an increase in the height of the existing structure
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Kyle Richers

Kyle Richers
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
908-447-4716
krichers@transcendwireless.com

Attachments:

cc: David Martin- as elected official
American Tower Corporation- tower and property owner

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

T-Mobile Existing Facility

Site ID: CT11007A

**Stamford AT&T
168 Catoona Lane
Stamford, CT 06902**

June 3, 2016

EBI Project Number: 6216002643

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	41.48 %

June 3, 2016

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

Emissions Analysis for Site: **CT11007A – Stamford AT&T**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **168 Catoona Lane, Stamford, 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 700 MHz Band is approximately $467 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS and AWS bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **168 Catoona Lane, Stamford, 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, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **Ericsson AIR32 B2A/B66Aa & Ericsson AIR 21 B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR32 B2A/B66Aa & Ericsson AIR 21 B2A/B4P** have a maximum gain of **15.9 dBd** at their main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerline of the proposed antennas is **265 feet** above ground level (AGL).
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR32 B2A/B66Aa	Make / Model:	Ericsson AIR32 B2A/B66Aa	Make / Model:	Ericsson AIR32 B2A/B66Aa
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	265	Height (AGL):	265	Height (AGL):	265
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	0.50	Antenna B1 MPE%	0.50	Antenna C1 MPE%	0.50
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	265	Height (AGL):	265	Height (AGL):	265
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	7,002.81	ERP (W):	7,002.81	ERP (W):	7,002.81
Antenna A2 MPE%	0.38	Antenna B2 MPE%	0.38	Antenna C2 MPE%	0.38
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	265	Height (AGL):	265	Height (AGL):	265
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.10	Antenna B3 MPE%	0.10	Antenna C3 MPE%	0.10

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Per Sector Max)	0.97 %
Sirius XM Radio	1.03 %
Bell Industries	0.63 %
Lojack	0.37 %
US Treasury	0.55 %
USA Mobility	1.90 %
Sensus (CL&P)	0.57 %
MediaFLO	4.20 %
AT&T	2.78 %
Nextel	1.50
Marcus	4.42
Clearwire	0.48
Sprint	8.99
SNET Paging	1.75
Skytel	0.00
Rescue 21	4.12
Metro PCS	7.22
Site Total MPE %:	41.48 %

T-Mobile Sector 1 Total:	0.97 %
T-Mobile Sector 2 Total:	0.97 %
T-Mobile Sector 3 Total:	0.97 %
Site Total:	41.48 %



T-Mobile Max Power Values Per Sector

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	2	2334.27	265	2.50	2100	1000	0.25 %
T-Mobile 1900 MHz (PCS) LTE	2	2334.27	265	2.50	1900	1000	0.25 %
T-Mobile 1900 MHz (PCS) GSM	2	1167.14	265	1.25	1900	1000	0.12 %
T-Mobile 1900 MHz (PCS) UMTS	2	1167.14	265	1.25	1900	1000	0.12 %
T-Mobile 2100 MHz (AWS) UMTS	2	1167.14	265	1.25	2100	1000	0.12 %
T-Mobile 700 MHz LTE	1	865.21	265	0.46	700	467	0.10 %
						Total:	0.97 %

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	0.97 %
Sector 2:	0.97 %
Sector 3:	0.97 %
T-Mobile Per Sector Maximum:	0.97 %
Site Total:	41.48 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **41.48%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



AMERICAN TOWER®
C O R P O R A T I O N

Structural Analysis Report

Structure : 300 ft Self Supported AT&T TAG Tower
ATC Site Name : Stamford (Katoona), CT
ATC Site Number : 88018
Engineering Number : 66326022
Proposed Carrier : T-Mobile
Carrier Site Name : N/A
Carrier Site Number : CT11007A
Site Location : Catoona Lane
Stamford, CT 06902-4573
41.052825,-73.563047
County : Fairfield
Date : May 10, 2016
Max Usage : 99%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer



Prepared By:
Andrew D. Vargo, E.I.

May 11 2016 4:37 PM

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
Existing and Reserved Equipment.....	2-3
Equipment to be Removed.....	3
Proposed Equipment	3
Structure Usages	4
Foundations	4
Standard Conditions	5
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft self supported tower to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Eng. #73123451, dated September 28, 2005
Foundation Drawing	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Geotechnical Report	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Modifications	ATC Eng. #42439132, dated September 26, 2008 ATC Eng. #44209632, dated December 2, 2009

Analysis

The tower was analyzed using Power Lines Systems tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

Basic Wind Speed:	85 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	74 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

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 American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
300.0	306.0	1	3' HP Dish	Platform w/ Handrails	(1) 1/2" Coax	--
	300.0	3	Horizon Compact		(5) 7/8" Coax	Clearwire
		3	DragonWave A-ANT-18G-2-C			
	335.0	1	TX RX Systems 101-68-10-X-03N		(2) 1 1/4" Coax	Marcus Comm.
	317.0	1	16' Omni			
	311.0	1	Radio/ODU			
		1	4' Std. Dish			
	320.0	1	16' Omni		(1) 7/8" Coax	UNITed Wireless Holdings
270.0	276.0	1	Dielectric TLP-08M-2E	Side Arm	(1) 3 1/8" HL	Qualcomm
269.0	275.0	1	ADD090	Side Arm	(2) 7/8" Coax	US Dept Of Homeland Security
265.0	272.0	2	Til-Tek TA-2350-DAB	Side Arm	(1) EW20	Sirius XM Radio
	265.0	3	RFS ATMAA1412D-1A20	Sector Frame	(3) 7/8" Fiber (6) 1 5/8" Coax	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Andrew LNX-6515DS-VTM			
240.0	250.0	1	Sinclair SC281-L	Side Arm	(2) 7/8" Coax	US Dept Of Homeland Security
	245.0	1	Sinclair SC381-HL			
231.0	235.0	6	Powerwave TT19-08BP111-001	Sector Frame	(12) 1 5/8" Coax (2) 0.39" Fiber Trunk (2) 0.74" 8 AWG 7	AT&T Mobility
		2	Raycap DC2-48-60-0-9E			
		6	Ericsson RRUS A2			
		3	Ericsson RRUS-11 800MHz			
		6	Ericsson RRUS 12			
		3	Ericsson RRUS E2 B29			
		3	Ericsson RRUS-32			
		3	Ericsson RRUS-11			
		3	KMW AM-X-CD-14-65-00T-RET			
		3	Powerwave 7770.00			
		3	Andrew SBNHH-1D65A			
		3	CCI OPA-65R-LCUU-H4			
222.0	222.0	12	Decibel DB844H90E-XY	Sector Frame	(15) 1 5/8" Coax	Sprint Nextel
200.0	201.0	2	TX RX Systems 101-68-10-X-03N	Side Arm	(2) 1 1/4" Coax	Marcus Comm.
	210.0	1	Sinclair SC281-L		(1) 7/8" Coax	US Dept Of Homeland Security
189.0	193.0	1	30" x 30" Reflector	Leg	-	Town Of Stanford
178.0	183.0	3	Antel BCD-87010 ____	Side Arm	(3) 7/8" Coax	Spok Holdings
171.0	175.0	1	24" x 24" Junction Box	T-Arm	(2) 2" conduit	Clearwire
167.0	171.0	3	NextNet BTS-2500	T-Arm	(6) 5/16" Coax	
		3	Argus LLPX310R		(1) 2" conduit	
160.0	161.0	6	Kathrein 800 10504	Leg	(12) 1 5/8" Coax	Metro PCS
	160.0	18	RCU		(2) 3/8" Coax	

Existing and Reserved Equipment Continued

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	3	Alcatel-Lucent ALU 800MHz External Notch Filter	Sector Frame	(4) 1 1/4" Hybriflex (1) 1/2" Coax	Sprint Nextel
		3	RFS IBC1900HB-2			
		3	Alcatel-Lucent 800MHz RRH			
		6	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSPP18-C-A20			
137.0	142.0	1	Antel BCD-87010 ____ 4°	Stand-Off	(1) 7/8" Coax	Sensus USA
120.0	120.0	1	Channel Master Type 120	Leg	(1) 1/2" Coax	Spok Holdings
100.0	100.0	1	TX RX Systems 101-68-10-X-03N	Side Arm	(1) 1 1/4" Coax	Marcus Comm.
92.0	92.0	3	Alcatel-Lucent RRH2X60-1900A-4R	Sector Frame	(2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield			
		2	RFS DB-T1-6Z-8AB-0Z			
		12	Andrew SBNHH-1D65B			
22.0	22.0	1	Til-Tek TA-2324-LHCP	Leg	(1) 7/8" Coax	Sirius XM Radio
6.0	6.0	1	Trimble Acutime 2000	Leg	(1) 1/2" Coax	Spok Holdings
		1	Channel Master Type 120		(1) 1/4" Coax	

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
265.0	265.0	3	Ericsson AIR 21, 1.3M, B4A B2P	-	(6) 1 5/8" Coax	T-Mobile

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
265.0	265.0	3	Ericsson AIR-32 B2A/B66Aa	Sector Frame	(3) 7/8" Fiber	T-Mobile

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 stacked on top of existing T-Mobile coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	91%	Pass
Diagonals	97%	Pass
Truss Diagonals	99%	Pass
Horizontals	95%	Pass
Truss Horizontals	84%	Pass
Anchor Bolts	84%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	385.4	96%
Axial (Kips)	494.7	8%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

The foundation and anchorages for this tower have factors of safety exceeding 2.0 with respect to wind.



Standard Conditions

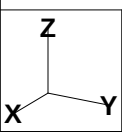
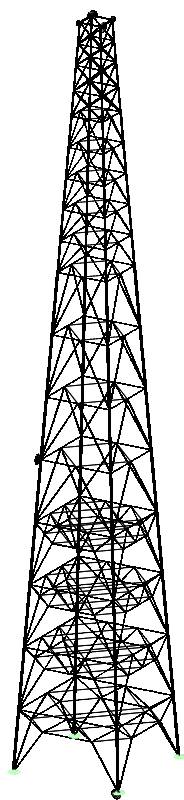
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- 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 A.T. Engineering Service, PLLC 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. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Project Name : 88018 - Stamford (Katoona), CT
Project Notes: T-Mobile - 6354541
Project File : N:\L2 - ATC\88018\2016.05.10 - T-Mobile - 66326022\2016.05.10 - T-Mobile - 66326022.tow
Date run : 3:06:42 PM Tuesday, May 10, 2016
by : Tower Version 12.50
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

Member check option: TIA/EIA 222-F
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: n:\l2 - atc\88018\2016.05.10 - t-mobile - 66326022\2016.05.10 - t-mobile - 66326022.eia

*** Analysis Results:

Maximum element usage is 98.72% for Angle "LD 9X" in load case "W -90"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	OP	-46.46	-21.32	-334.42	51.12	-0.91	-5.75	5.83	-2.41	0.00
W 0	OX	-44.60	22.03	-328.69	49.74	0.59	-5.44	5.48	2.42	0.00
W 0	OXY	-36.80	-16.33	225.20	40.32	0.55	-5.95	5.98	2.21	0.00
W 0	OY	-38.30	15.63	227.37	41.37	-0.33	-6.27	6.27	2.18	0.00
W 180	OP	38.66	15.43	224.84	41.62	-0.32	6.31	6.32	2.18	0.00
W 180	OX	36.80	-16.19	223.00	40.28	0.55	6.00	6.03	-2.21	0.00
W 180	OXY	44.62	21.92	-326.49	49.71	0.59	5.50	5.53	-2.43	0.00
W 180	OY	46.15	-21.14	-331.88	50.76	-0.91	5.79	5.87	2.43	0.00
W 45	OP	-50.33	-50.62	-494.68	71.38	4.09	-4.01	5.73	-0.14	0.00
W 45	OX	-21.11	-15.08	-49.94	25.94	5.27	-4.25	6.77	3.59	0.00
W 45	OXY	-44.81	-38.64	228.59	41.67	5.92	7.08	6.98	-0.01	0.00
W 45	OY	-14.79	-20.95	-49.47	25.65	4.23	-5.18	6.69	-3.59	0.00
W -45	OP	-22.34	15.70	-53.28	27.31	-5.47	-4.47	7.07	-3.44	0.00
W -45	OX	-49.07	50.93	-490.47	70.72	-4.29	-3.79	5.73	0.00	0.00
W -45	OXY	-13.72	20.57	-52.16	24.73	-4.08	-4.96	6.42	3.61	0.00
W -45	OY	-45.90	44.29	385.38	63.79	-4.84	-5.24	7.13	0.03	0.00
W 90	OP	-21.27	-48.62	-335.83	51.24	5.82	0.95	5.89	2.29	0.00
W 90	OX	-15.60	-38.64	228.59	41.67	6.33	0.30	6.33	2.18	0.00
W 90	OXY	-16.49	-36.82	225.67	40.34	5.93	-0.58	5.96	-2.22	0.00
W 90	OY	22.18	44.55	-328.96	49.76	5.43	-0.55	5.45	-2.43	0.00
W 90	OP	15.46	38.09	226.94	41.67	6.36	0.29	6.36	2.05	0.00
W 90	OX	-21.15	46.49	-334.19	51.07	-5.84	0.96	5.92	-2.43	0.00
W 90	OXY	22.14	44.60	-327.81	49.79	-5.47	-0.55	5.49	2.44	0.00
W 90	OY	-16.42	-36.80	224.52	40.37	-5.97	-0.58	6.00	2.22	0.00
W 0 Ice	OP	-43.50	-21.07	-325.74	48.34	-1.86	-4.17	4.57	-2.21	0.00
W 0 Ice	OX	-41.66	21.74	-320.33	46.99	1.54	-3.86	4.16	2.22	0.00
W 0 Ice	OXY	-33.34	-14.65	189.78	36.41	1.64	-6.59	6.79	2.84	0.00
W 0 Ice	OY	-34.81	13.99	191.13	37.37	-1.45	6.89	7.05	2.81	0.00
W 180 Ice	OP	34.92	13.71	187.75	37.52	-1.44	6.95	7.10	2.02	0.00
W 180 Ice	OX	33.37	-14.45	186.79	36.37	1.65	6.66	6.86	-2.05	0.00
W 180 Ice	OXY	15.60	-21.59	-117.34	46.95	1.53	3.94	4.22	-2.23	0.00
W 180 Ice	OY	43.24	-20.84	-323.36	48.00	-1.87	4.23	4.62	2.23	0.00
W 45 Ice	OP	-48.63	-48.89	-479.08	68.95	2.86	-2.78	3.99	-0.11	0.00
W 45 Ice	OX	-20.23	-12.91	-63.97	24.00	5.98	-2.88	6.64	3.41	0.00
W 45 Ice	OXY	-41.70	-41.59	341.17	58.89	5.84	5.87	6.28	0.01	0.00
W 45 Ice	OY	-12.66	-20.08	-63.38	23.74	2.85	-5.90	6.56	-3.41	0.00
W -45 Ice	OP	-21.49	13.46	-68.29	25.36	-6.20	-3.10	6.93	-3.29	0.00
W -45 Ice	OX	-47.36	49.20	-474.97	68.30	-3.67	2.57	6.01	0.00	0.00
W -45 Ice	OXY	-11.68	19.71	-64.93	22.91	-2.73	-5.68	6.30	3.43	0.00
W -45 Ice	OY	-42.64	41.15	342.03	59.26	-5.72	-6.08	8.35	0.03	0.00
W 90 Ice	OP	-21.01	-43.65	-327.90	48.45	4.23	1.90	4.63	2.11	0.00
W 90 Ice	OX	-13.94	-34.94	191.05	37.62	6.95	1.42	7.00	2.81	0.00
W 90 Ice	OXY	-14.78	-33.29	190.09	36.42	6.57	-1.67	6.78	-2.05	0.00
W 90 Ice	OY	21.87	-41.58	-320.31	46.99	3.85	-1.50	4.13	-2.23	0.00
W -90 Ice	OP	13.72	34.96	189.45	37.56	-6.96	1.41	7.13	1.92	0.00
W -90 Ice	OX	-20.83	43.54	-325.40	48.26	-4.26	1.91	4.67	-2.23	0.00
W -90 Ice	OXY	21.79	41.65	-318.32	47.00	-3.91	-1.49	4.18	2.23	0.00
W -90 Ice	OY	-14.66	33.35	188.11	36.43	-6.63	-1.68	6.84	2.06	0.00

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

Load Case	Support Origin	Joint	Member	Leg Dir.	Force In Residual Shear Perpendicular	Residual Shear Horizontal	Residual Shear Horizontal	Residual Shear Horizontal	Total Long.	Total Tran.	Total Vert.
					(kips)	To Leg (kips)	To Leg - Res. (kips)	To Leg - Long. (kips)	To Leg - Tran. (kips)	Force (kips)	Force (kips)
W 0	OP	1P	L 1P	337.317	25.795	25.846	25.837	0.695	-46.46	-21.32	-334.42
W 0	OX	1X	L 1X	331.545	24.343	24.396	24.332	-1.756	-44.60	22.03	-328.69
W 0	OXY	1XY	L 1XY	-227.620	23.052	23.104	22.975	2.442	-36.80	-16.33	225.20
W 0	OY	1Y	L 1Y	-227.828	24.286	24.278	24.332	-1.613	-38.30	15.63	227.37
W 180	OP	1P	L 1P	-227.314	24.788	24.841	-24.792	-1.564	38.66	15.43	224.84
W 180	OX	1X	L 1X	-225.415	23.202	23.255	-23.128	2.435	36.80	-16.19	223.00
W 180	OXY	1XY	L 1XY	334.056	24.496	24.549	-24.484	-1.784	44.62	21.92	-326.49
W 180	OY	1Y	L 1Y	334.762	25.640	25.691	-25.682	0.676	46.15	-21.14	-331.88
W 45	OP	1P	L 1P	499.014	28.134	28.241	19.823	20.114	-50.33	-50.62	-494.68
W 45	OX	1X	L 1X	50.123	25.591	25.591	18.031	18.031	-21.11	-15.08	-49.94
W 45	OXY	1XY	L 1XY	-387.613	29.808	29.921	21.218	21.096	-44.87	-44.75	383.56
W 45	OY	1Y	L 1Y	49.659	25.276	25.276	17.842	17.903	-14.79	-20.95	-49.47
W -45	OP	1P	L 1P	53.486	26.898	26.898	19.058	-18.982	-22.34	15.70	-53.28
W -45	OX	1X	L 1X	47.759	27.864	27.969	18.826	-20.685	-49.07	50.93	-490.47
W -45	OXY	1XY	L 1XY	52.388	24.251	24.251	16.936	-17.357	-13.72	20.57	-52.16
W -45	OY	1Y	L 1Y	-389.463	30.076	30.190	22.139	-20.525	-45.90	44.29	385.38
W 90	OP	1P	L 1P	338.733	25.862	25.914	0.557	25.908	-21.27	-48.62	-335.83
W 90	OX	1X	L 1X	-228.056	24.537	24.589	-24.501	24.543	15.60	-38.64	228.59
W 90	OXY	1XY	L 1XY	-228.095	22.992	23.045	-2.573	22.901	-16.49	-36.82	225.67
W 90	OY	1Y	L 1Y	331.819	24.281	24.334	-1.898	24.260	22.18	44.55	-328.96
W 90	OP	1P	L 1P	-229.823	24.691	24.743	-1.464	24.699	15.46	38.09	226.94
W 90	OX	1X	L 1X	337.080	25.835	25.886	0.538	-25.880	-21.15	46.49	-334.19
W 90	OXY	1XY	L 1XY	330.667	24.410	24.463	-1.924	-24.387	22.14	44.60	-327.81
W 90	OY	1Y	L 1Y	-226.942	23.122	23.175	2.578	-23.031	-16.42	36.80	224.52
W 0 Ice	OP	1P	L 1P	329.471	23.324	23.372	23.353	0.925	-43.50	-21.07	-325.74
W 0 Ice	OX	1X	L 1X	323.014	21.945	21.994	21.995	-1.987	-41.66	21.74	-320.33
W 0 Ice	OXY	1XY	L 1XY	-192.011	21.781	21.834	21.634	2.944	-33.34	-14.65	189.78
W 0 Ice	OY	1Y	L 1Y	-192.921	22.877	22.927	22.871	-2.204	-34.66	13.99	191.13
W 180 Ice	OP	1P	L 1P	-190.028	23.387	23.439	-23.342	-2.135	34.92	13.71	187.75
W 180 Ice	OX	1X	L 1X	-189.026	21.995	22.048	-21.852	2.935	33.37	-14.45	186.79
W 180 Ice	OXY	1XY	L 1XY	320.832	22.160	22.210	-22.117	-2.024	-41.69	21.59	-317.34
W 180 Ice	OY	1Y	L 1Y	320.832	23.268	23.316	-23.298	0.897	43.24	-20.84	-323.36
W 45 Ice	OP	1P	L 1P	484.160	26.993	27.095	19.029	19.289	-48.63	-48.89	-479.08
W 45 Ice	OX	1X	L 1X	64.175	23.437	23.437	16.290	16.850	-29.23	-12.91	-63.97
W 45 Ice	OXY	1XY	L 1XY	-344.909	29.631	29.714	-29.664	-20.548	-41.70	-41.59	341.17
W 45 Ice	OY	1Y	L 1Y	63.601	23.159	23.151	16.569	16.168	-12.66	-20.08	-63.38
W -45 Ice	OP	1P	L 1P	68.528	24.721	24.721	17.283	-17.675	-21.49	13.46	-68.29
W -45 Ice	OX	1X	L 1X	479.105	26.791	26.893	18.075	19.913	-47.36	49.20	-474.97
W -45 Ice	OXY	1XY	L 1XY	65.182	22.190	22.190	15.680	-15.702	-11.68	19.71	-64.93
W -45 Ice	OY	1Y	L 1Y	-345.886	29.331	29.442	21.548	-20.062	-42.64	41.15	342.03
W 90 Ice	OP	1P	L 1P	330.630	23.400	23.448	0.793	23.434	-21.01	-43.65	-327.90
W 90 Ice	OX	1X	L 1X	-194.225	23.145	23.197	-2.102	23.102	13.94	-34.94	191.05
W 90 Ice	OXY	1XY	L 1XY	-192.325	21.728	21.781	3.058	21.565	-14.78	-33.29	190.09
W 90 Ice	OY	1Y	L 1Y	322.866	21.886	21.935	-2.122	21.832	21.87	-41.58	-320.31
W -90 Ice	OP	1P	L 1P	-191.725	23.317	23.369	-2.045	-23.279	13.73	34.96	189.45
W -90 Ice	OX	1X	L 1X	328.123	23.435	23.483	0.765	-23.470	-20.83	43.54	-325.40
W -90 Ice	OXY	1XY	L 1XY	321.014	22.071	22.121	-2.158	-22.016	21.79	-41.65	-318.38
W -90 Ice	OY	1Y	L 1Y	-191.815	23.315	23.365	-2.045	-23.279	13.73	34.96	189.45

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

Group Label	Angle Desc.	Angle Type	Size	Steel Strength	Max Usage	Usage Control	Max Use In	Comp. Control Member	Comp. Force	Comp. Load Case	L/R Capacity	Comp. Connect. Shear	Comp. Connect. Bearing	RLX	RLY	RLZ	L/R	K
			(ksi)	%			Comp. %		(kips)		(kips)	(kips)	(kips)					

Group Summary (Tension Portion):

Group Label	Angle Desc.	Angle Type	Steel Strength	Max Usage	Max Use Control	Tension In Member	Tension Force	Tension Load Case	Net Section Capacity	Tension Connect. Shear Capacity	Tension Connect. Bearing Capacity	Tension Connect. Rupture Capacity	Length Member (ft)	No. of Bolts	No. of Holes	Hole Diameter (in)
			(ksi)	%	%	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(ft)			(in)
Leg S1	L 8" x 8" x 1.125"	SAE	88X81.13	36.0	90.98	Comp 67.14	L 1Y 323.510	W -45	361.367	0.000	0.000	0.000	25.995	0	0.000	0
Leg S2	L 8" x 8" x 1.125"	SAE	88X81.13	36.0	85.53	Comp 58.00	L 2Y 279.438	W -45	361.367	0.000	0.000	0.000	25.995	0	0.000	0
Leg S3	L 8" x 8" x 1.125"	SAE	88X81.13	36.0	77.92	Comp 49.38	3XY 237.926	W -45	361.367	0.000	0.000	0.000	25.995	0	0.000	0
Leg S4	L 8" x 8" x 0.875"	SAE	88X80.88	36.0	90.98	Comp 67.14	L 4XY 195.750	W -45	361.367	0.000	0.000	0.000	25.995	0	0.000	0
Leg S5	L 8" x 8" x 0.875"	SAE	88X80.88	36.0	81.26	Comp 50.40	L 6XY 192.633	W -45	285.768	0.000	0.000	0.000	25.995	0	0.000	0
Leg S6	L 8" x 8" x 0.875"	SAE	88X80.88	36.0	65.82	Comp 40.65	L 8XY 154.865	W -45	285.768	0.000	0.000	0.000	25.995	0	0.000	0
Leg S7	L 8" x 8" x 0.75"	SAE	88X80.75	36.0	59.25	Comp 36.52	7XY 129.518	W -45	247.194	0.000	0.000	0.000	25.995	0	0.000	0
Leg S8	L 8" x 8" x 0.75"	SAE	88X80.75	36.0	53.63	Comp 31.41	L 8XY 109.238	W -45	247.194	0.000	0.000	0.000	25.995	0	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	66X60.75	36.0	49.68	Comp 29.53	L 9XY 71.783	W -45	182.304	0.000	0.000	0.000	12.547	0	0.000	0
Leg S10	L 6" x 6" x 0.75"	SAE	66X60.75	36.0	39.80	Comp 23.34	L 18XY 56.735	W -45	182.304	0.000	0.000	0.000	12.547	0	0.000	0
Leg S11	L 6" x 6" x 0.5625"	SAE	66X60.56	36.0	29.75	Comp 16.23	L 12XY 59.654	W -45	138.988	0.000	0.000	0.000	12.547	0	0.000	0
Leg S12	L 6" x 6" x 0.5625"	SAE	66X60.56	36.0	25.29	Comp 12.48	L 13XY 18.181	W -45	109.296	0.000	0.000	0.000	12.547	0	0.000	0
Leg S13	L 5" x 5" x 0.4375"	SAE	55X50.44	36.0	23.99	Comp 11.74	L 14XY 14.130	W -45	90.288	0.000	0.000	0.000	10.269	0	0.000	0
Leg S14	L 5" x 5" x 0.4375"	SAE	55X50.44	36.0	21.84	Comp 10.62	L 15XY 7.847	W -45	90.288	0.000	0.000	0.000	10.269	0	0.000	0
Leg S15	L 5" x 5" x 0.3125"	SAE	55X50.31	36.0	19.28	Comp 3.52	L 16XY 3.970	W -45	65.448	0.000	0.000	0.000	8.613	0	0.000	0
Leg S16	L 5" x 5" x 0.3125"	SAE	55X50.31	36.0	4.51	Comp 0.29	L 17Y 0.173	W -45	65.448	0.000	0.000	0.000	8.613	0	0.000	0
Diag S1	B/B L3"x4"x0.3125"	DAS	43X30.31	36.0	91.85	Comp 37.66	D 2P 45.338	W -90	90.288	0.000	0.000	0.000	21.780	0	0.000	0
Diag S2	B/B L3"x4"x0.3125"	DAS	3.5X2.5X0.25	36.0	89.93	Comp 34.42	D 4P 46.947	W -90	90.288	0.000	0.000	0.000	21.780	0	0.000	0
Diag S3	B/B L3"x4"x0.3125"	DAS	3.5X2.5X0.25	36.0	65.80	Comp 59.61	D 8P 48.947	W -90	62.208	0.000	0.000	0.000	20.553	0	0.000	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3.5X2.5X0.25	36.0	64.78	Comp 58.55	D 8X 48.569	W -90	62.208	0.000	0.000	0.000	20.207	0	0.000	0
Diag S5	B/B L3"x4"x0.25"	DAS	43X30.25	36.0	87.48	Comp 33.81	D 10P 32.126	W -90	90.288	0.000	0.000	0.000	21.780	0	0.000	0
Diag S6	B/B L3"x4"x0.25"	DAS	43X30.25	36.0	82.14	Comp 32.99	D 11P 32.109	W -90	73.008	0.000	0.000	0.000	20.346	0	0.000	0
Diag S7	B/B L3"x4"x0.25"	DAS	43X30.25	36.0	71.40	Comp 29.76	D 13P 28.971	W -90	73.008	0.000	0.000	0.000	20.283	0	0.000	0
Diag S8	B/B L3"x4"x0.25"	DAS	3.5X3.5X0.25	36.0	75.02	Comp 28.24	D 15P 27.491	W -90	73.008	0.000	0.000	0.000	20.784	0	0.000	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	88.88	Comp 22.17	D 17P 23.888	W -90	51.408	0.000	0.000	0.000	15.962	0	0.000	0
Diag S10	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	67.93	Comp 21.04	D 19P 14.424	W -90	51.408	0.000	0.000	0.000	15.962	0	0.000	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2.0X0.25	36.0	89.16	Comp 21.85	D 21P 13.406	W -90	46.008	0.000	0.000	0.000	15.495	0	0.000	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2.0X0.25	36.0	78.87	Comp 16.94	D 23P 10.993	W -90	46.008	0.000	0.000	0.000	15.954	0	0.000	0
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2.0X0.25	36.0	64.78	Comp 17.47	D 25P 9.644	W -90	46.008	0.000	0.000	0.000	15.954	0	0.000	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	12.36	Comp 9.11	D 28X 4.433	W -90	36.504	0.000	0.000	0.000	16.516	0	0.000	0
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	12.46	Comp 6.73	308X 3.275	W -90	36.504	0.000	0.000	0.000	15.548	0	0.000	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	13.45	Comp 5.49	D 32P 2.450	W -90	36.504	0.000	0.000	0.000	15.548	0	0.000	0
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	21.82	Comp 4.97	34P 1.688	W -90	31.194	0.000	0.000	0.000	12.834	0	0.000	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	94.92	Comp 52.43	H 3X 43.486	W -90	62.208	0.000	0.000	0.000	21.148	0	0.000	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	68.01	Comp 55.10	H 1X 45.764	W -90	62.208	0.000	0.000	0.000	13.278	0	0.000	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	94.19	Comp 52.43	H 3X 43.486	W -90	62.208	0.000	0.000	0.000	12.200	0	0.000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	91.45	Comp 51.81	H 7P 39.244	W -90	56.808	0.000	0.000	0.000	11.222	0	0.000	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	92.82	Comp 23.93	H 9X 18.127	W -90	56.808	0.000	0.000	0.000	11.292	0	0.000	0
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	71.28	Comp 21.29	H 11P 16.233	W -90	56.808	0.000	0.000	0.000	13.750	0	0.000	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	36.0	73.43	Comp 19.43	H 13X 12.868	W -90	51.408	0.000	0.000	0.000	11.292	0	0.000	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	36.0	54.52	Comp 17.53	H 15X 12.615	W -90	51.408	0.000	0.000	0.000	10.667	0	0.000	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	36.0	40.67	Comp 14.46	H 17X 9.908	W -90	51.408	0.000	0.000	0.000	9.996	0	0.000	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	36.0	27.81	Comp 11.78	H 19X 8.611	W -90	51.408	0.000	0.000	0.000	9.996	0	0.000	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	36.0	27.82	Comp 11.78	H 21P 8.076	W -90	51.408	0.000	0.000	0.000	8.354	0	0.000	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	36.0	16.66	Comp 8.40	H 23X 5.750	W -90	51.408	0.000	0.000	0.000	7.583	0	0.000	0
Horiz 13	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	36.0	13.74	Comp 8.33	H 25X 5.709	W -90	51.408	0.000	0.000	0.000	6.813	0	0.000	0
Horiz 14	B/B L2.5"x2.5"x0.25"	SAU	3X2.5X0.25	36.0	10.71	Comp 7.27	H 27P 4.828	W -90	46.008	0.000	0.000	0.000	6.813	0	0.000	0
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.48	Tens 1.48	H 30X 1.1249	W -90 Ic	56.808	0.000	0.000	0.000	11.116	0	0.000	0
Horiz 16	L 3" x 3" x 0.25"	SAU	3X2.5X0.25	36.0	1.88	Tens 1.88	H 32X 0.710W -90	Ic	28.296	0.000	0.000	0.000	10.058	0	0.000	0
Horiz 17	B/B L3"x2.5"x0.25"	CHN	CH811.5	36.0	1.42	Comp 0.38	H 33P 0.372	W -90	73.008	0.000	0.000	0.000	9.900	0	0.000	0
LD 1	B/B L4"x4"x0.25"	DAL	4X3X0.25	36.0	89.38	Comp 23.93	LD 21P 13.406	W -90	46.008	0.000	0.000	0.000	15.962	0	0.000	0
LD 2	B/B L4"x4"x0.25"	DAL	4X3X0.25	36.0	89.62	Comp 51.06	LD 3P 49.704	W -90	73.008	0.000	0.000	0.000	12.834	0	0.000	0
LD 4	B/B L2"x3"x0.25"	DAL	2.5X2.0X0.25	36.0	58.25	Comp 41.08	LD 8P 25.198	W -45	46.008	0.000	0.000	0.000	11.516	0	0.000	0
LD 5	B/B L2"x3"x0.25"	DAL	2.5X2.0X0.25	36.0	58.25	Comp 41.08	LD 9P 22.477	W -90	46.008	0.000	0.000	0.000	11.516	0	0.000	0
LD 6	B/B L3"x3"x0.25"	DAL	3X3X0.25	36.0	84.17	Comp 49.31	LD 11X 40.902	W -90	62.208	0.000	0.000	0.000	9.679	0	0.000	0

LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	70.05	Comp	30.40	LD 14Y	25.212	W -45	62.208	0.000	0.000	0.000	10.941	0 0.000	0
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	90.52	Comp	52.84	LD 15P	32.413	W -90	46.008	0.000	0.000	0.000	8.040	0 0.000	0
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	98.09	Comp	58.39	LD 17X	40.024	W -90	51.408	0.000	0.000	0.000	9.334	0 0.000	0
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	65.55	Comp	30.36	LD 20Y	25.177	W -45	62.208	0.000	0.000	0.000	10.386	0 0.000	0
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	90.92	Comp	52.19	LD 21P	32.017	W -90	46.008	0.000	0.000	0.000	7.905	0 0.000	0
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	36.0	81.90	Comp	39.09	LD 23X	39.069	W -90	74.952	0.000	0.000	0.000	9.005	0 0.000	0
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	17.22	Tens	17.22	LH 2X	13.046W	90 Ice	56.808	0.000	0.000	0.000	21.458	0 0.000	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	66.98	Comp	37.94	LH 4Y	28.056	W -45	56.808	0.000	0.000	0.000	10.806	0 0.000	0
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	36.0	84.41	Comp	24.71	LH 6Y	27.326	W -45	82.944	0.000	0.000	0.000	10.003	0 0.000	0
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	75.05	Comp	26.95	LH 8Y	26.231	W -45	73.008	0.000	0.000	0.000	9.200	0 0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 11X	1.189	W -45	0.216	0.000	0.000	0.000	19.445	0 0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
W 0	97.46	LD 10P	Angle
W 180	97.85	LD 10Y	Angle
W 45	90.98	L 1P	Angle
W -45	93.73	H 2Y	Angle
W 90	98.55	LD 9P	Angle
W -90	98.72	LD 9X	Angle
W 0 Ice	91.63	LD 10P	Angle
W 180 Ice	92.10	LD 10Y	Angle
W 45 Ice	88.40	H 2X	Angle
W -45 Ice	91.81	H 2Y	Angle
W 90 Ice	92.59	LD 9P	Angle
W -90 Ice	92.93	LD 9X	Angle

*** Weight of structure (lbs):
 Weight of Angles*Section DLF: 143635.5
 Weight of Equipment: 1109.0
 Total: 144744.5

*** End of Report

Site #:	88018
Name:	Stamford (Katina), CT

Engineer:	ADV
Date:	05/10/16

Windspeed:	No Ice:	85 mph	Ice:	74 mph
Carrier:	T-Mobile			

Taper:	-0.123333
FW @ Base:	46 ft

Taper Change:	300 ft
FW @ Top:	9 ft

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Sub-Brace (Y or Blank)	Spreadsheet Version Last Updated: 11/12/2014							
												# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
0	XY-Symmetry	23	23	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed			7.030	25	1	1	0	46	3
1	XY-Symmetry	21.45833333	21.45833333	25	Free	Free	Free	Free	Free	Free			7.030	25	2	2	25	42.91666667	3
2	XY-Symmetry	19.91666667	19.91666667	50	Free	Free	Free	Free	Free	Free			7.030	25	2	3	50	39.83333333	3
3	XY-Symmetry	18.375	18.375	75	Free	Free	Free	Free	Free	Free			7.030	25	2	4	75	36.75	3
4	XY-Symmetry	16.83333333	16.83333333	100	Free	Free	Free	Free	Free	Free				25	A	5	100	33.66666667	2
5	XY-Symmetry	15.29166667	15.29166667	125	Free	Free	Free	Free	Free	Free				25	A	6	125	30.58333333	2
6	XY-Symmetry	13.75	13.75	150	Free	Free	Free	Free	Free	Free				25	A	7	150	27.5	2
7	XY-Symmetry	12.20833333	12.20833333	175	Free	Free	Free	Free	Free	Free				25	A	8	175	24.41666667	2
8	XY-Symmetry	10.66666667	10.66666667	200	Free	Free	Free	Free	Free	Free			12.5	A	9	9	200	21.33333333	1
9	XY-Symmetry	9.895833333	9.895833333	212.5	Free	Free	Free	Free	Free	Free			12.5	A	10	10	212.5	19.79166667	1
10	XY-Symmetry	9.125	9.125	225	Free	Free	Free	Free	Free	Free			12.5	A	11	11	225	18.25	1
11	XY-Symmetry	8.354166667	8.354166667	237.5	Free	Free	Free	Free	Free	Free			12.5	A	12	12	237.5	16.70833333	1
12	XY-Symmetry	7.583333333	7.583333333	250	Free	Free	Free	Free	Free	Free			12.5	A	13	13	250	15.16666667	1
13	XY-Symmetry	6.8125	6.8125	262.5	Free	Free	Free	Free	Free	Free		1		10.17	X	14	262.5	13.625	1
14	XY-Symmetry	6.18535	6.18535	272.67	Free	Free	Free	Free	Free	Free		1		10.17	X	15	272.67	12.3707	1
15	XY-Symmetry	5.5582	5.5582	282.84	Free	Free	Free	Free	Free	Free		1		8.58	X	16	282.84	11.1164	1
16	XY-Symmetry	5.0291	5.0291	291.42	Free	Free	Free	Free	Free	Free		1		8.58	X	17	291.42	10.0582	1
17	XY-Symmetry	4.5	4.5	300	Free	Free	Free	Free	Free	Free						18	300	9	
A1	Y-Symmetry	21.45833333	0	25	Free	Free	Free	Free	Free	Free									
A2	X-Symmetry	0	21.45833333	25	Free	Free	Free	Free	Free	Free									
A3	XY-Symmetry	19.91666667	6.638888889	50	Free	Free	Free	Free	Free	Free									
A4	XY-Symmetry	6.638888889	19.91666667	50	Free	Free	Free	Free	Free	Free									
A5	XY-Symmetry	18.375	6.125	75	Free	Free	Free	Free	Free	Free									
A6	XY-Symmetry	6.125	18.375	75	Free	Free	Free	Free	Free	Free									
A7	XY-Symmetry	16.83333333	5.611111111	100	Free	Free	Free	Free	Free	Free									
A8	XY-Symmetry	5.611111111	16.83333333	100	Free	Free	Free	Free	Free	Free									
A9	Y-Symmetry	15.29166667	0	125	Free	Free	Free	Free	Free	Free									
A10	X-Symmetry	0	15.29166667	125	Free	Free	Free	Free	Free	Free									
A11	Y-Symmetry	13.75	0	150	Free	Free	Free	Free	Free	Free									
A12	X-Symmetry	0	13.75	150	Free	Free	Free	Free	Free	Free									
A13	Y-Symmetry	12.20833333	0	175	Free	Free	Free	Free	Free	Free									
A14	X-Symmetry	0	12.20833333	175	Free	Free	Free	Free	Free	Free									
A15	Y-Symmetry	10.66666667	0	200	Free	Free	Free	Free	Free	Free									
A16	X-Symmetry	0	10.66666667	200	Free	Free	Free	Free	Free	Free									
A17	Y-Symmetry	9.895833333	0	212.5	Free	Free	Free	Free	Free	Free									
A18	X-Symmetry	0	9.895833333	212.5	Free	Free	Free	Free	Free	Free									
A19	Y-Symmetry	9.125	0	225	Free	Free	Free	Free	Free	Free									
A20	X-Symmetry	0	9.125	225	Free	Free	Free	Free	Free	Free									
A21	Y-Symmetry	8.354166667	0	237.5	Free	Free	Free	Free	Free	Free									
A22	X-Symmetry	0	8.354166667	237.5	Free	Free	Free	Free	Free	Free									
A23	Y-Symmetry	7.583333333	0	250	Free	Free	Free	Free	Free	Free									
A24	X-Symmetry	0	7.583333333	250	Free	Free	Free	Free	Free	Free									
A25	Y-Symmetry	6.8125	0	262.5	Free	Free	Free	Free	Free	Free									
A26	X-Symmetry	0	6.8125	262.5	Free	Free	Free	Free	Free	Free									
H1	XY-Symmetry	21.89185	10.72916667	17.97	Free	Free	Free	Free	Free	Free									
H2	XY-Symmetry	10.72916667	21.89185	17.97	Free	Free	Free	Free	Free	Free									
H5	XY-Symmetry	20.35018333	10.80611667	42.97	Free	Free	Free	Free	Free	Free									
H6	XY-Symmetry	10.80611667	20.35018333	42.97	Free	Free	Free	Free	Free	Free									
H7	Y-Symmetry	20.35018333	0	42.97	Free	Free	Free	Free	Free	Free									
H8	X-Symmetry	0	20.35018333	42.97	Free	Free	Free	Free	Free	Free									
H9	XY-Symmetry	18.80851667	10.00321667	67.97	Free	Free	Free	Free	Free	Free									
H10	XY-Symmetry	10.00321667	18.80851667	67.97	Free	Free	Free	Free	Free	Free									
H11	Y-Symmetry	18.80851667	0	67.97	Free	Free	Free	Free	Free	Free									
H12	X-Symmetry	0	18.80851667	67.97	Free	Free	Free	Free	Free	Free									
H13	XY-Symmetry	17.26685	9.200316667	92.97	Free	Free	Free	Free	Free	Free									
H14	XY-Symmetry	9.200316667	17.26685	92.97	Free	Free	Free	Free	Free	Free									
H15	Y-Symmetry	17.26685	0	92.97	Free	Free	Free	Free	Free	Free									
H16	X-Symmetry	0	17.26685	92.97	Free	Free	Free	Free	Free	Free									

NOTES

Types:

1: Built up Horiz. w/ A

2: Built up Horiz. w/ M

A: Typical A brace

X: Typical X brace

Drop: Use only for types 1 & 2

Sections: 17

Legs

Site No.:	88018
Engineer:	ADV
Date:	05/10/2016
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter or Length (in)	Thickness ^[2] (in)	F _y (ksi)
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1	36
5	100.0-125.0	L	8	0.875	36
6	125.0-150.0	L	8	0.875	36
7	150.0-175.0	L	8	0.75	36
8	175.0-200.0	L	8	0.625	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.75	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.5625	36
13	250.0-262.5	L	6	0.4375	36
14	262.5-272.7	L	5	0.4375	36
15	272.7-282.8	L	5	0.4375	36
16	282.8-291.4	L	5	0.3125	36
17	291.4-300.0	L	5	0.3125	36

Notes:

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

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

^[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88018
Engineer:	ADV
Date:	05/10/2016
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.3125	36	
2	25.00-50.00	2L		3	3.5	0.25	36	
3	50.00-75.00	2L		2.5	3.5	0.25	36	
4	75.00-100.0	2L		2.5	3.5	0.25	36	
5	100.0-125.0	2L		3	4	0.25	36	
6	125.0-150.0	2L		3	4	0.25	36	
7	150.0-175.0	2L		3	4	0.25	36	
8	175.0-200.0	2L		3.5	3.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-262.5	2L		2.5	2	0.25	36	
14	262.5-272.7	L		3.5	3.5	0.25	36	
15	272.7-282.8	L		3.5	3.5	0.25	36	
16	282.8-291.4	L		3	3	0.25	36	
17	291.4-300.0	L		3	3	0.25	36	

Notes:

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

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

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

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

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

Horizontals

Site No.:	88018
Engineer:	ADV
Date:	05/10/2016
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	
1	0.000-25.00	2L		3.5	2.5	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3.5	2.5	0.25	36	
4	75.00-100.0	2L		3	2.5	0.25	36	
5	100.0-125.0	2L		3	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		2.5	2.5	0.25	36	
8	175.0-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-262.5	2L		2.5	2.5	0.25	36	
14	262.5-272.7	L		3	2.5	0.25	36	
15	272.7-282.8	2L		3	2.5	0.25	36	
16	282.8-291.4	L		3	2.5	0.25	36	
17	291.4-300.0	C		8	11.5		36	

Notes:

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

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

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

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

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

Built-up Diagonals

Site No.:	88018
Engineer:	ADV
Date:	05/10/2016
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Input diags. from left to center & from base section upward.

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

Notes:

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

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

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

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

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

Site No.:	88018
Engineer:	ADV
Date:	05/10/2016
Carrier:	T-Mobile

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-25.00	2L		2.5	3	0.25	36	Y
2	25.00-50.00	2L		2.5	3	0.25	36	
3	50.00-75.00	2L		2.5	3	0.375	36	
4	75.00-100.0	2L		3.5	3.5	0.25	36	

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

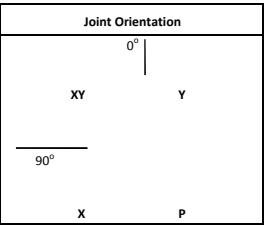
[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

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

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Site No.:	88018
Engineer:	ADV
Date:	05/10/16
Carrier:	T-Mobile

Dish Types		Joint Orientation	
S	Standard		
R	Standard w/ Radome		
H	High Performance		
G	Grid		

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
LADDER	0	300	1	Flat	1.5	6.0	6	No	Yes
Short Ladder1	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	No
Short Ladder2	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	No
WG1	5	300	1	Flat	1.5	6.0	6	Yes	No
WG2	5	160	1	Flat	1.5	6.0	6	Yes	Yes
WG3	5	272	1	Flat	1.5	6.0	6	Yes	No
Clearwire1	5	300	5	Round	1.09	3.4	0.33	Yes	Yes
MC1	5	300	2	Round	1.55	4.9	0.63	No	Yes
UWH1	5	300	1	Round	1.09	3.4	0.33	No	Yes
UNK1	5	300	1	Round	0.63	2.0	0.15	No	Yes
QualComm1	5	270	1	Round	3.13	9.8	3.04	No	Yes
USDOHS1	5	269	2	Round	1.09	3.4	0.33	Yes	Yes
Sirus1	5	265	1	Round	5.02	15.8	1.85	Yes	No
Sirus2	5	265	1	Round	1.98	6.2	0.82	Yes	No
TMO 1	5	265	1	Flat	2.64	8.8	4.2	Yes	No
TMO 2	5	265	1	Flat	7.92	23.8	4.92	Yes	No
USDOHS2	5	240	2	Round	1.09	3.4	0.33	Yes	Yes
AT&T1	5	231	4	Round	0.74	2.3	0.49	Yes	No
AT&T2	5	231	2	Round	0.39	1.2	0.06	Yes	No
AT&T3	5	231	1	Flat	11.88	31.7	9.84	Yes	No
Sprint1	5	224	1	Flat	9.9	31.7	12.3	Yes	Yes
MC2	5	200	2	Round	1.55	4.9	0.63	No	Yes
USDOHS3	5	200	1	Round	1.09	3.4	0.33	Yes	Yes
Spok1	5	178	3	Round	1.09	3.4	0.33	No	Yes
Clearwire2	5	171	1	Flat	2.38	14.3	7.3	Yes	Yes
Clearwire3	5	167	6	Round	0.31	1.0	0.05	Yes	Yes
Clearwire4	5	167	1	Round	2.38	7.5	3.65	Yes	Yes
Metro1	5	160	1	Flat	11.88	31.7	9.84	Yes	No
Metro2	5	160	2	Round	0.44	1.4	0.08	Yes	No
Sprint2	5	150	4	Round	1.54	4.8	1	Yes	Yes
Sprint3	5	150	1	Round	0.63	2.0	0.15	Yes	Yes
Sensus1	5	137	1	Round	1.09	3.4	0.33	No	Yes
Spok2	5	120	1	Round	0.63	2.0	0.15	No	Yes
MC3	5	100	1	Round	1.55	4.9	0.63	No	Yes
Verizon1	5	92	2	Round	1.981	6.2	1.3	No	Yes
Spok3	5	6	1	Round	0.63	2.0	0.15	No	Yes
Spok4	5	6	1	Round	0.34	1.1	0.06	No	Yes

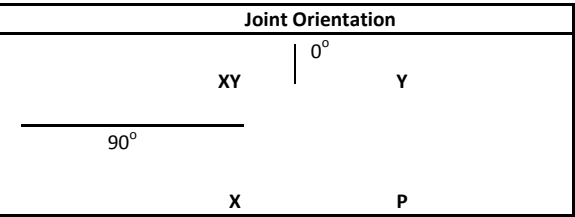
Description	From (ft)	To (ft)	Quantity	Face # (1-4, A-D)	Coax Width (in)	Considered Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include in Wind Load (Yes/No)
LADDER	0	300	1	B	1.5	Flat	100	0	Flat	1	1	6.0	6	No	No
Short Ladder1	8.3333	33.3333	2	1	1.5	Flat	100		Flat	2	1	6.0	6	Yes	No
Short Ladder2	8.3333	33.3333	2	3	1.5	Flat	100	0	Flat	2	1	6.0	6	Yes	No
WG1	5	300	1	1	1.5	Flat	100		Flat	1	1	6.0	6	Yes	No
WG2	5	160	1	2	1.5	Flat	100	0	Flat	1	1	6.0	6	Yes	Yes
WG3	5	272	1	1	1.5	Flat	100		Flat	1	1	6.0	6	Yes	No
Clearwire1	5	300	5	2	1.09	Ind	100	0	Round	5	1	3.4	0.33	Yes	Yes
MC1	5	300	2	B	1.55	Ind	100		Round	2	1	4.9	0.63	No	Yes
UWH1	5	300	1	B	1.09	Ind	100	0	Round	1	1	3.4	0.33	No	Yes
UNK1	5	300	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	No	Yes
QualComm1	5	270	1	B	3.13	Ind	100	0	Round	1	1	9.8	3.04	No	Yes
USDOHS1	5	269	2	2	1.09	Ind	100		Round	2	1	3.4	0.33	Yes	Yes
Sirus1	5	265	1	4	5.02	Ind	100	0	Round	1	1	15.8	1.85	Yes	No
Sirus2	5	265	1	4	1.98	Ind	100		Round	1	1	6.2	0.82	Yes	No
TMO 1	5	265	6	4	0.88	Block	50	0	Flat	3	2	8.8	4.2	Yes	No
TMO 2	5	265	6	4	1.98	Block	66	0	Flat	4	2	23.8	4.92	Yes	No
USDOHS2	5	240	2	2	1.09	Ind	100	0	Round	2	1	3.4	0.33	Yes	Yes
AT&T1	5	231	4	1	0.74	Ind	100		Round	4	1	2.3	0.49	Yes	No
AT&T2	5	231	2	1	0.39	Ind	100	0	Round	2	1	1.2	0.06	Yes	No
AT&T3	5	231	12	1	1.98	Block	50	0	Flat	6	2	31.7	9.84	Yes	No
Sprint1	5	224	15	2	1.98	Block	33	0	Flat	5	3	31.7	12.3	Yes	Yes
MC2	5	200	2	B	1.55	Ind	100		Round	2	1	4.9	0.63	No	Yes
USDOHS3	5	200	1	2	1.09	Ind	100	0	Round	1	1	3.4	0.33	Yes	Yes
Spok1	5	178	3	B	1.09	Ind	100		Round	3	1	3.4	0.33	No	Yes
Clearwire2	5	171	2	2	2.38	Block	50	0	Flat	1	2	14.3	7.3	Yes	Yes
Clearwire3	5	167	6	2	0.31	Ind	100		Round	6	1	1.0	0.05	Yes	Yes
Clearwire4	5	167	1	2	2.38	Ind	100	0	Round	1	1	7.5	3.65	Yes	Yes
Metro1	5	160	12	1	1.98	Block	50	0	Flat	6	2	31.7	9.84	Yes	No
Metro2	5	160	2	1	0.44	Ind	100	0	Round	2	1	1.4	0.08	Yes	No
Sprint2	5	150	4	2	1.54	Ind	100		Round	4	1	4.8	1	Yes	Yes
Sprint3	5	150	1	2	0.63	Ind	100	0	Round	1	1	2.0	0.15	Yes	Yes
Sensus1	5	137	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	No	Yes
Spok2	5	120	1	B	0.63	Ind	100	0	Round	1	1	2.0	0.15	No	Yes
MC3	5	100	1	B	1.55	Ind	100		Round	1	1	4.9	0.63	No	Yes
Verizon1	5	92	2	B	1.98	Ind	100	0	Round	2	1	6.2	1.3	No	Yes
Spok3	5	6	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	No	Yes
Spok4	5	6	1	B	0.34	Ind	100	0	Round	1	1	1.1	0.06	No	Yes
							100							No	No
							100	0						No	No

Coax & Dishes

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation
300	2	0	H	Y
300	2	90	H	XY
300	2	180	H	X
300	4	270	S	P
300	3	0	H	XY
120	4	90	S	X
24	2	235	R	P
6	4	180	S	P

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)
2' HP 1 @ 300'	17Y	2 ft HP Dish	0
2' HP 2 @ 300'	17XY	2 ft HP Dish	90
2' HP 3 @ 300'	17X	2 ft HP Dish	180
4' STD 4 @ 300'	17P	4 ft STD Dish	270
3' HP 5 @ 300'	17XY	3 ft HP Dish	0
4' STD 6 @ 120'	5X	4 ft STD Dish	90
2' RAD 7 @ 24'	1P	2 ft RAD Dish	235
4' STD 8 @ 6'	0P	4 ft STD Dish	180



Site #:	88018
Name:	T-Mobile

Engineer:	ADV
Date:	05/10/16

Section Label	Section Color	Joint Defining Bottom Section	Dead Load Adj. Factor					Adj. Factor Flat	Adj. Factor Round	Area Multiplier	Weight Multiplier
0.000-25.00		0P	1.502697162					1.252247635	1.252247635	1	1.2
25.00-50.00		1P	1.48093403					1.234111691	1.234111691	1	1.2
50.00-75.00		2P	1.475299206					1.229416005	1.229416005	1	1.2
75.00-100.0		3P	1.468662391					1.223885326	1.223885326	1	1.2
100.0-125.0		4P	1.534826556					1.27902213	1.27902213	1	1.2
125.0-150.0		5P	1.518955429					1.265796191	1.265796191	1	1.2
150.0-175.0		6P	1.50866585					1.257221541	1.257221541	1	1.2
175.0-200.0		7P	1.478954774					1.232462312	1.232462312	1	1.2
200.0-212.5		8P	1.469986394					1.224988662	1.224988662	1	1.2
212.5-225.0		9P	1.462963002					1.219135835	1.219135835	1	1.2
225.0-237.5		10P	1.455806469					1.213172057	1.213172057	1	1.2
237.5-250.0		11P	1.44853386					1.20711155	1.20711155	1	1.2
250.0-262.5		12P	1.441165734					1.200971445	1.200971445	1	1.2
262.5-272.7		13P	1.443770575					1.203142146	1.203142146	1	1.2
272.7-282.8		14P	1.435797379					1.196497816	1.196497816	1	1.2
282.8-291.4		15P	1.457623525					1.214686271	1.214686271	1	1.2
291.4-300.0		16P	1.400830114					1.167358428	1.167358428	1	1.2

Site #:	88018
Name:	T-Mobile

Engineer:	ADV
Date:	05/10/16

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	A 36	Beam	Leg	None
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	A 36	Beam	Leg	None
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	A 36	Beam	Leg	None
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	A 36	Beam	Leg	None
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	A 36	Beam	Other	None
Diag S2	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	A 36	Beam	Other	None
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S8	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 17	C8x11.5	CHN	C8x11.5	A 36	Beam	Other	None
LD 1	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	A 36	Beam	Other	None
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 6	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	A 36	Beam	Other	None
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	T-Only	Other	None
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	A 36	Beam	Other	None
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	A 36	Beam	Other	None
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	A 36	Beam	Fictitious	None

Site #:	88018
Name:	T-Mobile

Engineer:	ADV
Date:	05/10/16

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	
L 1	Leg S1		XY-Symmetry	0P	1P		1	4	0.2812	0.2812	0.2812
L 2	Leg S2		XY-Symmetry	1P	2P		1	4	0.2812	0.2812	0.2812
L 3	Leg S3		XY-Symmetry	2P	3P		1	4	0.2812	0.2812	0.2812
L 4	Leg S4		XY-Symmetry	3P	4P		1	4	0.2812	0.2812	0.2812
L 5	Leg S5		XY-Symmetry	4P	5P		1	4	0.333333333	0.333333333	0.333333333
L 6	Leg S6		XY-Symmetry	5P	6P		1	4	0.333333333	0.333333333	0.333333333
L 7	Leg S7		XY-Symmetry	6P	7P		1	4	0.333333333	0.333333333	0.333333333
L 8	Leg S8		XY-Symmetry	7P	8P		1	4	0.333333333	0.333333333	0.333333333
L 9	Leg S9		XY-Symmetry	8P	9P		1	4	0.5	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P		1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P		1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P		1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P		1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P		1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P		1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P		1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P		1	4	0.5	0.5	0.5
D 1	Diag S1		XY-Symmetry	0P	H2P		1	6	0.31	0.92	0.31
D 2	Diag S1		XY-Symmetry	0P	H1P		1	6	0.31	0.92	0.31
D 3	Diag S2		XY-Symmetry	1P	H6P		1	6	0.31	0.62	0.31
D 4	Diag S2		XY-Symmetry	1P	H5P		1	6	0.31	0.62	0.31
D 5	Diag S3		XY-Symmetry	2P	H10P		1	6	0.333333333	0.667	0.333333333
D 6	Diag S3		XY-Symmetry	2P	H9P		1	6	0.333333333	0.667	0.333333333
D 7	Diag S4		XY-Symmetry	3P	H14P		1	6	0.333333333	0.667	0.333333333
D 8	Diag S4		XY-Symmetry	3P	H13P		1	6	0.333333333	0.667	0.333333333
D 9	Diag S5		XY-Symmetry	4P	A9P		1	6	0.333333333	0.666666667	0.333333333
D 10	Diag S5		XY-Symmetry	4P	A10P		1	6	0.333333333	0.666666667	0.333333333
D 11	Diag S6		XY-Symmetry	5P	A11P		1	6	0.333333333	0.666666667	0.333333333
D 12	Diag S6		XY-Symmetry	5P	A12P		1	6	0.333333333	0.666666667	0.333333333
D 13	Diag S7		XY-Symmetry	6P	A13P		1	6	0.333333333	0.666666667	0.333333333
D 14	Diag S7		XY-Symmetry	6P	A14P		1	6	0.333333333	0.666666667	0.333333333
D 15	Diag S8		XY-Symmetry	7P	A15P		1	6	0.333333333	0.666666667	0.333333333
D 16	Diag S8		XY-Symmetry	7P	A16P		1	6	0.333333333	0.666666667	0.333333333
D 17	Diag S9		XY-Symmetry	8P	A17P		1	6	0.32	0.59	0.32
D 18	Diag S9		XY-Symmetry	8P	A18P		1	6	0.32	0.59	0.32
D 19	Diag S10		XY-Symmetry	9P	A19P		1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P		1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P		1	6	0.48	0.96	0.58
D 22	Diag S11		XY-Symmetry	10P	A22P		1	6	0.48	0.96	0.58
D 23	Diag S12		XY-Symmetry	11P	A23P		1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P		1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P		1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P		1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	14Y		2	5	0.52	0.75	0.52
D 28	Diag S14		XY-Symmetry	13P	14X		2	5	0.52	0.75	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y		2	5	0.52	0.75	0.52
D 30	Diag S15		XY-Symmetry	14P	15X		2	5	0.52	0.75	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y		2	5	0.52	0.75	0.52
D 32	Diag S16		XY-Symmetry	15P	16X		2	5	0.52	0.75	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y		2	5	0.52	0.75	0.52
D 34	Diag S17		XY-Symmetry	16P	17X		2	5	0.52	0.75	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P		1	6	0.48	0.48	0.48
H 2	Horiz 1		XY-Symmetry	1P	A2P		1	6	0.48	0.48	0.48
H 3	Horiz 2		XY-Symmetry	2P	A3P		1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P		1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P		1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P		1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P		1	6	0.47	0.94	0.47
H 8	Horiz 4		XY-Symmetry	4P	A8P		1	6	0.47	0.94	0.47
H 9	Horiz 5		XY-Symmetry	5P	A9P		1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P		1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P		1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	
H 12	Horiz 6		XY-Symmetry	6P	A12P		1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P		1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P		1	6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P		1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P		1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P		1	6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P		1	6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P		1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P		1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P		1	6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P		1	6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P		1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P		1	6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P		1	6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P		1	6	1	1	1
H 27	Horiz 14		Y-Symmetry	14P	14X		3	5	0.5	1	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y		3	5	0.5	1	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X		1	6	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y		1	6	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X		3	5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y		3	5	0.5	1	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X		3	5	0.5	1	0.5
H 34	Horiz 17		X-Symmetry	17P	17Y		3	5	0.5	1	0.5
H 37	Horiz 2		Y-Symmetry	A3P	A3X		1	5	1	1	1
H 38	Horiz 2		X-Symmetry	A4P	A4Y		1	5	1	1	1
H 39	Horiz 3		Y-Symmetry	A5P	A5X		1	5	1	1	1
H 40	Horiz 3		X-Symmetry	A6P	A6Y		1	5	1	1	1
H 41	Horiz 4		Y-Symmetry	A7P	A7X		1	5	1	1	1
H 42	Horiz 4		X-Symmetry	A8P	A8Y		1	5	1	1	1
LH 1	LH 1		Y-Symmetry	H1P	H1X		1	6	50	100	50
LH 2	LH 1		X-Symmetry	H2P	H2Y		1	6	50	100	50
LH 3	LH 2		XY-Symmetry	H5P	H7P		1	6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P		1	6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P		1	6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P		1	6	1	2	1
LH 7	LH 4		XY-Symmetry	H13P	H15P		1	6	0.998	1.995	0.998
LH 8	LH 4		XY-Symmetry	H14P	H16P		1	6	0.998	1.995	0.998
LD 1	LD 1		XY-Symmetry	H1P	1P		1	6	0.85	0.85	0.85
LD 2	LD 1		XY-Symmetry	H2P	1P		1	6	0.85	0.85	0.85
LD 3	LD 2		XY-Symmetry	H1P	A1P		1	6	0.82	0.82	0.82
LD 4	LD 2		XY-Symmetry	H2P	A2P		1	6	0.82	0.82	0.82
LD 7	LD 4		XY-Symmetry	H5P	2P		1	6	0.87	0.87	0.87
LD 8	LD 4		XY-Symmetry	H6P	2P		1	6	0.87	0.87	0.87
LD 9	LD 5		XY-Symmetry	H5P	A3P		1	6	0.8	0.8	0.8
LD 10	LD 5		XY-Symmetry	H6P	A4P		1	6	0.8	0.8	0.8
LD 11	LD 6		XY-Symmetry	A3P	H7P		1	6	0.84	0.84	0.84
LD 12	LD 6		XY-Symmetry	A4P	H8P		1	6	0.84	0.84	0.84
LD 13	LD 7		XY-Symmetry	H9P	3P		1	6	0.865	0.865	0.865
LD 14	LD 7		XY-Symmetry	H10P	3P		1	6	0.865	0.865	0.865
LD 15	LD 8		XY-Symmetry	H9P	A5P		1	6	0.82	0.82	0.82
LD 16	LD 8		XY-Symmetry	H10P	A6P		1	6	0.82	0.82	0.82
LD 17	LD 9		XY-Symmetry	A5P	H11P		1	6	0.82	0.82	0.82
LD 18	LD 9		XY-Symmetry	A6P	H12P		1	6	0.82	0.82	0.82
LD 19	LD 10		XY-Symmetry	H13P	4P		1	6	0.86	0.86	0.86
LD 20	LD 10		XY-Symmetry	H14P	4P		1	6	0.86	0.86	0.86
LD 21	LD 11		XY-Symmetry	H13P	A7P		1	6	0.82	0.82	0.82
LD 22	LD 11		XY-Symmetry	H14P	A8P		1	6	0.82	0.82	0.82
LD 23	LD 12		XY-Symmetry	A7P	H15P		1	6	0.85	0.85	0.85
LD 24	LD 12		XY-Symmetry	A8P	H16P		1	6	0.85	0.85	0.85
BR 1	DUM 1		XY-Symmetry	A1P	A2P		1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P	1	4	1	1	1

Point Loads

Tower Height:	300	ft
Gh:	1.09	
Wind Speed:	85.00	
Wind Speed (Ice):	73.95	
Radial Ice Diameter:	0.5	in

Site No.:	88018
Engineer:	ADV
Date:	05/10/2016
Carrier:	T-Mobile

KS-15676 Horn Antennas: ~128 ft²

No.	Carrier	Elevation (ft)	Quantity	Number of Azimuths	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction Factor	C _A A _c (ft²/ea)	Weight (k/ea)	H/W	C _A	q _z (psf)	q _z (Ice) (psf)
1		300	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	34.75	26.30
			1	4	Platform						1.000	55.00	4.00	-	-	-	-
2		283	1	4	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	34.18	25.87
			1	4	Catwalk						1.000	40.00	2.75	-	-	-	-
3		212.5	1	3	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	31.49	23.83
			1	3	Platform						1.000	50.00	3.00	-	-	-	-
4		100	1	3	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	25.39	19.22
			1	3	Platform						1.000	50.00	3.00	-	-	-	-
5	Clearwire Marcus Comm.	300	1	1	Horizon Compact	4.7	9.3	9.3	10.6	R	1.000			0.51	0.80	34.75	26.30
			1	1	Radio/ODU						0.500	1.87	0.03	-	-	-	-
6	United/Marcus Marcus Comm.	300	2	2	16' Omni	192	3	3	55	R	1.000			64.00	1.20	34.75	26.30
			1	1	101-68-10-X-03N						1.000	5.53	0.07	-	-	-	-
7	Qualcomm Qualcomm	270	1	1	TLP-08M-2E	146.4	10.5	10.5	130	R	1.000			13.94	0.95	33.72	25.52
			1	1	Side Arm						1.000	5.20	0.15	-	-	-	-
8	US DOHS -	269	1	1	ADD090	78.7	31.5	31.5	88.2	F	1.000			2.50	1.40	33.68	25.50
			1	1	-						1.000	0.00	0.00	-	-	-	-
9	Sirius Sirius	265	2	2	TA-2350-DAB	70	2.3	2.3	15	R	1.000			30.43	1.20	33.54	25.39
			2	2	Side Arm						0.900	5.20	0.15	-	-	-	-
10	T-Mobile T-Mobile	265	3	3	ATMAA1412D-1A20	12	10	4	13	F	0.500			1.20	1.40	33.54	25.39
			3	3	RRUS 11 B12						0.500	3.25	0.05	-	-	-	-
11	T-Mobile T-Mobile	265	3	3	AIR 21, 1.3 M, B2A B4P	56	12	8	83	F	0.690			4.67	1.40	33.54	25.39
			3	3	AIR-32 B2A/B66Aa						0.690	7.10	0.13	-	-	-	-
12	T-Mobile T-Mobile	265	3	3	LNx-6515DS-VTM	96.3	11.9	7.1	51.3	F	0.700			8.09	1.44	33.54	25.39
			3	3	Sector Frame						0.670	17.90	0.40	-	-	-	-
13	US DOHS US DOHS	240	1	1	SC381-HL	148.3	4.5	4.5	47	R	1.000			32.96	1.20	32.60	24.68
			1	1	SC281-L						1.000	10.46	0.08	-	-	-	-
14	US DOHS US DOHS	240	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	32.60	24.68
			2	2	Side Arm						0.900	5.20	0.15	-	-	-	-
15	AT&T Mobility AT&T Mobility	231	3	3	7770	55	11	5	35	F	0.640			5.00	1.40	32.25	24.41
			3	3	Sector Frame						0.670	14.40	0.40	-	-	-	-
16																	
17	AT&T Mobility AT&T Mobility	231	3	3	SBNHH-1D65A	55	11.9	7.1	40.9	F	0.670			4.62	1.40	32.25	24.41
			1	3	32 BOB, TTA, RET						0.500	83.84	1.26	-	-	-	-
18	AT&T Mobility AT&T Mobility	231	3	3	AM-X-CD-14-65-00T-RET	48	11.8	5.9	36.4	F	0.650			4.07	1.40	32.25	24.41
			3	3	OPA-65R-LCUU-H4						0.640	6.91	0.06	-	-	-	-
19	Sprint Nextel Sprint Nextel	224	12	3	Decibel DB844H90E-XY	48	6.5	8	14	F	0.730			7.38	1.41	31.97	24.20
			3	3	Sector Frame						0.670	17.90	0.40	-	-	-	-
20	US DOHS US DOHS	200	1	1	Sinclair SC281-L	251	5	5	79	R	1.000			50.20	1.20	30.95	23.43
			1	1	Side Arm						1.000	5.20	0.15	-	-	-	-
21	Marcus Comm. Marcus Comm.	200	2	2	TX RX 101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000			54.17	1.20	30.95	23.43
			2	2	Side Arm						0.900	5.20	0.15	-	-	-	-
22	Town of Stamford Town of Stamford	189	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	30.45	23.05
			1	1	30" x 30" Reflector						1.000	8.75	0.03	-	-	-	-
23	Spok Holdings Spok Holdings	178	3	3	BCD-87010 ____	134	2.6	2.6	26.5	R	1.000			51.54	1.20	29.94	22.66
			3	3	Side Arm						0.670	5.20	0.15	-	-	-	-
24	Clearwire Clearwire	171	3	3	24" x 24" Junction Box	24	24	8	20	F	0.670			1.00	1.40	29.59	22.40
			1	1	-						1.000	0.01	0.01	-	-	-	-
25	Clearwire Clearwire	167	3	3	BTS-2500	19.3	11.3	5.1	35	F	0.670			1.71	1.40	29.40	22.25
			3	3	LLPX310R						0.620	4.83	0.03	-	-	-	-
26	Clearwire Clearwire	167	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	29.40	22.25
			3	3	T-Arm						0.670	5.20	0.15	-	-	-	-
27	Metro PCS Metro PCS	160	18	3	RCU (Remote Control Unit)	8	2	2	1	R	0.500			4.00	0.80	29.04	21.98
			6	3	800 10504						0.670	3.35	0.02	-	-	-	-
28	Sprint Nextel Sprint Nextel	150	3	3	APXVTM14-C-I20	56.3	12.6	6.3	52.9	F	0.650			4.47	1.40	28.51	21.58
			1	3	18 RRH						0.500	50.70	0.78	-	-	-	-
29	Sprint Nextel Sprint Nextel	150	3	3	APXVSP18-C-A20	72	11.8	7	57	F	0.680			6.10	1.40	28.51	21.58
			3	3	Sector Frame						0.670	17.90	0.40	-	-	-	-
30	Senus Senus	137	1	1	BCD-87010 ____ 4"	134	2.6	2.6	26.5	R	1.000			51.54	1.20	27.78	21.03
			1	1	Side Arm						1.000	5.20	0.15	-	-	-	-

31	Marcus Comm. Marcus Comm.	100	1 1	1 1	101-68-10-X-03N Side Arm	189.6 1.000	3.5 1.000	3.5 5.20	70 0.15	R F	1.000 0.500		54.17 -	1.20 -	25.39 19.22
32	Verizon Verizon	92	3 3	3 3	RRH2X60-1900A-4R RRH2x60 700	20 0.500	11.2 0.500	7.6 2.51	46 0.06	F F	0.500 0.500		1.79 -	1.40 -	24.79 18.76
33	Verizon Verizon	92	3 2	3 3	RRH4x45-B66 w/o Solar Shield DB- T1-6Z-8AB-0Z	26 0.500	11.4 0.500	5.9 5.60	63.3 0.04	F F	0.500 0.500		2.28 -	1.40 -	24.79 18.76
34	Verizon Verizon	92	12 1	3 3	SBNHH-1D65B Sector Frame	72.7 0.670	11.9 0.670	7.1 17.90	50.7 0.40	R F	0.690 0.670		6.11 -	0.80 -	24.79 18.76
35	Spok Holdings Spok Holdings	6	1 1	1 1	Acutime 2000 -	5 1.000	6.1 1.000	6.1 0.00	1.3 0.00	F F	1.000 1.000		0.82 -	1.40 -	18.50 14.00
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49															
50															

No.	Elevation (ft)	C _A A _C (ft²)	C _A A _C (Ice) (ft²)	Force (k)	Force (Ice) (k)	Weight (k)	Weight (Ice) (k)	Σ Force (k)	Σ Force (Ice) (k)	Σ Weight (k)	Σ Weight (Ice) (k)
1	300	0.00 55.00	0.00 74.25	0.000 2.079	0.000 2.124	0.000 4.000	0.000 5.200	2.08	2.12	4.00	5.20
2	283	0.00 40.00	0.00 54.00	0.000 1.487	0.000 1.519	0.000 2.750	0.000 3.575	1.49	1.52	2.75	3.58
3	212.5	0.00 50.00	0.00 67.50	0.000 1.713	0.000 1.750	0.000 3.000	0.000 3.900	1.71	1.75	3.00	3.90
4	100	0.00 50.00	0.00 67.50	0.000 1.381	0.000 1.411	0.000 3.000	0.000 3.900	1.38	1.41	3.00	3.90
5	300	0.24 0.94	0.33 1.26	0.009 0.035	0.009 0.036	0.011 0.030	0.017 0.039	0.04	0.05	0.04	0.06
6	300	9.60 5.53	12.87 7.47	0.363 0.209	0.368 0.214	0.110 0.070	0.198 0.091	0.57	0.58	0.18	0.29
7	270	10.19 5.20	11.23 7.02	0.374 0.191	0.312 0.195	0.130 0.150	0.239 0.195	0.56	0.51	0.28	0.43
8	269	24.10 0.00	25.18 0.00	0.883 0.000	0.698 0.000	0.088 0.000	0.286 0.000	0.88	0.70	0.09	0.29
9	265	2.68 9.36	3.91 12.64	0.098 0.341	0.108 0.349	0.030 0.300	0.056 0.390	0.44	0.46	0.33	0.45
10	265	1.75 4.88	2.09 6.58	0.064 0.178	0.058 0.182	0.039 0.152	0.062 0.198	0.24	0.24	0.19	0.26
11	265	13.52 14.70	14.91 19.84	0.493 0.536	0.412 0.548	0.249 0.397	0.375 0.516	1.03	0.96	0.65	0.89
12	265	24.01 35.98	26.29 48.57	0.876 1.313	0.726 1.341	0.154 1.200	0.351 1.560	2.19	2.07	1.35	1.91
13	260	5.56	6.84	0.197	0.184	0.047	0.096	0.57	0.56	0.13	0.20

[illegible]

Foundation

Design Loads (Unfactored)

Compression/Leg:	494.68 k
Uplift/Leg:	385.38 k

Face Width @ Top of Pier (d_1):	4.00 ft
Face Width @ Bottom of Pier (d_2):	8.00 ft
Total Length of Pier (l):	8.00 ft
Height of Pedestal Above Ground (h):	0.50 ft
Width of Pad (W):	18.00 ft
Length of Pad (L):	18.00 ft
Thickness of Pad (t):	3.00 ft
Water Table Depth (w):	99 ft
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Soil (Above Water Table):	110.0 pcf
Unit Weight of Soil (Below Water Table):	55.0 pcf
Friction Angle of Uplift (A):	20 °
Allowable Compressive Bearing Pressure:	20000 psf

Volume Pier (Total):	298.67	ft ³
Volume Pad (Total):	972.00	ft ³
Volume Soil (Total):	2935.41	ft ³
Volume Pier (Buoyant):	0.00	ft ³
Volume Pad (Buoyant):	0.00	ft ³
Volume Soil (Buoyant):	0.00	ft ³
Weight Pier:	44.80	k
Weight Pad:	145.80	k
Weight Soil:	322.89	k

Uplift Check

TIA Case 1: $\frac{\text{Wt. Soil} + \text{Wt. Concrete}}{2.0}$

TIA Case 2: $\frac{\text{Wt. Soil} + \text{Wt. Concrete}}{2.0 \quad 1.25}$

	Allowable Uplift (k)	Ratio	Result
TIA Case 1:	402.55	0.96	OK
TIA Case 2:	423.28	0.91	OK

Axial Check

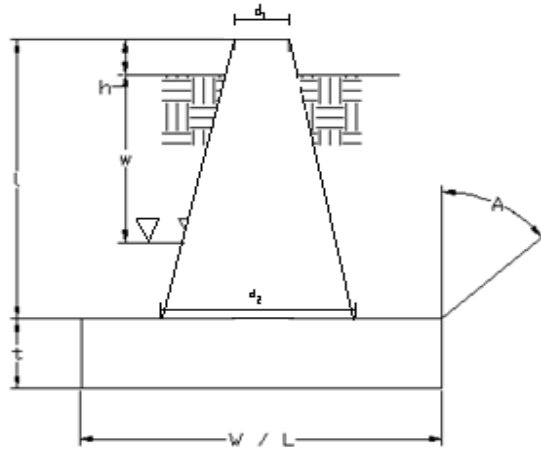
Allowable Axial: $\text{Allowable Bearing Pressure} * W * L$

	Allowable Axial (k)	Ratio	Result
	6480.00	0.08	OK

Anchor Bolt Check

Bolt Description	Allowable Uplift (k)	Ratio	Result
(6) 2 1/4" A36	456.61	0.84	OK

Site No.:	88018
Engineer:	ADV
Date:	05/10/16
Carrier:	T-Mobile



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 EFFECTVELY 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 RECEPTABLES 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.

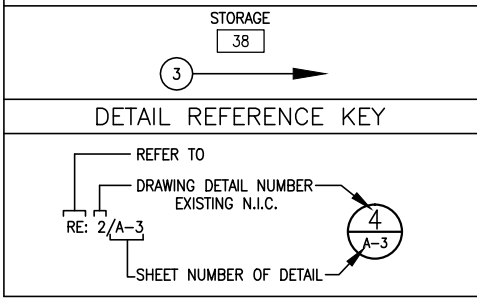
ADMINISTRATION

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.

ARCHITECTURAL SYMBOLS



T-Mobile

T-MOBILE NORTHEAST, LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159

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innovative design solutions
ForeSiteLLC.com

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NEWTON, MA 02459
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MOBILE 617-212-3723

SUBMITTALS			
DATE	DESCRIPTION	REVISION	
05/04/16	ISSUED FOR REVIEW	A	
06/02/16	FINAL CD	0	

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

PROJECT NO:	CT11007A
DRAWN BY:	MS
CHECKED BY:	SM

STATE OF CONNECTICUT
HOSEIN VARDI
NO. APR. 11/16
LICENSED ARCHITECT

PROFESSIONAL SEAL

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SITE NUMBER
CT11007A

SITE NAME
STAMFORD AT&T

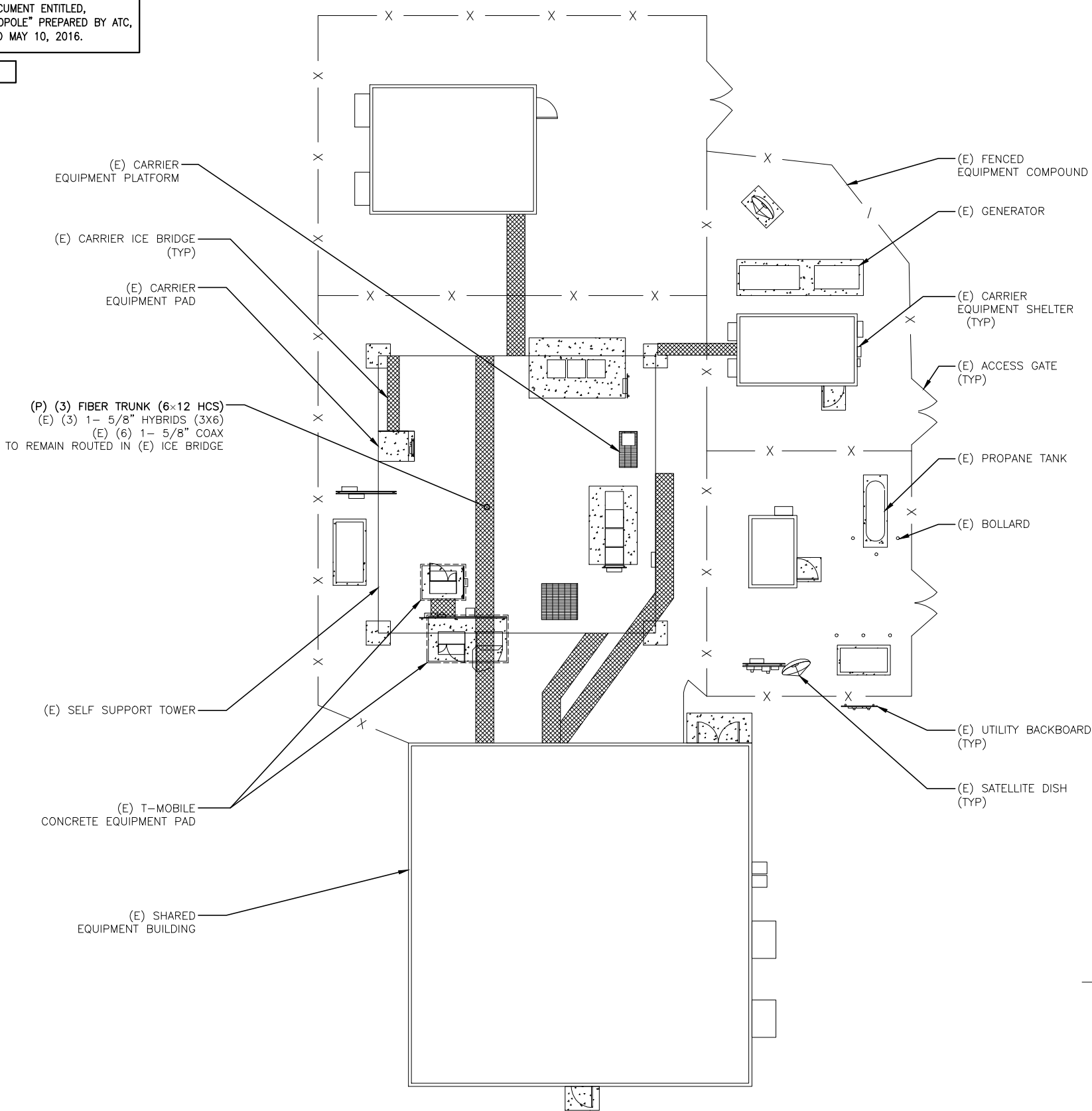
SITE ADDRESS
168 CATOONA LANA
STAMFORD, CT 06902

SHEET TITLE
CONTRACTOR'S NOTES

SHEET NUMBER
N-1

REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED,
"STRUCTURAL ANALYSIS REPORT MONOPOLE" PREPARED BY ATC,
"T-MOBILE SITE ID CT11007E", DATED MAY 10, 2016.

FOR ANTENNA PLAN SEE SHEET A-2



SITE PLAN

SCALE 1"=30' (11x17)
1"=15' (24x36)

1
A-1



GENERAL SITE NOTES

1. SITE INFORMATION WAS OBTAINED FROM A FIELD INVESTIGATION PERFORMED BY ATLANTIS GROUP, INC. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.
2. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.
3. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
4. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.
5. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
6. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT CALL BEFORE YOU DIG THREE WORKING DAYS PRIOR TO COMMENCING WORK.
7. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

- | | |
|-----|------------------------|
| | SITE PROPERTY LINE |
| | STREET OR ROAD |
| | CHAIN LINK FENCE |
| | OPAQUE WOODEN FENCE |
| | BOARD ON BOARD FENCE |
| | DECIDUOUS TREES/SHRUBS |
| | EVERGREEN TREES/SHRUBS |
| | TREE LINE |
| | UTILITY POLE |
| (E) | EXISTING |
| (N) | NEW |
| (P) | PROPOSED |
| (F) | FUTURE |
| | PROP. LTE ANTENNA |
| | PROP. UMTS/GSM ANTENNA |
| | EX. GSM ANTENNA |
| | EX. UMTS ANTENNA |

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MOBILE 617-212-3123

SUBMITTALS

DATE	DESCRIPTION	REVISION
05/04/16	ISSUED FOR REVIEW	A
06/02/16	FINAL CD	0

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

PROJECT NO: CT11007A
DRAWN BY: MS
CHECKED BY: SM



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SITE NUMBER

CT11007A

SITE NAME

STAMFORD AT&T

SITE ADDRESS

168 CATOONA LANA
STAMFORD, CT 06902

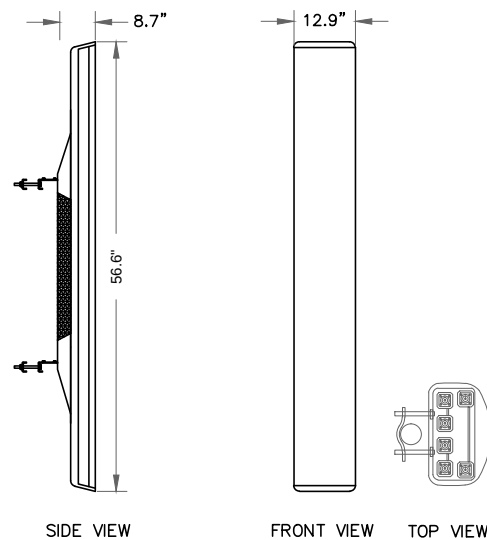
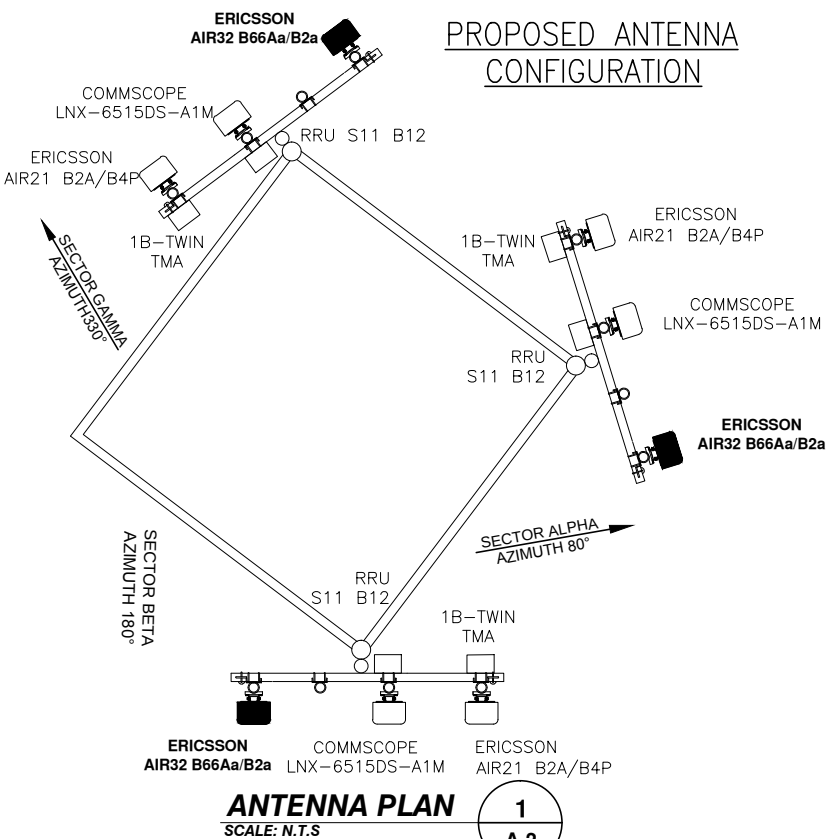
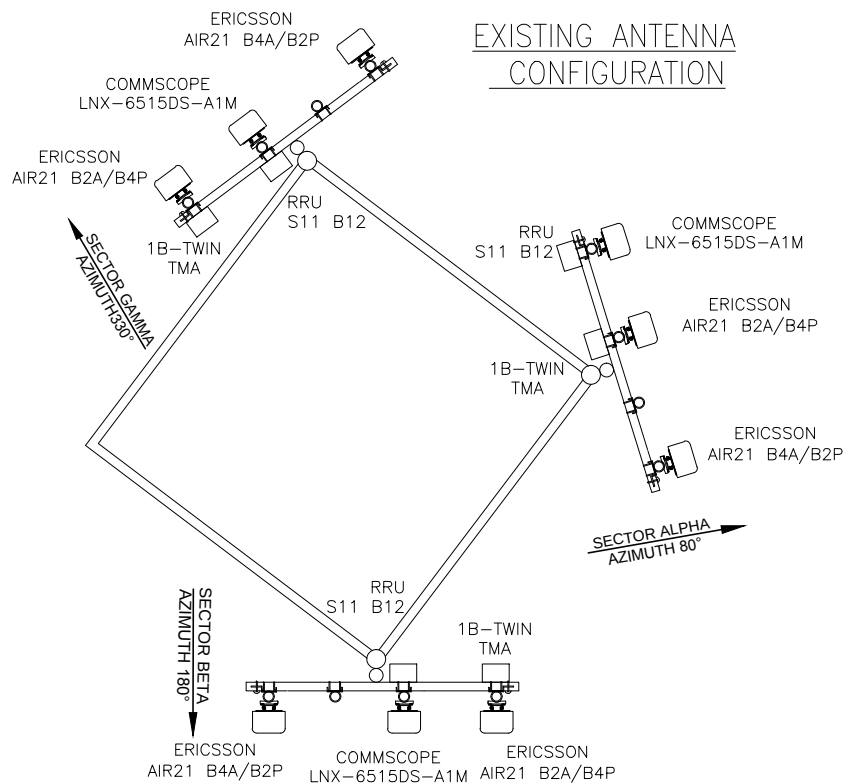
SHEET TITLE

SITE PLAN

SHEET NUMBER

A-1

REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED,
"STRUCTURAL ANALYSIS REPORT MONOPOLE" PREPARED BY ATC,
"T-MOBILE SITE ID CT11007E", DATED MAY 10, 2016.

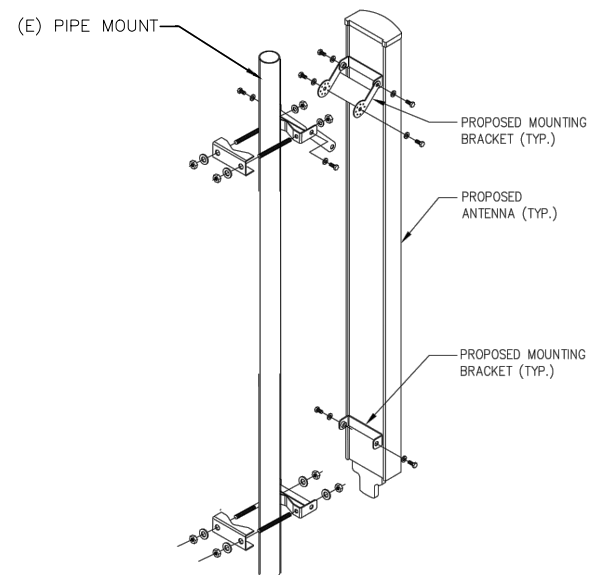


MANUFACTURER: ERICSSON
MODEL NO.: AIR32-B66Aa/B2a
DIMENSIONS - HxWxD, (IN) 56.6x12.9x8.7
WEIGHT - 132.2 LB

ERICSSON AIR32- B66Aa/B2a
ANTENNA DETAIL

SCALE: N.T.S

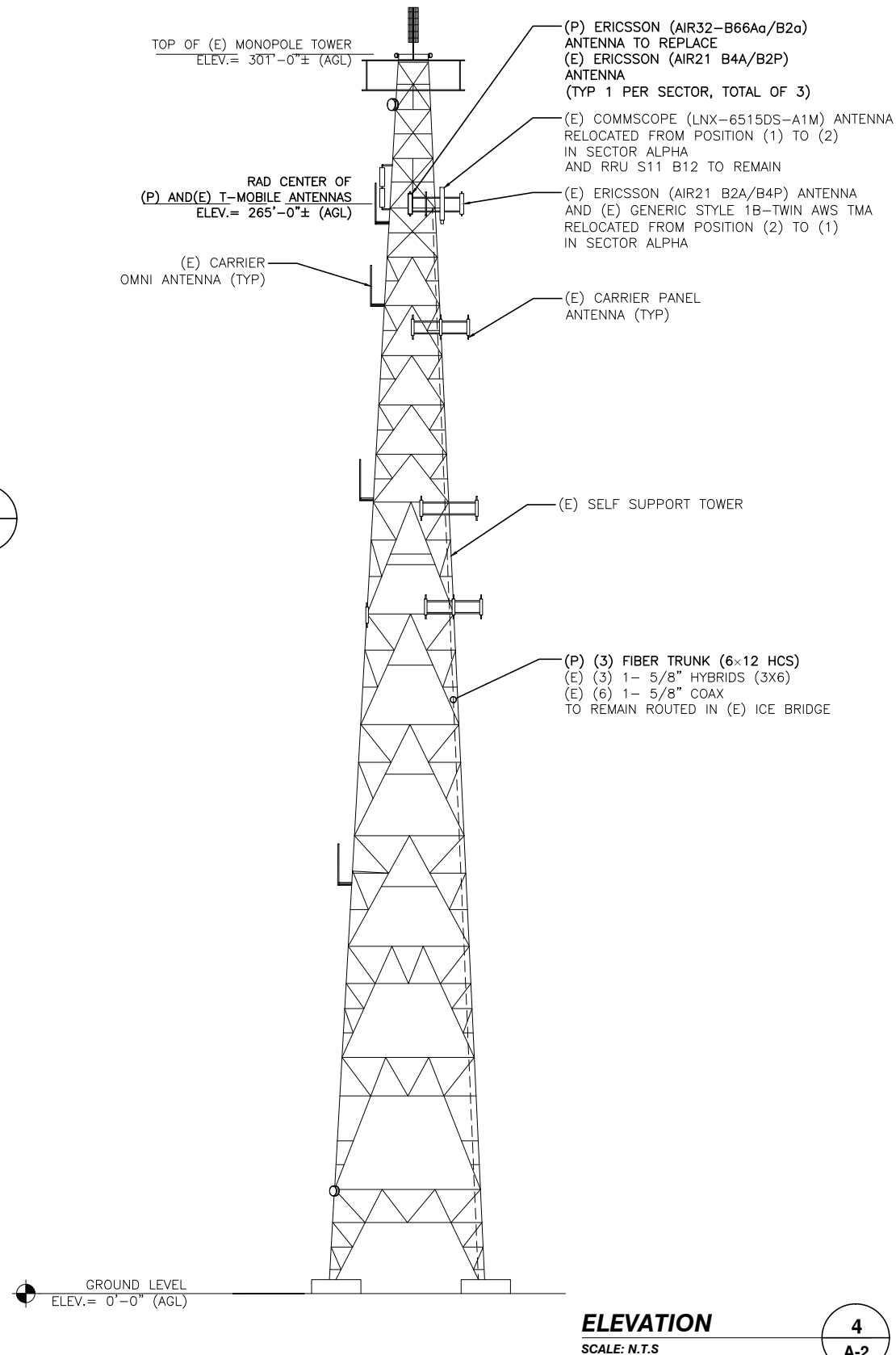
2
A-2



MOUNTING DETAIL

SCALE: N.T.S

3
A-2



ELEVATION

SCALE: N.T.S

4
A-2



T-MOBILE NORTHEAST, LLC
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462 WALNUT STREET
NEWTON, MA 02460
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MOBILE :617-212-3123

SUBMITTALS

[illegible]

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

PROJECT NO:	CT11007A
DRAWN BY:	MS
CHECKED BY:	SM



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SITE NUMBER
CT11007A

SITE NAME
STAMFORD AT

SITE ADDRESS
168 CATOONA LANA
STAMFORD, CT 06902

SHEET TITLE

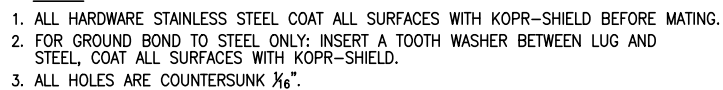
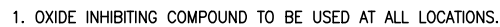
ELEVATION

SHEET NUMBER

A-2

- A. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
- B. DO NOT INSTALL GROUND KIT AT BEND. DIRECT GROUND WIRE DOWN TO ANTENNA BUSSBAR.
- C. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
- D. ADD COAX GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF COAX RUN (FROM EQUIPMENT TO ANTENNA) IS GREATER THAN 20'-0".
- E. GROUND HCS BOX W/ #2AWG GROUNDING CONDUCTOR ATTACHED TO GOOD GROUND AS DIRECT AND SHORT AS POSSIBLE. USE GREEN STRANDED INSULATED CONDUCTOR TO CONNECT TO BUSSBAR/GROUND HALO OR BARE TINNED SOLID COPPER CONDUCTOR TO CONNECT TO GROUND RING.

(F). ANTENNA



33

SCALE: N.T.S

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO $\frac{3}{4}$ " COAXIAL CABLE, AND SIMILAR INSTALLATION TECHNIQUES APPLY. ALL CABLES ARE INDIVIDUALLY SERIALIZED, BE SURE TO WRITE DOWN THE CABLE SERIAL NUMBER FOR FUTURE REFERENCE.
2. THE TERMINATED FIBER ENDS (THE BROKEN OUT FIBERS PLUS CONNECTORS) HOWEVER ARE FRAGILE, AND THESE MUST BE PROTECTED DURING THE INSTALLATION PROCESS.
3. LEAVE THE PROTECTIVE TUBE AND SOCK AROUND THE FIBER TAILS AND CONNECTORS IN PLACE DURING HOISTING AND SECURING THE CABLE. REMOVE THIS ONLY JUST PRIOR TO MAKING THE FINAL CONNECTIONS TO THE OVP BOX.
4. DO NOT BEND THE FIBER ENDS (IN THE ORANGE FURCATION TUBES) TIGHTER THAN $\frac{3}{4}$ " (19MM) BEND RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS FIBERS.
5. BE SURE THAT THE LACE UP ENDS AND FIBER CONNECTORS ARE NOT DAMAGED BY ATTACHMENT OF A HOISTING GRIP OR DURING THE HOISTING PROCESS. ATTACH A HOISTING GRIP ON THE JACKETED CABLE NO LESS THAN 6 INCHES BELOW THE FIBER BREAKOUT POINT. IF A HOISTING GRIP IS NOT EASILY ATTACHED, USE A SIMPLE LINE ATTACHED BELOW THE FIBER BREAK-OUT POINT (I.E. AT THE CABLE OUTER JACKET). PREVENT THE FIBER TAILS (IN PROTECTIVE TUBE) AT THE CABLE END FROM UNDUE MOVEMENT DURING HOISTING BY SECURING THE PROTECTIVE TUBE (WITH OUTER SOCK) TO THE HOISTING LINE.
6. DURING HOISTING ENSURE THAT THERE IS A FREE PATH AND THAT THE CABLE, AND ESPECIALLY THE FIBER ENDS, WILL NOT BE SNAGGED ON TOWER MEMBERS OR OTHER OBSTACLES.
7. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO +70C).
8. MINIMUM CABLE BEND RADII ARE 22.2" (565MM) LOADED (WITH TENSION ON THE CABLE) AND 11.1" (280MM) UNLOADED.
9. MAXIMUM CABLE TENSILE LOAD IS 3560 N (800 LB) SHORT TERM (DURING INSTALLATION) AND 1070 N (240 LB) LONG TERM.
10. COMSCOPE DO NOT LACE UP GRIP RECOMMENDED FOR MONOPOLE INSTALLATIONS.
11. MAXIMUM HANGER SPACING 3FT (0.9 M).

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO A 3/8" COAXIAL CABLE.
2. THE TERMINATED FIBER ENDS HOWEVER ARE FRAGILE AND MUST BE PROTECTED DURING INSTALLATION. LEAVE THE PACKAGING AROUND THE FIBER ENDS IN PLACE UNTIL READY TO CONNECT THE JUMPER BETWEEN OVP AND RRU OR BBU.
3. DO NOT BEND THE FIBER BREAKOUT CABLE (BETWEEN THE MAIN CABLE AND THE FIBER CONNECTOR) TIGHTER THAN 3/4" (19MM) RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS.
4. ATTACH THE MAIN CABLE SECURELY TO THE STRUCTURE OR EQUIPMENT USING HANGERS AND/OR CABLE TIES TO PREVENT STRAIN ON CONNECTIONS FROM MOVEMENT IN WIND OR SNOW/ICE CONDITIONS.
5. ENSURE THE LC FIBER CONNECTORS ARE SEATED FIRMLY IN PANEL IN OVP OR IN EQUIPMENT.
6. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO 70C).
7. MINIMUM CABLE BEND RADII ARE 10.3 INCH (265MM) LOADED (WITH TENSION ON THE CABLE) AND 5.2 INCH (130MM) UNLOADED.
8. MAXIMUM CABLE TENSILE LOAD IS 350 LB (1560N) SHORT TERM (DURING INSTALLATION) AND 105 LB (470N) LONG TERM.
9. STANDARD LENGTHS AVAILABLE ARE 6 FEET, 15 FEET AND 20 FEET

4

SCALE: N.T.S

SHEET NUMBER

E-1