Michael Gentile, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (508) 844-9813
mgentile@clinellc.com

March 2, 2016

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

RE: Notice of Exempt Modification // Site Number: CT2112
623-627 Honeyspot Road, Stratford, CT 06615 (Site Name: Stratford)
N 41.176875 // W 73.1460222

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains nine (9) antennas at the 90 foot level of the existing 102 foot monopole tower at 623-627 Honeyspot Road, Stratford, CT 06615. The tower is owned by John and/or Deborah Becker. The property is also owned by John and/or Deborah Becker. AT&T now intends to replace three (3) of its existing antennas with three (3) new for its LTE upgrade. These antennas would be installed at the 90 foot level of the tower. AT&T also intends to install three (3) remote radio units, one (1) surge arrestor, six (6) triplexers and three (3) remote radio unit modules.

The current proposal involves an antenna swap only (three for three); zero antennas will be added.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to John A. Harkins, Mayor for the Town of Stratford, as well as the tower owner and the ground owner, John and/or Deborah Becker.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). AT&T was original approved for nine (9) antennas on 6/16/1999; AT&T was further approved for three (3) additional antennas that were never added on 7/18/2011 and approved for various radio units on 6/15/2015.

Attached to accommodate this filing are construction drawings dated 3/1/2015 by ComEx consultants, a structural analysis dated 3/1/2016 by ComEx Consultants and an Emissions Analysis Report dated 2/3/2016 by EBI Consulting.

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

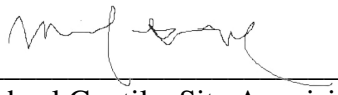
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading as shown in the attached structural analysis by ComEx Consultants dated 3/1/2016.

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

Sincerely,



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Mobile: (508) 844-9813
mgentile@centerlincommunications.com

Attachments

cc: John A. Harkins, Mayor, Town of Stratford - as elected official
John and/or Deborah Becker - as tower owner
John and/or Deborah Becker - as property owner

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

AT&T Existing Facility

Site ID: CTU2112

Stratford
623 Honeyspot Road
Stratford, CT 06615

February 3, 2016

EBI Project Number: 6216000455

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	29.45 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
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February 3, 2016

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

Emissions Analysis for Site: **CTU2112 – Stratford**

EBI Consulting was directed to analyze the proposed AT&T facility located at **623 Honeyspot Road, Stratford, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **623 Honeyspot Road, Stratford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

8) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the **KMW AM-X-CD-16-65-00T-RET, Quintel QS66512-3 and the Powerwave 7770.00** for transmission in the 700 MHz, 850 MHz,1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is **90 feet** above ground level (AGL).

11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

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AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	90 feet	Height (AGL):	90 feet	Height (AGL):	90 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	**1.41**	Antenna B1 MPE%	**1.41**	Antenna C1 MPE%	**1.41**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET
Gain:	13.35 dBd	Gain:	13.35 dBd	Gain:	13.35 dBd
Height (AGL):	90 feet	Height (AGL):	90 feet	Height (AGL):	90 feet
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,595.26	ERP (W):	2,595.26	ERP (W):	2,595.26
Antenna A2 MPE%	**2.83**	Antenna B2 MPE%	**2.83**	Antenna C2 MPE%	**2.83**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Quintel QS66512-3	Make / Model:	Quintel QS66512-3	Make / Model:	Quintel QS66512-3
Gain:	11.65 / 15.65 / 15.55 dBd	Gain:	11.65 / 15.65 / 15.55 dBd	Gain:	11.65 / 15.65 / 15.55 dBd
Height (AGL):	90 feet	Height (AGL):	90 feet	Height (AGL):	90 feet
Frequency Bands	850 MHz / 1900 MHz (PCS) / 2300 MHz (WCS)	Frequency Bands	850 MHz / 1900 MHz (PCS) / 2300 MHz (WCS)	Frequency Bands	850 MHz / 1900 MHz (PCS) / 2300 MHz (WCS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	300	Total TX Power(W):	300	Total TX Power(W):	300
ERP (W):	9,951.76	ERP (W):	9,951.76	ERP (W):	9,951.76
Antenna A3 MPE%	**5.25**	Antenna B3 MPE%	**5.25**	Antenna C3 MPE%	**5.25**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**9.47 %**
Nextel	2.11 %
Com-Tronics	4.26 %
Metricom	0.00 %
Verizon Wireless	10.87 %
Clearwire	0.43 %
Sprint	0.40 %
MetroPCS	1.91 %
Site Total MPE %:	**29.45 %**

AT&T Sector 1 Total:	9.47 %
AT&T Sector 2 Total:	9.47 %
AT&T Sector 3 Total:	9.47 %
Site Total:	29.45 %

AT&T _ Max Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	90	4.22	850	567	0.74 %
AT&T 1900 MHz (PCS) UMTS	2	656.33	90	6.69	1900	1000	0.67 %
AT&T 700 MHz LTE	2	1297.63	90	13.22	700	467	2.83 %
AT&T 850 MHz GSM	2	438.65	90	4.47	850	567	0.79 %
AT&T 1900 MHz (PCS) LTE	2	2203.69	90	22.46	1900	1000	2.25 %
AT&T 2300 MHz (WCS) LTE	2	2153.53	90	21.94	2300	1000	2.19 %
						Total:	9.47 %

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Summary

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

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

AT&T Sector	Power Density Value (%)
Sector 1:	9.47 %
Sector 2:	9.47 %
Sector 3 :	9.47 %
AT&T Maximum Total (per sector):	9.47 %
Site Total:	29.45 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **29.45%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

STRUCTURAL ANALYSIS REPORT – REV.1
MONOPOLE

Prepared For:

Com-Ex Consultants, LLC
115 Route 46 – Suite E39
Mountain Lakes, NJ 07046

Structure Rating:

Monopole:	**Pass**

Sincerely,
Destek Engineering, LLC

03-08-2016

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

AT&T Site ID: CT2112
FA Number: 10071312
Site Name: Stratford
623 Honeyspot Road
Stratford, Fairfield County, CT 06615

Destek Job No: 1629013

March 8, 2016

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1.1 – STRUCTURE

2.0 – EXISTING AND PROPOSED APPURTENANCES

3.0 - CODES AND LOADING

4.0 - STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

5.0 - ANALYSIS AND ASSUMPTIONS

6.0 – RESULTS AND CONCLUSION

APPENDIX

A – CALCULATIONS

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Ste 100, Marietta, GA 30066 -Tel: (770) 693-0835

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the existing monopole located at 623 Honeyspot Road, Stratford, CT 06615 for the additions and alterations proposed by AT&T.

The structural analysis is based on the following information provided to Destek Engineering, LLC (Destek):

- RFDS prepared by AT&T, dated 11/18/2015.
- Structural Analysis Report prepared by Ramaker & Associates, Inc., Project Number 27746, dated 5/6/2015.
- Tower Modification Drawings prepared by Ramaker & Associates, Inc., Project Number 27746, dated 10/15/2014.

1.1 STRUCTURE

The structure is a 102'-0" (18) sided monopole, which is attached to the foundation with anchor bolts and a base plate. Please refer to the software output in Appendix A, for tower geometry, member sizes, and other details.

ELEVATION (FEET)	SECTION LENGTH (FEET)	LAP SPLICE (IN)	SHAFT THICKNESS (IN)	TOP DIAMETER (IN)	BOTTOM DIAMETER (IN)	YIELD STRENGTH (KSI)
102.70-89.80	12.92	-	0.2500	13.0000	13.0000	35
89.80-45.00	44.80	3.80	0.2500	13.0000	26.7925	65
45.00-0.00	48.78	-	0.3125	25.1226	40.0000	65

*Does not include description of existing monopole modifications.

2.0 EXISTING AND PROPOSED APPURTENANCES

Appurtenances by others can be found in the appendix. AT&T is proposing the following antenna configuration on the tower:

Existing Configuration of AT&T Appurtenances:

Rad. Center (ft)	Antenna & TMA	Mount	Cables
90.0	(6) 7700.00 w/Mount Pipe (3) AM-X-CD-16-65-00T-RET w/Mount Pipe (12) LGP21401 TMAs (6) RRUW* (6) RRUS-11 (1) DC Fiber Distribution/Squid	(1) Platform Mount	(12) 7/8"

*Installed at grade

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Ste 100, Marietta, GA 30066 -Tel: (770) 693-0835

Proposed and Final Configuration of AT&T Appurtenances:

Rad. Center (ft)	Antenna & TMA	Mount	Cables
90.0	(3) 7700.00 w/Mount Pipe (3) AM-X-CD-16-65-00T-RET w/Mount Pipe (3) QS66512-3 w/ Mount Pipe (2) DC Fiber Distribution/Squid (12) LGP 21401 TMAs (6) RRUW* (6) RRUS 11 (3) RRUS 32 (3) RRUS A2 (6) Triplexers	(1) Platform Mount	(12) 7/8”

*Installed at grade

3.0 CODES AND LOADING

The Monopole was analyzed per *TIA/EIA-222-F* as referenced by *the 2005 State Building Code with all of the adopted Supplements and Amendments*, International Code Council. The following wind loading was used in compliance with the standard for Fairfield County:

- Basic wind speed 90 mph without ice (W)
- Basic wind speed 78 mph with 1/2” radial ice (W_i)

The following load combinations were used with wind blowing at 0^o, 60^o and 90^o, measured from a line normal to the face of the tower.

- D + W
- D + W_i + I

D: Dead Load W: Wind Load, without ice
W_i: Wind Load with ice I: Ice Gravity Load

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Ste 100, Marietta, GA 30066 -Tel: (770) 693-0835

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided to Destek and is assumed to be current and correct. Unless otherwise noted, the structure is assumed to be in good condition, free of defects, and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service lifespan. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Destek will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance.

The analysis does not include a qualification of the antenna mounts attached on the structure or their connections. The analysis is performed to verify the capacity of the main structural members, which is the current practice in the tower industry.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed appurtenances. Any deviation of the appurtenances and placement, etc., will require Destek to generate an additional structural analysis. Additionally, the proposed linear appurtenances should be placed per recommendations of this report.

5.0 ANALYSIS AND ASSUMPTIONS

The Monopole was analyzed by utilizing tnxTower, a non-linear, three-dimensional, finite element-analysis software package, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix A of this report.

The monopole modifications are assumed to have been constructed in accordance with the previously referenced drawings.

6.0 RESULTS AND CONCLUSION

Based on analysis, per TIA/EIA-222-F, the existing monopole is found to have **adequate** structural capacity for the proposed changes by AT&T. As a maximum, the monopole shaft between 72.5 feet and 74.8 feet is stressed to **77.7%** of its capacity. The anchor rods, base plate and foundation are also found to have **adequate** capacity.

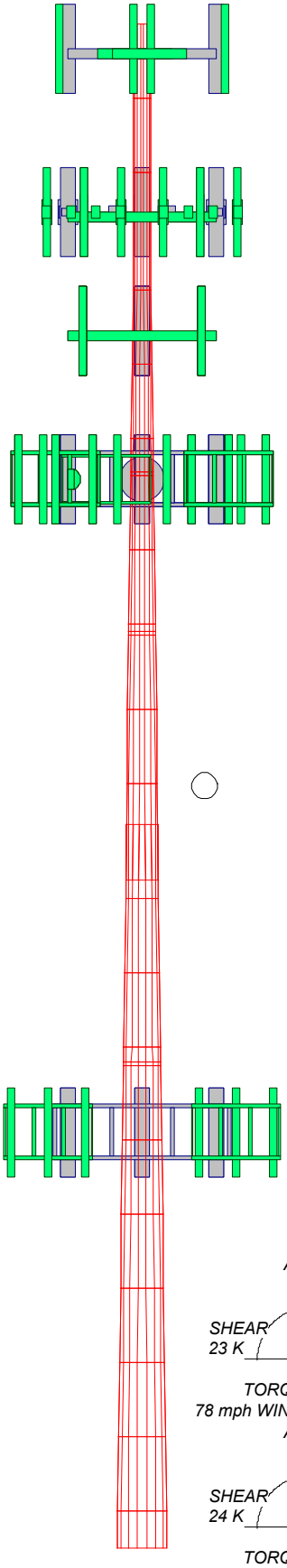
Therefore, the proposed additions and alterations by AT&T can be implemented as intended with the conditions outlined in this report.

Should you have any questions about this report, please contact Ahmet Colakoglu at (770) 693-0835 or acolakoglu@destekengineering.com.

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Ste 100, Marietta, GA 30066 -Tel: (770) 693-0835

APPENDIX A
CALCULATIONS

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	0	0.2500		13.0000	13.0000	A53-B-35	0.2
2	5.00	0	0.2500		13.0000	13.0000		0.2
3	2.92	0	0.2500		13.0000	13.0000		0.1
4	5.00	18	0.2500		13.0000	14.5393		0.2
5	5.00	18	0.2500		14.5393	16.0787		0.2
6	5.00	18	0.2500		16.0787	17.6180		0.2
7	0.28	18	0.2500		17.6180	17.7200		0.0
8	0.22	18	0.2500		17.7200	17.7756		0.0
9	5.00	18	0.6125		18.3968	19.9363		0.5
10	5.00	18	0.5750		19.9363	21.4756		0.6
11	0.25	18	0.5750		21.4756	21.5394		0.0
12	0.25	18	0.5750		21.5394	21.7063		0.0
13	5.00	18	0.6750		21.7063	23.2459		0.7
14	5.00	18	0.6375		23.2459	24.7852		0.7
15	5.06	18	0.6250	3.80	24.7852	26.7925		1.0
16	0.52	18	0.6625		26.7925	26.8475	A572-65	0.8
17	5.00	18	0.6500		26.8475	28.1725		0.9
18	5.00	18	0.6250		28.1725	29.6974		0.9
19	0.33	18	0.6250		29.6974	29.8723		0.2
20	0.17	18	0.6250		29.8723	30.0872		0.0
21	5.00	18	0.6875		30.0872	31.6128		1.1
22	5.00	18	0.6625		31.6128	33.1377		1.1
23	5.00	18	0.6500		33.1377	34.6627		1.1
24	5.00	18	0.6250		34.6627	36.1876		1.1
25	5.00	18	0.6125		36.1876	37.7126		1.2
26	5.00	18	0.6000		37.7126	39.2375		1.2
27	2.50	18	0.6000		39.2375	40.0000		0.6



DESIGNED APPURTENANCE LOADING

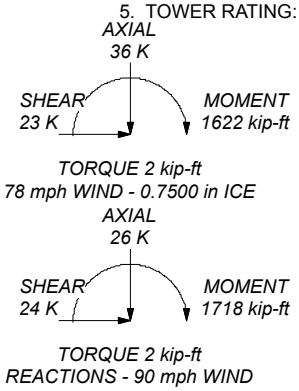
TYPE	ELEVATION	TYPE	ELEVATION
(2) 800 10504 w/ Mount Pipe	101	(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	82
(2) 800 10504 w/ Mount Pipe	101	RRH2x40-AWS	82
(2) 800 10504 w/ Mount Pipe	101	RRH2x40-AWS	82
5' T-Arm	101	RRH2x40-AWS	82
5' T-Arm	101	RRH 2x40-700 W/SOLAR	82
5' T-Arm	101	RRH 2x40-700 W/SOLAR	82
climbing ladder	92	RRH 2x40-700 W/SOLAR	82
7770.00 w/ Mount Pipe	90	DB-T1-6Z-8AB-0Z	82
7770.00 w/ Mount Pipe	90	Sabre 10' Platform w/handrails	82
AM-X-CD-16-65-00T-RET w/ Mount Pipe	90	MG D3-800TV w/ Mount Pipe	82
AM-X-CD-16-65-00T-RET w/ Mount Pipe	90	climbing ladder	82
AM-X-CD-16-65-00T-RET w/ Mount Pipe	90	(2) 1900MHz 4X40W RRH	75
QS66512-3 w/ Mount Pipe	90	(2) 1900MHz 4X40W RRH	75
QS66512-3 w/ Mount Pipe	90	(2) 1900MHz 4X40W RRH	75
QS66512-3 w/ Mount Pipe	90	800MHZ RRH	73
DC Filber Distribution/Squid	90	800MHZ RRH	73
DC Filber Distribution/Squid	90	800MHZ RRH	73
(4) LGP21401	90	APXVTM14-C-120 w/ Mount Pipe	72
(4) LGP21401	90	APXVSPP18-C w/ Mount Pipe	72
(4) LGP21401	90	APXVSPP18-C w/ Mount Pipe	72
(2) TPX-070821	90	APXVSPP18-C w/ Mount Pipe	72
(2) TPX-070821	90	TD-RRH8x20	72
(2) TPX-070821	90	TD-RRH8x20	72
(2) RRUS 11	90	TD-RRH8x20	72
(2) RRUS 11	90	2'x2' Junction box	72
(2) RRUS 11	90	12' T-ARM	72
RRUS 32	90	12' T-ARM	72
RRUS 32	90	12' T-ARM	72
RRUS 32	90	APXVTM14-C-120 w/ Mount Pipe	72
Sabre 10' Platform w/handrails	90	APXVTM14-C-120 w/ Mount Pipe	72
7770.00 w/ Mount Pipe	90	A-ANT23G-1	72
MG D3-800TV w/ Mount Pipe	82	A-ANT23G-1	72
MG D3-800TV w/ Mount Pipe	82	andrew 3' w/ Radome	72
BXA-171063-8CF-EDIN-X w/ Mount Pipe	82	12' Omni	28
BXA-171063-8CF-EDIN-X w/ Mount Pipe	82	10' Omni	28
BXA-171063-8CF-EDIN-X w/ Mount Pipe	82	10' Omni	28
BXA-171063-8CF-EDIN-X w/ Mount Pipe	82	10' Omni	28
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	82	GPS	28
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	82	12' T-Arm	28
		4' Standoff	28
		4' Standoff	28
		20' Omni	28
		12' Omni	28

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 78 mph basic wind with 0.75 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 77.7%



Destek Engineering, LLC
1281 Kennestone Circle, Ste 100
Marietta, GA 30066
Phone: (770) 693-0835
FAX:

Job: ***1629013***			
Project: ***Stratford***			
Client: Com-Ex Consultants, LLC	Drawn by: Ahmet Colakoglu		App'd:
Code: TIA/EIA-222-F	Date: 03/08/16		Scale: NTS
Path: Z:\Projects\2016\29 - Com-Ex\013 - CT2112 - 15180\TNX\Rev2\Stratford.eri			Dwg No. E-1

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 90 mph.
Nominal ice thickness of 0.7500 in.
Ice density of 56 pcf.
A wind speed of 78 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

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	102.70-97.70	5.00	0.00	Round	13.0000	13.0000	0.2500		A53-B-35 (35 ksi)
L2	97.70-92.70	5.00	0.00	Round	13.0000	13.0000	0.2500		A53-B-35 (35 ksi)
L3	92.70-89.78	2.92	0.00	Round	13.0000	13.0000	0.2500		A53-B-35 (35 ksi)
L4	89.78-84.78	5.00	0.00	18	13.0000	14.5393	0.2500	1.0000	A572-65 (65 ksi)
L5	84.78-79.78	5.00	0.00	18	14.5393	16.0787	0.2500	1.0000	A572-65 (65 ksi)

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
L6	79.78-74.78	5.00	0.00	18	16.0787	17.6180	0.2500	1.0000	A572-65 (65 ksi)
L7	74.78-72.50	2.28	0.00	18	17.6180	18.3200	0.2500	1.0000	A572-65 (65 ksi)
L8	72.50-72.25	0.25	0.00	18	18.3200	18.3969	0.6625	2.6500	A572-65 (65 ksi)
L9	72.25-67.25	5.00	0.00	18	18.3969	19.9363	0.6125	2.4500	A572-65 (65 ksi)
L10	67.25-62.25	5.00	0.00	18	19.9363	21.4756	0.5750	2.3000	A572-65 (65 ksi)
L11	62.25-61.75	0.50	0.00	18	21.4756	21.6295	0.5750	2.3000	A572-65 (65 ksi)
L12	61.75-61.50	0.25	0.00	18	21.6295	21.7065	0.7125	2.8500	A572-65 (65 ksi)
L13	61.50-56.50	5.00	0.00	18	21.7065	23.2459	0.6750	2.7000	A572-65 (65 ksi)
L14	56.50-51.50	5.00	0.00	18	23.2459	24.7852	0.6375	2.5500	A572-65 (65 ksi)
L15	51.50-44.98	6.52	3.80	18	24.7852	26.7925	0.6250	2.5000	A572-65 (65 ksi)
L16	44.98-43.78	5.00	0.00	18	25.1226	26.6475	0.6625	2.6500	A572-65 (65 ksi)
L17	43.78-38.78	5.00	0.00	18	26.6475	28.1725	0.6500	2.6000	A572-65 (65 ksi)
L18	38.78-33.78	5.00	0.00	18	28.1725	29.6974	0.6250	2.5000	A572-65 (65 ksi)
L19	33.78-32.75	1.03	0.00	18	29.6974	30.0116	0.6250	2.5000	A572-65 (65 ksi)
L20	32.75-32.50	0.25	0.00	18	30.0116	30.0878	0.7125	2.8500	A572-65 (65 ksi)
L21	32.50-27.50	5.00	0.00	18	30.0878	31.6128	0.6875	2.7500	A572-65 (65 ksi)
L22	27.50-22.50	5.00	0.00	18	31.6128	33.1377	0.6625	2.6500	A572-65 (65 ksi)
L23	22.50-17.50	5.00	0.00	18	33.1377	34.6627	0.6500	2.6000	A572-65 (65 ksi)
L24	17.50-12.50	5.00	0.00	18	34.6627	36.1876	0.6250	2.5000	A572-65 (65 ksi)
L25	12.50-7.50	5.00	0.00	18	36.1876	37.7126	0.6125	2.4500	A572-65 (65 ksi)
L26	7.50-2.50	5.00	0.00	18	37.7126	39.2375	0.6000	2.4000	A572-65 (65 ksi)
L27	2.50-0.00	2.50		18	39.2375	40.0000	0.6000	2.4000	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	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
L2	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
L3	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
	13.0000	10.0138	203.5623	4.5087	6.5000	31.3173	407.1246	5.0039	0.0000	0
L4	13.2005	10.1171	207.7854	4.5263	6.6040	31.4636	415.8441	5.0595	1.8480	7.392

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
	14.7636	11.3386	292.4968	5.0727	7.3860	39.6016	585.3784	5.6704	2.1189	8.476
L5	14.7636	11.3386	292.4968	5.0727	7.3860	39.6016	585.3784	5.6704	2.1189	8.476
	16.3267	12.5601	397.5747	5.6192	8.1680	48.6748	795.6725	6.2812	2.3898	9.559
L6	16.3267	12.5601	397.5747	5.6192	8.1680	48.6748	795.6725	6.2812	2.3898	9.559
	17.8898	13.7815	525.2133	6.1656	8.9500	58.6833	1051.1176	6.8921	2.6608	10.643
L7	17.8898	13.7815	525.2133	6.1656	8.9500	58.6833	1051.1176	6.8921	2.6608	10.643
	18.6026	14.3385	591.5020	6.4148	9.3065	63.5577	1183.7824	7.1706	2.7843	11.137
L8	18.6026	37.1297	1462.5652	6.2684	9.3065	157.1545	2927.0549	18.5684	2.0583	3.107
	18.6807	37.2915	1481.7742	6.2957	9.3456	158.5524	2965.4982	18.6493	2.0719	3.127
L9	18.6807	34.5743	1381.5620	6.3135	9.3456	147.8296	2764.9420	17.2904	2.1599	3.526
	20.2438	37.5669	1772.2551	6.8599	10.1276	174.9921	3546.8423	18.7870	2.4308	3.969
L10	20.2438	35.3353	1673.4546	6.8733	10.1276	165.2366	3349.1112	17.6710	2.4968	4.342
	21.8069	38.1447	2105.1806	7.4197	10.9096	192.9657	4213.1312	19.0760	2.7677	4.813
L11	21.8069	38.1447	2105.1806	7.4197	10.9096	192.9657	4213.1312	19.0760	2.7677	4.813
	21.9632	38.4256	2152.0385	7.4744	10.9878	195.8569	4306.9088	19.2165	2.7948	4.861
L12	21.9632	47.3034	2614.7519	7.4256	10.9878	237.9684	5232.9443	23.6562	2.5528	3.583
	22.0414	47.4774	2643.7222	7.4529	11.0269	239.7519	5290.9230	23.7432	2.5663	3.602
L13	22.0414	45.0590	2518.0241	7.4662	11.0269	228.3526	5039.3615	22.5338	2.6323	3.9
	23.6045	48.3569	3112.3777	8.0127	11.8089	263.5621	6228.8507	24.1831	2.9033	4.301
L14	23.6045	45.7463	2954.1434	8.0260	11.8089	250.1625	5912.1739	22.8775	2.9693	4.658
	25.1676	48.8611	3599.5799	8.5724	12.5909	285.8879	7203.8963	24.4352	3.2402	5.083
L15	25.1676	47.9278	3534.4831	8.5769	12.5909	280.7177	7073.6170	23.9685	3.2622	5.22
	27.2058	51.9098	4490.6694	9.2895	13.6106	329.9394	8987.2478	25.9598	3.6155	5.785
L16	26.6870	51.4341	3887.8092	8.6833	12.7623	304.6328	7780.7340	25.7219	3.2556	4.914
	27.0586	54.6407	4661.2337	9.2247	13.5370	344.3340	9328.6007	27.3255	3.5240	5.319
L17	27.0586	53.6355	4579.8889	9.2291	13.5370	338.3249	9165.8042	26.8229	3.5460	5.455
	28.6071	56.7817	5434.0205	9.7705	14.3116	379.6927	10875.1913	28.3962	3.8144	5.868
L18	28.6071	54.6473	5239.2711	9.7794	14.3116	366.0849	10485.4362	27.3289	3.8584	6.173
	30.1556	57.6725	6158.4178	10.3207	15.0863	408.2125	12324.9391	28.8417	4.1268	6.603
L19	30.1556	57.6725	6158.4178	10.3207	15.0863	408.2125	12324.9391	28.8417	4.1268	6.603
	30.4746	58.2956	6360.2150	10.4322	15.2459	417.1758	12728.7989	29.1534	4.1820	6.691
L20	30.4746	66.2592	7186.0703	10.4012	15.2459	471.3449	14381.5961	33.1359	4.0280	5.653
	30.5520	66.4316	7242.3188	10.4282	15.2846	473.8305	14494.1672	33.2221	4.0415	5.672
L21	30.5520	64.1552	7006.0595	10.4371	15.2846	458.3732	14021.3378	32.0837	4.0855	5.942
	32.1005	67.4828	8153.7629	10.9785	16.0593	507.7286	16318.2548	33.7478	4.3538	6.333
L22	32.1005	65.0815	7876.3333	10.9874	16.0593	490.4533	15763.0305	32.5469	4.3978	6.638
	33.6489	68.2881	9098.8604	11.5287	16.8340	540.5060	18209.6933	34.1505	4.6662	7.043
L23	33.6489	67.0254	8937.4962	11.5331	16.8340	530.9204	17886.7526	33.5191	4.6882	7.213
	35.1974	70.1716	10256.0538	12.0745	17.6086	582.4444	20525.6027	35.0924	4.9566	7.626
L24	35.1974	67.5222	9883.3515	12.0834	17.6086	561.2785	19779.7078	33.7675	5.0006	8.001
	36.7459	70.5474	11272.1285	12.6247	18.3833	613.1717	22559.0891	35.2804	5.2690	8.43
L25	36.7459	69.1607	11058.3385	12.6292	18.3833	601.5421	22131.2278	34.5869	5.2910	8.638
	38.2944	72.1253	12542.2340	13.1705	19.1580	654.6738	25100.9714	36.0695	5.5594	9.077
L26	38.2944	70.6772	12298.6929	13.1750	19.1580	641.9616	24613.5688	35.3453	5.5814	9.302
	39.8428	73.5813	13877.8936	13.7163	19.9327	696.2388	27774.0481	36.7976	5.8498	9.75
L27	39.8428	73.5813	13877.8936	13.7163	19.9327	696.2388	27774.0481	36.7976	5.8498	9.75
	40.6171	75.0334	14715.8140	13.9870	20.3200	724.2034	29450.9913	37.5238	5.9840	9.973

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
L1 102.70-97.70				1	1	1		
L2 97.70-92.70				1	1	1		
L3 92.70-89.78				1	1	1		
L4 89.78-84.78				1	1	1		
L5 84.78-79.78				1	1	1		
L6 79.78-74.78				1	1	1		
L7 74.78-72.50				1	1	1		

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
L8 72.50-72.25				1	1	0.868837		
L9 72.25-67.25				1	1	0.894983		
L10 67.25-62.25				1	1	0.913448		
L11 62.25-61.75				1	1	0.909948		
L12 61.75-61.50				1	1	0.872027		
L13 61.50-56.50				1	1	0.881427		
L14 56.50-51.50				1	1	0.897331		
L15 51.50-44.98				1	1	0.897559		
L16 44.98-43.78				1	1	0.924164		
L17 43.78-38.78				1	1	0.915956		
L18 38.78-33.78				1	1	0.928035		
L19 33.78-32.75				1	1	0.923459		
L20 32.75-32.50				1	1	0.933812		
L21 32.50-27.50				1	1	0.941679		
L22 27.50-22.50				1	1	0.952724		
L23 22.50-17.50				1	1	0.948707		
L24 17.50-12.50				1	1	0.965094		
L25 12.50-7.50				1	1	0.96495		
L26 7.50-2.50				1	1	0.966413		
L27 2.50-0.00				1	1	0.95779		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
****										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
****								
LDF6-50A(1-1/4")	C	No	CaAa (Out Of Face)	72.00 - 20.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.66 1.91 3.78

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF6-50A(1-1/4")	C	No	CaAa (Out Of Face)	72.00 - 20.00	1	No Ice	0.16	0.66
						1/2" Ice	0.25	1.91
						1" Ice	0.35	3.78
LDF4-50A(1/2")	C	No	CaAa (Out Of Face)	72.00 - 20.00	1	No Ice	0.06	0.15
						1/2" Ice	0.16	0.84
						1" Ice	0.26	2.14
LDF4-50A(1/2")	C	No	CaAa (Out Of Face)	72.00 - 20.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.84
						1" Ice	0.00	2.14
241568(5/8)	C	No	CaAa (Out Of Face)	72.00 - 20.00	1	No Ice	0.06	0.19
						1/2" Ice	0.16	0.88
						1" Ice	0.26	2.18
***								
****								
LDF5-50A(7/8")	B	No	Inside Pole	82.00 - 20.00	12	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
LDF4-50A(1/2")	B	No	Inside Pole	82.00 - 20.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
HB158-1-08U8-S8J18 (8X8)	B	No	Inside Pole	82.00 - 20.00	1	No Ice	0.00	1.30
						1/2" Ice	0.00	1.30
						1" Ice	0.00	1.30
HB114-1-08U4-S4J18 (4X4)	B	No	Inside Pole	82.00 - 20.00	1	No Ice	0.00	1.30
						1/2" Ice	0.00	1.30
						1" Ice	0.00	1.30
***								
LDF5-50A(7/8")	C	No	Inside Pole	90.00 - 20.00	12	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
***								
LDF4-50A(1/2")	C	No	Inside Pole	28.00 - 0.00	8	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
LDF6-50A(1-1/4")	C	No	Inside Pole	28.00 - 0.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
***								
LDF5-50A(7/8")	C	No	Inside Pole	101.00 - 20.00	12	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
LDF2-50(3/8")	C	No	Inside Pole	101.00 - 20.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
***								
MS-650	B	No	CaAa (Out Of Face)	32.75 - 0.00	1	No Ice	0.21	0.00
						1/2" Ice	0.32	0.00
						1" Ice	0.43	0.00
MS-650	B	No	CaAa (Out Of Face)	61.75 - 0.00	1	No Ice	0.21	0.00
						1/2" Ice	0.32	0.00
						1" Ice	0.43	0.00
MS-600	B	No	CaAa (Out Of Face)	74.50 - 0.00	1	No Ice	0.02	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.54	0.00
****								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	102.70-97.70	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L2	97.70-92.70	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	92.70-89.78	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L4	89.78-84.78	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L5	84.78-79.78	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.04
L6	79.78-74.78	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L7	74.78-72.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.034	0.02
		C	0.000	0.000	0.000	0.000	0.02
L8	72.50-72.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.004	0.00
		C	0.000	0.000	0.000	0.000	0.00
L9	72.25-67.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.085	0.03
		C	0.000	0.000	0.000	1.335	0.05
L10	67.25-62.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.085	0.03
		C	0.000	0.000	0.000	1.405	0.06
L11	62.25-61.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.009	0.00
		C	0.000	0.000	0.000	0.141	0.01
L12	61.75-61.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.057	0.00
		C	0.000	0.000	0.000	0.070	0.00
L13	61.50-56.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.135	0.03
		C	0.000	0.000	0.000	1.405	0.06
L14	56.50-51.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.135	0.03
		C	0.000	0.000	0.000	1.405	0.06
L15	51.50-44.98	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.480	0.04
		C	0.000	0.000	0.000	1.832	0.07
L16	44.98-43.78	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.272	0.01
		C	0.000	0.000	0.000	0.337	0.01
L17	43.78-38.78	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.135	0.03
		C	0.000	0.000	0.000	1.405	0.06
L18	38.78-33.78	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.135	0.03
		C	0.000	0.000	0.000	1.405	0.06
L19	33.78-32.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.234	0.01
		C	0.000	0.000	0.000	0.289	0.01
L20	32.75-32.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.109	0.00
		C	0.000	0.000	0.000	0.070	0.00
L21	32.50-27.50	A	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	2.185	0.03
		C	0.000	0.000	0.000	1.405	0.06
L22	27.50-22.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.185	0.03
		C	0.000	0.000	0.000	1.405	0.06
L23	22.50-17.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.185	0.02
		C	0.000	0.000	0.000	0.703	0.04
L24	17.50-12.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.185	0.00
		C	0.000	0.000	0.000	0.000	0.01
L25	12.50-7.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.185	0.00
		C	0.000	0.000	0.000	0.000	0.01
L26	7.50-2.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.185	0.00
		C	0.000	0.000	0.000	0.000	0.01
L27	2.50-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.093	0.00
		C	0.000	0.000	0.000	0.000	0.00

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_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	102.70-97.70	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L2	97.70-92.70	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L3	92.70-89.78	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L4	89.78-84.78	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
L5	84.78-79.78	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.04
L6	79.78-74.78	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
L7	74.78-72.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.823	0.02
		C		0.000	0.000	0.000	0.000	0.02
L8	72.50-72.25	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.103	0.00
		C		0.000	0.000	0.000	0.000	0.00
L9	72.25-67.25	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.057	0.03
		C		0.000	0.000	0.000	3.472	0.12
L10	67.25-62.25	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.057	0.03
		C		0.000	0.000	0.000	3.655	0.12
L11	62.25-61.75	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.206	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.000	0.365	0.01
L12	61.75-61.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.197	0.00
		C		0.000	0.000	0.000	0.183	0.01
L13	61.50-56.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	3.932	0.03
		C		0.000	0.000	0.000	3.655	0.12
L14	56.50-51.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	3.932	0.03
		C		0.000	0.000	0.000	3.655	0.12
L15	51.50-44.98	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.128	0.04
		C		0.000	0.000	0.000	4.766	0.16
L16	44.98-43.78	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.944	0.01
		C		0.000	0.000	0.000	0.877	0.03
L17	43.78-38.78	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	3.932	0.03
		C		0.000	0.000	0.000	3.655	0.12
L18	38.78-33.78	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	3.932	0.03
		C		0.000	0.000	0.000	3.655	0.12
L19	33.78-32.75	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.810	0.01
		C		0.000	0.000	0.000	0.753	0.02
L20	32.75-32.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.290	0.00
		C		0.000	0.000	0.000	0.183	0.01
L21	32.50-27.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.808	0.03
		C		0.000	0.000	0.000	3.655	0.12
L22	27.50-22.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.808	0.03
		C		0.000	0.000	0.000	3.655	0.13
L23	22.50-17.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.808	0.02
		C		0.000	0.000	0.000	1.827	0.07
L24	17.50-12.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.808	0.00
		C		0.000	0.000	0.000	0.000	0.01
L25	12.50-7.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.808	0.00
		C		0.000	0.000	0.000	0.000	0.01
L26	7.50-2.50	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.808	0.00
		C		0.000	0.000	0.000	0.000	0.01
L27	2.50-0.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.904	0.00
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	102.70-97.70	0.0000	0.0000	0.0000	0.0000
L2	97.70-92.70	0.0000	0.0000	0.0000	0.0000

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L3	92.70-89.78	0.0000	0.0000	0.0000	0.0000
L4	89.78-84.78	0.0000	0.0000	0.0000	0.0000
L5	84.78-79.78	0.0000	0.0000	0.0000	0.0000
L6	79.78-74.78	0.0000	0.0000	0.0000	0.0000
L7	74.78-72.50	0.0192	0.0111	0.3549	0.2049
L8	72.50-72.25	0.0218	0.0126	0.3958	0.2285
L9	72.25-67.25	-0.2763	0.1812	-0.2086	0.4690
L10	67.25-62.25	-0.2924	0.1906	-0.2393	0.4940
L11	62.25-61.75	-0.2941	0.1917	-0.2433	0.5024
L12	61.75-61.50	-0.0548	0.2973	0.0378	0.5960
L13	61.50-56.50	-0.0552	0.2997	0.0384	0.6064
L14	56.50-51.50	-0.0560	0.3039	0.0396	0.6251
L15	51.50-44.98	-0.0567	0.3082	0.0409	0.6451
L16	44.98-43.78	-0.0570	0.3097	0.0413	0.6523
L17	43.78-38.78	-0.0574	0.3117	0.0419	0.6621
L18	38.78-33.78	-0.0579	0.3147	0.0429	0.6770
L19	33.78-32.75	-0.0583	0.3164	0.0434	0.6855
L20	32.75-32.50	0.1575	0.4185	0.3097	0.7861
L21	32.50-27.50	0.1584	0.4209	0.3133	0.7953
L22	27.50-22.50	0.1601	0.4253	0.3200	0.8121
L23	22.50-17.50	0.3215	0.3586	0.6559	0.7207
L24	17.50-12.50	0.4945	0.2855	1.0509	0.6067
L25	12.50-7.50	0.4971	0.2870	1.0642	0.6144
L26	7.50-2.50	0.4996	0.2884	1.0768	0.6217
L27	2.50-0.00	0.5013	0.2894	1.0858	0.6269

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
****									
(2) 800 10504 w/ Mount Pipe	A	From Leg	3.00	0.0000	101.00	No Ice	3.59	3.18	0.04
			0.00			1/2" Ice	4.01	3.91	0.07
			0.00			1" Ice	4.42	4.58	0.11
(2) 800 10504 w/ Mount Pipe	B	From Leg	3.00	0.0000	101.00	No Ice	3.59	3.18	0.04
			0.00			1/2" Ice	4.01	3.91	0.07
			0.00			1" Ice	4.42	4.58	0.11
(2) 800 10504 w/ Mount Pipe	C	From Leg	3.00	0.0000	101.00	No Ice	3.59	3.18	0.04
			0.00			1/2" Ice	4.01	3.91	0.07
			0.00			1" Ice	4.42	4.58	0.11
5' T-Arm	A	From Leg	0.00	0.0000	101.00	No Ice	2.78	2.23	0.11
			0.00			1/2" Ice	3.39	2.43	0.14
			0.00			1" Ice	4.00	2.63	0.17
5' T-Arm	B	From Leg	0.00	0.0000	101.00	No Ice	2.78	2.23	0.11
			0.00			1/2" Ice	3.39	2.43	0.14
			0.00			1" Ice	4.00	2.63	0.17
5' T-Arm	C	From Leg	0.00	0.0000	101.00	No Ice	2.78	2.23	0.11
			0.00			1/2" Ice	3.39	2.43	0.14
			0.00			1" Ice	4.00	2.63	0.17
****									
7770.00 w/ Mount Pipe	A	From Leg	4.00	0.0000	90.00	No Ice	6.12	4.25	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	6.63	5.01	0.10
			0.00			1" Ice	7.13	5.71	0.16
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.0000	90.00	No Ice	6.12	4.25	0.06
			0.00			1/2" Ice	6.63	5.01	0.10
			0.00			1" Ice	7.13	5.71	0.16
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.0000	90.00	No Ice	6.12	4.25	0.06
			0.00			1/2" Ice	6.63	5.01	0.10
			0.00			1" Ice	7.13	5.71	0.16
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.00	0.0000	90.00	No Ice	8.50	6.30	0.07
			0.00			1/2" Ice	9.15	7.48	0.14
			0.00			1" Ice	9.77	8.37	0.21
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.00	0.0000	90.00	No Ice	8.50	6.30	0.07
			0.00			1/2" Ice	9.15	7.48	0.14
			0.00			1" Ice	9.77	8.37	0.21
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.00	0.0000	90.00	No Ice	8.50	6.30	0.07
			0.00			1/2" Ice	9.15	7.48	0.14
			0.00			1" Ice	9.77	8.37	0.21
QS66512-3 w/ Mount Pipe	A	From Leg	4.00	0.0000	90.00	No Ice	8.64	8.46	0.13
			0.00			1/2" Ice	9.29	9.66	0.21
			0.00			1" Ice	9.91	10.62	0.29
QS66512-3 w/ Mount Pipe	B	From Leg	4.00	0.0000	90.00	No Ice	8.64	8.46	0.13
			0.00			1/2" Ice	9.29	9.66	0.21
			0.00			1" Ice	9.91	10.62	0.29
QS66512-3 w/ Mount Pipe	C	From Leg	4.00	0.0000	90.00	No Ice	8.64	8.46	0.13
			0.00			1/2" Ice	9.29	9.66	0.21
			0.00			1" Ice	9.91	10.62	0.29
DC Filber Distribution/Squid	A	From Leg	4.00	0.0000	90.00	No Ice	2.57	2.57	0.02
			0.00			1/2" Ice	2.80	2.80	0.04
			0.00			1" Ice	3.04	3.04	0.07
DC Filber Distribution/Squid	B	From Leg	4.00	0.0000	90.00	No Ice	2.57	2.57	0.02
			0.00			1/2" Ice	2.80	2.80	0.04
			0.00			1" Ice	3.04	3.04	0.07
(4) LGP21401	A	From Leg	4.00	0.0000	90.00	No Ice	1.29	0.23	0.01
			0.00			1/2" Ice	1.45	0.31	0.02
			0.00			1" Ice	1.61	0.40	0.03
(4) LGP21401	B	From Leg	4.00	0.0000	90.00	No Ice	1.29	0.23	0.01
			0.00			1/2" Ice	1.45	0.31	0.02
			0.00			1" Ice	1.61	0.40	0.03
(4) LGP21401	C	From Leg	4.00	0.0000	90.00	No Ice	1.29	0.23	0.01
			0.00			1/2" Ice	1.45	0.31	0.02
			0.00			1" Ice	1.61	0.40	0.03
(2) TPX-070821	A	From Leg	4.00	0.0000	90.00	No Ice	0.55	0.12	0.01
			0.00			1/2" Ice	0.65	0.17	0.01
			0.00			1" Ice	0.76	0.24	0.02
(2) TPX-070821	B	From Leg	4.00	0.0000	90.00	No Ice	0.55	0.12	0.01
			0.00			1/2" Ice	0.65	0.17	0.01
			0.00			1" Ice	0.76	0.24	0.02
(2) TPX-070821	C	From Leg	4.00	0.0000	90.00	No Ice	0.55	0.12	0.01
			0.00			1/2" Ice	0.65	0.17	0.01
			0.00			1" Ice	0.76	0.24	0.02
(2) RRUS 11	A	From Leg	4.00	0.0000	90.00	No Ice	3.25	1.37	0.05
			0.00			1/2" Ice	3.49	1.55	0.07
			0.00			1" Ice	3.74	1.74	0.10
(2) RRUS 11	B	From Leg	4.00	0.0000	90.00	No Ice	3.25	1.37	0.05
			0.00			1/2" Ice	3.49	1.55	0.07
			0.00			1" Ice	3.74	1.74	0.10
(2) RRUS 11	C	From Leg	4.00	0.0000	90.00	No Ice	3.25	1.37	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1/2" Ice	3.49	1.55	0.07
			0.00				1" Ice	3.74	1.74	0.10
RRUS 32	A	From Leg	4.00	0.00	0.0000	90.00	No Ice	3.33	1.98	0.06
			0.00				1/2" Ice	3.60	2.21	0.08
			0.00				1" Ice	3.87	2.45	0.10
RRUS 32	B	From Leg	4.00	0.00	0.0000	90.00	No Ice	3.33	1.98	0.06
			0.00				1/2" Ice	3.60	2.21	0.08
			0.00				1" Ice	3.87	2.45	0.10
RRUS 32	C	From Leg	4.00	0.00	0.0000	90.00	No Ice	3.33	1.98	0.06
			0.00				1/2" Ice	3.60	2.21	0.08
			0.00				1" Ice	3.87	2.45	0.10
Sabre 10' Platform w/handrails	C	None			0.0000	90.00	No Ice	25.40	25.40	1.30
							1/2" Ice	30.40	30.40	1.69
							1" Ice	35.40	35.40	2.08
****										
MG D3-800TV w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.57	3.42	0.04
			0.00				1/2" Ice	3.98	4.12	0.07
			0.00				1" Ice	4.39	4.78	0.11
MG D3-800TV w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.57	3.42	0.04
			0.00				1/2" Ice	3.98	4.12	0.07
			0.00				1" Ice	4.39	4.78	0.11
MG D3-800TV w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.57	3.42	0.04
			0.00				1/2" Ice	3.98	4.12	0.07
			0.00				1" Ice	4.39	4.78	0.11
BXA-171063-8CF-EDIN-X w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.16	3.33	0.03
			0.00				1/2" Ice	3.53	3.94	0.06
			0.00				1" Ice	3.94	4.56	0.10
BXA-171063-8CF-EDIN-X w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.16	3.33	0.03
			0.00				1/2" Ice	3.53	3.94	0.06
			0.00				1" Ice	3.94	4.56	0.10
BXA-171063-8CF-EDIN-X w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.16	3.33	0.03
			0.00				1/2" Ice	3.53	3.94	0.06
			0.00				1" Ice	3.94	4.56	0.10
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	82.00	No Ice	7.97	5.80	0.04
			0.00				1/2" Ice	8.61	6.95	0.10
			0.00				1" Ice	9.22	7.82	0.17
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	82.00	No Ice	7.97	5.80	0.04
			0.00				1/2" Ice	8.61	6.95	0.10
			0.00				1" Ice	9.22	7.82	0.17
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	82.00	No Ice	7.97	5.80	0.04
			0.00				1/2" Ice	8.61	6.95	0.10
			0.00				1" Ice	9.22	7.82	0.17
RRH2x40-AWS	A	From Leg	4.00	0.00	0.0000	82.00	No Ice	2.52	1.59	0.04
			0.00				1/2" Ice	2.75	1.80	0.06
			0.00				1" Ice	2.99	2.01	0.08
RRH2x40-AWS	B	From Leg	4.00	0.00	0.0000	82.00	No Ice	2.52	1.59	0.04
			0.00				1/2" Ice	2.75	1.80	0.06
			0.00				1" Ice	2.99	2.01	0.08
RRH2x40-AWS	C	From Leg	4.00	0.00	0.0000	82.00	No Ice	2.52	1.59	0.04
			0.00				1/2" Ice	2.75	1.80	0.06
			0.00				1" Ice	2.99	2.01	0.08
RRH 2x40-700 W/SOLAR	A	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.31	1.94	0.05
			0.00				1/2" Ice	3.55	2.14	0.08
			0.00				1" Ice	3.80	2.35	0.10
RRH 2x40-700 W/SOLAR	B	From Leg	4.00	0.00	0.0000	82.00	No Ice	3.31	1.94	0.05
			0.00				1/2" Ice	3.55	2.14	0.08
			0.00				1" Ice	3.80	2.35	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRH 2x40-700 W/SOLAR	C	From Leg	4.00	0.0000	82.00	No Ice	3.31	1.94	0.05
			0.00			1/2" Ice	3.55	2.14	0.08
			0.00			1" Ice	3.80	2.35	0.10
DB-T1-6Z-8AB-0Z	C	From Leg	4.00	0.0000	82.00	No Ice	5.60	2.33	0.04
			0.00			1/2" Ice	5.92	2.56	0.08
			0.00			1" Ice	6.24	2.79	0.12
Sabre 10' Platform w/handrails	C	None		0.0000	82.00	No Ice	25.40	25.40	1.30
						1/2" Ice	30.40	30.40	1.69
						1" Ice	35.40	35.40	2.08
****									
800MHZ RRH	A	From Leg	1.00	0.0000	73.00	No Ice	2.49	2.07	0.05
			0.00			1/2" Ice	2.71	2.27	0.07
			0.00			1" Ice	2.93	2.48	0.10
800MHZ RRH	B	From Leg	1.00	0.0000	73.00	No Ice	2.49	2.07	0.05
			0.00			1/2" Ice	2.71	2.27	0.07
			0.00			1" Ice	2.93	2.48	0.10
800MHZ RRH	C	From Leg	1.00	0.0000	73.00	No Ice	2.49	2.07	0.05
			0.00			1/2" Ice	2.71	2.27	0.07
			0.00			1" Ice	2.93	2.48	0.10
(2) 1900MHz 4X40W RRH	A	From Leg	1.00	0.0000	75.00	No Ice	2.71	2.61	0.06
			0.00			1/2" Ice	2.95	2.85	0.08
			0.00			1" Ice	3.20	3.09	0.11
(2) 1900MHz 4X40W RRH	B	From Leg	1.00	0.0000	75.00	No Ice	2.71	2.61	0.06
			0.00			1/2" Ice	2.95	2.85	0.08
			0.00			1" Ice	3.20	3.09	0.11
(2) 1900MHz 4X40W RRH	C	From Leg	1.00	0.0000	75.00	No Ice	2.71	2.61	0.06
			0.00			1/2" Ice	2.95	2.85	0.08
			0.00			1" Ice	3.20	3.09	0.11
****									
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00	0.0000	72.00	No Ice	7.13	4.96	0.08
			0.00			1/2" Ice	7.66	5.75	0.13
			0.00			1" Ice	8.18	6.47	0.19
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00	0.0000	72.00	No Ice	7.13	4.96	0.08
			0.00			1/2" Ice	7.66	5.75	0.13
			0.00			1" Ice	8.18	6.47	0.19
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00	0.0000	72.00	No Ice	7.13	4.96	0.08
			0.00			1/2" Ice	7.66	5.75	0.13
			0.00			1" Ice	8.18	6.47	0.19
APXVSPP18-C w/ Mount Pipe	A	From Leg	4.00	0.0000	72.00	No Ice	8.50	6.95	0.08
			0.00			1/2" Ice	9.15	8.13	0.15
			0.00			1" Ice	9.77	9.02	0.23
APXVSPP18-C w/ Mount Pipe	B	From Leg	4.00	0.0000	72.00	No Ice	8.50	6.95	0.08
			0.00			1/2" Ice	9.15	8.13	0.15
			0.00			1" Ice	9.77	9.02	0.23
APXVSPP18-C w/ Mount Pipe	C	From Leg	4.00	0.0000	72.00	No Ice	8.50	6.95	0.08
			0.00			1/2" Ice	9.15	8.13	0.15
			0.00			1" Ice	9.77	9.02	0.23
TD-RRH8x20	A	From Leg	4.00	0.0000	72.00	No Ice	4.32	1.41	0.07
			0.00			1/2" Ice	4.60	1.61	0.09
			0.00			1" Ice	4.89	1.83	0.12
TD-RRH8x20	B	From Leg	4.00	0.0000	72.00	No Ice	4.32	1.41	0.07
			0.00			1/2" Ice	4.60	1.61	0.09
			0.00			1" Ice	4.89	1.83	0.12
TD-RRH8x20	C	From Leg	4.00	0.0000	72.00	No Ice	4.32	1.41	0.07
			0.00			1/2" Ice	4.60	1.61	0.09
			0.00			1" Ice	4.89	1.83	0.12
2'x2' Junction box	C	From Leg	2.00	0.0000	72.00	No Ice	5.60	2.80	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	5.92	3.04	0.14
			0.00			1" Ice	6.24	3.28	0.18
12' T-ARM	A	From Leg	2.00	0.0000	72.00	No Ice	4.70	2.33	0.77
			0.00			1/2" Ice	5.33	2.96	0.99
			0.00			1" Ice	5.96	3.59	1.21
12' T-ARM	B	From Leg	2.00	0.0000	72.00	No Ice	4.70	2.33	0.77
			0.00			1/2" Ice	5.33	2.96	0.99
			0.00			1" Ice	5.96	3.59	1.21
12' T-ARM	C	From Leg	2.00	0.0000	72.00	No Ice	4.70	2.33	0.77
			0.00			1/2" Ice	5.33	2.96	0.99
			0.00			1" Ice	5.96	3.59	1.21
***									
12' T-Arm	A	From Leg	0.00	0.0000	28.00	No Ice	4.70	2.33	0.33
			0.00			1/2" Ice	5.33	2.96	0.40
			0.00			1" Ice	5.96	3.59	0.47
4' Standoff	A	From Leg	1.00	0.0000	28.00	No Ice	3.41	3.41	0.08
			0.00			1/2" Ice	4.47	4.47	0.10
			0.00			1" Ice	5.53	5.53	0.13
4' Standoff	A	From Leg	1.00	0.0000	28.00	No Ice	3.41	3.41	0.08
			0.00			1/2" Ice	4.47	4.47	0.10
			0.00			1" Ice	5.53	5.53	0.13
20' Omni	A	From Leg	1.00	0.0000	28.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	7.03	7.03	0.08
			14.00			1" Ice	9.06	9.06	0.11
12' Omni	A	From Leg	1.00	0.0000	28.00	No Ice	3.00	3.00	0.02
			0.00			1/2" Ice	4.23	4.23	0.04
			8.00			1" Ice	5.46	5.46	0.06
12' Omni	A	From Leg	1.00	0.0000	28.00	No Ice	3.00	3.00	0.02
			0.00			1/2" Ice	4.23	4.23	0.04
			8.00			1" Ice	5.46	5.46	0.06
10' Omni	A	From Leg	1.00	0.0000	28.00	No Ice	2.00	2.00	0.03
			0.00			1/2" Ice	3.02	3.02	0.04
			6.00			1" Ice	4.04	4.04	0.06
10' Omni	A	From Leg	1.00	0.0000	28.00	No Ice	2.00	2.00	0.03
			0.00			1/2" Ice	3.02	3.02	0.04
			6.00			1" Ice	4.04	4.04	0.06
10' Omni	A	From Leg	0.00	0.0000	28.00	No Ice	2.00	2.00	0.03
			0.00			1/2" Ice	3.02	3.02	0.04
			6.00			1" Ice	4.04	4.04	0.06
GPS	A	From Leg	1.00	0.0000	28.00	No Ice	0.17	0.17	0.00
			0.00			1/2" Ice	0.24	0.24	0.00
			2.00			1" Ice	0.31	0.31	0.01
climbing ladder	C	From Leg	0.00	0.0000	92.00	No Ice	0.29	0.29	0.01
			0.00			1/2" Ice	0.55	0.55	0.01
			0.00			1" Ice	0.81	0.81	0.01
climbing ladder	C	From Leg	0.00	0.0000	82.00	No Ice	0.29	0.29	0.01
			0.00			1/2" Ice	0.55	0.55	0.01
			0.00			1" Ice	0.81	0.81	0.01

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
A-ANT23G-1	C	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 0.00	0.0000		72.00	1.27	No Ice 1/2" Ice 1" Ice	1.28 1.45 1.62	0.01 0.02 0.03
A-ANT23G-1	C	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 0.00	2.5000		72.00	1.27	No Ice 1/2" Ice 1" Ice	1.28 1.45 1.62	0.01 0.02 0.03
andrew 3' w/ Radome	A	Paraboloid w/Radome	From Leg	4.00 0.00 0.00	1.0000		72.00	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.87	0.10 0.14 0.18

Tower Pressures - No Ice

$G_H = 1.690$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 102.70-97.70	100.20	1.373	28	5.417	A B C	0.000 0.000 0.000	5.417 5.417 5.417	5.417	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L2 97.70-92.70	95.20	1.354	28	5.417	A B C	0.000 0.000 0.000	5.417 5.417 5.417	5.417	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L3 92.70-89.78	91.24	1.337	28	3.163	A B C	0.000 0.000 0.000	3.163 3.163 3.163	3.163	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L4 89.78-84.78	87.23	1.32	27	5.737	A B C	0.000 0.000 0.000	5.737 5.737 5.737	5.737	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L5 84.78-79.78	82.24	1.298	27	6.379	A B C	0.000 0.000 0.000	6.379 6.379 6.379	6.379	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L6 79.78-74.78	77.24	1.275	26	7.020	A B C	0.000 0.000 0.000	7.020 7.020 7.020	7.020	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.000 0.000
L7 74.78-72.50	73.63	1.258	26	3.414	A B C	0.000 0.000 0.000	3.414 3.414 3.414	3.414	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.034 0.000
L8 72.50-72.25	72.37	1.252	26	0.382	A B C	0.000 0.000 0.000	0.382 0.382 0.382	0.382	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.004 0.000
L9 72.25-67.25	69.72	1.238	26	7.986	A B C	0.000 0.000 0.000	7.986 7.986 7.986	7.986	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.085 1.335
L10 67.25-62.25	64.72	1.212	25	8.627	A B C	0.000 0.000 0.000	8.627 8.627 8.627	8.627	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.085 1.405
L11 62.25-61.75	62.00	1.197	25	0.898	A B C	0.000 0.000 0.000	0.898 0.898 0.898	0.898	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.009 0.141
L12 61.75-61.50	61.62	1.195	25	0.451	A B C	0.000 0.000 0.000	0.451 0.451 0.451	0.451	100.00 100.00 100.00	0.000 0.000 0.000	0.000 0.057 0.070
L13	58.97	1.18	24	9.365	A	0.000	9.365	9.365	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
61.50-56.50					B	0.000	9.365		100.00	0.000	1.135
					C	0.000	9.365		100.00	0.000	1.405
L14	53.97	1.151	24	10.006	A	0.000	10.006	10.006	100.00	0.000	0.000
56.50-51.50					B	0.000	10.006		100.00	0.000	1.135
					C	0.000	10.006		100.00	0.000	1.405
L15	48.20	1.114	23	14.012	A	0.000	14.012	14.012	100.00	0.000	0.000
51.50-44.98					B	0.000	14.012		100.00	0.000	1.480
					C	0.000	14.012		100.00	0.000	1.832
L16	44.38	1.088	23	2.646	A	0.000	2.646	2.646	100.00	0.000	0.000
44.98-43.78					B	0.000	2.646		100.00	0.000	0.272
					C	0.000	2.646		100.00	0.000	0.337
L17	41.26	1.066	22	11.421	A	0.000	11.421	11.421	100.00	0.000	0.000
43.78-38.78					B	0.000	11.421		100.00	0.000	1.135
					C	0.000	11.421		100.00	0.000	1.405
L18	36.26	1.027	21	12.056	A	0.000	12.056	12.056	100.00	0.000	0.000
38.78-33.78					B	0.000	12.056		100.00	0.000	1.135
					C	0.000	12.056		100.00	0.000	1.405
L19	33.26	1.002	21	2.563	A	0.000	2.563	2.563	100.00	0.000	0.000
33.78-32.75					B	0.000	2.563		100.00	0.000	0.234
					C	0.000	2.563		100.00	0.000	0.289
L20	32.62	1	21	0.626	A	0.000	0.626	0.626	100.00	0.000	0.000
32.75-32.50					B	0.000	0.626		100.00	0.000	0.109
					C	0.000	0.626		100.00	0.000	0.070
L21	29.98	1	21	12.854	A	0.000	12.854	12.854	100.00	0.000	0.000
32.50-27.50					B	0.000	12.854		100.00	0.000	2.185
					C	0.000	12.854		100.00	0.000	1.405
L22	24.98	1	21	13.490	A	0.000	13.490	13.490	100.00	0.000	0.000
27.50-22.50					B	0.000	13.490		100.00	0.000	2.185
					C	0.000	13.490		100.00	0.000	1.405
L23	19.98	1	21	14.125	A	0.000	14.125	14.125	100.00	0.000	0.000
22.50-17.50					B	0.000	14.125		100.00	0.000	2.185
					C	0.000	14.125		100.00	0.000	0.703
L24	14.98	1	21	14.760	A	0.000	14.760	14.760	100.00	0.000	0.000
17.50-12.50					B	0.000	14.760		100.00	0.000	2.185
					C	0.000	14.760		100.00	0.000	0.000
L25 12.50-7.50	9.98	1	21	15.396	A	0.000	15.396	15.396	100.00	0.000	0.000
					B	0.000	15.396		100.00	0.000	2.185
					C	0.000	15.396		100.00	0.000	0.000
L26 7.50-2.50	4.98	1	21	16.031	A	0.000	16.031	16.031	100.00	0.000	0.000
					B	0.000	16.031		100.00	0.000	2.185
					C	0.000	16.031		100.00	0.000	0.000
L27 2.50-0.00	1.25	1	21	8.254	A	0.000	8.254	8.254	100.00	0.000	0.000
					B	0.000	8.254		100.00	0.000	1.093
					C	0.000	8.254		100.00	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.690$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 102.70-97.70	100.20	1.373	21	0.7500	6.042	A	0.000	6.042	6.042	100.00	0.000	0.000
						B	0.000	6.042		100.00	0.000	0.000
						C	0.000	6.042		100.00	0.000	0.000

Section Elevation	z	K_Z	q_z	t_Z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	in	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
L2 97.70-92.70	95.20	1.354	21	0.7500	6.042	A	0.000	6.042	6.042	100.00	0.000	0.000
						B	0.000	6.042		100.00	0.000	0.000
						C	0.000	6.042		100.00	0.000	0.000
L3 92.70-89.78	91.24	1.337	21	0.7500	3.528	A	0.000	3.528	3.528	100.00	0.000	0.000
						B	0.000	3.528		100.00	0.000	0.000
						C	0.000	3.528		100.00	0.000	0.000
L4 89.78-84.78	87.23	1.32	21	0.7500	6.362	A	0.000	6.362	6.362	100.00	0.000	0.000
						B	0.000	6.362		100.00	0.000	0.000
						C	0.000	6.362		100.00	0.000	0.000
L5 84.78-79.78	82.24	1.298	20	0.7500	7.004	A	0.000	7.004	7.004	100.00	0.000	0.000
						B	0.000	7.004		100.00	0.000	0.000
						C	0.000	7.004		100.00	0.000	0.000
L6 79.78-74.78	77.24	1.275	20	0.7500	7.645	A	0.000	7.645	7.645	100.00	0.000	0.000
						B	0.000	7.645		100.00	0.000	0.000
						C	0.000	7.645		100.00	0.000	0.000
L7 74.78-72.50	73.63	1.258	20	0.7500	3.699	A	0.000	3.699	3.699	100.00	0.000	0.000
						B	0.000	3.699		100.00	0.000	0.823
						C	0.000	3.699		100.00	0.000	0.000
L8 72.50-72.25	72.37	1.252	19	0.7500	0.414	A	0.000	0.414	0.414	100.00	0.000	0.000
						B	0.000	0.414		100.00	0.000	0.103
						C	0.000	0.414		100.00	0.000	0.000
L9 72.25-67.25	69.72	1.238	19	0.7500	8.611	A	0.000	8.611	8.611	100.00	0.000	0.000
						B	0.000	8.611		100.00	0.000	2.057
						C	0.000	8.611		100.00	0.000	3.472
L10 67.25-62.25	64.72	1.212	19	0.7500	9.252	A	0.000	9.252	9.252	100.00	0.000	0.000
						B	0.000	9.252		100.00	0.000	2.057
						C	0.000	9.252		100.00	0.000	3.655
L11 62.25-61.75	62.00	1.197	19	0.7500	0.961	A	0.000	0.961	0.961	100.00	0.000	0.000
						B	0.000	0.961		100.00	0.000	0.206
						C	0.000	0.961		100.00	0.000	0.365
L12 61.75-61.50	61.62	1.195	19	0.7500	0.483	A	0.000	0.483	0.483	100.00	0.000	0.000
						B	0.000	0.483		100.00	0.000	0.197
						C	0.000	0.483		100.00	0.000	0.183
L13 61.50-56.50	58.97	1.18	18	0.7500	9.990	A	0.000	9.990	9.990	100.00	0.000	0.000
						B	0.000	9.990		100.00	0.000	3.932
						C	0.000	9.990		100.00	0.000	3.655
L14 56.50-51.50	53.97	1.151	18	0.7500	10.631	A	0.000	10.631	10.631	100.00	0.000	0.000
						B	0.000	10.631		100.00	0.000	3.932
						C	0.000	10.631		100.00	0.000	3.655
L15 51.50-44.98	48.20	1.114	17	0.7500	14.827	A	0.000	14.827	14.827	100.00	0.000	0.000
						B	0.000	14.827		100.00	0.000	5.128
						C	0.000	14.827		100.00	0.000	4.766
L16 44.98-43.78	44.38	1.088	17	0.7500	2.796	A	0.000	2.796	2.796	100.00	0.000	0.000
						B	0.000	2.796		100.00	0.000	0.944
						C	0.000	2.796		100.00	0.000	0.877
L17 43.78-38.78	41.26	1.066	17	0.7500	12.046	A	0.000	12.046	12.046	100.00	0.000	0.000
						B	0.000	12.046		100.00	0.000	3.932
						C	0.000	12.046		100.00	0.000	3.655
L18 38.78-33.78	36.26	1.027	16	0.7500	12.681	A	0.000	12.681	12.681	100.00	0.000	0.000
						B	0.000	12.681		100.00	0.000	3.932
						C	0.000	12.681		100.00	0.000	3.655
L19 33.78-32.75	33.26	1.002	16	0.7500	2.691	A	0.000	2.691	2.691	100.00	0.000	0.000
						B	0.000	2.691		100.00	0.000	0.810
						C	0.000	2.691		100.00	0.000	0.753
L20 32.75-32.50	32.62	1	16	0.7500	0.657	A	0.000	0.657	0.657	100.00	0.000	0.000
						B	0.000	0.657		100.00	0.000	0.290
						C	0.000	0.657		100.00	0.000	0.183
L21 32.50-27.50	29.98	1	16	0.7500	13.479	A	0.000	13.479	13.479	100.00	0.000	0.000
						B	0.000	13.479		100.00	0.000	5.808
						C	0.000	13.479		100.00	0.000	3.655

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L22 27.50-22.50	24.98	1	16	0.7500	14.115	A	0.000	14.115	14.115	100.00	0.000	0.000
						B	0.000	14.115		100.00	0.000	5.808
						C	0.000	14.115		100.00	0.000	3.655
L23 22.50-17.50	19.98	1	16	0.7500	14.750	A	0.000	14.750	14.750	100.00	0.000	0.000
						B	0.000	14.750		100.00	0.000	5.808
						C	0.000	14.750		100.00	0.000	1.827
L24 17.50-12.50	14.98	1	16	0.7500	15.385	A	0.000	15.385	15.385	100.00	0.000	0.000
						B	0.000	15.385		100.00	0.000	5.808
						C	0.000	15.385		100.00	0.000	0.000
L25 12.50-7.50	9.98	1	16	0.7500	16.021	A	0.000	16.021	16.021	100.00	0.000	0.000
						B	0.000	16.021		100.00	0.000	5.808
						C	0.000	16.021		100.00	0.000	0.000
L26 7.50-2.50	4.98	1	16	0.7500	16.656	A	0.000	16.656	16.656	100.00	0.000	0.000
						B	0.000	16.656		100.00	0.000	5.808
						C	0.000	16.656		100.00	0.000	0.000
L27 2.50-0.00	1.25	1	16	0.7500	8.566	A	0.000	8.566	8.566	100.00	0.000	0.000
						B	0.000	8.566		100.00	0.000	2.904
						C	0.000	8.566		100.00	0.000	0.000

Tower Pressure - Service

$G_H = 1.690$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	100.20	1.373	13	5.417	A	0.000	5.417	5.417	100.00	0.000	0.000
102.70-97.70					B	0.000	5.417		100.00	0.000	0.000
					C	0.000	5.417		100.00	0.000	0.000
L2 97.70-92.70	95.20	1.354	12	5.417	A	0.000	5.417	5.417	100.00	0.000	0.000
					B	0.000	5.417		100.00	0.000	0.000
					C	0.000	5.417		100.00	0.000	0.000
L3 92.70-89.78	91.24	1.337	12	3.163	A	0.000	3.163	3.163	100.00	0.000	0.000
					B	0.000	3.163		100.00	0.000	0.000
					C	0.000	3.163		100.00	0.000	0.000
L4 89.78-84.78	87.23	1.32	12	5.737	A	0.000	5.737	5.737	100.00	0.000	0.000
					B	0.000	5.737		100.00	0.000	0.000
					C	0.000	5.737		100.00	0.000	0.000
L5 84.78-79.78	82.24	1.298	12	6.379	A	0.000	6.379	6.379	100.00	0.000	0.000
					B	0.000	6.379		100.00	0.000	0.000
					C	0.000	6.379		100.00	0.000	0.000
L6 79.78-74.78	77.24	1.275	12	7.020	A	0.000	7.020	7.020	100.00	0.000	0.000
					B	0.000	7.020		100.00	0.000	0.000
					C	0.000	7.020		100.00	0.000	0.000
L7 74.78-72.50	73.63	1.258	12	3.414	A	0.000	3.414	3.414	100.00	0.000	0.000
					B	0.000	3.414		100.00	0.000	0.034
					C	0.000	3.414		100.00	0.000	0.000
L8 72.50-72.25	72.37	1.252	12	0.382	A	0.000	0.382	0.382	100.00	0.000	0.000
					B	0.000	0.382		100.00	0.000	0.004
					C	0.000	0.382		100.00	0.000	0.000
L9 72.25-67.25	69.72	1.238	11	7.986	A	0.000	7.986	7.986	100.00	0.000	0.000
					B	0.000	7.986		100.00	0.000	0.085
					C	0.000	7.986		100.00	0.000	1.335
L10	64.72	1.212	11	8.627	A	0.000	8.627	8.627	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
67.25-62.25					B	0.000	8.627		100.00	0.000	0.085
					C	0.000	8.627		100.00	0.000	1.405
L11	62.00	1.197	11	0.898	A	0.000	0.898	0.898	100.00	0.000	0.000
62.25-61.75					B	0.000	0.898		100.00	0.000	0.009
					C	0.000	0.898		100.00	0.000	0.141
L12	61.62	1.195	11	0.451	A	0.000	0.451	0.451	100.00	0.000	0.000
61.75-61.50					B	0.000	0.451		100.00	0.000	0.057
					C	0.000	0.451		100.00	0.000	0.070
L13	58.97	1.18	11	9.365	A	0.000	9.365	9.365	100.00	0.000	0.000
61.50-56.50					B	0.000	9.365		100.00	0.000	1.135
					C	0.000	9.365		100.00	0.000	1.405
L14	53.97	1.151	11	10.006	A	0.000	10.006	10.006	100.00	0.000	0.000
56.50-51.50					B	0.000	10.006		100.00	0.000	1.135
					C	0.000	10.006		100.00	0.000	1.405
L15	48.20	1.114	10	14.012	A	0.000	14.012	14.012	100.00	0.000	0.000
51.50-44.98					B	0.000	14.012		100.00	0.000	1.480
					C	0.000	14.012		100.00	0.000	1.832
L16	44.38	1.088	10	2.646	A	0.000	2.646	2.646	100.00	0.000	0.000
44.98-43.78					B	0.000	2.646		100.00	0.000	0.272
					C	0.000	2.646		100.00	0.000	0.337
L17	41.26	1.066	10	11.421	A	0.000	11.421	11.421	100.00	0.000	0.000
43.78-38.78					B	0.000	11.421		100.00	0.000	1.135
					C	0.000	11.421		100.00	0.000	1.405
L18	36.26	1.027	9	12.056	A	0.000	12.056	12.056	100.00	0.000	0.000
38.78-33.78					B	0.000	12.056		100.00	0.000	1.135
					C	0.000	12.056		100.00	0.000	1.405
L19	33.26	1.002	9	2.563	A	0.000	2.563	2.563	100.00	0.000	0.000
33.78-32.75					B	0.000	2.563		100.00	0.000	0.234
					C	0.000	2.563		100.00	0.000	0.289
L20	32.62	1	9	0.626	A	0.000	0.626	0.626	100.00	0.000	0.000
32.75-32.50					B	0.000	0.626		100.00	0.000	0.109
					C	0.000	0.626		100.00	0.000	0.070
L21	29.98	1	9	12.854	A	0.000	12.854	12.854	100.00	0.000	0.000
32.50-27.50					B	0.000	12.854		100.00	0.000	2.185
					C	0.000	12.854		100.00	0.000	1.405
L22	24.98	1	9	13.490	A	0.000	13.490	13.490	100.00	0.000	0.000
27.50-22.50					B	0.000	13.490		100.00	0.000	2.185
					C	0.000	13.490		100.00	0.000	1.405
L23	19.98	1	9	14.125	A	0.000	14.125	14.125	100.00	0.000	0.000
22.50-17.50					B	0.000	14.125		100.00	0.000	2.185
					C	0.000	14.125		100.00	0.000	0.703
L24	14.98	1	9	14.760	A	0.000	14.760	14.760	100.00	0.000	0.000
17.50-12.50					B	0.000	14.760		100.00	0.000	2.185
					C	0.000	14.760		100.00	0.000	0.000
L25 12.50-7.50	9.98	1	9	15.396	A	0.000	15.396	15.396	100.00	0.000	0.000
					B	0.000	15.396		100.00	0.000	2.185
					C	0.000	15.396		100.00	0.000	0.000
L26 7.50-2.50	4.98	1	9	16.031	A	0.000	16.031	16.031	100.00	0.000	0.000
					B	0.000	16.031		100.00	0.000	2.185
					C	0.000	16.031		100.00	0.000	0.000
L27 2.50-0.00	1.25	1	9	8.254	A	0.000	8.254	8.254	100.00	0.000	0.000
					B	0.000	8.254		100.00	0.000	1.093
					C	0.000	8.254		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.01	0.17	A	1	0.59	1	1	1	5.417	0.15	30.76	C
102.70-97.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L2	0.02	0.17	A	1	0.59	1	1	1	5.417	0.15	30.32	C
97.70-92.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L3	0.01	0.10	A	1	0.59	1	1	1	3.163	0.09	29.95	C
92.70-89.78			B	1	0.59	1	1	1	3.163			
			C	1	0.59	1	1	1	3.163			
L4	0.04	0.18	A	1	0.65	1	1	1	5.737	0.17	34.51	C
89.78-84.78			B	1	0.65	1	1	1	5.737			
			C	1	0.65	1	1	1	5.737			
L5	0.05	0.20	A	1	0.65	1	1	1	6.379	0.19	37.72	C
84.78-79.78			B	1	0.65	1	1	1	6.379			
			C	1	0.65	1	1	1	6.379			
L6	0.07	0.22	A	1	0.65	1	1	1	7.020	0.20	40.78	C
79.78-74.78			B	1	0.65	1	1	1	7.020			
			C	1	0.65	1	1	1	7.020			
L7	0.03	0.11	A	1	0.65	1	1	1	3.414	0.10	43.56	C
74.78-72.50			B	1	0.65	1	1	1	3.414			
			C	1	0.65	1	1	1	3.414			
L8	0.00	0.03	A	1	0.65	1	1	1	0.382	0.01	44.36	C
72.50-72.25			B	1	0.65	1	1	1	0.382			
			C	1	0.65	1	1	1	0.382			
L9	0.09	0.55	A	1	0.65	1	1	1	7.986	0.29	57.37	C
72.25-67.25			B	1	0.65	1	1	1	7.986			
			C	1	0.65	1	1	1	7.986			
L10	0.09	0.57	A	1	0.65	1	1	1	8.627	0.30	60.30	C
67.25-62.25			B	1	0.65	1	1	1	8.627			
			C	1	0.65	1	1	1	8.627			
L11	0.01	0.06	A	1	0.65	1	1	1	0.898	0.03	61.49	C
62.25-61.75			B	1	0.65	1	1	1	0.898			
			C	1	0.65	1	1	1	0.898			
L12	0.00	0.04	A	1	0.65	1	1	1	0.451	0.02	70.45	C
61.75-61.50			B	1	0.65	1	1	1	0.451			
			C	1	0.65	1	1	1	0.451			
L13	0.09	0.70	A	1	0.65	1	1	1	9.365	0.36	71.38	C
61.50-56.50			B	1	0.65	1	1	1	9.365			
			C	1	0.65	1	1	1	9.365			
L14	0.09	0.72	A	1	0.65	1	1	1	10.006	0.36	72.96	C
56.50-51.50			B	1	0.65	1	1	1	10.006			
			C	1	0.65	1	1	1	10.006			
L15	0.12	0.99	A	1	0.65	1	1	1	14.012	0.48	74.39	C
51.50-44.98			B	1	0.65	1	1	1	14.012			
			C	1	0.65	1	1	1	14.012			
L16	0.02	0.83	A	1	0.65	1	1	1	2.646	0.09	74.05	C
44.98-43.78			B	1	0.65	1	1	1	2.646			
			C	1	0.65	1	1	1	2.646			
L17	0.09	0.86	A	1	0.65	1	1	1	11.421	0.37	74.43	C
43.78-38.78			B	1	0.65	1	1	1	11.421			
			C	1	0.65	1	1	1	11.421			
L18	0.09	0.89	A	1	0.65	1	1	1	12.056	0.37	74.71	C
38.78-33.78			B	1	0.65	1	1	1	12.056			
			C	1	0.65	1	1	1	12.056			
L19	0.02	0.19	A	1	0.65	1	1	1	2.563	0.08	74.64	C
33.78-32.75			B	1	0.65	1	1	1	2.563			
			C	1	0.65	1	1	1	2.563			
L20	0.00	0.05	A	1	0.65	1	1	1	0.626	0.02	82.20	C
32.75-32.50			B	1	0.65	1	1	1	0.626			
			C	1	0.65	1	1	1	0.626			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L21	0.09	1.05	A	1	0.65	1	1	1	12.854	0.42	83.72	C
32.50-27.50			B	1	0.65	1	1	1	12.854			
			C	1	0.65	1	1	1	12.854			
L22	0.10	1.08	A	1	0.65	1	1	1	13.490	0.43	86.62	C
27.50-22.50			B	1	0.65	1	1	1	13.490			
			C	1	0.65	1	1	1	13.490			
L23	0.05	1.11	A	1	0.65	1	1	1	14.125	0.42	84.59	C
22.50-17.50			B	1	0.65	1	1	1	14.125			
			C	1	0.65	1	1	1	14.125			
L24	0.01	1.13	A	1	0.65	1	1	1	14.760	0.41	82.56	C
17.50-12.50			B	1	0.65	1	1	1	14.760			
			C	1	0.65	1	1	1	14.760			
L25	0.01	1.16	A	1	0.65	1	1	1	15.396	0.43	85.45	C
12.50-7.50			B	1	0.65	1	1	1	15.396			
			C	1	0.65	1	1	1	15.396			
L26 7.50-2.50	0.01	1.19	A	1	0.65	1	1	1	16.031	0.44	88.35	C
			B	1	0.65	1	1	1	16.031			
			C	1	0.65	1	1	1	16.031			
L27 2.50-0.00	0.00	0.61	A	1	0.65	1	1	1	8.254	0.23	90.52	C
			B	1	0.65	1	1	1	8.254			
			C	1	0.65	1	1	1	8.254			
Sum Weight:	1.24	14.97						OTM	279.68 kip-ft	6.63		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.01	0.17	A	1	0.59	1	1	1	5.417	0.15	30.76	C
102.70-97.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L2	0.02	0.17	A	1	0.59	1	1	1	5.417	0.15	30.32	C
97.70-92.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L3	0.01	0.10	A	1	0.59	1	1	1	3.163	0.09	29.95	C
92.70-89.78			B	1	0.59	1	1	1	3.163			
			C	1	0.59	1	1	1	3.163			
L4	0.04	0.18	A	1	0.65	1	1	1	5.737	0.17	34.51	C
89.78-84.78			B	1	0.65	1	1	1	5.737			
			C	1	0.65	1	1	1	5.737			
L5	0.05	0.20	A	1	0.65	1	1	1	6.379	0.19	37.72	C
84.78-79.78			B	1	0.65	1	1	1	6.379			
			C	1	0.65	1	1	1	6.379			
L6	0.07	0.22	A	1	0.65	1	1	1	7.020	0.20	40.78	C
79.78-74.78			B	1	0.65	1	1	1	7.020			
			C	1	0.65	1	1	1	7.020			
L7	0.03	0.11	A	1	0.65	1	1	1	3.414	0.10	43.56	C
74.78-72.50			B	1	0.65	1	1	1	3.414			
			C	1	0.65	1	1	1	3.414			
L8	0.00	0.03	A	1	0.65	1	1	1	0.382	0.01	44.36	C
72.50-72.25			B	1	0.65	1	1	1	0.382			
			C	1	0.65	1	1	1	0.382			
L9	0.09	0.55	A	1	0.65	1	1	1	7.986	0.29	57.37	C
72.25-67.25			B	1	0.65	1	1	1	7.986			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	7.986			
L10	0.09	0.57	A	1	0.65	1	1	1	8.627	0.30	60.30	C
67.25-62.25			B	1	0.65	1	1	1	8.627			
			C	1	0.65	1	1	1	8.627			
L11	0.01	0.06	A	1	0.65	1	1	1	0.898	0.03	61.49	C
62.25-61.75			B	1	0.65	1	1	1	0.898			
			C	1	0.65	1	1	1	0.898			
L12	0.00	0.04	A	1	0.65	1	1	1	0.451	0.02	70.45	C
61.75-61.50			B	1	0.65	1	1	1	0.451			
			C	1	0.65	1	1	1	0.451			
L13	0.09	0.70	A	1	0.65	1	1	1	9.365	0.36	71.38	C
61.50-56.50			B	1	0.65	1	1	1	9.365			
			C	1	0.65	1	1	1	9.365			
L14	0.09	0.72	A	1	0.65	1	1	1	10.006	0.36	72.96	C
56.50-51.50			B	1	0.65	1	1	1	10.006			
			C	1	0.65	1	1	1	10.006			
L15	0.12	0.99	A	1	0.65	1	1	1	14.012	0.48	74.39	C
51.50-44.98			B	1	0.65	1	1	1	14.012			
			C	1	0.65	1	1	1	14.012			
L16	0.02	0.83	A	1	0.65	1	1	1	2.646	0.09	74.05	C
44.98-43.78			B	1	0.65	1	1	1	2.646			
			C	1	0.65	1	1	1	2.646			
L17	0.09	0.86	A	1	0.65	1	1	1	11.421	0.37	74.43	C
43.78-38.78			B	1	0.65	1	1	1	11.421			
			C	1	0.65	1	1	1	11.421			
L18	0.09	0.89	A	1	0.65	1	1	1	12.056	0.37	74.71	C
38.78-33.78			B	1	0.65	1	1	1	12.056			
			C	1	0.65	1	1	1	12.056			
L19	0.02	0.19	A	1	0.65	1	1	1	2.563	0.08	74.64	C
33.78-32.75			B	1	0.65	1	1	1	2.563			
			C	1	0.65	1	1	1	2.563			
L20	0.00	0.05	A	1	0.65	1	1	1	0.626	0.02	82.20	C
32.75-32.50			B	1	0.65	1	1	1	0.626			
			C	1	0.65	1	1	1	0.626			
L21	0.09	1.05	A	1	0.65	1	1	1	12.854	0.42	83.72	C
32.50-27.50			B	1	0.65	1	1	1	12.854			
			C	1	0.65	1	1	1	12.854			
L22	0.10	1.08	A	1	0.65	1	1	1	13.490	0.43	86.62	C
27.50-22.50			B	1	0.65	1	1	1	13.490			
			C	1	0.65	1	1	1	13.490			
L23	0.05	1.11	A	1	0.65	1	1	1	14.125	0.42	84.59	C
22.50-17.50			B	1	0.65	1	1	1	14.125			
			C	1	0.65	1	1	1	14.125			
L24	0.01	1.13	A	1	0.65	1	1	1	14.760	0.41	82.56	C
17.50-12.50			B	1	0.65	1	1	1	14.760			
			C	1	0.65	1	1	1	14.760			
L25	0.01	1.16	A	1	0.65	1	1	1	15.396	0.43	85.45	C
12.50-7.50			B	1	0.65	1	1	1	15.396			
			C	1	0.65	1	1	1	15.396			
L26 7.50-2.50	0.01	1.19	A	1	0.65	1	1	1	16.031	0.44	88.35	C
			B	1	0.65	1	1	1	16.031			
			C	1	0.65	1	1	1	16.031			
L27 2.50-0.00	0.00	0.61	A	1	0.65	1	1	1	8.254	0.23	90.52	C
			B	1	0.65	1	1	1	8.254			
			C	1	0.65	1	1	1	8.254			
Sum Weight:	1.24	14.97						OTM	279.68 kip-ft	6.63		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.01	0.17	A	1	0.59	1	1	1	5.417	0.15	30.76	C
102.70-97.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L2	0.02	0.17	A	1	0.59	1	1	1	5.417	0.15	30.32	C
97.70-92.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L3	0.01	0.10	A	1	0.59	1	1	1	3.163	0.09	29.95	C
92.70-89.78			B	1	0.59	1	1	1	3.163			
			C	1	0.59	1	1	1	3.163			
L4	0.04	0.18	A	1	0.65	1	1	1	5.737	0.17	34.51	C
89.78-84.78			B	1	0.65	1	1	1	5.737			
			C	1	0.65	1	1	1	5.737			
L5	0.05	0.20	A	1	0.65	1	1	1	6.379	0.19	37.72	C
84.78-79.78			B	1	0.65	1	1	1	6.379			
			C	1	0.65	1	1	1	6.379			
L6	0.07	0.22	A	1	0.65	1	1	1	7.020	0.20	40.78	C
79.78-74.78			B	1	0.65	1	1	1	7.020			
			C	1	0.65	1	1	1	7.020			
L7	0.03	0.11	A	1	0.65	1	1	1	3.414	0.10	43.56	C
74.78-72.50			B	1	0.65	1	1	1	3.414			
			C	1	0.65	1	1	1	3.414			
L8	0.00	0.03	A	1	0.65	1	1	1	0.382	0.01	44.36	C
72.50-72.25			B	1	0.65	1	1	1	0.382			
			C	1	0.65	1	1	1	0.382			
L9	0.09	0.55	A	1	0.65	1	1	1	7.986	0.29	57.37	C
72.25-67.25			B	1	0.65	1	1	1	7.986			
			C	1	0.65	1	1	1	7.986			
L10	0.09	0.57	A	1	0.65	1	1	1	8.627	0.30	60.30	C
67.25-62.25			B	1	0.65	1	1	1	8.627			
			C	1	0.65	1	1	1	8.627			
L11	0.01	0.06	A	1	0.65	1	1	1	0.898	0.03	61.49	C
62.25-61.75			B	1	0.65	1	1	1	0.898			
			C	1	0.65	1	1	1	0.898			
L12	0.00	0.04	A	1	0.65	1	1	1	0.451	0.02	70.45	C
61.75-61.50			B	1	0.65	1	1	1	0.451			
			C	1	0.65	1	1	1	0.451			
L13	0.09	0.70	A	1	0.65	1	1	1	9.365	0.36	71.38	C
61.50-56.50			B	1	0.65	1	1	1	9.365			
			C	1	0.65	1	1	1	9.365			
L14	0.09	0.72	A	1	0.65	1	1	1	10.006	0.36	72.96	C
56.50-51.50			B	1	0.65	1	1	1	10.006			
			C	1	0.65	1	1	1	10.006			
L15	0.12	0.99	A	1	0.65	1	1	1	14.012	0.48	74.39	C
51.50-44.98			B	1	0.65	1	1	1	14.012			
			C	1	0.65	1	1	1	14.012			
L16	0.02	0.83	A	1	0.65	1	1	1	2.646	0.09	74.05	C
44.98-43.78			B	1	0.65	1	1	1	2.646			
			C	1	0.65	1	1	1	2.646			
L17	0.09	0.86	A	1	0.65	1	1	1	11.421	0.37	74.43	C
43.78-38.78			B	1	0.65	1	1	1	11.421			
			C	1	0.65	1	1	1	11.421			
L18	0.09	0.89	A	1	0.65	1	1	1	12.056	0.37	74.71	C
38.78-33.78			B	1	0.65	1	1	1	12.056			
			C	1	0.65	1	1	1	12.056			
L19	0.02	0.19	A	1	0.65	1	1	1	2.563	0.08	74.64	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
33.78-32.75			B	1	0.65	1	1	1	2.563			
			C	1	0.65	1	1	1	2.563			
L20	0.00	0.05	A	1	0.65	1	1	1	0.626	0.02	82.20	C
32.75-32.50			B	1	0.65	1	1	1	0.626			
			C	1	0.65	1	1	1	0.626			
L21	0.09	1.05	A	1	0.65	1	1	1	12.854	0.42	83.72	C
32.50-27.50			B	1	0.65	1	1	1	12.854			
			C	1	0.65	1	1	1	12.854			
L22	0.10	1.08	A	1	0.65	1	1	1	13.490	0.43	86.62	C
27.50-22.50			B	1	0.65	1	1	1	13.490			
			C	1	0.65	1	1	1	13.490			
L23	0.05	1.11	A	1	0.65	1	1	1	14.125	0.42	84.59	C
22.50-17.50			B	1	0.65	1	1	1	14.125			
			C	1	0.65	1	1	1	14.125			
L24	0.01	1.13	A	1	0.65	1	1	1	14.760	0.41	82.56	C
17.50-12.50			B	1	0.65	1	1	1	14.760			
			C	1	0.65	1	1	1	14.760			
L25	0.01	1.16	A	1	0.65	1	1	1	15.396	0.43	85.45	C
12.50-7.50			B	1	0.65	1	1	1	15.396			
			C	1	0.65	1	1	1	15.396			
L26 7.50-2.50	0.01	1.19	A	1	0.65	1	1	1	16.031	0.44	88.35	C
			B	1	0.65	1	1	1	16.031			
			C	1	0.65	1	1	1	16.031			
L27 2.50-0.00	0.00	0.61	A	1	0.65	1	1	1	8.254	0.23	90.52	C
			B	1	0.65	1	1	1	8.254			
			C	1	0.65	1	1	1	8.254			
Sum Weight:	1.24	14.97						OTM	279.68 kip-ft	6.63		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.01	0.23	A	1	0.59	1	1	1	6.042	0.13	25.77	C
102.70-97.70			B	1	0.59	1	1	1	6.042			
			C	1	0.59	1	1	1	6.042			
L2	0.02	0.23	A	1	0.59	1	1	1	6.042	0.13	25.40	C
97.70-92.70			B	1	0.59	1	1	1	6.042			
			C	1	0.59	1	1	1	6.042			
L3	0.01	0.14	A	1	0.59	1	1	1	3.528	0.07	25.09	C
92.70-89.78			B	1	0.59	1	1	1	3.528			
			C	1	0.59	1	1	1	3.528			
L4	0.04	0.25	A	1	0.65	1	1	1	6.362	0.14	28.74	C
89.78-84.78			B	1	0.65	1	1	1	6.362			
			C	1	0.65	1	1	1	6.362			
L5	0.05	0.28	A	1	0.65	1	1	1	7.004	0.16	31.11	C
84.78-79.78			B	1	0.65	1	1	1	7.004			
			C	1	0.65	1	1	1	7.004			
L6	0.07	0.31	A	1	0.65	1	1	1	7.645	0.17	33.36	C
79.78-74.78			B	1	0.65	1	1	1	7.645			
			C	1	0.65	1	1	1	7.645			
L7	0.03	0.15	A	1	0.65	1	1	1	3.699	0.11	46.86	C
74.78-72.50			B	1	0.65	1	1	1	3.699			
			C	1	0.65	1	1	1	3.699			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L8	0.00	0.03	A	1	0.65	1	1	1	0.414	0.01	48.99	C
72.50-72.25			B	1	0.65	1	1	1	0.414			
			C	1	0.65	1	1	1	0.414			
L9	0.15	0.64	A	1	0.65	1	1	1	8.611	0.36	72.53	C
72.25-67.25			B	1	0.65	1	1	1	8.611			
			C	1	0.65	1	1	1	8.611			
L10	0.15	0.67	A	1	0.65	1	1	1	9.252	0.37	74.83	C
67.25-62.25			B	1	0.65	1	1	1	9.252			
			C	1	0.65	1	1	1	9.252			
L11	0.02	0.07	A	1	0.65	1	1	1	0.961	0.04	75.37	C
62.25-61.75			B	1	0.65	1	1	1	0.961			
			C	1	0.65	1	1	1	0.961			
L12	0.01	0.04	A	1	0.65	1	1	1	0.483	0.02	87.23	C
61.75-61.50			B	1	0.65	1	1	1	0.483			
			C	1	0.65	1	1	1	0.483			
L13	0.15	0.81	A	1	0.65	1	1	1	9.990	0.44	87.50	C
61.50-56.50			B	1	0.65	1	1	1	9.990			
			C	1	0.65	1	1	1	9.990			
L14	0.15	0.84	A	1	0.65	1	1	1	10.631	0.44	87.84	C
56.50-51.50			B	1	0.65	1	1	1	10.631			
			C	1	0.65	1	1	1	10.631			
L15	0.20	1.15	A	1	0.65	1	1	1	14.827	0.57	87.86	C
51.50-44.98			B	1	0.65	1	1	1	14.827			
			C	1	0.65	1	1	1	14.827			
L16	0.04	0.86	A	1	0.65	1	1	1	2.796	0.10	86.86	C
44.98-43.78			B	1	0.65	1	1	1	2.796			
			C	1	0.65	1	1	1	2.796			
L17	0.15	0.99	A	1	0.65	1	1	1	12.046	0.43	86.51	C
43.78-38.78			B	1	0.65	1	1	1	12.046			
			C	1	0.65	1	1	1	12.046			
L18	0.15	1.02	A	1	0.65	1	1	1	12.681	0.43	85.61	C
38.78-33.78			B	1	0.65	1	1	1	12.681			
			C	1	0.65	1	1	1	12.681			
L19	0.03	0.22	A	1	0.65	1	1	1	2.691	0.09	84.84	C
33.78-32.75			B	1	0.65	1	1	1	2.691			
			C	1	0.65	1	1	1	2.691			
L20	0.01	0.06	A	1	0.65	1	1	1	0.657	0.02	94.80	C
32.75-32.50			B	1	0.65	1	1	1	0.657			
			C	1	0.65	1	1	1	0.657			
L21	0.15	1.20	A	1	0.65	1	1	1	13.479	0.48	95.94	C
32.50-27.50			B	1	0.65	1	1	1	13.479			
			C	1	0.65	1	1	1	13.479			
L22	0.16	1.23	A	1	0.65	1	1	1	14.115	0.49	98.11	C
27.50-22.50			B	1	0.65	1	1	1	14.115			
			C	1	0.65	1	1	1	14.115			
L23	0.09	1.27	A	1	0.65	1	1	1	14.750	0.45	90.67	C
22.50-17.50			B	1	0.65	1	1	1	14.750			
			C	1	0.65	1	1	1	14.750			
L24	0.01	1.30	A	1	0.65	1	1	1	15.385	0.42	83.22	C
17.50-12.50			B	1	0.65	1	1	1	15.385			
			C	1	0.65	1	1	1	15.385			
L25	0.01	1.33	A	1	0.65	1	1	1	16.021	0.43	85.39	C
12.50-7.50			B	1	0.65	1	1	1	16.021			
			C	1	0.65	1	1	1	16.021			
L26 7.50-2.50	0.01	1.37	A	1	0.65	1	1	1	16.656	0.44	87.57	C
			B	1	0.65	1	1	1	16.656			
			C	1	0.65	1	1	1	16.656			
L27 2.50-0.00	0.00	0.70	A	1	0.65	1	1	1	8.566	0.22	89.20	C
			B	1	0.65	1	1	1	8.566			
			C	1	0.65	1	1	1	8.566			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
Sum Weight:	1.90	17.40						OTM	299.27 kip-ft	7.16		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.01	0.23	A	1	0.59	1	1	1	6.042	0.13	25.77	C
102.70-97.70			B	1	0.59	1	1	1	6.042			
			C	1	0.59	1	1	1	6.042			
L2	0.02	0.23	A	1	0.59	1	1	1	6.042	0.13	25.40	C
97.70-92.70			B	1	0.59	1	1	1	6.042			
			C	1	0.59	1	1	1	6.042			
L3	0.01	0.14	A	1	0.59	1	1	1	3.528	0.07	25.09	C
92.70-89.78			B	1	0.59	1	1	1	3.528			
			C	1	0.59	1	1	1	3.528			
L4	0.04	0.25	A	1	0.65	1	1	1	6.362	0.14	28.74	C
89.78-84.78			B	1	0.65	1	1	1	6.362			
			C	1	0.65	1	1	1	6.362			
L5	0.05	0.28	A	1	0.65	1	1	1	7.004	0.16	31.11	C
84.78-79.78			B	1	0.65	1	1	1	7.004			
			C	1	0.65	1	1	1	7.004			
L6	0.07	0.31	A	1	0.65	1	1	1	7.645	0.17	33.36	C
79.78-74.78			B	1	0.65	1	1	1	7.645			
			C	1	0.65	1	1	1	7.645			
L7	0.03	0.15	A	1	0.65	1	1	1	3.699	0.11	46.86	C
74.78-72.50			B	1	0.65	1	1	1	3.699			
			C	1	0.65	1	1	1	3.699			
L8	0.00	0.03	A	1	0.65	1	1	1	0.414	0.01	48.99	C
72.50-72.25			B	1	0.65	1	1	1	0.414			
			C	1	0.65	1	1	1	0.414			
L9	0.15	0.64	A	1	0.65	1	1	1	8.611	0.36	72.53	C
72.25-67.25			B	1	0.65	1	1	1	8.611			
			C	1	0.65	1	1	1	8.611			
L10	0.15	0.67	A	1	0.65	1	1	1	9.252	0.37	74.83	C
67.25-62.25			B	1	0.65	1	1	1	9.252			
			C	1	0.65	1	1	1	9.252			
L11	0.02	0.07	A	1	0.65	1	1	1	0.961	0.04	75.37	C
62.25-61.75			B	1	0.65	1	1	1	0.961			
			C	1	0.65	1	1	1	0.961			
L12	0.01	0.04	A	1	0.65	1	1	1	0.483	0.02	87.23	C
61.75-61.50			B	1	0.65	1	1	1	0.483			
			C	1	0.65	1	1	1	0.483			
L13	0.15	0.81	A	1	0.65	1	1	1	9.990	0.44	87.50	C
61.50-56.50			B	1	0.65	1	1	1	9.990			
			C	1	0.65	1	1	1	9.990			
L14	0.15	0.84	A	1	0.65	1	1	1	10.631	0.44	87.84	C
56.50-51.50			B	1	0.65	1	1	1	10.631			
			C	1	0.65	1	1	1	10.631			
L15	0.20	1.15	A	1	0.65	1	1	1	14.827	0.57	87.86	C
51.50-44.98			B	1	0.65	1	1	1	14.827			
			C	1	0.65	1	1	1	14.827			
L16	0.04	0.86	A	1	0.65	1	1	1	2.796	0.10	86.86	C
44.98-43.78			B	1	0.65	1	1	1	2.796			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	2.796			
L17	0.15	0.99	A	1	0.65	1	1	1	12.046	0.43	86.51	C
43.78-38.78			B	1	0.65	1	1	1	12.046			
			C	1	0.65	1	1	1	12.046			
L18	0.15	1.02	A	1	0.65	1	1	1	12.681	0.43	85.61	C
38.78-33.78			B	1	0.65	1	1	1	12.681			
			C	1	0.65	1	1	1	12.681			
L19	0.03	0.22	A	1	0.65	1	1	1	2.691	0.09	84.84	C
33.78-32.75			B	1	0.65	1	1	1	2.691			
			C	1	0.65	1	1	1	2.691			
L20	0.01	0.06	A	1	0.65	1	1	1	0.657	0.02	94.80	C
32.75-32.50			B	1	0.65	1	1	1	0.657			
			C	1	0.65	1	1	1	0.657			
L21	0.15	1.20	A	1	0.65	1	1	1	13.479	0.48	95.94	C
32.50-27.50			B	1	0.65	1	1	1	13.479			
			C	1	0.65	1	1	1	13.479			
L22	0.16	1.23	A	1	0.65	1	1	1	14.115	0.49	98.11	C
27.50-22.50			B	1	0.65	1	1	1	14.115			
			C	1	0.65	1	1	1	14.115			
L23	0.09	1.27	A	1	0.65	1	1	1	14.750	0.45	90.67	C
22.50-17.50			B	1	0.65	1	1	1	14.750			
			C	1	0.65	1	1	1	14.750			
L24	0.01	1.30	A	1	0.65	1	1	1	15.385	0.42	83.22	C
17.50-12.50			B	1	0.65	1	1	1	15.385			
			C	1	0.65	1	1	1	15.385			
L25	0.01	1.33	A	1	0.65	1	1	1	16.021	0.43	85.39	C
12.50-7.50			B	1	0.65	1	1	1	16.021			
			C	1	0.65	1	1	1	16.021			
L26 7.50-2.50	0.01	1.37	A	1	0.65	1	1	1	16.656	0.44	87.57	C
			B	1	0.65	1	1	1	16.656			
			C	1	0.65	1	1	1	16.656			
L27 2.50-0.00	0.00	0.70	A	1	0.65	1	1	1	8.566	0.22	89.20	C
			B	1	0.65	1	1	1	8.566			
			C	1	0.65	1	1	1	8.566			
Sum Weight:	1.90	17.40						OTM	299.27 kip-ft	7.16		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.01	0.23	A	1	0.59	1	1	1	6.042	0.13	25.77	C
102.70-97.70			B	1	0.59	1	1	1	6.042			
			C	1	0.59	1	1	1	6.042			
L2	0.02	0.23	A	1	0.59	1	1	1	6.042	0.13	25.40	C
97.70-92.70			B	1	0.59	1	1	1	6.042			
			C	1	0.59	1	1	1	6.042			
L3	0.01	0.14	A	1	0.59	1	1	1	3.528	0.07	25.09	C
92.70-89.78			B	1	0.59	1	1	1	3.528			
			C	1	0.59	1	1	1	3.528			
L4	0.04	0.25	A	1	0.65	1	1	1	6.362	0.14	28.74	C
89.78-84.78			B	1	0.65	1	1	1	6.362			
			C	1	0.65	1	1	1	6.362			
L5	0.05	0.28	A	1	0.65	1	1	1	7.004	0.16	31.11	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
84.78-79.78			B	1	0.65	1	1	1	7.004			
			C	1	0.65	1	1	1	7.004			
L6	0.07	0.31	A	1	0.65	1	1	1	7.645	0.17	33.36	C
79.78-74.78			B	1	0.65	1	1	1	7.645			
			C	1	0.65	1	1	1	7.645			
L7	0.03	0.15	A	1	0.65	1	1	1	3.699	0.11	46.86	C
74.78-72.50			B	1	0.65	1	1	1	3.699			
			C	1	0.65	1	1	1	3.699			
L8	0.00	0.03	A	1	0.65	1	1	1	0.414	0.01	48.99	C
72.50-72.25			B	1	0.65	1	1	1	0.414			
			C	1	0.65	1	1	1	0.414			
L9	0.15	0.64	A	1	0.65	1	1	1	8.611	0.36	72.53	C
72.25-67.25			B	1	0.65	1	1	1	8.611			
			C	1	0.65	1	1	1	8.611			
L10	0.15	0.67	A	1	0.65	1	1	1	9.252	0.37	74.83	C
67.25-62.25			B	1	0.65	1	1	1	9.252			
			C	1	0.65	1	1	1	9.252			
L11	0.02	0.07	A	1	0.65	1	1	1	0.961	0.04	75.37	C
62.25-61.75			B	1	0.65	1	1	1	0.961			
			C	1	0.65	1	1	1	0.961			
L12	0.01	0.04	A	1	0.65	1	1	1	0.483	0.02	87.23	C
61.75-61.50			B	1	0.65	1	1	1	0.483			
			C	1	0.65	1	1	1	0.483			
L13	0.15	0.81	A	1	0.65	1	1	1	9.990	0.44	87.50	C
61.50-56.50			B	1	0.65	1	1	1	9.990			
			C	1	0.65	1	1	1	9.990			
L14	0.15	0.84	A	1	0.65	1	1	1	10.631	0.44	87.84	C
56.50-51.50			B	1	0.65	1	1	1	10.631			
			C	1	0.65	1	1	1	10.631			
L15	0.20	1.15	A	1	0.65	1	1	1	14.827	0.57	87.86	C
51.50-44.98			B	1	0.65	1	1	1	14.827			
			C	1	0.65	1	1	1	14.827			
L16	0.04	0.86	A	1	0.65	1	1	1	2.796	0.10	86.86	C
44.98-43.78			B	1	0.65	1	1	1	2.796			
			C	1	0.65	1	1	1	2.796			
L17	0.15	0.99	A	1	0.65	1	1	1	12.046	0.43	86.51	C
43.78-38.78			B	1	0.65	1	1	1	12.046			
			C	1	0.65	1	1	1	12.046			
L18	0.15	1.02	A	1	0.65	1	1	1	12.681	0.43	85.61	C
38.78-33.78			B	1	0.65	1	1	1	12.681			
			C	1	0.65	1	1	1	12.681			
L19	0.03	0.22	A	1	0.65	1	1	1	2.691	0.09	84.84	C
33.78-32.75			B	1	0.65	1	1	1	2.691			
			C	1	0.65	1	1	1	2.691			
L20	0.01	0.06	A	1	0.65	1	1	1	0.657	0.02	94.80	C
32.75-32.50			B	1	0.65	1	1	1	0.657			
			C	1	0.65	1	1	1	0.657			
L21	0.15	1.20	A	1	0.65	1	1	1	13.479	0.48	95.94	C
32.50-27.50			B	1	0.65	1	1	1	13.479			
			C	1	0.65	1	1	1	13.479			
L22	0.16	1.23	A	1	0.65	1	1	1	14.115	0.49	98.11	C
27.50-22.50			B	1	0.65	1	1	1	14.115			
			C	1	0.65	1	1	1	14.115			
L23	0.09	1.27	A	1	0.65	1	1	1	14.750	0.45	90.67	C
22.50-17.50			B	1	0.65	1	1	1	14.750			
			C	1	0.65	1	1	1	14.750			
L24	0.01	1.30	A	1	0.65	1	1	1	15.385	0.42	83.22	C
17.50-12.50			B	1	0.65	1	1	1	15.385			
			C	1	0.65	1	1	1	15.385			
L25	0.01	1.33	A	1	0.65	1	1	1	16.021	0.43	85.39	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
12.50-7.50			B	1	0.65	1	1	1	16.021			
			C	1	0.65	1	1	1	16.021			
L26 7.50-2.50	0.01	1.37	A	1	0.65	1	1	1	16.656	0.44	87.57	C
			B	1	0.65	1	1	1	16.656			
			C	1	0.65	1	1	1	16.656			
L27 2.50-0.00	0.00	0.70	A	1	0.65	1	1	1	8.566	0.22	89.20	C
			B	1	0.65	1	1	1	8.566			
			C	1	0.65	1	1	1	8.566			
Sum Weight:	1.90	17.40						OTM	299.27 kip-ft	7.16		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.01	0.17	A	1	0.59	1	1	1	5.417	0.07	13.67	C
102.70-97.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L2	0.02	0.17	A	1	0.59	1	1	1	5.417	0.07	13.47	C
97.70-92.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L3	0.01	0.10	A	1	0.59	1	1	1	3.163	0.04	13.31	C
92.70-89.78			B	1	0.59	1	1	1	3.163			
			C	1	0.59	1	1	1	3.163			
L4	0.04	0.18	A	1	0.65	1	1	1	5.737	0.08	15.34	C
89.78-84.78			B	1	0.65	1	1	1	5.737			
			C	1	0.65	1	1	1	5.737			
L5	0.05	0.20	A	1	0.65	1	1	1	6.379	0.08	16.77	C
84.78-79.78			B	1	0.65	1	1	1	6.379			
			C	1	0.65	1	1	1	6.379			
L6	0.07	0.22	A	1	0.65	1	1	1	7.020	0.09	18.12	C
79.78-74.78			B	1	0.65	1	1	1	7.020			
			C	1	0.65	1	1	1	7.020			
L7	0.03	0.11	A	1	0.65	1	1	1	3.414	0.04	19.36	C
74.78-72.50			B	1	0.65	1	1	1	3.414			
			C	1	0.65	1	1	1	3.414			
L8	0.00	0.03	A	1	0.65	1	1	1	0.382	0.00	19.72	C
72.50-72.25			B	1	0.65	1	1	1	0.382			
			C	1	0.65	1	1	1	0.382			
L9	0.09	0.55	A	1	0.65	1	1	1	7.986	0.13	25.50	C
72.25-67.25			B	1	0.65	1	1	1	7.986			
			C	1	0.65	1	1	1	7.986			
L10	0.09	0.57	A	1	0.65	1	1	1	8.627	0.13	26.80	C
67.25-62.25			B	1	0.65	1	1	1	8.627			
			C	1	0.65	1	1	1	8.627			
L11	0.01	0.06	A	1	0.65	1	1	1	0.898	0.01	27.33	C
62.25-61.75			B	1	0.65	1	1	1	0.898			
			C	1	0.65	1	1	1	0.898			
L12	0.00	0.04	A	1	0.65	1	1	1	0.451	0.01	31.31	C
61.75-61.50			B	1	0.65	1	1	1	0.451			
			C	1	0.65	1	1	1	0.451			
L13	0.09	0.70	A	1	0.65	1	1	1	9.365	0.16	31.72	C
61.50-56.50			B	1	0.65	1	1	1	9.365			
			C	1	0.65	1	1	1	9.365			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L14	0.09	0.72	A	1	0.65	1	1	1	10.006	0.16	32.42	C
56.50-51.50			B	1	0.65	1	1	1	10.006			
			C	1	0.65	1	1	1	10.006			
L15	0.12	0.99	A	1	0.65	1	1	1	14.012	0.22	33.06	C
51.50-44.98			B	1	0.65	1	1	1	14.012			
			C	1	0.65	1	1	1	14.012			
L16	0.02	0.83	A	1	0.65	1	1	1	2.646	0.04	32.91	C
44.98-43.78			B	1	0.65	1	1	1	2.646			
			C	1	0.65	1	1	1	2.646			
L17	0.09	0.86	A	1	0.65	1	1	1	11.421	0.17	33.08	C
43.78-38.78			B	1	0.65	1	1	1	11.421			
			C	1	0.65	1	1	1	11.421			
L18	0.09	0.89	A	1	0.65	1	1	1	12.056	0.17	33.20	C
38.78-33.78			B	1	0.65	1	1	1	12.056			
			C	1	0.65	1	1	1	12.056			
L19	0.02	0.19	A	1	0.65	1	1	1	2.563	0.03	33.17	C
33.78-32.75			B	1	0.65	1	1	1	2.563			
			C	1	0.65	1	1	1	2.563			
L20	0.00	0.05	A	1	0.65	1	1	1	0.626	0.01	36.53	C
32.75-32.50			B	1	0.65	1	1	1	0.626			
			C	1	0.65	1	1	1	0.626			
L21	0.09	1.05	A	1	0.65	1	1	1	12.854	0.19	37.21	C
32.50-27.50			B	1	0.65	1	1	1	12.854			
			C	1	0.65	1	1	1	12.854			
L22	0.10	1.08	A	1	0.65	1	1	1	13.490	0.19	38.50	C
27.50-22.50			B	1	0.65	1	1	1	13.490			
			C	1	0.65	1	1	1	13.490			
L23	0.05	1.11	A	1	0.65	1	1	1	14.125	0.19	37.59	C
22.50-17.50			B	1	0.65	1	1	1	14.125			
			C	1	0.65	1	1	1	14.125			
L24	0.01	1.13	A	1	0.65	1	1	1	14.760	0.18	36.69	C
17.50-12.50			B	1	0.65	1	1	1	14.760			
			C	1	0.65	1	1	1	14.760			
L25	0.01	1.16	A	1	0.65	1	1	1	15.396	0.19	37.98	C
12.50-7.50			B	1	0.65	1	1	1	15.396			
			C	1	0.65	1	1	1	15.396			
L26 7.50-2.50	0.01	1.19	A	1	0.65	1	1	1	16.031	0.20	39.27	C
			B	1	0.65	1	1	1	16.031			
			C	1	0.65	1	1	1	16.031			
L27 2.50-0.00	0.00	0.61	A	1	0.65	1	1	1	8.254	0.10	40.23	C
			B	1	0.65	1	1	1	8.254			
			C	1	0.65	1	1	1	8.254			
Sum Weight:	1.24	14.97						OTM	124.30 kip-ft	2.95		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.01	0.17	A	1	0.59	1	1	1	5.417	0.07	13.67	C
102.70-97.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L2	0.02	0.17	A	1	0.59	1	1	1	5.417	0.07	13.47	C
97.70-92.70			B	1	0.59	1	1	1	5.417			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	1	0.59	1	1	1	5.417			
L3	0.01	0.10	A	1	0.59	1	1	1	3.163	0.04	13.31	C
92.70-89.78			B	1	0.59	1	1	1	3.163			
			C	1	0.59	1	1	1	3.163			
L4	0.04	0.18	A	1	0.65	1	1	1	5.737	0.08	15.34	C
89.78-84.78			B	1	0.65	1	1	1	5.737			
			C	1	0.65	1	1	1	5.737			
L5	0.05	0.20	A	1	0.65	1	1	1	6.379	0.08	16.77	C
84.78-79.78			B	1	0.65	1	1	1	6.379			
			C	1	0.65	1	1	1	6.379			
L6	0.07	0.22	A	1	0.65	1	1	1	7.020	0.09	18.12	C
79.78-74.78			B	1	0.65	1	1	1	7.020			
			C	1	0.65	1	1	1	7.020			
L7	0.03	0.11	A	1	0.65	1	1	1	3.414	0.04	19.36	C
74.78-72.50			B	1	0.65	1	1	1	3.414			
			C	1	0.65	1	1	1	3.414			
L8	0.00	0.03	A	1	0.65	1	1	1	0.382	0.00	19.72	C
72.50-72.25			B	1	0.65	1	1	1	0.382			
			C	1	0.65	1	1	1	0.382			
L9	0.09	0.55	A	1	0.65	1	1	1	7.986	0.13	25.50	C
72.25-67.25			B	1	0.65	1	1	1	7.986			
			C	1	0.65	1	1	1	7.986			
L10	0.09	0.57	A	1	0.65	1	1	1	8.627	0.13	26.80	C
67.25-62.25			B	1	0.65	1	1	1	8.627			
			C	1	0.65	1	1	1	8.627			
L11	0.01	0.06	A	1	0.65	1	1	1	0.898	0.01	27.33	C
62.25-61.75			B	1	0.65	1	1	1	0.898			
			C	1	0.65	1	1	1	0.898			
L12	0.00	0.04	A	1	0.65	1	1	1	0.451	0.01	31.31	C
61.75-61.50			B	1	0.65	1	1	1	0.451			
			C	1	0.65	1	1	1	0.451			
L13	0.09	0.70	A	1	0.65	1	1	1	9.365	0.16	31.72	C
61.50-56.50			B	1	0.65	1	1	1	9.365			
			C	1	0.65	1	1	1	9.365			
L14	0.09	0.72	A	1	0.65	1	1	1	10.006	0.16	32.42	C
56.50-51.50			B	1	0.65	1	1	1	10.006			
			C	1	0.65	1	1	1	10.006			
L15	0.12	0.99	A	1	0.65	1	1	1	14.012	0.22	33.06	C
51.50-44.98			B	1	0.65	1	1	1	14.012			
			C	1	0.65	1	1	1	14.012			
L16	0.02	0.83	A	1	0.65	1	1	1	2.646	0.04	32.91	C
44.98-43.78			B	1	0.65	1	1	1	2.646			
			C	1	0.65	1	1	1	2.646			
L17	0.09	0.86	A	1	0.65	1	1	1	11.421	0.17	33.08	C
43.78-38.78			B	1	0.65	1	1	1	11.421			
			C	1	0.65	1	1	1	11.421			
L18	0.09	0.89	A	1	0.65	1	1	1	12.056	0.17	33.20	C
38.78-33.78			B	1	0.65	1	1	1	12.056			
			C	1	0.65	1	1	1	12.056			
L19	0.02	0.19	A	1	0.65	1	1	1	2.563	0.03	33.17	C
33.78-32.75			B	1	0.65	1	1	1	2.563			
			C	1	0.65	1	1	1	2.563			
L20	0.00	0.05	A	1	0.65	1	1	1	0.626	0.01	36.53	C
32.75-32.50			B	1	0.65	1	1	1	0.626			
			C	1	0.65	1	1	1	0.626			
L21	0.09	1.05	A	1	0.65	1	1	1	12.854	0.19	37.21	C
32.50-27.50			B	1	0.65	1	1	1	12.854			
			C	1	0.65	1	1	1	12.854			
L22	0.10	1.08	A	1	0.65	1	1	1	13.490	0.19	38.50	C
27.50-22.50			B	1	0.65	1	1	1	13.490			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	1	0.65	1	1	1	13.490			
L23	0.05	1.11	A	1	0.65	1	1	1	14.125	0.19	37.59	C
22.50-17.50			B	1	0.65	1	1	1	14.125			
			C	1	0.65	1	1	1	14.125			
L24	0.01	1.13	A	1	0.65	1	1	1	14.760	0.18	36.69	C
17.50-12.50			B	1	0.65	1	1	1	14.760			
			C	1	0.65	1	1	1	14.760			
L25	0.01	1.16	A	1	0.65	1	1	1	15.396	0.19	37.98	C
12.50-7.50			B	1	0.65	1	1	1	15.396			
			C	1	0.65	1	1	1	15.396			
L26 7.50-2.50	0.01	1.19	A	1	0.65	1	1	1	16.031	0.20	39.27	C
			B	1	0.65	1	1	1	16.031			
			C	1	0.65	1	1	1	16.031			
L27 2.50-0.00	0.00	0.61	A	1	0.65	1	1	1	8.254	0.10	40.23	C
			B	1	0.65	1	1	1	8.254			
			C	1	0.65	1	1	1	8.254			
Sum Weight:	1.24	14.97						OTM	124.30 kip-ft	2.95		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.01	0.17	A	1	0.59	1	1	1	5.417	0.07	13.67	C
102.70-97.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L2	0.02	0.17	A	1	0.59	1	1	1	5.417	0.07	13.47	C
97.70-92.70			B	1	0.59	1	1	1	5.417			
			C	1	0.59	1	1	1	5.417			
L3	0.01	0.10	A	1	0.59	1	1	1	3.163	0.04	13.31	C
92.70-89.78			B	1	0.59	1	1	1	3.163			
			C	1	0.59	1	1	1	3.163			
L4	0.04	0.18	A	1	0.65	1	1	1	5.737	0.08	15.34	C
89.78-84.78			B	1	0.65	1	1	1	5.737			
			C	1	0.65	1	1	1	5.737			
L5	0.05	0.20	A	1	0.65	1	1	1	6.379	0.08	16.77	C
84.78-79.78			B	1	0.65	1	1	1	6.379			
			C	1	0.65	1	1	1	6.379			
L6	0.07	0.22	A	1	0.65	1	1	1	7.020	0.09	18.12	C
79.78-74.78			B	1	0.65	1	1	1	7.020			
			C	1	0.65	1	1	1	7.020			
L7	0.03	0.11	A	1	0.65	1	1	1	3.414	0.04	19.36	C
74.78-72.50			B	1	0.65	1	1	1	3.414			
			C	1	0.65	1	1	1	3.414			
L8	0.00	0.03	A	1	0.65	1	1	1	0.382	0.00	19.72	C
72.50-72.25			B	1	0.65	1	1	1	0.382			
			C	1	0.65	1	1	1	0.382			
L9	0.09	0.55	A	1	0.65	1	1	1	7.986	0.13	25.50	C
72.25-67.25			B	1	0.65	1	1	1	7.986			
			C	1	0.65	1	1	1	7.986			
L10	0.09	0.57	A	1	0.65	1	1	1	8.627	0.13	26.80	C
67.25-62.25			B	1	0.65	1	1	1	8.627			
			C	1	0.65	1	1	1	8.627			
L11	0.01	0.06	A	1	0.65	1	1	1	0.898	0.01	27.33	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
62.25-61.75			B	1	0.65	1	1	1	0.898			
			C	1	0.65	1	1	1	0.898			
L12	0.00	0.04	A	1	0.65	1	1	1	0.451	0.01	31.31	C
61.75-61.50			B	1	0.65	1	1	1	0.451			
			C	1	0.65	1	1	1	0.451			
L13	0.09	0.70	A	1	0.65	1	1	1	9.365	0.16	31.72	C
61.50-56.50			B	1	0.65	1	1	1	9.365			
			C	1	0.65	1	1	1	9.365			
L14	0.09	0.72	A	1	0.65	1	1	1	10.006	0.16	32.42	C
56.50-51.50			B	1	0.65	1	1	1	10.006			
			C	1	0.65	1	1	1	10.006			
L15	0.12	0.99	A	1	0.65	1	1	1	14.012	0.22	33.06	C
51.50-44.98			B	1	0.65	1	1	1	14.012			
			C	1	0.65	1	1	1	14.012			
L16	0.02	0.83	A	1	0.65	1	1	1	2.646	0.04	32.91	C
44.98-43.78			B	1	0.65	1	1	1	2.646			
			C	1	0.65	1	1	1	2.646			
L17	0.09	0.86	A	1	0.65	1	1	1	11.421	0.17	33.08	C
43.78-38.78			B	1	0.65	1	1	1	11.421			
			C	1	0.65	1	1	1	11.421			
L18	0.09	0.89	A	1	0.65	1	1	1	12.056	0.17	33.20	C
38.78-33.78			B	1	0.65	1	1	1	12.056			
			C	1	0.65	1	1	1	12.056			
L19	0.02	0.19	A	1	0.65	1	1	1	2.563	0.03	33.17	C
33.78-32.75			B	1	0.65	1	1	1	2.563			
			C	1	0.65	1	1	1	2.563			
L20	0.00	0.05	A	1	0.65	1	1	1	0.626	0.01	36.53	C
32.75-32.50			B	1	0.65	1	1	1	0.626			
			C	1	0.65	1	1	1	0.626			
L21	0.09	1.05	A	1	0.65	1	1	1	12.854	0.19	37.21	C
32.50-27.50			B	1	0.65	1	1	1	12.854			
			C	1	0.65	1	1	1	12.854			
L22	0.10	1.08	A	1	0.65	1	1	1	13.490	0.19	38.50	C
27.50-22.50			B	1	0.65	1	1	1	13.490			
			C	1	0.65	1	1	1	13.490			
L23	0.05	1.11	A	1	0.65	1	1	1	14.125	0.19	37.59	C
22.50-17.50			B	1	0.65	1	1	1	14.125			
			C	1	0.65	1	1	1	14.125			
L24	0.01	1.13	A	1	0.65	1	1	1	14.760	0.18	36.69	C
17.50-12.50			B	1	0.65	1	1	1	14.760			
			C	1	0.65	1	1	1	14.760			
L25	0.01	1.16	A	1	0.65	1	1	1	15.396	0.19	37.98	C
12.50-7.50			B	1	0.65	1	1	1	15.396			
			C	1	0.65	1	1	1	15.396			
L26 7.50-2.50	0.01	1.19	A	1	0.65	1	1	1	16.031	0.20	39.27	C
			B	1	0.65	1	1	1	16.031			
			C	1	0.65	1	1	1	16.031			
L27 2.50-0.00	0.00	0.61	A	1	0.65	1	1	1	8.254	0.10	40.23	C
			B	1	0.65	1	1	1	8.254			
			C	1	0.65	1	1	1	8.254			
Sum Weight:	1.24	14.97						OTM	124.30 kip-ft	2.95		

Force Totals

Load Case	*Vertical Forces* K	*Sum of Forces X* K	*Sum of Forces Z* K	*Sum of Overturning Moments, M_x* kip-ft	*Sum of Overturning Moments, M_z* kip-ft	*Sum of Torques* kip-ft
Leg Weight	14.97					
Bracing Weight	0.00					
Total Member Self-Weight	14.97			-1.27	0.60	
Total Weight	26.02			-1.27	0.60	
Wind 0 deg - No Ice		0.19	-23.78	-1672.46	-13.40	-0.39
Wind 30 deg - No Ice		12.06	-20.65	-1452.46	-849.95	-1.60
Wind 60 deg - No Ice		20.67	-11.97	-842.75	-1456.27	-2.25
Wind 90 deg - No Ice		23.79	-0.12	-10.59	-1675.65	-2.34
Wind 120 deg - No Ice		20.59	11.75	823.74	-1449.65	-1.92
Wind 150 deg - No Ice		11.82	20.58	1444.34	-831.42	-0.84
Wind 180 deg - No Ice		-0.16	23.83	1673.44	12.83	0.46
Wind 210 deg - No Ice		-12.08	20.70	1453.83	852.60	1.64
Wind 240 deg - No Ice		-20.70	12.03	844.84	1459.34	2.34
Wind 270 deg - No Ice		-23.77	0.19	13.34	1675.02	2.36
Wind 300 deg - No Ice		-20.53	-11.69	-821.93	1446.28	1.81
Wind 330 deg - No Ice		-11.80	-20.49	-1440.64	830.98	0.79
Member Ice	2.43					
Total Weight Ice	35.82			-1.70	1.57	
Wind 0 deg - Ice		0.15	-22.87	-1564.59	-9.97	-0.23
Wind 30 deg - Ice		11.58	-19.85	-1358.31	-792.10	-1.49
Wind 60 deg - Ice		19.87	-11.49	-787.85	-1359.72	-2.24
Wind 90 deg - Ice		22.88	-0.10	-9.27	-1565.52	-2.43
Wind 120 deg - Ice		19.81	11.32	771.00	-1354.56	-2.07
Wind 150 deg - Ice		11.38	19.79	1350.51	-777.01	-1.02
Wind 180 deg - Ice		-0.13	22.91	1564.02	11.52	0.28
Wind 210 deg - Ice		-11.59	19.89	1357.98	796.29	1.52
Wind 240 deg - Ice		-19.89	11.55	788.13	1364.24	2.32
Wind 270 deg - Ice		-22.86	0.16	10.12	1567.01	2.45
Wind 300 deg - Ice		-19.75	-11.27	-770.97	1353.86	1.97
Wind 330 deg - Ice		-11.36	-19.72	-1348.76	778.95	0.97
Total Weight	26.02			-1.27	0.60	
Wind 0 deg - Service		0.08	-10.57	-744.11	-5.78	-0.17
Wind 30 deg - Service		5.36	-9.18	-646.33	-377.58	-0.71
Wind 60 deg - Service		9.19	-5.32	-375.35	-647.05	-1.00
Wind 90 deg - Service		10.57	-0.05	-5.50	-744.55	-1.04
Wind 120 deg - Service		9.15	5.22	365.31	-644.11	-0.85
Wind 150 deg - Service		5.25	9.15	641.13	-369.34	-0.38
Wind 180 deg - Service		-0.07	10.59	742.95	5.88	0.20
Wind 210 deg - Service		-5.37	9.20	645.35	379.11	0.73
Wind 240 deg - Service		-9.20	5.35	374.69	648.77	1.04
Wind 270 deg - Service		-10.56	0.09	5.13	744.63	1.05
Wind 300 deg - Service		-9.12	-5.20	-366.10	642.97	0.80
Wind 330 deg - Service		-5.24	-9.11	-641.08	369.50	0.35

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice

Comb. No.	Description
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	102.7 - 97.7	Pole	Max Tension	8	0.00	-0.00	0.00
			Max. Compression	14	-1.26	0.00	0.00
			Max. Mx	11	-0.65	4.98	-0.00
			Max. My	8	-0.65	0.00	-4.98
			Max. Vy	11	-1.55	4.98	-0.00
			Max. Vx	8	1.55	0.00	-4.98
			Max. Torque	8			0.00
L2	97.7 - 92.7	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-1.51	0.00	0.00
			Max. Mx	11	-0.83	13.14	-0.00
			Max. My	8	-0.83	0.00	-13.13
			Max. Vy	11	-1.71	13.14	-0.00
			Max. Vx	8	1.71	0.00	-13.13
			Max. Torque	8			0.00
L3	92.7 - 89.78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-6.49	-0.21	0.12
			Max. Mx	5	-3.26	-19.73	0.03
			Max. My	2	-3.26	-0.05	19.70
			Max. Vy	11	-7.93	19.58	0.02
			Max. Vx	8	7.93	-0.04	-19.61
			Max. Torque	7			0.54
L4	89.78 - 84.78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-6.78	-0.21	0.12

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	5	-3.50	-59.83	0.04
			Max. My	2	-3.50	-0.05	59.79
			Max. Vy	11	-8.11	59.68	0.02
			Max. Vx	8	8.11	-0.03	-59.70
			Max. Torque	7			0.54
L5	84.78 - 79.78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-10.92	0.21	-0.12
			Max. Mx	11	-5.55	111.81	-0.21
			Max. My	8	-5.55	0.26	-111.60
			Max. Vy	11	-13.24	111.81	-0.21
			Max. Vx	8	13.16	0.26	-111.60
			Max. Torque	7			0.54
L6	79.78 - 74.78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-11.88	0.21	-0.11
			Max. Mx	11	-6.25	178.57	-0.54
			Max. My	8	-6.26	0.60	-177.99
			Max. Vy	11	-14.14	178.57	-0.54
			Max. Vx	8	14.07	0.60	-177.99
			Max. Torque	7			0.04
L7	74.78 - 72.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-12.32	0.21	-0.11
			Max. Mx	11	-6.58	211.05	-0.69
			Max. My	8	-6.58	0.76	-210.29
			Max. Vy	11	-14.53	211.05	-0.69
			Max. Vx	8	14.46	0.76	-210.29
			Max. Torque	7			0.04
L8	72.5 - 72.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-12.35	0.21	-0.11
			Max. Mx	11	-6.62	214.68	-0.70
			Max. My	8	-6.63	0.77	-213.91
			Max. Vy	11	-14.54	214.68	-0.70
			Max. Vx	8	14.46	0.77	-213.91
			Max. Torque	7			0.04
L9	72.25 - 67.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-18.17	0.85	0.27
			Max. Mx	11	-10.39	303.88	-1.41
			Max. My	2	-10.40	-1.13	302.55
			Max. Vy	5	18.10	-303.09	1.48
			Max. Vx	8	18.06	1.91	-302.36
			Max. Torque	9			-0.75
L10	67.25 - 62.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-18.99	0.91	0.23
			Max. Mx	11	-11.12	394.94	-2.40
			Max. My	8	-11.12	2.75	-393.32
			Max. Vy	5	18.38	-394.25	2.09
			Max. Vx	8	18.34	2.75	-393.32
			Max. Torque	9			-0.76
L11	62.25 - 61.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-19.08	0.92	0.23
			Max. Mx	11	-11.20	404.13	-2.50
			Max. My	8	-11.20	2.84	-402.50
			Max. Vy	5	18.41	-403.44	2.15
			Max. Vx	8	18.36	2.84	-402.50
			Max. Torque	9			-0.76
L12	61.75 - 61.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-19.12	0.92	0.23
			Max. Mx	11	-11.24	408.72	-2.55
			Max. My	8	-11.25	2.88	-407.09
			Max. Vy	5	18.42	-408.05	2.18
			Max. Vx	8	18.38	2.88	-407.09
			Max. Torque	9			-0.76

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L13	61.5 - 56.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-20.09	0.99	0.19
			Max. Mx	11	-12.09	501.57	-3.54
			Max. My	8	-12.09	3.72	-499.83
			Max. Vy	5	18.77	-500.99	2.80
			Max. Vx	8	18.72	3.72	-499.83
			Max. Torque	9			-0.76
L14	56.5 - 51.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-21.08	1.05	0.15
			Max. Mx	11	-12.96	596.12	-4.54
			Max. My	8	-12.96	4.55	-594.29
			Max. Vy	5	19.11	-595.64	3.41
			Max. Vx	8	19.07	4.55	-594.29
			Max. Torque	9			-0.75
L15	51.5 - 44.98	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-21.63	1.09	0.13
			Max. Mx	11	-13.45	648.28	-5.07
			Max. My	8	-13.45	5.01	-646.38
			Max. Vy	5	19.30	-647.85	3.75
			Max. Vx	8	19.25	5.01	-646.38
			Max. Torque	9			-0.75
L16	44.98 - 43.78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-23.33	1.17	0.08
			Max. Mx	11	-15.00	745.60	-6.07
			Max. My	8	-15.00	5.85	-743.61
			Max. Vy	5	19.68	-745.27	4.36
			Max. Vx	8	19.64	5.85	-743.61
			Max. Torque	9			-0.75
L17	43.78 - 38.78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-24.47	1.25	0.04
			Max. Mx	11	-16.02	844.70	-7.06
			Max. My	8	-16.02	6.69	-842.61
			Max. Vy	5	20.02	-844.47	4.97
			Max. Vx	8	19.97	6.69	-842.61
			Max. Torque	9			-0.74
L18	38.78 - 33.78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-25.65	1.33	-0.01
			Max. Mx	11	-17.06	945.48	-8.05
			Max. My	8	-17.07	7.53	-943.28
			Max. Vy	5	20.35	-945.34	5.58
			Max. Vx	8	20.31	7.53	-943.28
			Max. Torque	9			-0.74
L19	33.78 - 32.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-25.90	1.35	-0.02
			Max. Mx	11	-17.28	966.44	-8.25
			Max. My	8	-17.29	7.70	-964.23
			Max. Vy	5	20.42	-966.32	5.70
			Max. Vx	8	20.37	7.70	-964.23
			Max. Torque	9			-0.74
L20	32.75 - 32.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-25.97	1.35	-0.02
			Max. Mx	11	-17.35	971.54	-8.30
			Max. My	8	-17.35	7.74	-969.32
			Max. Vy	5	20.43	-971.43	5.73
			Max. Vx	8	20.39	7.74	-969.32
			Max. Torque	9			-0.74
L21	32.5 - 27.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-28.33	1.44	1.79
			Max. Mx	11	-19.18	1080.64	-8.19
			Max. My	2	-19.18	-8.52	1077.61
			Max. Vy	5	21.77	-1080.62	7.45

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	8	21.81	8.58	-1077.22
			Max. Torque	24			-2.57
L22	27.5 - 22.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-29.73	1.53	1.73
			Max. Mx	5	-20.43	-1190.38	8.05
			Max. My	2	-20.43	-9.44	1187.32
			Max. Vy	5	22.16	-1190.38	8.05
			Max. Vx	8	22.20	9.41	-1187.21
			Max. Torque	24			-2.57
L23	22.5 - 17.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-31.08	1.58	1.70
			Max. Mx	5	-21.66	-1302.04	8.66
			Max. My	8	-21.66	10.24	-1299.07
			Max. Vy	5	22.53	-1302.04	8.66
			Max. Vx	8	22.57	10.24	-1299.07
			Max. Torque	24			-2.54
L24	17.5 - 12.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-32.40	1.58	1.70
			Max. Mx	5	-22.87	-1415.51	9.27
			Max. My	8	-22.87	11.05	-1412.74
			Max. Vy	5	22.88	-1415.51	9.27
			Max. Vx	8	22.92	11.05	-1412.74
			Max. Torque	24			-2.51
L25	12.5 - 7.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-33.74	1.58	1.70
			Max. Mx	5	-24.11	-1530.76	9.87
			Max. My	8	-24.11	11.86	-1528.19
			Max. Vy	5	23.24	-1530.76	9.87
			Max. Vx	8	23.28	11.86	-1528.19
			Max. Torque	24			-2.49
L26	7.5 - 2.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.12	1.58	1.70
			Max. Mx	5	-25.37	-1647.84	10.48
			Max. My	8	-25.37	12.67	-1645.47
			Max. Vy	5	23.61	-1647.84	10.48
			Max. Vx	8	23.65	12.67	-1645.47
			Max. Torque	24			-2.47
L27	2.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-35.82	1.58	1.70
			Max. Mx	5	-26.01	-1707.09	10.78
			Max. My	8	-26.01	13.07	-1704.82
			Max. Vy	5	23.80	-1707.09	10.78
			Max. Vx	8	23.84	13.07	-1704.82
			Max. Torque	24			-2.44

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	24	35.82	22.86	-0.16
	Max. H_x	11	26.02	23.77	-0.19
	Max. H_z	2	26.02	-0.19	23.78
	Max. M_x	2	1703.82	-0.19	23.78
	Max. M_z	5	1707.09	-23.79	0.12
	Max. Torsion	18	2.41	-22.88	0.10
	Min. Vert	1	26.02	0.00	0.00

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H_x	5	26.02	-23.79	0.12
	Min. H_z	8	26.02	0.16	-23.83
	Min. M_x	8	-1704.82	0.16	-23.83
	Min. M_z	11	-1706.47	23.77	-0.19
	Min. Torsion	24	-2.43	22.86	-0.16

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	26.02	0.00	0.00	-1.27	0.60	0.00
Dead+Wind 0 deg - No Ice	26.02	0.19	-23.78	-1703.82	-13.63	-0.38
Dead+Wind 30 deg - No Ice	26.02	12.06	-20.65	-1479.68	-865.88	-1.59
Dead+Wind 60 deg - No Ice	26.02	20.67	-11.97	-858.54	-1483.59	-2.23
Dead+Wind 90 deg - No Ice	26.02	23.79	-0.12	-10.78	-1707.09	-2.32
Dead+Wind 120 deg - No Ice	26.02	20.59	11.75	839.20	-1476.85	-1.91
Dead+Wind 150 deg - No Ice	26.02	11.82	20.58	1471.43	-847.02	-0.84
Dead+Wind 180 deg - No Ice	26.02	-0.16	23.83	1704.82	13.07	0.45
Dead+Wind 210 deg - No Ice	26.02	-12.08	20.70	1481.08	868.59	1.63
Dead+Wind 240 deg - No Ice	26.02	-20.70	12.03	860.67	1486.71	2.33
Dead+Wind 270 deg - No Ice	26.02	-23.77	0.19	13.58	1706.47	2.35
Dead+Wind 300 deg - No Ice	26.02	-20.53	-11.69	-837.36	1473.45	1.80
Dead+Wind 330 deg - No Ice	26.02	-11.80	-20.49	-1467.67	846.60	0.78
Dead+Ice+Temp	35.82	0.00	0.00	-1.70	1.58	0.00
Dead+Wind 0 deg+Ice+Temp	35.82	0.15	-22.87	-1610.80	-10.23	-0.22
Dead+Wind 30 deg+Ice+Temp	35.82	11.58	-19.85	-1398.43	-815.48	-1.47
Dead+Wind 60 deg+Ice+Temp	35.82	19.87	-11.49	-811.11	-1399.90	-2.22
Dead+Wind 90 deg+Ice+Temp	35.82	22.88	-0.10	-9.52	-1611.79	-2.41
Dead+Wind 120 deg+Ice+Temp	35.82	19.81	11.32	793.81	-1394.59	-2.05
Dead+Wind 150 deg+Ice+Temp	35.82	11.38	19.79	1390.42	-799.97	-1.02
Dead+Wind 180 deg+Ice+Temp	35.82	-0.13	22.91	1610.23	11.87	0.28
Dead+Wind 210 deg+Ice+Temp	35.82	-11.59	19.89	1398.10	819.83	1.50
Dead+Wind 240 deg+Ice+Temp	35.82	-19.89	11.55	811.42	1404.58	2.30
Dead+Wind 270 deg+Ice+Temp	35.82	-22.86	0.16	10.42	1613.37	2.43
Dead+Wind 300 deg+Ice+Temp	35.82	-19.75	-11.27	-793.76	1393.93	1.96
Dead+Wind 330 deg+Ice+Temp	35.82	-11.36	-19.72	-1388.61	802.01	0.97
Dead+Wind 0 deg - Service	26.02	0.08	-10.57	-758.33	-5.72	-0.17
Dead+Wind 30 deg - Service	26.02	5.36	-9.18	-658.67	-384.68	-0.71
Dead+Wind 60 deg - Service	26.02	9.19	-5.32	-382.47	-659.34	-0.99
Dead+Wind 90 deg - Service	26.02	10.57	-0.05	-5.51	-758.72	-1.03
Dead+Wind 120 deg - Service	26.02	9.15	5.22	372.44	-656.34	-0.85
Dead+Wind 150 deg - Service	26.02	5.25	9.15	653.56	-376.29	-0.37
Dead+Wind 180 deg - Service	26.02	-0.07	10.59	757.33	6.16	0.20
Dead+Wind 210 deg - Service	26.02	-5.37	9.20	657.85	386.57	0.73
Dead+Wind 240 deg - Service	26.02	-9.20	5.35	381.98	661.42	1.04
Dead+Wind 270 deg - Service	26.02	-10.56	0.09	5.32	759.13	1.04
Dead+Wind 300 deg - Service	26.02	-9.12	-5.20	-373.05	655.52	0.80
Dead+Wind 330 deg - Service	26.02	-5.24	-9.11	-653.32	376.78	0.35

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-26.02	0.00	0.00	26.02	0.00	0.000%
2	0.19	-26.02	-23.78	-0.19	26.02	23.78	0.000%
3	12.06	-26.02	-20.65	-12.06	26.02	20.65	0.000%
4	20.67	-26.02	-11.97	-20.67	26.02	11.97	0.000%
5	23.79	-26.02	-0.12	-23.79	26.02	0.12	0.000%
6	20.59	-26.02	11.75	-20.59	26.02	-11.75	0.000%
7	11.82	-26.02	20.58	-11.82	26.02	-20.58	0.000%
8	-0.16	-26.02	23.83	0.16	26.02	-23.83	0.000%
9	-12.08	-26.02	20.70	12.08	26.02	-20.70	0.000%
10	-20.70	-26.02	12.03	20.70	26.02	-12.03	0.000%
11	-23.77	-26.02	0.19	23.77	26.02	-0.19	0.000%
12	-20.53	-26.02	-11.69	20.53	26.02	11.69	0.000%
13	-11.80	-26.02	-20.49	11.80	26.02	20.49	0.000%
14	0.00	-35.82	0.00	0.00	35.82	0.00	0.000%
15	0.15	-35.82	-22.87	-0.15	35.82	22.87	0.000%
16	11.58	-35.82	-19.85	-11.58	35.82	19.85	0.000%
17	19.87	-35.82	-11.49	-19.87	35.82	11.49	0.000%
18	22.88	-35.82	-0.10	-22.88	35.82	0.10	0.000%
19	19.81	-35.82	11.32	-19.81	35.82	-11.32	0.000%
20	11.38	-35.82	19.79	-11.38	35.82	-19.79	0.000%
21	-0.13	-35.82	22.91	0.13	35.82	-22.91	0.000%
22	-11.59	-35.82	19.89	11.59	35.82	-19.89	0.000%
23	-19.89	-35.82	11.55	19.89	35.82	-11.55	0.000%
24	-22.86	-35.82	0.16	22.86	35.82	-0.16	0.000%
25	-19.75	-35.82	-11.27	19.75	35.82	11.27	0.000%
26	-11.36	-35.82	-19.72	11.36	35.82	19.72	0.000%
27	0.08	-26.02	-10.57	-0.08	26.02	10.57	0.000%
28	5.36	-26.02	-9.18	-5.36	26.02	9.18	0.000%
29	9.19	-26.02	-5.32	-9.19	26.02	5.32	0.000%
30	10.57	-26.02	-0.05	-10.57	26.02	0.05	0.000%
31	9.15	-26.02	5.22	-9.15	26.02	-5.22	0.000%
32	5.25	-26.02	9.15	-5.25	26.02	-9.15	0.000%
33	-0.07	-26.02	10.59	0.07	26.02	-10.59	0.000%
34	-5.37	-26.02	9.20	5.37	26.02	-9.20	0.000%
35	-9.20	-26.02	5.35	9.20	26.02	-5.35	0.000%
36	-10.56	-26.02	0.09	10.56	26.02	-0.09	0.000%
37	-9.12	-26.02	-5.20	9.12	26.02	5.20	0.000%
38	-5.24	-26.02	-9.11	5.24	26.02	9.11	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00032799
3	Yes	5	0.00000001	0.00028121
4	Yes	5	0.00000001	0.00030834
5	Yes	5	0.00000001	0.00002997
6	Yes	5	0.00000001	0.00027642
7	Yes	5	0.00000001	0.00028725
8	Yes	4	0.00000001	0.00083290
9	Yes	5	0.00000001	0.00030951
10	Yes	5	0.00000001	0.00027905
11	Yes	4	0.00000001	0.00088288
12	Yes	5	0.00000001	0.00029283
13	Yes	5	0.00000001	0.00028600

14	Yes	4	0.00000001	0.00000001
15	Yes	5	0.00000001	0.00051338
16	Yes	6	0.00000001	0.00004947
17	Yes	6	0.00000001	0.00005151
18	Yes	5	0.00000001	0.00052063
19	Yes	6	0.00000001	0.00004865
20	Yes	6	0.00000001	0.00004953
21	Yes	5	0.00000001	0.00051572
22	Yes	6	0.00000001	0.00005183
23	Yes	6	0.00000001	0.00004940
24	Yes	5	0.00000001	0.00051856
25	Yes	6	0.00000001	0.00005004
26	Yes	6	0.00000001	0.00004962
27	Yes	4	0.00000001	0.00016115
28	Yes	5	0.00000001	0.00004188
29	Yes	5	0.00000001	0.00004967
30	Yes	4	0.00000001	0.00034881
31	Yes	5	0.00000001	0.00004101
32	Yes	5	0.00000001	0.00004376
33	Yes	4	0.00000001	0.00022817
34	Yes	5	0.00000001	0.00004978
35	Yes	5	0.00000001	0.00004148
36	Yes	4	0.00000001	0.00030807
37	Yes	5	0.00000001	0.00004583
38	Yes	5	0.00000001	0.00004366

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* *ft*	*Horz. Deflection* *in*	*Gov. Load Comb.*	*Tilt* °	*Twist* °
L1	102.7 - 97.7	20.645	35	1.9441	0.0034
L2	97.7 - 92.7	18.611	35	1.9390	0.0034
L3	92.7 - 89.78	16.593	35	1.9110	0.0034
L4	89.78 - 84.78	15.433	35	1.8824	0.0033
L5	84.78 - 79.78	13.508	35	1.7837	0.0026
L6	79.78 - 74.78	11.715	35	1.6325	0.0026
L7	74.78 - 72.5	10.107	35	1.4329	0.0026
L8	72.5 - 72.25	9.447	35	1.3319	0.0026
L9	72.25 - 67.25	9.377	35	1.3273	0.0026
L10	67.25 - 62.25	8.041	35	1.2228	0.0023
L11	62.25 - 61.75	6.822	35	1.1049	0.0019
L12	61.75 - 61.5	6.707	35	1.0931	0.0019
L13	61.5 - 56.5	6.650	35	1.0882	0.0019
L14	56.5 - 51.5	5.565	35	0.9851	0.0017
L15	51.5 - 44.98	4.589	35	0.8781	0.0015
L16	48.78 - 43.78	4.106	35	0.8202	0.0014
L17	43.78 - 38.78	3.275	35	0.7561	0.0013
L18	38.78 - 33.78	2.537	35	0.6547	0.0012
L19	33.78 - 32.75	1.904	35	0.5544	0.0011
L20	32.75 - 32.5	1.787	35	0.5347	0.0011
L21	32.5 - 27.5	1.759	35	0.5304	0.0011
L22	27.5 - 22.5	1.249	35	0.4442	0.0010
L23	22.5 - 17.5	0.829	35	0.3589	0.0008
L24	17.5 - 12.5	0.497	35	0.2762	0.0006
L25	12.5 - 7.5	0.251	35	0.1943	0.0004
L26	7.5 - 2.5	0.089	35	0.1147	0.0002
L27	2.5 - 0	0.010	35	0.0373	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
101.00	(2) 800 10504 w/ Mount Pipe	35	19.952	1.9439	0.0038	18106
92.00	climbing ladder	35	16.314	1.9054	0.0038	6002
90.00	7770.00 w/ Mount Pipe	35	15.520	1.8852	0.0038	4362
82.00	MG D3-800TV w/ Mount Pipe	35	12.491	1.7040	0.0026	1844
75.00	(2) 1900MHz 4X40W RRH	35	10.174	1.4441	0.0026	1455
73.00	800MHZ RRH	35	9.588	1.3463	0.0026	1683
72.00	A-ANT23G-1	35	9.308	1.3230	0.0026	1915
28.00	12' T-Arm	35	1.296	0.4529	0.0010	3336

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	102.7 - 97.7	46.354	10	4.3674	0.0073
L2	97.7 - 92.7	41.791	10	4.3559	0.0073
L3	92.7 - 89.78	37.265	10	4.2931	0.0073
L4	89.78 - 84.78	34.663	10	4.2288	0.0072
L5	84.78 - 79.78	30.343	10	4.0067	0.0058
L6	79.78 - 74.78	26.321	10	3.6669	0.0058
L7	74.78 - 72.5	22.712	10	3.2191	0.0059
L8	72.5 - 72.25	21.229	10	2.9924	0.0059
L9	72.25 - 67.25	21.073	10	2.9822	0.0059
L10	67.25 - 62.25	18.073	10	2.7477	0.0051
L11	62.25 - 61.75	15.335	10	2.4831	0.0043
L12	61.75 - 61.5	15.076	10	2.4566	0.0043
L13	61.5 - 56.5	14.948	10	2.4456	0.0043
L14	56.5 - 51.5	12.509	10	2.2140	0.0038
L15	51.5 - 44.98	10.318	10	1.9739	0.0034
L16	48.78 - 43.78	9.230	10	1.8438	0.0032
L17	43.78 - 38.78	7.364	10	1.6997	0.0030
L18	38.78 - 33.78	5.705	10	1.4719	0.0027
L19	33.78 - 32.75	4.282	10	1.2466	0.0025
L20	32.75 - 32.5	4.018	10	1.2022	0.0025
L21	32.5 - 27.5	3.956	10	1.1927	0.0025
L22	27.5 - 22.5	2.809	10	0.9990	0.0024
L23	22.5 - 17.5	1.864	10	0.8072	0.0018
L24	17.5 - 12.5	1.117	10	0.6211	0.0013
L25	12.5 - 7.5	0.564	10	0.4369	0.0009
L26	7.5 - 2.5	0.200	10	0.2580	0.0005
L27	2.5 - 0	0.022	10	0.0840	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
101.00	(2) 800 10504 w/ Mount Pipe	10	44.801	4.3669	0.0088	8139
92.00	climbing ladder	10	36.638	4.2805	0.0088	2700
90.00	7770.00 w/ Mount Pipe	10	34.857	4.2350	0.0087	1964
82.00	MG D3-800TV w/ Mount Pipe	10	28.062	3.8274	0.0058	827
75.00	(2) 1900MHz 4X40W RRH	10	22.860	3.2444	0.0059	652
73.00	800MHZ RRH	10	21.545	3.0247	0.0059	754
72.00	A-ANT23G-1	10	20.917	2.9725	0.0059	858
28.00	12' T-Arm	10	2.914	1.0185	0.0024	1485

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	102.7 - 97.7 (1)	TP13x13x0.25	5.00	0.00	0.0	21.000	10.0138	-0.65	210.29	0.003
L2	97.7 - 92.7 (2)	TP13x13x0.25	5.00	0.00	0.0	21.000	10.0138	-0.83	210.29	0.004
L3	92.7 - 89.78 (3)	TP13x13x0.25	2.92	0.00	0.0	21.000	10.0138	-3.26	210.29	0.016
L4	89.78 - 84.78 (4)	TP14.5393x13x0.25	5.00	0.00	0.0	39.000	11.3386	-3.50	442.20	0.008
L5	84.78 - 79.78 (5)	TP16.0787x14.5393x0.25	5.00	0.00	0.0	39.000	12.5601	-5.54	489.84	0.011
L6	79.78 - 74.78 (6)	TP17.618x16.0787x0.25	5.00	0.00	0.0	39.000	13.7815	-6.25	537.48	0.012
L7	74.78 - 72.5 (7)	TP18.32x17.618x0.25	2.28	0.00	0.0	39.000	14.3385	-6.57	559.20	0.012
L8	72.5 - 72.25 (8)	TP18.3969x18.32x0.6625	0.25	0.00	0.0	39.000	37.2915	-6.62	1454.37	0.005
L9	72.25 - 67.25 (9)	TP19.9363x18.3969x0.6125	5.00	0.00	0.0	39.000	37.5669	-10.38	1465.11	0.007
L10	67.25 - 62.25 (10)	TP21.4756x19.9363x0.575	5.00	0.00	0.0	39.000	38.1447	-11.11	1487.64	0.007
L11	62.25 - 61.75 (11)	TP21.6295x21.4756x0.575	0.50	0.00	0.0	39.000	38.4256	-11.19	1498.60	0.007
L12	61.75 - 61.5 (12)	TP21.7065x21.6295x0.7125	0.25	0.00	0.0	39.000	47.4774	-11.23	1851.62	0.006
L13	61.5 - 56.5 (13)	TP23.2459x21.7065x0.675	5.00	0.00	0.0	39.000	48.3569	-12.08	1885.92	0.006
L14	56.5 - 51.5 (14)	TP24.7852x23.2459x0.6375	5.00	0.00	0.0	39.000	48.8611	-12.95	1905.58	0.007
L15	51.5 - 44.98 (15)	TP26.7925x24.7852x0.625	6.52	0.00	0.0	39.000	49.5890	-13.44	1933.97	0.007
L16	44.98 - 43.78 (16)	TP26.6475x25.1226x0.6625	5.00	0.00	0.0	39.000	54.6407	-14.99	2130.99	0.007
L17	43.78 - 38.78 (17)	TP28.1725x26.6475x0.65	5.00	0.00	0.0	39.000	56.7817	-16.01	2214.49	0.007
L18	38.78 - 33.78 (18)	TP29.6974x28.1725x0.625	5.00	0.00	0.0	39.000	57.6725	-17.06	2249.23	0.008
L19	33.78 - 32.75 (19)	TP30.0116x29.6974x0.625	1.03	0.00	0.0	39.000	58.2956	-17.28	2273.53	0.008
L20	32.75 - 32.5 (20)	TP30.0878x30.0116x0.7125	0.25	0.00	0.0	39.000	66.4316	-17.34	2590.83	0.007
L21	32.5 - 27.5 (21)	TP31.6128x30.0878x0.6875	5.00	0.00	0.0	39.000	67.4828	-19.18	2631.83	0.007
L22	27.5 - 22.5 (22)	TP33.1377x31.6128x0.6625	5.00	0.00	0.0	39.000	66.3641	-19.68	2588.20	0.008
L23	22.5 - 17.5 (23)	TP34.6627x33.1377x0.65	5.00	0.00	0.0	39.000	67.0254	-20.44	2613.99	0.008
L24	17.5 - 12.5 (24)	TP36.1876x34.6627x0.625	5.00	0.00	0.0	39.000	67.5222	-21.67	2633.37	0.008
L25	12.5 - 7.5 (25)	TP37.7126x36.1876x0.6125	5.00	0.00	0.0	39.000	69.1607	-22.88	2697.27	0.008
L26	7.5 - 2.5 (26)	TP39.2375x37.7126x0.6	5.00	0.00	0.0	39.000	70.6772	-24.12	2756.41	0.009
L27	2.5 - 0 (27)	TP40x39.2375x0.6	2.50	0.00	0.0	39.000	73.5813	-25.39	2869.67	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	102.7 - 97.7 (1)	TP13x13x0.25	4.98	-1.908	23.100	0.083	0.00	0.000	23.100	0.000
L2	97.7 - 92.7 (2)	TP13x13x0.25	13.14	-5.034	23.100	0.218	0.00	0.000	23.100	0.000
L3	92.7 - 89.78 (3)	TP13x13x0.25	19.74	-7.565	23.100	0.328	0.00	0.000	23.100	0.000
L4	89.78 - 84.78 (4)	TP14.5393x13x0.25	59.84	-18.134	39.000	0.465	0.00	0.000	39.000	0.000
L5	84.78 - 79.78 (5)	TP16.0787x14.5393x0.25	111.92	-27.593	39.000	0.708	0.00	0.000	39.000	0.000
L6	79.78 - 74.78 (6)	TP17.618x16.0787x0.25	178.88	-36.579	39.000	0.938	0.00	0.000	39.000	0.000
L7	74.78 - 72.5 (7)	TP18.32x17.618x0.25	211.44	-39.922	39.000	1.024	0.00	0.000	39.000	0.000
L8	72.5 - 72.25 (8)	TP18.3969x18.32x0.6625	215.09	-16.279	39.000	0.417	0.00	0.000	39.000	0.000
L9	72.25 - 67.25 (9)	TP19.9363x18.3969x0.6125	304.85	-20.905	39.000	0.536	0.00	0.000	39.000	0.000
L10	67.25 - 62.25 (10)	TP21.4756x19.9363x0.575	396.69	-24.669	39.000	0.633	0.00	0.000	39.000	0.000
L11	62.25 - 61.75 (11)	TP21.6295x21.4756x0.575	405.95	-24.872	39.000	0.638	0.00	0.000	39.000	0.000
L12	61.75 - 61.5 (12)	TP21.7065x21.6295x0.7125	410.59	-20.551	39.000	0.527	0.00	0.000	39.000	0.000
L13	61.5 - 56.5 (13)	TP23.2459x21.7065x0.675	504.21	-22.957	39.000	0.589	0.00	0.000	39.000	0.000
L14	56.5 - 51.5 (14)	TP24.7852x23.2459x0.6375	599.54	-25.166	39.000	0.645	0.00	0.000	39.000	0.000
L15	51.5 - 44.98 (15)	TP26.7925x24.7852x0.625	652.12	-26.018	39.000	0.667	0.00	0.000	39.000	0.000
L16	44.98 - 43.78 (16)	TP26.6475x25.1226x0.6625	750.23	-26.145	39.000	0.670	0.00	0.000	39.000	0.000
L17	43.78 - 38.78 (17)	TP28.1725x26.6475x0.65	850.11	-26.867	39.000	0.689	0.00	0.000	39.000	0.000
L18	38.78 - 33.78 (18)	TP29.6974x28.1725x0.625	951.66	-27.975	39.000	0.717	0.00	0.000	39.000	0.000
L19	33.78 - 32.75 (19)	TP30.0116x29.6974x0.625	972.78	-27.982	39.000	0.717	0.00	0.000	39.000	0.000
L20	32.75 - 32.5 (20)	TP30.0878x30.0116x0.7125	977.92	-24.767	39.000	0.635	0.00	0.000	39.000	0.000
L21	32.5 - 27.5 (21)	TP31.6128x30.0878x0.6875	1087.24	-25.697	39.000	0.659	0.00	0.000	39.000	0.000
L22	27.5 - 22.5 (22)	TP33.1377x31.6128x0.6625	1131.23	-26.608	39.000	0.682	0.00	0.000	39.000	0.000
L23	22.5 - 17.5 (23)	TP34.6627x33.1377x0.65	1197.79	-27.073	39.000	0.694	0.00	0.000	39.000	0.000
L24	17.5 - 12.5 (24)	TP36.1876x34.6627x0.625	1310.22	-28.012	39.000	0.718	0.00	0.000	39.000	0.000
L25	12.5 - 7.5 (25)	TP37.7126x36.1876x0.6125	1424.43	-28.416	39.000	0.729	0.00	0.000	39.000	0.000
L26	7.5 - 2.5 (26)	TP39.2375x37.7126x0.6	1540.43	-28.795	39.000	0.738	0.00	0.000	39.000	0.000
L27	2.5 - 0 (27)	TP40x39.2375x0.6	1658.26	-28.581	39.000	0.733	0.00	0.000	39.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	102.7 - 97.7 (1)	TP13x13x0.25	0.003	0.083	0.000	0.086 ✔	1.333	H1-3 ✔
L2	97.7 - 92.7 (2)	TP13x13x0.25	0.004	0.218	0.000	0.222 ✔	1.333	H1-3 ✔
L3	92.7 - 89.78 (3)	TP13x13x0.25	0.016	0.328	0.000	0.343 ✔	1.333	H1-3 ✔

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L4	89.78 - 84.78 (4)	TP14.5393x13x0.25	0.008	0.465	0.000	0.473 ✔	1.333	H1-3 ✔
L5	84.78 - 79.78 (5)	TP16.0787x14.5393x0.25	0.011	0.708	0.000	0.719 ✔	1.333	H1-3 ✔
L6	79.78 - 74.78 (6)	TP17.618x16.0787x0.25	0.012	0.938	0.000	0.950 ✔	1.333	H1-3 ✔
L7	74.78 - 72.5 (7)	TP18.32x17.618x0.25	0.012	1.024	0.000	1.035 ✔	1.333	H1-3 ✔
L8	72.5 - 72.25 (8)	TP18.3969x18.32x0.6625	0.005	0.417	0.000	0.422 ✔	1.333	H1-3 ✔
L9	72.25 - 67.25 (9)	TP19.9363x18.3969x0.6125	0.007	0.536	0.000	0.543 ✔	1.333	H1-3 ✔
L10	67.25 - 62.25 (10)	TP21.4756x19.9363x0.575	0.007	0.633	0.000	0.640 ✔	1.333	H1-3 ✔
L11	62.25 - 61.75 (11)	TP21.6295x21.4756x0.575	0.007	0.638	0.000	0.645 ✔	1.333	H1-3 ✔
L12	61.75 - 61.5 (12)	TP21.7065x21.6295x0.7125	0.006	0.527	0.000	0.533 ✔	1.333	H1-3 ✔
L13	61.5 - 56.5 (13)	TP23.2459x21.7065x0.675	0.006	0.589	0.000	0.595 ✔	1.333	H1-3 ✔
L14	56.5 - 51.5 (14)	TP24.7852x23.2459x0.6375	0.007	0.645	0.000	0.652 ✔	1.333	H1-3 ✔
L15	51.5 - 44.98 (15)	TP26.7925x24.7852x0.625	0.007	0.667	0.000	0.674 ✔	1.333	H1-3 ✔
L16	44.98 - 43.78 (16)	TP26.6475x25.1226x0.6625	0.007	0.670	0.000	0.677 ✔	1.333	H1-3 ✔
L17	43.78 - 38.78 (17)	TP28.1725x26.6475x0.65	0.007	0.689	0.000	0.696 ✔	1.333	H1-3 ✔
L18	38.78 - 33.78 (18)	TP29.6974x28.1725x0.625	0.008	0.717	0.000	0.725 ✔	1.333	H1-3 ✔
L19	33.78 - 32.75 (19)	TP30.0116x29.6974x0.625	0.008	0.717	0.000	0.725 ✔	1.333	H1-3 ✔
L20	32.75 - 32.5 (20)	TP30.0878x30.0116x0.7125	0.007	0.635	0.000	0.642 ✔	1.333	H1-3 ✔
L21	32.5 - 27.5 (21)	TP31.6128x30.0878x0.6875	0.007	0.659	0.000	0.666 ✔	1.333	H1-3 ✔
L22	27.5 - 22.5 (22)	TP33.1377x31.6128x0.6625	0.008	0.682	0.000	0.690 ✔	1.333	H1-3 ✔
L23	22.5 - 17.5 (23)	TP34.6627x33.1377x0.65	0.008	0.694	0.000	0.702 ✔	1.333	H1-3 ✔
L24	17.5 - 12.5 (24)	TP36.1876x34.6627x0.625	0.008	0.718	0.000	0.726 ✔	1.333	H1-3 ✔
L25	12.5 - 7.5 (25)	TP37.7126x36.1876x0.6125	0.008	0.729	0.000	0.737 ✔	1.333	H1-3 ✔
L26	7.5 - 2.5 (26)	TP39.2375x37.7126x0.6	0.009	0.738	0.000	0.747 ✔	1.333	H1-3 ✔
L27	2.5 - 0 (27)	TP40x39.2375x0.6	0.009	0.733	0.000	0.742 ✔	1.333	H1-3 ✔

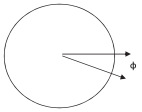
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
L1	102.7 - 97.7	Pole	TP13x13x0.25	1	-0.65	280.32	6.4	Pass
L2	97.7 - 92.7	Pole	TP13x13x0.25	2	-0.83	280.32	16.6	Pass
L3	92.7 - 89.78	Pole	TP13x13x0.25	3	-3.26	280.32	25.7	Pass
L4	89.78 - 84.78	Pole	TP14.5393x13x0.25	4	-3.50	589.46	35.5	Pass
L5	84.78 - 79.78	Pole	TP16.0787x14.5393x0.25	5	-5.54	652.96	53.9	Pass
L6	79.78 - 74.78	Pole	TP17.618x16.0787x0.25	6	-6.25	716.46	71.2	Pass
L7	74.78 - 72.5	Pole	TP18.32x17.618x0.25	7	-6.57	745.42	77.7	Pass
L8	72.5 - 72.25	Pole	TP18.3969x18.32x0.6625	8	-6.62	1938.68	31.7	Pass
L9	72.25 - 67.25	Pole	TP19.9363x18.3969x0.6125	9	-10.38	1952.99	40.7	Pass
L10	67.25 - 62.25	Pole	TP21.4756x19.9363x0.575	10	-11.11	1983.02	48.0	Pass
L11	62.25 - 61.75	Pole	TP21.6295x21.4756x0.575	11	-11.19	1997.63	48.4	Pass
L12	61.75 - 61.5	Pole	TP21.7065x21.6295x0.7125	12	-11.23	2468.21	40.0	Pass
L13	61.5 - 56.5	Pole	TP23.2459x21.7065x0.675	13	-12.08	2513.93	44.6	Pass
L14	56.5 - 51.5	Pole	TP24.7852x23.2459x0.6375	14	-12.95	2540.14	48.9	Pass
L15	51.5 - 44.98	Pole	TP26.7925x24.7852x0.625	15	-13.44	2577.98	50.6	Pass
L16	44.98 - 43.78	Pole	TP26.6475x25.1226x0.6625	16	-14.99	2840.61	50.8	Pass
L17	43.78 - 38.78	Pole	TP28.1725x26.6475x0.65	17	-16.01	2951.92	52.2	Pass
L18	38.78 - 33.78	Pole	TP29.6974x28.1725x0.625	18	-17.06	2998.22	54.4	Pass
L19	33.78 - 32.75	Pole	TP30.0116x29.6974x0.625	19	-17.28	3030.62	54.4	Pass
L20	32.75 - 32.5	Pole	TP30.0878x30.0116x0.7125	20	-17.34	3453.58	48.1	Pass
L21	32.5 - 27.5	Pole	TP31.6128x30.0878x0.6875	21	-19.18	3508.23	50.0	Pass
L22	27.5 - 22.5	Pole	TP33.1377x31.6128x0.6625	22	-19.68	3450.07	51.8	Pass
L23	22.5 - 17.5	Pole	TP34.6627x33.1377x0.65	23	-20.44	3484.45	52.7	Pass
L24	17.5 - 12.5	Pole	TP36.1876x34.6627x0.625	24	-21.67	3510.28	54.5	Pass
L25	12.5 - 7.5	Pole	TP37.7126x36.1876x0.6125	25	-22.88	3595.46	55.3	Pass
L26	7.5 - 2.5	Pole	TP39.2375x37.7126x0.6	26	-24.12	3674.29	56.0	Pass
L27	2.5 - 0	Pole	TP40x39.2375x0.6	27	-25.39	3825.27	55.6	Pass
							Summary	
						Pole (L7)	77.7	Pass
						RATING =	**77.7**	**Pass**

BU#	
Site Name	Stratford
App #	

Number Of Bolts (Ext + Mod)	13
Diameter Of Exist. Bolt Circle(inch)	48
Moment (ft. kips)	1718
Axial Compression (kips)	26
Outer Diamter of Mod. Bolt Circle(inch)	56.5

20616 in. kips



	Bolt Diameter (inch)	Grade	Allowable Axial (kips)	Capacity
Existing	2.25	A615 (Gr 75)	195	63.8%
Mod	**2.25**	**A193 B7 (105 KSI)**	**272.9**	**51.3%**

Sum Ax^2 16059.79

T(+) C(-)

Bolt #	ϕ°	Bolt Circle	D (in)	Radians	Cos(ϕ°)	x_i(inch)	x_i^2	Area	Ax_i	Ax_i^2	Force (Kip)	Capacities
1	288	48.00	2.25	5.027	0.309	7.416	55.003	3.98	29.49	218.70	35.9	18.4%
2	324	48.00	2.25	5.655	0.809	19.416	376.997	3.98	77.20	1498.97	97.1	49.8%
3	0	48.00	2.25	0.000	1.000	24.000	576.000	3.98	95.43	2290.22	120.5	61.8%
4	36	48.00	2.25	0.628	0.809	19.416	376.997	3.98	77.20	1498.97	97.1	49.8%
5	72	48.00	2.25	1.257	0.309	7.416	55.003	3.98	29.49	218.70	35.9	18.4%
6	108	48.00	2.25	1.885	-0.309	-7.416	55.003	3.98	-29.49	218.70	-39.9	20.4%
7	144	48.00	2.25	2.513	-0.809	-19.416	376.997	3.98	-77.20	1498.97	-101.1	51.8%
8	180	48.00	2.25	3.142	-1.000	-24.000	576.000	3.98	-95.43	2290.22	-124.5	63.8%
9	216	48.00	2.25	3.770	-0.809	-19.416	376.997	3.98	-77.20	1498.97	-101.1	51.8%
10	252	48.00	2.25	4.398	-0.309	-7.416	55.003	3.98	-29.49	218.70	-39.9	20.4%
11	270	56.50	2.25	4.712	0.000	0.000	0.000	3.98	0.00	0.00	-2.0	0.7%
12	10	56.50	2.25	0.175	0.985	27.821	773.998	3.98	110.62	3077.48	140.0	51.3%
13	134	56.50	2.25	2.339	-0.695	-19.624	385.105	3.98	-78.03	1531.21	-102.2	37.4%

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#:	
Site Name:	*Stratford*
App #:	
Pole Manufacturer:	*Other*

Reactions		
Moment:	1230	ft-kips
Axial:	25	kips
Shear:	24	kips

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Base Plate Check Only

Anchor Rod Data		
Qty:	10	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	48	in

Plate Data		
Diam:	57	in
Thick:	1.75	in
Grade:	60	ksi
Single-Rod B-eff:	12.70	in

Stiffener Data (Welding at both sides)		
Config:		*
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:	40	in
Thick:	0.3125	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

Base Plate Results — Flexural Check

Base Plate Stress:	49.9 ksi	
Allowable Plate Stress:	60.0 ksi	
Base Plate Stress Ratio:	83.1% **Pass**	

Non-Rigid
Service ASD
0.75*Fy*ASIF
Y.L. Length: 26.53

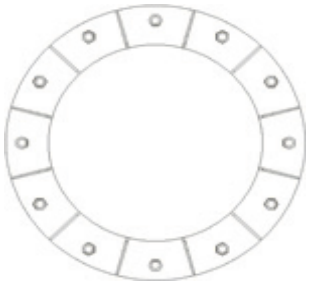
n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

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

CCI Foundation Tool Suite - Monopole Pier - Beta Release

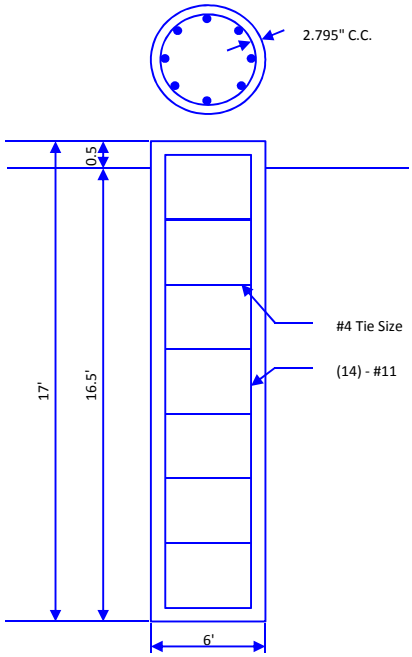
CCI Foundation Tool Suite - v1.0 Date: 3/8/2016

BU:
Site Name: Stratford
App Number:
Work Order:

Monopole Drilled Pier

Input

Criteria		
TIA Revision:	F	
ACI 318 Revision:	2005	
Seismic Category:	D	
Forces		
Compression	33.8	kips
Shear	31.2	kips
Moment	2233.4	k-ft
Swelling Force	0	kips
Foundation Dimensions		
Pier Diameter:	6	ft
Ext. above grade:	0.5	ft
Depth below grade:	16.5	ft
Material Properties		
Number of Rebar:	14	
Rebar Size:	11	
Tie Size	4	
Rebar tensile strength:	60	ksi
Concrete Strength:	4000	psi
Ultimate Concrete Strain	0.003	in/in
Clear Cover to Ties:	2.795	in



Soil Profile: West Bridgeport

Layer	Thickness (ft)	From (ft)	To (ft)	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (deg)	Ultimate Uplift Skin Friction (ksf)	Ultimate Comp. Skin Friction (ksf)	Ultimate Bearing Capacity (ksf)	SPT 'N' Counts
1	3.33	0	3.33	100	0	0	0	0	0	
2	0.6	3.33	3.93	100	0	30	0	0	0	
3	15	3.93	18.93	169	0	42	0	0	5	

Analysis Results

Soil Lateral Capacity

Depth to Zero Shear:	4.89	ft
Max Moment, Mu:	1794.51	k-ft
Soil Safety Factor:	2.31	
Safety Factor Req'd:	2	
RATING:	86.5%	

Soil Axial Capacity

Skin Friction (k):	0.00	kips
End Bearing (k):	70.69	kips
Comp. Capacity (k), ϕCn:	70.69	kips
Comp. (k), Cu:	33.80	kips
RATING:	47.8%	

Concrete/Steel Check

Mu (from soil analysis)	2332.86	k-ft
ϕMn	3074.36	k-ft
RATING:	75.9%	
rho provided	0.54	
rho required	0.50	OK
Rebar Spacing	12.95	
Spacing required	22.56	OK
Dev. Length required	11.38	
Dev. Length provided	53.51	OK

Overall Foundation Rating: 86.5%

PROJECT INFORMATION

SCOPE OF WORK:
- AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR, FOR A TOTAL (3) NEW ANTENNAS. (2) EXISTING ANTENNAS PER SECTOR FOR 3 SECTORS, FOR A TOTAL OF (6) EXISTING ANTENNAS TO REMAIN. (1) EXISTING ANTENNA PER SECTOR FOR (3) SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO BE REMOVED.
- AT&T RRUs: (1) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW RRUs; (2) EXISTING RRU PER SECTOR TO BE REUSED, FOR A TOTAL OF (6) EXISTING RRUs, (1) NEW A2 MODULES PER SECTOR, (3) TOTAL NEW A2 MODULES
- AT&T TRIPLEXERS: (2) NEW TRIPLEXERS INSTALLED AT ANTENNAS PER SECTOR FOR A TOTAL OF (6) NEW TRIPLEXERS, (2) NEW TRIPLEXERS AT EQUIPMENT LOCATION PER SECTOR FOR A TOTAL OF (6) TRIPLEXERS AT EQUIPMENT LOCATION
- AT&T SQUID: (1) NEW DC6 SURGE, FOR A TOTAL OF (1) NEW SQUID, (1) EXISTING DC-6 SURGE PROTECTOR, FOR A TOTAL OF (1) EXISTING SQUID TO REMAIN.

SITE ADDRESS:	623 HONEYSPOT ROAD STRATFORD, CT 06615
LATITUDE:	41.1768811 41° 10' 36.7"N
LONGITUDE:	-73.1461661 -73° 08' 46.20"W
USID:	60398
TOWER OWNER:	CINGULAR SITES
TYPE OF SITE:	MONOPOLE/INDOOR EQUIPMENT
MONOPOLE HEIGHT:	102'-0"±
RAD CENTER:	90'-0"±
CURRENT USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY
PROPOSED USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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

APPROVALS

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

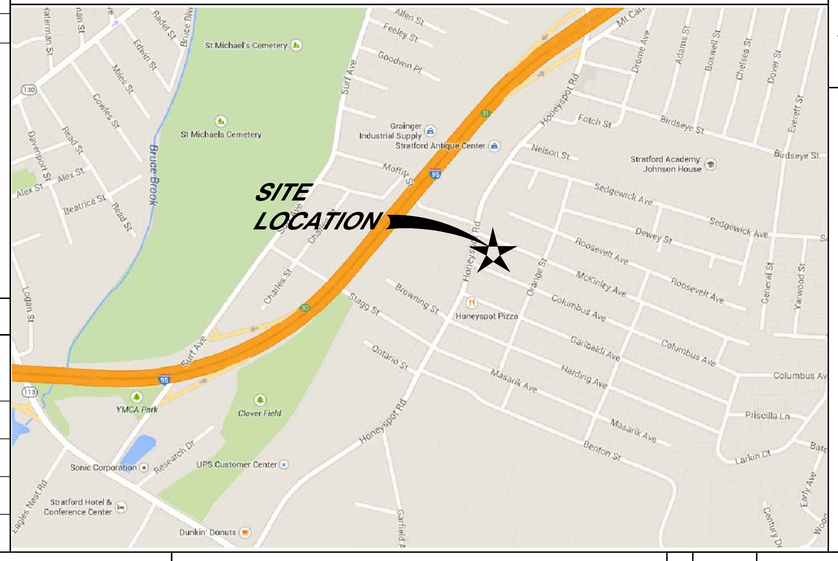
DISCIPLINE:	NAME:	
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

at&t MOBILITY

FA CODE: 10071312
SITE NUMBER: CTU2112
SITE NAME: STRATFORD

VICINITY MAP

HEAD EAST ON COCHITUATE RD TOWARD BURR ST (322 FT), TAKE THE RAMP TO I-90 E/MASSPIKE W/SPRINGFIELD/BOSTON (0.6 MI), KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 90 W/MASSACHUSETTS TURNPIKE/WORCHESTER/SPRINGFIELD AND MERGE ONTO I-90 W/MASSACHUSETTS TURNPIKE (0.5 MI), MERGE ONTO I-90 W/MASSACHUSETTS TURNPIKE (37.6 MI), TAKE EXIT 9 FOR I-84 TOWARD US-20/HARTFORD/NEW YORK CITY (0.9 MI), CONTINUE ONTO I-84 (40.9 MI), TAKE EXIT 57 ON THE LEFT FOR CT-15 S TOWARD I-91 S/CHARTER OAK BRIDGE/N Y. CITY (0.5 MI), CONTINUE ONTO CT-15 S (0.5 MI), CONTINUE ONTO CT-15 S/US-5 S (0.8 MI), TAKE EXIT 86 TO MERGE ONTO I-91 S TOWARD NEW HAVEN/NEW YORK CITY (36.6 MI), TAKE THE INTERSTATE 95 S EXIT ON THE LEFT TOWARD N.Y. CITY (0.5 MI), MERGE ONTO I-95 S (14.9 MI), TAKE EXIT 31 FOR SOUTH AVE (0.2 MI), CONTINUE ONTO SPADA BLVD (0.1 MI), TURN LEFT ONTO HONEYSPOT RD (0.4 MI), DESTINATION WILL BE ON THE LEFT.



PROJECT TEAM

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

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CONTACT: DAVID COOPER
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EMAIL: dcooper@empiretelecomm.com

ENGINEERING:
COMPANY: COM-EX CONSULTANTS, LLC
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CONTACT: NICHOLAS D. BARILE, P.E.
PHONE: 862-209-4300
EMAIL: nbarile@comexconsultants.com

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

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

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CONNECTICUT ONE CALL SYSTEM, INC. — STOP · CALL BEFORE YOU DIG! — 1-800-922-4455

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

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

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CTU2112
SITE NAME: STRATFORD
623 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/17/16	REVISED PER CLIENT COMMENTS	NJM	NDB	NDB
1	03/03/16	REVISED PER RFDS	NJM	NDB	NDB
0	03/01/16	ISSUED AS FINAL	NJM	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: TB

SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARILE — 25040 — REGISTERED PROFESSIONAL ENGINEER — PROFESSIONAL ENGINEER — CT LICENSE NO. 25040

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
15180-EMP	T-1	2

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   - CONTRACTOR – EMPIRE TELECOM
   - SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   - OWNER – AT&T MOBILITY
   - OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR (EMPIRE TELECOM).

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR

9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
   - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
   - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
   - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS

20. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
   - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION
   - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
   - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
   - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
   - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
   - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
   - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

21. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

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

23. INFORMATION SHOWN ON THIS SET OF PLANS TAKEN FROM DRAWINGS PREPARED BY HUDSON DESIGN GROUP, LLC FOR A RECENT UPGRADE DATED 04/18/11. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CTU2112
SITE NAME: STRATFORD

623 HONEYSPOT ROAD
STRATFORD, CT 06615
FAIRFIELD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/17/16	REVISED PER CLIENT COMMENTS	NJM	NDB	NDB
1	03/03/16	REVISED PER RFDS	NJM	NDB	NDB
0	03/01/16	ISSUED AS FINAL	NJM	NDB	NDB

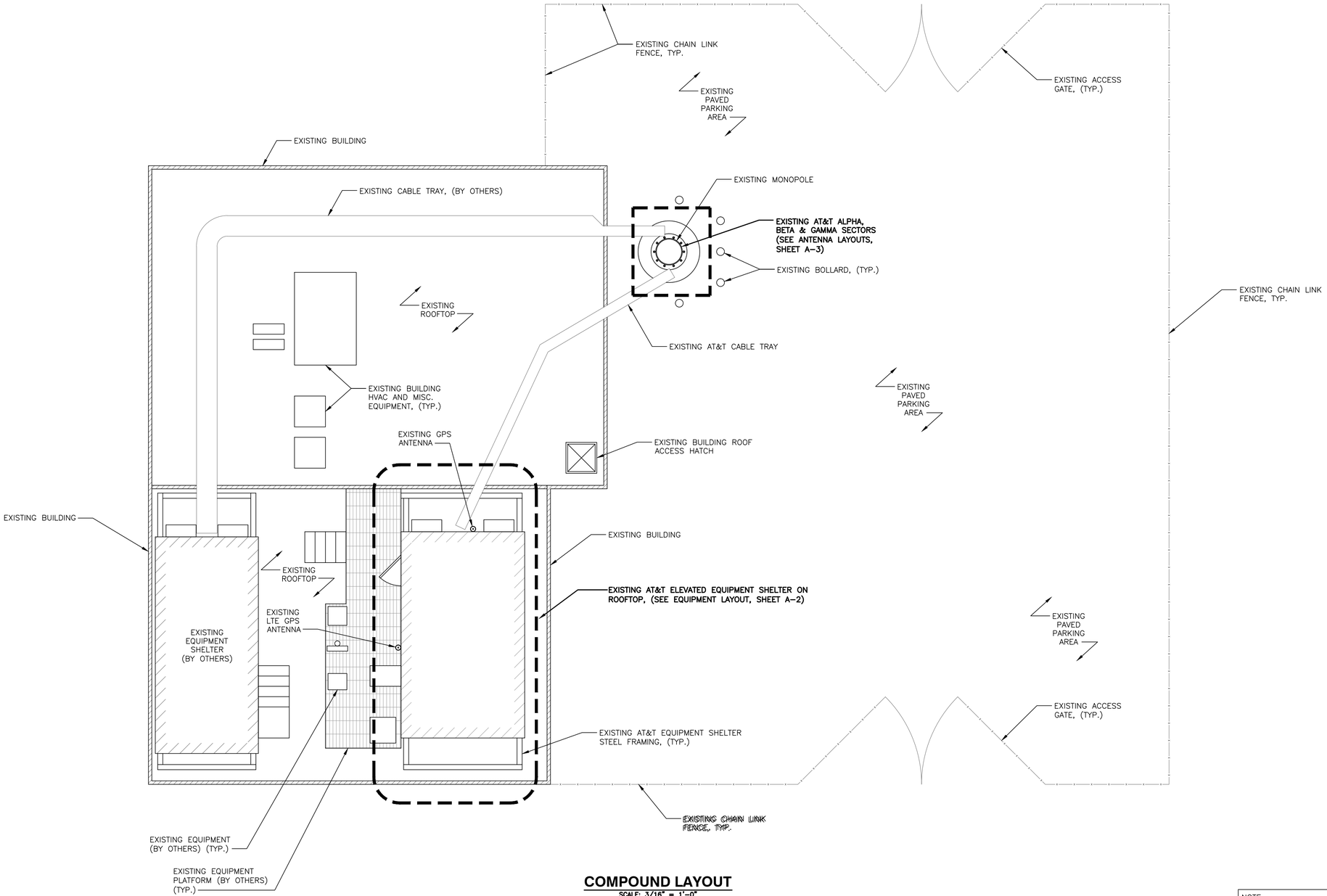
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: TB

SEAL:
STATE OF CONNECTICUT
DOUGLAS G. BALL
0023643
REGISTERED
PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER
CT LICENSE NO. 23643

AT&T

DRAWING TITLE:
GROUNDING & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
15180-EMP	GN-1	2



COMPOUND LAYOUT

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

0 2'-8" 5'-4" 10'-8"

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

NORTH

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

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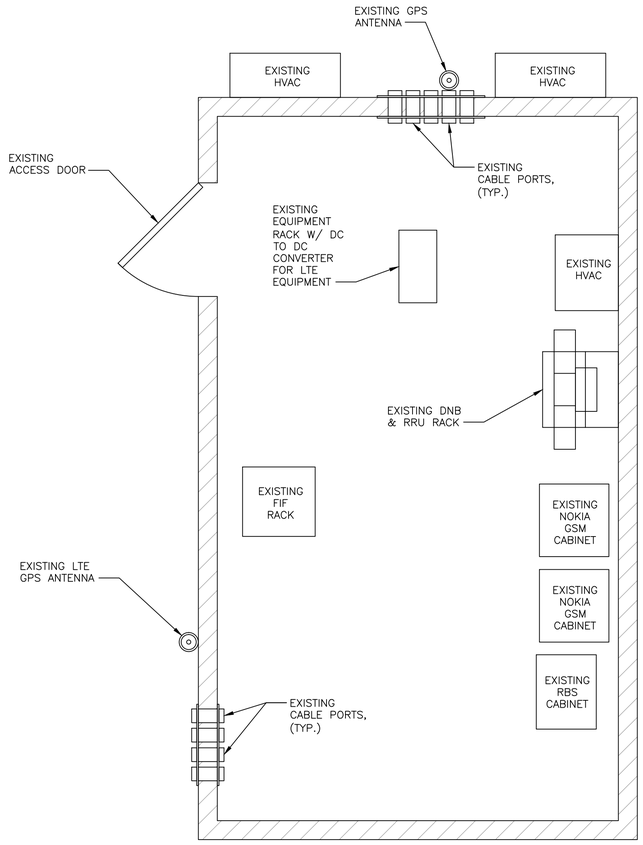
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: TB

SEAL:
STATE OF CONNECTICUT
DOUGLAS D. BAKER
No. 20643
REGISTERED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER
CT 20643

AT&T

DRAWING TITLE:
COMPOUND LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
15180-EMP	A-1	2



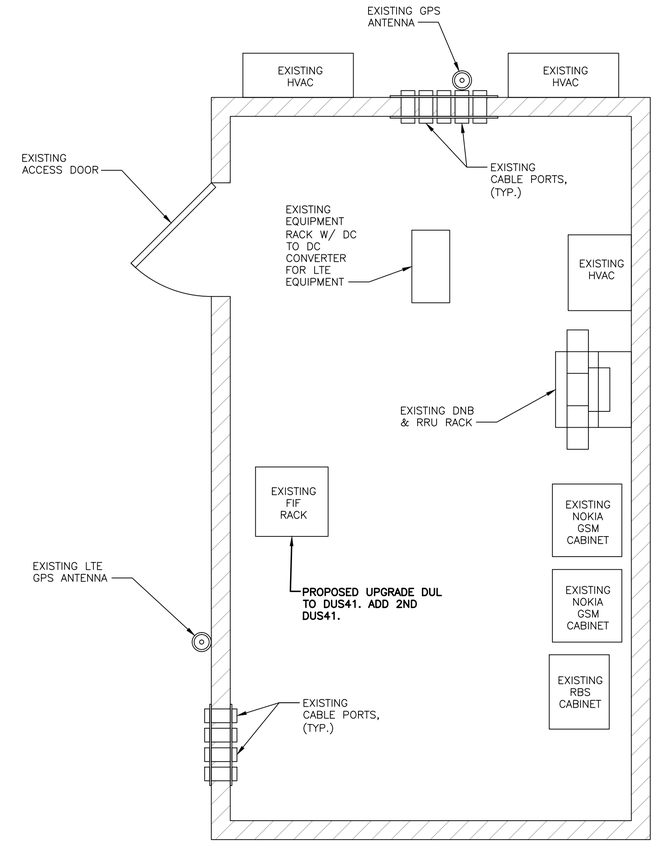
NORTH

EXISTING EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot



NORTH

PROPOSED EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot

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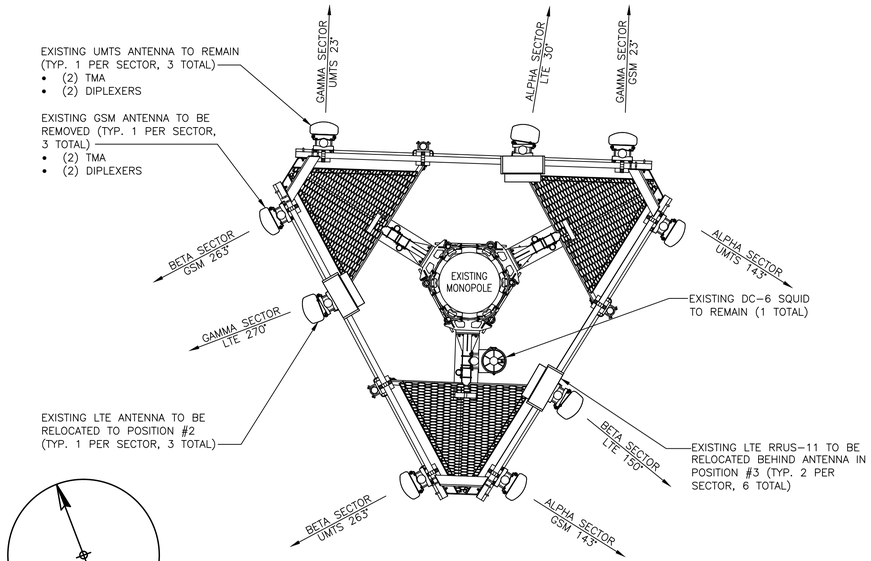
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: TB

SEAL:
STATE OF CONNECTICUT
NICHOLAS D. BARTOLOMEO
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T

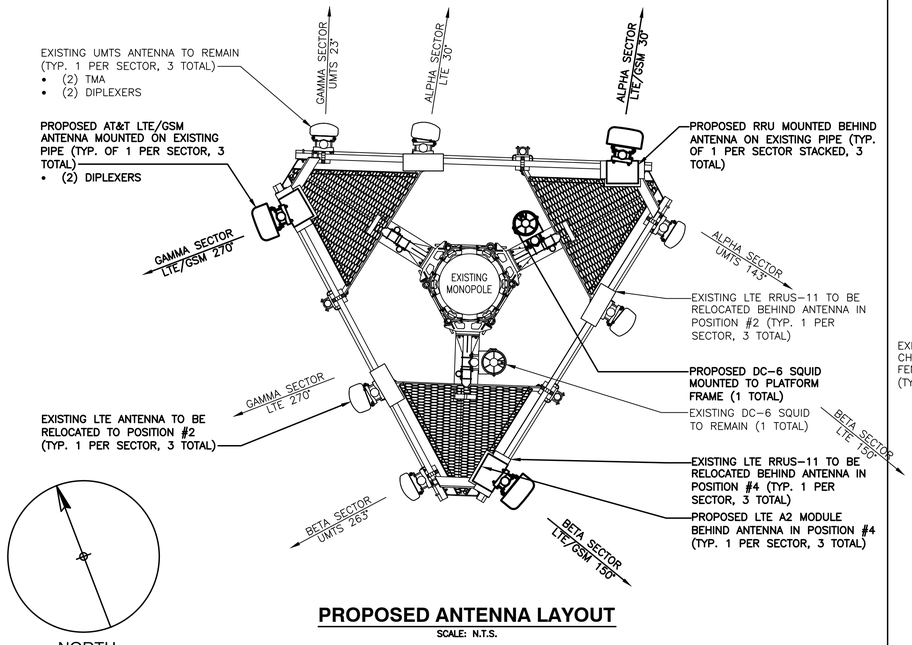
DRAWING TITLE:
EQUIPMENT LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
15180-EMP	A-2	2



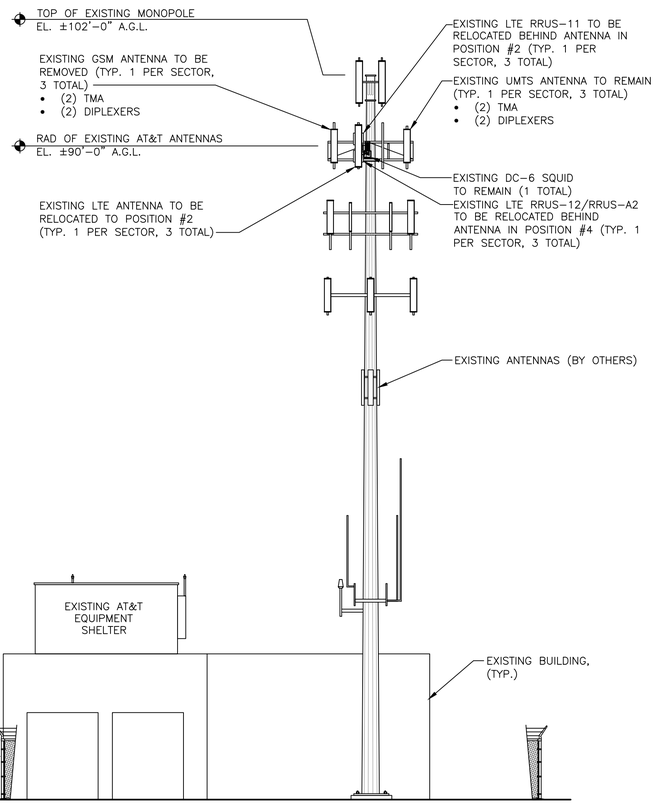
EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT

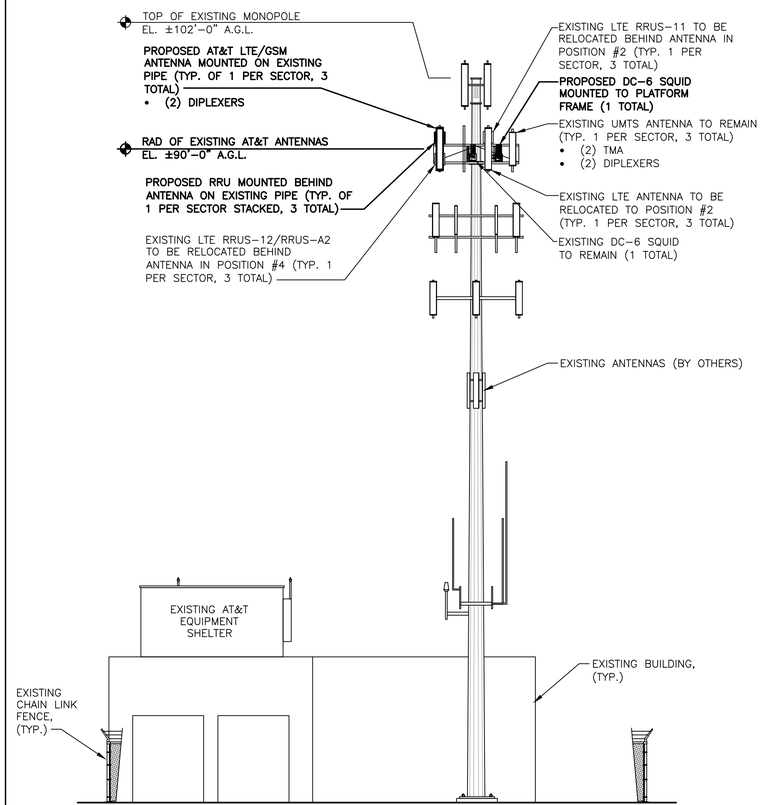
SCALE: N.T.S.



EXISTING TOWER ELEVATION

SCALE: NTS

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



PROPOSED TOWER ELEVATION

SCALE: NTS

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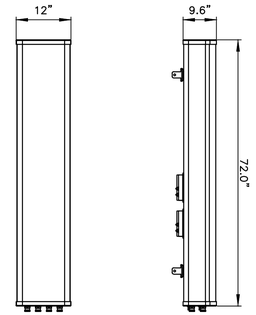
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: TB

SEAL:

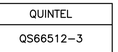
AT&T

DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
15180-EMP	A-3	2



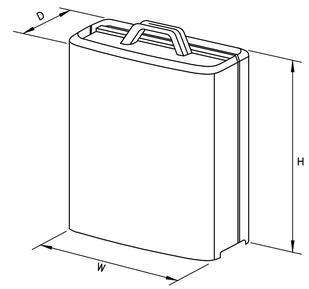
FRONT VIEW SIDE VIEW



BOTTOM VIEW

MANUFACTURER	QUINTEL
MODEL	QS66512-3
WEIGHT	105.0 LBS

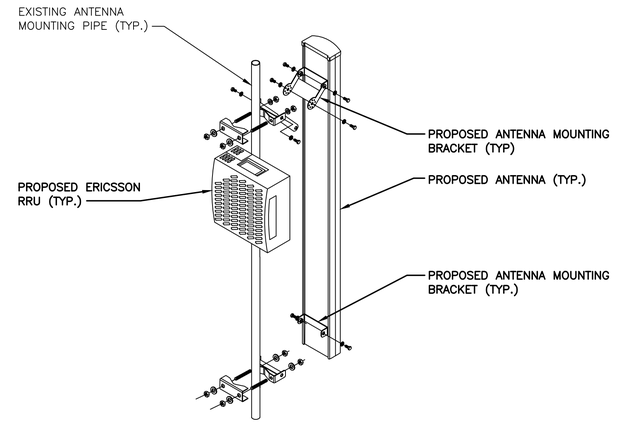
LTE ANTENNA DETAIL
SCALE: N.T.S.



MODEL	L x W x H	WEIGHT
*A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS
*RRUS-12	20.4" x 18.5" x 7.5"	58 LBS
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-32	29.9"x13.3"x9.5"	77 LBS

*DENOTES EXISTING.

RRUS DETAIL
SCALE: N.T.S.



ANTENNA AND RRU MOUNTING DETAIL
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00.850.00	55"x11"x5"
	A2	–	–	–
	A3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	A4	POWERWAVE	7770.00.850.00	55"x11"x5"
BETA	B1	POWERWAVE	7770.00.850.00	55"x11"x5"
	B2	–	–	–
	B3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	B4	POWERWAVE	7770.00.850.00	55"x11"x5"
GAMMA	G1	POWERWAVE	7770.00.850.00	55"x11"x5"
	G2	–	–	–
	G3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	G4	POWERWAVE	7770.00.850.00	55"x11"x5"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00.850.00	55"x11"x5"
	A2	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	A3	–	–	–
	A4	**QUINTEL**	**QS66512-3**	**72"x12"x9.6**
BETA	B1	POWERWAVE	7770.00.850.00	55"x11"x5"
	B2	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	B3	–	–	–
	B4	**QUINTEL**	**QS66512-3**	**72"x12"x9.6**
GAMMA	G1	POWERWAVE	7770.00.850.00	55"x11"x5"
	G2	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	G3	–	–	–
	G4	**QUINTEL**	**QS66512-3**	**72"x12"x9.6**

PROPOSED RRU SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	**ERICSSON**	**RRUS-32**	**29.9"x13.3"x9.5"**	–	–
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	**ERICSSON A2 MODULE**	**16.4"X15.2"X3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
BETA	**ERICSSON**	**RRUS-32**	**29.9"x13.3"x9.5"**	–	–
	ERICSSON	RRUS-11 (EXISTING)	20.4"x18.5"x9.5"	**ERICSSON A2 MODULE**	**16.4"X15.2"X3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
GAMMA	**ERICSSON**	**RRUS-32**	**29.9"x13.3"x9.5"**	–	–
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	**ERICSSON A2 MODULE**	**16.4"x15.2"x3.4"**
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		

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

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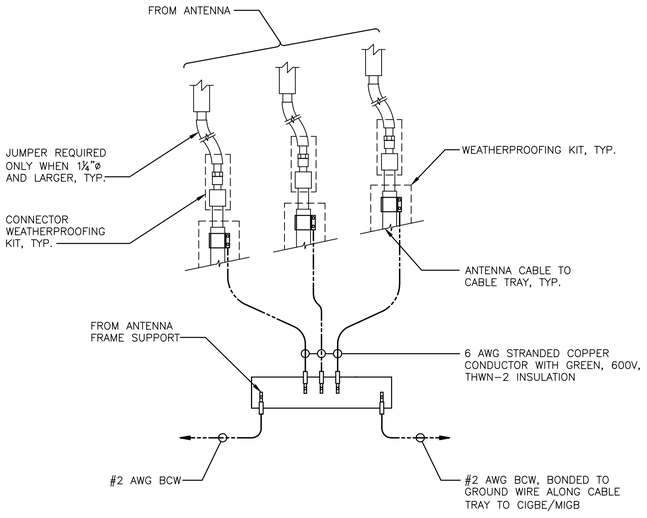
SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: TB

SEAL:
STATE OF CONNECTICUT
NICHOLAS D. BALLER
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER
CT 28643

AT&T

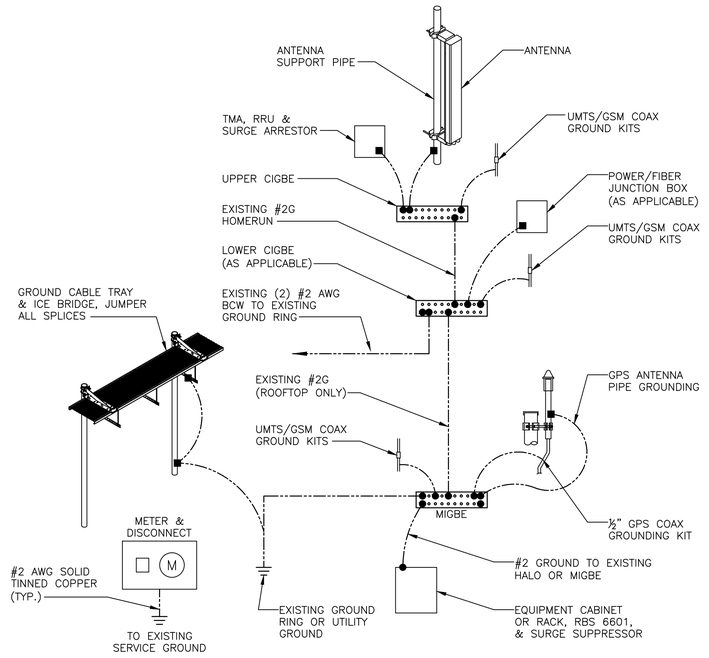
DRAWING TITLE:
DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15180-EMP	A-4	2



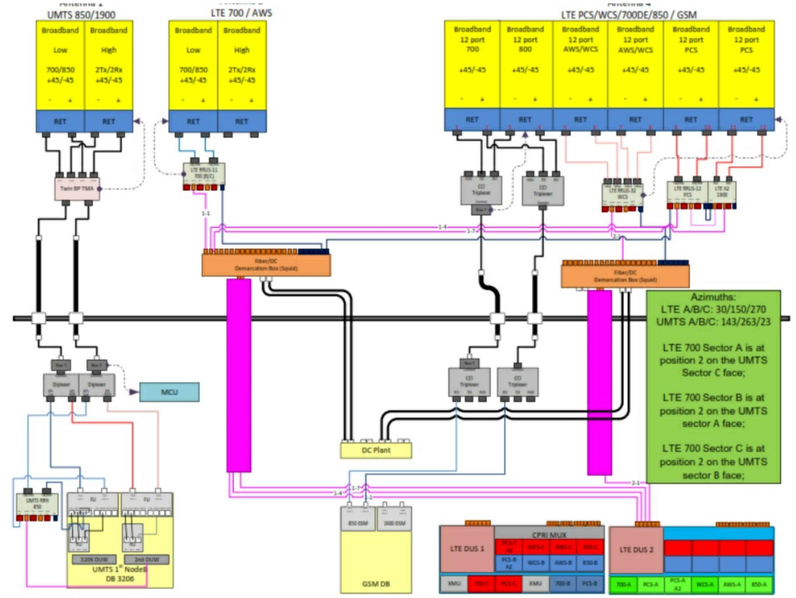
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



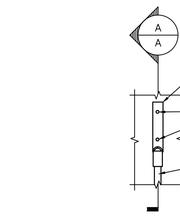
GROUNDING RISER DIAGRAM

SCALE: N.T.S.

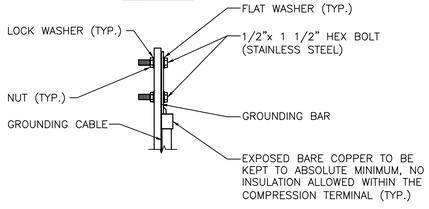


TYPICAL PLUMBING DIAGRAM (PER SECTOR)

SCALE: N.T.S.



ELEVATION



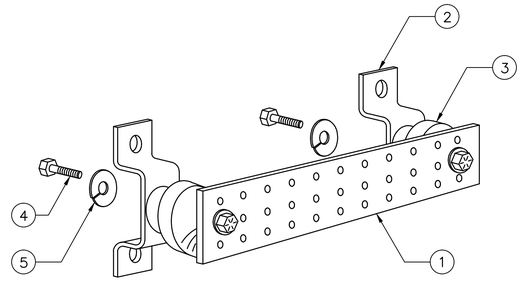
SECTION "A–A"

NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x ¼")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	⅝"–11x1" H.H.C.S.
5	4	⅝" LOCK WASHER

NOTES:

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

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

SECTION "A" – SURGE ABSORBERS
- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

GROUND BAR DETAIL

SCALE: N.T.S.

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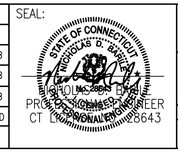
2	03/17/16	REVISED PER CLIENT COMMENTS	NJM	NDB	NDB
1	03/03/16	REVISED PER RFDS	NJM	NDB	NDB
0	03/01/16	ISSUED AS FINAL	NJM	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: NJM | DRAWN BY: TB

SEAL:



AT&T

DRAWING TITLE:
GROUNDING, ONE–LINE DIAGRAM & DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15180–EMP	G–1	2