

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-286-4007
jandrews@empiretelecomm.com

April 30, 2018

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

NOTICE OF EXEMPT MODIFICATION

23 Kelleher Court, Wethersfield, CT 06109

Lat: 41-42-55.5 (41.7154166666667)
Long. 72-41-26.14 (-72.69059444)

Dear Ms. Bachman:

AT&T Wireless currently maintains nine (9) antennas at the 144-foot level of an existing 179-foot monopole tower located at 23 Kelleher Court, in Wethersfield, CT. The tower is owned by the Town of Wethersfield. The property is owned by the Town of Wethersfield. AT&T Wireless now seeks to install three (3) additional antennas, install six (6) new Remote Radio Units (“RRU”), install a new surge suppression dome, add one (1) XMU, and install two (2) new DC power cables. The proposed antennas, suppression dome, and RRUs will be mounted at the 144-foot level on the existing tower.

The facility was approved by the Connecticut Siting Council in EM-AT&T-159-161223 on January 17, 2017. Eight (8) conditions were enumerated in the Council’s decision: 1) Prior to equipment installation, AT&T shall ensure that the structural analysis for the tower takes into account Verizon modifications approved by the Council in EM-VER-159-161117b on December 12, 2016 and is still less than 100 percent of its capacity; 2) Within 45 days following completion of equipment installation, AT&T shall provide documentation certified by a Professional Engineer duly licensed in the State of Connecticut to certify that the tower and foundation does not exceed 100 percent of its post-construction rating; 3) Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid; 4) Any material changes to the modification as proposed shall require the filing of a new notice with the Council; 5) Within 45 days after the completion of construction the Council shall be notified in writing that the construction has been completed; 6) Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function; 7) the validity of the action shall expire one year from the date of

the letter; and 8) The applicant may file a request an extension of time beyond the one year deadline provided that such a request is submitted to the Council not less than 60 days prior to the expiration.

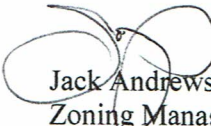
Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies section 16-50j-73 for construction that constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2). In accordance with RCSA section 16-50j-73, a copy of this letter and attachments is being sent to the Honorable Amy Morrin Bello, Mayor of Wethersfield; Peter Gillespie, Director of Wethersfield Planning & Economic Development, as well as the Town of Wethersfield, the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities expressly provided for in RCSA section 50j-72(b)(2).

1. The proposed modifications will not result in an increase in height of the existing structure.
2. The proposed modifications will not require an 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 will exceed state and local limits.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Respectfully submitted,



Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-286-4007
jandrews@empiretelecomm.com

Enclosures

cc: Honorable Amy Morrin Bello, Mayor of Wethersfield
Peter Gillespie, Director of Wethersfield Planning & Economic Development
Jeff Bridges, Town Manager, Town of Wethersfield, property owner and tower owner

May 4, 2018

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

RE: NOTICE OF EXEMPT MODIFICATION
23 Kelleher Court, Wethersfield, CT 06109

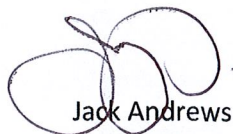
Dear Ms. Bachman:

Enclosed please find an original and two (2) copies of a Notice of Exempt Modification including drawings, structural analyses, RF emissions reports, parcel maps, and a check in the amount of six hundred twenty five dollars (\$625.00) for the filing fee. In addition, I have included a single copy of each notification letter to the municipality, the Department of Planning and Zoning, and to the property/tower owner. The proof of delivery is likewise enclosed and consists of a copy of the USPS Tracking Results from the USPS website clipped to each letter, acknowledging the date and time of delivery.

I have submitted electronic copies of these documents via email to the CSC today.

Please feel free to contact me with any questions or comments. Thank you for your kind cooperation in this matter.

Respectfully submitted,



Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-286-4006
jandrews@empiretelecomm.com

Enclosures

10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

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8:00pm ⓘ

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April 30, 2018

The Honorable Amy Morrin Bello
505 Silas Deane Highway
Wethersfield, CT 06109

RE: AT&T Wireless Modifications to Telecommunication Facility –
23 Kelleher Court, Wethersfield, CT 06109

Dear Mayor Bello:

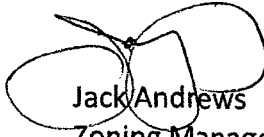
In order to accommodate technological changes, implement the Uniform Mobile Telecommunications System and enhance system performance in the State of Connecticut, AT&T Wireless ("AT&T") will be changing its equipment configuration at the above referenced telecommunication facility. AT&T Wireless currently maintains nine (9) antennas at the 144-foot level of an existing 179-foot monopole tower located at 23 Kelleher Court, in Wethersfield, CT. The tower is owned by the Town of Wethersfield. The property is owned by the Town of Wethersfield.

AT&T Wireless now seeks to install three (3) additional antennas, install six (6) new Remote Radio Units ("RRU"), install a new surge suppression dome, add one (1) XMU, and install two (2) new DC cables. The proposed antennas, suppression dome, and RRUs will be mounted at the 144-foot level on the existing tower.

This letter is intended to serve as the required notice to the municipality. As required by the Regulations of Connecticut State Agencies ("RCSA") section 16-50j-73, the Connecticut Siting Council ("CSC") has been notified of the proposed changes and will review AT&T's proposal. Please accept this letter as notification under RCSA section 16-50j-73 of construction which constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2).

The enclosed letter and documents to the CSC fully describes AT&T's proposal for the above referenced site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachman, Acting Executive Director of the CSC at 860-872-2935.

Respectfully submitted,



Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: Melanie Bachman, Connecticut Siting Council ✓

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April 30, 2018

Jeff Bridges, Town of Wethersfield Town Manager
505 Silas Deane Highway
Wethersfield, CT 06109

RE: AT&T Wireless Modifications to Telecommunication Facility –
23 Kelleher Court, Wethersfield, CT 06109

Dear Mr. Bridges:

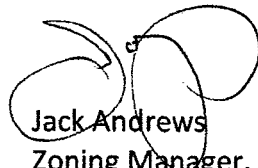
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This letter is intended to serve as the required notice to the property owner and to the tower owner. As required by the Regulations of Connecticut State Agencies (“RCSA”) section 16-50j-73, the Connecticut Siting Council (“CSC”) has been notified of the proposed changes and will review AT&T’s proposal. Please accept this letter as notification under RCSA section 16-50j-73 of construction which constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2).

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Respectfully submitted,



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Columbia, MD 21046
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Enclosures

cc: Melanie Bachman, Connecticut Siting Council ✓

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April 30, 2018

Peter Gillespie, Director of Wethersfield Planning & Economic Development
505 Silas Deane Highway
Wethersfield, CT 06109

RE: AT&T Wireless Modifications to Telecommunication Facility –
23 Kelleher Court, Wethersfield, CT 06109

Dear Mr. Gillespie:

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This letter is intended to serve as the required notice to the municipality’s Planning and Economic Development Department. As required by the Regulations of Connecticut State Agencies (“RCSA”) section 16-50j-73, the Connecticut Siting Council (“CSC”) has been notified of the proposed changes and will review AT&T’s proposal. Please accept this letter as notification under RCSA section 16-50j-73 of construction which constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2).

The enclosed letter and documents to the CSC fully describes AT&T's proposal for the above referenced site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachman, Acting Executive Director of the CSC at 860-872-2935.

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Enclosures

cc: Melanie Bachman, Connecticut Siting Council



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5122

Wethersfield North
23 Kelleher Court
Wethersfield, CT 06109

February 9, 2018

Centerline Communications Project Number: 950006-094

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	17.70 %



February 9, 2018

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

Emissions Analysis for Site: **CT5122 – Wethersfield North**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **23 Kelleher Court, Wethersfield, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general population 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 population 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.

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



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

Additional details can be found in FCC OET 65.



CALCULATIONS

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

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
UMTS	1900 MHz (PCS)	2	30
LTE	2300 MHz (WCS)	4	60
LTE	700 MHz (Band 14)	4	60
LTE	2100 MHz (AWS)	4	60
LTE	700 MHz	2	60
LTE	1900 MHz (PCS)	4	60

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	140
A	2	CCI TPA-65R-LCUUUU-H8	140
A	3	Kathrein 800-10966	140
A	4	CCI HPA-65R-BUU-H8	140
B	1	Powerwave 7770	140
B	2	CCI TPA-65R-LCUUUU-H8	140
B	3	Kathrein 800-10966	140
B	4	CCI HPA-65R-BUU-H8	140
C	1	Powerwave 7770	140
C	2	Commscope SBNHH-1D65A	140
C	3	Kathrein 800-10964	140
C	4	Commscope SBNHH-1D65A	140

Table 2: Antenna Data

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



RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.56
Antenna A2	CCI TPA-65R-LCUUUU-H8	2300 MHz (WCS)	14.45	4	240	6,686.69	1.34
Antenna A3	Kathrein 800-10966	700 MHz (Band 14) / 2100 MHz (AWS)	13.55 / 16.15	8	480	15,325.49	4.31
Antenna A4	CCI HPA-65R-BUU-H8	700 MHz / 1900 MHz (PCS)	13.15 / 14.95	6	360	9,981.05	2.56
Sector A Composite MPE%							8.77
Antenna B1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.56
Antenna B2	CCI TPA-65R-LCUUUU-H8	2300 MHz (WCS)	14.45	4	240	6,686.69	1.34
Antenna B3	Kathrein 800-10966	700 MHz (Band 14) / 2100 MHz (AWS)	13.55 / 16.15	8	480	15,325.49	4.31
Antenna B4	CCI HPA-65R-BUU-H8	700 MHz / 1900 MHz (PCS)	13.15 / 14.95	6	360	9,981.05	2.56
Sector B Composite MPE%							8.77
Antenna C1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	0.56
Antenna C2	Commscope SBNHH-1D65A	2300 MHz (WCS)	15.85	4	240	9,230.20	1.85
Antenna C3	Kathrein 800-10964	700 MHz (Band 14) / 2100 MHz (AWS)	11.45 / 15.35	8	480	11,577.71	3.08
Antenna C4	Commscope SBNHH-1D65A	700 MHz / 1900 MHz (PCS)	10.85 / 14.55	6	360	8,301.87	2.00
Sector C Composite MPE%							7.48

Table 3: AT&T Emissions Levels



The Following table (table 4) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sectors with the largest calculated MPE% are Sectors A & B. Table 5 below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
AT&T – Max Sector Value	8.77 %
Town of Wethersfield	0.17 %
Clearwire	0.07 %
Verizon Wireless	5.38 %
Sprint	1.27 %
Nextel	1.65 %
T-Mobile	0.39 %
Site Total MPE %:	17.70 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	8.77 %
AT&T Sector B Total:	8.77 %
AT&T Sector C Total:	7.48 %
Site Total:	
	17.70 %

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, the sectors with the largest calculated MPE% are Sectors A & B.

AT&T _ Frequency Band / Technology (Sectors A & B)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	140	1.66	850 MHz	567	0.29%
AT&T 1900 MHz (PCS) UMTS	2	656.33	140	2.63	1900 MHz (PCS)	1000	0.26%
AT&T 2300 MHz (WCS) LTE	4	1,671.67	140	13.39	2300 MHz (WCS)	1000	1.34%
AT&T 700 MHz LTE – Band 14	4	1,358.79	140	10.88	700 MHz	467	2.33%
AT&T 2100 MHz (AWS) LTE	4	2,472.59	140	19.80	2100 MHz (AWS)	1000	1.98%
AT&T 700 MHz LTE	2	1,239.23	140	4.96	700 MHz	467	1.06%
AT&T 1900 MHz (PCS) LTE	4	1,875.65	140	15.02	1900 MHz (PCS)	1000	1.50%
						Total:	8.77%

Table 6: AT&T Maximum Sector MPE Power Values



Summary

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

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

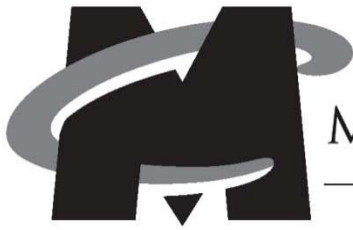
AT&T Sector	Power Density Value (%)
Sector A:	8.77 %
Sector B:	8.77 %
Sector C:	7.48 %
AT&T Maximum Total (per sector):	8.77 %
Site Total:	17.70 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **17.70 %** of the allowable FCC established general population 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.

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is positioned above the printed name.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767



MASER CONSULTING
— CONNECTICUT —

Monopole Feasibility Study

FOR
CT5122 - Wethersfield North

FA # 10092829
LTE 4C/5C
23 Kelleher Court
Wethersfield, CT 06109
Hartford County

Monopole Utilization: 93.6%

March 2, 2018


Prepared For

AT&T
550 Cochituate Road
Framingham, MA 01701

Prepared By

Maser Consulting Connecticut
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950




Petros E. Tsoukalas, P.E.
Geographic Discipline Leader
Connecticut License No. 32557



Objective:

The objective of this report is to determine the structural capacity of the existing 179' galvanized steel monopole located at the above referenced address for the addition of the proposed wireless telecommunications equipment by **AT&T**, together with the existing loading.

Introduction:

Maser Consulting Connecticut has reviewed the following documents in completing this report:

- RFDS 2047031 Revision 1.00, provided by Smartlink LLC., dated January 3, 2018
- Previous Structural Analysis prepared by Destek Engineering, dated March 2, 2017

This report is based upon this information. Since Maser Consulting Connecticut did not visit the site, this analysis is based off of the referenced structural analysis. It is assumed that all the information in the referenced analysis is accurate and no other changes have been made to the monopole.

Equipment Loading:

Maser Consulting Connecticut understands the existing and proposed **AT&T** equipment loading to be as follows:

Quantity	Manufacturer	Antenna/ Appurtenance	Status	Sector
3	Powerwave	7770	Existing	Alpha, Beta, & Gamma
2	CCI	TPA-65R-LCUUUU-H8	Existing	Alpha & Beta
2	CCI	HPA-65R-BUU-H8	Existing	Alpha & Beta
2	Commscope	SBNHH-1D65A	Existing	Gamma
2	Kathrein	80010966	Proposed	Alpha & Beta
1	Kathrein	80010964	Proposed	Gamma
3	Ericsson	RRUS 4478 B14	Proposed	Alpha, Beta, & Gamma
3	Ericsson	RRUS 32 B66	Proposed	Alpha, Beta, & Gamma
3	Ericsson	RRUS 11	Existing	Alpha, Beta, & Gamma
3	Ericsson	RRUS 32	Existing	Alpha, Beta, & Gamma
3	Raycap	DC6-48-60-0-8C	Existing/Proposed	Alpha, Beta, & Gamma
6	Powerwave	LGP 21401	Existing	Alpha, Beta, & Gamma
3	Ericsson	RRUS 32 B2	Existing	Alpha, Beta, & Gamma

See the Material Take-Off sheet in Appendix A for final appurtenance loading.

Monopole Member Information:

See the Material Take-Off sheet in Appendix A for monopole information.

Codes, Standards and Loading:

Maser Consulting Connecticut utilized the following codes and standards:

- 2016 Connecticut State Building Code, Incorporating 2012 IBC
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-EIA-222-G
 - Ultimate Wind Speed – 125 mph (3 Second Gust) Per Connecticut Building Code
 - Nominal Wind Speed – 90 mph
 - Service Wind Speed – 60 mph
 - Ice Wind Speed – 40 mph (1" Ice)
 - Exposure Category – C
 - Structure Class - II

Analysis Approach & Assumptions:

The analysis approach used in this structural analysis is based on the premise that if the existing structure is structurally adequate to support the existing and proposed equipment per the aforementioned codes and standards, then the proposed equipment can be installed as intended. Tower Numerics, tnx Tower, a tower and monopole analysis and design program, designed specifically for the telecommunications industry and for all applicable codes and standards was used for this structural analysis.

The following assumptions were considered during this analysis:

- No physical deterioration has occurred in any of the structural components of the monopole.
- The monopole has the same capacity as the day it was erected.
- The monopole and foundation has been installed as they were originally intended.

Calculations:

The calculations are found in Appendix A of this report.

Conclusion:

Maser Consulting Connecticut has determined that the existing 179' tall structural steel galvanized monopole is **ADEQUATE** to support the existing and proposed loading per the aforementioned codes and standards. It has been calculated that the maximum stress ratio is in the base plate. The monopole and its baseplate are stressed to **86.6%** and **93.6%** respectively. Therefore, the proposed **AT&T** equipment **CAN** be installed on the monopole as intended.

Maser Consulting Connecticut reserves the right to amend this report if additional information about the monopole and foundation is provided. The conclusions reached by Maser Consulting Connecticut in this report are only valid for the discrete and linear appurtenances listed in this report. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Very truly yours,
Maser Consulting Connecticut



Petros E. Tsoukalas, P.E.
Geographic Discipline Leader



Vincent DiGirolamo

Section	1	2	3	4
Length (ft)	37.75	53.00	53.00	53.00
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3750	0.3750	0.3750
Socket Length (ft)	4.33	5.92	7.50	54.9765
Top Dia (in)	23.1000	31.5849	43.4924	69.2250
Bot Dia (in)	33.2490	45.8340	57.7420	132.49.9
Grade		A572-65		
Weight (lb)	2846.3	8228.8	10784.9	13249.9

179.0 ft

141.3 ft

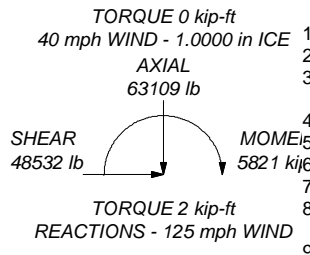
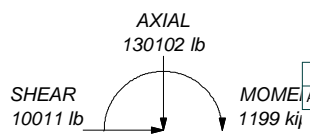
92.6 ft

45.5 ft

0.0 ft



ALL REACTIONS ARE FACTORED



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) 6' x 2" Pipe Mount	181	(2) LGP21401 (ATI)	140
(2) 6' x 2" Pipe Mount	181	(2) LGP21401 (ATI)	140
(2) 6' x 2" Pipe Mount	181	(2) LGP21401 (ATI)	140
Distribution Box	181	HPA-65R-BUU-H8 (ATI)	140
Distribution Box	181	HPA-65R-BUU-H8 (ATI)	140
4' Dipole	181	TPA-65R-LCUUUU-H8 (ATI)	140
10' Omni	181	TPA-65R-LCUUUU-H8 (ATI)	140
(2) 4' Omni	181	7770 (ATI)	140
6' Omni	181	7770 (ATI)	140
6' Omni	181	7770 (ATI)	140
TA 702-3	181	80010966 (ATI)	140
APXV9TM14-ALU (Sprint)	174	80010966 (ATI)	140
ET-X-TU-42-15-37-18-IR-ST (Sprint)	174	80010964 (ATI)	140
APXVSP18-C (Sprint)	174	(2) SBNHH-1D65A (ATI)	140
APXVSP18-C (Sprint)	174	(4) 8' x 2" Mount Pipe (ATI)	140
APXV9TM14-ALU (Sprint)	174	(4) 8' x 2" Mount Pipe (ATI)	140
TD-RRH8x20-25 (Sprint)	174	(4) 8' x 2" Mount Pipe (ATI)	140
TD-RRH8x20-25 (Sprint)	174	DC6 Dome (ATI)	140
TD-RRH8x20-25 (Sprint)	174	DC6 Dome (ATI)	140
APXV9TM14-ALU (Sprint)	174	DC6 Dome (ATI)	140
TA 602-3 (Sprint)	174	RRUS 32 B66 (ATI)	140
ALU RRH-4X45-1900 (Sprint)	170	RRUS 32 (ATI)	140
ALU RRH-4X45-1900 (Sprint)	170	RRUS 32 (ATI)	140
RRH-2X50-800 (Sprint)	170	RRUS 32 (ATI)	140
ALU RRH-4X45-1900 (Sprint)	170	RRU B14 4478 (ATI)	140
RRH-2X50-800 (Sprint)	170	RRU B14 4478 (ATI)	140
RRH-2X50-800 (Sprint)	170	RRUS 32 B66 (ATI)	140
Ring Mount (Sprint)	170	TA 602-3 (ATI)	140
2' dish (Clearwire)	159	RRUS 32 B66 (ATI)	140
LNX-6515DS-VTM (T-Mobile)	151	(2) SBNHH-1D65B (Verizon)	130
LNX-6515DS-VTM (T-Mobile)	151	(2) SBNHH-1D65B (Verizon)	130
RRUS-11 (T-Mobile)	151	(2) SBNHH-1D65B (Verizon)	130
RRUS-11 (T-Mobile)	151	(4) 6' x 2" Pipe Mount (Verizon)	130
RRUS-11 (T-Mobile)	151	(4) 6' x 2" Pipe Mount (Verizon)	130
TMA (T-Mobile)	151	(4) 6' x 2" Pipe Mount (Verizon)	130
TMA (T-Mobile)	151	(2) RRH2X60-PCS (Verizon)	130
TMA (T-Mobile)	151	(2) RRH2X60-PCS (Verizon)	130
8' x 2" Mount Pipe (T-Mobile)	151	(2) RRH2X60-PCS (Verizon)	130
8' x 2" Mount Pipe (T-Mobile)	151	ALU RRH-4X45-1900 (Verizon)	130
8' x 2" Mount Pipe (T-Mobile)	151	ALU RRH-4X45-1900 (Verizon)	130
(2) AIR 21 B2A/B4P With mount Pipe (T-Mobile)	151	ALU RRH-4X45-1900 (Verizon)	130
(2) AIR 21 B2A/B4P With mount Pipe (T-Mobile)	151	RRH2x60-700 (Verizon)	130
(2) AIR 21 B2A/B4P With mount Pipe (T-Mobile)	151	RRH2x60-700 (Verizon)	130
(2) AIR 21 B2A/B4P With mount Pipe (T-Mobile)	151	RRH2x60-700 (Verizon)	130
TA 602-3 (T-Mobile)	151	DC6 Dome (Verizon)	130
LNX-6515DS-VTM (T-Mobile)	151	DC6 Dome (Verizon)	130
RRUS-11 (ATI)	142	BXA-80063/4CF (Verizon)	130
RRUS-11 (ATI)	142	BXA-80063/4CF (Verizon)	130
RRUS-11 (ATI)	142	BXA-80063/6CF (Verizon)	130
RRUS 32 B2 (ATI)	142	BXA-80063/6CF (Verizon)	130
RRUS 32 B2 (ATI)	142	BXA-80063/6CF (Verizon)	130
RRUS 32 B2 (ATI)	142	Pirod 13' Low Profile Platform (Verizon)	130
RRU B14 4478 (ATI)	140	BXA-80063/6CF (Verizon)	130
		2' dish (Clearwire)	126

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. Weld together tower sections have flange connections.
8. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
9. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
10. Welds are fabricated with ER-70S-6 electrodes.
11. TOWER RATING: 86.6%

Maser Consulting Connecticut		Job: 17963030A	
331 Newman Springs Road, Suite 203		Project: CT5122	
Red Bank, NJ 07701		Client: AT&T	Drawn by: vdgirolamo
Phone: 732.383.1950		Code: TIA-222-G	Date: 03/02/18
FAX: 732.383.1984		Path:	App'd: _____
		Scale: NTS	
		Dwg No. E-1	

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tnxTower Maser Consulting Connecticut 331 Newman Springs Road, Suite 203 Red Bank, NJ 07701 Phone: 732.383.1950 FAX: 732.383.1984	Job 17963030A	Page 1 of 31
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	Client AT&T	Designed by vdigirolamo

Tower Input Data

There is a pole section.

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

The following design criteria apply:

ASCE 7-10 Wind Data is used.

Basic wind speed of 125 mph.

Risk Category II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 40 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Weld together tower sections have flange connections..

Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..

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

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

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

Options

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension Bypass Mast Stability Checks Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder 	<ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
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Tapered Pole Section Geometry

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Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	179.00-141.25	37.75	4.33	18	23.1000	33.2490	0.2500	1.0000	A572-65 (65 ksi)
L2	141.25-92.58	53.00	5.92	18	31.5849	45.8340	0.3750	1.5000	A572-65 (65 ksi)
L3	92.58-45.50	53.00	7.50	18	43.4924	57.7420	0.3750	1.5000	A572-65 (65 ksi)
L4	45.50-0.00	53.00		18	54.9755	69.2250	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	23.4564	18.1315	1196.0325	8.1118	11.7348	101.9219	2393.6388	9.0675	3.6256	14.502
	33.7619	26.1847	3602.3567	11.7146	16.8905	213.2772	7209.4536	13.0948	5.4118	21.647
L2	33.2542	37.1476	4571.4330	11.0795	16.0451	284.9110	9148.8811	18.5773	4.8989	13.064
	46.5411	54.1076	14126.5228	16.1379	23.2837	606.7137	28271.6336	27.0589	7.4068	19.751
L3	45.7795	51.3205	12054.0604	15.3067	22.0941	545.5773	24123.9819	25.6651	6.9947	18.652
	58.6328	68.2811	28389.7820	20.3653	29.3329	967.8466	56816.9200	34.1470	9.5026	25.34
L4	57.8712	64.9883	24477.4753	19.3832	27.9276	876.4625	48987.1587	32.5003	9.0157	24.042
	70.2929	81.9487	49078.0698	24.4417	35.1663	1395.5995	98220.7178	40.9821	11.5236	30.73

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 179.00-141.25				1	1	1			
L2 141.25-92.58				1	1	1			
L3 92.58-45.50				1	1	1			
L4 45.50-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
LDF6-50A (1-1/4 FOAM) (Sprint)	B	Surface Ar (CaAa)	6.00 - 174.00	1	1	0.000 0.000	1.5500		0.66
LDF7-50A (1-5/8 FOAM) (T-Mobile)	C	Surface Ar (CaAa)	6.00 - 151.00	6	6	-0.100 0.100	1.9800		0.82
LDF1-50A (1/4 FOAM) (T-Mobile)	C	Surface Ar (CaAa)	6.00 - 151.00	1	1	-0.125 0.125	0.3500		0.06
LDF7-50A (1-5/8 FOAM) (Verizon)	C	Surface Ar (CaAa)	6.00 - 130.00	2	1	0.100 0.300	1.9800		0.82
Step Pegs (Sprint)	C	Surface Ar (CaAa)	6.00 - 179.00	1	1	0.000 0.000	0.0000		1.50

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	Client	AT&T	Designed by	vdigirolamo

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A _A		Weight
						ft ² /ft	plf	
LDF7-50A (1-5/8 FOAM) (Sprint)	B	No	Inside Pole	6.00 - 179.00	4	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
LDF6-50A (1-1/4 FOAM) (Sprint)	B	No	Inside Pole	6.00 - 179.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
LDF5-50A (7/8 FOAM) (Sprint)	B	No	Inside Pole	6.00 - 179.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
HJ4-50 (1/2 AIR) (Sprint)	B	No	Inside Pole	6.00 - 179.00	2	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
						1" Ice	0.00	0.25
LDF6-50A (1-1/4 FOAM) (Sprint)	B	No	Inside Pole	6.00 - 174.00	3	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
LDF1-50A (1/4 FOAM) (T-Mobile)	B	No	Inside Pole	6.00 - 159.00	1	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
LDF7-50A (1-5/8 FOAM) (T-Mobile)	C	No	Inside Pole	6.00 - 151.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM) (At&T)	A	No	Inside Pole	6.00 - 140.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
LDF2-50 (3/8 FOAM) (At&T)	A	No	Inside Pole	6.00 - 140.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
LDF5-50A (7/8 FOAM) (At&T)	A	No	Inside Pole	6.00 - 140.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	Inside Pole	6.00 - 130.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
LDF1-50A (1/4 FOAM) (Verizon)	B	No	Inside Pole	6.00 - 126.00	1	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R	A _F	C _A A _A In Face	C _A A _A Out Face	Weight
			ft ²	ft ²	ft ²	ft ²	lb
L1	179.00-141.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	5.076	0.000	280.05
		C	0.000	0.000	11.924	0.000	201.12
L2	141.25-92.58	A	0.000	0.000	0.000	0.000	501.70
		B	0.000	0.000	7.544	0.000	381.63
		C	0.000	0.000	66.933	0.000	1223.88
L3	92.58-45.50	A	0.000	0.000	0.000	0.000	498.11
		B	0.000	0.000	7.297	0.000	370.05
		C	0.000	0.000	66.901	0.000	1308.82
L4	45.50-0.00	A	0.000	0.000	0.000	0.000	417.91
		B	0.000	0.000	6.122	0.000	310.47
		C	0.000	0.000	56.130	0.000	1098.10

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Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L1	179.00-141.25	A	2.341	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	20.408	0.000	644.44
		C		0.000	0.000	42.762	0.000	840.98
L2	141.25-92.58	A	2.268	0.000	0.000	0.000	0.000	501.70
		B		0.000	0.000	30.328	0.000	923.15
		C		0.000	0.000	172.955	0.000	4407.07
L3	92.58-45.50	A	2.152	0.000	0.000	0.000	0.000	498.11
		B		0.000	0.000	28.649	0.000	867.97
		C		0.000	0.000	171.627	0.000	4507.05
L4	45.50-0.00	A	1.929	0.000	0.000	0.000	0.000	417.91
		B		0.000	0.000	23.120	0.000	694.80
		C		0.000	0.000	140.099	0.000	3587.16

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	179.00-141.25	0.1561	0.3817	0.3815	0.7320
L2	141.25-92.58	0.0666	1.3840	0.1763	1.9045
L3	92.58-45.50	0.0525	1.5083	0.1622	2.2480
L4	45.50-0.00	0.0497	1.3904	0.1625	2.2479

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	1	LDF6-50A (1-1/4 FOAM)	141.25 - 174.00	1.0000	1.0000
L1	2	LDF7-50A (1-5/8 FOAM)	141.25 - 151.00	1.0000	1.0000
L1	3	LDF1-50A (1/4 FOAM)	141.25 - 151.00	1.0000	1.0000
L1	5	Step Pegs	141.25 - 179.00	1.0000	1.0000
L1	4	LDF7-50A (1-5/8 FOAM)	141.25 - 130.00	1.0000	1.0000
L2	1	LDF6-50A (1-1/4 FOAM)	92.58 - 141.25	1.0000	1.0000
L2	2	LDF7-50A (1-5/8 FOAM)	92.58 - 141.25	1.0000	1.0000
L2	3	LDF1-50A (1/4 FOAM)	92.58 - 141.25	1.0000	1.0000
L2	4	LDF7-50A (1-5/8 FOAM)	92.58 - 130.00	1.0000	1.0000
L2	5	Step Pegs	92.58 - 141.25	1.0000	1.0000
L3	1	LDF6-50A (1-1/4 FOAM)	45.50 - 92.58	1.0000	1.0000
L3	2	LDF7-50A (1-5/8 FOAM)	45.50 - 92.58	1.0000	1.0000
L3	3	LDF1-50A (1/4 FOAM)	45.50 - 92.58	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L3	4	LDF7-50A (1-5/8 FOAM)	45.50 - 92.58	1.0000	1.0000
L3	5	Step Pegs	45.50 - 92.58	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA}		Weight
			Horz Lateral	Vert			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	lb
ET-X-TU-42-15-37-18-iR-ST (Sprint)	A	From Face	3.00	0.0000	174.00	No Ice	7.76	4.71	71.90
			0.00			1/2" Ice	8.28	5.51	133.56
			0.00			1" Ice	8.77	6.19	201.83
APXVSPP18-C (Sprint)	B	From Face	3.00	0.0000	174.00	No Ice	8.02	5.28	57.00
			0.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
APXVSPP18-C (Sprint)	C	From Face	3.00	0.0000	174.00	No Ice	8.02	5.28	57.00
			0.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
APXV9TM14-ALU (Sprint)	A	From Face	3.00	0.0000	174.00	No Ice	6.34	3.61	63.00
			0.00			1/2" Ice	6.72	3.97	102.53
			0.00			1" Ice	7.10	4.33	147.12
APXV9TM14-ALU (Sprint)	B	From Face	3.00	0.0000	174.00	No Ice	6.34	3.61	63.00
			0.00			1/2" Ice	6.72	3.97	102.53
			0.00			1" Ice	7.10	4.33	147.12
APXV9TM14-ALU (Sprint)	C	From Face	3.00	0.0000	174.00	No Ice	6.34	3.61	63.00
			0.00			1/2" Ice	6.72	3.97	102.53
			0.00			1" Ice	7.10	4.33	147.12
(2) 6' x 2" Pipe Mount	A	From Face	2.00	0.0000	181.00	No Ice	1.20	1.20	20.00
			0.00			1/2" Ice	1.80	1.80	29.39
			0.00			1" Ice	2.17	2.17	42.81
(2) 6' x 2" Pipe Mount	B	From Face	2.00	0.0000	181.00	No Ice	1.20	1.20	20.00
			0.00			1/2" Ice	1.80	1.80	29.39
			0.00			1" Ice	2.17	2.17	42.81
(2) 6' x 2" Pipe Mount	C	From Face	2.00	0.0000	181.00	No Ice	1.20	1.20	20.00
			0.00			1/2" Ice	1.80	1.80	29.39
			0.00			1" Ice	2.17	2.17	42.81
Distribution Box	A	From Face	2.00	0.0000	181.00	No Ice	5.60	1.87	50.00
			0.00			1/2" Ice	5.92	2.08	82.96
			0.00			1" Ice	6.24	2.30	119.74
Distribution Box	B	From Face	2.00	0.0000	181.00	No Ice	5.60	1.87	50.00
			0.00			1/2" Ice	5.92	2.08	82.96
			0.00			1" Ice	6.24	2.30	119.74
4' Dipole	A	From Face	2.00	0.0000	181.00	No Ice	0.79	0.79	20.00
			0.00			1/2" Ice	1.03	1.03	26.34
			2.00			1" Ice	1.28	1.28	35.48
10' Omni	B	From Face	2.00	0.0000	181.00	No Ice	2.00	2.00	30.00
			0.00			1/2" Ice	3.02	3.02	40.00
			7.00			1" Ice	4.07	4.07	60.00
(2) 4' Omni	C	From Face	2.00	0.0000	181.00	No Ice	1.76	1.76	44.60
			0.00			1/2" Ice	2.25	2.25	62.92
			4.00			1" Ice	2.76	2.76	85.36
6' Omni	A	From Face	2.00	0.0000	181.00	No Ice	2.37	2.37	44.60

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	Client	AT&T	Designed by	vdigirolamo

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral					
			0.00			1/2" Ice	3.08	3.08	66.58
			5.00			1" Ice	3.70	3.70	93.91
6' Omni	B	From Face	2.00	0.0000	181.00	No Ice	2.37	2.37	44.60
			0.00			1/2" Ice	3.08	3.08	66.58
			5.00			1" Ice	3.70	3.70	93.91
TD-RRH8x20-25 (Sprint)	A	From Face	1.50	0.0000	174.00	No Ice	4.03	1.53	76.20
			0.00			1/2" Ice	4.28	1.70	103.25
			0.00			1" Ice	4.54	1.89	133.82
RRH-2X50-800 (Sprint)	B	From Face	1.50	0.0000	170.00	No Ice	1.73	1.33	69.10
			0.00			1/2" Ice	1.90	1.48	86.54
			0.00			1" Ice	2.07	1.64	106.69
ALU RRH-4X45-1900 (Sprint)	C	From Face	1.50	0.0000	170.00	No Ice	2.50	2.50	69.50
			0.00			1/2" Ice	2.71	2.71	95.23
			0.00			1" Ice	2.93	2.93	124.33
TD-RRH8x20-25 (Sprint)	A	From Face	1.50	0.0000	174.00	No Ice	4.03	1.53	76.20
			0.00			1/2" Ice	4.28	1.70	103.25
			0.00			1" Ice	4.54	1.89	133.82
RRH-2X50-800 (Sprint)	B	From Face	1.50	0.0000	170.00	No Ice	1.73	1.33	69.10
			0.00			1/2" Ice	1.90	1.48	86.54
			0.00			1" Ice	2.07	1.64	106.69
ALU RRH-4X45-1900 (Sprint)	C	From Face	1.50	0.0000	170.00	No Ice	2.50	2.50	69.50
			0.00			1/2" Ice	2.71	2.71	95.23
			0.00			1" Ice	2.93	2.93	124.33
TD-RRH8x20-25 (Sprint)	A	From Face	1.50	0.0000	174.00	No Ice	4.03	1.53	76.20
			0.00			1/2" Ice	4.28	1.70	103.25
			0.00			1" Ice	4.54	1.89	133.82
RRH-2X50-800 (Sprint)	B	From Face	1.50	0.0000	170.00	No Ice	1.73	1.33	69.10
			0.00			1/2" Ice	1.90	1.48	86.54
			0.00			1" Ice	2.07	1.64	106.69
ALU RRH-4X45-1900 (Sprint)	C	From Face	1.50	0.0000	170.00	No Ice	2.50	2.50	69.50
			0.00			1/2" Ice	2.71	2.71	95.23
			0.00			1" Ice	2.93	2.93	124.33
(2) AIR 21 B2A/B4P With mount Pipe (T-Mobile)	A	From Face	3.00	0.0000	151.00	No Ice	6.41	5.69	113.40
			0.00			1/2" Ice	6.89	6.54	170.95
			1.00			1" Ice	7.35	7.27	235.30
(2) AIR 21 B2A/B4P With mount Pipe (T-Mobile)	B	From Face	3.00	0.0000	151.00	No Ice	6.41	5.69	113.40
			0.00			1/2" Ice	6.89	6.54	170.95
			1.00			1" Ice	7.35	7.27	235.30
(2) AIR 21 B2A/B4P With mount Pipe (T-Mobile)	C	From Face	3.00	0.0000	151.00	No Ice	6.41	5.69	113.40
			0.00			1/2" Ice	6.89	6.54	170.95
			1.00			1" Ice	7.35	7.27	235.30
LNX-6515DS-VTM (T-Mobile)	A	From Face	3.00	0.0000	151.00	No Ice	11.45	9.60	79.50
			0.00			1/2" Ice	12.06	11.02	166.47
			1.00			1" Ice	12.69	12.29	263.19
LNX-6515DS-VTM (T-Mobile)	B	From Face	3.00	0.0000	151.00	No Ice	11.45	9.60	79.50
			0.00			1/2" Ice	12.06	11.02	166.47
			1.00			1" Ice	12.69	12.29	263.19
LNX-6515DS-VTM (T-Mobile)	C	From Face	3.00	0.0000	151.00	No Ice	11.45	9.60	79.50
			0.00			1/2" Ice	12.06	11.02	166.47
			1.00			1" Ice	12.69	12.29	263.19
RRUS-11 (T-Mobile)	A	From Face	2.00	0.0000	151.00	No Ice	2.52	1.02	55.00
			0.00			1/2" Ice	2.72	1.16	74.32
			0.00			1" Ice	2.92	1.30	96.56
RRUS-11 (T-Mobile)	B	From Face	2.00	0.0000	151.00	No Ice	2.52	1.02	55.00
			0.00			1/2" Ice	2.72	1.16	74.32
			0.00			1" Ice	2.92	1.30	96.56
RRUS-11	C	From Face	2.00	0.0000	151.00	No Ice	2.52	1.02	55.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral					
(T-Mobile)			0.00			1/2" Ice	2.72	1.16	74.32
			0.00			1" Ice	2.92	1.30	96.56
TMA (T-Mobile)	A	From Face	2.00		0.0000	No Ice	1.00	0.27	15.00
			0.00			1/2" Ice	1.13	0.34	22.78
			0.00			1" Ice	1.27	0.41	32.50
TMA (T-Mobile)	B	From Face	2.00		0.0000	No Ice	1.00	0.27	15.00
			0.00			1/2" Ice	1.13	0.34	22.78
			0.00			1" Ice	1.27	0.41	32.50
TMA (T-Mobile)	C	From Face	2.00		0.0000	No Ice	1.00	0.27	15.00
			0.00			1/2" Ice	1.13	0.34	22.78
			0.00			1" Ice	1.27	0.41	32.50
RRUS-11 (AT&T)	A	From Face	1.00		0.0000	No Ice	2.52	1.02	55.00
			0.00			1/2" Ice	2.72	1.16	74.32
			0.00			1" Ice	2.92	1.30	96.56
RRUS-11 (AT&T)	B	From Face	1.00		0.0000	No Ice	2.52	1.02	55.00
			0.00			1/2" Ice	2.72	1.16	74.32
			0.00			1" Ice	2.92	1.30	96.56
RRUS-11 (AT&T)	C	From Face	1.00		0.0000	No Ice	2.52	1.02	55.00
			0.00			1/2" Ice	2.72	1.16	74.32
			0.00			1" Ice	2.92	1.30	96.56
RRUS 32 B2 (AT&T)	A	From Face	1.00		0.0000	No Ice	3.31	2.42	67.90
			0.00			1/2" Ice	3.56	2.64	95.83
			0.00			1" Ice	3.81	2.86	127.37
RRUS 32 B2 (AT&T)	B	From Face	1.00		0.0000	No Ice	3.31	2.42	67.90
			0.00			1/2" Ice	3.56	2.64	95.83
			0.00			1" Ice	3.81	2.86	127.37
RRUS 32 B2 (AT&T)	C	From Face	1.00		0.0000	No Ice	3.31	2.42	67.90
			0.00			1/2" Ice	3.56	2.64	95.83
			0.00			1" Ice	3.81	2.86	127.37
RRUS 32 B66 (AT&T)	A	From Face	1.00		0.0000	No Ice	3.01	2.18	68.00
			0.00			1/2" Ice	3.24	2.38	93.85
			0.00			1" Ice	3.48	2.59	123.13
RRUS 32 B66 (AT&T)	B	From Face	1.00		0.0000	No Ice	3.01	2.18	68.00
			0.00			1/2" Ice	3.24	2.38	93.85
			0.00			1" Ice	3.48	2.59	123.13
RRUS 32 B66 (AT&T)	C	From Face	1.00		0.0000	No Ice	3.01	2.18	68.00
			0.00			1/2" Ice	3.24	2.38	93.85
			0.00			1" Ice	3.48	2.59	123.13
RRUS 32 (AT&T)	A	From Face	1.00		0.0000	No Ice	3.31	2.42	92.00
			0.00			1/2" Ice	3.56	2.64	119.93
			0.00			1" Ice	3.81	2.86	151.47
RRUS 32 (AT&T)	B	From Face	1.00		0.0000	No Ice	3.31	2.42	92.00
			0.00			1/2" Ice	3.56	2.64	119.93
			0.00			1" Ice	3.81	2.86	151.47
RRUS 32 (AT&T)	C	From Face	1.00		0.0000	No Ice	3.31	2.42	92.00
			0.00			1/2" Ice	3.56	2.64	119.93
			0.00			1" Ice	3.81	2.86	151.47
RRU B14 4478 (AT&T)	A	From Face	1.00		0.0000	No Ice	1.86	0.82	47.40
			0.00			1/2" Ice	2.03	0.94	61.55
			0.00			1" Ice	2.20	1.07	78.22
RRU B14 4478 (AT&T)	B	From Face	1.00		0.0000	No Ice	1.86	0.82	47.40
			0.00			1/2" Ice	2.03	0.94	61.55
			0.00			1" Ice	2.20	1.07	78.22
RRU B14 4478 (AT&T)	C	From Face	1.00		0.0000	No Ice	1.86	0.82	47.40
			0.00			1/2" Ice	2.03	0.94	61.55
			0.00			1" Ice	2.20	1.07	78.22
(2) LGP21401	A	From Face	2.00		0.0000	No Ice	1.66	0.44	35.00

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AT&T						vdigirolamo		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	lb
(AT&T)			0.00			1/2" Ice	1.82	0.54	45.89
			0.00			1" Ice	1.98	0.65	59.04
(2) LGP21401	B	From Face	2.00		0.0000	No Ice	1.66	0.44	35.00
(AT&T)			0.00			1/2" Ice	1.82	0.54	45.89
			0.00			1" Ice	1.98	0.65	59.04
(2) LGP21401	C	From Face	2.00		0.0000	No Ice	1.66	0.44	35.00
(AT&T)			0.00			1/2" Ice	1.82	0.54	45.89
			0.00			1" Ice	1.98	0.65	59.04
HPA-65R-BUU-H8	A	From Face	3.00		0.0000	No Ice	12.98	7.52	68.00
(AT&T)			0.00			1/2" Ice	13.56	8.09	141.77
			0.00			1" Ice	14.15	8.67	223.17
HPA-65R-BUU-H8	B	From Face	3.00		0.0000	No Ice	12.98	7.52	68.00
(AT&T)			0.00			1/2" Ice	13.56	8.09	141.77
			0.00			1" Ice	14.15	8.67	223.17
TPA-65R-LCUUUU-H8	A	From Face	3.00		0.0000	No Ice	12.75	7.25	105.00
(AT&T)			0.00			1/2" Ice	13.33	7.82	176.29
			0.00			1" Ice	13.92	8.40	255.16
TPA-65R-LCUUUU-H8	B	From Face	3.00		0.0000	No Ice	12.75	7.25	105.00
(AT&T)			0.00			1/2" Ice	13.33	7.82	176.29
			0.00			1" Ice	13.92	8.40	255.16
7770	A	From Face	3.00		0.0000	No Ice	5.51	2.93	35.00
(AT&T)			0.00			1/2" Ice	5.87	3.27	67.63
			0.00			1" Ice	6.23	3.63	105.06
7770	B	From Face	3.00		0.0000	No Ice	5.51	2.93	35.00
(AT&T)			0.00			1/2" Ice	5.87	3.27	67.63
			0.00			1" Ice	6.23	3.63	105.06
7770	C	From Face	3.00		0.0000	No Ice	5.51	2.93	35.00
(AT&T)			0.00			1/2" Ice	5.87	3.27	67.63
			0.00			1" Ice	6.23	3.63	105.06
80010966	A	From Face	3.00		0.0000	No Ice	17.36	9.40	158.40
(AT&T)			0.00			1/2" Ice	17.99	10.82	271.68
			0.00			1" Ice	18.63	12.09	395.19
80010966	B	From Face	3.00		0.0000	No Ice	17.36	9.40	158.40
(AT&T)			0.00			1/2" Ice	17.99	10.82	271.68
			0.00			1" Ice	18.63	12.09	395.19
80010964	C	From Face	3.00		0.0000	No Ice	7.14	3.68	35.00
(AT&T)			0.00			1/2" Ice	7.52	4.03	79.18
			0.00			1" Ice	7.90	4.40	128.52
(2) SBNHH-1D65A	C	From Face	3.00		0.0000	No Ice	5.88	3.86	33.50
(AT&T)			0.00			1/2" Ice	6.25	4.22	72.53
			0.00			1" Ice	6.62	4.57	116.56
(4) 8' x 2" Mount Pipe	A	From Face	3.00		0.0000	No Ice	1.60	1.60	30.00
(AT&T)			0.00			1/2" Ice	2.42	2.42	42.45
			0.00			1" Ice	3.24	3.24	60.14
(4) 8' x 2" Mount Pipe	B	From Face	3.00		0.0000	No Ice	1.60	1.60	30.00
(AT&T)			0.00			1/2" Ice	2.42	2.42	42.45
			0.00			1" Ice	3.24	3.24	60.14
(4) 8' x 2" Mount Pipe	C	From Face	3.00		0.0000	No Ice	1.60	1.60	30.00
(AT&T)			0.00			1/2" Ice	2.42	2.42	42.45
			0.00			1" Ice	3.24	3.24	60.14
DC6 Dome	A	From Face	2.00		0.0000	No Ice	1.24	1.24	34.00
(AT&T)			0.00			1/2" Ice	1.94	1.94	56.40
			0.00			1" Ice	2.16	2.16	81.70
DC6 Dome	B	From Face	2.00		0.0000	No Ice	1.24	1.24	34.00
(AT&T)			0.00			1/2" Ice	1.94	1.94	56.40
			0.00			1" Ice	2.16	2.16	81.70
DC6 Dome	C	From Face	2.00		0.0000	No Ice	1.24	1.24	34.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral					
(AT&T)			0.00						
			0.00			1/2" Ice	1.94	1.94	56.40
			0.00			1" Ice	2.16	2.16	81.70
8' x 2" Mount Pipe (T-Mobile)	C	From Face	1.00	0.0000	151.00	No Ice	1.60	1.60	30.00
			0.00			1/2" Ice	2.42	2.42	42.45
			0.00			1" Ice	3.24	3.24	60.14
8' x 2" Mount Pipe (T-Mobile)	C	From Face	1.00	0.0000	151.00	No Ice	1.60	1.60	30.00
			0.00			1/2" Ice	2.42	2.42	42.45
			0.00			1" Ice	3.24	3.24	60.14
8' x 2" Mount Pipe (T-Mobile)	C	From Face	1.00	0.0000	151.00	No Ice	1.60	1.60	30.00
			0.00			1/2" Ice	2.42	2.42	42.45
			0.00			1" Ice	3.24	3.24	60.14
BXA-80063/4CF (Verizon)	A	From Face	3.00	0.0000	130.00	No Ice	4.71	2.25	9.90
			0.00			1/2" Ice	5.03	2.55	37.73
			0.00			1" Ice	5.35	2.85	69.84
BXA-80063/4CF (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	4.71	2.25	9.90
			0.00			1/2" Ice	5.03	2.55	37.73
			0.00			1" Ice	5.35	2.85	69.84
BXA-80063/4CF (Verizon)	C	From Face	3.00	0.0000	130.00	No Ice	4.71	2.25	9.90
			0.00			1/2" Ice	5.03	2.55	37.73
			0.00			1" Ice	5.35	2.85	69.84
BXA-80063/6CF (Verizon)	A	From Face	3.00	0.0000	130.00	No Ice	14.41	5.72	38.00
			0.00			1/2" Ice	14.92	6.17	120.76
			0.00			1" Ice	15.44	6.63	210.38
BXA-80063/6CF (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	14.41	5.72	38.00
			0.00			1/2" Ice	14.92	6.17	120.76
			0.00			1" Ice	15.44	6.63	210.38
BXA-80063/6CF (Verizon)	C	From Face	3.00	0.0000	130.00	No Ice	14.41	5.72	38.00
			0.00			1/2" Ice	14.92	6.17	120.76
			0.00			1" Ice	15.44	6.63	210.38
(2) SBNHH-1D65B (Verizon)	A	From Face	3.00	0.0000	130.00	No Ice	8.20	6.89	74.73
			0.00			1/2" Ice	8.70	7.95	141.97
			0.00			1" Ice	9.19	8.81	217.08
(2) SBNHH-1D65B (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	8.20	6.89	74.73
			0.00			1/2" Ice	8.70	7.95	141.97
			0.00			1" Ice	9.19	8.81	217.08
(2) SBNHH-1D65B (Verizon)	C	From Face	3.00	0.0000	130.00	No Ice	8.20	6.89	74.73
			0.00			1/2" Ice	8.70	7.95	141.97
			0.00			1" Ice	9.19	8.81	217.08
(4) 6' x 2" Pipe Mount (Verizon)	A	From Face	3.00	0.0000	130.00	No Ice	1.20	1.20	20.00
			0.00			1/2" Ice	1.80	1.80	29.39
			0.00			1" Ice	2.17	2.17	42.81
(4) 6' x 2" Pipe Mount (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	1.20	1.20	20.00
			0.00			1/2" Ice	1.80	1.80	29.39
			0.00			1" Ice	2.17	2.17	42.81
(4) 6' x 2" Pipe Mount (Verizon)	C	From Face	3.00	0.0000	130.00	No Ice	1.20	1.20	20.00
			0.00			1/2" Ice	1.80	1.80	29.39
			0.00			1" Ice	2.17	2.17	42.81
(2) RRH2X60-PCS (Verizon)	A	From Face	3.00	0.0000	130.00	No Ice	2.20	1.72	55.00
			0.00			1/2" Ice	2.39	1.90	75.35
			0.00			1" Ice	2.59	2.09	98.71
(2) RRH2X60-PCS (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	2.20	1.72	55.00
			0.00			1/2" Ice	2.39	1.90	75.35
			0.00			1" Ice	2.59	2.09	98.71
(2) RRH2X60-PCS (Verizon)	C	From Face	3.00	0.0000	130.00	No Ice	2.20	1.72	55.00
			0.00			1/2" Ice	2.39	1.90	75.35
			0.00			1" Ice	2.59	2.09	98.71
ALU RRH-4X45-1900	A	From Face	3.00	0.0000	130.00	No Ice	2.50	2.50	69.50

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Lateral					
(Verizon)				0.00					95.23
				0.00		1/2" Ice	2.71	2.71	124.33
				0.00		1" Ice	2.93	2.93	69.50
ALU RRH-4X45-1900 (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	2.50	2.50	95.23
			0.00			1/2" Ice	2.71	2.71	124.33
			0.00			1" Ice	2.93	2.93	69.50
ALU RRH-4X45-1900 (Verizon)	C	From Face	3.00	0.0000	130.00	No Ice	2.50	2.50	95.23
			0.00			1/2" Ice	2.71	2.71	124.33
			0.00			1" Ice	2.93	2.93	50.00
RRH2x60-700 (Verizon)	A	From Face	3.00	0.0000	130.00	No Ice	1.73	1.33	66.28
			0.00			1/2" Ice	1.90	1.48	85.25
			0.00			1" Ice	2.07	1.64	50.00
RRH2x60-700 (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	1.73	1.33	66.28
			0.00			1/2" Ice	1.90	1.48	85.25
			0.00			1" Ice	2.07	1.64	50.00
RRH2x60-700 (Verizon)	C	From Face	3.00	0.0000	130.00	No Ice	1.73	1.33	66.28
			0.00			1/2" Ice	1.90	1.48	85.25
			0.00			1" Ice	2.07	1.64	34.00
DC6 Dome (Verizon)	A	From Face	3.00	0.0000	130.00	No Ice	1.24	1.24	56.40
			0.00			1/2" Ice	1.94	1.94	81.70
			0.00			1" Ice	2.16	2.16	34.00
DC6 Dome (Verizon)	B	From Face	3.00	0.0000	130.00	No Ice	1.24	1.24	56.40
			0.00			1/2" Ice	1.94	1.94	81.70
			0.00			1" Ice	2.16	2.16	339.00
TA 702-3	A	None		0.0000	181.00	No Ice	5.64	5.64	429.00
						1/2" Ice	6.55	6.55	519.00
						1" Ice	7.46	7.46	774.00
TA 602-3 (Sprint)	B	None		0.0000	174.00	No Ice	11.59	11.59	990.00
						1/2" Ice	15.44	15.44	1206.00
						1" Ice	19.29	19.29	90.00
Ring Mount (Sprint)	C	None		0.0000	170.00	No Ice	1.40	1.40	130.00
						1/2" Ice	2.40	2.40	170.00
						1" Ice	3.40	3.40	774.00
TA 602-3 (T-Mobile)	A	None		0.0000	151.00	No Ice	11.59	11.59	990.00
						1/2" Ice	15.44	15.44	1206.00
						1" Ice	19.29	19.29	774.00
TA 602-3 (AT&T)	A	None		0.0000	140.00	No Ice	11.59	11.59	990.00
						1/2" Ice	15.44	15.44	1206.00
						1" Ice	19.29	19.29	1300.00
Pirod 13' Low Profile Platform (Verizon)	A	None		0.0000	130.00	No Ice	15.70	15.70	1765.00
						1/2" Ice	20.10	20.10	2230.00
						1" Ice	24.50	24.50	

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral							Vert
2' dish (Clearwire)	A	Paraboloid w/o Radome	From Face	1.50	0.00	Worst		126.00	2.00	No Ice	3.14	15.00
										1/2" Ice	3.41	47.50

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				ft	°	°	ft	ft	ft ²	lb
2' dish (Clearwire)	C	Paraboloid w/o Radome	From Face	0.00 1.50 0.00 0.00	Worst		159.00	2.00	1" Ice No Ice 1/2" Ice 1" Ice	65.01 15.00 47.50 65.01

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
L1 179.00-141.25	159.11	1.396	53	90.000	A	0.000	90.000	90.000	100.00	0.000	0.000
					B	0.000	90.000		100.00	5.076	0.000
					C	0.000	90.000		100.00	11.924	0.000
L2 141.25-92.58	115.83	1.305	50	161.818	A	0.000	161.818	161.818	100.00	0.000	0.000
					B	0.000	161.818		100.00	7.544	0.000
					C	0.000	161.818		100.00	66.933	0.000
L3 92.58-45.50	68.50	1.169	44	204.822	A	0.000	204.822	204.822	100.00	0.000	0.000
					B	0.000	204.822		100.00	7.297	0.000
					C	0.000	204.822		100.00	66.901	0.000
L4 45.50-0.00	22.98	0.929	35	242.978	A	0.000	242.978	242.978	100.00	0.000	0.000
					B	0.000	242.978		100.00	6.122	0.000
					C	0.000	242.978		100.00	56.130	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	in	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
L1 179.00-141.25	159.11	1.396	5	2.3407	104.727	A	0.000	104.727	104.727	100.00	0.000	0.000
						B	0.000	104.727		100.00	20.408	0.000
						C	0.000	104.727		100.00	42.762	0.000
L2 141.25-92.58	115.83	1.305	5	2.2676	180.805	A	0.000	180.805	180.805	100.00	0.000	0.000
						B	0.000	180.805		100.00	30.328	0.000
						C	0.000	180.805		100.00	172.955	0.000
L3 92.58-45.50	68.50	1.169	5	2.1515	222.615	A	0.000	222.615	222.615	100.00	0.000	0.000
						B	0.000	222.615		100.00	28.649	0.000
						C	0.000	222.615		100.00	171.627	0.000
L4 45.50-0.00	22.98	0.929	4	1.9289	259.294	A	0.000	259.294	259.294	100.00	0.000	0.000
						B	0.000	259.294		100.00	23.120	0.000
						C	0.000	259.294		100.00	140.099	0.000

Tower Pressure - Service

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$$G_H = 1.100$$

Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
L1 179.00-141.25	159.11	1.396	11	90.000	A	0.000	90.000	90.000	100.00	0.000	0.000
					B	0.000	90.000		100.00	5.076	0.000
					C	0.000	90.000		100.00	11.924	0.000
L2 141.25-92.58	115.83	1.305	10	161.818	A	0.000	161.818	161.818	100.00	0.000	0.000
					B	0.000	161.818		100.00	7.544	0.000
					C	0.000	161.818		100.00	66.933	0.000
L3 92.58-45.50	68.50	1.169	9	204.822	A	0.000	204.822	204.822	100.00	0.000	0.000
					B	0.000	204.822		100.00	7.297	0.000
					C	0.000	204.822		100.00	66.901	0.000
L4 45.50-0.00	22.98	0.929	7	242.978	A	0.000	242.978	242.978	100.00	0.000	0.000
					B	0.000	242.978		100.00	6.122	0.000
					C	0.000	242.978		100.00	56.130	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			psf			ft ²	lb	plf	
L1 179.00-141.25	481.17	2846.33	A	1	0.65	53	1	1	90.000	3411.17	90.36	C
			B	1	0.65		1	1	90.000			
			C	1	0.65		1	1	90.000			
L2 141.25-92.58	2107.21	8228.84	A	1	0.712	50	1	1	161.818	6276.18	128.95	A
			B	1	0.65		1	1	161.818			
			C	1	0.65		1	1	161.818			
L3 92.58-45.50	2176.98	10784.95	A	1	0.703	44	1	1	204.822	7003.11	148.75	A
			B	1	0.65		1	1	204.822			
			C	1	0.65		1	1	204.822			
L4 45.50-0.00	1826.48	13249.90	A	1	0.65	35	1	1	242.978	6107.88	134.24	C
			B	1	0.65		1	1	242.978			
			C	1	0.65		1	1	242.978			
Sum Weight:	6591.84	35110.01						OTM	1889.81 kip-ft	22798.33		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			psf			ft ²	lb	plf	
L1 179.00-141.25	481.17	2846.33	A	1	0.65	53	1	1	90.000	3411.17	90.36	C
			B	1	0.65		1	1	90.000			
			C	1	0.65		1	1	90.000			
L2 141.25-92.58	2107.21	8228.84	A	1	0.65	50	1	1	161.818	6276.18	128.95	B
			B	1	0.712		1	1	161.818			
			C	1	0.65		1	1	161.818			
L3 92.58-45.50	2176.98	10784.95	A	1	0.65	44	1	1	204.822	7003.11	148.75	B
			B	1	0.65		1	1	204.822			
			C	1	0.703		1	1	204.822			

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Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L4 45.50-0.00	1826.48	13249.90	C	1	0.65	35	1	1	204.822	6107.88	134.24	C
			A	1	0.65		1	1	242.978			
			B	1	0.65		1	1	242.978			
			C	1	0.65		1	1	242.978			
Sum Weight:	6591.84	35110.01						OTM	1889.81 kip-ft	22798.33		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 179.00-141.25	481.17	2846.33	A	1	0.65	53	1	1	90.000	3411.17	90.36	C
			B	1	0.65		1	1	90.000			
			C	1	0.65		1	1	90.000			
L2 141.25-92.58	2107.21	8228.84	A	1	0.65	50	1	1	161.818	6754.01	138.77	C
			B	1	0.651		1	1	161.818			
			C	1	0.766		1	1	161.818			
L3 92.58-45.50	2176.98	10784.95	A	1	0.65	44	1	1	204.822	7356.16	156.25	C
			B	1	0.65		1	1	204.822			
			C	1	0.738		1	1	204.822			
L4 45.50-0.00	1826.48	13249.90	A	1	0.65	35	1	1	242.978	6155.98	135.30	C
			B	1	0.65		1	1	242.978			
			C	1	0.65		1	1	242.978			
			C	1	0.655		1	1	242.978			
Sum Weight:	6591.84	35110.01						OTM	1970.45 kip-ft	23677.32		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 179.00-141.25	1485.42	6174.56	A	1	1.2	5	1	1	104.727	750.39	19.88	C
			B	1	1.2		1	1	104.727			
			C	1	1.2		1	1	104.727			
L2 141.25-92.58	5831.93	13890.20	A	1	1.2	5	1	1	180.805	1595.87	32.79	A
			B	1	1.2		1	1	180.805			
			C	1	1.2		1	1	180.805			
L3 92.58-45.50	5873.12	17482.16	A	1	1.2	5	1	1	222.615	1712.19	36.37	A
			B	1	1.2		1	1	222.615			
			C	1	1.2		1	1	222.615			
L4 45.50-0.00	4699.86	20295.65	A	1	1.2	4	1	1	259.294	1232.21	27.08	C
			B	1	1.2		1	1	259.294			
			C	1	1.2		1	1	259.294			
			C	1	1.2		1	1	259.294			
Sum Weight:	17890.33	57842.57						OTM	449.85 kip-ft	5290.66		

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Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 179.00-141.25	1485.42	6174.56	A	1	1.2	5	1	1	104.727	750.39	19.88	C
			B	1	1.2		1	1	104.727			
			C	1	1.2		1	1	104.727			
L2 141.25-92.58	5831.93	13890.20	A	1	1.2	5	1	1	180.805	1595.87	32.79	B
			B	1	1.2		1	1	180.805			
			C	1	1.2		1	1	180.805			
L3 92.58-45.50	5873.12	17482.16	A	1	1.2	5	1	1	222.615	1712.19	36.37	B
			B	1	1.2		1	1	222.615			
			C	1	1.2		1	1	222.615			
L4 45.50-0.00	4699.86	20295.65	A	1	1.2	4	1	1	259.294	1232.21	27.08	C
			B	1	1.2		1	1	259.294			
			C	1	1.2		1	1	259.294			
Sum Weight:	17890.33	57842.57						OTM	449.85 kip-ft	5290.66		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 179.00-141.25	1485.42	6174.56	A	1	1.2	5	1	1	104.727	750.39	19.88	C
			B	1	1.2		1	1	104.727			
			C	1	1.2		1	1	104.727			
L2 141.25-92.58	5831.93	13890.20	A	1	1.2	5	1	1	180.805	1724.73	35.44	C
			B	1	1.2		1	1	180.805			
			C	1	1.2		1	1	180.805			
L3 92.58-45.50	5873.12	17482.16	A	1	1.2	5	1	1	222.615	1818.05	38.62	C
			B	1	1.2		1	1	222.615			
			C	1	1.2		1	1	222.615			
L4 45.50-0.00	4699.86	20295.65	A	1	1.2	4	1	1	259.294	1547.69	34.02	C
			B	1	1.2		1	1	259.294			
			C	1	1.2		1	1	259.294			
Sum Weight:	17890.33	57842.57						OTM	479.28 kip-ft	5840.86		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
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Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 179.00-141.25	481.17	2846.33	A	1	0.65	11	1	1	90.000	703.20	18.63	C
			B	1	0.65		1	1	90.000			
			C	1	0.65		1	1	90.000			
L2 141.25-92.58	2107.21	8228.84	A	1	0.712	10	1	1	161.818	1293.82	26.58	A
			B	1	0.65		1	1	161.818			
			C	1	0.65		1	1	161.818			
L3 92.58-45.50	2176.98	10784.95	A	1	0.703	9	1	1	204.822	1443.67	30.66	A
			B	1	0.65		1	1	204.822			
			C	1	0.65		1	1	204.822			
L4 45.50-0.00	1826.48	13249.90	A	1	0.65	7	1	1	242.978	1259.12	27.67	C
			B	1	0.65		1	1	242.978			
			C	1	0.65		1	1	242.978			
Sum Weight:	6591.84	35110.01						OTM	389.58 kip-ft	4699.82		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 179.00-141.25	481.17	2846.33	A	1	0.65	11	1	1	90.000	703.20	18.63	C
			B	1	0.65		1	1	90.000			
			C	1	0.65		1	1	90.000			
L2 141.25-92.58	2107.21	8228.84	A	1	0.65	10	1	1	161.818	1293.82	26.58	B
			B	1	0.712		1	1	161.818			
			C	1	0.65		1	1	161.818			
L3 92.58-45.50	2176.98	10784.95	A	1	0.65	9	1	1	204.822	1443.67	30.66	B
			B	1	0.703		1	1	204.822			
			C	1	0.65		1	1	204.822			
L4 45.50-0.00	1826.48	13249.90	A	1	0.65	7	1	1	242.978	1259.12	27.67	C
			B	1	0.65		1	1	242.978			
			C	1	0.65		1	1	242.978			
Sum Weight:	6591.84	35110.01						OTM	389.58 kip-ft	4699.82		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
L1 179.00-141.25	481.17	2846.33	A	1	0.65	11	1	1	90.000	703.20	18.63	C
			B	1	0.65		1	1	90.000			
			C	1	0.65		1	1	90.000			
L2 141.25-92.58	2107.21	8228.84	A	1	0.65	10	1	1	161.818	1392.32	28.61	C
			B	1	0.651		1	1	161.818			
			C	1	0.766		1	1	161.818			
L3	2176.98	10784.95	A	1	0.65	9	1	1	204.822	1516.45	32.21	C

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	Client	AT&T	Designed by	vdigirolamo

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
92.58-45.50			B	1	0.65		1	1	204.822			
			C	1	0.738		1	1	204.822			
L4 45.50-0.00	1826.48	13249.90	A	1	0.65	7	1	1	242.978	1269.04	27.89	C
			B	1	0.65		1	1	242.978			
			C	1	0.655		1	1	242.978			
Sum Weight:	6591.84	35110.01						OTM	406.20 kip-ft	4881.02		

Discrete Appurtenance Pressures - No Ice G_H = 1.100

Description	Aiming Azimuth	Weight	Offset _x	Offset _z	z	K _z	q _z	C _{AAC} Front	C _{AAC} Side
	°	lb	ft	ft	ft		psf	ft ²	ft ²
ET-X-TU-42-15-37-18-i R-ST	300.0000	71.90	-3.48	-2.01	174.00	1.422	54	7.76	4.71
APXVSP18-C	60.0000	57.00	3.48	-2.01	174.00	1.422	54	8.02	5.28
APXVSP18-C	180.0000	57.00	0.00	4.02	174.00	1.422	54	8.02	5.28
APXV9TM14-ALU	300.0000	63.00	-3.48	-2.01	174.00	1.422	54	6.34	3.61
APXV9TM14-ALU	60.0000	63.00	3.48	-2.01	174.00	1.422	54	6.34	3.61
APXV9TM14-ALU	180.0000	63.00	0.00	4.02	174.00	1.422	54	6.34	3.61
6' x 2" Pipe Mount	300.0000	40.00	-2.57	-1.48	181.00	1.434	54	2.40	2.40
6' x 2" Pipe Mount	60.0000	40.00	2.57	-1.48	181.00	1.434	54	2.40	2.40
6' x 2" Pipe Mount	180.0000	40.00	0.00	2.96	181.00	1.434	54	2.40	2.40
Distribution Box	300.0000	50.00	-2.57	-1.48	181.00	1.434	54	5.60	1.87
Distribution Box	60.0000	50.00	2.57	-1.48	181.00	1.434	54	5.60	1.87
4' Dipole	300.0000	20.00	-2.57	-1.48	183.00	1.437	55	0.79	0.79
10' Omni	60.0000	30.00	2.57	-1.48	188.00	1.446	55	2.00	2.00
4' Omni	180.0000	89.20	0.00	2.96	185.00	1.441	55	3.52	3.52
6' Omni	300.0000	44.60	-2.57	-1.48	186.00	1.442	55	2.37	2.37
6' Omni	60.0000	44.60	2.57	-1.48	186.00	1.442	55	2.37	2.37
TD-RRH8x20-25	300.0000	76.20	-2.18	-1.26	174.00	1.422	54	4.03	1.53
RRH-2X50-800	60.0000	69.10	2.22	-1.28	170.00	1.415	54	1.73	1.33
ALU RRH-4X45-1900	180.0000	69.50	0.00	2.56	170.00	1.415	54	2.50	2.50
TD-RRH8x20-25	300.0000	76.20	-2.18	-1.26	174.00	1.422	54	4.03	1.53
RRH-2X50-800	60.0000	69.10	2.22	-1.28	170.00	1.415	54	1.73	1.33
ALU RRH-4X45-1900	180.0000	69.50	0.00	2.56	170.00	1.415	54	2.50	2.50
TD-RRH8x20-25	300.0000	76.20	-2.18	-1.26	174.00	1.422	54	4.03	1.53
RRH-2X50-800	60.0000	69.10	2.22	-1.28	170.00	1.415	54	1.73	1.33
ALU RRH-4X45-1900	180.0000	69.50	0.00	2.56	170.00	1.415	54	2.50	2.50
AIR 21 B2A/B4P With mount Pipe	300.0000	226.80	-3.70	-2.14	152.00	1.382	53	12.82	11.38
AIR 21 B2A/B4P With mount Pipe	60.0000	226.80	3.70	-2.14	152.00	1.382	53	12.82	11.38
AIR 21 B2A/B4P With mount Pipe	180.0000	226.80	0.00	4.28	152.00	1.382	53	12.82	11.38
LNx-6515DS-VTM	300.0000	79.50	-3.70	-2.14	152.00	1.382	53	11.45	9.60
LNx-6515DS-VTM	60.0000	79.50	3.70	-2.14	152.00	1.382	53	11.45	9.60
LNx-6515DS-VTM	180.0000	79.50	0.00	4.28	152.00	1.382	53	11.45	9.60
RRUS-11	300.0000	55.00	-2.84	-1.64	151.00	1.380	52	2.52	1.02
RRUS-11	60.0000	55.00	2.84	-1.64	151.00	1.380	52	2.52	1.02
RRUS-11	180.0000	55.00	0.00	3.28	151.00	1.380	52	2.52	1.02
TMA	300.0000	15.00	-2.84	-1.64	151.00	1.380	52	1.00	0.27
TMA	60.0000	15.00	2.84	-1.64	151.00	1.380	52	1.00	0.27
TMA	180.0000	15.00	0.00	3.28	151.00	1.380	52	1.00	0.27

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Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAc} Front ft ²	C _{AAc} Side ft ²
RRUS-11	300.0000	55.00	-2.06	-1.19	142.00	1.363	52	2.52	1.02
RRUS-11	60.0000	55.00	2.06	-1.19	142.00	1.363	52	2.52	1.02
RRUS-11	180.0000	55.00	0.00	2.38	142.00	1.363	52	2.52	1.02
RRUS 32 B2	300.0000	67.90	-2.06	-1.19	142.00	1.363	52	3.31	2.42
RRUS 32 B2	60.0000	67.90	2.06	-1.19	142.00	1.363	52	3.31	2.42
RRUS 32 B2	180.0000	67.90	0.00	2.38	142.00	1.363	52	3.31	2.42
RRUS 32 B66	300.0000	68.00	-2.06	-1.19	140.00	1.359	52	3.01	2.18
RRUS 32 B66	60.0000	68.00	2.06	-1.19	140.00	1.359	52	3.01	2.18
RRUS 32 B66	180.0000	68.00	0.00	2.38	140.00	1.359	52	3.01	2.18
RRUS 32	300.0000	92.00	-2.06	-1.19	140.00	1.359	52	3.31	2.42
RRUS 32	60.0000	92.00	2.06	-1.19	140.00	1.359	52	3.31	2.42
RRUS 32	180.0000	92.00	0.00	2.38	140.00	1.359	52	3.31	2.42
RRU B14 4478	300.0000	47.40	-2.06	-1.19	140.00	1.359	52	1.86	0.82
RRU B14 4478	60.0000	47.40	2.06	-1.19	140.00	1.359	52	1.86	0.82
RRU B14 4478	180.0000	47.40	0.00	2.38	140.00	1.359	52	1.86	0.82
LGP21401	300.0000	70.00	-2.93	-1.69	140.00	1.359	52	3.31	0.89
LGP21401	60.0000	70.00	2.93	-1.69	140.00	1.359	52	3.31	0.89
LGP21401	180.0000	70.00	0.00	3.38	140.00	1.359	52	3.31	0.89
HPA-65R-BUU-H8	300.0000	68.00	-3.79	-2.19	140.00	1.359	52	12.98	7.52
HPA-65R-BUU-H8	60.0000	68.00	3.79	-2.19	140.00	1.359	52	12.98	7.52
TPA-65R-LCUUUU-H8	300.0000	105.00	-3.79	-2.19	140.00	1.359	52	12.75	7.25
TPA-65R-LCUUUU-H8	60.0000	105.00	3.79	-2.19	140.00	1.359	52	12.75	7.25
7770	300.0000	35.00	-3.79	-2.19	140.00	1.359	52	5.51	2.93
7770	60.0000	35.00	3.79	-2.19	140.00	1.359	52	5.51	2.93
7770	180.0000	35.00	0.00	4.38	140.00	1.359	52	5.51	2.93
80010966	300.0000	158.40	-3.79	-2.19	140.00	1.359	52	17.36	9.40
80010966	60.0000	158.40	3.79	-2.19	140.00	1.359	52	17.36	9.40
80010964	180.0000	35.00	0.00	4.38	140.00	1.359	52	7.14	3.68
SBNHH-1D65A	180.0000	67.00	0.00	4.38	140.00	1.359	52	11.77	7.73
8' x 2" Mount Pipe	300.0000	120.00	-3.79	-2.19	140.00	1.359	52	6.40	6.40
8' x 2" Mount Pipe	60.0000	120.00	3.79	-2.19	140.00	1.359	52	6.40	6.40
8' x 2" Mount Pipe	180.0000	120.00	0.00	4.38	140.00	1.359	52	6.40	6.40
DC6 Dome	300.0000	34.00	-2.93	-1.69	140.00	1.359	52	1.24	1.24
DC6 Dome	60.0000	34.00	2.93	-1.69	140.00	1.359	52	1.24	1.24
DC6 Dome	180.0000	34.00	0.00	3.38	140.00	1.359	52	1.24	1.24
8' x 2" Mount Pipe	180.0000	30.00	0.00	2.28	151.00	1.380	52	1.60	1.60
8' x 2" Mount Pipe	180.0000	30.00	0.00	2.28	151.00	1.380	52	1.60	1.60
8' x 2" Mount Pipe	180.0000	30.00	0.00	2.28	151.00	1.380	52	1.60	1.60
BXA-80063/4CF	300.0000	9.90	-3.89	-2.25	130.00	1.337	51	4.71	2.25
BXA-80063/4CF	60.0000	9.90	3.89	-2.25	130.00	1.337	51	4.71	2.25
BXA-80063/4CF	180.0000	9.90	0.00	4.49	130.00	1.337	51	4.71	2.25
BXA-80063/6CF	300.0000	38.00	-3.89	-2.25	130.00	1.337	51	14.41	5.72
BXA-80063/6CF	60.0000	38.00	3.89	-2.25	130.00	1.337	51	14.41	5.72
BXA-80063/6CF	180.0000	38.00	0.00	4.49	130.00	1.337	51	14.41	5.72
SBNHH-1D65B	300.0000	149.46	-3.89	-2.25	130.00	1.337	51	16.40	13.77
SBNHH-1D65B	60.0000	149.46	3.89	-2.25	130.00	1.337	51	16.40	13.77
SBNHH-1D65B	180.0000	149.46	0.00	4.49	130.00	1.337	51	16.40	13.77
6' x 2" Pipe Mount	300.0000	80.00	-3.89	-2.25	130.00	1.337	51	4.80	4.80
6' x 2" Pipe Mount	60.0000	80.00	3.89	-2.25	130.00	1.337	51	4.80	4.80
6' x 2" Pipe Mount	180.0000	80.00	0.00	4.49	130.00	1.337	51	4.80	4.80
RRH2X60-PCS	300.0000	110.00	-3.89	-2.25	130.00	1.337	51	4.40	3.45
RRH2X60-PCS	60.0000	110.00	3.89	-2.25	130.00	1.337	51	4.40	3.45
RRH2X60-PCS	180.0000	110.00	0.00	4.49	130.00	1.337	51	4.40	3.45
ALU RRH-4X45-1900	300.0000	69.50	-3.89	-2.25	130.00	1.337	51	2.50	2.50
ALU RRH-4X45-1900	60.0000	69.50	3.89	-2.25	130.00	1.337	51	2.50	2.50
ALU RRH-4X45-1900	180.0000	69.50	0.00	4.49	130.00	1.337	51	2.50	2.50
RRH2x60-700	300.0000	50.00	-3.89	-2.25	130.00	1.337	51	1.73	1.33
RRH2x60-700	60.0000	50.00	3.89	-2.25	130.00	1.337	51	1.73	1.33
RRH2x60-700	180.0000	50.00	0.00	4.49	130.00	1.337	51	1.73	1.33
DC6 Dome	300.0000	34.00	-3.89	-2.25	130.00	1.337	51	1.24	1.24
DC6 Dome	60.0000	34.00	3.89	-2.25	130.00	1.337	51	1.24	1.24

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Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAc} Front ft ²	C _{AAc} Side ft ²
TA 702-3	0.0000	339.00	0.00	0.00	181.00	1.434	54	5.64	5.64
TA 602-3	0.0000	774.00	0.00	0.00	174.00	1.422	54	11.59	11.59
Ring Mount	0.0000	90.00	0.00	0.00	170.00	1.415	54	1.40	1.40
TA 602-3	0.0000	774.00	0.00	0.00	151.00	1.380	52	11.59	11.59
TA 602-3	0.0000	774.00	0.00	0.00	140.00	1.359	52	11.59	11.59
Pirod 13' Low Profile Platform	0.0000	1300.00	0.00	0.00	130.00	1.337	51	15.70	15.70
Sum Weight:		10858.88							

Discrete Appurtenance Pressures - With Ice G_H = 1.100

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAc} Front ft ²	C _{AAc} Side ft ²	t _z in
ET-X-TU-42-15-37-18-i R-ST	300.0000	441.52	-3.48	-2.01	174.00	1.422	6	10.18	8.14	2.3617
APXVSP18-C	60.0000	354.18	3.48	-2.01	174.00	1.422	6	10.25	7.49	2.3617
APXVSP18-C	180.0000	354.18	0.00	4.02	174.00	1.422	6	10.25	7.49	2.3617
APXV9TM14-ALU	300.0000	302.89	-3.48	-2.01	174.00	1.422	6	8.18	5.35	2.3617
APXV9TM14-ALU	60.0000	302.89	3.48	-2.01	174.00	1.422	6	8.18	5.35	2.3617
APXV9TM14-ALU	180.0000	302.89	0.00	4.02	174.00	1.422	6	8.18	5.35	2.3617
6' x 2" Pipe Mount	300.0000	214.34	-2.57	-1.48	181.00	1.434	6	6.47	6.47	2.3711
6' x 2" Pipe Mount	60.0000	214.34	2.57	-1.48	181.00	1.434	6	6.47	6.47	2.3711
6' x 2" Pipe Mount	180.0000	214.34	0.00	2.96	181.00	1.434	6	6.47	6.47	2.3711
Distribution Box	300.0000	247.50	-2.57	-1.48	181.00	1.434	6	7.18	2.96	2.3711
Distribution Box	60.0000	247.50	2.57	-1.48	181.00	1.434	6	7.18	2.96	2.3711
4' Dipole	300.0000	80.37	-2.57	-1.48	183.00	1.437	6	2.03	2.03	2.3711
10' Omni	60.0000	77.42	2.57	-1.48	188.00	1.446	6	6.84	6.84	2.3711
4' Omni	180.0000	364.54	0.00	2.96	185.00	1.441	6	8.54	8.54	2.3711
6' Omni	300.0000	211.97	-2.57	-1.48	186.00	1.442	6	5.53	5.53	2.3711
6' Omni	60.0000	211.97	2.57	-1.48	186.00	1.442	6	5.53	5.53	2.3711
TD-RRH8x20-25	300.0000	241.70	-2.18	-1.26	174.00	1.422	6	5.29	2.44	2.3617
RRH-2X50-800	60.0000	180.84	2.22	-1.28	170.00	1.415	6	2.58	2.10	2.3563
ALU RRH-4X45-1900	180.0000	226.77	0.00	2.56	170.00	1.415	6	3.56	3.56	2.3563
TD-RRH8x20-25	300.0000	241.70	-2.18	-1.26	174.00	1.422	6	5.29	2.44	2.3617
RRH-2X50-800	60.0000	180.84	2.22	-1.28	170.00	1.415	6	2.58	2.10	2.3563
ALU RRH-4X45-1900	180.0000	226.77	0.00	2.56	170.00	1.415	6	3.56	3.56	2.3563
TD-RRH8x20-25	300.0000	241.70	-2.18	-1.26	174.00	1.422	6	5.29	2.44	2.3617
RRH-2X50-800	60.0000	180.84	2.22	-1.28	170.00	1.415	6	2.58	2.10	2.3563
ALU RRH-4X45-1900	180.0000	226.77	0.00	2.56	170.00	1.415	6	3.56	3.56	2.3563
AIR 21 B2A/B4P With mount Pipe	300.0000	916.47	-3.70	-2.14	152.00	1.382	5	17.24	18.58	2.3285
AIR 21 B2A/B4P With mount Pipe	60.0000	916.47	3.70	-2.14	152.00	1.382	5	17.24	18.58	2.3285
AIR 21 B2A/B4P With mount Pipe	180.0000	916.47	0.00	4.28	152.00	1.382	5	17.24	18.58	2.3285
LNx-6515DS-VTM	300.0000	592.37	-3.70	-2.14	152.00	1.382	5	14.35	15.27	2.3285
LNx-6515DS-VTM	60.0000	592.37	3.70	-2.14	152.00	1.382	5	14.35	15.27	2.3285
LNx-6515DS-VTM	180.0000	592.37	0.00	4.28	152.00	1.382	5	14.35	15.27	2.3285
RRUS-11	300.0000	175.45	-2.84	-1.64	151.00	1.380	5	3.51	1.73	2.3285
RRUS-11	60.0000	175.45	2.84	-1.64	151.00	1.380	5	3.51	1.73	2.3285
RRUS-11	180.0000	175.45	0.00	3.28	151.00	1.380	5	3.51	1.73	2.3285
TMA	300.0000	72.35	-2.84	-1.64	151.00	1.380	5	1.68	0.67	2.3285
TMA	60.0000	72.35	2.84	-1.64	151.00	1.380	5	1.68	0.67	2.3285
TMA	180.0000	72.35	0.00	3.28	151.00	1.380	5	1.68	0.67	2.3285
RRUS-11	300.0000	174.37	-2.06	-1.19	142.00	1.363	5	3.50	1.73	2.3142
RRUS-11	60.0000	174.37	2.06	-1.19	142.00	1.363	5	3.50	1.73	2.3142

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	Project	CT5122	Date	14:51:18 03/02/18
	Client	AT&T	Designed by	vdigirolamo

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAc} Front ft ²	C _{AAc} Side ft ²	t _z in
RRUS-11	180.0000	174.37	0.00	2.38	142.00	1.363	5	3.50	1.73	2.3142
RRUS 32 B2	300.0000	233.67	-2.06	-1.19	142.00	1.363	5	4.51	3.49	2.3142
RRUS 32 B2	60.0000	233.67	2.06	-1.19	142.00	1.363	5	4.51	3.49	2.3142
RRUS 32 B2	180.0000	233.67	0.00	2.38	142.00	1.363	5	4.51	3.49	2.3142
RRUS 32 B66	300.0000	222.17	-2.06	-1.19	140.00	1.359	5	4.14	3.18	2.3110
RRUS 32 B66	60.0000	222.17	2.06	-1.19	140.00	1.359	5	4.14	3.18	2.3110
RRUS 32 B66	180.0000	222.17	0.00	2.38	140.00	1.359	5	4.14	3.18	2.3110
RRUS 32	300.0000	257.44	-2.06	-1.19	140.00	1.359	5	4.51	3.48	2.3110
RRUS 32	60.0000	257.44	2.06	-1.19	140.00	1.359	5	4.51	3.48	2.3110
RRUS 32	180.0000	257.44	0.00	2.38	140.00	1.359	5	4.51	3.48	2.3110
RRU B14 4478	300.0000	138.90	-2.06	-1.19	140.00	1.359	5	2.71	1.47	2.3110
RRU B14 4478	60.0000	138.90	2.06	-1.19	140.00	1.359	5	2.71	1.47	2.3110
RRU B14 4478	180.0000	138.90	0.00	2.38	140.00	1.359	5	2.71	1.47	2.3110
LGP21401	300.0000	217.96	-2.93	-1.69	140.00	1.359	5	4.93	1.93	2.3110
LGP21401	60.0000	217.96	2.93	-1.69	140.00	1.359	5	4.93	1.93	2.3110
LGP21401	180.0000	217.96	0.00	3.38	140.00	1.359	5	4.93	1.93	2.3110
HPA-65R-BUU-H8	300.0000	483.12	-3.79	-2.19	140.00	1.359	5	15.73	10.23	2.3110
HPA-65R-BUU-H8	60.0000	483.12	3.79	-2.19	140.00	1.359	5	15.73	10.23	2.3110
TPA-65R-LCUUUU-H8	300.0000	508.33	-3.79	-2.19	140.00	1.359	5	15.50	9.95	2.3110
TPA-65R-LCUUUU-H8	60.0000	508.33	3.79	-2.19	140.00	1.359	5	15.50	9.95	2.3110
7770	300.0000	233.37	-3.79	-2.19	140.00	1.359	5	7.23	4.58	2.3110
7770	60.0000	233.37	3.79	-2.19	140.00	1.359	5	7.23	4.58	2.3110
7770	180.0000	233.37	0.00	4.38	140.00	1.359	5	7.23	4.58	2.3110
80010966	300.0000	791.97	-3.79	-2.19	140.00	1.359	5	20.33	15.02	2.3110
80010966	60.0000	791.97	3.79	-2.19	140.00	1.359	5	20.33	15.02	2.3110
80010964	180.0000	290.21	0.00	4.38	140.00	1.359	5	8.96	5.34	2.3110
SBNHH-1D65A	180.0000	526.56	0.00	4.38	140.00	1.359	5	15.26	11.04	2.3110
8' x 2" Mount Pipe	300.0000	555.06	-3.79	-2.19	140.00	1.359	5	18.22	18.22	2.3110
8' x 2" Mount Pipe	60.0000	555.06	3.79	-2.19	140.00	1.359	5	18.22	18.22	2.3110
8' x 2" Mount Pipe	180.0000	555.06	0.00	4.38	140.00	1.359	5	18.22	18.22	2.3110
DC6 Dome	300.0000	166.70	-2.93	-1.69	140.00	1.359	5	2.79	2.79	2.3110
DC6 Dome	60.0000	166.70	2.93	-1.69	140.00	1.359	5	2.79	2.79	2.3110
DC6 Dome	180.0000	166.70	0.00	3.38	140.00	1.359	5	2.79	2.79	2.3110
8' x 2" Mount Pipe	180.0000	140.28	0.00	2.28	151.00	1.380	5	4.57	4.57	2.3285
8' x 2" Mount Pipe	180.0000	140.28	0.00	2.28	151.00	1.380	5	4.57	4.57	2.3285
8' x 2" Mount Pipe	180.0000	140.28	0.00	2.28	151.00	1.380	5	4.57	4.57	2.3285
BXA-80063/4CF	300.0000	179.39	-3.89	-2.25	130.00	1.337	5	6.23	3.68	2.2939
BXA-80063/4CF	60.0000	179.39	3.89	-2.25	130.00	1.337	5	6.23	3.68	2.2939
BXA-80063/4CF	180.0000	179.39	0.00	4.49	130.00	1.337	5	6.23	3.68	2.2939
BXA-80063/6CF	300.0000	483.31	-3.89	-2.25	130.00	1.337	5	16.82	7.85	2.2939
BXA-80063/6CF	60.0000	483.31	3.89	-2.25	130.00	1.337	5	16.82	7.85	2.2939
BXA-80063/6CF	180.0000	483.31	0.00	4.49	130.00	1.337	5	16.82	7.85	2.2939
SBNHH-1D65B	300.0000	934.27	-3.89	-2.25	130.00	1.337	5	21.03	22.23	2.2939
SBNHH-1D65B	60.0000	934.27	3.89	-2.25	130.00	1.337	5	21.03	22.23	2.2939
SBNHH-1D65B	180.0000	934.27	0.00	4.49	130.00	1.337	5	21.03	22.23	2.2939
6' x 2" Pipe Mount	300.0000	407.99	-3.89	-2.25	130.00	1.337	5	12.69	12.69	2.2939
6' x 2" Pipe Mount	60.0000	407.99	3.89	-2.25	130.00	1.337	5	12.69	12.69	2.2939
6' x 2" Pipe Mount	180.0000	407.99	0.00	4.49	130.00	1.337	5	12.69	12.69	2.2939
RRH2X60-PCS	300.0000	356.80	-3.89	-2.25	130.00	1.337	5	6.30	5.22	2.2939
RRH2X60-PCS	60.0000	356.80	3.89	-2.25	130.00	1.337	5	6.30	5.22	2.2939
RRH2X60-PCS	180.0000	356.80	0.00	4.49	130.00	1.337	5	6.30	5.22	2.2939
ALU RRH-4X45-1900	300.0000	220.93	-3.89	-2.25	130.00	1.337	5	3.53	3.53	2.2939
ALU RRH-4X45-1900	60.0000	220.93	3.89	-2.25	130.00	1.337	5	3.53	3.53	2.2939
ALU RRH-4X45-1900	180.0000	220.93	0.00	4.49	130.00	1.337	5	3.53	3.53	2.2939
RRH2x60-700	300.0000	151.70	-3.89	-2.25	130.00	1.337	5	2.57	2.10	2.2939
RRH2x60-700	60.0000	151.70	3.89	-2.25	130.00	1.337	5	2.57	2.10	2.2939
RRH2x60-700	180.0000	151.70	0.00	4.49	130.00	1.337	5	2.57	2.10	2.2939
DC6 Dome	300.0000	165.33	-3.89	-2.25	130.00	1.337	5	2.78	2.78	2.2939
DC6 Dome	60.0000	165.33	3.89	-2.25	130.00	1.337	5	2.78	2.78	2.2939
TA 702-3	0.0000	765.79	0.00	0.00	181.00	1.434	6	9.96	9.96	2.3711
TA 602-3	0.0000	1794.28	0.00	0.00	174.00	1.422	6	29.78	29.78	2.3617

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	Project	CT5122	Date	14:51:18 03/02/18
	Client	AT&T	Designed by	vdigirolamo

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAC} Front ft ²	C _{AAC} Side ft ²	t _z in
Ring Mount	0.0000	278.50	0.00	0.00	170.00	1.415	6	6.11	6.11	2.3563
TA 602-3	0.0000	1779.91	0.00	0.00	151.00	1.380	5	29.52	29.52	2.3285
TA 602-3	0.0000	1772.33	0.00	0.00	140.00	1.359	5	29.38	29.38	2.3110
Pirod 13' Low Profile Platform	0.0000	3433.32	0.00	0.00	130.00	1.337	5	35.89	35.89	2.2939
Sum Weight:		41122.02								

Discrete Appurtenance Pressures - Service G_H = 1.100

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAC} Front ft ²	C _{AAC} Side ft ²
ET-X-TU-42-15-37-18-i R-ST	300.0000	71.90	-3.48	-2.01	174.00	1.422	11	7.76	4.71
APXVSP18-C	60.0000	57.00	3.48	-2.01	174.00	1.422	11	8.02	5.28
APXVSP18-C	180.0000	57.00	0.00	4.02	174.00	1.422	11	8.02	5.28
APXV9TM14-ALU	300.0000	63.00	-3.48	-2.01	174.00	1.422	11	6.34	3.61
APXV9TM14-ALU	60.0000	63.00	3.48	-2.01	174.00	1.422	11	6.34	3.61
APXV9TM14-ALU	180.0000	63.00	0.00	4.02	174.00	1.422	11	6.34	3.61
6' x 2" Pipe Mount	300.0000	40.00	-2.57	-1.48	181.00	1.434	11	2.40	2.40
6' x 2" Pipe Mount	60.0000	40.00	2.57	-1.48	181.00	1.434	11	2.40	2.40
6' x 2" Pipe Mount	180.0000	40.00	0.00	2.96	181.00	1.434	11	2.40	2.40
Distribution Box	300.0000	50.00	-2.57	-1.48	181.00	1.434	11	5.60	1.87
Distribution Box	60.0000	50.00	2.57	-1.48	181.00	1.434	11	5.60	1.87
4' Dipole	300.0000	20.00	-2.57	-1.48	183.00	1.437	11	0.79	0.79
10' Omni	60.0000	30.00	2.57	-1.48	188.00	1.446	11	2.00	2.00
4' Omni	180.0000	89.20	0.00	2.96	185.00	1.441	11	3.52	3.52
6' Omni	300.0000	44.60	-2.57	-1.48	186.00	1.442	11	2.37	2.37
6' Omni	60.0000	44.60	2.57	-1.48	186.00	1.442	11	2.37	2.37
TD-RRH8x20-25	300.0000	76.20	-2.18	-1.26	174.00	1.422	11	4.03	1.53
RRH-2X50-800	60.0000	69.10	2.22	-1.28	170.00	1.415	11	1.73	1.33
ALU RRH-4X45-1900	180.0000	69.50	0.00	2.56	170.00	1.415	11	2.50	2.50
TD-RRH8x20-25	300.0000	76.20	-2.18	-1.26	174.00	1.422	11	4.03	1.53
RRH-2X50-800	60.0000	69.10	2.22	-1.28	170.00	1.415	11	1.73	1.33
ALU RRH-4X45-1900	180.0000	69.50	0.00	2.56	170.00	1.415	11	2.50	2.50
TD-RRH8x20-25	300.0000	76.20	-2.18	-1.26	174.00	1.422	11	4.03	1.53
RRH-2X50-800	60.0000	69.10	2.22	-1.28	170.00	1.415	11	1.73	1.33
ALU RRH-4X45-1900	180.0000	69.50	0.00	2.56	170.00	1.415	11	2.50	2.50
AIR 21 B2A/B4P With mount Pipe	300.0000	226.80	-3.70	-2.14	152.00	1.382	11	12.82	11.38
AIR 21 B2A/B4P With mount Pipe	60.0000	226.80	3.70	-2.14	152.00	1.382	11	12.82	11.38
AIR 21 B2A/B4P With mount Pipe	180.0000	226.80	0.00	4.28	152.00	1.382	11	12.82	11.38
LNx-6515DS-VTM	300.0000	79.50	-3.70	-2.14	152.00	1.382	11	11.45	9.60
LNx-6515DS-VTM	60.0000	79.50	3.70	-2.14	152.00	1.382	11	11.45	9.60
LNx-6515DS-VTM	180.0000	79.50	0.00	4.28	152.00	1.382	11	11.45	9.60
RRUS-11	300.0000	55.00	-2.84	-1.64	151.00	1.380	11	2.52	1.02
RRUS-11	60.0000	55.00	2.84	-1.64	151.00	1.380	11	2.52	1.02
RRUS-11	180.0000	55.00	0.00	3.28	151.00	1.380	11	2.52	1.02
TMA	300.0000	15.00	-2.84	-1.64	151.00	1.380	11	1.00	0.27
TMA	60.0000	15.00	2.84	-1.64	151.00	1.380	11	1.00	0.27
TMA	180.0000	15.00	0.00	3.28	151.00	1.380	11	1.00	0.27
RRUS-11	300.0000	55.00	-2.06	-1.19	142.00	1.363	11	2.52	1.02
RRUS-11	60.0000	55.00	2.06	-1.19	142.00	1.363	11	2.52	1.02
RRUS-11	180.0000	55.00	0.00	2.38	142.00	1.363	11	2.52	1.02
RRUS 32 B2	300.0000	67.90	-2.06	-1.19	142.00	1.363	11	3.31	2.42

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	Project CT5122	Date 14:51:18 03/02/18
	Client AT&T	Designed by vdigirolamo

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAc} Front ft ²	C _{AAc} Side ft ²
RRUS 32 B2	60.0000	67.90	2.06	-1.19	142.00	1.363	11	3.31	2.42
RRUS 32 B2	180.0000	67.90	0.00	2.38	142.00	1.363	11	3.31	2.42
RRUS 32 B66	300.0000	68.00	-2.06	-1.19	140.00	1.359	11	3.01	2.18
RRUS 32 B66	60.0000	68.00	2.06	-1.19	140.00	1.359	11	3.01	2.18
RRUS 32 B66	180.0000	68.00	0.00	2.38	140.00	1.359	11	3.01	2.18
RRUS 32	300.0000	92.00	-2.06	-1.19	140.00	1.359	11	3.31	2.42
RRUS 32	60.0000	92.00	2.06	-1.19	140.00	1.359	11	3.31	2.42
RRUS 32	180.0000	92.00	0.00	2.38	140.00	1.359	11	3.31	2.42
RRU B14 4478	300.0000	47.40	-2.06	-1.19	140.00	1.359	11	1.86	0.82
RRU B14 4478	60.0000	47.40	2.06	-1.19	140.00	1.359	11	1.86	0.82
RRU B14 4478	180.0000	47.40	0.00	2.38	140.00	1.359	11	1.86	0.82
LGP21401	300.0000	70.00	-2.93	-1.69	140.00	1.359	11	3.31	0.89
LGP21401	60.0000	70.00	2.93	-1.69	140.00	1.359	11	3.31	0.89
LGP21401	180.0000	70.00	0.00	3.38	140.00	1.359	11	3.31	0.89
HPA-65R-BUU-H8	300.0000	68.00	-3.79	-2.19	140.00	1.359	11	12.98	7.52
HPA-65R-BUU-H8	60.0000	68.00	3.79	-2.19	140.00	1.359	11	12.98	7.52
TPA-65R-LCUUUU-H8	300.0000	105.00	-3.79	-2.19	140.00	1.359	11	12.75	7.25
TPA-65R-LCUUUU-H8	60.0000	105.00	3.79	-2.19	140.00	1.359	11	12.75	7.25
7770	300.0000	35.00	-3.79	-2.19	140.00	1.359	11	5.51	2.93
7770	60.0000	35.00	3.79	-2.19	140.00	1.359	11	5.51	2.93
7770	180.0000	35.00	0.00	4.38	140.00	1.359	11	5.51	2.93
80010966	300.0000	158.40	-3.79	-2.19	140.00	1.359	11	17.36	9.40
80010966	60.0000	158.40	3.79	-2.19	140.00	1.359	11	17.36	9.40
80010964	180.0000	35.00	0.00	4.38	140.00	1.359	11	7.14	3.68
SBNHH-1D65A	180.0000	67.00	0.00	4.38	140.00	1.359	11	11.77	7.73
8' x 2" Mount Pipe	300.0000	120.00	-3.79	-2.19	140.00	1.359	11	6.40	6.40
8' x 2" Mount Pipe	60.0000	120.00	3.79	-2.19	140.00	1.359	11	6.40	6.40
8' x 2" Mount Pipe	180.0000	120.00	0.00	4.38	140.00	1.359	11	6.40	6.40
DC6 Dome	300.0000	34.00	-2.93	-1.69	140.00	1.359	11	1.24	1.24
DC6 Dome	60.0000	34.00	2.93	-1.69	140.00	1.359	11	1.24	1.24
DC6 Dome	180.0000	34.00	0.00	3.38	140.00	1.359	11	1.24	1.24
8' x 2" Mount Pipe	180.0000	30.00	0.00	2.28	151.00	1.380	11	1.60	1.60
8' x 2" Mount Pipe	180.0000	30.00	0.00	2.28	151.00	1.380	11	1.60	1.60
8' x 2" Mount Pipe	180.0000	30.00	0.00	2.28	151.00	1.380	11	1.60	1.60
BXA-80063/4CF	300.0000	9.90	-3.89	-2.25	130.00	1.337	10	4.71	2.25
BXA-80063/4CF	60.0000	9.90	3.89	-2.25	130.00	1.337	10	4.71	2.25
BXA-80063/4CF	180.0000	9.90	0.00	4.49	130.00	1.337	10	4.71	2.25
BXA-80063/6CF	300.0000	38.00	-3.89	-2.25	130.00	1.337	10	14.41	5.72
BXA-80063/6CF	60.0000	38.00	3.89	-2.25	130.00	1.337	10	14.41	5.72
BXA-80063/6CF	180.0000	38.00	0.00	4.49	130.00	1.337	10	14.41	5.72
SBNHH-1D65B	300.0000	149.46	-3.89	-2.25	130.00	1.337	10	16.40	13.77
SBNHH-1D65B	60.0000	149.46	3.89	-2.25	130.00	1.337	10	16.40	13.77
SBNHH-1D65B	180.0000	149.46	0.00	4.49	130.00	1.337	10	16.40	13.77
6' x 2" Pipe Mount	300.0000	80.00	-3.89	-2.25	130.00	1.337	10	4.80	4.80
6' x 2" Pipe Mount	60.0000	80.00	3.89	-2.25	130.00	1.337	10	4.80	4.80
6' x 2" Pipe Mount	180.0000	80.00	0.00	4.49	130.00	1.337	10	4.80	4.80
RRH2X60-PCS	300.0000	110.00	-3.89	-2.25	130.00	1.337	10	4.40	3.45
RRH2X60-PCS	60.0000	110.00	3.89	-2.25	130.00	1.337	10	4.40	3.45
RRH2X60-PCS	180.0000	110.00	0.00	4.49	130.00	1.337	10	4.40	3.45
ALU RRH-4X45-1900	300.0000	69.50	-3.89	-2.25	130.00	1.337	10	2.50	2.50
ALU RRH-4X45-1900	60.0000	69.50	3.89	-2.25	130.00	1.337	10	2.50	2.50
ALU RRH-4X45-1900	180.0000	69.50	0.00	4.49	130.00	1.337	10	2.50	2.50
RRH2x60-700	300.0000	50.00	-3.89	-2.25	130.00	1.337	10	1.73	1.33
RRH2x60-700	60.0000	50.00	3.89	-2.25	130.00	1.337	10	1.73	1.33
RRH2x60-700	180.0000	50.00	0.00	4.49	130.00	1.337	10	1.73	1.33
DC6 Dome	300.0000	34.00	-3.89	-2.25	130.00	1.337	10	1.24	1.24
DC6 Dome	60.0000	34.00	3.89	-2.25	130.00	1.337	10	1.24	1.24
TA 702-3	0.0000	339.00	0.00	0.00	181.00	1.434	11	5.64	5.64
TA 602-3	0.0000	774.00	0.00	0.00	174.00	1.422	11	11.59	11.59
Ring Mount	0.0000	90.00	0.00	0.00	170.00	1.415	11	1.40	1.40
TA 602-3	0.0000	774.00	0.00	0.00	151.00	1.380	11	11.59	11.59

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Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAc} Front ft ²	C _{AAc} Side ft ²
TA 602-3	0.0000	774.00	0.00	0.00	140.00	1.359	11	11.59	11.59
Pirod 13' Low Profile Platform	0.0000	1300.00	0.00	0.00	130.00	1.337	10	15.70	15.70
	Sum Weight:	10858.88							

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z psf
126.00	2' dish	300.0000	15.00	-2.63	-1.52	1.329	3.14	50
159.00	2' dish	180.0000	15.00	0.00	2.69	1.395	3.14	53
	Sum Weight:		30.00					

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z psf	t _z in
126.00	2' dish	300.0000	110.06	-2.63	-1.52	1.329	4.36	5	2.2867
159.00	2' dish	180.0000	111.94	0.00	2.69	1.395	4.39	5	2.3406
	Sum Weight:		222.00						

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z psf
126.00	2' dish	300.0000	15.00	-2.63	-1.52	1.329	3.14	10
159.00	2' dish	180.0000	15.00	0.00	2.69	1.395	3.14	11
	Sum Weight:		30.00					

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Leg Weight	35110.01					
Bracing Weight	0.00					
Total Member Self-Weight	35110.01			1.29	0.11	
Total Weight	52590.73			1.29	0.11	
Wind 0 deg - No Ice		-136.32	-45548.33	-5285.10	23.93	-0.61
Wind 30 deg - No Ice		23173.93	-39377.85	-4564.95	-2703.12	-1.67
Wind 60 deg - No Ice		40274.74	-22656.11	-2621.28	-4705.84	-2.28
Wind 90 deg - No Ice		48531.55	136.32	25.10	-5627.23	-2.29

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Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 120 deg - No Ice		41336.48	23426.51	2714.60	-4815.39	-1.68
Wind 150 deg - No Ice		23413.13	39519.53	4591.96	-2744.73	-0.62
Wind 180 deg - No Ice		136.32	45548.33	5287.67	-23.71	0.61
Wind 210 deg - No Ice		-23173.93	39377.85	4567.52	2703.35	1.67
Wind 240 deg - No Ice		-40274.74	22656.11	2623.85	4706.07	2.28
Wind 270 deg - No Ice		-48531.55	-136.32	-22.53	5627.46	2.29
Wind 300 deg - No Ice		-41336.48	-23426.51	-2712.03	4815.61	1.68
Wind 330 deg - No Ice		-23413.13	-39519.53	-4589.39	2744.96	0.62
Member Ice	22732.56					
Total Weight Ice	117076.92			16.07	0.75	
Wind 0 deg - Ice		-13.52	-8598.70	-964.93	3.12	-0.05
Wind 30 deg - Ice		4335.72	-7439.94	-832.32	-495.34	-0.21
Wind 60 deg - Ice		7523.21	-4287.64	-472.38	-860.87	-0.32
Wind 90 deg - Ice		10011.20	13.52	18.43	-1095.67	-0.34
Wind 120 deg - Ice		8200.22	4694.13	543.97	-924.47	-0.27
Wind 150 deg - Ice		4359.13	7453.45	866.82	-499.43	-0.12
Wind 180 deg - Ice		13.52	8598.70	997.07	-1.61	0.05
Wind 210 deg - Ice		-4335.72	7439.94	864.46	496.84	0.21
Wind 240 deg - Ice		-7523.21	4287.64	504.52	862.37	0.32
Wind 270 deg - Ice		-10011.20	-13.52	13.70	1097.17	0.34
Wind 300 deg - Ice		-8200.22	-4694.13	-511.84	925.98	0.27
Wind 330 deg - Ice		-4359.13	-7453.45	-834.68	500.94	0.12
Total Weight	52590.73			1.29	0.11	
Wind 0 deg - Service		-28.10	-9389.67	-1090.85	5.01	-0.13
Wind 30 deg - Service		4777.24	-8117.64	-942.39	-557.16	-0.34
Wind 60 deg - Service		8302.53	-4670.50	-541.71	-970.02	-0.47
Wind 90 deg - Service		10004.65	28.10	3.84	-1159.96	-0.47
Wind 120 deg - Service		8521.41	4829.31	558.27	-992.60	-0.35
Wind 150 deg - Service		4826.55	8146.85	945.28	-565.74	-0.13
Wind 180 deg - Service		28.10	9389.67	1088.70	-4.81	0.13
Wind 210 deg - Service		-4777.24	8117.64	940.24	557.37	0.34
Wind 240 deg - Service		-8302.53	4670.50	539.56	970.22	0.47
Wind 270 deg - Service		-10004.65	-28.10	-5.98	1160.17	0.47
Wind 300 deg - Service		-8521.41	-4829.31	-560.42	992.81	0.35
Wind 330 deg - Service		-4826.55	-8146.85	-947.43	565.95	0.13

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	179 - 141.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24755.17	0.34	-1.45
			Max. Mx	20	-8014.57	250.00	3.94
			Max. My	14	-8109.40	-3.99	-235.66
			Max. Vy	20	-13314.26	250.00	3.94
			Max. Vx	2	-12841.13	4.13	235.16
			Max. Torque	20			1.35
L2	141.25 - 92.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71405.95	0.58	-1.59
			Max. Mx	20	-25745.89	1613.80	11.28
			Max. My	2	-25979.10	10.93	1532.79
			Max. Vy	20	-35732.36	1613.80	11.28
			Max. Vx	14	33727.43	-10.76	-1531.81
			Max. Torque	9			2.24
L3	92.58 - 45.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96803.85	0.72	-8.96
			Max. Mx	20	-41205.71	3394.95	16.96
			Max. My	14	-41370.21	-17.28	-3202.52
			Max. Vy	20	-42479.14	3394.95	16.96

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L4	45.5 - 0	Pole	Max. Vx	14	39614.91	-17.28	-3202.52
			Max. Torque	9			2.24
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-130102.26	0.87	-17.17
			Max. Mx	20	-63074.39	5820.80	23.23
			Max. My	14	-63078.45	-24.68	-5470.85
			Max. Vy	20	-48576.37	5820.80	23.23
			Max. Vx	14	45590.45	-24.68	-5470.85
			Max. Torque	9			2.23

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	36	130102.26	10011.21	13.52
	Max. H _x	20	63108.88	48531.55	136.32
	Max. H _z	2	63108.88	136.32	45548.33
	Max. M _x	2	5467.72	136.32	45548.33
	Max. M _z	8	5820.52	-48531.55	-136.32
	Max. Torsion	9	2.23	-48531.55	-136.32
	Min. Vert	5	47331.66	-23173.93	39377.85
	Min. H _x	8	63108.88	-48531.55	-136.32
	Min. H _z	15	47331.66	-136.32	-45548.33
	Min. M _x	14	-5470.85	-136.32	-45548.33
	Min. M _z	20	-5820.80	48531.55	136.32
	Min. Torsion	19	-2.23	40274.74	-22656.11

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	52590.73	0.00	0.00	1.29	0.11	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	63108.88	-136.32	-45548.33	-5467.72	24.96	-0.59
0.9 Dead+1.0 Wind 0 deg - No Ice	47331.66	-136.32	-45548.33	-5419.57	24.65	-0.59
1.2 Dead+1.0 Wind 30 deg - No Ice	63108.88	23173.93	-39377.85	-4722.52	-2796.81	-1.62
0.9 Dead+1.0 Wind 30 deg - No Ice	47331.66	23173.93	-39377.85	-4681.01	-2771.97	-1.63
1.2 Dead+1.0 Wind 60 deg - No Ice	63108.88	40274.74	-22656.11	-2711.44	-4868.94	-2.21
0.9 Dead+1.0 Wind 60 deg - No Ice	47331.66	40274.74	-22656.11	-2687.81	-4825.63	-2.23
1.2 Dead+1.0 Wind 90 deg - No Ice	63108.88	48531.55	136.32	26.39	-5820.52	-2.22
0.9 Dead+1.0 Wind 90 deg - No Ice	47331.66	48531.55	136.32	25.73	-5769.09	-2.23
1.2 Dead+1.0 Wind 120 deg - No Ice	63108.88	41336.48	23426.51	2808.26	-4981.53	-1.63
0.9 Dead+1.0 Wind 120 deg - No Ice	47331.66	41336.48	23426.51	2783.03	-4937.35	-1.64

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.0 Wind 150 deg - No Ice	63108.88	23413.13	39519.53	4751.01	-2840.09	-0.60
0.9 Dead+1.0 Wind 150 deg - No Ice	47331.66	23413.13	39519.53	4708.44	-2814.79	-0.60
1.2 Dead+1.0 Wind 180 deg - No Ice	63108.88	136.32	45548.33	5470.85	-24.68	0.60
0.9 Dead+1.0 Wind 180 deg - No Ice	47331.66	136.32	45548.33	5421.91	-24.45	0.60
1.2 Dead+1.0 Wind 210 deg - No Ice	63108.88	-23173.93	39377.85	4725.66	2797.07	1.63
0.9 Dead+1.0 Wind 210 deg - No Ice	47331.66	-23173.93	39377.85	4683.36	2772.16	1.64
1.2 Dead+1.0 Wind 240 deg - No Ice	63108.88	-40274.74	22656.11	2714.60	4869.21	2.22
0.9 Dead+1.0 Wind 240 deg - No Ice	47331.66	-40274.74	22656.11	2690.17	4825.83	2.23
1.2 Dead+1.0 Wind 270 deg - No Ice	63108.88	-48531.55	-136.32	-23.23	5820.80	2.21
0.9 Dead+1.0 Wind 270 deg - No Ice	47331.66	-48531.55	-136.32	-23.37	5769.30	2.22
1.2 Dead+1.0 Wind 300 deg - No Ice	63108.88	-41336.48	-23426.51	-2805.11	4981.82	1.61
0.9 Dead+1.0 Wind 300 deg - No Ice	47331.66	-41336.48	-23426.51	-2780.67	4937.57	1.63
1.2 Dead+1.0 Wind 330 deg - No Ice	63108.88	-23413.13	-39519.53	-4747.87	2840.38	0.59
0.9 Dead+1.0 Wind 330 deg - No Ice	47331.66	-23413.13	-39519.53	-4706.10	2815.00	0.60
1.2 Dead+1.0 Ice+1.0 Temp	130102.26	-0.00	0.01	17.17	0.87	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	130102.26	-13.52	-8598.71	-1056.49	3.54	-0.05
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	130102.26	4335.73	-7439.95	-911.28	-542.31	-0.19
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	130102.26	7523.22	-4287.65	-517.19	-942.60	-0.28
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	130102.26	10011.21	13.52	20.17	-1197.13	-0.30
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	130102.26	8200.23	4694.13	594.73	-1010.90	-0.23
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	130102.26	4359.14	7453.46	948.97	-546.89	-0.11
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	130102.26	13.52	8598.71	1091.54	-1.75	0.05
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	130102.26	-4335.73	7439.95	946.33	544.09	0.19
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	130102.26	-7523.22	4287.65	552.25	944.39	0.28
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	130102.26	-10011.21	-13.52	14.89	1198.91	0.30
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	130102.26	-8200.23	-4694.13	-559.68	1012.69	0.23
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	130102.26	-4359.14	-7453.46	-913.92	548.67	0.11
Dead+Wind 0 deg - Service	52590.73	-28.10	-9389.67	-1120.60	5.20	-0.12
Dead+Wind 30 deg - Service	52590.73	4777.24	-8117.64	-967.76	-573.61	-0.34
Dead+Wind 60 deg - Service	52590.73	8302.53	-4670.50	-555.25	-998.70	-0.46
Dead+Wind 90 deg - Service	52590.73	10004.65	28.10	6.39	-1194.03	-0.46
Dead+Wind 120 deg - Service	52590.73	8521.41	4829.31	577.09	-1021.86	-0.34
Dead+Wind 150 deg - Service	52590.73	4826.55	8146.85	975.57	-582.50	-0.12
Dead+Wind 180 deg - Service	52590.73	28.10	9389.67	1123.20	-4.97	0.12

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 210 deg - Service	52590.73	-4777.24	8117.64	970.35	573.85	0.34
Dead+Wind 240 deg - Service	52590.73	-8302.53	4670.50	557.85	998.93	0.46
Dead+Wind 270 deg - Service	52590.73	-10004.65	-28.10	-3.79	1194.26	0.46
Dead+Wind 300 deg - Service	52590.73	-8521.41	-4829.31	-574.49	1022.09	0.34
Dead+Wind 330 deg - Service	52590.73	-4826.55	-8146.85	-972.97	582.73	0.12

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-52590.73	0.00	0.00	52590.73	0.00	0.000%
2	-136.32	-63108.88	-45548.33	136.32	63108.88	45548.33	0.000%
3	-136.32	-47331.66	-45548.33	136.32	47331.66	45548.33	0.000%
4	23173.93	-63108.88	-39377.85	-23173.93	63108.88	39377.85	0.000%
5	23173.93	-47331.66	-39377.85	-23173.93	47331.66	39377.85	0.000%
6	40274.74	-63108.88	-22656.11	-40274.74	63108.88	22656.11	0.000%
7	40274.74	-47331.66	-22656.11	-40274.74	47331.66	22656.11	0.000%
8	48531.55	-63108.88	136.32	-48531.55	63108.88	-136.32	0.000%
9	48531.55	-47331.66	136.32	-48531.55	47331.66	-136.32	0.000%
10	41336.48	-63108.88	23426.51	-41336.48	63108.88	-23426.51	0.000%
11	41336.48	-47331.66	23426.51	-41336.48	47331.66	-23426.51	0.000%
12	23413.13	-63108.88	39519.53	-23413.13	63108.88	-39519.53	0.000%
13	23413.13	-47331.66	39519.53	-23413.13	47331.66	-39519.53	0.000%
14	136.32	-63108.88	45548.33	-136.32	63108.88	-45548.33	0.000%
15	136.32	-47331.66	45548.33	-136.32	47331.66	-45548.33	0.000%
16	-23173.93	-63108.88	39377.85	23173.93	63108.88	-39377.85	0.000%
17	-23173.93	-47331.66	39377.85	23173.93	47331.66	-39377.85	0.000%
18	-40274.74	-63108.88	22656.11	40274.74	63108.88	-22656.11	0.000%
19	-40274.74	-47331.66	22656.11	40274.74	47331.66	-22656.11	0.000%
20	-48531.55	-63108.88	-136.32	48531.55	63108.88	136.32	0.000%
21	-48531.55	-47331.66	-136.32	48531.55	47331.66	136.32	0.000%
22	-41336.48	-63108.88	-23426.51	41336.48	63108.88	23426.51	0.000%
23	-41336.48	-47331.66	-23426.51	41336.48	47331.66	23426.51	0.000%
24	-23413.13	-63108.88	-39519.53	23413.13	63108.88	39519.53	0.000%
25	-23413.13	-47331.66	-39519.53	23413.13	47331.66	39519.53	0.000%
26	0.00	-130102.26	0.00	0.00	130102.26	-0.01	0.000%
27	-13.52	-130102.26	-8598.70	13.52	130102.26	8598.71	0.000%
28	4335.72	-130102.26	-7439.94	-4335.73	130102.26	7439.95	0.000%
29	7523.21	-130102.26	-4287.64	-7523.22	130102.26	4287.65	0.000%
30	10011.20	-130102.26	13.52	-10011.21	130102.26	-13.52	0.000%
31	8200.22	-130102.26	4694.13	-8200.23	130102.26	-4694.13	0.000%
32	4359.13	-130102.26	7453.45	-4359.14	130102.26	-7453.46	0.000%
33	13.52	-130102.26	8598.70	-13.52	130102.26	-8598.71	0.000%
34	-4335.72	-130102.26	7439.94	4335.73	130102.26	-7439.95	0.000%
35	-7523.21	-130102.26	4287.64	7523.22	130102.26	-4287.65	0.000%
36	-10011.20	-130102.26	-13.52	10011.21	130102.26	13.52	0.000%
37	-8200.22	-130102.26	-4694.13	8200.23	130102.26	4694.13	0.000%
38	-4359.13	-130102.26	-7453.45	4359.14	130102.26	7453.46	0.000%
39	-28.10	-52590.73	-9389.67	28.10	52590.73	9389.67	0.000%
40	4777.24	-52590.73	-8117.64	-4777.24	52590.73	8117.64	0.000%
41	8302.53	-52590.73	-4670.50	-8302.53	52590.73	4670.50	0.000%
42	10004.65	-52590.73	28.10	-10004.65	52590.73	-28.10	0.000%
43	8521.41	-52590.73	4829.31	-8521.41	52590.73	-4829.31	0.000%
44	4826.55	-52590.73	8146.85	-4826.55	52590.73	-8146.85	0.000%
45	28.10	-52590.73	9389.67	-28.10	52590.73	-9389.67	0.000%
46	-4777.24	-52590.73	8117.64	4777.24	52590.73	-8117.64	0.000%
47	-8302.53	-52590.73	4670.50	8302.53	52590.73	-4670.50	0.000%

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	Client	AT&T	Designed by	vdigirolamo

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
48	-10004.65	-52590.73	-28.10	10004.65	52590.73	28.10	0.000%
49	-8521.41	-52590.73	-4829.31	8521.41	52590.73	4829.31	0.000%
50	-4826.55	-52590.73	-8146.85	4826.55	52590.73	8146.85	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	5	0.0000001	0.00001262
3	Yes	5	0.0000001	0.00000555
4	Yes	6	0.0000001	0.00001937
5	Yes	6	0.0000001	0.00000614
6	Yes	6	0.0000001	0.00002035
7	Yes	6	0.0000001	0.00000646
8	Yes	5	0.0000001	0.00001460
9	Yes	5	0.0000001	0.00000661
10	Yes	6	0.0000001	0.00002036
11	Yes	6	0.0000001	0.00000636
12	Yes	6	0.0000001	0.00002027
13	Yes	6	0.0000001	0.00000641
14	Yes	5	0.0000001	0.00000620
15	Yes	4	0.0000001	0.00007552
16	Yes	6	0.0000001	0.00002000
17	Yes	6	0.0000001	0.00000636
18	Yes	6	0.0000001	0.00001939
19	Yes	6	0.0000001	0.00000612
20	Yes	5	0.0000001	0.00002736
21	Yes	5	0.0000001	0.00001239
22	Yes	6	0.0000001	0.00002108
23	Yes	6	0.0000001	0.00000662
24	Yes	6	0.0000001	0.00002001
25	Yes	6	0.0000001	0.00000631
26	Yes	4	0.0000001	0.00002949
27	Yes	6	0.0000001	0.00003025
28	Yes	6	0.0000001	0.00003399
29	Yes	6	0.0000001	0.00003436
30	Yes	6	0.0000001	0.00003322
31	Yes	6	0.0000001	0.00003736
32	Yes	6	0.0000001	0.00003504
33	Yes	6	0.0000001	0.00003097
34	Yes	6	0.0000001	0.00003488
35	Yes	6	0.0000001	0.00003503
36	Yes	6	0.0000001	0.00003330
37	Yes	6	0.0000001	0.00003685
38	Yes	6	0.0000001	0.00003433
39	Yes	4	0.0000001	0.00002924
40	Yes	5	0.0000001	0.00000535
41	Yes	5	0.0000001	0.00000617
42	Yes	4	0.0000001	0.00003850
43	Yes	5	0.0000001	0.00000577
44	Yes	5	0.0000001	0.00000590
45	Yes	4	0.0000001	0.00002860
46	Yes	5	0.0000001	0.00000590
47	Yes	5	0.0000001	0.00000531
48	Yes	4	0.0000001	0.00004082

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49	Yes	5	0.00000001	0.00000644
50	Yes	5	0.00000001	0.00000568

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	179 - 141.25	22.920	48	1.0473	0.0011
L2	145.58 - 92.58	15.791	48	0.9664	0.0013
L3	98.5 - 45.5	7.343	48	0.7054	0.0006
L4	53 - 0	2.133	48	0.3681	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
181.00	(2) 6' x 2" Pipe Mount	48	22.920	1.0473	0.0012	94269
174.00	ET-X-TU-42-15-37-18-iR-ST	48	21.830	1.0381	0.0012	94269
170.00	RRH-2X50-800	48	20.960	1.0304	0.0013	52372
159.00	2' dish	48	18.593	1.0064	0.0013	23567
151.00	(2) AIR 21 B2A/B4P With mount Pipe	48	16.907	0.9844	0.0013	16833
142.00	RRUS-11	48	15.066	0.9529	0.0013	13440
140.00	RRUS 32 B66	48	14.667	0.9448	0.0013	13088
130.00	BXA-80063/4CF	48	12.726	0.8987	0.0012	11586
126.00	2' dish	48	11.977	0.8778	0.0011	11077

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	179 - 141.25	111.735	20	5.1083	0.0050
L2	145.58 - 92.58	76.994	20	4.7156	0.0059
L3	98.5 - 45.5	35.813	20	3.4417	0.0030
L4	53 - 0	10.399	20	1.7957	0.0011

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
181.00	(2) 6' x 2" Pipe Mount	20	111.735	5.1083	0.0065	19638
174.00	ET-X-TU-42-15-37-18-iR-ST	20	106.425	5.0635	0.0066	19638
170.00	RRH-2X50-800	20	102.187	5.0265	0.0067	10909

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
159.00	2' dish	20	90.649	4.9101	0.0069	4907
151.00	(2) AIR 21 B2A/B4P With mount Pipe	20	82.436	4.8032	0.0069	3503
142.00	RRUS-11	20	73.464	4.6498	0.0067	2793
140.00	RRUS 32 B66	20	71.517	4.6103	0.0066	2719
130.00	BXA-80063/4CF	20	62.054	4.3853	0.0059	2402
126.00	2' dish	20	58.406	4.2834	0.0056	2295

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	37.75	0.00	0.0	25.2610	-8014.57	1748390.00	0.005
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	53.00	0.00	0.0	52.2132	-25745.90	3714610.00	0.007
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	53.00	0.00	0.0	65.8810	-41205.70	4311140.00	0.010
L4	45.5 - 0 (4)	TP69.225x54.9755x0.375	53.00	0.00	0.0	81.9487	-63074.40	4812990.00	0.013

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	250.03	1144.56	0.218	0.00	1144.56	0.000
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	1613.84	3348.51	0.482	0.00	3348.51	0.000
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	3394.99	4912.18	0.691	0.00	4912.18	0.000
L4	45.5 - 0 (4)	TP69.225x54.9755x0.375	5820.85	6830.50	0.852	0.00	6830.50	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u lb	φV _n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u kip-ft	φT _n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	13315.00	874196.00	0.015	1.35	2291.92	0.001
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	35732.70	1857310.00	0.019	2.22	6705.20	0.000
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	42479.40	2155570.00	0.020	2.21	9836.33	0.000
L4	45.5 - 0 (4)	TP69.225x54.9755x0.375	48576.60	2406490.00	0.020	2.21	13677.67	0.000

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	Client AT&T	Designed by vdigirolamo

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
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Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	179 - 141.25 (1)	0.005	0.218	0.000	0.015	0.001	0.223	1.000	4.8.2 ✓
L2	141.25 - 92.58 (2)	0.007	0.482	0.000	0.019	0.000	0.489	1.000	4.8.2 ✓
L3	92.58 - 45.5 (3)	0.010	0.691	0.000	0.020	0.000	0.701	1.000	4.8.2 ✓
L4	45.5 - 0 (4)	0.013	0.852	0.000	0.020	0.000	0.866	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	179 - 141.25	Pole	TP33.249x23.1x0.25	1	-8014.57	1748390.00	22.3	Pass
L2	141.25 - 92.58	Pole	TP45.834x31.5849x0.375	2	-25745.90	3714610.00	48.9	Pass
L3	92.58 - 45.5	Pole	TP57.742x43.4924x0.375	3	-41205.70	4311140.00	70.1	Pass
L4	45.5 - 0	Pole	TP69.225x54.9755x0.375	4	-63074.40	4812990.00	86.6	Pass
Summary								
Pole (L4)							86.6	Pass
RATING =							86.6	Pass

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /C

- Assumptions:**
- 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
 - 2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
 - 3) Clear space between bottom of leveling nut and top of concrete **not** exceeding $(1) \times (\text{Rod Diameter})$

Site Data

BU#: _____
 Site Name: CT5122
 App #: _____

Anchor Rod Data

Eta Factor, η	0.5	TIA G (Fig. 4-4)
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, F_y :	75	ksi
Strength, F_u :	100	ksi
Bolt Circle:	76	in
Anchor Spacing:	6	in

Plate Data

W=Side:	82	in
Thick:	2.25	in
Grade:	60	ksi
Clip Distance:	16	in

Stiffener Data (Welding at both sides)

Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	69.225	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round

Base Reactions

TIA Revision:	G	
Factored Moment, M_u :	5821	ft-kips
Factored Axial, P_u :	63.1	kips
Factored Shear, V_u :	48.5	kips

Anchor Rod Results

TIA G --> Max Rod ($C_u + V_u/\eta$): 239.8 Kips
 Axial Design Strength, $\Phi * F_u * A_{net}$: 260.0 Kips
 Anchor Rod Stress Ratio: 92.2% **Pass**

Base Plate Results

Base Plate Stress: 50.5 ksi
 PL Design Bending Strength, $\Phi * F_y$: 54.0 ksi
 Base Plate Stress Ratio: 93.6% **Pass**

Flexural Check

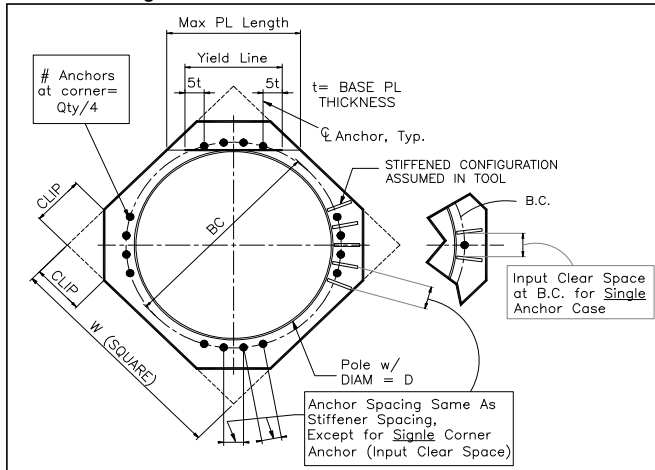
N/A - Unstiffened

Stiffener Results

Horizontal Weld : N/A
 Vertical Weld: N/A
 Plate Flex+Shear, $f_b/F_b + (f_v/F_v)^2$: N/A
 Plate Tension+Shear, $f_t/F_t + (f_v/F_v)^2$: N/A
 Plate Comp. (AISC Bracket): N/A

Pole Results

Pole Punching Shear Check: N/A



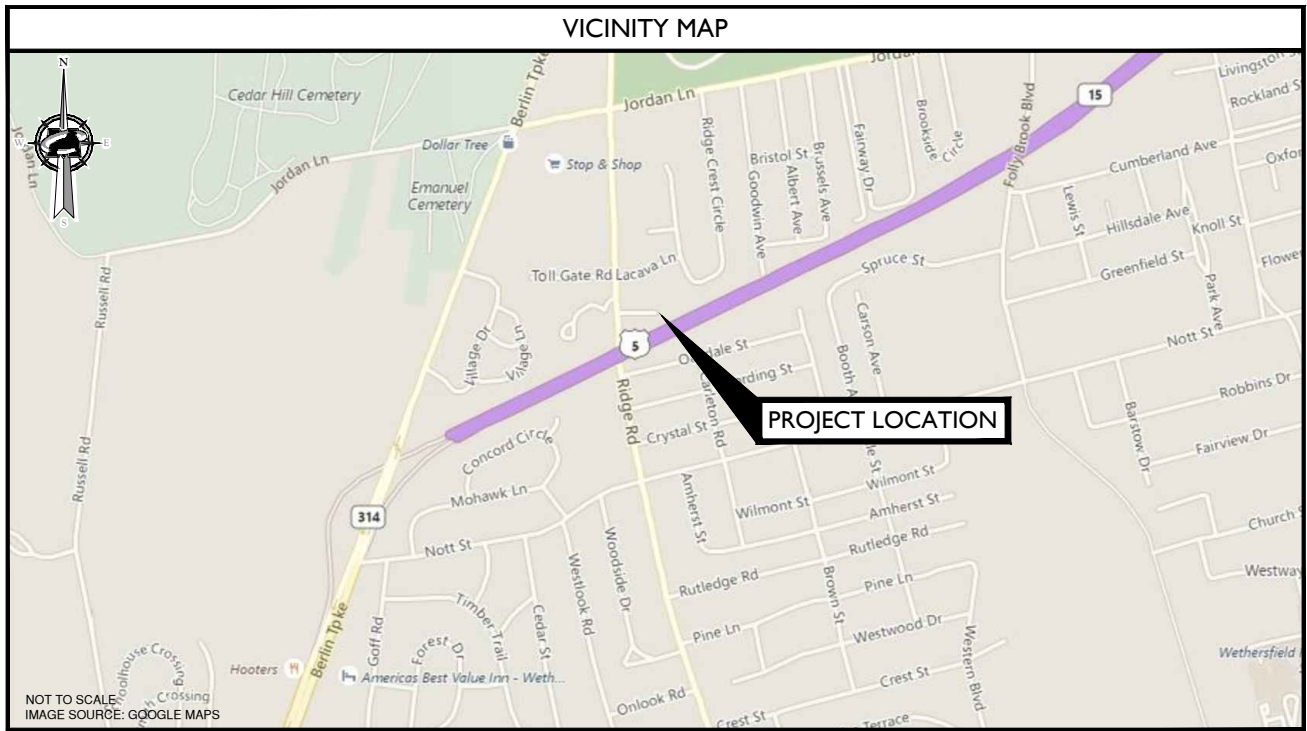
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes



**SITE NAME: WETHERSFIELD NORTH
PROJECT: LTE - 4C/5C
FA NUMBER: 10092829
SITE NUMBER: CT5122
23 KELLEHER COURT
WETHERSFIELD, CT 06109
HARTFORD COUNTY
FIRSTNET**

PROJECT TEAM	
CLIENT REPRESENTATIVE	
COMPANY:	EMPIRE TELECOM
ADDRESS:	16 ESQUIRE ROAD
CITY, STATE, ZIP:	BILLERICA, MA 01862
CONTACT:	DAVID COOPER
E-MAIL:	DCOOPER@EMPIRETEL.COM
ENGINEER	
COMPANY:	MASER CONSULTING CONNECTICUT
ADDRESS:	331 NEWMAN SPRINGS ROAD, SUITE 203
CITY, STATE, ZIP:	RED BANK, NJ 07701
CONTACT:	MICHAEL CLEARY
PHONE:	(856) 717-0412 x4105
E-MAIL:	MCLEARY@MASERCONSULTING.COM
RF ENGINEER	
COMPANY:	NEW CINGULAR WIRELESS PCS, LLC
ADDRESS:	550 COCHITUATE ROAD
CITY, STATE, ZIP:	FRAMINGHAM, MA 01701
CONTACT:	RAHI MUDDIN MOHAMMED
E-MAIL:	RX855W@ATT.COM

SITE INFORMATION	
APPLICANT/LESSEE	
NEW CINGULAR WIRELESS PCS, LLC 550 COCHITUATE RD. FRAMINGHAM, MA 01701	
TOWER OWNER:	
NAME:	TOWN OF WETHERSFIELD
ADDRESS:	
CITY, STATE, ZIP:	
LATITUDE:	41.7153919° N
LONGITUDE:	72.6905989° W
LAT/LONG. TYPE:	NAD 83
AREA OF CONSTRUCTION:	EXISTING OUTDOOR EQUIPMENT AND MONOPOLE
ZONING/JURISDICTION:	TOWN OF WETHERSFIELD
CURRENT USE/PROPOSED USE:	UNMANNED TELECOMMUNICATIONS FACILITY
HANDICAP REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.
CONSTRUCTION TYPE:	IIB
USE GROUP:	U



DRIVING DIRECTIONS

DIRECTIONS FROM AT&T OFFICE AT 550 COCHITUATE ROAD, FRAMINGHAM, MA:

DEPART RT-30 WEST/COCHITUATE ROAD TOWARD BURR STREET. TURN BACK ON RT-30 EAST/COCHITUATE ROAD. TAKE RAMP RIGHT FOR I-90 WEST TOWARD SPRINGFIELD/WORCESTER. AT EXIT 9, TAKE RAMP RIGHT FOR I-84 TOWARD HARTFORD/NEW YORK CITY. AT EXIT 57, TAKE RAMP LEFT FOR CT-15 SOUTH TOWARD CHARTER OAK BRIDGE/N.Y. CITY. KEEP STRAIGHT ONTO US-5 SOUTH/CT-15 SOUTH. AT EXIT 85, TAKE RAMP RIGHT FOR CT-99 SOUTH TOWARD ROCKY HILL/WETHERSFIELD. KEEP STRAIGHT ONTO CT-99 SOUTH/SILAS DEANE HIGHWAY. TURN RIGHT ONTO NOTT STREET. TURN RIGHT ONTO RIDGE ROAD. TURN RIGHT ONTO KELLEHER COURT.

CODE COMPLIANCE	
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.	
1. 2016 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2012 IBC	7. EIATIA-222 REVISION G
2. 2014 NATIONAL ELECTRICAL CODE-NFPA 70	8. TIA 607 FOR GROUNDING
3. 2012 NFPA 101	9. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
4. LIGHTNING PROTECTION CODE 2011	10. IEEE C2 LATEST EDITION
5. AMERICAN CONCRETE INSTITUTE 318	11. TELCORDIA GR-1275
6. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10	12. ANSI T1.311

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-1	COMPOUND AND EQUIPMENT PLAN
A-2	ELEVATION VIEW, DETAILS AND ANTENNA SCHEDULE
A-3	ANTENNA LAYOUTS
A-4	DETAILS
A-5	DETAILS
A-6	RF PLUMBING DIAGRAMS
G-1	GROUNDING DETAILS

PROJECT DESCRIPTION/SCOPE OF WORK

THIS PROJECT WILL BE COMPRISED OF:

- INSTALL (3) NEW AT&T ANTENNAS, (1) PER SECTOR
- INSTALL (3) NEW RRUS-B14 4478, (1) PER SECTOR
- INSTALL (3) NEW RRUS-32 866, (1) PER SECTOR
- INSTALL (1) NEW DC-6 SURGE SUPPRESSION DOME
- INSTALL (2) NEW 6/C DC POWER CABLE
- ADD 2ND XMU

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550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

16 ESQUIRE ROAD
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SCALE:	JOB NUMBER:
AS SHOWN	17963030A
0	02/19/18
1	01/29/18
REV	DESCRIPTION

PETROS P. KOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN 3157

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SITE NAME:

WETHERSFIELD NORTH
FA#:10092829
SITE #: CT5122
23 KELLEHER COURT
WETHERSFIELD, CT 06109
HARTFORD COUNTY

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732.383.1950
Fax: 732.383.1984

SHEET TITLE:	TITLE SHEET
SHEET NUMBER:	T-1

GENERAL NOTES:

- THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GESS) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 50 HNS OR LESS.
- THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
- METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
- EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
- APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
- GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR - EMPIRE TELECOM
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)
- ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND TI CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
- ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
- CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION, ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN ALERT OF DANGEROUS EXPOSURE LEVELS.



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NEW CINGULAR WIRELESS PCS, LLC
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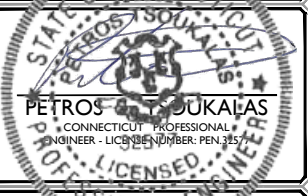


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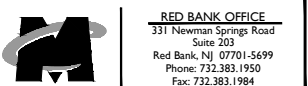
0	02/19/18	FOR CONSTRUCTION	RA	PET
1	01/29/18		AJC	RA
REV	DATE	DESCRIPTION	BY	CHECKED BY



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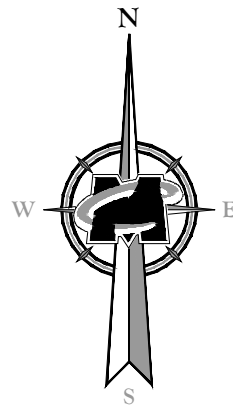
WETHERSFIELD NORTH
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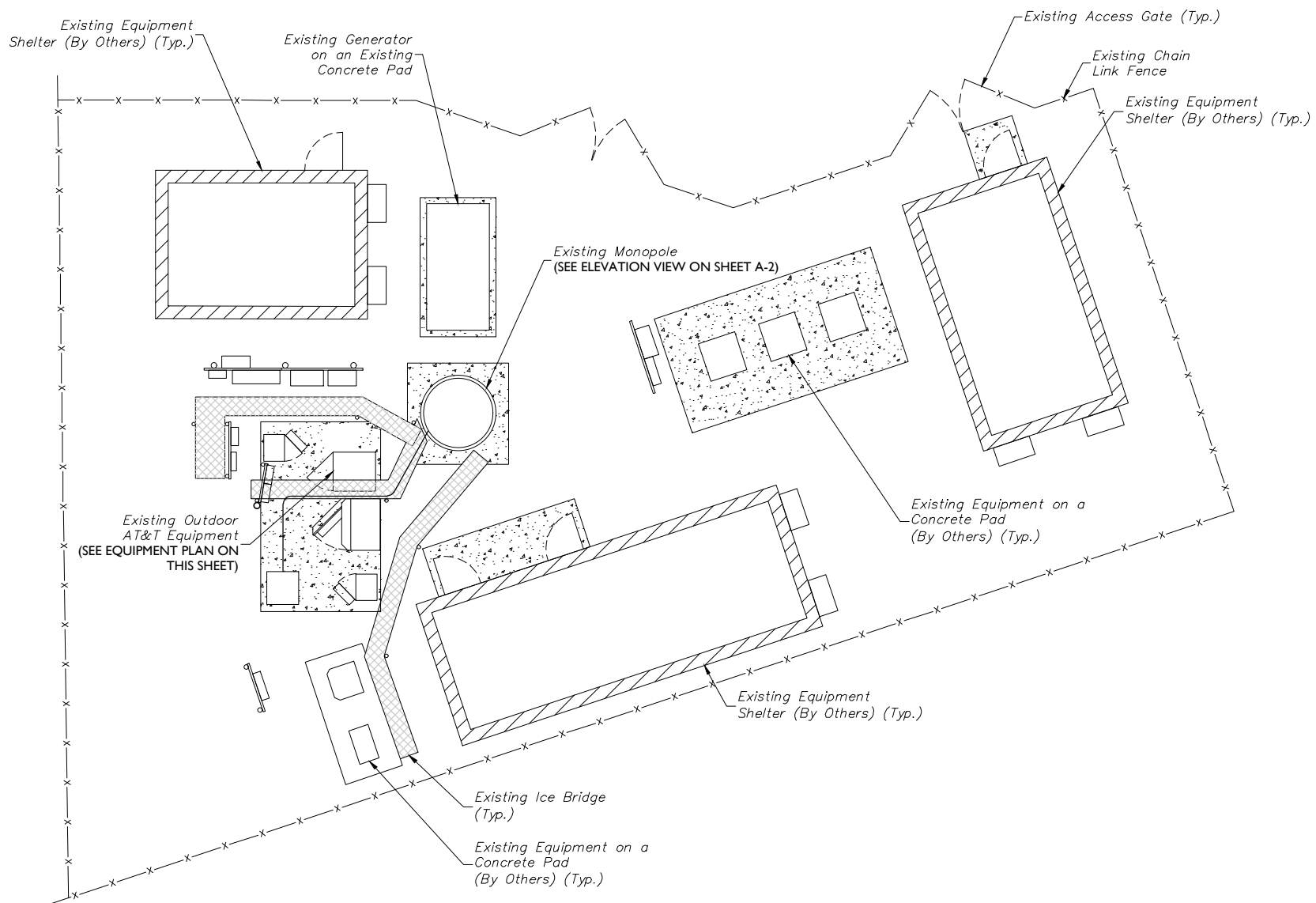
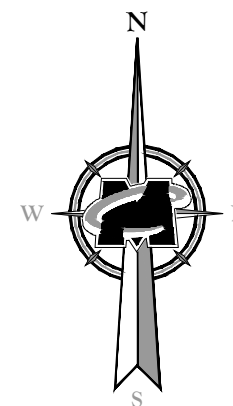
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SHEET NUMBER: GN-1

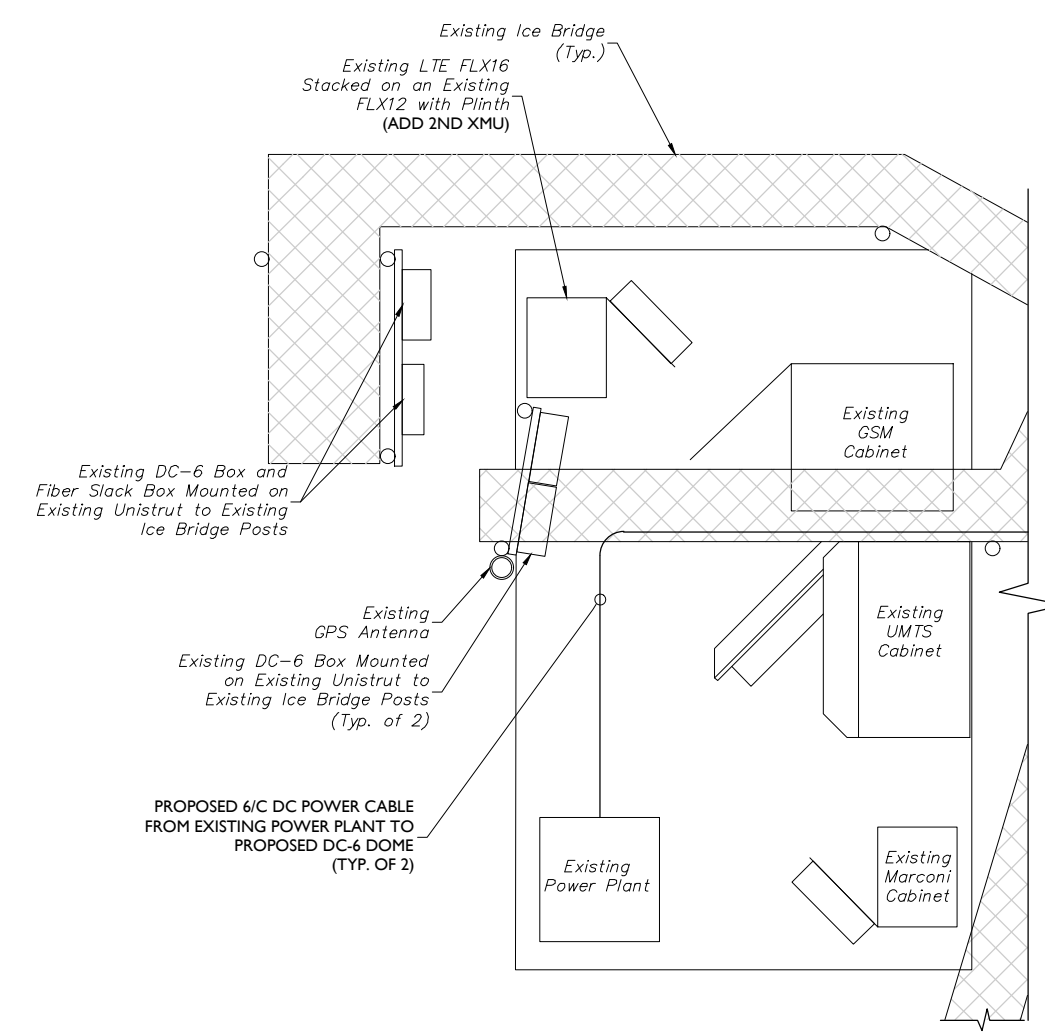


NOTE:
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NOTE:
 SITE INFORMATION OBTAINED FROM THE FOLLOWING:
 A. PLAN ENTITLED "WETHERSFIELD NORTH" PREPARED BY COM EX CONSULTANTS, LAST REVISED 12/14/16.



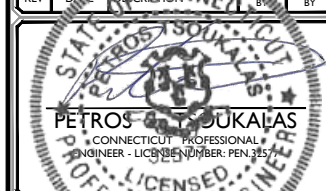
COMPOUND PLAN
 GRAPHIC SCALE
 (IN FEET)
 SCALE: 1" = 10' FOR 24"X36" DRAWINGS
 (DO NOT SCALE 11"X17" DRAWINGS)



EQUIPMENT PLAN
 GRAPHIC SCALE
 (IN FEET)
 SCALE: 1" = 2' FOR 24"X36" DRAWINGS
 (DO NOT SCALE 11"X17" DRAWINGS)

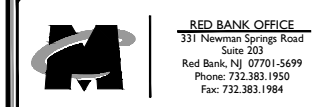


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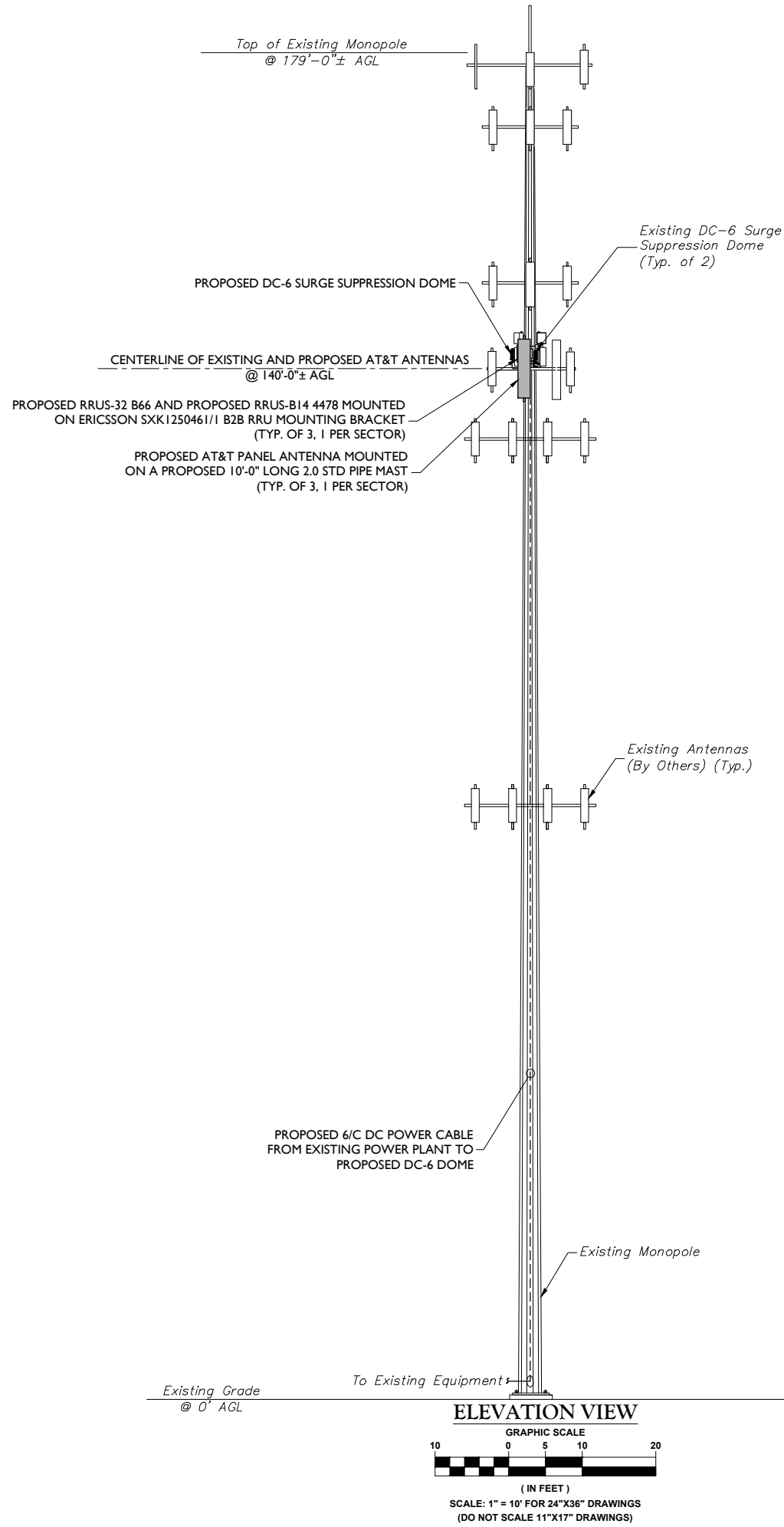


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 FA#:10092829
 SITE #: CT5122
 23 KELLEHER COURT
 WETHERSFIELD, CT 06109
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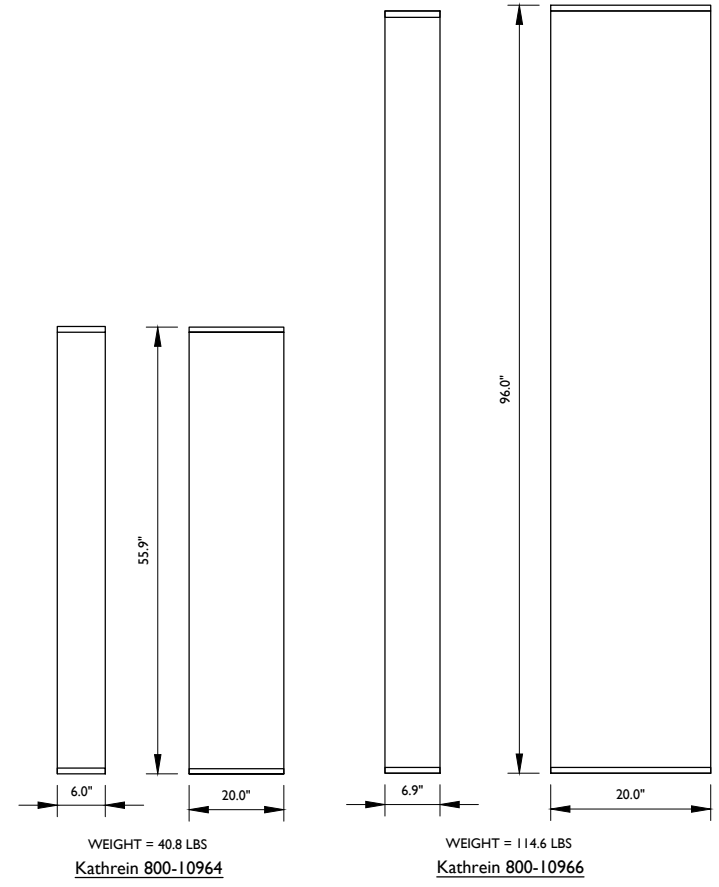
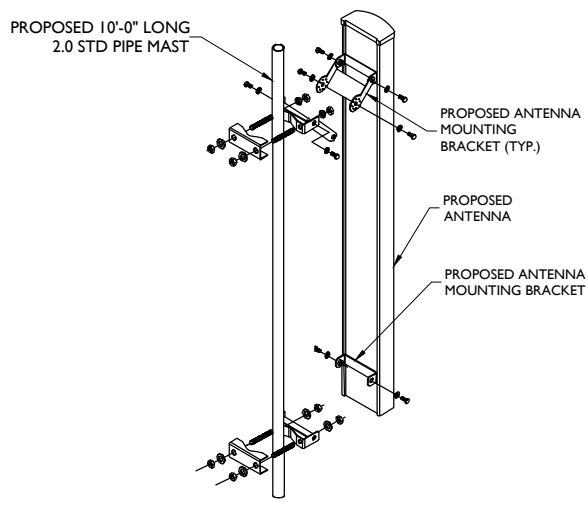
SHEET TITLE:
COMPOUND AND EQUIPMENT PLAN
 SHEET NUMBER:
A-1



3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
 6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE

PROPOSED ANTENNA AND RRUS CONFIGURATION												
SECTOR	EXISTING ANTENNA CONFIGURATION	PROPOSED ANTENNA CONFIGURATION	TECHNOLOGY	ANTENNA STATUS	HEIGHT (ft)	WIDTH (ft)	DEPTH (ft)	WEIGHT (lbs)	ANTENNA AZIMUTH	ANT. CL. ELEV (ft)	RRUS CONFIGURATION	STATUS
ALPHA	A1	Povenave 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	40°	140°	-	-
	A2	CCI TPA-65R-LCUUUU-H8	LTE	REMAIN	92.70	14.40	7.00	105.00	40°	140°	(1) RRUS-32	REMAIN
	A3	-	LTE	NEW	96.00	20.00	6.90	114.60	40°	140°	(1) RRUS-B14 4478 (1) RRUS-32 B66	NEW NEW
	A4	CCI HPA-65R-BUUU-H8	LTE	REMAIN	92.40	14.80	7.40	68.00	40°	140°	(1) RRUS-11 (1) RRUS-32 B2	REMAIN REMAIN
BETA	B1	Povenave 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	150°	140°	-	-
	B2	CCI TPA-65R-LCUUUU-H8	LTE	REMAIN	92.70	14.40	7.00	105.00	150°	140°	(1) RRUS-32	REMAIN
	B3	-	LTE	NEW	96.00	20.00	6.90	114.60	150°	140°	(1) RRUS-B14 4478 (1) RRUS-32 B66	NEW NEW
	B4	CCI HPA-65R-BUUU-H8	LTE	REMAIN	92.40	14.80	7.40	68.00	150°	140°	(1) RRUS-11 (1) RRUS-32 B2	REMAIN REMAIN
GAMMA	C1	Povenave 7770	UMTS	REMAIN	55.00	11.00	5.00	35.00	270°	140°	-	-
	C2	AndrewSBNHH-1D65A	LTE	REMAIN	55.00	11.90	7.10	33.50	270°	140°	(1) RRUS-32	REMAIN
	C3	-	LTE	NEW	55.20	11.80	6.00	40.80	270°	140°	(1) RRUS-B14 4478 (1) RRUS-32 B66	NEW NEW
	C4	AndrewSBNHH-1D65A	LTE	REMAIN	55.00	11.90	7.10	33.50	270°	140°	(1) RRUS-11 (1) RRUS-32 B2	REMAIN REMAIN

ANTENNA SCHEDULE



ANTENNA MOUNTING DETAIL
NOT TO SCALE

ANTENNA DETAILS
NOT TO SCALE

STRUCTURAL NOTES:

- NO CONSTRUCTION OF THE PROPOSED LOADING SHOWN SHALL PROCEED UNTIL ADEQUACY OF THE EXISTING STRUCTURE AND FOUNDATION, INCLUDING THE PROPOSED AT&T ANTENNA MOUNTING CONFIGURATION SHOWN HEREIN, HAS BEEN COMPLETED.
- THE STRUCTURE ELEVATION IS SHOWN FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REFLECT AS-BUILT FIELD CONDITIONS FOR ALL EXISTING INVENTORY LOADING/ANTENNAS/APPURTENANCES ON STRUCTURE. REFER TO THE LATEST STRUCTURAL ANALYSIS FOR EXISTING STRUCTURE LOADING AND THE PROPOSED METHOD OF ATTACHMENT OF THE PROPOSED ANTENNAS/CABLES.
- THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, CABLES, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

NOTE:

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CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN 3857

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SHEET TITLE:
ELEVATION VIEW, DETAILS AND ANTENNA SCHEDULE

SHEET NUMBER:
A-2



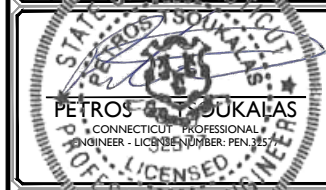
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HARTFORD COUNTY

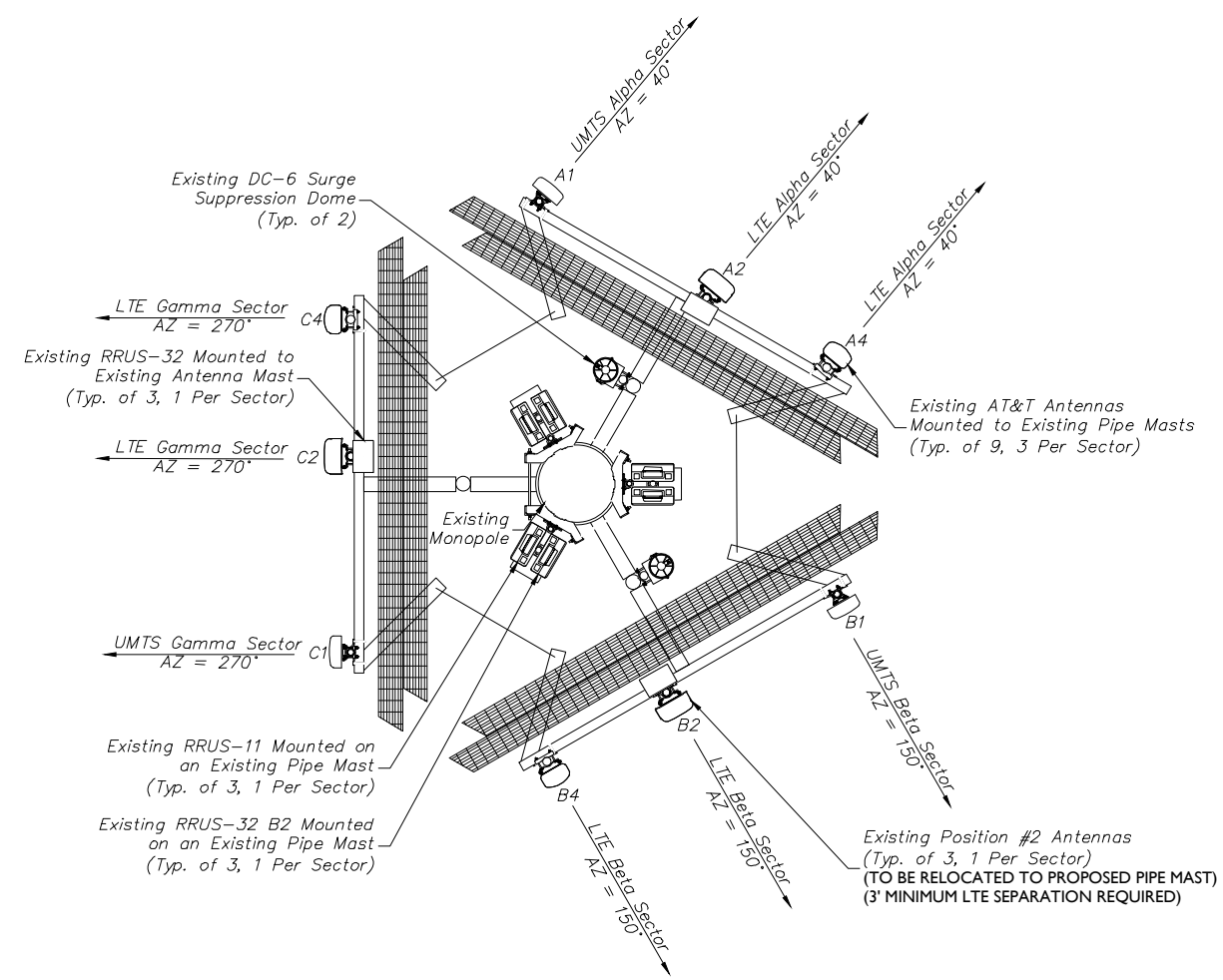
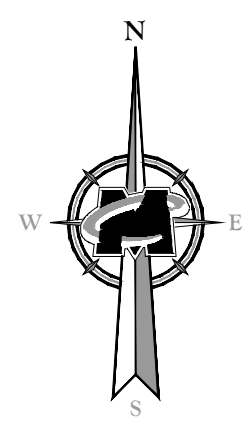
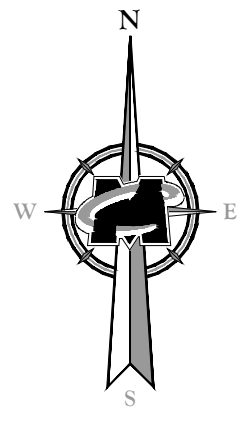
RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732.383.1950
Fax: 732.383.1984

SHEET TITLE:
ANTENNA LAYOUTS

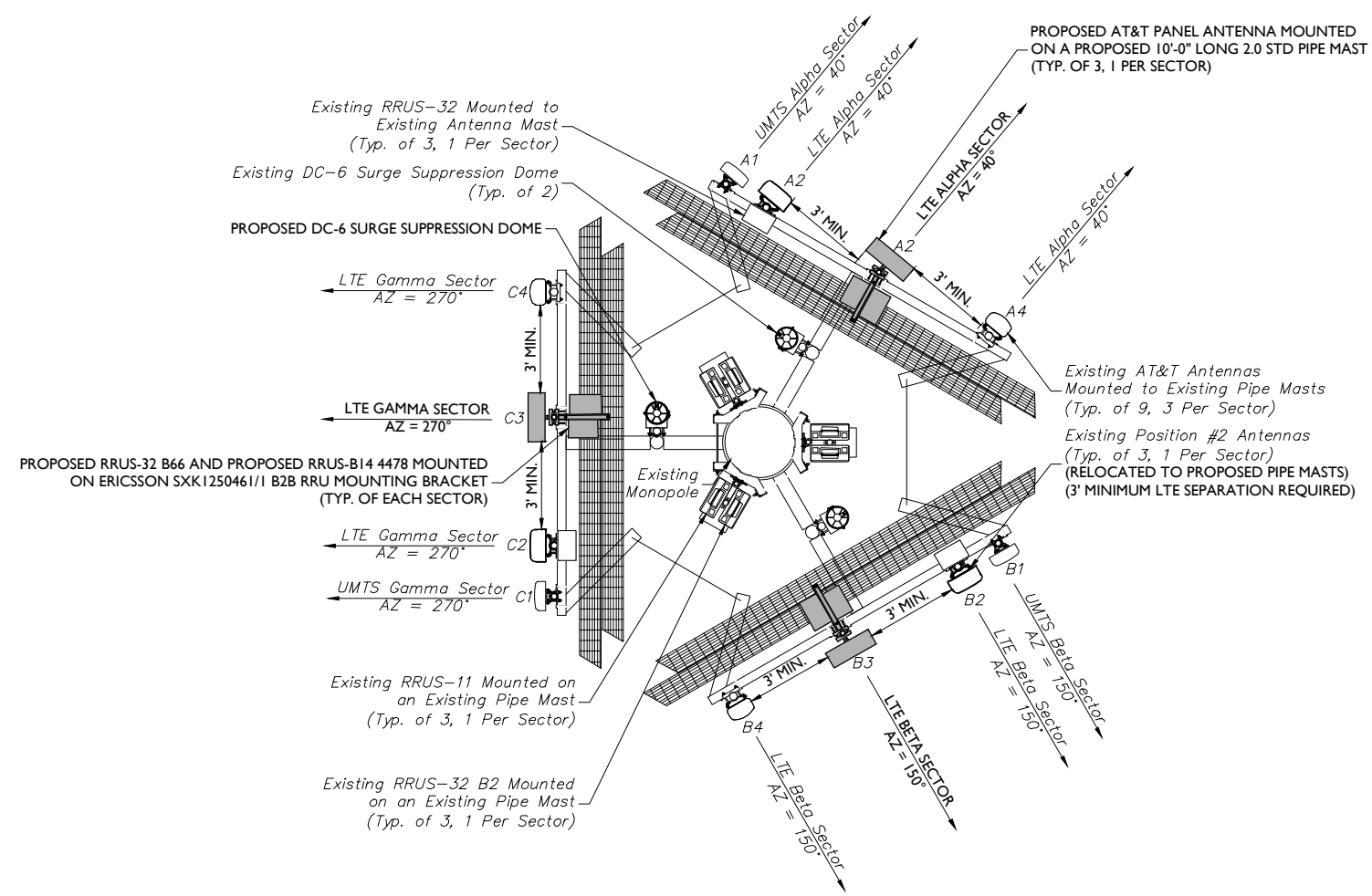
SHEET NUMBER:
A-3

3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE

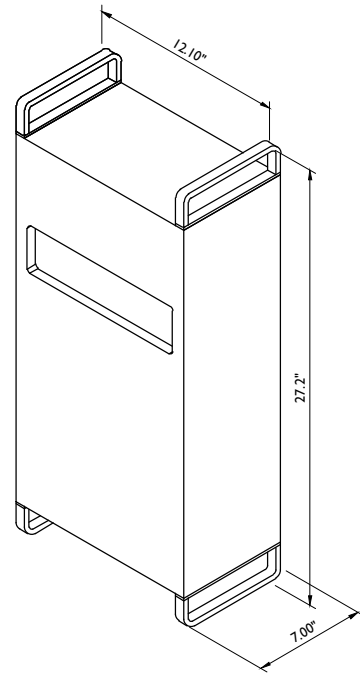
NOTE:
CONTRACTOR TO SHIFT EXISTING ANTENNAS AS NEEDED TO MEET REQUIRED 3'-0" MINIMUM ANTENNA SEPARATION.



EXISTING - ANTENNA LAYOUT
NOT TO SCALE



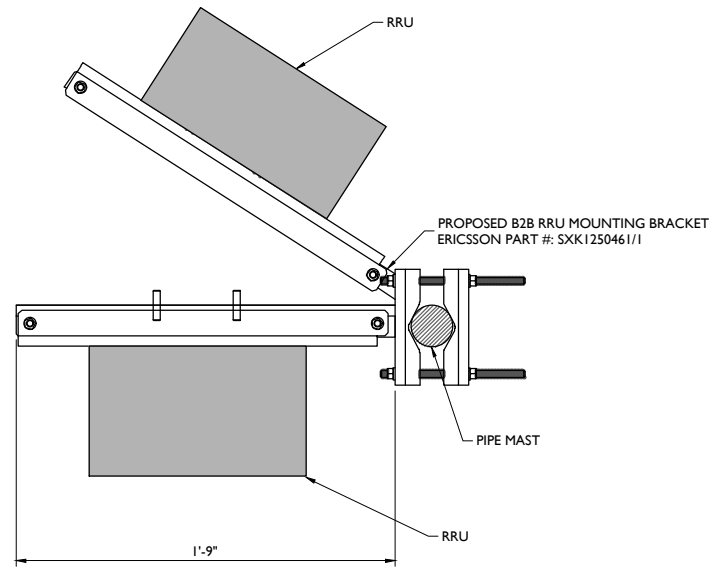
PROPOSED - ANTENNA LAYOUT
NOT TO SCALE



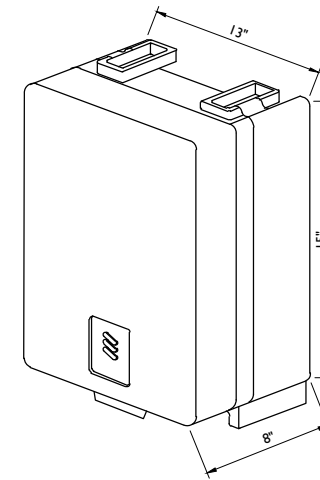
RRUS-32 B66 DIMENSIONS (H X W X D): 27.2" X 12.1" X 7.0"
(INCLUDES HANDLES, FEET AND SUNSHIELD)

WEIGHT: 53 LBS

RRUS-32 B66 DETAIL
NOT TO SCALE

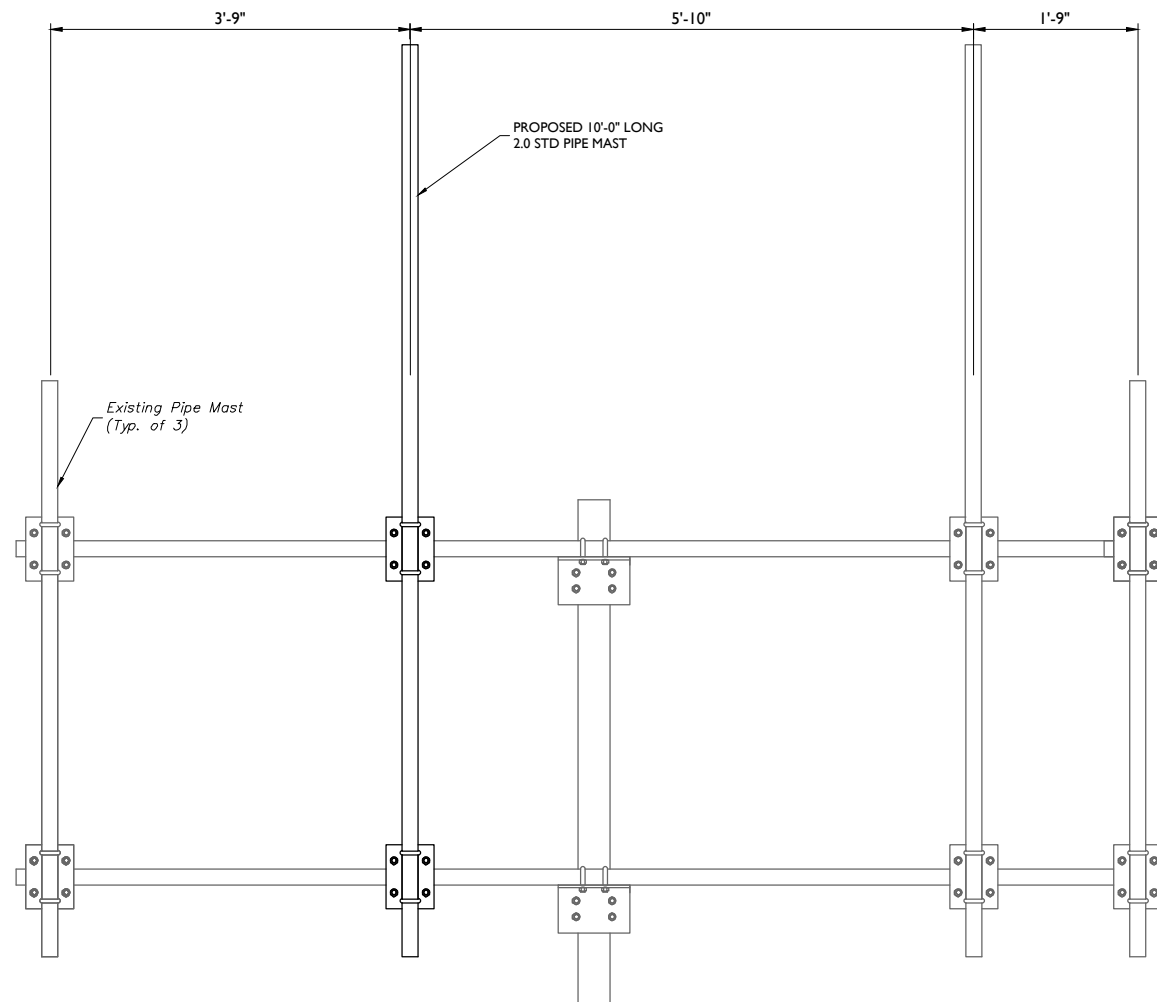


RRU MOUNTING DETAIL
NOT TO SCALE



DIMENSIONS (H X W X D): 15"H X 13"W X 8"D (INCLUDES SUNSHIELD)
WEIGHT: 60 LBS

RRU-4478-B14 DETAIL
NOT TO SCALE



PROPOSED PIPE MAST MOUNTING DETAIL
NOT TO SCALE



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550 COCHITUATE ROAD
FRAMINGHAM, MA 01701



16 ESQUIRE ROAD
BILLERICA, MA 01862



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SCALE: AS SHOWN JOB NUMBER: 17963030A

REV	DATE	DESCRIPTION	BY	CHECKED BY
0	02/19/18	FOR CONSTRUCTION	RA	PET
1	01/29/18		AJC	RA



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SITE NAME:

WETHERSFIELD NORTH
FA#: 10092829
SITE #: CT5122
23 KELLEHER COURT
WETHERSFIELD, CT 06109
HARTFORD COUNTY



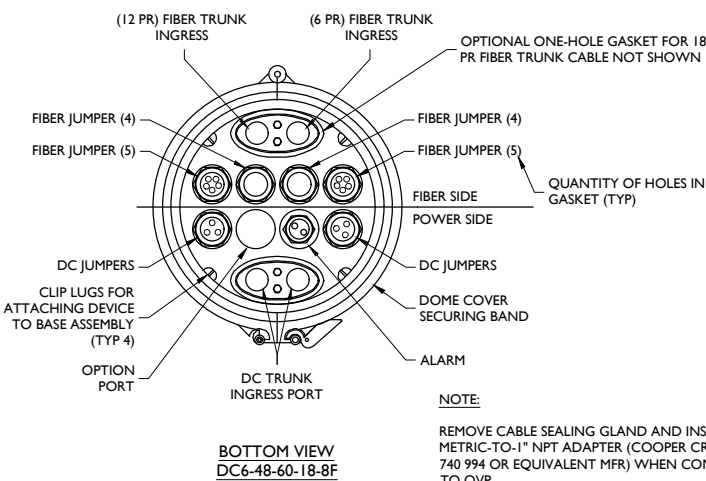
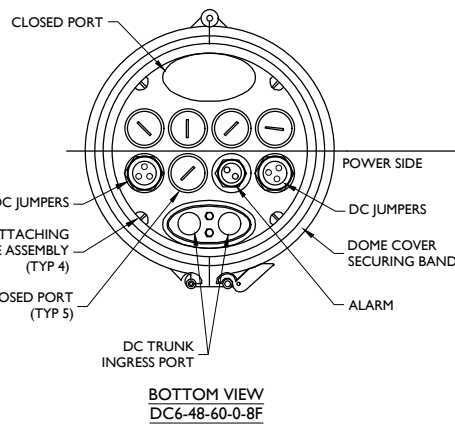
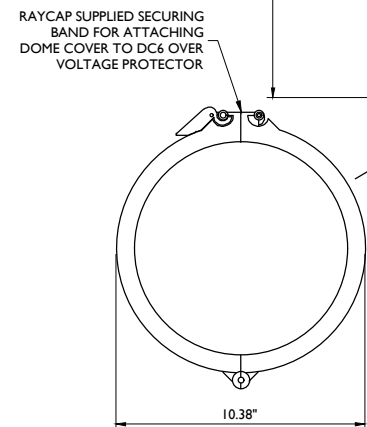
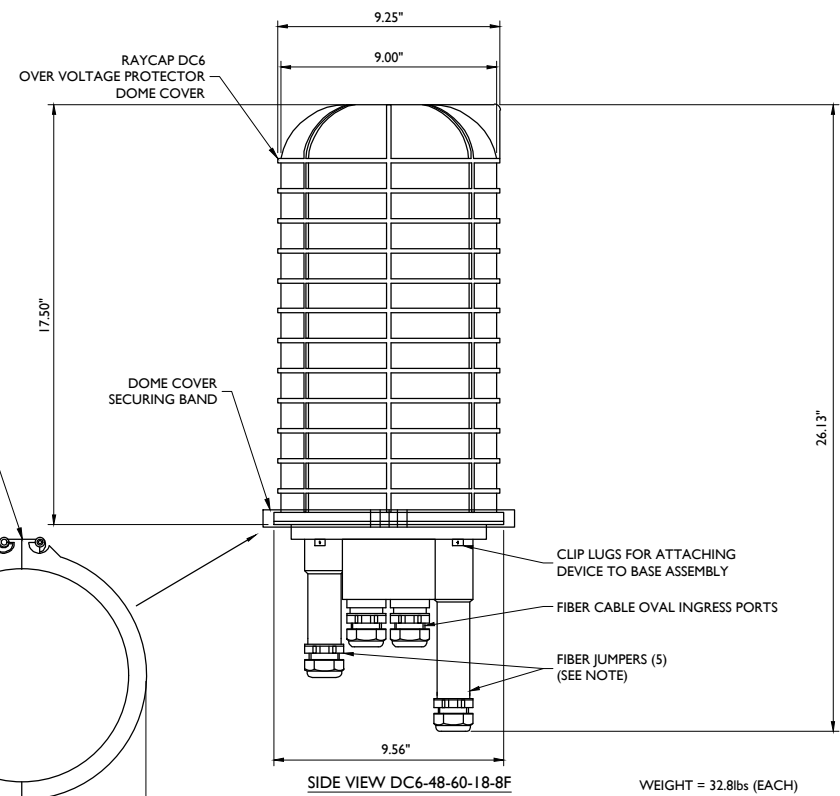
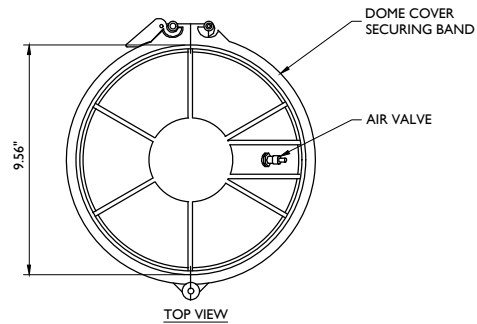
RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732.383.1950
Fax: 732.383.1984

SHEET TITLE:

DETAILS

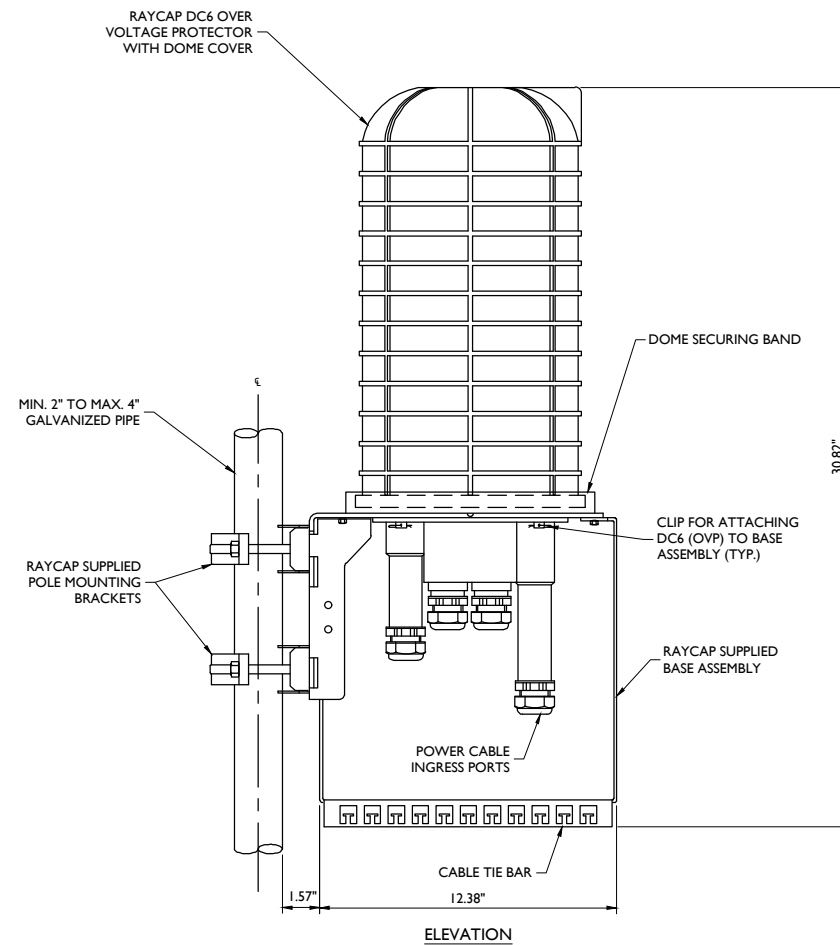
SHEET NUMBER:

A-4



DC6 SURGE SUPPRESSION DOME DETAIL

NOT TO SCALE



NOTES:

RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

**RAYCAP DC6-48-60-18-8F & DC6-48-60-0-8F
DC POWER OVER VOLTAGE PROTECTOR (OVP)
POLE MOUNT BASE ASSEMBLY**

NOT TO SCALE



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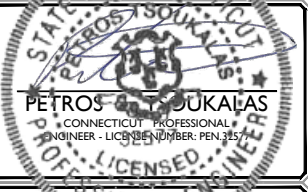


16 ESQUIRE ROAD
BILLERICA, MA 01862



SCALE:	JOB NUMBER:
AS SHOWN	17963030A

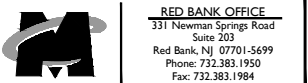
REV	DATE	DESCRIPTION	BY	CHECKED BY
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1	01/29/18		AJC	RA



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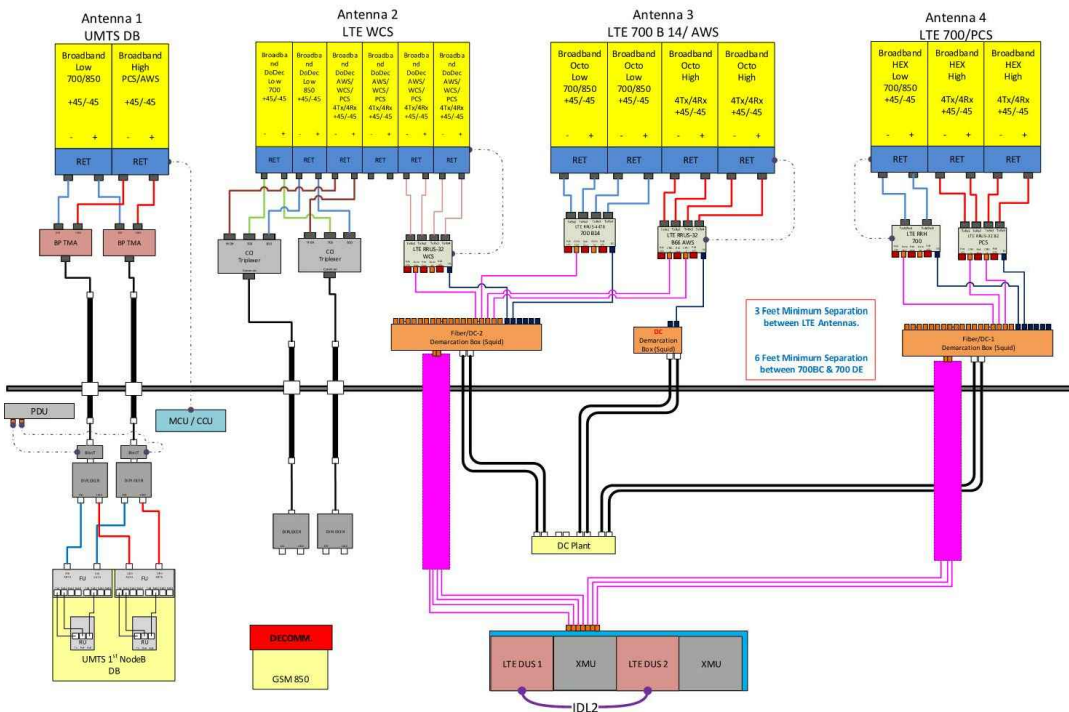
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331 Newman Springs Road
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Phone: 732.383.1950
Fax: 732.383.1984

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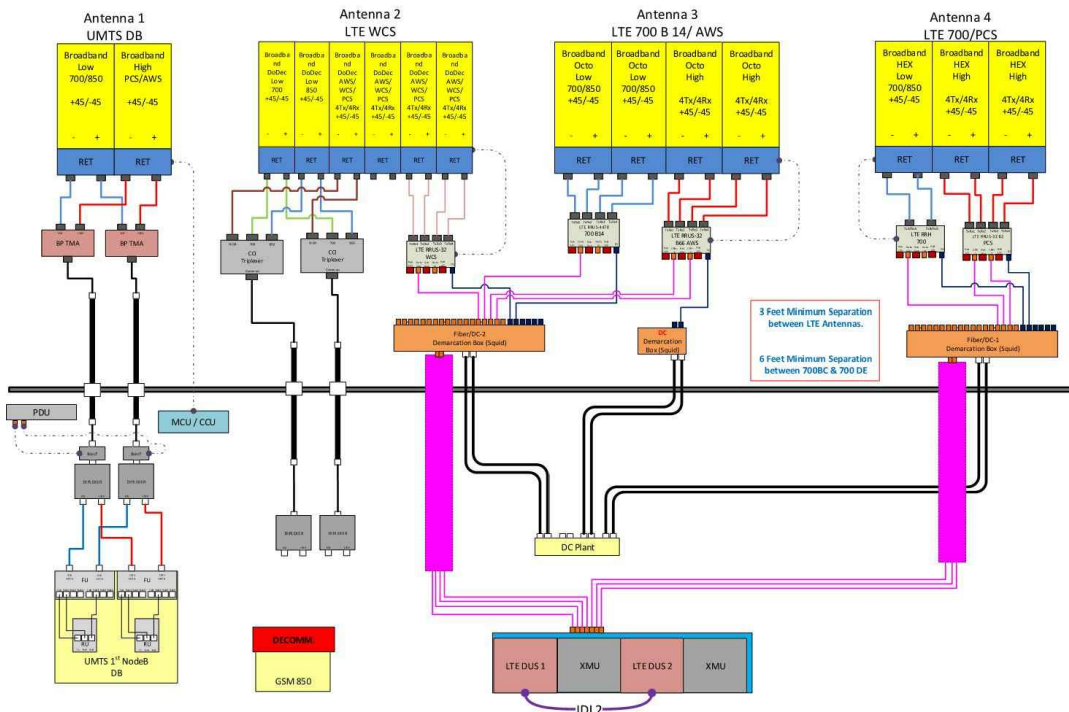
DETAILS

SHEET NUMBER:

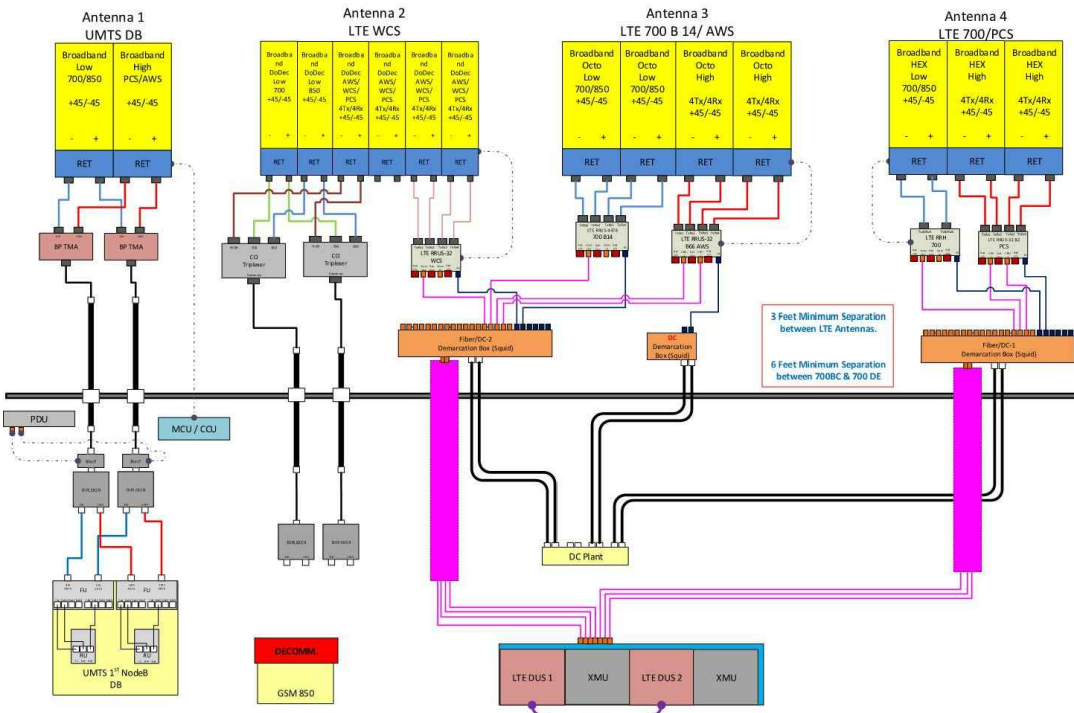
A-5



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR

BASED ON: "NEW-ENGLAND_CONNECTICUT_CT5122_2018-LTE-Next-Carrier_LTE_sp656b_2051A0EFQ2_10092829_25877_10-26-2017_Final-Approved_v1.00" Last Updated: 01/03/2018.

RF PLUMBING DIAGRAMS



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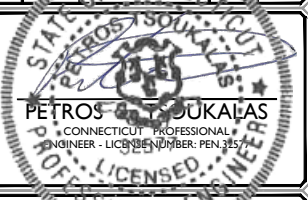
16 ESQUIRE ROAD
 BILLERICA, MA 01862



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SCALE:	JOB NUMBER:
AS SHOWN	17963030A

REV	DATE	DESCRIPTION	CHECKED BY
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 SITE #: CT5122
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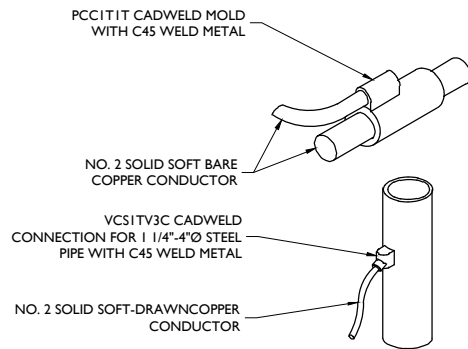
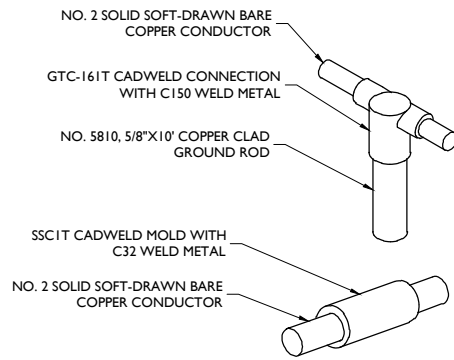
RED BANK OFFICE
 331 Newman Springs Road
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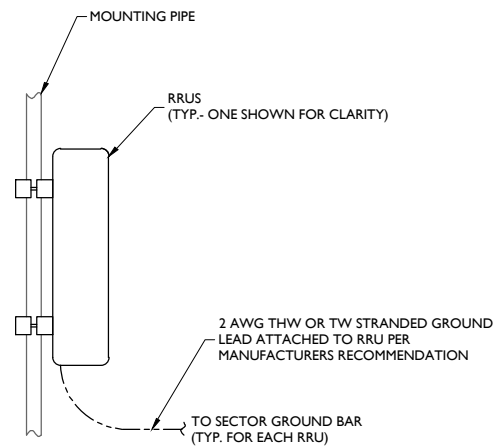
RF PLUMBING DIAGRAMS

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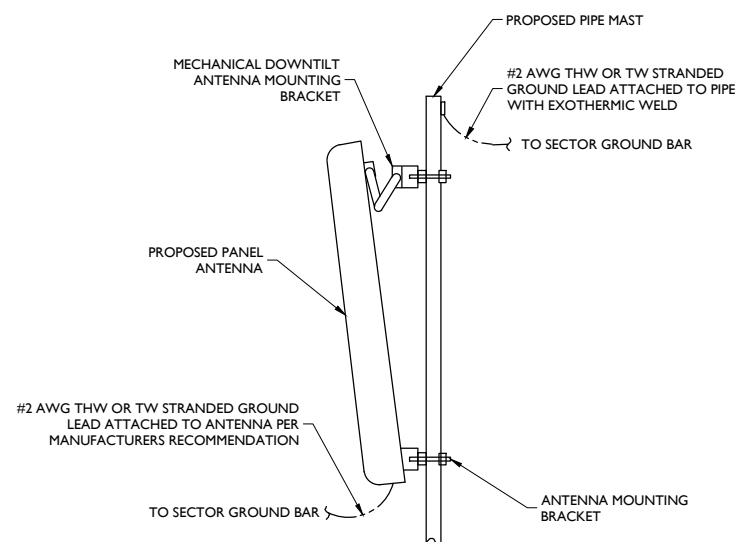
A-6



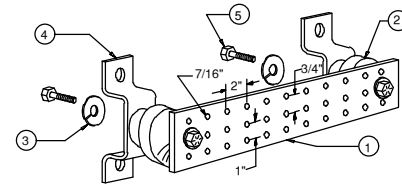
CADWELD DETAILS
NOT TO SCALE



RRU GROUNDING DETAIL
NOT TO SCALE



ANTENNA GROUNDING
NOT TO SCALE



LEGEND

- 1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
- 2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
- 3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
- 4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-5056
- 5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
- 6- EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

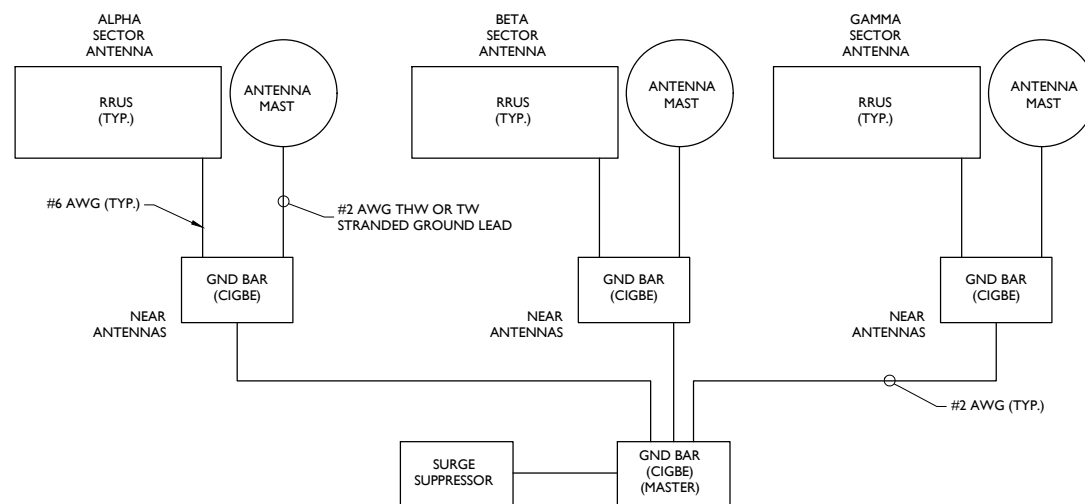
SECTION "P" - SURGE PRODUCERS

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

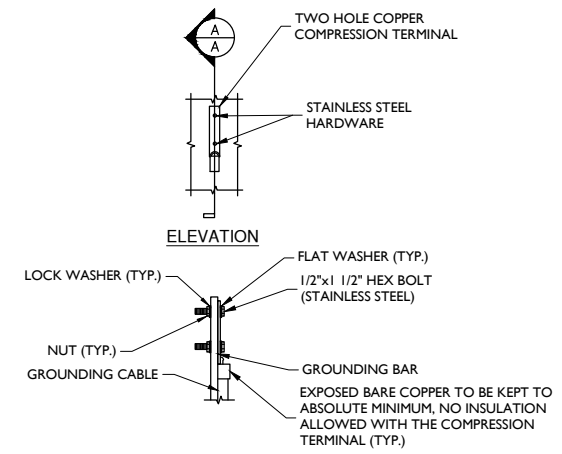
SECTION "A" - SURGE ABSORBERS

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

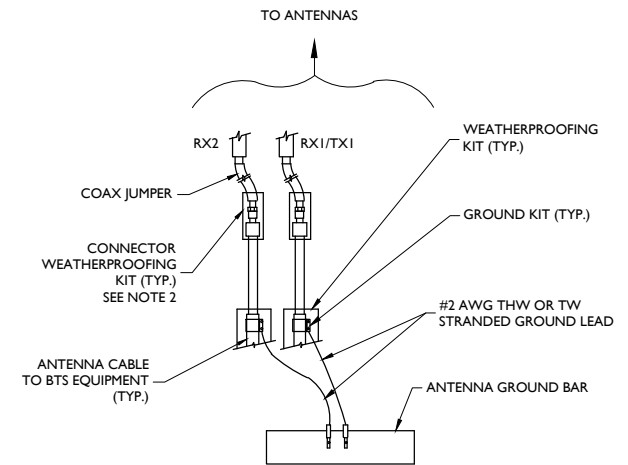
MASTER GROUND BAR
NOT TO SCALE



SCHEMATIC DIAGRAM GROUNDING SYSTEM



TYPICAL GROUND BAR CONNECTION DETAIL
NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR
NOT TO SCALE



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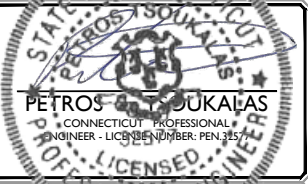
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SCALE: AS SHOWN	JOB NUMBER: 17963030A
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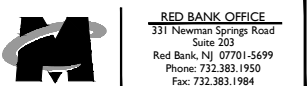
0	02/19/18	FOR CONSTRUCTION	RA	PET
1	01/29/18		AJC	RA
REV	DATE	DESCRIPTION	CHECKED BY	



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WETHERSFIELD NORTH
FA#:10092829
SITE #: CT5122
23 KELLEHER COURT
WETHERSFIELD, CT 06109
HARTFORD COUNTY



RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732.383.1950
Fax: 732.383.1984

SHEET TITLE:
GROUNDING DETAILS

SHEET NUMBER:
G-1

April 30, 2018

Peter Gillespie, Director of Wethersfield Planning & Economic Development
505 Silas Deane Highway
Wethersfield, CT 06109

RE: AT&T Wireless Modifications to Telecommunication Facility –
23 Kelleher Court, Wethersfield, CT 06109

Dear Mr. Gillespie:

In order to accommodate technological changes, implement the Uniform Mobile Telecommunications System and enhance system performance in the State of Connecticut, AT&T Wireless (“AT&T”) will be changing its equipment configuration at the above referenced telecommunications facility. AT&T Wireless currently maintains nine (9) antennas at the 144-foot level of an existing 179-foot monopole tower located at 23 Kelleher Court, in Wethersfield, CT. The tower is owned by the Town of Wethersfield. The property is owned by the Town of Wethersfield.

AT&T Wireless now seeks to install three (3) additional antennas, install six (6) new Remote Radio Units (“RRU”), install a new surge suppression dome, add one (1) XMU, and install two (2) new DC cables. The proposed antennas, suppression dome, and RRUs will be mounted at the 144-foot level on the existing tower.

This letter is intended to serve as the required notice to the municipality’s Planning and Economic Development Department. As required by the Regulations of Connecticut State Agencies (“RCSA”) section 16-50j-73, the Connecticut Siting Council (“CSC”) has been notified of the proposed changes and will review AT&T’s proposal. Please accept this letter as notification under RCSA section 16-50j-73 of construction which constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2).

The enclosed letter and documents to the CSC fully describes AT&T's proposal for the above referenced site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachman, Acting Executive Director of the CSC at 860-872-2935.

Respectfully submitted,



Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: Melanie Bachman, Connecticut Siting Council

April 30, 2018

Jeff Bridges, Town of Wethersfield Town Manager
505 Silas Deane Highway
Wethersfield, CT 06109

RE: AT&T Wireless Modifications to Telecommunication Facility –
23 Kelleher Court, Wethersfield, CT 06109

Dear Mr. Bridges:

In order to accommodate technological changes, implement the Uniform Mobile Telecommunications System and enhance system performance in the State of Connecticut, AT&T Wireless ("AT&T") will be changing its equipment configuration at the above referenced telecommunications facility. AT&T Wireless currently maintains nine (9) antennas at the 144-foot level of an existing 179-foot monopole tower located at 23 Kelleher Court, in Wethersfield, CT. The tower is owned by the Town of Wethersfield. The property is owned by the Town of Wethersfield.

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This letter is intended to serve as the required notice to the property owner and to the tower owner. As required by the Regulations of Connecticut State Agencies ("RCSA") section 16-50j-73, the Connecticut Siting Council ("CSC") has been notified of the proposed changes and will review AT&T's proposal. Please accept this letter as notification under RCSA section 16-50j-73 of construction which constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2).

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Respectfully submitted,



Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: Melanie Bachman, Connecticut Siting Council

April 30, 2018

The Honorable Amy Morrin Bello
505 Silas Deane Highway
Wethersfield, CT 06109

RE: AT&T Wireless Modifications to Telecommunication Facility –
23 Kelleher Court, Wethersfield, CT 06109

Dear Mayor Bello:

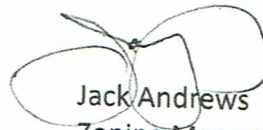
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The enclosed letter and documents to the CSC fully describes AT&T's proposal for the above referenced site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachman, Acting Executive Director of the CSC at 860-872-2935.

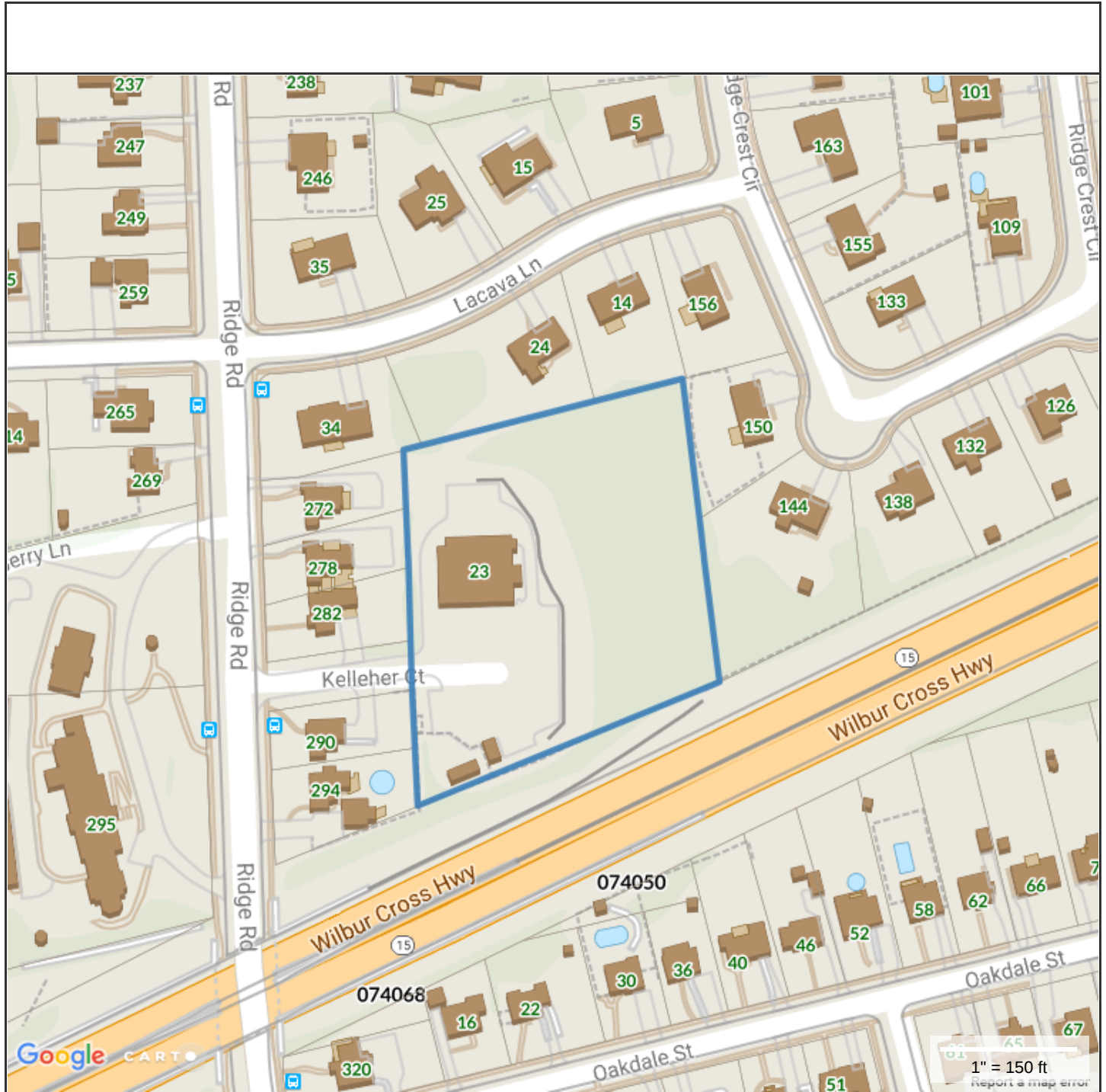
Respectfully submitted,



Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: Melanie Bachman, Connecticut Siting Council



Property Information
 Property ID 073060
 Location 23 KELLEHER CT
 Owner WETHERSFIELD TOWN OF



**MAP FOR REFERENCE ONLY
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Town of Wethersfield, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 11/14/17
 Properties updated daily

1" = 150 ft
 Report a map error