

April 18, 2022

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

**RE: Notice of Exempt Modification for ATT
Crown #806377; ATT Site ID CTL01082
197 South Street, Vernon, CT 06066
Latitude: 41° 51' 12.51" / Longitude: -72° 27' 7.52"**

Dear Ms. Bachman:

AT&T currently maintains twelve (12) antennas at the 104-foot level of the existing 132-foot self-support tower at 197 South Street in Vernon, CT. The property is owned by the Connecticut Water Company and the Tower is owned by Crown Castle USA Inc. AT&T now intends to replace six (6) antennas, relocate three (3) existing antennas, install three (3) new antennas and ancillary equipment at the 102 to 106-foot level. This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:

- (6) Ericsson- AIR6449 B77D (below) + AIR6419 B77G (above) Stacked Antennas
- (6) Y CABLES
- (6) Dual Radio Mounts

Remove:

- (3) Kathrein – 800-10121 Antennas
- (2) CCI-HPA-65R-BUU-H6 Antennas
- (1) CCI-HPA-65R-BUU-H8 Antennas
- (3) Ericsson-RRUS-32 B2 RRUs.
- (3) CCI-DTMABP7819VG12A TMAs
- (6) Kathrein-782 10250 Diplexers

Ground:

Install New:

- (4) Rectifiers in existing power plant
- (1) -6648 (+Acede) 4-way GPS splitter

The facility was approved by the Connecticut Siting Council in Docket No. 58A on April 22, 1987. The approval was given with conditions which this exempt modification follows.

The Foundation for a Wireless World.

CrownCastle.com

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 Daniel Champagne, Mayor for the Town of Vernon, George McGregor, Town Planner, the Connecticut Water Company as the property owner and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification 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 Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, ATT respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Domenica Tatasciore.

Sincerely,



Domenica Tatasciore
Site Acquisition Specialist
1800 W. Park Drive
Westborough, MA 01581
(508) 621-9161/ Domenica.Tatasciore@crowncastle.com

Attachments

cc:

The Honorable Daniel Champagne, Mayor
Vernon Town Hall
14 Park Place, 3rd Floor
Vernon, CT 06066

George McGregor, Town Planner
55 West Main Street, 2nd Floor
Vernon, CT 06066

Connecticut Water Company
93 West Main Street
Clinton, CT 06413-1600

Crown Castle, Tower Owner

From: TrackingUpdates@fedex.com
To: [Tatasciore, Domenica](#)
Subject: FedEx Shipment 776606562824: Your package has been delivered
Date: Tuesday, April 19, 2022 9:49:28 AM

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Hi. Your package was
delivered Tue, 04/19/2022 at
9:47am.



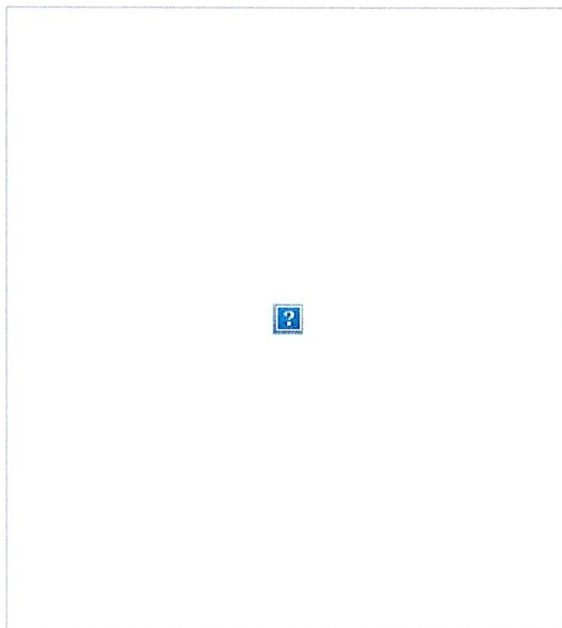
Delivered to 14 PARK PL, VERNON, CT 06066
Received by S.SONIA

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [776606562824](#)

FROM Domenica Tatasciore
1800 West Park Drive

	Suite 200 WESTBOROUGH, MA, US, 01581
TO	Honorable Daniel Champagne, Mayor Vernon Town Hall 14 Park Place, 3rd Floor VERNON, CT, US, 06066
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 4/18/2022 05:35 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	VERNON, CT, US, 06066
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight



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FedEx



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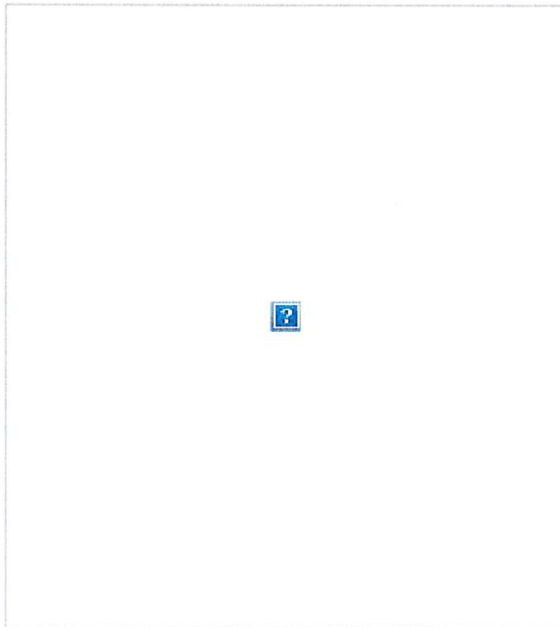
Delivered to 55 W MAIN ST, VERNON, CT 06066

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [776606604191](#)

FROM Domenica Tatasciore
1800 West Park Drive
Suite 200

	WESTBOROUGH, MA, US, 01581
TO	George McGregor, Town Planner 55 West Main Street, 2nd Floor VERNON, CT, US, 06066
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 4/18/2022 05:35 PM
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	VERNON, CT, US, 06066
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



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From: TrackingUpdates@fedex.com
To: [Tatasciore, Domenica](#)
Subject: FedEx Shipment 776606634882: Your package has been delivered
Date: Tuesday, April 19, 2022 10:21:07 AM

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10:19am.



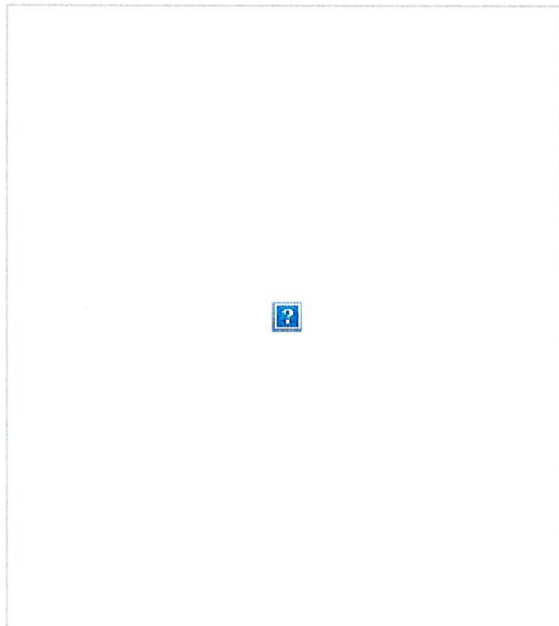
Delivered to 93 W MAIN ST, CLINTON, CT 06413

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [776606634882](#)

FROM Domenica Tatasciore
1800 West Park Drive
Suite 200

	WESTBOROUGH, MA, US, 01581
TO	Connecticut Water Company 93 West Main Street CLINTON, CT, US, 06413
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 4/18/2022 05:35 PM
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	CLINTON, CT, US, 06413
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight



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AN APPLICATION FOR AN AMENDMENT TO THE : CONNECTICUT SITING
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY :
AND PUBLIC NEED FOR TELECOMMUNICATIONS : COUNCIL
TOWERS AND ASSOCIATED EQUIPMENT TO PROVIDE
CELLULAR SERVICE IN HARTFORD, MIDDLESEX,
AND TOLLAND COUNTIES. : April 22, 1987

DECISION AND ORDER

The Connecticut Siting Council (Council) hereby amends the Certificate of Environmental Compatibility and Public Need issued pursuant to sections 16-50g through 16-50x of the Connecticut General Statutes of Connecticut (CGS) for the construction, operation, and maintenance of cellular mobile telephone telecommunications towers and associated equipment in Hartford, Tolland, and Middlesex Counties to permit the relocation of the Vernon tower 250 feet to the west, subject to the conditions below.

1. The tower shall be no taller than necessary to provide the proposed service, and in no event shall exceed a total height, including antennas, of 143 feet.
2. The Certificate holder shall submit a development and management plan (D&M plan) for the Vernon site, pursuant to sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies (RSA). The D&M plan shall provide plans for evergreen screening around the fenced perimeter of the tower site.
3. This facility shall be constructed, operated, and maintained as specified in the Council's record and in the plan required by order number 2.

4. The certificate holder shall comply with any future radiofrequency (RF) standards promulgated by state or federal regulatory agencies.

Upon the establishment of any new governmental RF standards, the facility shall be brought into compliance with such standards.

5. The certificate holder shall permit public or private entities to share space on the tower approved herein, for due consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. In addition to complying with section 16-50j-73 of the RSA, the certificate holder shall notify the Council of the addition of any equipment to the approved tower.

6. A chain link fence not lower than eight feet shall surround the tower and associated equipment.
7. Unless necessary to comply with order eight, no lights shall be installed on this tower.
8. The facility's construction and any future tower sharing shall be in accordance with all applicable federal, state, and municipal laws and regulations. Shared uses by entities not subject to Council jurisdiction pursuant to Section 16-50k of the CGS shall be subject to all applicable federal, state, and municipal laws and regulations.
9. Construction activities shall take place during daylight working hours.

CONNECTICUT WATER CO
93 WEST MAIN ST
CLINTON, CT 06413-1600
CENSUS TRACT: 530400

Neighborhood Number
12100

Neighborhood Name
General Commercial

TAXING DISTRICT INFORMATION
Jurisdiction Name
Area
Routing Number

Town of Vernon
146
5887

Site Description
Topography

Public Utilities
Water, Sewer, Gas, Electric
Street or Road
Paved

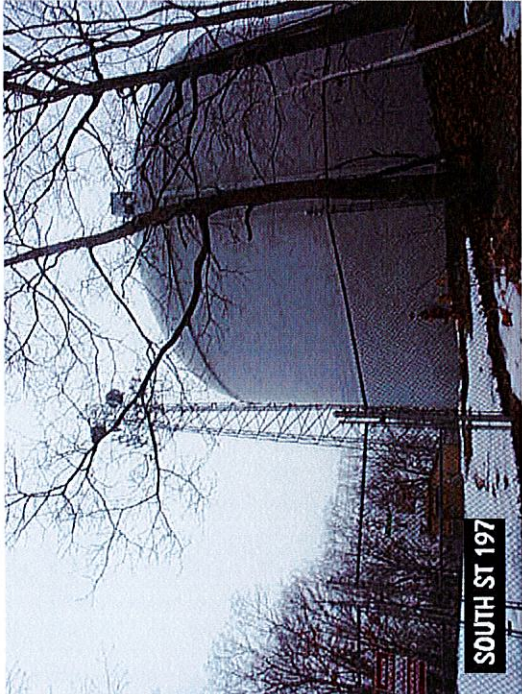
Neighborhood

Zoning:
R-22

Legal Acres:
2.0000

Transfer of Ownership				
Owner	Consideration	Transfer Date	Deed Type	Deed Book/Page
NA	0	12/21/1978	351	39

Valuation Record					
Assessment Year	2011	2016	2018	2021	
Reason for Change	2011 Reval	2016 Reval	2018	2021 Reval	
Market	L I T	156820 270220 427040	183200 263240 446440	183200 263240 446440	220700 296140 516840
70% Assessed/Use	L I T	109770 189160 298930	128240 184270 312510	128240 184270 312510	154490 207290 361780



Land Size				
Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor

Physical Characteristics

ROOFING														
Other														
WALLS														
Frame	B	1	2	U										
	Guard	Yes	Yes	Yes										
FRAMING														
F Res	B	1	2	U										
		0	312	0										
FINISH														
1	UF	SF	FO	FD										
	312	0	0	0										
Total	312	0	0	0										
HEATING AND AIR CONDITIONING														
B	1	2	U											

010203

26
1 s Mas 12
(312)

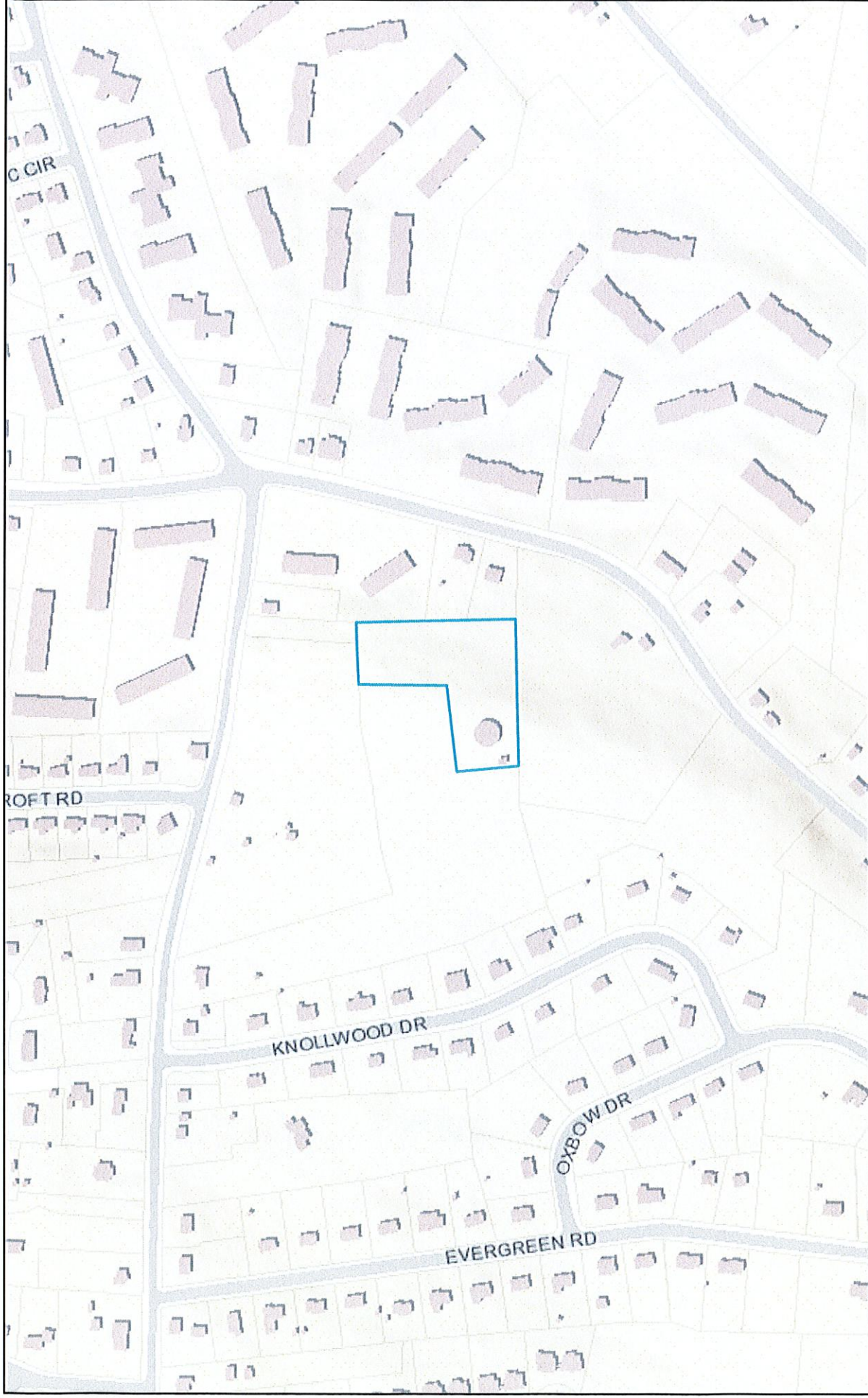
Special Features

Description

ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
C	UTLSTOR	0.00		Avg	1963	2005	AV	312
01	FENCECL	6.00	51C	Avg	1963	1985	AV	510
02	UTLISHED	0.00	4	Avg	1963	1985	AV	300
03	TANKWATR	0.00	51	Good	1963	2000	AV	125000

Summary of Improvements

Town of Vernon, CT



April 18, 2022

TaxParcelPublishing

1:4,000
0 0.03 0.07 0.13 mi
0 0.05 0.1 0.2 km
Town of Vernon, CT, Aaron Nash, Town of Vernon



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

AT&T Existing Facility

Site ID: CTL01082

806377

197 South Street

Vernon, Connecticut 06066

March 10, 2022

EBI Project Number: 6222001768

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	66.44%



March 10, 2022

AT&T

Emissions Analysis for Site: CTL01082 - 806377

EBI Consulting was directed to analyze the proposed AT&T facility located at **197 South Street** in **Vernon, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu\text{W}/\text{cm}^2$ and 467 $\mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at 197 South Street in Vernon, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

- 1) 4 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 2) 4 LTE FN channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 4 5G channels (850 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) 4 LTE / 5G channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 4 LTE / 5G channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 6) 4 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 25 Watts per Channel.



- 7) 2 C-Band Channels (3700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 144.58 Watts per Channel.
- 8) 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.
- 9) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.
- 10) The antennas used in this modeling are the CCI TPA65R-BU6D for the 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 3700 MHz channel(s), the Ericsson AIR 6449 for the 3700 MHz channel(s), the CCI DMP65R-BU6DA for the 700 MHz / 850 MHz / 2300 MHz channel(s) in Sector A, the CCI TPA65R-BU6D for the 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 3700 MHz channel(s), the Ericsson AIR 6449 for the 3700 MHz channel(s), the CCI DMP65R-BU6DA for the 700 MHz / 850 MHz / 2300 MHz channel(s) in Sector B, the CCI TPA65R-BU8D for the 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 3700 MHz channel(s), the Ericsson AIR 6449 for the 3700 MHz channel(s), the CCI DMP65R-BU8DA for the 700 MHz / 850 MHz / 2300 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.
- 11) The antenna mounting height centerlines of the proposed antennas are 102, 104, and 106 feet above ground level (AGL).
- 12) 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.



EBI Consulting

environmental | engineering | due diligence

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



AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	CCI TPA65R-BU6D	Make / Model:	CCI TPA65R-BU6D	Make / Model:	CCI TPA65R-BU8D
Frequency Bands:	700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	700 MHz / 1900 MHz / 2100 MHz
Gain:	12.35 dBd / 15.95 dBd / 16.25 dBd	Gain:	12.35 dBd / 15.95 dBd / 16.25 dBd	Gain:	13.45 dBd / 15.95 dBd / 16.15 dBd
Height (AGL):	104 feet	Height (AGL):	104 feet	Height (AGL):	104 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	480.00 Watts	Total TX Power (W):	480.00 Watts	Total TX Power (W):	480.00 Watts
ERP (W):	15,792.60	ERP (W):	15,792.60	ERP (W):	16,431.31
Antenna A1 MPE %:	7.09%	Antenna B1 MPE %:	7.09%	Antenna C1 MPE %:	7.66%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz
Gain:	23.45 dBd	Gain:	23.45 dBd	Gain:	23.45 dBd
Height (AGL):	106 feet	Height (AGL):	106 feet	Height (AGL):	106 feet
Channel Count:	1	Channel Count:	1	Channel Count:	1
Total TX Power (W):	144.58 Watts	Total TX Power (W):	144.58 Watts	Total TX Power (W):	144.58 Watts
ERP (W):	31,996.92	ERP (W):	31,996.92	ERP (W):	31,996.92
Antenna A2 MPE %:	11.50%	Antenna B2 MPE %:	11.50%	Antenna C2 MPE %:	11.50%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz	Frequency Bands:	3700 MHz
Gain:	23.45 dBd	Gain:	23.45 dBd	Gain:	23.45 dBd
Height (AGL):	102 feet	Height (AGL):	102 feet	Height (AGL):	102 feet
Channel Count:	1	Channel Count:	1	Channel Count:	1
Total TX Power (W):	144.58 Watts	Total TX Power (W):	144.58 Watts	Total TX Power (W):	144.58 Watts
ERP (W):	31,996.92	ERP (W):	31,996.92	ERP (W):	31,996.92
Antenna A3 MPE %:	12.48%	Antenna B3 MPE %:	12.48%	Antenna C3 MPE %:	12.48%
Antenna #:	4	Antenna #:	4	Antenna #:	4
Make / Model:	CCI DMP65R-BU6DA	Make / Model:	CCI DMP65R-BU6DA	Make / Model:	CCI DMP65R-BU8DA
Frequency Bands:	700 MHz / 850 MHz / 2300 MHz	Frequency Bands:	700 MHz / 850 MHz / 2300 MHz	Frequency Bands:	700 MHz / 850 MHz / 2300 MHz
Gain:	11.85 dBd / 12.45 dBd / 16.25 dBd	Gain:	11.85 dBd / 12.45 dBd / 16.25 dBd	Gain:	11.85 dBd / 12.45 dBd / 15.95 dBd
Height (AGL):	104 feet	Height (AGL):	104 feet	Height (AGL):	104 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	420.00 Watts	Total TX Power (W):	420.00 Watts	Total TX Power (W):	420.00 Watts
ERP (W):	9,479.38	ERP (W):	9,479.38	ERP (W):	9,197.92
Antenna A4 MPE %:	5.40%	Antenna B4 MPE %:	5.40%	Antenna C4 MPE %:	5.29%

- An adjusted power reduction factor of 0.32 was applied to the AIR 6449 antennas per guidance from AT&T.
- Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.



Site Composite MPE %	
Carrier	MPE %
AT&T (Max at Sector C):	36.94%
Dish	2.05%
Verizon	14.93%
XM Sat Radio	0.14%
Town	0.89%
Metro PCS	1.12%
Sprint	0.97%
Clearwire	0.11%
T-Mobile	9.29%
Site Total MPE % :	66.44%

AT&T MPE % Per Sector	
AT&T Sector A Total:	36.47%
AT&T Sector B Total:	36.47%
AT&T Sector C Total:	36.94%
Site Total MPE % :	66.44%

AT&T Maximum MPE Power Values (Sector C)

AT&T Frequency Band / Technology (Sector C)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 700 MHz LTE FN	4	885.24	104.0	13.26	700 MHz LTE FN	467	2.84%
AT&T 1900 MHz LTE/5G	4	1574.20	104.0	23.57	1900 MHz LTE/5G	1000	2.36%
AT&T 2100 MHz LTE/5G	4	1648.39	104.0	24.68	2100 MHz LTE/5G	1000	2.47%
AT&T 3700 MHz C-Band	1	31996.92	106.0	115.03	3700 MHz C-Band	1000	11.50%
AT&T 3700 MHz C-Band	1	31996.92	102.0	124.82	3700 MHz C-Band	1000	12.48%
AT&T 700 MHz LTE	4	612.43	104.0	9.17	700 MHz LTE	467	1.96%
AT&T 850 MHz 5G	4	703.17	104.0	10.53	850 MHz 5G	567	1.86%
AT&T 2300 MHz LTE	4	983.88	104.0	14.73	2300 MHz LTE	1000	1.47%
						Total:	36.94%

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.



Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	36.47%
Sector B:	36.47%
Sector C:	36.94%
AT&T Maximum MPE % (Sector C):	36.94%
Site Total:	66.44%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **66.44%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

January 7, 2022

This submission contains confidential, proprietary, or trade secret information that is exempt from disclosure under applicable laws. Please make sure these pages are not disclosed. If any request is made for this information, please contact the sender in addition to any legal notice requirements under applicable law.



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
CrownMA@tepgroup.net

Subject: Mount Analysis

Carrier Designation:

AT&T Mobility Reconfiguration

Client Site Number:

CTL01082

Client Site Name:

Vernon NE

FA Location Code:

10035095

Crown Castle Designation:

Crown Castle BU Number:

806377

Crown Castle Site Name:

HRT 084 943242

Crown Castle JDE Job Number:

686192

Crown Castle Order Number:

586240 Rev. 0

Engineering Firm Designation:

TEP Project Number:

217456.638687

Site Data:

197 South St., Vernon, Tolland County, CT 06066

Latitude 41° 51' 12.51", Longitude -72° 27' 7.52"

Structure Information:

Tower Height & Type:

132.1± ft Self-Supporting Tower

Mount Elevation:

104.0 ft

Mount Width & Type:

12.5 ft Sector Mount

Tower Engineering Professionals is pleased to submit this "**Mount Analysis**" to determine the structural integrity of AT&T Mobility's antenna mounting system with proposed appurtenance and equipment addition on the above-mentioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis, we have determined the mount stress level to be:

Sector Mount

Sufficient Capacity

The analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 118 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Danny Murillo / DC

Respectfully submitted by:

Aaron T. Rucker, P.E.
Structural Division Manager
919-661-6351
arucker@tepgroup.net



Electronic Copy

01/07/2022

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1) INTRODUCTION

The mounts are existing 12.5-ft Sector mounts, designed by Rohn. The mounts are installed at the 104.0 ft elevation on the 132.1± ft Self-Supporting Tower.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	B
Topographic Category at Base:	1.0
Topographic Category at Mount:	1.0
Ice Thickness:	1.50 in
Wind Speed with Ice:	50 mph
Seismic Design Category:	B
Seismic S_s:	0.183
Seismic S_1:	0.055
Live Loading Wind Speed:	30 mph
Live Loading at Mid/End-Points:	250 lb
Man Live Loading at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
104.0	106.0	3	Ericsson	AIR 6419 B77G_CCIV2	(3) Sector Mounts
	104.0	2	CCI Antennas	DMP65R-BU6D	
		1	CCI Antennas	DMP65R-BU8D	
		2	CCI Antennas	TPA65R-BU6D_CCIV2	
		1	CCI Antennas	TPA65R-BU8D_CCIV2	
		3	Ericsson	RRUS 32 B2	
		3	Ericsson	RRUS 32 B30	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4478 B14	
		3	Ericsson	RRUS 8843 B2/B66A	
		2	Raycap	DC6-48-60-18-8F	
		1	Raycap	DC9-48-60-24-8C-EV_CCIV2	
	102.0	3	Ericsson	AIR 6449 B77D	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Mount Manufacturer Drawings	Rohn	Drawing No. 0930522	TEP
Previous Mount Analysis	Power of Design	9123601	CCIsites
Loading Application	AT&T Mobility	Order 586240 Rev. 0	CCIsites

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A and Appendix C.

TEP Mount Analysis Tool, a tool internally developed by TEP using Microsoft Excel, was used to calculate member loading for various load cases. Selected output from the analysis is included in Appendix B.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis (Revision D)*.

In addition, this analysis is in accordance with AT&T's *Mount Technical Guidance – Revision 16*.

3.2) Assumptions

- 1) The mount was built in accordance with the manufacturer's specifications.
- 2) The mount has been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, mounts and other appurtenances are as specified in Table 1. All mount components have been assumed to be in sufficient condition to carry their full design capacity for this analysis. Refer to the issued mapping for any structural and/or maintenance issues found during our site visit if applicable.
- 4) All mount components are in sufficient condition to carry their full design capacity.
- 5) All material grades used for this analysis, unless verified by mount manufacturer design, were assumed per AISC Table 2-4, 15th Edition. See RISA-3D output for confirmation on grades used in this analysis.

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS**Table 3 - Mount Component Stresses vs. Capacity (Sector Mount)**

Notes	Component	Critical Member	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontals	FFBH-M	104.0	21.3	Pass
1	Support Horizontals	SF3-BH	104.0	33.6	Pass
1	Mount Pipes	MP-3	104.0	44.2	Pass
1	Bracing Members	SF3-V2	104.0	34.8	Pass
1	Stabilizer Arms	SA-1	104.0	5.9	Pass
2	Connection Bolts	-	104.0	23.3	Pass

Structure Rating (max from all components) =	44.2%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Analysis Output" for calculations supporting the % capacity listed.
- 2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity listed.

Table 4 - Tieback Connection Data Table

Tower Connection Node No.	Existing/ Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity (lb) ³	Notes
SA-1B	Existing	1,171	Leg	Rohn 2.5 STD	2,856	1

Notes:

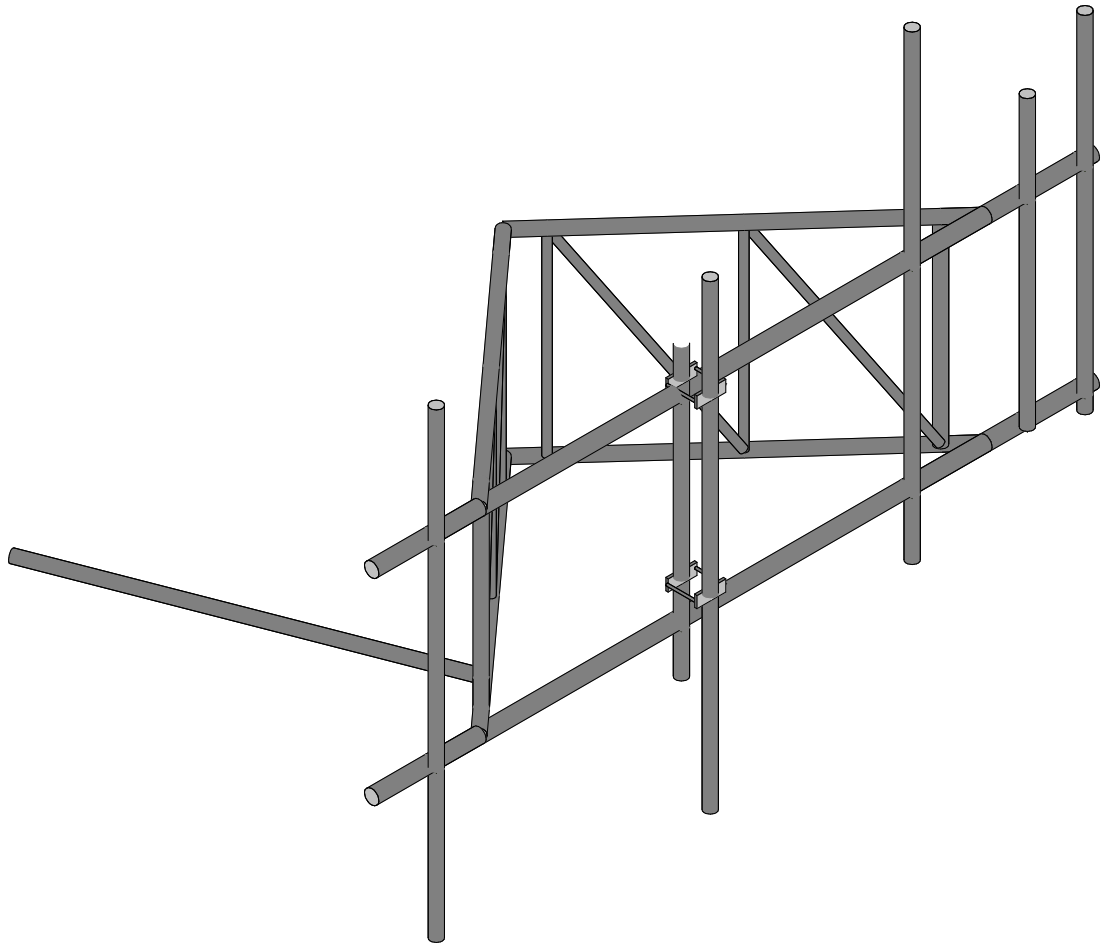
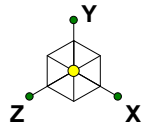
- 1) Tieback connection point is within 25% of either end of the connected tower member.
- 2) Tower connection point is NOT within 25% of either end of the connected tower member.
- 3) Reduced member compressive capacity according to CED-STD-10294 *Standard for Installation of Mounts and Appurtenances*.

4.1) Recommendations

- 1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) The mount and its connection have sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

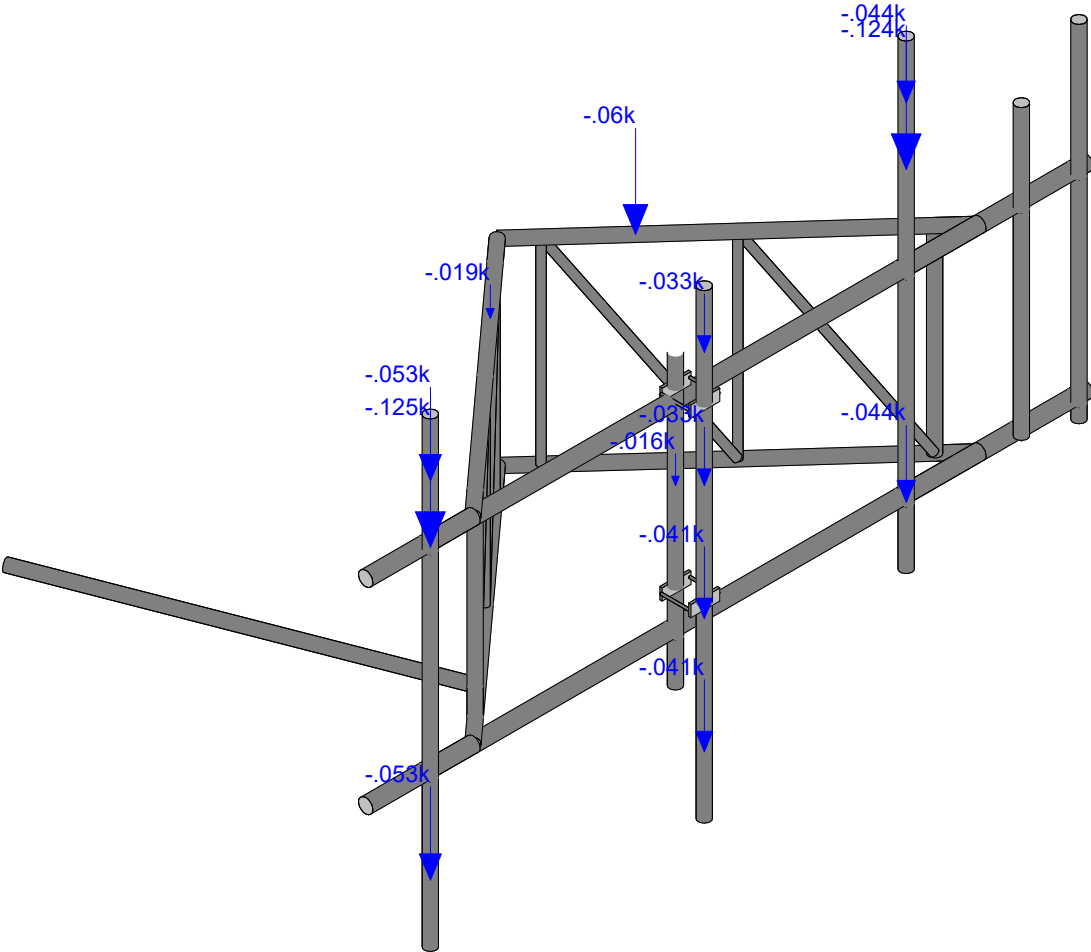
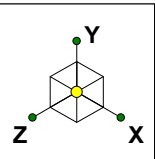
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Tower Engineering Profes...	CCI BU No 806377	SK - 1
DJM		Jan 7, 2022 at 11:07 AM
TEP No. 217456.638687		S-2 Sector Mount (12.5-ft).r3d



Loads: BLC 1, Dead
Envelope Only Solution

Tower Engineering Profes...

DJM

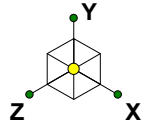
TEP No. 217456.638687

CCI BU No 806377

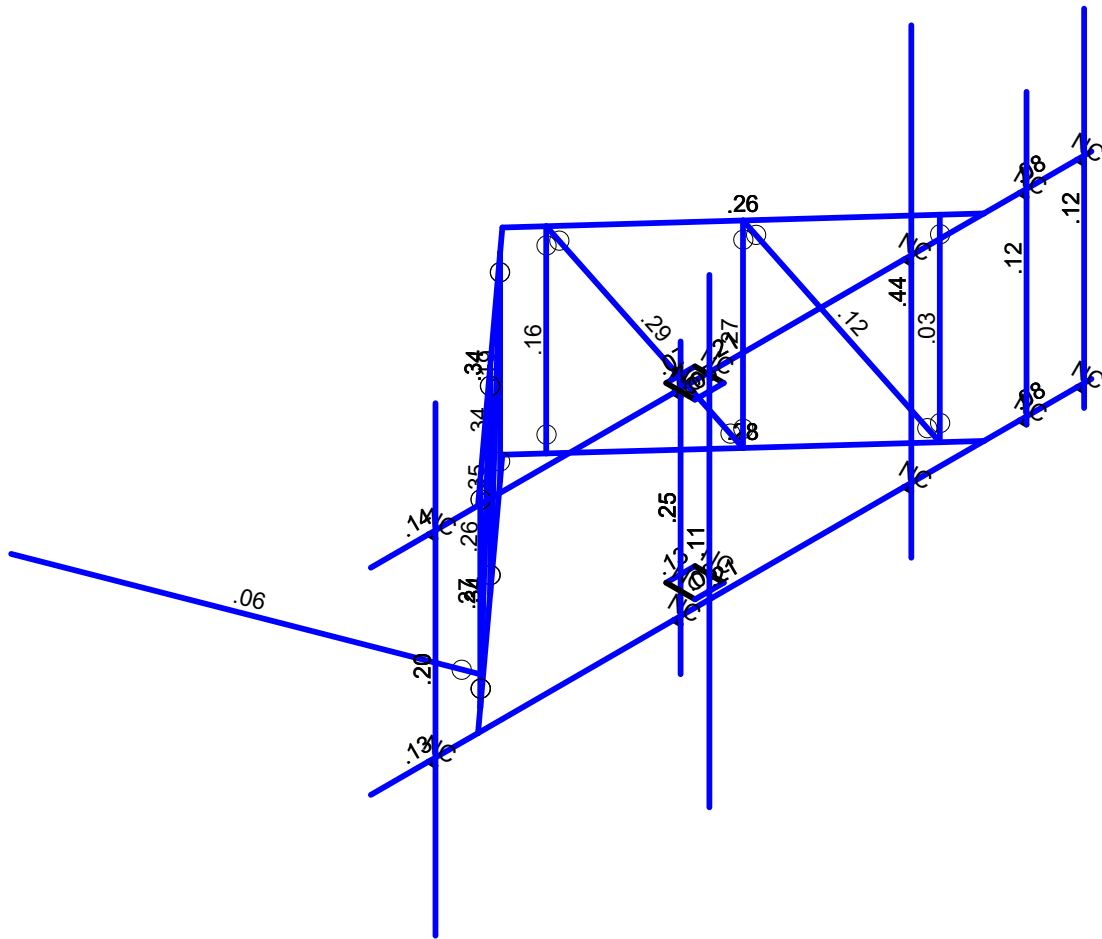
SK - 2

Jan 7, 2022 at 11:07 AM

S-2 Sector Mount (12.5-ft).r3d

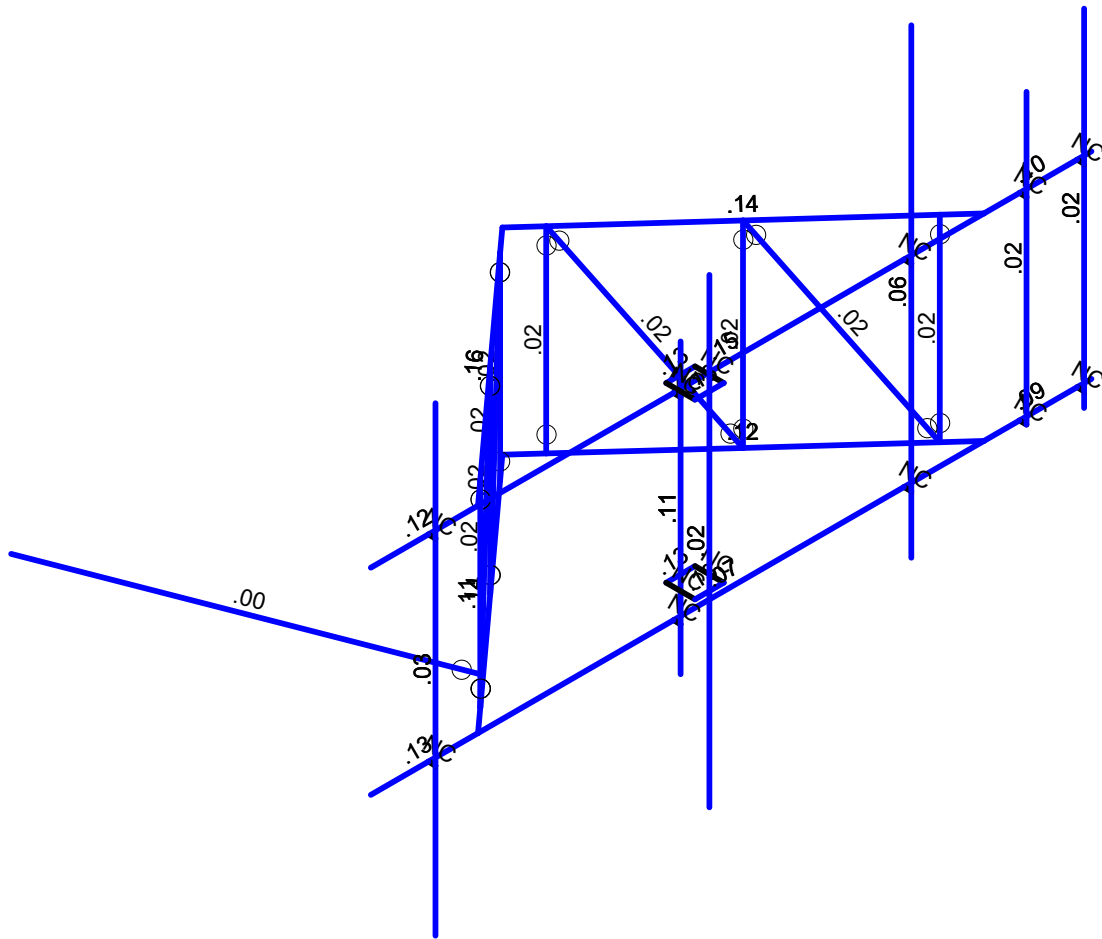


Code Check (Env)	
	No Calc
	> 1.0
	.90-1.0
	.75-.90
	.50-.75
	0.-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Profes...	CCI BU No 806377	SK - 3
DJM		Jan 7, 2022 at 11:07 AM
TEP No. 217456.638687		S-2 Sector Mount (12.5-ft).r3d



S-2 Sector Mount (12.5-ft).r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS



CCI BU No 806377

TEP No. 217456.638687

Analysis By: DJM 1/7/2022

Checked By: DC 1/7/2022

Code Revisions:	TIA-222-H	IBC 2018
Tower Type:	3 Sided Self-Support	

Wind Inputs:

Ult. Wind Velocity:	118.0	mph
Live Load Velocity:	30.0	mph
Ice Wind Velocity:	50.0	mph
Base Ice Thickness:	1.50	inches
Mount Centerline:	104.0	ft
Antenna Centerline:	104.0	ft
Exposure Category:	B	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	655	ft

Wind Calculations:

K_{zt} :	1.000	Section 2.6.6
K_d :	0.950	
$K_{z-Mount}$:	0.999	Section 2.6.5.2
$K_{z-Antenna}$:	0.999	Section 2.6.5.2
K_{iz} :	1.122	Section 2.6.10
Ice Thickness:	1.682	inches - Section 2.6.10

Without Ice - (psf)	With Ice - (psf)
$(q_z G_h)_{Mount}$: 33.05	$(q_z G_h)_{Mount}$: 5.93
$(q_z G_h)_{Antenna}$: 33.05	$(q_z G_h)_{Antenna}$: 5.93



CCI BU No 806377

TEP No. 217456.638687
 Analysis By: DJM 1/7/2022
 Checked By: DC 1/7/2022

Antenna Loads are Calculated in Accordance with TIA-222-H

Azimuth is the absolute angle measured clockwise from RISA-3D global X-axis.

MFR	Model	Height (in)	Width (in)	Depth (in)	Wt. (lbs)	Azimuth°	Qty	Shape	Member Label	Distance from start node of the member		
										Location #1 (ft,%)	Location #2 (ft,%)	Location #3 (ft,%)
CCI Antennas	TPA65R-BU8D_CCIV2	96.00	20.70	7.70	87.10	0.00	1	Flat	MP-3	1.00	7.00	
Ericsson	AIR 6419 B77G_CCIV2	28.30	16.10	7.90	66.10	0.00	1	Flat	MP-4	1.00	3.00	
Ericsson	AIR 6449 B77D	30.39	15.87	8.07	81.60	0.00	1	Flat	MP-4	5.00	7.00	
CCI Antennas	DMP65R-BU8D	96.00	20.70	7.70	105.60	0.00	1	Flat	MP-5	1.00	7.00	
Ericsson	RRUS 4478 B14	16.50	13.40	7.70	59.90	315.00	1	Flat	SF2-TH	1.70		
Raycap	DC6-48-60-18-8F	24.00	11.00	11.00	18.90	0.00	1	Round	SF3-TH	1.70		
Ericsson	RRUS 32 B2	27.20	12.05	7.00	52.90	90.00	1	Flat	MP-3	2.00		
Ericsson	RRUS 4449 B5/B12	17.90	13.19	9.44	71.00	90.00	1	Flat	MP-3	2.00		
Raycap	DC9-48-60-24-8C-EV_CCIV2	31.40	10.24	10.24	16.00	0.00	1	Round	MP-4B	2.00		
Ericsson	RRUS 32 B30	27.20	12.05	7.00	52.90	90.00	1	Flat	MP-5	2.00		
Ericsson	RRUS 8843 B2/B66A	14.90	13.20	10.90	72.00	90.00	1	Flat	MP-5	2.00		



CCI BU No 806377

TEP No. 217456.638687
 Analysis By: DJM 1/7/2022
 Checked By: DC 1/7/2022

Member Forces are Calculated in Accordance with TIA-222-H

Member Name	Wind Proj. (in)	Length (in)	Shape	θ (°)	Perimeter (in)
FFBH-L	2.875	150.00	Round	90.00	9.03
FFBH-M	2.875	150.00	Round	90.00	9.03
FFBH-R	2.875	150.00	Round	90.00	9.03
FFTH-L	2.875	150.00	Round	90.00	9.03
FFTH-M	2.875	150.00	Round	90.00	9.03
FFTH-R	2.875	150.00	Round	90.00	9.03
SA-1	2.375	75.57	Round	21.02	7.46
SF2-D1	1.500	50.22	Round		4.71
SF2-D2	1.500	50.22	Round		4.71
SF3-D1	1.500	50.22	Round		4.71
SF3-D2	1.500	50.22	Round		4.71
SF2-BH	2.375	71.00	Round	47.87	7.46
SF2-TH	2.375	71.00	Round	47.87	7.46
SF3-BH	2.375	71.00	Round	-47.87	7.46
SF3-TH	2.375	71.00	Round	-47.87	7.46
SF2-V1	1.500	41.00	Round		4.71
SF2-V2	1.500	41.00	Round		4.71
SF3-V1	1.500	41.00	Round		4.71
SF3-V2	1.500	41.00	Round		4.71
SF2-V3	2.375	41.00	Round		7.46
SF3-V3	2.375	41.00	Round		7.46
MP-1	2.375	72.00	Round		7.46
MP-2	2.375	60.00	Round		7.46
MP-3	2.375	96.00	Round		7.46
MP-4B	2.375	60.00	Round		7.46
MP-5	2.375	96.00	Round		7.46
TRP-1	2.375	6.00	Flat	90.00	5.75
TRP-2	2.375	6.00	Flat	90.00	5.75
TRP-3	2.375	6.00	Flat	90.00	5.75
TRP-4	2.375	6.00	Flat	90.00	5.75
TR-1	0.500	6.00	Round	0.00	1.57
TR-2	0.500	6.00	Round	0.00	1.57
TR-3	0.500	6.00	Round	0.00	1.57
TR-4	0.500	6.00	Round	0.00	1.57
MP-4	2.375	96.00	Round		7.46

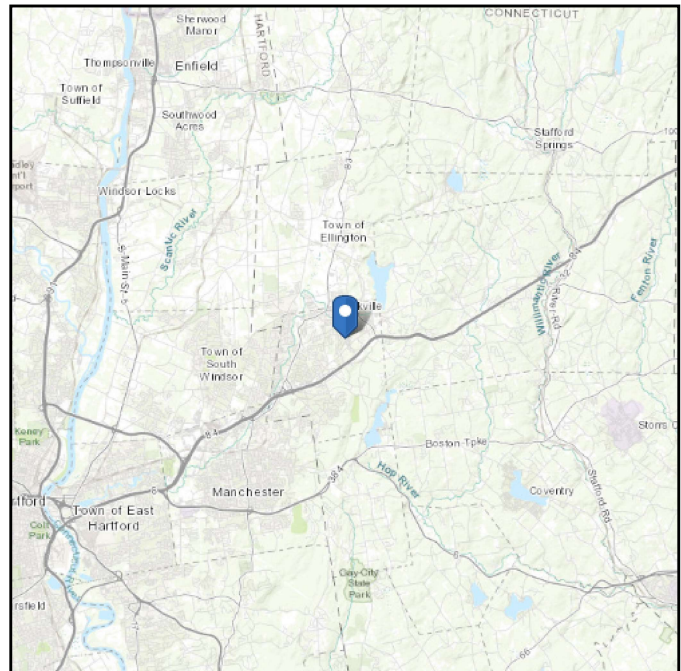
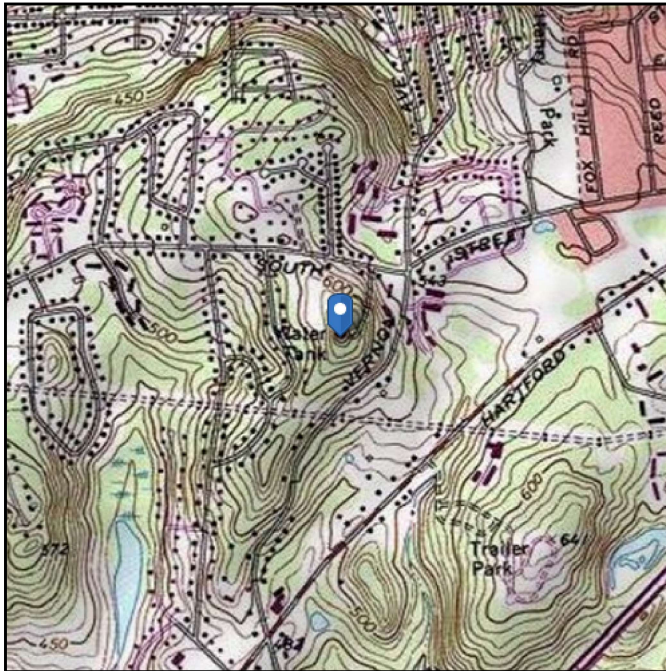


ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Elevation: 654.83 ft (NAVD 88)
Latitude: 41.853475
Longitude: -72.452089



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Nov 19 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

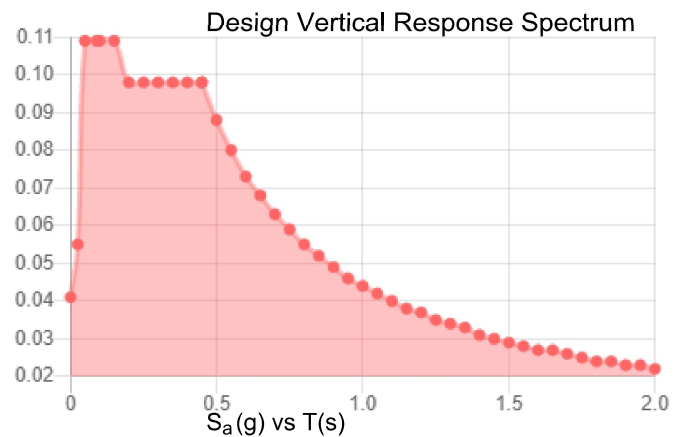
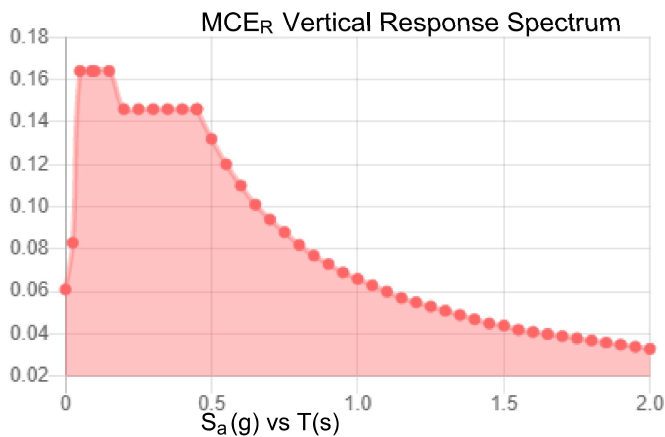
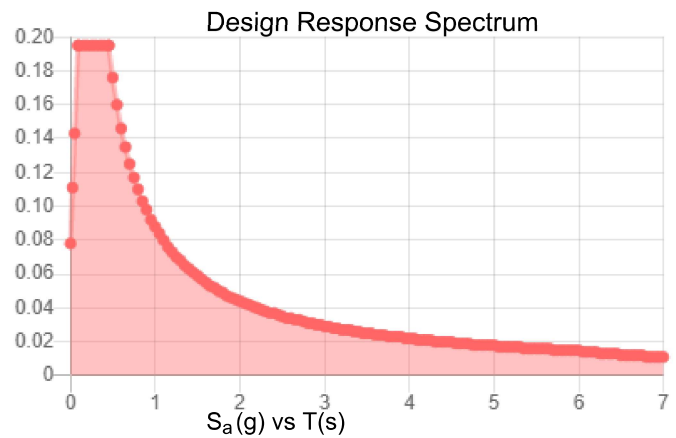
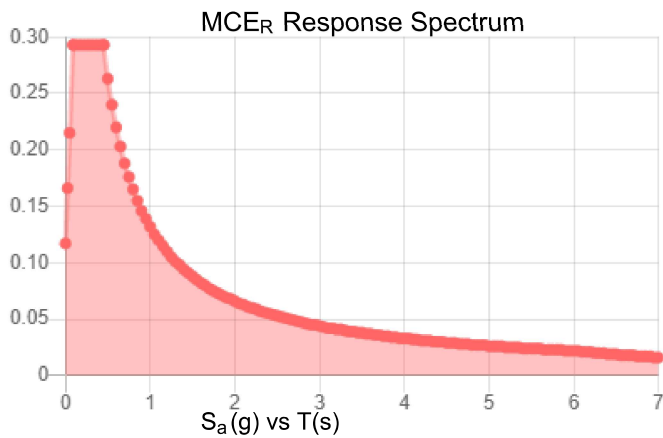


Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_s :	0.183	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.098
F_v :	2.4	PGA _M :	0.156
S_{MS} :	0.293	F_{PGA} :	1.6
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.195	C_v :	0.7

Seismic Design Category B



Data Accessed:

Fri Nov 19 2021

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.



Ice

Results:

Ice Thickness: 1.50 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Fri Nov 19 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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APPENDIX C

SOFTWARE ANALYSIS OUTPUT



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

Jan 7, 2022
 11:08 AM
 Checked By: DC

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	No
RISACONNECTION CODE	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

Jan 7, 2022
 11:08 AM
 Checked By: DC

(Global) Model Settings, Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A53-B-42	29000	11154	.3	.65	.49	42	1.4	63	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iy [in4]	Izz [in4]	J [in4]
1	Face Horizontal	PIPE 2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
2	Support Horizontal	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Support Vertical 1	ROHN TS1.5x16GA	None	None	A53-B-42	Typical	.263	.068	.068	.137
4	Support Vertical 2	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Support Diagonal	ROHN TS1.5x16GA	None	None	A53-B-42	Typical	.263	.068	.068	.137
6	Stabilizer Arm	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Mount Pipe	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	Threaded Rods	1/2 Threaded Rod	None	None	A36 Gr.36	Typical	.142	.002	.002	.003
9	Threaded Rods Plates	PL 2-3/8x1/2	None	None	A36 Gr.36	Typical	1.188	.025	.558	.086



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 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	.581	.057	4.41	.00063

Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	General				
2	RIGID		10	1.3	0
3	Total General		10	1.3	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	1/2 Threaded Rod	4	2	0
7	A36 Gr.36	PL 2-3/8x1/2	4	2	.008
8	A53 Gr.B	PIPE 2.0	13	76.8	.267
9	A53 Gr.B	PIPE 2.5	6	25	.137
10	A53-B-42	ROHN TS1.5x16GA	8	30.4	.027
11	Total HR Steel		35	136.2	.44

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	SF2-1	Reaction	Reaction	Reaction			
2	SF2-2	Reaction	Reaction	Reaction			
3	SA-1B	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	FFBH-L	FF3	SF2-4			Face Horizontal	None	None	A53 Gr.B	Typical
2	FFBH-M	SF2-4	SF3-4			Face Horizontal	None	None	A53 Gr.B	Typical
3	FFBH-R	SF3-4	FF4			Face Horizontal	None	None	A53 Gr.B	Typical
4	FFTH-L	FF1	SF2-3			Face Horizontal	None	None	A53 Gr.B	Typical
5	FFTH-M	SF2-3	SF3-3			Face Horizontal	None	None	A53 Gr.B	Typical
6	FFTH-R	SF3-3	FF2			Face Horizontal	None	None	A53 Gr.B	Typical
7	SA-1	SA-1A	SA-1B			Stabilizer Arm	None	None	A53 Gr.B	Typical
8	SF2-D1	SF2-V1A	SF2-V2B			Support Diagonal	None	None	A53-B-42	Typical
9	SF2-D2	SF2-V2A	SF2-V3B			Support Diagonal	None	None	A53-B-42	Typical
10	SF3-D1	SF3-V1A	SF3-V2B			Support Diagonal	None	None	A53-B-42	Typical
11	SF3-D2	SF3-V2A	SF3-V3B			Support Diagonal	None	None	A53-B-42	Typical
12	SF2-BH	SF2-2	SF2-4			Support Horizontal	None	None	A53 Gr.B	Typical
13	SF2-TH	SF2-1	SF2-3			Support Horizontal	None	None	A53 Gr.B	Typical
14	SF3-BH	SF2-2	SF3-4			Support Horizontal	None	None	A53 Gr.B	Typical
15	SF3-TH	SF2-1	SF3-3			Support Horizontal	None	None	A53 Gr.B	Typical
16	SF2-V1	SF2-V1A	SF2-V1B			Support Vertical 1	None	None	A53-B-42	Typical
17	SF2-V2	SF2-V2A	SF2-V2B			Support Vertical 1	None	None	A53-B-42	Typical
18	SF3-V1	SF3-V1A	SF3-V1B			Support Vertical 1	None	None	A53-B-42	Typical
19	SF3-V2	SF3-V2A	SF3-V2B			Support Vertical 1	None	None	A53-B-42	Typical
20	SF2-V3	SF2-V3A	SF2-V3B			Support Vertical 2	None	None	A53 Gr.B	Typical
21	SF3-V3	SF3-V3A	SF3-V3B			Support Vertical 2	None	None	A53 Gr.B	Typical
22	M22	N35	N25			RIGID	None	None	RIGID	Typical



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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
23	M23	N36	N26			RIGID	None	None	RIGID	Typical
24	M24	N37	N27			RIGID	None	None	RIGID	Typical
25	M25	N38	N28			RIGID	None	None	RIGID	Typical
26	M26	N39	N29			RIGID	None	None	RIGID	Typical
27	M27	N40	N30			RIGID	None	None	RIGID	Typical
28	M28	N41	N31			RIGID	None	None	RIGID	Typical
29	M29	N42	N32			RIGID	None	None	RIGID	Typical
30	M30	N43	N33			RIGID	None	None	RIGID	Typical
31	M31	N44	N34			RIGID	None	None	RIGID	Typical
32	MP-1	N46	N45			Mount Pipe	None	None	A53 Gr.B	Typical
33	MP-2	N47	N38			Mount Pipe	None	None	A53 Gr.B	Typical
34	MP-3	N49	N48			Mount Pipe	None	None	A53 Gr.B	Typical
35	MP-4B	N51	N50			Mount Pipe	None	None	A53 Gr.B	Typical
36	MP-5	N53	N52			Mount Pipe	None	None	A53 Gr.B	Typical
37	TRP-1	N58	N56			Threaded Rods Plates	None	None	A36 Gr.36	Typical
38	TRP-2	N64	N62			Threaded Rods Plates	None	None	A36 Gr.36	Typical
39	TRP-3	N59	N57			Threaded Rods Plates	None	None	A36 Gr.36	Typical
40	TRP-4	N65	N63			Threaded Rods Plates	None	None	A36 Gr.36	Typical
41	TR-1	N58	N64			Threaded Rods	None	None	A36 Gr.36	Typical
42	TR-2	N56	N62			Threaded Rods	None	None	A36 Gr.36	Typical
43	TR-3	N59	N65			Threaded Rods	None	None	A36 Gr.36	Typical
44	TR-4	N57	N63			Threaded Rods	None	None	A36 Gr.36	Typical
45	MP-4	N66	N67			Mount Pipe	None	None	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	FFBH-L						Yes	** NA **			None
2	FFBH-M						Yes	** NA **			None
3	FFBH-R						Yes	** NA **			None
4	FFTH-L						Yes	** NA **			None
5	FFTH-M						Yes	** NA **			None
6	FFTH-R						Yes	** NA **			None
7	SA-1	BenPIN					Yes	** NA **			None
8	SF2-D1	BenPIN	BenPIN				Yes	** NA **			None
9	SF2-D2	BenPIN	BenPIN				Yes	** NA **			None
10	SF3-D1	BenPIN	BenPIN				Yes	** NA **			None
11	SF3-D2	BenPIN	BenPIN				Yes	** NA **			None
12	SF2-BH						Yes	** NA **			None
13	SF2-TH						Yes	** NA **			None
14	SF3-BH						Yes	** NA **			None
15	SF3-TH						Yes	** NA **			None
16	SF2-V1	BenPIN	BenPIN				Yes	** NA **			None
17	SF2-V2	BenPIN	BenPIN				Yes	** NA **			None
18	SF3-V1	BenPIN	BenPIN				Yes	** NA **			None
19	SF3-V2	BenPIN	BenPIN				Yes	** NA **			None
20	SF2-V3	BenPIN	BenPIN				Yes	** NA **			None
21	SF3-V3	BenPIN	BenPIN				Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24						Yes	** NA **			None



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Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
25	M25						Yes	** NA **			None
26	M26						Yes	** NA **			None
27	M27						Yes	** NA **			None
28	M28						Yes	** NA **			None
29	M29						Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	MP-1						Yes	** NA **			None
33	MP-2						Yes	** NA **			None
34	MP-3						Yes	** NA **			None
35	MP-4B						Yes	** NA **			None
36	MP-5						Yes	** NA **			None
37	TRP-1						Yes	** NA **			None
38	TRP-2						Yes	** NA **			None
39	TRP-3						Yes	** NA **			None
40	TRP-4						Yes	** NA **			None
41	TR-1						Yes	** NA **		Exclude	None
42	TR-2						Yes	** NA **		Exclude	None
43	TR-3						Yes	** NA **		Exclude	None
44	TR-4						Yes	** NA **		Exclude	None
45	MP-4						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length(ft)	Lbyy(ft)	Lbzz(ft)	Lcomp top(ft)	Lcomp bot(ft)	L-torq...	Kyy	Kzz	Cb	Functi...
1	FFBH-L	Face Horizontal	1.862						2.1	2.1		Lateral
2	FFBH-M	Face Horizontal	8.776						1	1		Lateral
3	FFBH-R	Face Horizontal	1.862						2.1	2.1		Lateral
4	FFTH-L	Face Horizontal	1.862						2.1	2.1		Lateral
5	FFTH-M	Face Horizontal	8.776						1	1		Lateral
6	FFTH-R	Face Horizontal	1.862						2.1	2.1		Lateral
7	SA-1	Stabilizer Arm	6.298						1	1		Lateral
8	SF2-D1	Support Diagonal	4.185						1	1		Lateral
9	SF2-D2	Support Diagonal	4.185						1	1		Lateral
10	SF3-D1	Support Diagonal	4.185						1	1		Lateral
11	SF3-D2	Support Diagonal	4.185						1	1		Lateral
12	SF2-BH	Support Horizontal	5.917		2.417				.8	.8		Lateral
13	SF2-TH	Support Horizontal	5.917		2.417				.8	.8		Lateral
14	SF3-BH	Support Horizontal	5.917		2.417				.8	.8		Lateral
15	SF3-TH	Support Horizontal	5.917		2.417				.8	.8		Lateral
16	SF2-V1	Support Vertical 1	3.417						1	1		Lateral
17	SF2-V2	Support Vertical 1	3.417						1	1		Lateral
18	SF3-V1	Support Vertical 1	3.417						1	1		Lateral
19	SF3-V2	Support Vertical 1	3.417						1	1		Lateral
20	SF2-V3	Support Vertical 2	3.417						1	1		Lateral
21	SF3-V3	Support Vertical 2	3.417						1	1		Lateral
22	MP-1	Mount Pipe	6	Segment	Segment				2.1	2.1		Lateral
23	MP-2	Mount Pipe	5	Segment	Segment				2.1	2.1		Lateral
24	MP-3	Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
25	MP-4B	Mount Pipe	5	Segment	Segment				2.1	2.1		Lateral
26	MP-5	Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral



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Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length(ft)	Lbyy(ft)	Lbzz(ft)	Lcomp top(ft)	Lcomp bot(ft)	L-torq...	Kyy	Kzz	Cb	Functi...
27	TRP-1	Threaded Rods Pla...	.5						2.1	2.1		Lateral
28	TRP-2	Threaded Rods Pla...	.5						2.1	2.1		Lateral
29	TRP-3	Threaded Rods Pla...	.5						2.1	2.1		Lateral
30	TRP-4	Threaded Rods Pla...	.5						2.1	2.1		Lateral
31	TR-1	Threaded Rods	.5						1	1		Lateral
32	TR-2	Threaded Rods	.5						1	1		Lateral
33	TR-3	Threaded Rods	.5						1	1		Lateral
34	TR-4	Threaded Rods	.5						1	1		Lateral
35	MP-4	Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral

Cold Formed Steel Design Parameters

Label	Shape	Lengt...	Lbyy(ft)	Lbzz(ft)	Lcomp to...	Lcomp b...	Kyy	Kzz	Cm-yy	Cm-zz	Cb	R	y sway	z sway
No Data to Print ...														

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Member)	Surface...
1	Dead	None		-1			15			
2	0 Wind - No Ice	None					15	35		
3	30 Wind - No Ice	None					30	70		
4	45 Wind - No Ice	None					30	70		
5	60 Wind - No Ice	None					30	70		
6	90 Wind - No Ice	None					15	35		
7	120 Wind - No Ice	None					30	70		
8	135 Wind - No Ice	None					30	70		
9	150 Wind - No Ice	None					30	70		
10	180 Wind - No Ice	None					15	35		
11	210 Wind - No Ice	None					30	70		
12	225 Wind - No Ice	None					30	70		
13	240 Wind - No Ice	None					30	70		
14	270 Wind - No Ice	None					15	35		
15	300 Wind - No Ice	None					30	70		
16	315 Wind - No Ice	None					30	70		
17	330 Wind - No Ice	None					30	70		
18	Ice Weight	None					15	35		
19	0 Wind - Ice	None					15	35		
20	30 Wind - Ice	None					30	70		
21	45 Wind - Ice	None					30	70		
22	60 Wind - Ice	None					30	70		
23	90 Wind - Ice	None					15	35		
24	120 Wind - Ice	None					30	70		
25	135 Wind - Ice	None					30	70		
26	150 Wind - Ice	None					30	70		
27	180 Wind - Ice	None					15	35		
28	210 Wind - Ice	None					30	70		
29	225 Wind - Ice	None					30	70		
30	240 Wind - Ice	None					30	70		
31	270 Wind - Ice	None					15	35		
32	300 Wind - Ice	None					30	70		
33	315 Wind - Ice	None					30	70		

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	B/LC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Member)	Surface(Load)
34	330 Wind - Ice	None					30	70		
35	Lm	None				1				
36	Lv	None				1				
37	Seismic Load X	ELX	-1				15			
38	Seismic Load Z	ELZ			-1		15			

[illegible]

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	Joint Label	L,D,M	Direction	Magnitude((k,k-ft), (in,rad), (k*s^2/ft)
1	N26	L	Y	-5

	Joint Label	L,D,M	Direction	Magnitude(k,k-ft), (in,rad), (k*s^2/f)
1	FF3	L	Y	-25

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-3	Y	-0.44	1
2	MP-4	Y	-0.33	1
3	MP-4	Y	-0.41	5
4	MP-5	Y	-0.53	1
5	SF2-TH	Y	-0.06	1.7
6	SF3-TH	Y	-0.19	1.7
7	MP-3	Y	-0.53	2
8	MP-3	Y	-0.71	2
9	MP-4B	Y	-0.16	2
10	MP-5	Y	-0.53	2
11	MP-5	Y	-0.72	2
12	MP-3	Y	-0.44	7
13	MP-4	Y	-0.33	3
14	MP-4	Y	-0.41	7
15	MP-5	Y	-0.53	7

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	-.236	1
2	MP-4	X	-.069	1
3	MP-4	X	-.054	5
4	MP-5	X	-.236	1
5	SF2-TH	X	-.043	1.7
6	SF3-TH	X	-.027	1.7
7	MP-3	X	-.05	2
8	MP-3	X	-.042	2
9	MP-4B	X	-.034	2
10	MP-5	X	-.05	2
11	MP-5	X	-.04	2
12	MP-3	X	-.236	7
13	MP-4	X	-.069	3
14	MP-4	X	-.054	7
15	MP-5	X	-.236	7



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	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-1.72	1
2	MP-4	X	-0.51	1
3	MP-4	X	-0.41	5
4	MP-5	X	-1.72	1
5	SF2-TH	X	-0.29	1.7
6	SF3-TH	X	-0.24	1.7
7	MP-3	X	-0.05	2
8	MP-3	X	-0.04	2
9	MP-4B	X	-0.29	2
10	MP-5	X	-0.05	2
11	MP-5	X	-0.37	2
12	MP-3	X	-1.72	7
13	MP-4	X	-0.51	3
14	MP-4	X	-0.41	7
15	MP-5	X	-1.72	7
16	MP-3	Z	-1	1
17	MP-4	Z	-0.29	1
18	MP-4	Z	-0.23	5
19	MP-5	Z	-1	1
20	SF2-TH	Z	-0.17	1.7
21	SF3-TH	Z	-0.14	1.7
22	MP-3	Z	-0.29	2
23	MP-3	Z	-0.23	2
24	MP-4B	Z	-0.17	2
25	MP-5	Z	-0.29	2
26	MP-5	Z	-0.21	2
27	MP-3	Z	-1	7
28	MP-4	Z	-0.29	3
29	MP-4	Z	-0.23	7
30	MP-5	Z	-1	7

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	-.115	1
2	MP-4	X	-.034	1
3	MP-4	X	-.028	5
4	MP-5	X	-.115	1
5	SF2-TH	X	-.022	1.7
6	SF3-TH	X	-.019	1.7
7	MP-3	X	-.046	2
8	MP-3	X	-.035	2
9	MP-4B	X	-.024	2
10	MP-5	X	-.046	2
11	MP-5	X	-.031	2
12	MP-3	X	-.115	7
13	MP-4	X	-.034	3
14	MP-4	X	-.028	7
15	MP-5	X	-.115	7
16	MP-3	Z	-.115	1
17	MP-4	Z	-.034	1
18	MP-4	Z	-.028	5



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Member Point Loads (BLC 4 : 45 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
19	MP-5	Z	-.115	1
20	SF2-TH	Z	-.022	1.7
21	SF3-TH	Z	-.019	1.7
22	MP-3	Z	-.046	2
23	MP-3	Z	-.035	2
24	MP-4B	Z	-.024	2
25	MP-5	Z	-.046	2
26	MP-5	Z	-.031	2
27	MP-3	Z	-.115	7
28	MP-4	Z	-.034	3
29	MP-4	Z	-.028	7
30	MP-5	Z	-.115	7

Member Point Loads (BLC 5 : 60 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	-.063	1
2	MP-4	X	-.019	1
3	MP-4	X	-.016	5
4	MP-5	X	-.063	1
5	SF2-TH	X	-.017	1.7
6	SF3-TH	X	-.014	1.7
7	MP-3	X	-.037	2
8	MP-3	X	-.027	2
9	MP-4B	X	-.017	2
10	MP-5	X	-.037	2
11	MP-5	X	-.023	2
12	MP-3	X	-.063	7
13	MP-4	X	-.019	3
14	MP-4	X	-.016	7
15	MP-5	X	-.063	7
16	MP-3	Z	-.109	1
17	MP-4	Z	-.033	1
18	MP-4	Z	-.028	5
19	MP-5	Z	-.109	1
20	SF2-TH	Z	-.029	1.7
21	SF3-TH	Z	-.024	1.7
22	MP-3	Z	-.064	2
23	MP-3	Z	-.047	2
24	MP-4B	Z	-.029	2
25	MP-5	Z	-.064	2
26	MP-5	Z	-.04	2
27	MP-3	Z	-.109	7
28	MP-4	Z	-.033	3
29	MP-4	Z	-.028	7
30	MP-5	Z	-.109	7

Member Point Loads (BLC 6 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	Z	-.088	1
2	MP-4	Z	-.028	1
3	MP-4	Z	-.026	5



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Member Point Loads (BLC 6 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
4	MP-5	Z	-.088	1
5	SF2-TH	Z	-.043	1.7
6	SF3-TH	Z	-.027	1.7
7	MP-3	Z	-.081	2
8	MP-3	Z	-.059	2
9	MP-4B	Z	-.034	2
10	MP-5	Z	-.081	2
11	MP-5	Z	-.049	2
12	MP-3	Z	-.088	7
13	MP-4	Z	-.028	3
14	MP-4	Z	-.026	7
15	MP-5	Z	-.088	7

Member Point Loads (BLC 7 : 120 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.063	1
2	MP-4	X	.019	1
3	MP-4	X	.016	5
4	MP-5	X	.063	1
5	SF2-TH	X	.027	1.7
6	SF3-TH	X	.014	1.7
7	MP-3	X	.037	2
8	MP-3	X	.027	2
9	MP-4B	X	.017	2
10	MP-5	X	.037	2
11	MP-5	X	.023	2
12	MP-3	X	.063	7
13	MP-4	X	.019	3
14	MP-4	X	.016	7
15	MP-5	X	.063	7
16	MP-3	Z	-.109	1
17	MP-4	Z	-.033	1
18	MP-4	Z	-.028	5
19	MP-5	Z	-.109	1
20	SF2-TH	Z	-.046	1.7
21	SF3-TH	Z	-.024	1.7
22	MP-3	Z	-.064	2
23	MP-3	Z	-.047	2
24	MP-4B	Z	-.029	2
25	MP-5	Z	-.064	2
26	MP-5	Z	-.04	2
27	MP-3	Z	-.109	7
28	MP-4	Z	-.033	3
29	MP-4	Z	-.028	7
30	MP-5	Z	-.109	7

Member Point Loads (BLC 8 : 135 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.115	1
2	MP-4	X	.034	1
3	MP-4	X	.028	5



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Member Point Loads (BLC 8 : 135 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
4	MP-5	X	.115	1
5	SF2-TH	X	.039	1.7
6	SF3-TH	X	.019	1.7
7	MP-3	X	.046	2
8	MP-3	X	.035	2
9	MP-4B	X	.024	2
10	MP-5	X	.046	2
11	MP-5	X	.031	2
12	MP-3	X	.115	7
13	MP-4	X	.034	3
14	MP-4	X	.028	7
15	MP-5	X	.115	7
16	MP-3	Z	-.115	1
17	MP-4	Z	-.034	1
18	MP-4	Z	-.028	5
19	MP-5	Z	-.115	1
20	SF2-TH	Z	-.039	1.7
21	SF3-TH	Z	-.019	1.7
22	MP-3	Z	-.046	2
23	MP-3	Z	-.035	2
24	MP-4B	Z	-.024	2
25	MP-5	Z	-.046	2
26	MP-5	Z	-.031	2
27	MP-3	Z	-.115	7
28	MP-4	Z	-.034	3
29	MP-4	Z	-.028	7
30	MP-5	Z	-.115	7

Member Point Loads (BLC 9 : 150 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
1	MP-3	X	.172	1
2	MP-4	X	.051	1
3	MP-4	X	.041	5
4	MP-5	X	.172	1
5	SF2-TH	X	.046	1.7
6	SF3-TH	X	.024	1.7
7	MP-3	X	.05	2
8	MP-3	X	.04	2
9	MP-4B	X	.029	2
10	MP-5	X	.05	2
11	MP-5	X	.037	2
12	MP-3	X	.172	7
13	MP-4	X	.051	3
14	MP-4	X	.041	7
15	MP-5	X	.172	7
16	MP-3	Z	-.1	1
17	MP-4	Z	-.029	1
18	MP-4	Z	-.023	5
19	MP-5	Z	-.1	1
20	SF2-TH	Z	-.027	1.7
21	SF3-TH	Z	-.014	1.7



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Member Point Loads (BLC 9 : 150 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
22	MP-3	Z	-.029	2
23	MP-3	Z	-.023	2
24	MP-4B	Z	-.017	2
25	MP-5	Z	-.029	2
26	MP-5	Z	-.021	2
27	MP-3	Z	-.1	7
28	MP-4	Z	-.029	3
29	MP-4	Z	-.023	7
30	MP-5	Z	-.1	7

Member Point Loads (BLC 10 : 180 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
1	MP-3	X	.236	1
2	MP-4	X	.069	1
3	MP-4	X	.054	5
4	MP-5	X	.236	1
5	SF2-TH	X	.043	1.7
6	SF3-TH	X	.027	1.7
7	MP-3	X	.05	2
8	MP-3	X	.042	2
9	MP-4B	X	.034	2
10	MP-5	X	.05	2
11	MP-5	X	.04	2
12	MP-3	X	.236	7
13	MP-4	X	.069	3
14	MP-4	X	.054	7
15	MP-5	X	.236	7

Member Point Loads (BLC 11 : 210 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
1	MP-3	X	.172	1
2	MP-4	X	.051	1
3	MP-4	X	.041	5
4	MP-5	X	.172	1
5	SF2-TH	X	.029	1.7
6	SF3-TH	X	.024	1.7
7	MP-3	X	.05	2
8	MP-3	X	.04	2
9	MP-4B	X	.029	2
10	MP-5	X	.05	2
11	MP-5	X	.037	2
12	MP-3	X	.172	7
13	MP-4	X	.051	3
14	MP-4	X	.041	7
15	MP-5	X	.172	7
16	MP-3	Z	.1	1
17	MP-4	Z	.029	1
18	MP-4	Z	.023	5
19	MP-5	Z	.1	1
20	SF2-TH	Z	.017	1.7
21	SF3-TH	Z	.014	1.7



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Member Point Loads (BLC 11 : 210 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
22	MP-3	Z	.029	2
23	MP-3	Z	.023	2
24	MP-4B	Z	.017	2
25	MP-5	Z	.029	2
26	MP-5	Z	.021	2
27	MP-3	Z	.1	7
28	MP-4	Z	.029	3
29	MP-4	Z	.023	7
30	MP-5	Z	.1	7

Member Point Loads (BLC 12 : 225 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.115	1
2	MP-4	X	.034	1
3	MP-4	X	.028	5
4	MP-5	X	.115	1
5	SF2-TH	X	.022	1.7
6	SF3-TH	X	.019	1.7
7	MP-3	X	.046	2
8	MP-3	X	.035	2
9	MP-4B	X	.024	2
10	MP-5	X	.046	2
11	MP-5	X	.031	2
12	MP-3	X	.115	7
13	MP-4	X	.034	3
14	MP-4	X	.028	7
15	MP-5	X	.115	7
16	MP-3	Z	.115	1
17	MP-4	Z	.034	1
18	MP-4	Z	.028	5
19	MP-5	Z	.115	1
20	SF2-TH	Z	.022	1.7
21	SF3-TH	Z	.019	1.7
22	MP-3	Z	.046	2
23	MP-3	Z	.035	2
24	MP-4B	Z	.024	2
25	MP-5	Z	.046	2
26	MP-5	Z	.031	2
27	MP-3	Z	.115	7
28	MP-4	Z	.034	3
29	MP-4	Z	.028	7
30	MP-5	Z	.115	7

Member Point Loads (BLC 13 : 240 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.063	1
2	MP-4	X	.019	1
3	MP-4	X	.016	5
4	MP-5	X	.063	1
5	SF2-TH	X	.017	1.7
6	SF3-TH	X	.014	1.7



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Member Point Loads (BLC 13 : 240 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
7	MP-3	X	.037	2
8	MP-3	X	.027	2
9	MP-4B	X	.017	2
10	MP-5	X	.037	2
11	MP-5	X	.023	2
12	MP-3	X	.063	7
13	MP-4	X	.019	3
14	MP-4	X	.016	7
15	MP-5	X	.063	7
16	MP-3	Z	.109	1
17	MP-4	Z	.033	1
18	MP-4	Z	.028	5
19	MP-5	Z	.109	1
20	SF2-TH	Z	.029	1.7
21	SF3-TH	Z	.024	1.7
22	MP-3	Z	.064	2
23	MP-3	Z	.047	2
24	MP-4B	Z	.029	2
25	MP-5	Z	.064	2
26	MP-5	Z	.04	2
27	MP-3	Z	.109	7
28	MP-4	Z	.033	3
29	MP-4	Z	.028	7
30	MP-5	Z	.109	7

Member Point Loads (BLC 14 : 270 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	Z	.088	1
2	MP-4	Z	.028	1
3	MP-4	Z	.026	5
4	MP-5	Z	.088	1
5	SF2-TH	Z	.043	1.7
6	SF3-TH	Z	.027	1.7
7	MP-3	Z	.081	2
8	MP-3	Z	.059	2
9	MP-4B	Z	.034	2
10	MP-5	Z	.081	2
11	MP-5	Z	.049	2
12	MP-3	Z	.088	7
13	MP-4	Z	.028	3
14	MP-4	Z	.026	7
15	MP-5	Z	.088	7

Member Point Loads (BLC 15 : 300 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	-.063	1
2	MP-4	X	-.019	1
3	MP-4	X	-.016	5
4	MP-5	X	-.063	1
5	SF2-TH	X	-.027	1.7
6	SF3-TH	X	-.014	1.7



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Member Point Loads (BLC 15 : 300 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
7	MP-3	X	-.037	2
8	MP-3	X	-.027	2
9	MP-4B	X	-.017	2
10	MP-5	X	-.037	2
11	MP-5	X	-.023	2
12	MP-3	X	-.063	7
13	MP-4	X	-.019	3
14	MP-4	X	-.016	7
15	MP-5	X	-.063	7
16	MP-3	Z	.109	1
17	MP-4	Z	.033	1
18	MP-4	Z	.028	5
19	MP-5	Z	.109	1
20	SF2-TH	Z	.046	1.7
21	SF3-TH	Z	.024	1.7
22	MP-3	Z	.064	2
23	MP-3	Z	.047	2
24	MP-4B	Z	.029	2
25	MP-5	Z	.064	2
26	MP-5	Z	.04	2
27	MP-3	Z	.109	7
28	MP-4	Z	.033	3
29	MP-4	Z	.028	7
30	MP-5	Z	.109	7

Member Point Loads (BLC 16 : 315 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
1	MP-3	X	-.115	1
2	MP-4	X	-.034	1
3	MP-4	X	-.028	5
4	MP-5	X	-.115	1
5	SF2-TH	X	-.039	1.7
6	SF3-TH	X	-.019	1.7
7	MP-3	X	-.046	2
8	MP-3	X	-.035	2
9	MP-4B	X	-.024	2
10	MP-5	X	-.046	2
11	MP-5	X	-.031	2
12	MP-3	X	-.115	7
13	MP-4	X	-.034	3
14	MP-4	X	-.028	7
15	MP-5	X	-.115	7
16	MP-3	Z	.115	1
17	MP-4	Z	.034	1
18	MP-4	Z	.028	5
19	MP-5	Z	.115	1
20	SF2-TH	Z	.039	1.7
21	SF3-TH	Z	.019	1.7
22	MP-3	Z	.046	2
23	MP-3	Z	.035	2
24	MP-4B	Z	.024	2



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Member Point Loads (BLC 16 : 315 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
25	MP-5	Z	.046	2
26	MP-5	Z	.031	2
27	MP-3	Z	.115	7
28	MP-4	Z	.034	3
29	MP-4	Z	.028	7
30	MP-5	Z	.115	7

Member Point Loads (BLC 17 : 330 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
1	MP-3	X	-.172	1
2	MP-4	X	-.051	1
3	MP-4	X	-.041	5
4	MP-5	X	-.172	1
5	SF2-TH	X	-.046	1.7
6	SF3-TH	X	-.024	1.7
7	MP-3	X	-.05	2
8	MP-3	X	-.04	2
9	MP-4B	X	-.029	2
10	MP-5	X	-.05	2
11	MP-5	X	-.037	2
12	MP-3	X	-.172	7
13	MP-4	X	-.051	3
14	MP-4	X	-.041	7
15	MP-5	X	-.172	7
16	MP-3	Z	.1	1
17	MP-4	Z	.029	1
18	MP-4	Z	.023	5
19	MP-5	Z	.1	1
20	SF2-TH	Z	.027	1.7
21	SF3-TH	Z	.014	1.7
22	MP-3	Z	.029	2
23	MP-3	Z	.023	2
24	MP-4B	Z	.017	2
25	MP-5	Z	.029	2
26	MP-5	Z	.021	2
27	MP-3	Z	.1	7
28	MP-4	Z	.029	3
29	MP-4	Z	.023	7
30	MP-5	Z	.1	7

Member Point Loads (BLC 18 : Ice Weight)

	Member Label	Direction	Magnitude[k,k-ft]	Location(ft,%)
1	MP-3	Y	-.181	1
2	MP-4	Y	-.054	1
3	MP-4	Y	-.057	5
4	MP-5	Y	-.181	1
5	SF2-TH	Y	-.064	1.7
6	SF3-TH	Y	-.059	1.7
7	MP-3	Y	-.084	2
8	MP-3	Y	-.074	2
9	MP-4B	Y	-.071	2



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Member Point Loads (BLC 18 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
10	MP-5	Y	-084	2
11	MP-5	Y	-07	2
12	MP-3	Y	-181	7
13	MP-4	Y	-054	3
14	MP-4	Y	-057	7
15	MP-5	Y	-181	7

Member Point Loads (BLC 19 : 0 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-05	1
2	MP-4	X	-01	1
3	MP-4	X	-013	5
4	MP-5	X	-05	1
5	SF2-TH	X	-015	1.7
6	SF3-TH	X	-007	1.7
7	MP-3	X	-021	2
8	MP-3	X	-016	2
9	MP-4B	X	-009	2
10	MP-5	X	-021	2
11	MP-5	X	-013	2
12	MP-3	X	-05	7
13	MP-4	X	-01	3
14	MP-4	X	-013	7
15	MP-5	X	-05	7

Member Point Loads (BLC 20 : 30 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-037	1
2	MP-4	X	-007	1
3	MP-4	X	-01	5
4	MP-5	X	-037	1
5	SF2-TH	X	-009	1.7
6	SF3-TH	X	-006	1.7
7	MP-3	X	-014	2
8	MP-3	X	-011	2
9	MP-4B	X	-008	2
10	MP-5	X	-014	2
11	MP-5	X	-01	2
12	MP-3	X	-037	7
13	MP-4	X	-007	3
14	MP-4	X	-01	7
15	MP-5	X	-037	7
16	MP-3	Z	-022	1
17	MP-4	Z	-004	1
18	MP-4	Z	-006	5
19	MP-5	Z	-022	1
20	SF2-TH	Z	-005	1.7
21	SF3-TH	Z	-004	1.7
22	MP-3	Z	-008	2
23	MP-3	Z	-007	2
24	MP-4B	Z	-004	2



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Member Point Loads (BLC 20 : 30 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
25	MP-5	Z	-008	2
26	MP-5	Z	-006	2
27	MP-3	Z	-022	7
28	MP-4	Z	-004	3
29	MP-4	Z	-006	7
30	MP-5	Z	-022	7

Member Point Loads (BLC 21 : 45 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-026	1
2	MP-4	X	-005	1
3	MP-4	X	-007	5
4	MP-5	X	-026	1
5	SF2-TH	X	-007	1.7
6	SF3-TH	X	-005	1.7
7	MP-3	X	-012	2
8	MP-3	X	-01	2
9	MP-4B	X	-006	2
10	MP-5	X	-012	2
11	MP-5	X	-009	2
12	MP-3	X	-026	7
13	MP-4	X	-005	3
14	MP-4	X	-007	7
15	MP-5	X	-026	7
16	MP-3	Z	-026	1
17	MP-4	Z	-005	1
18	MP-4	Z	-007	5
19	MP-5	Z	-026	1
20	SF2-TH	Z	-007	1.7
21	SF3-TH	Z	-005	1.7
22	MP-3	Z	-012	2
23	MP-3	Z	-01	2
24	MP-4B	Z	-006	2
25	MP-5	Z	-012	2
26	MP-5	Z	-009	2
27	MP-3	Z	-026	7
28	MP-4	Z	-005	3
29	MP-4	Z	-007	7
30	MP-5	Z	-026	7

Member Point Loads (BLC 22 : 60 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-015	1
2	MP-4	X	-003	1
3	MP-4	X	-004	5
4	MP-5	X	-015	1
5	SF2-TH	X	-005	1.7
6	SF3-TH	X	-004	1.7
7	MP-3	X	-01	2
8	MP-3	X	-007	2
9	MP-4B	X	-004	2



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Member Point Loads (BLC 22 : 60 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	MP-5	X	-.01	2
11	MP-5	X	-.006	2
12	MP-3	X	-.015	7
13	MP-4	X	-.003	3
14	MP-4	X	-.004	7
15	MP-5	X	-.015	7
16	MP-3	Z	-.026	1
17	MP-4	Z	-.005	1
18	MP-4	Z	-.007	5
19	MP-5	Z	-.026	1
20	SF2-TH	Z	-.009	1.7
21	SF3-TH	Z	-.006	1.7
22	MP-3	Z	-.017	2
23	MP-3	Z	-.013	2
24	MP-4B	Z	-.008	2
25	MP-5	Z	-.017	2
26	MP-5	Z	-.011	2
27	MP-3	Z	-.026	7
28	MP-4	Z	-.005	3
29	MP-4	Z	-.007	7
30	MP-5	Z	-.026	7

Member Point Loads (BLC 23 : 90 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	Z	-.023	1
2	MP-4	Z	-.004	1
3	MP-4	Z	-.007	5
4	MP-5	Z	-.023	1
5	SF2-TH	Z	-.01	1.7
6	SF3-TH	Z	-.007	1.7
7	MP-3	Z	-.014	2
8	MP-3	Z	-.012	2
9	MP-4B	Z	-.009	2
10	MP-5	Z	-.014	2
11	MP-5	Z	-.012	2
12	MP-3	Z	-.023	7
13	MP-4	Z	-.004	3
14	MP-4	Z	-.007	7
15	MP-5	Z	-.023	7

Member Point Loads (BLC 24 : 120 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.015	1
2	MP-4	X	.003	1
3	MP-4	X	.004	5
4	MP-5	X	.015	1
5	SF2-TH	X	.007	1.7
6	SF3-TH	X	.004	1.7
7	MP-3	X	.01	2
8	MP-3	X	.007	2
9	MP-4B	X	.004	2



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 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Member Point Loads (BLC 24 : 120 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	MP-5	X	.01	2
11	MP-5	X	.006	2
12	MP-3	X	.015	7
13	MP-4	X	.003	3
14	MP-4	X	.004	7
15	MP-5	X	.015	7
16	MP-3	Z	-.026	1
17	MP-4	Z	-.005	1
18	MP-4	Z	-.007	5
19	MP-5	Z	-.026	1
20	SF2-TH	Z	-.013	1.7
21	SF3-TH	Z	-.006	1.7
22	MP-3	Z	-.017	2
23	MP-3	Z	-.013	2
24	MP-4B	Z	-.008	2
25	MP-5	Z	-.017	2
26	MP-5	Z	-.011	2
27	MP-3	Z	-.026	7
28	MP-4	Z	-.005	3
29	MP-4	Z	-.007	7
30	MP-5	Z	-.026	7

Member Point Loads (BLC 25 : 135 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.026	1
2	MP-4	X	.005	1
3	MP-4	X	.007	5
4	MP-5	X	.026	1
5	SF2-TH	X	.01	1.7
6	SF3-TH	X	.005	1.7
7	MP-3	X	.012	2
8	MP-3	X	.01	2
9	MP-4B	X	.006	2
10	MP-5	X	.012	2
11	MP-5	X	.009	2
12	MP-3	X	.026	7
13	MP-4	X	.005	3
14	MP-4	X	.007	7
15	MP-5	X	.026	7
16	MP-3	Z	-.026	1
17	MP-4	Z	-.005	1
18	MP-4	Z	-.007	5
19	MP-5	Z	-.026	1
20	SF2-TH	Z	-.01	1.7
21	SF3-TH	Z	-.005	1.7
22	MP-3	Z	-.012	2
23	MP-3	Z	-.01	2
24	MP-4B	Z	-.006	2
25	MP-5	Z	-.012	2
26	MP-5	Z	-.009	2
27	MP-3	Z	-.026	7



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Member Point Loads (BLC 25 : 135 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
28	MP-4	Z	-.005	3
29	MP-4	Z	-.007	7
30	MP-5	Z	-.026	7

Member Point Loads (BLC 26 : 150 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.037	1
2	MP-4	X	.007	1
3	MP-4	X	.01	5
4	MP-5	X	.037	1
5	SF2-TH	X	.013	1.7
6	SF3-TH	X	.006	1.7
7	MP-3	X	.014	2
8	MP-3	X	.011	2
9	MP-4B	X	.008	2
10	MP-5	X	.014	2
11	MP-5	X	.01	2
12	MP-3	X	.037	7
13	MP-4	X	.007	3
14	MP-4	X	.01	7
15	MP-5	X	.037	7
16	MP-3	Z	-.022	1
17	MP-4	Z	-.004	1
18	MP-4	Z	-.006	5
19	MP-5	Z	-.022	1
20	SF2-TH	Z	-.007	1.7
21	SF3-TH	Z	-.004	1.7
22	MP-3	Z	-.008	2
23	MP-3	Z	-.007	2
24	MP-4B	Z	-.004	2
25	MP-5	Z	-.008	2
26	MP-5	Z	-.006	2
27	MP-3	Z	-.022	7
28	MP-4	Z	-.004	3
29	MP-4	Z	-.006	7
30	MP-5	Z	-.022	7

Member Point Loads (BLC 27 : 180 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.05	1
2	MP-4	X	.01	1
3	MP-4	X	.013	5
4	MP-5	X	.05	1
5	SF2-TH	X	.015	1.7
6	SF3-TH	X	.007	1.7
7	MP-3	X	.021	2
8	MP-3	X	.016	2
9	MP-4B	X	.009	2
10	MP-5	X	.021	2
11	MP-5	X	.013	2
12	MP-3	X	.05	7



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Member Point Loads (BLC 27 : 180 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
13	MP-4	X	.01	3
14	MP-4	X	.013	7
15	MP-5	X	.05	7

Member Point Loads (BLC 28 : 210 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.037	1
2	MP-4	X	.007	1
3	MP-4	X	.01	5
4	MP-5	X	.037	1
5	SF2-TH	X	.009	1.7
6	SF3-TH	X	.006	1.7
7	MP-3	X	.014	2
8	MP-3	X	.011	2
9	MP-4B	X	.008	2
10	MP-5	X	.014	2
11	MP-5	X	.01	2
12	MP-3	X	.037	7
13	MP-4	X	.007	3
14	MP-4	X	.01	7
15	MP-5	X	.037	7
16	MP-3	Z	.022	1
17	MP-4	Z	.004	1
18	MP-4	Z	.006	5
19	MP-5	Z	.022	1
20	SF2-TH	Z	.005	1.7
21	SF3-TH	Z	.004	1.7
22	MP-3	Z	.008	2
23	MP-3	Z	.007	2
24	MP-4B	Z	.004	2
25	MP-5	Z	.008	2
26	MP-5	Z	.006	2
27	MP-3	Z	.022	7
28	MP-4	Z	.004	3
29	MP-4	Z	.006	7
30	MP-5	Z	.022	7

Member Point Loads (BLC 29 : 225 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.026	1
2	MP-4	X	.005	1
3	MP-4	X	.007	5
4	MP-5	X	.026	1
5	SF2-TH	X	.007	1.7
6	SF3-TH	X	.005	1.7
7	MP-3	X	.012	2
8	MP-3	X	.01	2
9	MP-4B	X	.006	2
10	MP-5	X	.012	2
11	MP-5	X	.009	2
12	MP-3	X	.026	7



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Member Point Loads (BLC 29 : 225 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
13	MP-4	X	.005	3
14	MP-4	X	.007	7
15	MP-5	X	.026	7
16	MP-3	Z	.026	1
17	MP-4	Z	.005	1
18	MP-4	Z	.007	5
19	MP-5	Z	.026	1
20	SF2-TH	Z	.007	1.7
21	SF3-TH	Z	.005	1.7
22	MP-3	Z	.012	2
23	MP-3	Z	.01	2
24	MP-4B	Z	.006	2
25	MP-5	Z	.012	2
26	MP-5	Z	.009	2
27	MP-3	Z	.026	7
28	MP-4	Z	.005	3
29	MP-4	Z	.007	7
30	MP-5	Z	.026	7

Member Point Loads (BLC 30 : 240 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	.015	1
2	MP-4	X	.003	1
3	MP-4	X	.004	5
4	MP-5	X	.015	1
5	SF2-TH	X	.005	1.7
6	SF3-TH	X	.004	1.7
7	MP-3	X	.01	2
8	MP-3	X	.007	2
9	MP-4B	X	.004	2
10	MP-5	X	.01	2
11	MP-5	X	.006	2
12	MP-3	X	.015	7
13	MP-4	X	.003	3
14	MP-4	X	.004	7
15	MP-5	X	.015	7
16	MP-3	Z	.026	1
17	MP-4	Z	.005	1
18	MP-4	Z	.007	5
19	MP-5	Z	.026	1
20	SF2-TH	Z	.009	1.7
21	SF3-TH	Z	.006	1.7
22	MP-3	Z	.017	2
23	MP-3	Z	.013	2
24	MP-4B	Z	.008	2
25	MP-5	Z	.017	2
26	MP-5	Z	.011	2
27	MP-3	Z	.026	7
28	MP-4	Z	.005	3
29	MP-4	Z	.007	7
30	MP-5	Z	.026	7



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Member Point Loads (BLC 31 : 270 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	Z	.023	1
2	MP-4	Z	.004	1
3	MP-4	Z	.007	5
4	MP-5	Z	.023	1
5	SF2-TH	Z	.01	1.7
6	SF3-TH	Z	.007	1.7
7	MP-3	Z	.014	2
8	MP-3	Z	.012	2
9	MP-4B	Z	.009	2
10	MP-5	Z	.014	2
11	MP-5	Z	.012	2
12	MP-3	Z	.023	7
13	MP-4	Z	.004	3
14	MP-4	Z	.007	7
15	MP-5	Z	.023	7

Member Point Loads (BLC 32 : 300 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-3	X	-.015	1
2	MP-4	X	-.003	1
3	MP-4	X	-.004	5
4	MP-5	X	-.015	1
5	SF2-TH	X	-.007	1.7
6	SF3-TH	X	-.004	1.7
7	MP-3	X	-.01	2
8	MP-3	X	-.007	2
9	MP-4B	X	-.004	2
10	MP-5	X	-.01	2
11	MP-5	X	-.006	2
12	MP-3	X	-.015	7
13	MP-4	X	-.003	3
14	MP-4	X	-.004	7
15	MP-5	X	-.015	7
16	MP-3	Z	.026	1
17	MP-4	Z	.005	1
18	MP-4	Z	.007	5
19	MP-5	Z	.026	1
20	SF2-TH	Z	.013	1.7
21	SF3-TH	Z	.006	1.7
22	MP-3	Z	.017	2
23	MP-3	Z	.013	2
24	MP-4B	Z	.008	2
25	MP-5	Z	.017	2
26	MP-5	Z	.011	2
27	MP-3	Z	.026	7
28	MP-4	Z	.005	3
29	MP-4	Z	.007	7
30	MP-5	Z	.026	7

Member Point Loads (BLC 33 : 315 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
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Member Point Loads (BLC 33 : 315 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-.026	1
2	MP-4	X	-.005	1
3	MP-4	X	-.007	5
4	MP-5	X	-.026	1
5	SF2-TH	X	-.01	1.7
6	SF3-TH	X	-.005	1.7
7	MP-3	X	-.012	2
8	MP-3	X	-.01	2
9	MP-4B	X	-.006	2
10	MP-5	X	-.012	2
11	MP-5	X	-.009	2
12	MP-3	X	-.026	7
13	MP-4	X	-.005	3
14	MP-4	X	-.007	7
15	MP-5	X	-.026	7
16	MP-3	Z	.026	1
17	MP-4	Z	.005	1
18	MP-4	Z	.007	5
19	MP-5	Z	.026	1
20	SF2-TH	Z	.01	1.7
21	SF3-TH	Z	.005	1.7
22	MP-3	Z	.012	2
23	MP-3	Z	.01	2
24	MP-4B	Z	.006	2
25	MP-5	Z	.012	2
26	MP-5	Z	.009	2
27	MP-3	Z	.026	7
28	MP-4	Z	.005	3
29	MP-4	Z	.007	7
30	MP-5	Z	.026	7

Member Point Loads (BLC 34 : 330 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-.037	1
2	MP-4	X	-.007	1
3	MP-4	X	-.01	5
4	MP-5	X	-.037	1
5	SF2-TH	X	-.013	1.7
6	SF3-TH	X	-.006	1.7
7	MP-3	X	-.014	2
8	MP-3	X	-.011	2
9	MP-4B	X	-.008	2
10	MP-5	X	-.014	2
11	MP-5	X	-.01	2
12	MP-3	X	-.037	7
13	MP-4	X	-.007	3
14	MP-4	X	-.01	7
15	MP-5	X	-.037	7
16	MP-3	Z	.022	1
17	MP-4	Z	.004	1
18	MP-4	Z	.006	5



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Member Point Loads (BLC 34 : 330 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
19	MP-5	Z	.022	1
20	SF2-TH	Z	.007	1.7
21	SF3-TH	Z	.004	1.7
22	MP-3	Z	.008	2
23	MP-3	Z	.007	2
24	MP-4B	Z	.004	2
25	MP-5	Z	.008	2
26	MP-5	Z	.006	2
27	MP-3	Z	.022	7
28	MP-4	Z	.004	3
29	MP-4	Z	.006	7
30	MP-5	Z	.022	7

Member Point Loads (BLC 37 : Seismic Load X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	X	-.044	1
2	MP-4	X	-.033	1
3	MP-4	X	-.041	5
4	MP-5	X	-.053	1
5	SF2-TH	X	-.06	1.7
6	SF3-TH	X	-.019	1.7
7	MP-3	X	-.053	2
8	MP-3	X	-.071	2
9	MP-4B	X	-.016	2
10	MP-5	X	-.053	2
11	MP-5	X	-.072	2
12	MP-3	X	-.044	7
13	MP-4	X	-.033	3
14	MP-4	X	-.041	7
15	MP-5	X	-.053	7

Member Point Loads (BLC 38 : Seismic Load Z)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft, %]
1	MP-3	Z	-.044	1
2	MP-4	Z	-.033	1
3	MP-4	Z	-.041	5
4	MP-5	Z	-.053	1
5	SF2-TH	Z	-.06	1.7
6	SF3-TH	Z	-.019	1.7
7	MP-3	Z	-.053	2
8	MP-3	Z	-.071	2
9	MP-4B	Z	-.016	2
10	MP-5	Z	-.053	2
11	MP-5	Z	-.072	2
12	MP-3	Z	-.044	7
13	MP-4	Z	-.033	3
14	MP-4	Z	-.041	7
15	MP-5	Z	-.053	7



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Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	FFBH-L	X	-0.009	-0.009	0	%100
2	FFBH-M	X	-0.009	-0.009	0	%100
3	FFBH-R	X	-0.009	-0.009	0	%100
4	FFTH-L	X	-0.009	-0.009	0	%100
5	FFTH-M	X	-0.009	-0.009	0	%100
6	FFTH-R	X	-0.009	-0.009	0	%100
7	SA-1	X	-0.002	-0.002	0	%100
8	SF2-D1	X	-0.004	-0.004	0	%100
9	SF2-D2	X	-0.004	-0.004	0	%100
10	SF3-D1	X	-0.004	-0.004	0	%100
11	SF3-D2	X	-0.004	-0.004	0	%100
12	SF2-BH	X	-0.005	-0.005	0	%100
13	SF2-TH	X	-0.005	-0.005	0	%100
14	SF3-BH	X	-0.005	-0.005	0	%100
15	SF3-TH	X	-0.005	-0.005	0	%100
16	SF2-V1	X	-0.004	-0.004	0	%100
17	SF2-V2	X	-0.004	-0.004	0	%100
18	SF3-V1	X	-0.004	-0.004	0	%100
19	SF3-V2	X	-0.004	-0.004	0	%100
20	SF2-V3	X	-0.006	-0.006	0	%100
21	SF3-V3	X	-0.006	-0.006	0	%100
22	MP-1	X	-0.007	-0.007	0	%100
23	MP-2	X	-0.007	-0.007	0	%100
24	MP-3	X	-0.007	-0.007	0	%100
25	MP-4B	X	-0.007	-0.007	0	%100
26	MP-5	X	-0.007	-0.007	0	%100
27	TRP-1	X	-0.007	-0.007	0	%100
28	TRP-2	X	-0.007	-0.007	0	%100
29	TRP-3	X	-0.007	-0.007	0	%100
30	TRP-4	X	-0.007	-0.007	0	%100
31	TR-1	X	0	0	0	%100
32	TR-2	X	0	0	0	%100
33	TR-3	X	0	0	0	%100
34	TR-4	X	0	0	0	%100
35	MP-4	X	-0.007	-0.007	0	%100

Member Distributed Loads (BLC 3 : 30 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	FFBH-L	X	-0.006	-0.006	0	%100
2	FFBH-M	X	-0.006	-0.006	0	%100
3	FFBH-R	X	-0.006	-0.006	0	%100
4	FFTH-L	X	-0.006	-0.006	0	%100
5	FFTH-M	X	-0.006	-0.006	0	%100
6	FFTH-R	X	-0.006	-0.006	0	%100
7	SA-1	X	-0.004	-0.004	0	%100
8	SF2-D1	X	-0.004	-0.004	0	%100
9	SF2-D2	X	-0.004	-0.004	0	%100
10	SF3-D1	X	-0.004	-0.004	0	%100
11	SF3-D2	X	-0.004	-0.004	0	%100
12	SF2-BH	X	-0.006	-0.006	0	%100



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Member Distributed Loads (BLC 3 : 30 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
13	SF2-TH	X	-0.006	-0.006	0	%100
14	SF3-BH	X	-0.002	-0.002	0	%100
15	SF3-TH	X	-0.002	-0.002	0	%100
16	SF2-V1	X	-0.004	-0.004	0	%100
17	SF2-V2	X	-0.004	-0.004	0	%100
18	SF3-V1	X	-0.004	-0.004	0	%100
19	SF3-V2	X	-0.004	-0.004	0	%100
20	SF2-V3	X	-0.005	-0.005	0	%100
21	SF3-V3	X	-0.005	-0.005	0	%100
22	MP-1	X	-0.006	-0.006	0	%100
23	MP-2	X	-0.006	-0.006	0	%100
24	MP-3	X	-0.006	-0.006	0	%100
25	MP-4B	X	-0.006	-0.006	0	%100
26	MP-5	X	-0.006	-0.006	0	%100
27	TRP-1	X	-0.005	-0.005	0	%100
28	TRP-2	X	-0.005	-0.005	0	%100
29	TRP-3	X	-0.005	-0.005	0	%100
30	TRP-4	X	-0.005	-0.005	0	%100
31	TR-1	X	-0.000376	-0.000376	0	%100
32	TR-2	X	-0.000376	-0.000376	0	%100
33	TR-3	X	-0.000376	-0.000376	0	%100
34	TR-4	X	-0.000376	-0.000376	0	%100
35	MP-4	X	-0.006	-0.006	0	%100
36	FFBH-L	Z	-0.004	-0.004	0	%100
37	FFBH-M	Z	-0.004	-0.004	0	%100
38	FFBH-R	Z	-0.004	-0.004	0	%100
39	FFTH-L	Z	-0.004	-0.004	0	%100
40	FFTH-M	Z	-0.004	-0.004	0	%100
41	FFTH-R	Z	-0.004	-0.004	0	%100
42	SA-1	Z	-0.003	-0.003	0	%100
43	SF2-D1	Z	-0.002	-0.002	0	%100
44	SF2-D2	Z	-0.002	-0.002	0	%100
45	SF3-D1	Z	-0.002	-0.002	0	%100
46	SF3-D2	Z	-0.002	-0.002	0	%100
47	SF2-BH	Z	-0.003	-0.003	0	%100
48	SF2-TH	Z	-0.003	-0.003	0	%100
49	SF3-BH	Z	-0.000985	-0.000985	0	%100
50	SF3-TH	Z	-0.000985	-0.000985	0	%100
51	SF2-V1	Z	-0.002	-0.002	0	%100
52	SF2-V2	Z	-0.002	-0.002	0	%100
53	SF3-V1	Z	-0.002	-0.002	0	%100
54	SF3-V2	Z	-0.002	-0.002	0	%100
55	SF2-V3	Z	-0.003	-0.003	0	%100
56	SF3-V3	Z	-0.003	-0.003	0	%100
57	MP-1	Z	-0.004	-0.004	0	%100
58	MP-2	Z	-0.004	-0.004	0	%100
59	MP-3	Z	-0.004	-0.004	0	%100
60	MP-4B	Z	-0.004	-0.004	0	%100
61	MP-5	Z	-0.004	-0.004	0	%100
62	TRP-1	Z	-0.003	-0.003	0	%100
63	TRP-2	Z	-0.003	-0.003	0	%100
64	TRP-3	Z	-0.003	-0.003	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
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Member Distributed Loads (BLC 3 : 30 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
65 TRP-4	Z	-0.003	-0.003	0	%100
66 TR-1	Z	-0.000282	-0.000282	0	%100
67 TR-2	Z	-0.000282	-0.000282	0	%100
68 TR-3	Z	-0.000282	-0.000282	0	%100
69 TR-4	Z	-0.000282	-0.000282	0	%100
70 MP-4	Z	-0.004	-0.004	0	%100

Member Distributed Loads (BLC 4 : 45 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
1 FFBH-L	X	-0.004	-0.004	0	%100
2 FFBH-M	X	-0.004	-0.004	0	%100
3 FFBH-R	X	-0.004	-0.004	0	%100
4 FFTH-L	X	-0.004	-0.004	0	%100
5 FFTH-M	X	-0.004	-0.004	0	%100
6 FFTH-R	X	-0.004	-0.004	0	%100
7 SA-1	X	-0.003	-0.003	0	%100
8 SF2-D1	X	-0.003	-0.003	0	%100
9 SF2-D2	X	-0.003	-0.003	0	%100
10 SF3-D1	X	-0.003	-0.003	0	%100
11 SF3-D2	X	-0.003	-0.003	0	%100
12 SF2-BH	X	-0.005	-0.005	0	%100
13 SF2-TH	X	-0.005	-0.005	0	%100
14 SF3-BH	X	-0.000237	-0.000237	0	%100
15 SF3-TH	X	-0.000237	-0.000237	0	%100
16 SF2-V1	X	-0.003	-0.003	0	%100
17 SF2-V2	X	-0.003	-0.003	0	%100
18 SF3-V1	X	-0.003	-0.003	0	%100
19 SF3-V2	X	-0.003	-0.003	0	%100
20 SF2-V3	X	-0.004	-0.004	0	%100
21 SF3-V3	X	-0.004	-0.004	0	%100
22 MP-1	X	-0.005	-0.005	0	%100
23 MP-2	X	-0.005	-0.005	0	%100
24 MP-3	X	-0.005	-0.005	0	%100
25 MP-4B	X	-0.005	-0.005	0	%100
26 MP-5	X	-0.005	-0.005	0	%100
27 TRP-1	X	-0.004	-0.004	0	%100
28 TRP-2	X	-0.004	-0.004	0	%100
29 TRP-3	X	-0.004	-0.004	0	%100
30 TRP-4	X	-0.004	-0.004	0	%100
31 TR-1	X	-0.000434	-0.000434	0	%100
32 TR-2	X	-0.000434	-0.000434	0	%100
33 TR-3	X	-0.000434	-0.000434	0	%100
34 TR-4	X	-0.000434	-0.000434	0	%100
35 MP-4	X	-0.005	-0.005	0	%100
36 FFBH-L	Z	-0.004	-0.004	0	%100
37 FFBH-M	Z	-0.004	-0.004	0	%100
38 FFBH-R	Z	-0.004	-0.004	0	%100
39 FFTH-L	Z	-0.004	-0.004	0	%100
40 FFTH-M	Z	-0.004	-0.004	0	%100
41 FFTH-R	Z	-0.004	-0.004	0	%100
42 SA-1	Z	-0.005	-0.005	0	%100



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Member Distributed Loads (BLC 4 : 45 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
43 SF2-D1	Z	-0.003	-0.003	0	%100
44 SF2-D2	Z	-0.003	-0.003	0	%100
45 SF3-D1	Z	-0.003	-0.003	0	%100
46 SF3-D2	Z	-0.003	-0.003	0	%100
47 SF2-BH	Z	-0.005	-0.005	0	%100
48 SF2-TH	Z	-0.005	-0.005	0	%100
49 SF3-BH	Z	-0.000227	-0.000227	0	%100
50 SF3-TH	Z	-0.000227	-0.000227	0	%100
51 SF2-V1	Z	-0.003	-0.003	0	%100
52 SF2-V2	Z	-0.003	-0.003	0	%100
53 SF3-V1	Z	-0.003	-0.003	0	%100
54 SF3-V2	Z	-0.003	-0.003	0	%100
55 SF2-V3	Z	-0.004	-0.004	0	%100
56 SF3-V3	Z	-0.004	-0.004	0	%100
57 MP-1	Z	-0.005	-0.005	0	%100
58 MP-2	Z	-0.005	-0.005	0	%100
59 MP-3	Z	-0.005	-0.005	0	%100
60 MP-4B	Z	-0.005	-0.005	0	%100
61 MP-5	Z	-0.005	-0.005	0	%100
62 TRP-1	Z	-0.004	-0.004	0	%100
63 TRP-2	Z	-0.004	-0.004	0	%100
64 TRP-3	Z	-0.004	-0.004	0	%100
65 TRP-4	Z	-0.004	-0.004	0	%100
66 TR-1	Z	-0.000565	-0.000565	0	%100
67 TR-2	Z	-0.000565	-0.000565	0	%100
68 TR-3	Z	-0.000565	-0.000565	0	%100
69 TR-4	Z	-0.000565	-0.000565	0	%100
70 MP-4	Z	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 5 : 60 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
1 FFBH-L	X	-0.002	-0.002	0	%100
2 FFBH-M	X	-0.002	-0.002	0	%100
3 FFBH-R	X	-0.002	-0.002	0	%100
4 FFTH-L	X	-0.002	-0.002	0	%100
5 FFTH-M	X	-0.002	-0.002	0	%100
6 FFTH-R	X	-0.002	-0.002	0	%100
7 SA-1	X	-0.003	-0.003	0	%100
8 SF2-D1	X	-0.002	-0.002	0	%100
9 SF2-D2	X	-0.002	-0.002	0	%100
10 SF3-D1	X	-0.002	-0.002	0	%100
11 SF3-D2	X	-0.002	-0.002	0	%100
12 SF2-BH	X	-0.003	-0.003	0	%100
13 SF2-TH	X	-0.003	-0.003	0	%100
14 SF3-BH	X	-0.000703	-0.000703	0	%100
15 SF3-TH	X	-0.000703	-0.000703	0	%100
16 SF2-V1	X	-0.002	-0.002	0	%100
17 SF2-V2	X	-0.002	-0.002	0	%100
18 SF3-V1	X	-0.002	-0.002	0	%100
19 SF3-V2	X	-0.002	-0.002	0	%100
20 SF2-V3	X	-0.003	-0.003	0	%100



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Member Distributed Loads (BLC 5 : 60 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
21 SF3-V3	X	-.003	-.003	0	%100
22 MP-1	X	-.004	-.004	0	%100
23 MP-2	X	-.004	-.004	0	%100
24 MP-3	X	-.004	-.004	0	%100
25 MP-4B	X	-.004	-.004	0	%100
26 MP-5	X	-.004	-.004	0	%100
27 TRP-1	X	-.002	-.002	0	%100
28 TRP-2	X	-.002	-.002	0	%100
29 TRP-3	X	-.002	-.002	0	%100
30 TRP-4	X	-.002	-.002	0	%100
31 TR-1	X	-.000376	-.000376	0	%100
32 TR-2	X	-.000376	-.000376	0	%100
33 TR-3	X	-.000376	-.000376	0	%100
34 TR-4	X	-.000376	-.000376	0	%100
35 MP-4	X	-.004	-.004	0	%100
36 FFBH-L	Z	-.004	-.004	0	%100
37 FFBH-M	Z	-.004	-.004	0	%100
38 FFBH-R	Z	-.004	-.004	0	%100
39 FFTH-L	Z	-.004	-.004	0	%100
40 FFTH-M	Z	-.004	-.004	0	%100
41 FFTH-R	Z	-.004	-.004	0	%100
42 SA-1	Z	-.006	-.006	0	%100
43 SF2-D1	Z	-.004	-.004	0	%100
44 SF2-D2	Z	-.004	-.004	0	%100
45 SF3-D1	Z	-.004	-.004	0	%100
46 SF3-D2	Z	-.004	-.004	0	%100
47 SF2-BH	Z	-.005	-.005	0	%100
48 SF2-TH	Z	-.005	-.005	0	%100
49 SF3-BH	Z	-.001	-.001	0	%100
50 SF3-TH	Z	-.001	-.001	0	%100
51 SF2-V1	Z	-.004	-.004	0	%100
52 SF2-V2	Z	-.004	-.004	0	%100
53 SF3-V1	Z	-.004	-.004	0	%100
54 SF3-V2	Z	-.004	-.004	0	%100
55 SF2-V3	Z	-.005	-.005	0	%100
56 SF3-V3	Z	-.005	-.005	0	%100
57 MP-1	Z	-.006	-.006	0	%100
58 MP-2	Z	-.006	-.006	0	%100
59 MP-3	Z	-.006	-.006	0	%100
60 MP-4B	Z	-.006	-.006	0	%100
61 MP-5	Z	-.006	-.006	0	%100
62 TRP-1	Z	-.003	-.003	0	%100
63 TRP-2	Z	-.003	-.003	0	%100
64 TRP-3	Z	-.003	-.003	0	%100
65 TRP-4	Z	-.003	-.003	0	%100
66 TR-1	Z	-.000847	-.000847	0	%100
67 TR-2	Z	-.000847	-.000847	0	%100
68 TR-3	Z	-.000847	-.000847	0	%100
69 TR-4	Z	-.000847	-.000847	0	%100
70 MP-4	Z	-.006	-.006	0	%100



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Member Distributed Loads (BLC 6 : 90 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1 FFBH-L	Z	0	0	0	%100
2 FFBH-M	Z	0	0	0	%100
3 FFBH-R	Z	0	0	0	%100
4 FFTH-L	Z	0	0	0	%100
5 FFTH-M	Z	0	0	0	%100
6 FFTH-R	Z	0	0	0	%100
7 SA-1	Z	-.007	-.007	0	%100
8 SF2-D1	Z	-.004	-.004	0	%100
9 SF2-D2	Z	-.004	-.004	0	%100
10 SF3-D1	Z	-.004	-.004	0	%100
11 SF3-D2	Z	-.004	-.004	0	%100
12 SF2-BH	Z	-.004	-.004	0	%100
13 SF2-TH	Z	-.004	-.004	0	%100
14 SF3-BH	Z	-.004	-.004	0	%100
15 SF3-TH	Z	-.004	-.004	0	%100
16 SF2-V1	Z	-.004	-.004	0	%100
17 SF2-V2	Z	-.004	-.004	0	%100
18 SF3-V1	Z	-.004	-.004	0	%100
19 SF3-V2	Z	-.004	-.004	0	%100
20 SF2-V3	Z	-.006	-.006	0	%100
21 SF3-V3	Z	-.006	-.006	0	%100
22 MP-1	Z	-.007	-.007	0	%100
23 MP-2	Z	-.007	-.007	0	%100
24 MP-3	Z	-.007	-.007	0	%100
25 MP-4B	Z	-.007	-.007	0	%100
26 MP-5	Z	-.007	-.007	0	%100
27 TRP-1	Z	0	0	0	%100
28 TRP-2	Z	0	0	0	%100
29 TRP-3	Z	0	0	0	%100
30 TRP-4	Z	0	0	0	%100
31 TR-1	Z	-.001	-.001	0	%100
32 TR-2	Z	-.001	-.001	0	%100
33 TR-3	Z	-.001	-.001	0	%100
34 TR-4	Z	-.001	-.001	0	%100
35 MP-4	Z	-.007	-.007	0	%100

Member Distributed Loads (BLC 7 : 120 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1 FFBH-L	X	.002	.002	0	%100
2 FFBH-M	X	.002	.002	0	%100
3 FFBH-R	X	.002	.002	0	%100
4 FFTH-L	X	.002	.002	0	%100
5 FFTH-M	X	.002	.002	0	%100
6 FFTH-R	X	.002	.002	0	%100
7 SA-1	X	.002	.002	0	%100
8 SF2-D1	X	.002	.002	0	%100
9 SF2-D2	X	.002	.002	0	%100
10 SF3-D1	X	.002	.002	0	%100
11 SF3-D2	X	.002	.002	0	%100
12 SF2-BH	X	.000703	.000703	0	%100
13 SF2-TH	X	.000703	.000703	0	%100



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Member Distributed Loads (BLC 7 : 120 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude(k/ft,...	End Magnitude(k/ft,F...	Start Location(ft,%)	End Location(ft,%)
14 SF3-BH	X	.003	.003	0	%100
15 SF3-TH	X	.003	.003	0	%100
16 SF2-V1	X	.002	.002	0	%100
17 SF2-V2	X	.002	.002	0	%100
18 SF3-V1	X	.002	.002	0	%100
19 SF3-V2	X	.002	.002	0	%100
20 SF2-V3	X	.003	.003	0	%100
21 SF3-V3	X	.003	.003	0	%100
22 MP-1	X	.004	.004	0	%100
23 MP-2	X	.004	.004	0	%100
24 MP-3	X	.004	.004	0	%100
25 MP-4B	X	.004	.004	0	%100
26 MP-5	X	.004	.004	0	%100
27 TRP-1	X	.002	.002	0	%100
28 TRP-2	X	.002	.002	0	%100
29 TRP-3	X	.002	.002	0	%100
30 TRP-4	X	.002	.002	0	%100
31 TR-1	X	.000376	.000376	0	%100
32 TR-2	X	.000376	.000376	0	%100
33 TR-3	X	.000376	.000376	0	%100
34 TR-4	X	.000376	.000376	0	%100
35 MP-4	X	.004	.004	0	%100
36 FFBH-L	Z	-.004	-.004	0	%100
37 FFBH-M	Z	-.004	-.004	0	%100
38 FFBH-R	Z	-.004	-.004	0	%100
39 FFTH-L	Z	-.004	-.004	0	%100
40 FFTH-M	Z	-.004	-.004	0	%100
41 FFTH-R	Z	-.004	-.004	0	%100
42 SA-1	Z	-.004	-.004	0	%100
43 SF2-D1	Z	-.004	-.004	0	%100
44 SF2-D2	Z	-.004	-.004	0	%100
45 SF3-D1	Z	-.004	-.004	0	%100
46 SF3-D2	Z	-.004	-.004	0	%100
47 SF2-BH	Z	-.001	-.001	0	%100
48 SF2-TH	Z	-.001	-.001	0	%100
49 SF3-BH	Z	-.005	-.005	0	%100
50 SF3-TH	Z	-.005	-.005	0	%100
51 SF2-V1	Z	-.004	-.004	0	%100
52 SF2-V2	Z	-.004	-.004	0	%100
53 SF3-V1	Z	-.004	-.004	0	%100
54 SF3-V2	Z	-.004	-.004	0	%100
55 SF2-V3	Z	-.005	-.005	0	%100
56 SF3-V3	Z	-.005	-.005	0	%100
57 MP-1	Z	-.006	-.006	0	%100
58 MP-2	Z	-.006	-.006	0	%100
59 MP-3	Z	-.006	-.006	0	%100
60 MP-4B	Z	-.006	-.006	0	%100
61 MP-5	Z	-.006	-.006	0	%100
62 TRP-1	Z	-.003	-.003	0	%100
63 TRP-2	Z	-.003	-.003	0	%100
64 TRP-3	Z	-.003	-.003	0	%100
65 TRP-4	Z	-.003	-.003	0	%100



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Member Distributed Loads (BLC 7 : 120 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude(k/ft,...	End Magnitude(k/ft,F...	Start Location(ft,%)	End Location(ft,%)
66 TR-1	Z	-.000847	-.000847	0	%100
67 TR-2	Z	-.000847	-.000847	0	%100
68 TR-3	Z	-.000847	-.000847	0	%100
69 TR-4	Z	-.000847	-.000847	0	%100
70 MP-4	Z	-.006	-.006	0	%100

Member Distributed Loads (BLC 8 : 135 Wind - No Ice)

Member Label	Direction	Start Magnitude(k/ft,...	End Magnitude(k/ft,F...	Start Location(ft,%)	End Location(ft,%)
1 FFBH-L	X	.004	.004	0	%100
2 FFBH-M	X	.004	.004	0	%100
3 FFBH-R	X	.004	.004	0	%100
4 FFTH-L	X	.004	.004	0	%100
5 FFTH-M	X	.004	.004	0	%100
6 FFTH-R	X	.004	.004	0	%100
7 SA-1	X	.002	.002	0	%100
8 SF2-D1	X	.003	.003	0	%100
9 SF2-D2	X	.003	.003	0	%100
10 SF3-D1	X	.003	.003	0	%100
11 SF3-D2	X	.003	.003	0	%100
12 SF2-BH	X	.000237	.000237	0	%100
13 SF2-TH	X	.000237	.000237	0	%100
14 SF3-BH	X	.005	.005	0	%100
15 SF3-TH	X	.005	.005	0	%100
16 SF2-V1	X	.003	.003	0	%100
17 SF2-V2	X	.003	.003	0	%100
18 SF3-V1	X	.003	.003	0	%100
19 SF3-V2	X	.003	.003	0	%100
20 SF2-V3	X	.004	.004	0	%100
21 SF3-V3	X	.004	.004	0	%100
22 MP-1	X	.005	.005	0	%100
23 MP-2	X	.005	.005	0	%100
24 MP-3	X	.005	.005	0	%100
25 MP-4B	X	.005	.005	0	%100
26 MP-5	X	.005	.005	0	%100
27 TRP-1	X	.004	.004	0	%100
28 TRP-2	X	.004	.004	0	%100
29 TRP-3	X	.004	.004	0	%100
30 TRP-4	X	.004	.004	0	%100
31 TR-1	X	.000434	.000434	0	%100
32 TR-2	X	.000434	.000434	0	%100
33 TR-3	X	.000434	.000434	0	%100
34 TR-4	X	.000434	.000434	0	%100
35 MP-4	X	.005	.005	0	%100
36 FFBH-L	Z	-.004	-.004	0	%100
37 FFBH-M	Z	-.004	-.004	0	%100
38 FFBH-R	Z	-.004	-.004	0	%100
39 FFTH-L	Z	-.004	-.004	0	%100
40 FFTH-M	Z	-.004	-.004	0	%100
41 FFTH-R	Z	-.004	-.004	0	%100
42 SA-1	Z	-.002	-.002	0	%100
43 SF2-D1	Z	-.003	-.003	0	%100



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Member Distributed Loads (BLC 8 : 135 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
44	SF2-D2	Z	-.003	0	%100
45	SF3-D1	Z	-.003	0	%100
46	SF3-D2	Z	-.003	0	%100
47	SF2-BH	Z	-.000227	0	%100
48	SF2-TH	Z	-.000227	0	%100
49	SF3-BH	Z	-.005	0	%100
50	SF3-TH	Z	-.005	0	%100
51	SF2-V1	Z	-.003	0	%100
52	SF2-V2	Z	-.003	0	%100
53	SF3-V1	Z	-.003	0	%100
54	SF3-V2	Z	-.003	0	%100
55	SF2-V3	Z	-.004	0	%100
56	SF3-V3	Z	-.004	0	%100
57	MP-1	Z	-.005	0	%100
58	MP-2	Z	-.005	0	%100
59	MP-3	Z	-.005	0	%100
60	MP-4B	Z	-.005	0	%100
61	MP-5	Z	-.005	0	%100
62	TRP-1	Z	-.004	0	%100
63	TRP-2	Z	-.004	0	%100
64	TRP-3	Z	-.004	0	%100
65	TRP-4	Z	-.004	0	%100
66	TR-1	Z	-.000565	0	%100
67	TR-2	Z	-.000565	0	%100
68	TR-3	Z	-.000565	0	%100
69	TR-4	Z	-.000565	0	%100
70	MP-4	Z	-.005	0	%100

Member Distributed Loads (BLC 9 : 150 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
1	FFBH-L	X	.006	0	%100
2	FFBH-M	X	.006	0	%100
3	FFBH-R	X	.006	0	%100
4	FFTH-L	X	.006	0	%100
5	FFTH-M	X	.006	0	%100
6	FFTH-R	X	.006	0	%100
7	SA-1	X	.000715	0	%100
8	SF2-D1	X	.004	0	%100
9	SF2-D2	X	.004	0	%100
10	SF3-D1	X	.004	0	%100
11	SF3-D2	X	.004	0	%100
12	SF2-BH	X	.002	0	%100
13	SF2-TH	X	.002	0	%100
14	SF3-BH	X	.006	0	%100
15	SF3-TH	X	.006	0	%100
16	SF2-V1	X	.004	0	%100
17	SF2-V2	X	.004	0	%100
18	SF3-V1	X	.004	0	%100
19	SF3-V2	X	.004	0	%100
20	SF2-V3	X	.005	0	%100
21	SF3-V3	X	.005	0	%100



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Member Distributed Loads (BLC 9 : 150 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
22	MP-1	X	.006	0	%100
23	MP-2	X	.006	0	%100
24	MP-3	X	.006	0	%100
25	MP-4B	X	.006	0	%100
26	MP-5	X	.006	0	%100
27	TRP-1	X	.005	0	%100
28	TRP-2	X	.005	0	%100
29	TRP-3	X	.005	0	%100
30	TRP-4	X	.005	0	%100
31	TR-1	X	.000376	0	%100
32	TR-2	X	.000376	0	%100
33	TR-3	X	.000376	0	%100
34	TR-4	X	.000376	0	%100
35	MP-4	X	.006	0	%100
36	FFBH-L	Z	-.004	0	%100
37	FFBH-M	Z	-.004	0	%100
38	FFBH-R	Z	-.004	0	%100
39	FFTH-L	Z	-.004	0	%100
40	FFTH-M	Z	-.004	0	%100
41	FFTH-R	Z	-.004	0	%100
42	SA-1	Z	-.000551	0	%100
43	SF2-D1	Z	-.002	0	%100
44	SF2-D2	Z	-.002	0	%100
45	SF3-D1	Z	-.002	0	%100
46	SF3-D2	Z	-.002	0	%100
47	SF2-BH	Z	-.000985	0	%100
48	SF2-TH	Z	-.000985	0	%100
49	SF3-BH	Z	-.003	0	%100
50	SF3-TH	Z	-.003	0	%100
51	SF2-V1	Z	-.002	0	%100
52	SF2-V2	Z	-.002	0	%100
53	SF3-V1	Z	-.002	0	%100
54	SF3-V2	Z	-.002	0	%100
55	SF2-V3	Z	-.003	0	%100
56	SF3-V3	Z	-.003	0	%100
57	MP-1	Z	-.004	0	%100
58	MP-2	Z	-.004	0	%100
59	MP-3	Z	-.004	0	%100
60	MP-4B	Z	-.004	0	%100
61	MP-5	Z	-.004	0	%100
62	TRP-1	Z	-.003	0	%100
63	TRP-2	Z	-.003	0	%100
64	TRP-3	Z	-.003	0	%100
65	TRP-4	Z	-.003	0	%100
66	TR-1	Z	-.000282	0	%100
67	TR-2	Z	-.000282	0	%100
68	TR-3	Z	-.000282	0	%100
69	TR-4	Z	-.000282	0	%100
70	MP-4	Z	-.004	0	%100

Member Distributed Loads (BLC 10 : 180 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
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Member Distributed Loads (BLC 10 : 180 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1 FFBH-L	X	.009	.009	0	%100
2 FFBH-M	X	.009	.009	0	%100
3 FFBH-R	X	.009	.009	0	%100
4 FFTH-L	X	.009	.009	0	%100
5 FFTH-M	X	.009	.009	0	%100
6 FFTH-R	X	.009	.009	0	%100
7 SA-1	X	.002	.002	0	%100
8 SF2-D1	X	.004	.004	0	%100
9 SF2-D2	X	.004	.004	0	%100
10 SF3-D1	X	.004	.004	0	%100
11 SF3-D2	X	.004	.004	0	%100
12 SF2-BH	X	.005	.005	0	%100
13 SF2-TH	X	.005	.005	0	%100
14 SF3-BH	X	.005	.005	0	%100
15 SF3-TH	X	.005	.005	0	%100
16 SF2-V1	X	.004	.004	0	%100
17 SF2-V2	X	.004	.004	0	%100
18 SF3-V1	X	.004	.004	0	%100
19 SF3-V2	X	.004	.004	0	%100
20 SF2-V3	X	.006	.006	0	%100
21 SF3-V3	X	.006	.006	0	%100
22 MP-1	X	.007	.007	0	%100
23 MP-2	X	.007	.007	0	%100
24 MP-3	X	.007	.007	0	%100
25 MP-4B	X	.007	.007	0	%100
26 MP-5	X	.007	.007	0	%100
27 TRP-1	X	.007	.007	0	%100
28 TRP-2	X	.007	.007	0	%100
29 TRP-3	X	.007	.007	0	%100
30 TRP-4	X	.007	.007	0	%100
31 TR-1	X	0	0	0	%100
32 TR-2	X	0	0	0	%100
33 TR-3	X	0	0	0	%100
34 TR-4	X	0	0	0	%100
35 MP-4	X	.007	.007	0	%100

Member Distributed Loads (BLC 11 : 210 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1 FFBH-L	X	.006	.006	0	%100
2 FFBH-M	X	.006	.006	0	%100
3 FFBH-R	X	.006	.006	0	%100
4 FFTH-L	X	.006	.006	0	%100
5 FFTH-M	X	.006	.006	0	%100
6 FFTH-R	X	.006	.006	0	%100
7 SA-1	X	.004	.004	0	%100
8 SF2-D1	X	.004	.004	0	%100
9 SF2-D2	X	.004	.004	0	%100
10 SF3-D1	X	.004	.004	0	%100
11 SF3-D2	X	.004	.004	0	%100
12 SF2-BH	X	.006	.006	0	%100
13 SF2-TH	X	.006	.006	0	%100



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Member Distributed Loads (BLC 11 : 210 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
14 SF3-BH	X	.002	.002	0	%100
15 SF3-TH	X	.002	.002	0	%100
16 SF2-V1	X	.004	.004	0	%100
17 SF2-V2	X	.004	.004	0	%100
18 SF3-V1	X	.004	.004	0	%100
19 SF3-V2	X	.004	.004	0	%100
20 SF2-V3	X	.005	.005	0	%100
21 SF3-V3	X	.005	.005	0	%100
22 MP-1	X	.006	.006	0	%100
23 MP-2	X	.006	.006	0	%100
24 MP-3	X	.006	.006	0	%100
25 MP-4B	X	.006	.006	0	%100
26 MP-5	X	.006	.006	0	%100
27 TRP-1	X	.005	.005	0	%100
28 TRP-2	X	.005	.005	0	%100
29 TRP-3	X	.005	.005	0	%100
30 TRP-4	X	.005	.005	0	%100
31 TR-1	X	.000376	.000376	0	%100
32 TR-2	X	.000376	.000376	0	%100
33 TR-3	X	.000376	.000376	0	%100
34 TR-4	X	.000376	.000376	0	%100
35 MP-4	X	.006	.006	0	%100
36 FFBH-L	Z	.004	.004	0	%100
37 FFBH-M	Z	.004	.004	0	%100
38 FFBH-R	Z	.004	.004	0	%100
39 FFTH-L	Z	.004	.004	0	%100
40 FFTH-M	Z	.004	.004	0	%100
41 FFTH-R	Z	.004	.004	0	%100
42 SA-1	Z	.003	.003	0	%100
43 SF2-D1	Z	.002	.002	0	%100
44 SF2-D2	Z	.002	.002	0	%100
45 SF3-D1	Z	.002	.002	0	%100
46 SF3-D2	Z	.002	.002	0	%100
47 SF2-BH	Z	.003	.003	0	%100
48 SF2-TH	Z	.003	.003	0	%100
49 SF3-BH	Z	.000985	.000985	0	%100
50 SF3-TH	Z	.000985	.000985	0	%100
51 SF2-V1	Z	.002	.002	0	%100
52 SF2-V2	Z	.002	.002	0	%100
53 SF3-V1	Z	.002	.002	0	%100
54 SF3-V2	Z	.002	.002	0	%100
55 SF2-V3	Z	.003	.003	0	%100
56 SF3-V3	Z	.003	.003	0	%100
57 MP-1	Z	.004	.004	0	%100
58 MP-2	Z	.004	.004	0	%100
59 MP-3	Z	.004	.004	0	%100
60 MP-4B	Z	.004	.004	0	%100
61 MP-5	Z	.004	.004	0	%100
62 TRP-1	Z	.003	.003	0	%100
63 TRP-2	Z	.003	.003	0	%100
64 TRP-3	Z	.003	.003	0	%100
65 TRP-4	Z	.003	.003	0	%100



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Member Distributed Loads (BLC 11 : 210 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
66	TR-1	Z	.000282	.000282	0	%100
67	TR-2	Z	.000282	.000282	0	%100
68	TR-3	Z	.000282	.000282	0	%100
69	TR-4	Z	.000282	.000282	0	%100
70	MP-4	Z	.004	.004	0	%100

Member Distributed Loads (BLC 12 : 225 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	.004	.004	0	%100
2	FFBH-M	X	.004	.004	0	%100
3	FFBH-R	X	.004	.004	0	%100
4	FFTH-L	X	.004	.004	0	%100
5	FFTH-M	X	.004	.004	0	%100
6	FFTH-R	X	.004	.004	0	%100
7	SA-1	X	.003	.003	0	%100
8	SF2-D1	X	.003	.003	0	%100
9	SF2-D2	X	.003	.003	0	%100
10	SF3-D1	X	.003	.003	0	%100
11	SF3-D2	X	.003	.003	0	%100
12	SF2-BH	X	.005	.005	0	%100
13	SF2-TH	X	.005	.005	0	%100
14	SF3-BH	X	.000237	.000237	0	%100
15	SF3-TH	X	.000237	.000237	0	%100
16	SF2-V1	X	.003	.003	0	%100
17	SF2-V2	X	.003	.003	0	%100
18	SF3-V1	X	.003	.003	0	%100
19	SF3-V2	X	.003	.003	0	%100
20	SF2-V3	X	.004	.004	0	%100
21	SF3-V3	X	.004	.004	0	%100
22	MP-1	X	.005	.005	0	%100
23	MP-2	X	.005	.005	0	%100
24	MP-3	X	.005	.005	0	%100
25	MP-4B	X	.005	.005	0	%100
26	MP-5	X	.005	.005	0	%100
27	TRP-1	X	.004	.004	0	%100
28	TRP-2	X	.004	.004	0	%100
29	TRP-3	X	.004	.004	0	%100
30	TRP-4	X	.004	.004	0	%100
31	TR-1	X	.000434	.000434	0	%100
32	TR-2	X	.000434	.000434	0	%100
33	TR-3	X	.000434	.000434	0	%100
34	TR-4	X	.000434	.000434	0	%100
35	MP-4	X	.005	.005	0	%100
36	FFBH-L	Z	.004	.004	0	%100
37	FFBH-M	Z	.004	.004	0	%100
38	FFBH-R	Z	.004	.004	0	%100
39	FFTH-L	Z	.004	.004	0	%100
40	FFTH-M	Z	.004	.004	0	%100
41	FFTH-R	Z	.004	.004	0	%100
42	SA-1	Z	.005	.005	0	%100
43	SF2-D1	Z	.003	.003	0	%100



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Member Distributed Loads (BLC 12 : 225 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
44	SF2-D2	Z	.003	.003	0	%100
45	SF3-D1	Z	.003	.003	0	%100
46	SF3-D2	Z	.003	.003	0	%100
47	SF2-BH	Z	.005	.005	0	%100
48	SF2-TH	Z	.005	.005	0	%100
49	SF3-BH	Z	.000227	.000227	0	%100
50	SF3-TH	Z	.000227	.000227	0	%100
51	SF2-V1	Z	.003	.003	0	%100
52	SF2-V2	Z	.003	.003	0	%100
53	SF3-V1	Z	.003	.003	0	%100
54	SF3-V2	Z	.003	.003	0	%100
55	SF2-V3	Z	.004	.004	0	%100
56	SF3-V3	Z	.004	.004	0	%100
57	MP-1	Z	.005	.005	0	%100
58	MP-2	Z	.005	.005	0	%100
59	MP-3	Z	.005	.005	0	%100
60	MP-4B	Z	.005	.005	0	%100
61	MP-5	Z	.005	.005	0	%100
62	TRP-1	Z	.004	.004	0	%100
63	TRP-2	Z	.004	.004	0	%100
64	TRP-3	Z	.004	.004	0	%100
65	TRP-4	Z	.004	.004	0	%100
66	TR-1	Z	.000565	.000565	0	%100
67	TR-2	Z	.000565	.000565	0	%100
68	TR-3	Z	.000565	.000565	0	%100
69	TR-4	Z	.000565	.000565	0	%100
70	MP-4	Z	.005	.005	0	%100

Member Distributed Loads (BLC 13 : 240 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	.002	.002	0	%100
2	FFBH-M	X	.002	.002	0	%100
3	FFBH-R	X	.002	.002	0	%100
4	FFTH-L	X	.002	.002	0	%100
5	FFTH-M	X	.002	.002	0	%100
6	FFTH-R	X	.002	.002	0	%100
7	SA-1	X	.003	.003	0	%100
8	SF2-D1	X	.002	.002	0	%100
9	SF2-D2	X	.002	.002	0	%100
10	SF3-D1	X	.002	.002	0	%100
11	SF3-D2	X	.002	.002	0	%100
12	SF2-BH	X	.003	.003	0	%100
13	SF2-TH	X	.003	.003	0	%100
14	SF3-BH	X	.000703	.000703	0	%100
15	SF3-TH	X	.000703	.000703	0	%100
16	SF2-V1	X	.002	.002	0	%100
17	SF2-V2	X	.002	.002	0	%100
18	SF3-V1	X	.002	.002	0	%100
19	SF3-V2	X	.002	.002	0	%100
20	SF2-V3	X	.003	.003	0	%100
21	SF3-V3	X	.003	.003	0	%100



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Member Distributed Loads (BLC 13 : 240 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
22 MP-1	X	.004	.004	0	%100
23 MP-2	X	.004	.004	0	%100
24 MP-3	X	.004	.004	0	%100
25 MP-4B	X	.004	.004	0	%100
26 MP-5	X	.004	.004	0	%100
27 TRP-1	X	.002	.002	0	%100
28 TRP-2	X	.002	.002	0	%100
29 TRP-3	X	.002	.002	0	%100
30 TRP-4	X	.002	.002	0	%100
31 TR-1	X	.000376	.000376	0	%100
32 TR-2	X	.000376	.000376	0	%100
33 TR-3	X	.000376	.000376	0	%100
34 TR-4	X	.000376	.000376	0	%100
35 MP-4	X	.004	.004	0	%100
36 FFBH-L	Z	.004	.004	0	%100
37 FFBH-M	Z	.004	.004	0	%100
38 FFBH-R	Z	.004	.004	0	%100
39 FFTH-L	Z	.004	.004	0	%100
40 FFTH-M	Z	.004	.004	0	%100
41 FFTH-R	Z	.004	.004	0	%100
42 SA-1	Z	.006	.006	0	%100
43 SF2-D1	Z	.004	.004	0	%100
44 SF2-D2	Z	.004	.004	0	%100
45 SF3-D1	Z	.004	.004	0	%100
46 SF3-D2	Z	.004	.004	0	%100
47 SF2-BH	Z	.005	.005	0	%100
48 SF2-TH	Z	.005	.005	0	%100
49 SF3-BH	Z	.001	.001	0	%100
50 SF3-TH	Z	.001	.001	0	%100
51 SF2-V1	Z	.004	.004	0	%100
52 SF2-V2	Z	.004	.004	0	%100
53 SF3-V1	Z	.004	.004	0	%100
54 SF3-V2	Z	.004	.004	0	%100
55 SF2-V3	Z	.005	.005	0	%100
56 SF3-V3	Z	.005	.005	0	%100
57 MP-1	Z	.006	.006	0	%100
58 MP-2	Z	.006	.006	0	%100
59 MP-3	Z	.006	.006	0	%100
60 MP-4B	Z	.006	.006	0	%100
61 MP-5	Z	.006	.006	0	%100
62 TRP-1	Z	.003	.003	0	%100
63 TRP-2	Z	.003	.003	0	%100
64 TRP-3	Z	.003	.003	0	%100
65 TRP-4	Z	.003	.003	0	%100
66 TR-1	Z	.000847	.000847	0	%100
67 TR-2	Z	.000847	.000847	0	%100
68 TR-3	Z	.000847	.000847	0	%100
69 TR-4	Z	.000847	.000847	0	%100
70 MP-4	Z	.006	.006	0	%100

Member Distributed Loads (BLC 14 : 270 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
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RISA-3D Version 17.0.4

[G:\...\\...\\RISA\S-2 Sector Mount (12.5-ft).r3d]

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Member Distributed Loads (BLC 14 : 270 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
1 FFBH-L	Z	0	0	0	%100
2 FFBH-M	Z	0	0	0	%100
3 FFBH-R	Z	0	0	0	%100
4 FFTH-L	Z	0	0	0	%100
5 FFTH-M	Z	0	0	0	%100
6 FFTH-R	Z	0	0	0	%100
7 SA-1	Z	.007	.007	0	%100
8 SF2-D1	Z	.004	.004	0	%100
9 SF2-D2	Z	.004	.004	0	%100
10 SF3-D1	Z	.004	.004	0	%100
11 SF3-D2	Z	.004	.004	0	%100
12 SF2-BH	Z	.004	.004	0	%100
13 SF2-TH	Z	.004	.004	0	%100
14 SF3-BH	Z	.004	.004	0	%100
15 SF3-TH	Z	.004	.004	0	%100
16 SF2-V1	Z	.004	.004	0	%100
17 SF2-V2	Z	.004	.004	0	%100
18 SF3-V1	Z	.004	.004	0	%100
19 SF3-V2	Z	.004	.004	0	%100
20 SF2-V3	Z	.006	.006	0	%100
21 SF3-V3	Z	.006	.006	0	%100
22 MP-1	Z	.007	.007	0	%100
23 MP-2	Z	.007	.007	0	%100
24 MP-3	Z	.007	.007	0	%100
25 MP-4B	Z	.007	.007	0	%100
26 MP-5	Z	.007	.007	0	%100
27 TRP-1	Z	0	0	0	%100
28 TRP-2	Z	0	0	0	%100
29 TRP-3	Z	0	0	0	%100
30 TRP-4	Z	0	0	0	%100
31 TR-1	Z	.001	.001	0	%100
32 TR-2	Z	.001	.001	0	%100
33 TR-3	Z	.001	.001	0	%100
34 TR-4	Z	.001	.001	0	%100
35 MP-4	Z	.007	.007	0	%100

Member Distributed Loads (BLC 15 : 300 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
1 FFBH-L	X	-.002	-.002	0	%100
2 FFBH-M	X	-.002	-.002	0	%100
3 FFBH-R	X	-.002	-.002	0	%100
4 FFTH-L	X	-.002	-.002	0	%100
5 FFTH-M	X	-.002	-.002	0	%100
6 FFTH-R	X	-.002	-.002	0	%100
7 SA-1	X	-.002	-.002	0	%100
8 SF2-D1	X	-.002	-.002	0	%100
9 SF2-D2	X	-.002	-.002	0	%100
10 SF3-D1	X	-.002	-.002	0	%100
11 SF3-D2	X	-.002	-.002	0	%100
12 SF2-BH	X	-.000703	-.000703	0	%100
13 SF2-TH	X	-.000703	-.000703	0	%100

RISA-3D Version 17.0.4

[G:\...\\...\\RISA\S-2 Sector Mount (12.5-ft).r3d]

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Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Member Distributed Loads (BLC 15 : 300 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
14 SF3-BH	X	-.003	-.003	0	%100
15 SF3-TH	X	-.003	-.003	0	%100
16 SF2-V1	X	-.002	-.002	0	%100
17 SF2-V2	X	-.002	-.002	0	%100
18 SF3-V1	X	-.002	-.002	0	%100
19 SF3-V2	X	-.002	-.002	0	%100
20 SF2-V3	X	-.003	-.003	0	%100
21 SF3-V3	X	-.003	-.003	0	%100
22 MP-1	X	-.004	-.004	0	%100
23 MP-2	X	-.004	-.004	0	%100
24 MP-3	X	-.004	-.004	0	%100
25 MP-4B	X	-.004	-.004	0	%100
26 MP-5	X	-.004	-.004	0	%100
27 TRP-1	X	-.002	-.002	0	%100
28 TRP-2	X	-.002	-.002	0	%100
29 TRP-3	X	-.002	-.002	0	%100
30 TRP-4	X	-.002	-.002	0	%100
31 TR-1	X	-.000376	-.000376	0	%100
32 TR-2	X	-.000376	-.000376	0	%100
33 TR-3	X	-.000376	-.000376	0	%100
34 TR-4	X	-.000376	-.000376	0	%100
35 MP-4	X	-.004	-.004	0	%100
36 FFBH-L	Z	.004	.004	0	%100
37 FFBH-M	Z	.004	.004	0	%100
38 FFBH-R	Z	.004	.004	0	%100
39 FFTH-L	Z	.004	.004	0	%100
40 FFTH-M	Z	.004	.004	0	%100
41 FFTH-R	Z	.004	.004	0	%100
42 SA-1	Z	.004	.004	0	%100
43 SF2-D1	Z	.004	.004	0	%100
44 SF2-D2	Z	.004	.004	0	%100
45 SF3-D1	Z	.004	.004	0	%100
46 SF3-D2	Z	.004	.004	0	%100
47 SF2-BH	Z	.001	.001	0	%100
48 SF2-TH	Z	.001	.001	0	%100
49 SF3-BH	Z	.005	.005	0	%100
50 SF3-TH	Z	.005	.005	0	%100
51 SF2-V1	Z	.004	.004	0	%100
52 SF2-V2	Z	.004	.004	0	%100
53 SF3-V1	Z	.004	.004	0	%100
54 SF3-V2	Z	.004	.004	0	%100
55 SF2-V3	Z	.005	.005	0	%100
56 SF3-V3	Z	.005	.005	0	%100
57 MP-1	Z	.006	.006	0	%100
58 MP-2	Z	.006	.006	0	%100
59 MP-3	Z	.006	.006	0	%100
60 MP-4B	Z	.006	.006	0	%100
61 MP-5	Z	.006	.006	0	%100
62 TRP-1	Z	.003	.003	0	%100
63 TRP-2	Z	.003	.003	0	%100
64 TRP-3	Z	.003	.003	0	%100
65 TRP-4	Z	.003	.003	0	%100



Company : Tower Engineering Professionals, Inc.
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 Job Number : TEP No. 217456.638687
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Member Distributed Loads (BLC 15 : 300 Wind - No Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
66 TR-1	Z	.000847	.000847	0	%100
67 TR-2	Z	.000847	.000847	0	%100
68 TR-3	Z	.000847	.000847	0	%100
69 TR-4	Z	.000847	.000847	0	%100
70 MP-4	Z	.006	.006	0	%100

Member Distributed Loads (BLC 16 : 315 Wind - No Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
1 FFBH-L	X	-.004	-.004	0	%100
2 FFBH-M	X	-.004	-.004	0	%100
3 FFBH-R	X	-.004	-.004	0	%100
4 FFTH-L	X	-.004	-.004	0	%100
5 FFTH-M	X	-.004	-.004	0	%100
6 FFTH-R	X	-.004	-.004	0	%100
7 SA-1	X	-.002	-.002	0	%100
8 SF2-D1	X	-.003	-.003	0	%100
9 SF2-D2	X	-.003	-.003	0	%100
10 SF3-D1	X	-.003	-.003	0	%100
11 SF3-D2	X	-.003	-.003	0	%100
12 SF2-BH	X	-.000237	-.000237	0	%100
13 SF2-TH	X	-.000237	-.000237	0	%100
14 SF3-BH	X	-.005	-.005	0	%100
15 SF3-TH	X	-.005	-.005	0	%100
16 SF2-V1	X	-.003	-.003	0	%100
17 SF2-V2	X	-.003	-.003	0	%100
18 SF3-V1	X	-.003	-.003	0	%100
19 SF3-V2	X	-.003	-.003	0	%100
20 SF2-V3	X	-.004	-.004	0	%100
21 SF3-V3	X	-.004	-.004	0	%100
22 MP-1	X	-.005	-.005	0	%100
23 MP-2	X	-.005	-.005	0	%100
24 MP-3	X	-.005	-.005	0	%100
25 MP-4B	X	-.005	-.005	0	%100
26 MP-5	X	-.005	-.005	0	%100
27 TRP-1	X	-.004	-.004	0	%100
28 TRP-2	X	-.004	-.004	0	%100
29 TRP-3	X	-.004	-.004	0	%100
30 TRP-4	X	-.004	-.004	0	%100
31 TR-1	X	-.000434	-.000434	0	%100
32 TR-2	X	-.000434	-.000434	0	%100
33 TR-3	X	-.000434	-.000434	0	%100
34 TR-4	X	-.000434	-.000434	0	%100
35 MP-4	X	-.005	-.005	0	%100
36 FFBH-L	Z	.004	.004	0	%100
37 FFBH-M	Z	.004	.004	0	%100
38 FFBH-R	Z	.004	.004	0	%100
39 FFTH-L	Z	.004	.004	0	%100
40 FFTH-M	Z	.004	.004	0	%100
41 FFTH-R	Z	.004	.004	0	%100
42 SA-1	Z	.002	.002	0	%100
43 SF2-D1	Z	.003	.003	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
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Member Distributed Loads (BLC 16 : 315 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft. %]	End Location[ft. %]
44	SF2-D2	Z	.003	.003	0	%100
45	SF3-D1	Z	.003	.003	0	%100
46	SF3-D2	Z	.003	.003	0	%100
47	SF2-BH	Z	.000227	.000227	0	%100
48	SF2-TH	Z	.000227	.000227	0	%100
49	SF3-BH	Z	.005	.005	0	%100
50	SF3-TH	Z	.005	.005	0	%100
51	SF2-V1	Z	.003	.003	0	%100
52	SF2-V2	Z	.003	.003	0	%100
53	SF3-V1	Z	.003	.003	0	%100
54	SF3-V2	Z	.003	.003	0	%100
55	SF2-V3	Z	.004	.004	0	%100
56	SF3-V3	Z	.004	.004	0	%100
57	MP-1	Z	.005	.005	0	%100
58	MP-2	Z	.005	.005	0	%100
59	MP-3	Z	.005	.005	0	%100
60	MP-4B	Z	.005	.005	0	%100
61	MP-5	Z	.005	.005	0	%100
62	TRP-1	Z	.004	.004	0	%100
63	TRP-2	Z	.004	.004	0	%100
64	TRP-3	Z	.004	.004	0	%100
65	TRP-4	Z	.004	.004	0	%100
66	TR-1	Z	.000565	.000565	0	%100
67	TR-2	Z	.000565	.000565	0	%100
68	TR-3	Z	.000565	.000565	0	%100
69	TR-4	Z	.000565	.000565	0	%100
70	MP-4	Z	.005	.005	0	%100

Member Distributed Loads (BLC 17 : 330 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft.%]	End Location[ft.%]
1	FFBH-L	X	-0.006	-0.006	0	%100
2	FFBH-M	X	-0.006	-0.006	0	%100
3	FFBH-R	X	-0.006	-0.006	0	%100
4	FFTH-L	X	-0.006	-0.006	0	%100
5	FFTH-M	X	-0.006	-0.006	0	%100
6	FFTH-R	X	-0.006	-0.006	0	%100
7	SA-1	X	-0.000715	-0.000715	0	%100
8	SF2-D1	X	-0.004	-0.004	0	%100
9	SF2-D2	X	-0.004	-0.004	0	%100
10	SF3-D1	X	-0.004	-0.004	0	%100
11	SF3-D2	X	-0.004	-0.004	0	%100
12	SF2-BH	X	-0.002	-0.002	0	%100
13	SF2-TH	X	-0.002	-0.002	0	%100
14	SF3-BH	X	-0.006	-0.006	0	%100
15	SF3-TH	X	-0.006	-0.006	0	%100
16	SF2-V1	X	-0.004	-0.004	0	%100
17	SF2-V2	X	-0.004	-0.004	0	%100
18	SF3-V1	X	-0.004	-0.004	0	%100
19	SF3-V2	X	-0.004	-0.004	0	%100
20	SF2-V3	X	-0.005	-0.005	0	%100
21	SF3-V3	X	-0.005	-0.005	0	%100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 17 : 330 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
22	MP-1	X	-.006	-.006	0	%100
23	MP-2	X	-.006	-.006	0	%100
24	MP-3	X	-.006	-.006	0	%100
25	MP-4B	X	-.006	-.006	0	%100
26	MP-5	X	-.006	-.006	0	%100
27	TRP-1	X	-.005	-.005	0	%100
28	TRP-2	X	-.005	-.005	0	%100
29	TRP-3	X	-.005	-.005	0	%100
30	TRP-4	X	-.005	-.005	0	%100
31	TR-1	X	-.000376	-.000376	0	%100
32	TR-2	X	-.000376	-.000376	0	%100
33	TR-3	X	-.000376	-.000376	0	%100
34	TR-4	X	-.000376	-.000376	0	%100
35	MP-4	X	-.006	-.006	0	%100
36	FFBH-L	Z	.004	.004	0	%100
37	FFBH-M	Z	.004	.004	0	%100
38	FFBH-R	Z	.004	.004	0	%100
39	FFTH-L	Z	.004	.004	0	%100
40	FFTH-M	Z	.004	.004	0	%100
41	FFTH-R	Z	.004	.004	0	%100
42	SA-1	Z	.000551	.000551	0	%100
43	SF2-D1	Z	.002	.002	0	%100
44	SF2-D2	Z	.002	.002	0	%100
45	SF3-D1	Z	.002	.002	0	%100
46	SF3-D2	Z	.002	.002	0	%100
47	SF2-BH	Z	.000985	.000985	0	%100
48	SF2-TH	Z	.000985	.000985	0	%100
49	SF3-BH	Z	.003	.003	0	%100
50	SF3-TH	Z	.003	.003	0	%100
51	SF2-V1	Z	.002	.002	0	%100
52	SF2-V2	Z	.002	.002	0	%100
53	SF3-V1	Z	.002	.002	0	%100
54	SF3-V2	Z	.002	.002	0	%100
55	SF2-V3	Z	.003	.003	0	%100
56	SF3-V3	Z	.003	.003	0	%100
57	MP-1	Z	.004	.004	0	%100
58	MP-2	Z	.004	.004	0	%100
59	MP-3	Z	.004	.004	0	%100
60	MP-4B	Z	.004	.004	0	%100
61	MP-5	Z	.004	.004	0	%100
62	TRP-1	Z	.003	.003	0	%100
63	TRP-2	Z	.003	.003	0	%100
64	TRP-3	Z	.003	.003	0	%100
65	TRP-4	Z	.003	.003	0	%100
66	TR-1	Z	.000282	.000282	0	%100
67	TR-2	Z	.000282	.000282	0	%100
68	TR-3	Z	.000282	.000282	0	%100
69	TR-4	Z	.000282	.000282	0	%100
70	MP-4	Z	.004	.004	0	%100

Member Distributed Loads (BLC 18 : Ice Weight)

Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
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Member Distributed Loads (BLC 18 : Ice Weight) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1 FFBH-L	Y	-01	-01	0	%100
2 FFBH-M	Y	-01	-01	0	%100
3 FFBH-R	Y	-01	-01	0	%100
4 FFTH-L	Y	-01	-01	0	%100
5 FFTH-M	Y	-01	-01	0	%100
6 FFTH-R	Y	-01	-01	0	%100
7 SA-1	Y	-009	-009	0	%100
8 SF2-D1	Y	-007	-007	0	%100
9 SF2-D2	Y	-007	-007	0	%100
10 SF3-D1	Y	-007	-007	0	%100
11 SF3-D2	Y	-007	-007	0	%100
12 SF2-BH	Y	-009	-009	0	%100
13 SF2-TH	Y	-009	-009	0	%100
14 SF3-BH	Y	-009	-009	0	%100
15 SF3-TH	Y	-009	-009	0	%100
16 SF2-V1	Y	-007	-007	0	%100
17 SF2-V2	Y	-007	-007	0	%100
18 SF3-V1	Y	-007	-007	0	%100
19 SF3-V2	Y	-007	-007	0	%100
20 SF2-V3	Y	-009	-009	0	%100
21 SF3-V3	Y	-009	-009	0	%100
22 MP-1	Y	-009	-009	0	%100
23 MP-2	Y	-009	-009	0	%100
24 MP-3	Y	-009	-009	0	%100
25 MP-4B	Y	-009	-009	0	%100
26 MP-5	Y	-009	-009	0	%100
27 TRP-1	Y	-006	-006	0	%100
28 TRP-2	Y	-006	-006	0	%100
29 TRP-3	Y	-006	-006	0	%100
30 TRP-4	Y	-006	-006	0	%100
31 TR-1	Y	-007	-007	0	%100
32 TR-2	Y	-007	-007	0	%100
33 TR-3	Y	-007	-007	0	%100
34 TR-4	Y	-007	-007	0	%100
35 MP-4	Y	-009	-009	0	%100

Member Distributed Loads (BLC 19 : 0 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1 FFBH-L	X	-003	-003	0	%100
2 FFBH-M	X	-003	-003	0	%100
3 FFBH-R	X	-003	-003	0	%100
4 FFTH-L	X	-003	-003	0	%100
5 FFTH-M	X	-003	-003	0	%100
6 FFTH-R	X	-003	-003	0	%100
7 SA-1	X	-002	-002	0	%100
8 SF2-D1	X	-002	-002	0	%100
9 SF2-D2	X	-002	-002	0	%100
10 SF3-D1	X	-002	-002	0	%100
11 SF3-D2	X	-002	-002	0	%100
12 SF2-BH	X	-002	-002	0	%100
13 SF2-TH	X	-002	-002	0	%100



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Member Distributed Loads (BLC 19 : 0 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
14 SF3-BH	X	-002	-002	0	%100
15 SF3-TH	X	-002	-002	0	%100
16 SF2-V1	X	-002	-002	0	%100
17 SF2-V2	X	-002	-002	0	%100
18 SF3-V1	X	-002	-002	0	%100
19 SF3-V2	X	-002	-002	0	%100
20 SF2-V3	X	-002	-002	0	%100
21 SF3-V3	X	-002	-002	0	%100
22 MP-1	X	-002	-002	0	%100
23 MP-2	X	-002	-002	0	%100
24 MP-3	X	-002	-002	0	%100
25 MP-4B	X	-002	-002	0	%100
26 MP-5	X	-002	-002	0	%100
27 TRP-1	X	-005	-005	0	%100
28 TRP-2	X	-005	-005	0	%100
29 TRP-3	X	-005	-005	0	%100
30 TRP-4	X	-005	-005	0	%100
31 TR-1	X	-002	-002	0	%100
32 TR-2	X	-002	-002	0	%100
33 TR-3	X	-002	-002	0	%100
34 TR-4	X	-002	-002	0	%100
35 MP-4	X	-002	-002	0	%100

Member Distributed Loads (BLC 20 : 30 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1 FFBH-L	X	-003	-003	0	%100
2 FFBH-M	X	-003	-003	0	%100
3 FFBH-R	X	-003	-003	0	%100
4 FFTH-L	X	-003	-003	0	%100
5 FFTH-M	X	-003	-003	0	%100
6 FFTH-R	X	-003	-003	0	%100
7 SA-1	X	-001	-001	0	%100
8 SF2-D1	X	-002	-002	0	%100
9 SF2-D2	X	-002	-002	0	%100
10 SF3-D1	X	-002	-002	0	%100
11 SF3-D2	X	-002	-002	0	%100
12 SF2-BH	X	-002	-002	0	%100
13 SF2-TH	X	-002	-002	0	%100
14 SF3-BH	X	-000612	-000612	0	%100
15 SF3-TH	X	-000612	-000612	0	%100
16 SF2-V1	X	-002	-002	0	%100
17 SF2-V2	X	-002	-002	0	%100
18 SF3-V1	X	-002	-002	0	%100
19 SF3-V2	X	-002	-002	0	%100
20 SF2-V3	X	-002	-002	0	%100
21 SF3-V3	X	-002	-002	0	%100
22 MP-1	X	-002	-002	0	%100
23 MP-2	X	-002	-002	0	%100
24 MP-3	X	-002	-002	0	%100
25 MP-4B	X	-002	-002	0	%100
26 MP-5	X	-002	-002	0	%100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 20 : 30 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
27 TRP-1	X	-0.004	-0.004	0	%100
28 TRP-2	X	-0.004	-0.004	0	%100
29 TRP-3	X	-0.004	-0.004	0	%100
30 TRP-4	X	-0.004	-0.004	0	%100
31 TR-1	X	-0.000814	-0.000814	0	%100
32 TR-2	X	-0.000814	-0.000814	0	%100
33 TR-3	X	-0.000814	-0.000814	0	%100
34 TR-4	X	-0.000814	-0.000814	0	%100
35 MP-4	X	-0.002	-0.002	0	%100
36 FFBH-L	Z	-0.001	-0.001	0	%100
37 FFBH-M	Z	-0.001	-0.001	0	%100
38 FFBH-R	Z	-0.001	-0.001	0	%100
39 FFTH-L	Z	-0.001	-0.001	0	%100
40 FFTH-M	Z	-0.001	-0.001	0	%100
41 FFTH-R	Z	-0.001	-0.001	0	%100
42 SA-1	Z	-0.000965	-0.000965	0	%100
43 SF2-D1	Z	-0.001	-0.001	0	%100
44 SF2-D2	Z	-0.001	-0.001	0	%100
45 SF3-D1	Z	-0.001	-0.001	0	%100
46 SF3-D2	Z	-0.001	-0.001	0	%100
47 SF2-BH	Z	-0.001	-0.001	0	%100
48 SF2-TH	Z	-0.001	-0.001	0	%100
49 SF3-BH	Z	-0.000346	-0.000346	0	%100
50 SF3-TH	Z	-0.000346	-0.000346	0	%100
51 SF2-V1	Z	-0.000992	-0.000992	0	%100
52 SF2-V2	Z	-0.000992	-0.000992	0	%100
53 SF3-V1	Z	-0.000992	-0.000992	0	%100
54 SF3-V2	Z	-0.000992	-0.000992	0	%100
55 SF2-V3	Z	-0.001	-0.001	0	%100
56 SF3-V3	Z	-0.001	-0.001	0	%100
57 MP-1	Z	-0.001	-0.001	0	%100
58 MP-2	Z	-0.001	-0.001	0	%100
59 MP-3	Z	-0.001	-0.001	0	%100
60 MP-4B	Z	-0.001	-0.001	0	%100
61 MP-5	Z	-0.001	-0.001	0	%100
62 TRP-1	Z	-0.002	-0.002	0	%100
63 TRP-2	Z	-0.002	-0.002	0	%100
64 TRP-3	Z	-0.002	-0.002	0	%100
65 TRP-4	Z	-0.002	-0.002	0	%100
66 TR-1	Z	-0.00047	-0.00047	0	%100
67 TR-2	Z	-0.00047	-0.00047	0	%100
68 TR-3	Z	-0.00047	-0.00047	0	%100
69 TR-4	Z	-0.00047	-0.00047	0	%100
70 MP-4	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 21 : 45 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1 FFBH-L	X	-0.002	-0.002	0	%100
2 FFBH-M	X	-0.002	-0.002	0	%100
3 FFBH-R	X	-0.002	-0.002	0	%100
4 FFTH-L	X	-0.002	-0.002	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Member Distributed Loads (BLC 21 : 45 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
5 FFTH-M	X	-0.002	-0.002	0	%100
6 FFTH-R	X	-0.002	-0.002	0	%100
7 SA-1	X	-0.001	-0.001	0	%100
8 SF2-D1	X	-0.001	-0.001	0	%100
9 SF2-D2	X	-0.001	-0.001	0	%100
10 SF3-D1	X	-0.001	-0.001	0	%100
11 SF3-D2	X	-0.001	-0.001	0	%100
12 SF2-BH	X	-0.002	-0.002	0	%100
13 SF2-TH	X	-0.002	-0.002	0	%100
14 SF3-BH	X	-8.2e-5	-8.2e-5	0	%100
15 SF3-TH	X	-8.2e-5	-8.2e-5	0	%100
16 SF2-V1	X	-0.001	-0.001	0	%100
17 SF2-V2	X	-0.001	-0.001	0	%100
18 SF3-V1	X	-0.001	-0.001	0	%100
19 SF3-V2	X	-0.001	-0.001	0	%100
20 SF2-V3	X	-0.001	-0.001	0	%100
21 SF3-V3	X	-0.001	-0.001	0	%100
22 MP-1	X	-0.002	-0.002	0	%100
23 MP-2	X	-0.002	-0.002	0	%100
24 MP-3	X	-0.002	-0.002	0	%100
25 MP-4B	X	-0.002	-0.002	0	%100
26 MP-5	X	-0.002	-0.002	0	%100
27 TRP-1	X	-0.002	-0.002	0	%100
28 TRP-2	X	-0.002	-0.002	0	%100
29 TRP-3	X	-0.002	-0.002	0	%100
30 TRP-4	X	-0.002	-0.002	0	%100
31 TR-1	X	-0.00094	-0.00094	0	%100
32 TR-2	X	-0.00094	-0.00094	0	%100
33 TR-3	X	-0.00094	-0.00094	0	%100
34 TR-4	X	-0.00094	-0.00094	0	%100
35 MP-4	X	-0.002	-0.002	0	%100
36 FFBH-L	Z	-0.002	-0.002	0	%100
37 FFBH-M	Z	-0.002	-0.002	0	%100
38 FFBH-R	Z	-0.002	-0.002	0	%100
39 FFTH-L	Z	-0.002	-0.002	0	%100
40 FFTH-M	Z	-0.002	-0.002	0	%100
41 FFTH-R	Z	-0.002	-0.002	0	%100
42 SA-1	Z	-0.002	-0.002	0	%100
43 SF2-D1	Z	-0.001	-0.001	0	%100
44 SF2-D2	Z	-0.001	-0.001	0	%100
45 SF3-D1	Z	-0.001	-0.001	0	%100
46 SF3-D2	Z	-0.001	-0.001	0	%100
47 SF2-BH	Z	-0.002	-0.002	0	%100
48 SF2-TH	Z	-0.002	-0.002	0	%100
49 SF3-BH	Z	-8e-5	-8e-5	0	%100
50 SF3-TH	Z	-8e-5	-8e-5	0	%100
51 SF2-V1	Z	-0.001	-0.001	0	%100
52 SF2-V2	Z	-0.001	-0.001	0	%100
53 SF3-V1	Z	-0.001	-0.001	0	%100
54 SF3-V2	Z	-0.001	-0.001	0	%100
55 SF2-V3	Z	-0.002	-0.002	0	%100
56 SF3-V3	Z	-0.002	-0.002	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Member Distributed Loads (BLC 21 : 45 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
57	MP-1	Z	-0.002	-0.002	0	%100
58	MP-2	Z	-0.002	-0.002	0	%100
59	MP-3	Z	-0.002	-0.002	0	%100
60	MP-4B	Z	-0.002	-0.002	0	%100
61	MP-5	Z	-0.002	-0.002	0	%100
62	TRP-1	Z	-0.002	-0.002	0	%100
63	TRP-2	Z	-0.002	-0.002	0	%100
64	TRP-3	Z	-0.002	-0.002	0	%100
65	TRP-4	Z	-0.002	-0.002	0	%100
66	TR-1	Z	-0.00094	-0.00094	0	%100
67	TR-2	Z	-0.00094	-0.00094	0	%100
68	TR-3	Z	-0.00094	-0.00094	0	%100
69	TR-4	Z	-0.00094	-0.00094	0	%100
70	MP-4	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 22 : 60 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	-0.000845	-0.000845	0	%100
2	FFBH-M	X	-0.000845	-0.000845	0	%100
3	FFBH-R	X	-0.000845	-0.000845	0	%100
4	FFTH-L	X	-0.000845	-0.000845	0	%100
5	FFTH-M	X	-0.000845	-0.000845	0	%100
6	FFTH-R	X	-0.000845	-0.000845	0	%100
7	SA-1	X	-0.001	-0.001	0	%100
8	SF2-D1	X	-0.000924	-0.000924	0	%100
9	SF2-D2	X	-0.000924	-0.000924	0	%100
10	SF3-D1	X	-0.000924	-0.000924	0	%100
11	SF3-D2	X	-0.000924	-0.000924	0	%100
12	SF2-BH	X	-0.001	-0.001	0	%100
13	SF2-TH	X	-0.001	-0.001	0	%100
14	SF3-BH	X	-0.000242	-0.000242	0	%100
15	SF3-TH	X	-0.000242	-0.000242	0	%100
16	SF2-V1	X	-0.000893	-0.000893	0	%100
17	SF2-V2	X	-0.000893	-0.000893	0	%100
18	SF3-V1	X	-0.000893	-0.000893	0	%100
19	SF3-V2	X	-0.000893	-0.000893	0	%100
20	SF2-V3	X	-0.001	-0.001	0	%100
21	SF3-V3	X	-0.001	-0.001	0	%100
22	MP-1	X	-0.001	-0.001	0	%100
23	MP-2	X	-0.001	-0.001	0	%100
24	MP-3	X	-0.001	-0.001	0	%100
25	MP-4B	X	-0.001	-0.001	0	%100
26	MP-5	X	-0.001	-0.001	0	%100
27	TRP-1	X	-0.001	-0.001	0	%100
28	TRP-2	X	-0.001	-0.001	0	%100
29	TRP-3	X	-0.001	-0.001	0	%100
30	TRP-4	X	-0.001	-0.001	0	%100
31	TR-1	X	-0.000814	-0.000814	0	%100
32	TR-2	X	-0.000814	-0.000814	0	%100
33	TR-3	X	-0.000814	-0.000814	0	%100
34	TR-4	X	-0.000814	-0.000814	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Member Distributed Loads (BLC 22 : 60 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
35	MP-4	X	-0.001	-0.001	0	%100
36	FFBH-L	Z	-0.001	-0.001	0	%100
37	FFBH-M	Z	-0.001	-0.001	0	%100
38	FFBH-R	Z	-0.001	-0.001	0	%100
39	FFTH-L	Z	-0.001	-0.001	0	%100
40	FFTH-M	Z	-0.001	-0.001	0	%100
41	FFTH-R	Z	-0.001	-0.001	0	%100
42	SA-1	Z	-0.002	-0.002	0	%100
43	SF2-D1	Z	-0.002	-0.002	0	%100
44	SF2-D2	Z	-0.002	-0.002	0	%100
45	SF3-D1	Z	-0.002	-0.002	0	%100
46	SF3-D2	Z	-0.002	-0.002	0	%100
47	SF2-BH	Z	-0.002	-0.002	0	%100
48	SF2-TH	Z	-0.002	-0.002	0	%100
49	SF3-BH	Z	-0.00041	-0.00041	0	%100
50	SF3-TH	Z	-0.00041	-0.00041	0	%100
51	SF2-V1	Z	-0.002	-0.002	0	%100
52	SF2-V2	Z	-0.002	-0.002	0	%100
53	SF3-V1	Z	-0.002	-0.002	0	%100
54	SF3-V2	Z	-0.002	-0.002	0	%100
55	SF2-V3	Z	-0.002	-0.002	0	%100
56	SF3-V3	Z	-0.002	-0.002	0	%100
57	MP-1	Z	-0.002	-0.002	0	%100
58	MP-2	Z	-0.002	-0.002	0	%100
59	MP-3	Z	-0.002	-0.002	0	%100
60	MP-4B	Z	-0.002	-0.002	0	%100
61	MP-5	Z	-0.002	-0.002	0	%100
62	TRP-1	Z	-0.002	-0.002	0	%100
63	TRP-2	Z	-0.002	-0.002	0	%100
64	TRP-3	Z	-0.002	-0.002	0	%100
65	TRP-4	Z	-0.002	-0.002	0	%100
66	TR-1	Z	-0.001	-0.001	0	%100
67	TR-2	Z	-0.001	-0.001	0	%100
68	TR-3	Z	-0.001	-0.001	0	%100
69	TR-4	Z	-0.001	-0.001	0	%100
70	MP-4	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 23 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	Z	0	0	0	%100
2	FFBH-M	Z	0	0	0	%100
3	FFBH-R	Z	0	0	0	%100
4	FFTH-L	Z	0	0	0	%100
5	FFTH-M	Z	0	0	0	%100
6	FFTH-R	Z	0	0	0	%100
7	SA-1	Z	-.002	-.002	0	%100
8	SF2-D1	Z	-.002	-.002	0	%100
9	SF2-D2	Z	-.002	-.002	0	%100
10	SF3-D1	Z	-.002	-.002	0	%100
11	SF3-D2	Z	-.002	-.002	0	%100
12	SF2-BH	Z	-.002	-.002	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
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Member Distributed Loads (BLC 23 : 90 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
13	SF2-TH	Z	-.002	0	%100
14	SF3-BH	Z	-.002	0	%100
15	SF3-TH	Z	-.002	0	%100
16	SF2-V1	Z	-.002	0	%100
17	SF2-V2	Z	-.002	0	%100
18	SF3-V1	Z	-.002	0	%100
19	SF3-V2	Z	-.002	0	%100
20	SF2-V3	Z	-.002	0	%100
21	SF3-V3	Z	-.002	0	%100
22	MP-1	Z	-.003	0	%100
23	MP-2	Z	-.002	0	%100
24	MP-3	Z	-.003	0	%100
25	MP-4B	Z	-.002	0	%100
26	MP-5	Z	-.003	0	%100
27	TRP-1	Z	0	0	%100
28	TRP-2	Z	0	0	%100
29	TRP-3	Z	0	0	%100
30	TRP-4	Z	0	0	%100
31	TR-1	Z	-.002	0	%100
32	TR-2	Z	-.002	0	%100
33	TR-3	Z	-.002	0	%100
34	TR-4	Z	-.002	0	%100
35	MP-4	Z	-.003	0	%100

Member Distributed Loads (BLC 24 : 120 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	.000845	0	%100
2	FFBH-M	X	.000845	0	%100
3	FFBH-R	X	.000845	0	%100
4	FFTH-L	X	.000845	0	%100
5	FFTH-M	X	.000845	0	%100
6	FFTH-R	X	.000845	0	%100
7	SA-1	X	.00064	0	%100
8	SF2-D1	X	.000924	0	%100
9	SF2-D2	X	.000924	0	%100
10	SF3-D1	X	.000924	0	%100
11	SF3-D2	X	.000924	0	%100
12	SF2-BH	X	.000242	0	%100
13	SF2-TH	X	.000242	0	%100
14	SF3-BH	X	.001	0	%100
15	SF3-TH	X	.001	0	%100
16	SF2-V1	X	.000893	0	%100
17	SF2-V2	X	.000893	0	%100
18	SF3-V1	X	.000893	0	%100
19	SF3-V2	X	.000893	0	%100
20	SF2-V3	X	.001	0	%100
21	SF3-V3	X	.001	0	%100
22	MP-1	X	.001	0	%100
23	MP-2	X	.001	0	%100
24	MP-3	X	.001	0	%100
25	MP-4B	X	.001	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Member Distributed Loads (BLC 24 : 120 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
26	MP-5	X	.001	0	%100
27	TRP-1	X	.001	0	%100
28	TRP-2	X	.001	0	%100
29	TRP-3	X	.001	0	%100
30	TRP-4	X	.001	0	%100
31	TR-1	X	.000814	0	%100
32	TR-2	X	.000814	0	%100
33	TR-3	X	.000814	0	%100
34	TR-4	X	.000814	0	%100
35	MP-4	X	.001	0	%100
36	FFBH-L	Z	-.001	0	%100
37	FFBH-M	Z	-.001	0	%100
38	FFBH-R	Z	-.001	0	%100
39	FFTH-L	Z	-.001	0	%100
40	FFTH-M	Z	-.001	0	%100
41	FFTH-R	Z	-.001	0	%100
42	SA-1	Z	-.001	0	%100
43	SF2-D1	Z	-.002	0	%100
44	SF2-D2	Z	-.002	0	%100
45	SF3-D1	Z	-.002	0	%100
46	SF3-D2	Z	-.002	0	%100
47	SF2-BH	Z	-.00041	0	%100
48	SF2-TH	Z	-.00041	0	%100
49	SF3-BH	Z	-.002	0	%100
50	SF3-TH	Z	-.002	0	%100
51	SF2-V1	Z	-.002	0	%100
52	SF2-V2	Z	-.002	0	%100
53	SF3-V1	Z	-.002	0	%100
54	SF3-V2	Z	-.002	0	%100
55	SF2-V3	Z	-.002	0	%100
56	SF3-V3	Z	-.002	0	%100
57	MP-1	Z	-.002	0	%100
58	MP-2	Z	-.002	0	%100
59	MP-3	Z	-.002	0	%100
60	MP-4B	Z	-.002	0	%100
61	MP-5	Z	-.002	0	%100
62	TRP-1	Z	-.002	0	%100
63	TRP-2	Z	-.002	0	%100
64	TRP-3	Z	-.002	0	%100
65	TRP-4	Z	-.002	0	%100
66	TR-1	Z	-.001	0	%100
67	TR-2	Z	-.001	0	%100
68	TR-3	Z	-.001	0	%100
69	TR-4	Z	-.001	0	%100
70	MP-4	Z	-.002	0	%100

Member Distributed Loads (BLC 25 : 135 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	.002	0	%100
2	FFBH-M	X	.002	0	%100
3	FFBH-R	X	.002	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
 Job Number : TEP No. 217456.638687
 Model Name : CCI BU No 806377

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Member Distributed Loads (BLC 25 : 135 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
4	FFTH-L	X	.002	.002	0	%100
5	FFTH-M	X	.002	.002	0	%100
6	FFTH-R	X	.002	.002	0	%100
7	SA-1	X	.000585	.000585	0	%100
8	SF2-D1	X	.001	.001	0	%100
9	SF2-D2	X	.001	.001	0	%100
10	SF3-D1	X	.001	.001	0	%100
11	SF3-D2	X	.001	.001	0	%100
12	SF2-BH	X	8.2e-5	8.2e-5	0	%100
13	SF2-TH	X	8.2e-5	8.2e-5	0	%100
14	SF3-BH	X	.002	.002	0	%100
15	SF3-TH	X	.002	.002	0	%100
16	SF2-V1	X	.001	.001	0	%100
17	SF2-V2	X	.001	.001	0	%100
18	SF3-V1	X	.001	.001	0	%100
19	SF3-V2	X	.001	.001	0	%100
20	SF2-V3	X	.001	.001	0	%100
21	SF3-V3	X	.001	.001	0	%100
22	MP-1	X	.002	.002	0	%100
23	MP-2	X	.002	.002	0	%100
24	MP-3	X	.002	.002	0	%100
25	MP-4B	X	.002	.002	0	%100
26	MP-5	X	.002	.002	0	%100
27	TRP-1	X	.002	.002	0	%100
28	TRP-2	X	.002	.002	0	%100
29	TRP-3	X	.002	.002	0	%100
30	TRP-4	X	.002	.002	0	%100
31	TR-1	X	.00094	.00094	0	%100
32	TR-2	X	.00094	.00094	0	%100
33	TR-3	X	.00094	.00094	0	%100
34	TR-4	X	.00094	.00094	0	%100
35	MP-4	X	.002	.002	0	%100
36	FFBH-L	Z	-.002	-.002	0	%100
37	FFBH-M	Z	-.002	-.002	0	%100
38	FFBH-R	Z	-.002	-.002	0	%100
39	FFTH-L	Z	-.002	-.002	0	%100
40	FFTH-M	Z	-.002	-.002	0	%100
41	FFTH-R	Z	-.002	-.002	0	%100
42	SA-1	Z	-.000714	-.000714	0	%100
43	SF2-D1	Z	-.001	-.001	0	%100
44	SF2-D2	Z	-.001	-.001	0	%100
45	SF3-D1	Z	-.001	-.001	0	%100
46	SF3-D2	Z	-.001	-.001	0	%100
47	SF2-BH	Z	-8e-5	-8e-5	0	%100
48	SF2-TH	Z	-8e-5	-8e-5	0	%100
49	SF3-BH	Z	-.002	-.002	0	%100
50	SF3-TH	Z	-.002	-.002	0	%100
51	SF2-V1	Z	-.001	-.001	0	%100
52	SF2-V2	Z	-.001	-.001	0	%100
53	SF3-V1	Z	-.001	-.001	0	%100
54	SF3-V2	Z	-.001	-.001	0	%100
55	SF2-V3	Z	-.002	-.002	0	%100



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Member Distributed Loads (BLC 25 : 135 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft.F...	Start Location[ft.%]	End Location[ft.%]
56	SF3-V3	Z	-.002	-.002	0	%100
57	MP-1	Z	-.002	-.002	0	%100
58	MP-2	Z	-.002	-.002	0	%100
59	MP-3	Z	-.002	-.002	0	%100
60	MP-4B	Z	-.002	-.002	0	%100
61	MP-5	Z	-.002	-.002	0	%100
62	TRP-1	Z	-.002	-.002	0	%100
63	TRP-2	Z	-.002	-.002	0	%100
64	TRP-3	Z	-.002	-.002	0	%100
65	TRP-4	Z	-.002	-.002	0	%100
66	TR-1	Z	-.00094	-.00094	0	%100
67	TR-2	Z	-.00094	-.00094	0	%100
68	TR-3	Z	-.00094	-.00094	0	%100
69	TR-4	Z	-.00094	-.00094	0	%100
70	MP-4	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 26 : 150 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft.%]	End Location[ft.%]
1	FFBH-L	X	.003	.003	0	%100
2	FFBH-M	X	.003	.003	0	%100
3	FFBH-R	X	.003	.003	0	%100
4	FFTH-L	X	.003	.003	0	%100
5	FFTH-M	X	.003	.003	0	%100
6	FFTH-R	X	.003	.003	0	%100
7	SA-1	X	.000275	.000275	0	%100
8	SF2-D1	X	.002	.002	0	%100
9	SF2-D2	X	.002	.002	0	%100
10	SF3-D1	X	.002	.002	0	%100
11	SF3-D2	X	.002	.002	0	%100
12	SF2-BH	X	.000612	.000612	0	%100
13	SF2-TH	X	.000612	.000612	0	%100
14	SF3-BH	X	.002	.002	0	%100
15	SF3-TH	X	.002	.002	0	%100
16	SF2-V1	X	.002	.002	0	%100
17	SF2-V2	X	.002	.002	0	%100
18	SF3-V1	X	.002	.002	0	%100
19	SF3-V2	X	.002	.002	0	%100
20	SF2-V3	X	.002	.002	0	%100
21	SF3-V3	X	.002	.002	0	%100
22	MP-1	X	.002	.002	0	%100
23	MP-2	X	.002	.002	0	%100
24	MP-3	X	.002	.002	0	%100
25	MP-4B	X	.002	.002	0	%100
26	MP-5	X	.002	.002	0	%100
27	TRP-1	X	.004	.004	0	%100
28	TRP-2	X	.004	.004	0	%100
29	TRP-3	X	.004	.004	0	%100
30	TRP-4	X	.004	.004	0	%100
31	TR-1	X	.000814	.000814	0	%100
32	TR-2	X	.000814	.000814	0	%100
33	TR-3	X	.000814	.000814	0	%100



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Member Distributed Loads (BLC 26 : 150 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
34	TR-4	X	.000814	.000814	0	%100
35	MP-4	X	.002	.002	0	%100
36	FFBH-L	Z	-.001	-.001	0	%100
37	FFBH-M	Z	-.001	-.001	0	%100
38	FFBH-R	Z	-.001	-.001	0	%100
39	FFTH-L	Z	-.001	-.001	0	%100
40	FFTH-M	Z	-.001	-.001	0	%100
41	FFTH-R	Z	-.001	-.001	0	%100
42	SA-1	Z	-.000194	-.000194	0	%100
43	SF2-D1	Z	-.001	-.001	0	%100
44	SF2-D2	Z	-.001	-.001	0	%100
45	SF3-D1	Z	-.001	-.001	0	%100
46	SF3-D2	Z	-.001	-.001	0	%100
47	SF2-BH	Z	-.000346	-.000346	0	%100
48	SF2-TH	Z	-.000346	-.000346	0	%100
49	SF3-BH	Z	-.001	-.001	0	%100
50	SF3-TH	Z	-.001	-.001	0	%100
51	SF2-V1	Z	-.000992	-.000992	0	%100
52	SF2-V2	Z	-.000992	-.000992	0	%100
53	SF3-V1	Z	-.000992	-.000992	0	%100
54	SF3-V2	Z	-.000992	-.000992	0	%100
55	SF2-V3	Z	-.001	-.001	0	%100
56	SF3-V3	Z	-.001	-.001	0	%100
57	MP-1	Z	-.001	-.001	0	%100
58	MP-2	Z	-.001	-.001	0	%100
59	MP-3	Z	-.001	-.001	0	%100
60	MP-4B	Z	-.001	-.001	0	%100
61	MP-5	Z	-.001	-.001	0	%100
62	TRP-1	Z	-.002	-.002	0	%100
63	TRP-2	Z	-.002	-.002	0	%100
64	TRP-3	Z	-.002	-.002	0	%100
65	TRP-4	Z	-.002	-.002	0	%100
66	TR-1	Z	-.00047	-.00047	0	%100
67	TR-2	Z	-.00047	-.00047	0	%100
68	TR-3	Z	-.00047	-.00047	0	%100
69	TR-4	Z	-.00047	-.00047	0	%100
70	MP-4	Z	-.001	-.001	0	%100

Member Distributed Loads (BLC 27 : 180 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	.003	.003	0	%100
2	FFBH-M	X	.003	.003	0	%100
3	FFBH-R	X	.003	.003	0	%100
4	FFTH-L	X	.003	.003	0	%100
5	FFTH-M	X	.003	.003	0	%100
6	FFTH-R	X	.003	.003	0	%100
7	SA-1	X	.002	.002	0	%100
8	SF2-D1	X	.002	.002	0	%100
9	SF2-D2	X	.002	.002	0	%100
10	SF3-D1	X	.002	.002	0	%100
11	SF3-D2	X	.002	.002	0	%100



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Member Distributed Loads (BLC 27 : 180 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
12	SF2-BH	X	.002	.002	0	%100
13	SF2-TH	X	.002	.002	0	%100
14	SF3-BH	X	.002	.002	0	%100
15	SF3-TH	X	.002	.002	0	%100
16	SF2-V1	X	.002	.002	0	%100
17	SF2-V2	X	.002	.002	0	%100
18	SF3-V1	X	.002	.002	0	%100
19	SF3-V2	X	.002	.002	0	%100
20	SF2-V3	X	.002	.002	0	%100
21	SF3-V3	X	.002	.002	0	%100
22	MP-1	X	.002	.002	0	%100
23	MP-2	X	.002	.002	0	%100
24	MP-3	X	.002	.002	0	%100
25	MP-4B	X	.002	.002	0	%100
26	MP-5	X	.002	.002	0	%100
27	TRP-1	X	.005	.005	0	%100
28	TRP-2	X	.005	.005	0	%100
29	TRP-3	X	.005	.005	0	%100
30	TRP-4	X	.005	.005	0	%100
31	TR-1	X	.002	.002	0	%100
32	TR-2	X	.002	.002	0	%100
33	TR-3	X	.002	.002	0	%100
34	TR-4	X	.002	.002	0	%100
35	MP-4	X	.002	.002	0	%100

Member Distributed Loads (BLC 28 : 210 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	.003	.003	0	%100
2	FFBH-M	X	.003	.003	0	%100
3	FFBH-R	X	.003	.003	0	%100
4	FFTH-L	X	.003	.003	0	%100
5	FFTH-M	X	.003	.003	0	%100
6	FFTH-R	X	.003	.003	0	%100
7	SA-1	X	.001	.001	0	%100
8	SF2-D1	X	.002	.002	0	%100
9	SF2-D2	X	.002	.002	0	%100
10	SF3-D1	X	.002	.002	0	%100
11	SF3-D2	X	.002	.002	0	%100
12	SF2-BH	X	.002	.002	0	%100
13	SF2-TH	X	.002	.002	0	%100
14	SF3-BH	X	.000612	.000612	0	%100
15	SF3-TH	X	.000612	.000612	0	%100
16	SF2-V1	X	.002	.002	0	%100
17	SF2-V2	X	.002	.002	0	%100
18	SF3-V1	X	.002	.002	0	%100
19	SF3-V2	X	.002	.002	0	%100
20	SF2-V3	X	.002	.002	0	%100
21	SF3-V3	X	.002	.002	0	%100
22	MP-1	X	.002	.002	0	%100
23	MP-2	X	.002	.002	0	%100
24	MP-3	X	.002	.002	0	%100



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Member Distributed Loads (BLC 28 : 210 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,....	End Magnitude[k/ft,F...	Start Location[ft,%)	End Location[ft,%)
25	MP-4B	X	.002	.002	0	%100
26	MP-5	X	.002	.002	0	%100
27	TRP-1	X	.004	.004	0	%100
28	TRP-2	X	.004	.004	0	%100
29	TRP-3	X	.004	.004	0	%100
30	TRP-4	X	.004	.004	0	%100
31	TR-1	X	.000814	.000814	0	%100
32	TR-2	X	.000814	.000814	0	%100
33	TR-3	X	.000814	.000814	0	%100
34	TR-4	X	.000814	.000814	0	%100
35	MP-4	X	.002	.002	0	%100
36	FFBH-L	Z	.001	.001	0	%100
37	FFBH-M	Z	.001	.001	0	%100
38	FFBH-R	Z	.001	.001	0	%100
39	FFTH-L	Z	.001	.001	0	%100
40	FFTH-M	Z	.001	.001	0	%100
41	FFTH-R	Z	.001	.001	0	%100
42	SA-1	Z	.000965	.000965	0	%100
43	SF2-D1	Z	.001	.001	0	%100
44	SF2-D2	Z	.001	.001	0	%100
45	SF3-D1	Z	.001	.001	0	%100
46	SF3-D2	Z	.001	.001	0	%100
47	SF2-BH	Z	.001	.001	0	%100
48	SF2-TH	Z	.001	.001	0	%100
49	SF3-BH	Z	.000346	.000346	0	%100
50	SF3-TH	Z	.000346	.000346	0	%100
51	SF2-V1	Z	.000992	.000992	0	%100
52	SF2-V2	Z	.000992	.000992	0	%100
53	SF3-V1	Z	.000992	.000992	0	%100
54	SF3-V2	Z	.000992	.000992	0	%100
55	SF2-V3	Z	.001	.001	0	%100
56	SF3-V3	Z	.001	.001	0	%100
57	MP-1	Z	.001	.001	0	%100
58	MP-2	Z	.001	.001	0	%100
59	MP-3	Z	.001	.001	0	%100
60	MP-4B	Z	.001	.001	0	%100
61	MP-5	Z	.001	.001	0	%100
62	TRP-1	Z	.002	.002	0	%100
63	TRP-2	Z	.002	.002	0	%100
64	TRP-3	Z	.002	.002	0	%100
65	TRP-4	Z	.002	.002	0	%100
66	TR-1	Z	.00047	.00047	0	%100
67	TR-2	Z	.00047	.00047	0	%100
68	TR-3	Z	.00047	.00047	0	%100
69	TR-4	Z	.00047	.00047	0	%100
70	MP-4	Z	.001	.001	0	%100

Member Distributed Loads (BLC 29 : 225 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	.002	.002	0	%100
2	FFBH-M	X	.002	.002	0	%100



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Member Distributed Loads (BLC 29 : 225 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
3	FFBH-R	X	.002	.002	0	%100
4	FFTH-L	X	.002	.002	0	%100
5	FFTH-M	X	.002	.002	0	%100
6	FFTH-R	X	.002	.002	0	%100
7	SA-1	X	.001	.001	0	%100
8	SF2-D1	X	.001	.001	0	%100
9	SF2-D2	X	.001	.001	0	%100
10	SF3-D1	X	.001	.001	0	%100
11	SF3-D2	X	.001	.001	0	%100
12	SF2-BH	X	.002	.002	0	%100
13	SF2-TH	X	.002	.002	0	%100
14	SF3-BH	X	8.2e-5	8.2e-5	0	%100
15	SF3-TH	X	8.2e-5	8.2e-5	0	%100
16	SF2-V1	X	.001	.001	0	%100
17	SF2-V2	X	.001	.001	0	%100
18	SF3-V1	X	.001	.001	0	%100
19	SF3-V2	X	.001	.001	0	%100
20	SF2-V3	X	.001	.001	0	%100
21	SF3-V3	X	.001	.001	0	%100
22	MP-1	X	.002	.002	0	%100
23	MP-2	X	.002	.002	0	%100
24	MP-3	X	.002	.002	0	%100
25	MP-4B	X	.002	.002	0	%100
26	MP-5	X	.002	.002	0	%100
27	TRP-1	X	.002	.002	0	%100
28	TRP-2	X	.002	.002	0	%100
29	TRP-3	X	.002	.002	0	%100
30	TRP-4	X	.002	.002	0	%100
31	TR-1	X	.00094	.00094	0	%100
32	TR-2	X	.00094	.00094	0	%100
33	TR-3	X	.00094	.00094	0	%100
34	TR-4	X	.00094	.00094	0	%100
35	MP-4	X	.002	.002	0	%100
36	FFBH-L	Z	.002	.002	0	%100
37	FFBH-M	Z	.002	.002	0	%100
38	FFBH-R	Z	.002	.002	0	%100
39	FFTH-L	Z	.002	.002	0	%100
40	FFTH-M	Z	.002	.002	0	%100
41	FFTH-R	Z	.002	.002	0	%100
42	SA-1	Z	.002	.002	0	%100
43	SF2-D1	Z	.001	.001	0	%100
44	SF2-D2	Z	.001	.001	0	%100
45	SF3-D1	Z	.001	.001	0	%100
46	SF3-D2	Z	.001	.001	0	%100
47	SF2-BH	Z	.002	.002	0	%100
48	SF2-TH	Z	.002	.002	0	%100
49	SF3-BH	Z	8e-5	8e-5	0	%100
50	SF3-TH	Z	8e-5	8e-5	0	%100
51	SF2-V1	Z	.001	.001	0	%100
52	SF2-V2	Z	.001	.001	0	%100
53	SF3-V1	Z	.001	.001	0	%100
54	SF3-V2	Z	.001	.001	0	%100



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Member Distributed Loads (BLC 29 : 225 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
55	SF2-V3	Z	.002	0	%100
56	SF3-V3	Z	.002	0	%100
57	MP-1	Z	.002	0	%100
58	MP-2	Z	.002	0	%100
59	MP-3	Z	.002	0	%100
60	MP-4B	Z	.002	0	%100
61	MP-5	Z	.002	0	%100
62	TRP-1	Z	.002	0	%100
63	TRP-2	Z	.002	0	%100
64	TRP-3	Z	.002	0	%100
65	TRP-4	Z	.002	0	%100
66	TR-1	Z	.00094	0	%100
67	TR-2	Z	.00094	0	%100
68	TR-3	Z	.00094	0	%100
69	TR-4	Z	.00094	0	%100
70	MP-4	Z	.002	0	%100

Member Distributed Loads (BLC 30 : 240 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	FFBH-L	X	.000845	0	%100
2	FFBH-M	X	.000845	0	%100
3	FFBH-R	X	.000845	0	%100
4	FFTH-L	X	.000845	0	%100
5	FFTH-M	X	.000845	0	%100
6	FFTH-R	X	.000845	0	%100
7	SA-1	X	.001	0	%100
8	SF2-D1	X	.000924	0	%100
9	SF2-D2	X	.000924	0	%100
10	SF3-D1	X	.000924	0	%100
11	SF3-D2	X	.000924	0	%100
12	SF2-BH	X	.001	0	%100
13	SF2-TH	X	.001	0	%100
14	SF3-BH	X	.000242	0	%100
15	SF3-TH	X	.000242	0	%100
16	SF2-V1	X	.000893	0	%100
17	SF2-V2	X	.000893	0	%100
18	SF3-V1	X	.000893	0	%100
19	SF3-V2	X	.000893	0	%100
20	SF2-V3	X	.001	0	%100
21	SF3-V3	X	.001	0	%100
22	MP-1	X	.001	0	%100
23	MP-2	X	.001	0	%100
24	MP-3	X	.001	0	%100
25	MP-4B	X	.001	0	%100
26	MP-5	X	.001	0	%100
27	TRP-1	X	.001	0	%100
28	TRP-2	X	.001	0	%100
29	TRP-3	X	.001	0	%100
30	TRP-4	X	.001	0	%100
31	TR-1	X	.000814	0	%100
32	TR-2	X	.000814	0	%100



Company : Tower Engineering Professionals, Inc.
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Member Distributed Loads (BLC 30 : 240 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
33	TR-3	X	.000814	0	%100
34	TR-4	X	.000814	0	%100
35	MP-4	X	.001	0	%100
36	FFBH-L	Z	.001	0	%100
37	FFBH-M	Z	.001	0	%100
38	FFBH-R	Z	.001	0	%100
39	FFTH-L	Z	.001	0	%100
40	FFTH-M	Z	.001	0	%100
41	FFTH-R	Z	.001	0	%100
42	SA-1	Z	.002	0	%100
43	SF2-D1	Z	.002	0	%100
44	SF2-D2	Z	.002	0	%100
45	SF3-D1	Z	.002	0	%100
46	SF3-D2	Z	.002	0	%100
47	SF2-BH	Z	.002	0	%100
48	SF2-TH	Z	.002	0	%100
49	SF3-BH	Z	.00041	0	%100
50	SF3-TH	Z	.00041	0	%100
51	SF2-V1	Z	.002	0	%100
52	SF2-V2	Z	.002	0	%100
53	SF3-V1	Z	.002	0	%100
54	SF3-V2	Z	.002	0	%100
55	SF2-V3	Z	.002	0	%100
56	SF3-V3	Z	.002	0	%100
57	MP-1	Z	.002	0	%100
58	MP-2	Z	.002	0	%100
59	MP-3	Z	.002	0	%100
60	MP-4B	Z	.002	0	%100
61	MP-5	Z	.002	0	%100
62	TRP-1	Z	.002	0	%100
63	TRP-2	Z	.002	0	%100
64	TRP-3	Z	.002	0	%100
65	TRP-4	Z	.002	0	%100
66	TR-1	Z	.001	0	%100
67	TR-2	Z	.001	0	%100
68	TR-3	Z	.001	0	%100
69	TR-4	Z	.001	0	%100
70	MP-4	Z	.002	0	%100

Member Distributed Loads (BLC 31 : 270 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	FFBH-L	Z	0	0	%100
2	FFBH-M	Z	0	0	%100
3	FFBH-R	Z	0	0	%100
4	FFTH-L	Z	0	0	%100
5	FFTH-M	Z	0	0	%100
6	FFTH-R	Z	0	0	%100
7	SA-1	Z	.002	0	%100
8	SF2-D1	Z	.002	0	%100
9	SF2-D2	Z	.002	0	%100
10	SF3-D1	Z	.002	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
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Member Distributed Loads (BLC 31 : 270 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
11	SF3-D2	Z	.002	.002	0	%100
12	SF2-BH	Z	.002	.002	0	%100
13	SF2-TH	Z	.002	.002	0	%100
14	SF3-BH	Z	.002	.002	0	%100
15	SF3-TH	Z	.002	.002	0	%100
16	SF2-V1	Z	.002	.002	0	%100
17	SF2-V2	Z	.002	.002	0	%100
18	SF3-V1	Z	.002	.002	0	%100
19	SF3-V2	Z	.002	.002	0	%100
20	SF2-V3	Z	.002	.002	0	%100
21	SF3-V3	Z	.002	.002	0	%100
22	MP-1	Z	.003	.003	0	%100
23	MP-2	Z	.002	.002	0	%100
24	MP-3	Z	.003	.003	0	%100
25	MP-4B	Z	.002	.002	0	%100
26	MP-5	Z	.003	.003	0	%100
27	TRP-1	Z	0	0	0	%100
28	TRP-2	Z	0	0	0	%100
29	TRP-3	Z	0	0	0	%100
30	TRP-4	Z	0	0	0	%100
31	TR-1	Z	.002	.002	0	%100
32	TR-2	Z	.002	.002	0	%100
33	TR-3	Z	.002	.002	0	%100
34	TR-4	Z	.002	.002	0	%100
35	MP-4	Z	.003	.003	0	%100

Member Distributed Loads (BLC 32 : 300 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	-0.00845	-0.00845	0	%100
2	FFBH-M	X	-0.00845	-0.00845	0	%100
3	FFBH-R	X	-0.00845	-0.00845	0	%100
4	FFTH-L	X	-0.00845	-0.00845	0	%100
5	FFTH-M	X	-0.00845	-0.00845	0	%100
6	FFTH-R	X	-0.00845	-0.00845	0	%100
7	SA-1	X	-0.0064	-0.0064	0	%100
8	SF2-D1	X	-0.00924	-0.00924	0	%100
9	SF2-D2	X	-0.00924	-0.00924	0	%100
10	SF3-D1	X	-0.00924	-0.00924	0	%100
11	SF3-D2	X	-0.00924	-0.00924	0	%100
12	SF2-BH	X	-0.00242	-0.00242	0	%100
13	SF2-TH	X	-0.00242	-0.00242	0	%100
14	SF3-BH	X	-0.001	-0.001	0	%100
15	SF3-TH	X	-0.001	-0.001	0	%100
16	SF2-V1	X	-0.00893	-0.00893	0	%100
17	SF2-V2	X	-0.00893	-0.00893	0	%100
18	SF3-V1	X	-0.00893	-0.00893	0	%100
19	SF3-V2	X	-0.00893	-0.00893	0	%100
20	SF2-V3	X	-0.001	-0.001	0	%100
21	SF3-V3	X	-0.001	-0.001	0	%100
22	MP-1	X	-0.001	-0.001	0	%100
23	MP-2	X	-0.001	-0.001	0	%100



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Member Distributed Loads (BLC 32 : 300 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
24	MP-3	X	-.001	-.001	0	%100
25	MP-4B	X	-.001	-.001	0	%100
26	MP-5	X	-.001	-.001	0	%100
27	TRP-1	X	-.001	-.001	0	%100
28	TRP-2	X	-.001	-.001	0	%100
29	TRP-3	X	-.001	-.001	0	%100
30	TRP-4	X	-.001	-.001	0	%100
31	TR-1	X	-.000814	-.000814	0	%100
32	TR-2	X	-.000814	-.000814	0	%100
33	TR-3	X	-.000814	-.000814	0	%100
34	TR-4	X	-.000814	-.000814	0	%100
35	MP-4	X	-.001	-.001	0	%100
36	FFBH-L	Z	.001	.001	0	%100
37	FFBH-M	Z	.001	.001	0	%100
38	FFBH-R	Z	.001	.001	0	%100
39	FFTH-L	Z	.001	.001	0	%100
40	FFTH-M	Z	.001	.001	0	%100
41	FFTH-R	Z	.001	.001	0	%100
42	SA-1	Z	.001	.001	0	%100
43	SF2-D1	Z	.002	.002	0	%100
44	SF2-D2	Z	.002	.002	0	%100
45	SF3-D1	Z	.002	.002	0	%100
46	SF3-D2	Z	.002	.002	0	%100
47	SF2-BH	Z	.00041	.00041	0	%100
48	SF2-TH	Z	.00041	.00041	0	%100
49	SF3-BH	Z	.002	.002	0	%100
50	SF3-TH	Z	.002	.002	0	%100
51	SF2-V1	Z	.002	.002	0	%100
52	SF2-V2	Z	.002	.002	0	%100
53	SF3-V1	Z	.002	.002	0	%100
54	SF3-V2	Z	.002	.002	0	%100
55	SF2-V3	Z	.002	.002	0	%100
56	SF3-V3	Z	.002	.002	0	%100
57	MP-1	Z	.002	.002	0	%100
58	MP-2	Z	.002	.002	0	%100
59	MP-3	Z	.002	.002	0	%100
60	MP-4B	Z	.002	.002	0	%100
61	MP-5	Z	.002	.002	0	%100
62	TRP-1	Z	.002	.002	0	%100
63	TRP-2	Z	.002	.002	0	%100
64	TRP-3	Z	.002	.002	0	%100
65	TRP-4	Z	.002	.002	0	%100
66	TR-1	Z	.001	.001	0	%100
67	TR-2	Z	.001	.001	0	%100
68	TR-3	Z	.001	.001	0	%100
69	TR-4	Z	.001	.001	0	%100
70	MP-4	Z	.002	.002	0	%100

Member Distributed Loads (BLC 33 : 315 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	FFBH-L	X	-.002	-.002	0	%100



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Member Distributed Loads (BLC 33 : 315 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
2	FFBH-M	X	-.002	0	%100
3	FFBH-R	X	-.002	0	%100
4	FFTH-L	X	-.002	0	%100
5	FFTH-M	X	-.002	0	%100
6	FFTH-R	X	-.002	0	%100
7	SA-1	X	-.000585	0	%100
8	SF2-D1	X	-.001	0	%100
9	SF2-D2	X	-.001	0	%100
10	SF3-D1	X	-.001	0	%100
11	SF3-D2	X	-.001	0	%100
12	SF2-BH	X	-8.2e-5	0	%100
13	SF2-TH	X	-8.2e-5	0	%100
14	SF3-BH	X	-.002	0	%100
15	SF3-TH	X	-.002	0	%100
16	SF2-V1	X	-.001	0	%100
17	SF2-V2	X	-.001	0	%100
18	SF3-V1	X	-.001	0	%100
19	SF3-V2	X	-.001	0	%100
20	SF2-V3	X	-.001	0	%100
21	SF3-V3	X	-.001	0	%100
22	MP-1	X	-.002	0	%100
23	MP-2	X	-.002	0	%100
24	MP-3	X	-.002	0	%100
25	MP-4B	X	-.002	0	%100
26	MP-5	X	-.002	0	%100
27	TRP-1	X	-.002	0	%100
28	TRP-2	X	-.002	0	%100
29	TRP-3	X	-.002	0	%100
30	TRP-4	X	-.002	0	%100
31	TR-1	X	-.00094	0	%100
32	TR-2	X	-.00094	0	%100
33	TR-3	X	-.00094	0	%100
34	TR-4	X	-.00094	0	%100
35	MP-4	X	-.002	0	%100
36	FFBH-L	Z	.002	0	%100
37	FFBH-M	Z	.002	0	%100
38	FFBH-R	Z	.002	0	%100
39	FFTH-L	Z	.002	0	%100
40	FFTH-M	Z	.002	0	%100
41	FFTH-R	Z	.002	0	%100
42	SA-1	Z	.000714	0	%100
43	SF2-D1	Z	.001	0	%100
44	SF2-D2	Z	.001	0	%100
45	SF3-D1	Z	.001	0	%100
46	SF3-D2	Z	.001	0	%100
47	SF2-BH	Z	8e-5	0	%100
48	SF2-TH	Z	8e-5	0	%100
49	SF3-BH	Z	.002	0	%100
50	SF3-TH	Z	.002	0	%100
51	SF2-V1	Z	.001	0	%100
52	SF2-V2	Z	.001	0	%100
53	SF3-V1	Z	.001	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
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Member Distributed Loads (BLC 33 : 315 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
54	SF3-V2	Z	.001	0	%100
55	SF2-V3	Z	.002	0	%100
56	SF3-V3	Z	.002	0	%100
57	MP-1	Z	.002	0	%100
58	MP-2	Z	.002	0	%100
59	MP-3	Z	.002	0	%100
60	MP-4B	Z	.002	0	%100
61	MP-5	Z	.002	0	%100
62	TRP-1	Z	.002	0	%100
63	TRP-2	Z	.002	0	%100
64	TRP-3	Z	.002	0	%100
65	TRP-4	Z	.002	0	%100
66	TR-1	Z	.00094	0	%100
67	TR-2	Z	.00094	0	%100
68	TR-3	Z	.00094	0	%100
69	TR-4	Z	.00094	0	%100
70	MP-4	Z	.002	0	%100

Member Distributed Loads (BLC 34 : 330 Wind - Ice)

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location(ft,%)	End Location(ft,%)
1	FFBH-L	X	-.003	0	%100
2	FFBH-M	X	-.003	0	%100
3	FFBH-R	X	-.003	0	%100
4	FFTH-L	X	-.003	0	%100
5	FFTH-M	X	-.003	0	%100
6	FFTH-R	X	-.003	0	%100
7	SA-1	X	-.000275	0	%100
8	SF2-D1	X	-.002	0	%100
9	SF2-D2	X	-.002	0	%100
10	SF3-D1	X	-.002	0	%100
11	SF3-D2	X	-.002	0	%100
12	SF2-BH	X	-.000612	0	%100
13	SF2-TH	X	-.000612	0	%100
14	SF3-BH	X	-.002	0	%100
15	SF3-TH	X	-.002	0	%100
16	SF2-V1	X	-.002	0	%100
17	SF2-V2	X	-.002	0	%100
18	SF3-V1	X	-.002	0	%100
19	SF3-V2	X	-.002	0	%100
20	SF2-V3	X	-.002	0	%100
21	SF3-V3	X	-.002	0	%100
22	MP-1	X	-.002	0	%100
23	MP-2	X	-.002	0	%100
24	MP-3	X	-.002	0	%100
25	MP-4B	X	-.002	0	%100
26	MP-5	X	-.002	0	%100
27	TRP-1	X	-.004	0	%100
28	TRP-2	X	-.004	0	%100
29	TRP-3	X	-.004	0	%100
30	TRP-4	X	-.004	0	%100
31	TR-1	X	-.000814	0	%100



Company : Tower Engineering Professionals, Inc.
 Designer : DJM
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Member Distributed Loads (BLC 34 : 330 Wind - Ice) (Continued)

Member Label	Direction	Start Magnitude[k/ft]...	End Magnitude[k/ft]...	Start Location[ft,%]	End Location[ft,%]
32 TR-2	X	-.000814	-.000814	0	%100
33 TR-3	X	-.000814	-.000814	0	%100
34 TR-4	X	-.000814	-.000814	0	%100
35 MP-4	X	-.002	-.002	0	%100
36 FFBH-L	Z	.001	.001	0	%100
37 FFBH-M	Z	.001	.001	0	%100
38 FFBH-R	Z	.001	.001	0	%100
39 FFTH-L	Z	.001	.001	0	%100
40 FFTH-M	Z	.001	.001	0	%100
41 FFTH-R	Z	.001	.001	0	%100
42 SA-1	Z	.000194	.000194	0	%100
43 SF2-D1	Z	.001	.001	0	%100
44 SF2-D2	Z	.001	.001	0	%100
45 SF3-D1	Z	.001	.001	0	%100
46 SF3-D2	Z	.001	.001	0	%100
47 SF2-BH	Z	.000346	.000346	0	%100
48 SF2-TH	Z	.000346	.000346	0	%100
49 SF3-BH	Z	.001	.001	0	%100
50 SF3-TH	Z	.001	.001	0	%100
51 SF2-V1	Z	.000992	.000992	0	%100
52 SF2-V2	Z	.000992	.000992	0	%100
53 SF3-V1	Z	.000992	.000992	0	%100
54 SF3-V2	Z	.000992	.000992	0	%100
55 SF2-V3	Z	.001	.001	0	%100
56 SF3-V3	Z	.001	.001	0	%100
57 MP-1	Z	.001	.001	0	%100
58 MP-2	Z	.001	.001	0	%100
59 MP-3	Z	.001	.001	0	%100
60 MP-4B	Z	.001	.001	0	%100
61 MP-5	Z	.001	.001	0	%100
62 TRP-1	Z	.002	.002	0	%100
63 TRP-2	Z	.002	.002	0	%100
64 TRP-3	Z	.002	.002	0	%100
65 TRP-4	Z	.002	.002	0	%100
66 TR-1	Z	.00047	.00047	0	%100
67 TR-2	Z	.00047	.00047	0	%100
68 TR-3	Z	.00047	.00047	0	%100
69 TR-4	Z	.00047	.00047	0	%100
70 MP-4	Z	.001	.001	0	%100

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[k/ft]
No Data to Print ...						

Envelope Joint Reactions

Joint			X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	SF2-1	max	.372	2	2.127	49	1.157	55	0	98	0	98	0	98
2		min	-4.599	42	.479	10	-1.201	30	0	1	0	1	0	1
3	SF2-2	max	4.506	36	1.806	42	.662	36	0	98	0	98	0	98



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Envelope Joint Reactions (Continued)

Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
4	SA-1B	min	-.028	12	.415	2	-1.104	60	0	1	0	1	0	1
5		max	1.09	15	.041	39	.429	23	0	98	0	98	0	98
6		min	-1.089	7	.009	15	-.429	15	0	1	0	1	0	1
7	Totals:	max	2.293	2	3.951	45	1.47	23						
8		min	-2.293	26	.968	87	-1.47	15						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Lo.....	phi*P...	phi*P...	phi*M...	phi*M...	Eqn
1 MP-3	PIPE 2.0	.442	3.583	18	.062	3.5...	2516.295	32.13	1.872	1.872	H1-1b
2 SF3-V2	ROHN TS1.5x16GA	.348	1.993	45	.019	3.4...	29 6.68	9.932	.38	.38	H1-1a
3 SF3-D1	ROHN TS1.5x16GA	.345	2.049	48	.019	0	225.478	9.932	.38	.38	H1-1a
4 SF3-BH	PIPE 2.0	.336	.555	45	.138	0	4324.561	32.13	1.872	1.872	H1-1b
5 SF3-TH	PIPE 2.0	.336	.555	45	.165	0	4724.561	32.13	1.872	1.872	H1-1b
6 SF2-D1	ROHN TS1.5x16GA	.285	2.049	35	.020	4.1...	455.478	9.932	.38	.38	H1-1a
7 SF2-BH	PIPE 2.0	.278	.555	37	.119	0	8724.561	32.13	1.872	1.872	H1-1b
8 SF2-V2	ROHN TS1.5x16GA	.275	1.993	37	.017	3.4...	29 6.68	9.932	.38	.38	H1-1a
9 SF3-V3	PIPE 2.0	.267	2.918	31	.111	2.9...	2427.933	32.13	1.872	1.872	H1-1b
10 SF2-TH	PIPE 2.0	.261	.555	39	.143	0	3624.561	32.13	1.872	1.872	H1-1b
11 SF3-D2	ROHN TS1.5x16GA	.258	2.049	49	.015	0	265.478	9.932	.38	.38	H1-1a
12 MP-4B	PIPE 2.0	.253	4.219	29	.109	4.2...	2931.188	32.13	1.872	1.872	H1-1b
13 FFBH-M	PIPE 2.5	.213	8.776	45	.072	0	4327.003	50.715	3.596	3.596	H1-1b
14 FFTH-M	PIPE 2.5	.209	8.776	45	.148	0	1827.003	50.715	3.596	3.596	H1-1b
15 MP-5	PIPE 2.0	.202	5.5	26	.030	2	2622.782	32.13	1.872	1.872	H1-1b
16 SF3-V1	ROHN TS1.5x16GA	.186	3.417	45	.025	3.4...	29 6.68	9.932	.38	.38	H1-1a
17 SF2-V1	ROHN TS1.5x16GA	.156	3.417	37	.025	3.4...	29 6.68	9.932	.38	.38	H1-1a
18 FFTH-R	PIPE 2.5	.142	0	44	.125	0	4944.75	50.715	3.596	3.596	H1-1b
19 TRP-3	PL 2-3/8x1/2	.133	.25	20	.134	.25 y	4025.875	38.491	.4	1.903	H1-1b
20 FFBH-R	PIPE 2.5	.132	0	47	.134	0	4344.75	50.715	3.596	3.596	H1-1b
21 MP-2	PIPE 2.0	.125	5	59	.019	1.6...	5717.332	32.13	1.872	1.872	H1-1b
22 MP-1	PIPE 2.0	.118	2.375	59	.017	2.3...	5717.332	32.13	1.872	1.872	H1-1b
23 SF2-D2	ROHN TS1.5x16GA	.116	2.092	34	.023	0	275.478	9.932	.38	.38	H1-1b
24 MP-4	PIPE 2.0	.105	4.75	18	.020	4.75	2719.964	32.13	1.872	1.872	H1-1b
25 FFTH-L	PIPE 2.5	.080	1.862	39	.101	1.8...	2544.75	50.715	3.596	3.596	H1-1b
26 FFBH-L	PIPE 2.5	.079	1.862	39	.091	1.8...	5744.75	50.715	3.596	3.596	H1-1b
27 TRP-4	PL 2-3/8x1/2	.078	.25	26	.132	.25 y	4125.875	38.491	.4	1.903	H1-1b
28 TRP-1	PL 2-3/8x1/2	.068	.25	25	.133	.25 y	4825.875	38.491	.4	1.903	H1-1b
29 SA-1	PIPE 2.0	.059	6.298	15	.004	0	4519.971	32.13	1.872	1.872	H1-1a
30 TRP-2	PL 2-3/8x1/2	.053	.25	26	.134	.5 y	4825.875	38.491	.4	1.903	H1-1b
31 SF2-V3	PIPE 2.0	.027	3.417	35	.016	0	3227.933	32.13	1.872	1.872	H1-1a

Envelope None Cold Formed Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	Pn[k]	Tn[k]	Mnyy[k...]	Mnzz[k...]	Cb	Cmy	Cmzz	Eqn
No Data to Print ...																

APPENDIX D

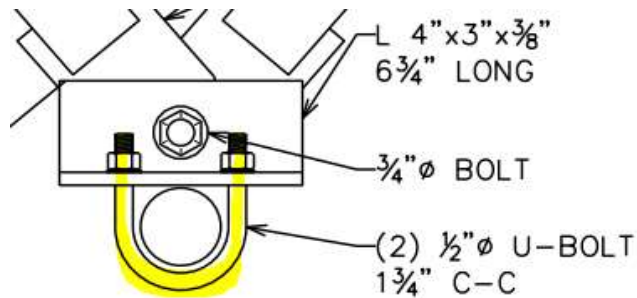
ADDITIONAL CALCULATIONS

Moment Bolt Group (Rohn Sector Mount) - Tower Leg

Bolt Size:	0.5	in
# Bolts:	4	
Plate Width:	6.75	in
Plate Height:	4	in
Bolt H Gap:	3.375	in
Bolt V Gap:	1.75	in
Plate T:	0.375	in
Tower Leg Ø:	2.875	in
Bolt Grade:	A36	
$F_{u,bolt}$	58	ksi
r:	1.9009	in
J:	14.45	in ⁴ /in ²
$Bolt_{Area}$:	0.196	in ²
$Bolt_{Area, Net Tensile}$:	0.142	in ²
Pretension:	6	kips
Slotted Holes:	No	

Code Checks Per ANSI/TIA-222-H:

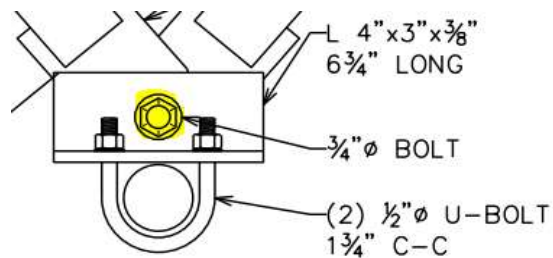
Bolt Capacity =	18.6%	PASS
Single Bolt Capacity=	23.3%	PASS

**Single Bolt Check**

Bolt Size:	0.75	in
Bolt F_u :	120	ksi
$Bolt_{A, Net Tensile}$:	0.334	in ²

Bolts: A325N

$V_{max} =$	4.639	kips
$\phi R_{NV} =$	19.880	kips
$T_{max} =$	2.127	kips
$\phi R_{NT} =$	30.060	kips



Date: January 14, 2022

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Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation:

AT&T Mobility Co-Locate

Site Number: CTL01082
Site Name: Vernon NE
FA Number: 10035095

Crown Castle Designation:

BU Number: 806377
Site Name: HRT 084 943242
JDE Job Number: 686192
Work Order Number: 2061283
Order Number: 586240 Rev. 0

Engineering Firm Designation:

TEP Project Number: 217456.645480

Site Data:

197 South St., Vernon, Tolland County, CT 06066
Latitude 41° 51' 12.51", Longitude -72° 27' 7.52"
132 Foot - Self-Supporting Tower

Tower Engineering Professionals is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration

Sufficient Capacity - 72.9%

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Gautam Sopal, E.I. / CLT

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

01/14/2022

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1) INTRODUCTION

This tower is a 132-ft self-supporting tower designed by Rohn. The tower has been modified per reinforcement drawings prepared by SSOE, Inc. in May of 2015.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
104.0	106.0	3	Ericsson	AIR 6419 B77G_CCIV2 w/ Mount Pipe	15 4 3	7/8 13/16 3/8
	104.0	2	CCI Antennas	TPA65R-BU6D_CCIV2 w/ Mount Pipe		
		1	CCI Antennas	TPA65R-BU8D_CCIV2 w/ Mount Pipe		
		2	CCI Antennas	DMP65R-BU6D w/ Mount Pipe		
		1	CCI Antennas	DMP65R-BU8D w/ Mount Pipe		
		1	Raycap	DC9-48-60-24-8C-EV_CCIV2		
		2	Raycap	DC6-48-60-18-8F		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RRUS 32 B2		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 8843 B2/B66A		
		1	Tower Mounts	Sector Mount [SM 502-3]		
	102.0	3	Ericsson	AIR 6449 B77D w/ Mount Pipe		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130.0	141.0	1	Decibel	DB413-B	3 4	1-5/8 7/8
	136.0	1	Telewave	ANT450D6-9		
	130.0	3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	RFS Celwave	APXVAARR24_43-U-NA20_T-MOBILE w/ Mount Pipe		
		1	Telewave	ANT450D6-9		
		3	Ericsson	RADIO 4480 B71_TMO		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Site Pro 1	VFA10-HD-S Sector Frame		
117.0	119.0	3	Samsung Telecom.	MT6407-77A w/ Mount Pipe	2 6	1-5/8 7/8
	117.0	2	Andrew	LBX-6515DS-T0M w/ Mount Pipe		
		1	Andrew	LNx-6514DS-T4M w/ Mount Pipe		
		6	Andrew	SBNHH-1D65B w/ Mount Pipe		
		1	Tower Mounts	Sector Mount [SM 505-3]		
	115.0	3	Samsung Telecom.	CBRS		
		2	RFS Celwave	DB-T1-6Z-8AB-0Z		
		3	Samsung Telecom.	RFV01U-D2A		
		3	Samsung Telecom.	RFV01U-D1A		
94.0	94.0	3	JMA Wireless	MX08FRO665-21 w/ Mount Pipe	1	1-1/2
		3	Fujitsu	TA08025-B604		
		3	Fujitsu	TA08025-B605		
		1	Raycap	RDIDC-9181-PF-48		
		1	Tower Mounts	Commscope MTC3975083 (3)		
84.0	84.0	3	Ericsson	AIR 21 B2A B4P w/ Mount Pipe	1 2 10	1-5/8 1-3/8 7/8
		3	RFS Celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		3	Ericsson	AIR 32 B2A/B66AA w/ Mount Pipe		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
		3	Site Pro 1	VFA12-U Sector Frame		
63.0	63.0	1	RFS Celwave	SB1-190BB	1	1/2
		1	Redline Comm.	RDL-3000		
		1	Siae Microelettronica	ALFOPLUS2_CCIV3		
		1	Tower Mounts	Side Arm Mount [SO 311-1]		
56.0	59.0	1	Maxrad	GPS-TMG-20N	1	1/2
	56.0	1	Tower Mounts	Side Arm Mount [SO 305-1]		
46.0	47.0	1	Lucent	KS24019-L112A	1	1/2

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	1014866	CCISites
Tower Foundation Drawings	1014812	CCISites
Tower Manufacturer Drawings	529704	CCISites
Tower Reinforcement Drawings	5678760	CCISites
Post-Modification Inspection	5849707	CCISites

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

3.2) Assumptions

- 1) The tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
- 3) The following material grades were assumed:
 - a) Concrete compressive strength: $f'_c = 3$ ksi
 - b) Foundation flexural reinforcement: $f_y = 60$ ksi

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
T1	132 - 120	Leg	ROHN 2 STD	2	-5.67	38.68	14.7	Pass
T2	120 - 100	Leg	ROHN 2.5 STD	27	-23.44	59.99	39.1	Pass
T3	100 - 93.3333	Leg	ROHN 3 STD	57	-30.76	74.44	41.3	Pass
T4	93.3333 - 86.6667	Leg	ROHN 3 STD	66	-38.36	74.41	51.6	Pass
T5	86.6667 - 80	Leg	ROHN 3 STD	75	-47.49	96.10	49.4	Pass
T6	80 - 60	Leg	ROHN 3 X-STR	87	-72.20	99.05	72.9	Pass
T7	60 - 40	Leg	ROHN 4 X-STR	108	-95.91	167.91	57.1	Pass
T8	40 - 20	Leg	ROHN 5 X-STR	129	-116.48	211.31	55.1	Pass
T9	20 - 10	Leg	ROHN 5 X-STR	144	-127.62	211.31	60.4	Pass
T10	10 - 0	Leg	ROHN 5 X-STR	153	-137.76	265.94	51.8	Pass
T1	132 - 120	Diagonal	L1 3/4x1 3/4x3/16	16	-1.18	11.55	10.2	Pass
T2	120 - 100	Diagonal	L1 3/4x1 3/4x3/16	33	-2.99	6.66	44.9	Pass
T3	100 - 93.3333	Diagonal	L2 1/2x2 1/2x3/16	60	-3.68	15.16	24.3	Pass

132-ft Self-Supporting Tower Structural Analysis Report
TEP Project Number 217456.645480, Order 586240, Revision 0

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
T4	93.3333 - 86.6667	Diagonal	L2 1/2x2 1/2x3/16	69	-3.93	13.54	29.0	Pass
T5	86.6667 - 80	Diagonal	L2 1/2x2 1/2x3/16	78	-4.91	12.58	39.0	Pass
T6	80 - 60	Diagonal	L2 1/2x2 1/2x3/16	91	-4.84	9.53	50.8	Pass
T7	60 - 40	Diagonal	L3x3x3/16	112	-5.21	13.25	39.4	Pass
T8	40 - 20	Diagonal	L3x3x1/4	133	-6.07	11.51	52.7	Pass
T9	20 - 10	Diagonal	L3 1/2x3 1/2x1/4	148	-6.17	17.40	35.5	Pass
T10	10 - 0	Diagonal	L3 1/2x3 1/2x1/4	157	-6.82	16.01	42.6	Pass
T5	86.6667 - 80	Secondary Horizontal	L1 1/2x1 1/2x3/16	83	-0.82	3.92	21.0	Pass
T10	10 - 0	Secondary Horizontal	L2 1/2x2 1/2x3/16	161	-2.39	6.01	39.8	Pass
T1	132 - 120	Top Girt	L2x2x3/16	6	-0.08	6.09	1.3	Pass
T2	120 - 100	Top Girt	L2x2x3/16	29	-0.41	6.09	6.7	Pass
							Summary	
						Leg (T6)	72.9	Pass
						Diagonal (T8)	52.7	Pass
						Secondary Horizontal (T10)	39.8	Pass
						Top Girt (T2)	6.7	Pass
						Bolt Checks	63.6	Pass
						Rating =	72.9	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	49.8	Pass
1,2	Base Foundation Structural	-	7.0	Pass
1,2	Base Foundation Soil Interaction	-	56.3	Pass

Structure Rating (max from all components) =	72.9%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
- 2) Rating per TIA-222-H Section 15.5

4.1) Recommendations

- 1) The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

132-ft Self-Supporting Tower Structural Analysis Report
TEP Project Number 217456.645480, Order 586240, Revision 0

January 14, 2022
CCI BU No 806377
Page 7

APPENDIX A

TNXTOWER OUTPUT

SYMBOL LIST

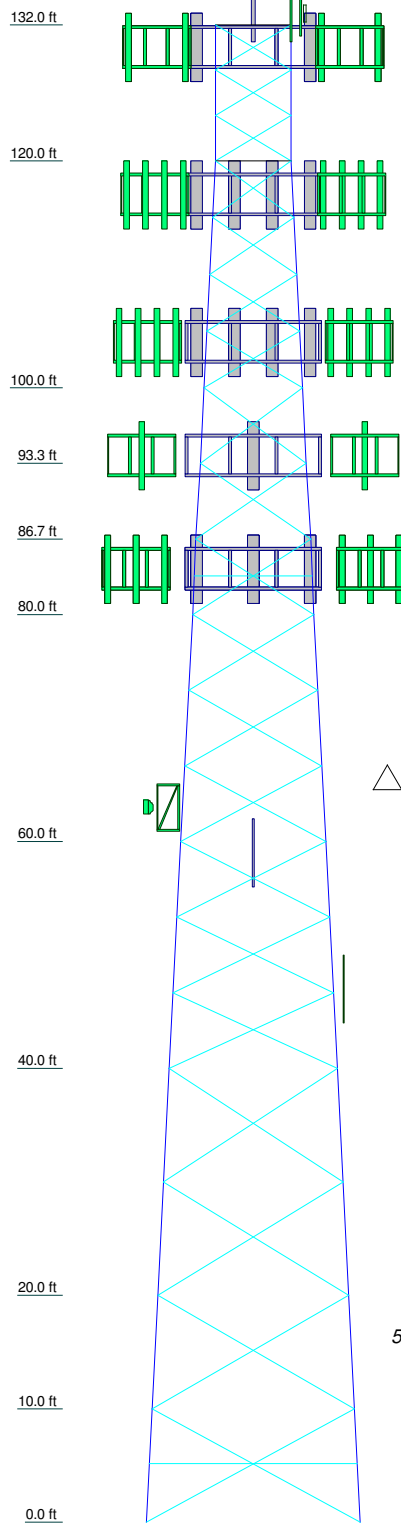
MARK	SIZE	MARK	SIZE
A	L1 1/2x1 1/2x3/16	B	L2 1/2x2 1/2x3/16

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0'
8. TOWER RATING: 72.9%

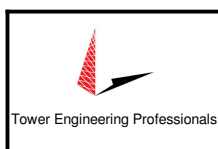
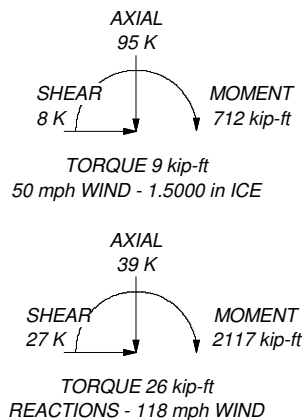


ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 143 K
SHEAR: 17 K

UPLIFT: -114 K
SHEAR: 14 K



Tower Engineering Professionals

326 Tryon Road
Raleigh, NC 27603
Phone: (919) 661-6351
FAX: (919) 661-6350

Job: **HRT 084 943242 (BU 806377)**

Project: **TEP No. 217456.645480**

Client: **Crown Castle**

Drawn by: **APJ**

App'd:

Code: **TIA-222-H**

Date: **01/14/22**

Scale: **NTS**

Path:

Dwg No. **E-1**

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job HRT 084 943242 (BU 806377)	Page 1 of 35
	Project TEP No. 217456.645480	Date 10:14:57 01/14/22
	Client Crown Castle	Designed by APJ

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 132' above the ground line.

The base of the tower is set at an elevation of 0' above the ground line.

The face width of the tower is 6'7-1/4" at the top and 18'9-1/4" at the base.

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

The following design criteria apply:

Tower is located in Tolland County, Connecticut.

Tower base elevation above sea level: 655'.

Basic wind speed of 118 mph.

Risk Category II.

Exposure Category B.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0'.

Nominal ice thickness of 1.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.

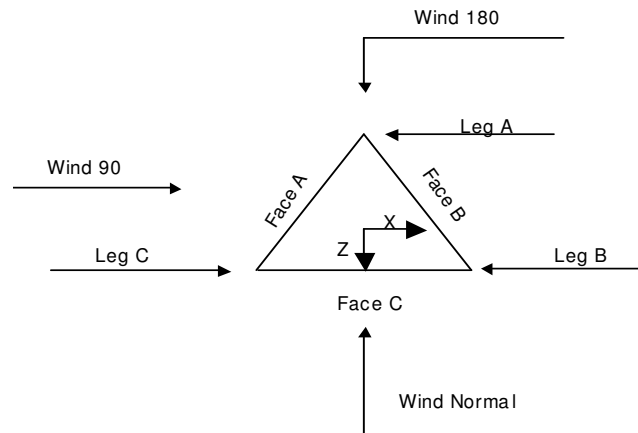
Maximum demand-capacity ratio is: 1.05.

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

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-H Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-H Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are
		Known

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job HRT 084 943242 (BU 806377)	Page 2 of 35
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	Client Crown Castle	Designed by APJ

**Triangular Tower**

Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	132'-120'			6'7-3/16"	1	12'
T2	120'-100'			6'7-13/16"	1	20'
T3	100'-93'3-31/32"			8'8-9/32"	1	6'8-1/32"
T4	93'3-31/32"-86'8-1/32"			9'4-3/16"	1	6'8-1/32"
T5	86'8-1/32"-80'			10'1-7/16"	1	6'8-1/32"
T6	80'-60'			10'8-9/32"	1	20'
T7	60'-40'			12'9-1/8"	1	20'
T8	40'-20'			14'9-1/4"	1	20'
T9	20'-10'			16'9-1/4"	1	10'
T10	10'-0'			17'9-1/4"	1	10'

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	132'-120'	4'	X Brace	No	No	0.0000	0.0000
T2	120'-100'	5'	X Brace	No	No	0.0000	0.0000
T3	100'-93'3-31/32"	6'8-1/32"	X Brace	No	No	0.0000	0.0000
T4	93'3-31/32"-86'8-1/32"	6'8-1/32"	X Brace	No	No	0.0000	0.0000

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	HRT 084 943242 (BU 806377)	Page	3 of 35
	Project	TEP No. 217456.645480	Date	10:14:57 01/14/22
	Client	Crown Castle	Designed by	APJ

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
	1/32"						
T5	86'8-1/32"-80'	6'8-1/32"	X Brace	No	Yes	0.0000	0.0000
T6	80'-60'	6'8-1/32"	X Brace	No	No	0.0000	0.0000
T7	60'-40'	6'8-1/32"	X Brace	No	No	0.0000	0.0000
T8	40'-20'	10'	X Brace	No	No	0.0000	0.0000
T9	20'-10'	10'	X Brace	No	No	0.0000	0.0000
T10	10'-0'	10'	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 132'-120'	Pipe	ROHN 2 STD	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 120'-100'	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T3 100'-93'3-31/32"	Pipe	ROHN 3 STD	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 93'3-31/32"-86'8-1/32"	Pipe	ROHN 3 STD	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 86'8-1/32"-80'	Pipe	ROHN 3 STD	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 80'-60'	Pipe	ROHN 3 X-STR	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T7 60'-40'	Pipe	ROHN 4 X-STR	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T8 40'-20'	Pipe	ROHN 5 X-STR	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T9 20'-10'	Pipe	ROHN 5 X-STR	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T10 10'-0'	Pipe	ROHN 5 X-STR	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
<i>ft</i>						
T1 132'-120'	Equal Angle	L2x2x3/16	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T2 120'-100'	Equal Angle	L2x2x3/16	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

Tower Section Geometry (cont'd)

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<i>Tower Elevation</i>	<i>Secondary Horizontal Type</i>	<i>Secondary Horizontal Size</i>	<i>Secondary Horizontal Grade</i>	<i>Inner Bracing Type</i>	<i>Inner Bracing Size</i>	<i>Inner Bracing Grade</i>
<i>ft</i>						
T5 86'-1/32"-80'	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T10 10'-0'	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals</i>	<i>Double Angle Stitch Bolt Spacing Horizontals</i>	<i>Double Angle Stitch Bolt Spacing Redundants</i>
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
T1 132'-120'	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T2 120'-100'	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T3 100'-93'3"-31/32"	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T4 93'3"-31/32"-86'8-1/32"	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T5 86'8-1/32"-80'	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T6 80'-60'	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T7 60'-40'	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T8 40'-20'	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T9 20'-10'	0.00	0.2500	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000
T10 10'-0'	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	0.0000	0.0000	0.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Calc K Single Angles</i>	<i>Calc K Solid Rounds</i>	<i>K Factors¹</i>							
			<i>Legs</i>	<i>X Brace Diags</i>	<i>K Brace Diags</i>	<i>Single Diags</i>	<i>Girts</i>	<i>Horiz.</i>	<i>Sec. Horiz.</i>	<i>Inner Brace</i>
				<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>	<i>X</i> <i>Y</i>
<i>ft</i>										
T1 132'-120'	Yes	Yes	1	1	1	1	1	1	1	1
T2 120'-100'	Yes	Yes	1	1	1	1	1	1	1	1
T3 100'-93'3"-31/32"	Yes	Yes	1	1	1	1	1	1	1	1
T4 93'3"-31/32"-8	Yes	Yes	1	1	1	1	1	1	1	1

[illegible]

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T3 100'-93'3-31/32" 2"	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 93'3-31/32"-86' 8-1/32"	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 86'8-1/32"-80'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 80'-60'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 60'-40'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 40'-20'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 20'-10'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 10'-0'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 132'-120'	Flange	0.6250	4	0.6250	1	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325X		A325N		A325N		A325N		A325N	
T2 120'-100'	Flange	0.7500	4	0.6250	1	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325X		A325N		A325N		A325N		A325N	
T3 100'-93'3-31/32" 2"	Flange	0.0000	0	0.6250	1	0.5000	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325N		A325N		A325N		A325N		A325N	
T4 93'3-31/32"-86' 8-1/32"	Flange	0.0000	0	0.6250	1	0.5000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325N		A325N		A325N		A325N		A325N	
T5 86'8-1/32"-80'	Flange	0.8750	4	0.6250	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	1
		A325X		A325X		A325N		A325N		A325N		A325N		A325N	
T6 80'-60'	Flange	0.8750	4	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325N		A325N		A325N		A325N		A325N	
T7 60'-40'	Flange	1.0000	4	0.6250	1	0.5000	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325N		A325N		A325N		A325N		A325N	
T8 40'-20'	Flange	1.0000	4	0.6250	1	0.5000	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325N		A325N		A325N		A325N		A325N	
T9 20'-10'	Flange	0.0000	0	0.6250	1	0.5000	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325X		A325X		A325N		A325N		A325N		A325N		A325N	
T10 10'-0'	Flange	1.0000	0	0.7500	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	1
		A449		A325X		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
Step Pegs (5/8" SR) 7.5-in w/ 30"	B	No	No	Ar (CaAa)	40' - 0'	0.0000	0.5	1	1	0.3130	0.3130		0.00
Step Step Pegs (5/8" SR) 7.5-in w/ 30"	C	No	No	Ar (CaAa)	40' - 0'	0.0000	0.5	1	1	0.3130	0.3130		0.00
Step Step Pegs (5/8" SR) 7.5-in w/ 30"	A	No	No	Ar (CaAa)	132' - 0'	0.0000	0.5	1	1	0.3130	0.3130		0.00
Step Safety Line 3/8	A	No	No	Ar (CaAa)	132' - 0'	0.0000	0.5	1	1	0.3750	0.3750		0.00
B Face Feedline	B	No	No	Af (CaAa)	63' - 0'	0.0000	-0.43	1	1	3.0000	3.0000		0.01
Ladder (Af) LDF4-50A(1/ 2)	B	No	No	Ar (CaAa)	56' - 0'	0.0000	-0.47	1	1	0.5000	0.6250		0.00
HB078-1-08U 3-M3J(7/8)	B	No	No	Ar (CaAa)	130' - 0'	0.0000	-0.44	4	4	0.5000	1.0900		0.00
LCF12-50J(1/ 2) ***	B	No	No	Ar (CaAa)	63' - 0'	0.0000	-0.425	1	1	0.5000	0.6400		0.00
HB158-21U6S 24-xxM_TMO (1-5/8)	B	No	No	Ar (CaAa)	130' - 0'	0.0000	0.415	3	3	0.5000	1.9960		0.00
LDF4-50A(1/ 2) ***A Face***	B	No	No	Ar (CaAa)	46' - 0'	0.0000	0.39	1	1	0.5000	0.6250		0.00
Feedline Ladder (Af)	A	No	No	Af (CaAa)	117' - 0'	0.0000	0.4	1	1	3.0000	3.0000		0.01
HB158-1-08U 8-S8J18(1-5/8)	A	No	No	Ar (CaAa)	117' - 0'	0.0000	0.43	2	2	0.5000	1.9800		0.00
LDF5-50A(7/ 8) ***	A	No	No	Ar (CaAa)	117' - 0'	0.0000	0.39	6	6	0.5000	1.0900		0.00
LDF5-50A(7/ 8)	C	No	No	Ar (CaAa)	104' - 0'	0.0000	-0.38	15	9	0.5000	1.0900		0.00
PWRT-608-S(13/16)	C	No	No	Ar (CaAa)	104' - 0'	1.5000	-0.43	3	3	0.5000	0.8200		0.00
FB-L98B-034- XXX(3/8)	C	No	No	Ar (CaAa)	104' - 0'	0.0000	-0.45	2	2	0.3937	0.3937		0.00
2" Flexible Conduit	C	No	No	Ar (CaAa)	104' - 0'	0.0000	-0.46	1	1	0.5000	2.0000		0.00
FB-L98B-235- XXX(3/8)	C	No	No	Ar (CaAa)	104' - 0'	0.0000	-0.46	1	1	0.3900	0.3900		0.00
PWRT-608-S(13/16) ***	C	No	No	Ar (CaAa)	104' - 0'	0.0000	-0.47	1	1	0.5000	0.8200		0.00
T-Bracket ***	B	No	No	Af (CaAa)	94' - 0'	-10.000 0	0.45	1	1	1.5000	1.5000		0.00
AL5-50(7/8)	B	No	No	Ar (CaAa)	84' - 0'	-10.000 0	0.45	8	2	0.5000	1.1000		0.00
AL5-50(7/8)	B	No	No	Ar (CaAa)	84' - 0'	-8.0000	0.462	2	1	0.5000	1.1000		0.00
HCS 6X12	B	No	No	Ar (CaAa)	84' - 0'	-12.000 0	0.435	2	2	0.5000	1.3800		0.00
6AWG(1-3/8) MLE	B	No	No	Ar (CaAa)	84' - 0'	-12.000	0.455	1	1	0.5000	1.6250		0.00

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	# Per Row	# Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
HYBRID 9POWER/18F IBER RL 2(1-5/8) ***													
CU12PSM9P6 XXX(1-1/2) *****	B	No	No	Ar (CaAa)	94' - 0'	-5.0000	0.433	1	1	0.5000	1.6000		0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	132'-120'	A	0.000	0.000	0.826	0.000	0.01
		B	0.000	0.000	10.348	0.000	0.11
		C	0.000	0.000	0.000	0.000	0.00
T2	120'-100'	A	0.000	0.000	27.726	0.000	0.24
		B	0.000	0.000	20.696	0.000	0.21
		C	0.000	0.000	9.123	0.000	0.03
T3	100'-93'3-31/32"	A	0.000	0.000	10.792	0.000	0.09
		B	0.000	0.000	7.172	0.000	0.08
		C	0.000	0.000	15.205	0.000	0.05
T4	93'3-31/32"-86'8-1/32"	A	0.000	0.000	10.792	0.000	0.09
		B	0.000	0.000	9.632	0.000	0.11
		C	0.000	0.000	15.205	0.000	0.05
T5	86'8-1/32"-80'	A	0.000	0.000	10.792	0.000	0.09
		B	0.000	0.000	15.786	0.000	0.14
		C	0.000	0.000	15.205	0.000	0.05
T6	80'-60'	A	0.000	0.000	32.376	0.000	0.27
		B	0.000	0.000	61.358	0.000	0.51
		C	0.000	0.000	45.615	0.000	0.16
T7	60'-40'	A	0.000	0.000	32.376	0.000	0.27
		B	0.000	0.000	72.321	0.000	0.66
		C	0.000	0.000	45.615	0.000	0.16
T8	40'-20'	A	0.000	0.000	32.376	0.000	0.27
		B	0.000	0.000	74.072	0.000	0.67
		C	0.000	0.000	46.241	0.000	0.17
T9	20'-10'	A	0.000	0.000	16.188	0.000	0.14
		B	0.000	0.000	37.036	0.000	0.34
		C	0.000	0.000	23.120	0.000	0.08
T10	10'-0'	A	0.000	0.000	16.188	0.000	0.14

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Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
		B	0.000	0.000	37.036	0.000	0.34
		C	0.000	0.000	23.120	0.000	0.08

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T1	132'-120'	A	1.458	0.000	0.000	7.823	0.000	0.09
		B		0.000	0.000	25.876	0.000	0.35
		C		0.000	0.000	0.000	0.000	0.00
T2	120'-100'	A	1.438	0.000	0.000	71.654	0.000	0.94
		B		0.000	0.000	51.491	0.000	0.69
		C		0.000	0.000	19.802	0.000	0.23
T3	100'-93'3"-31'32"	A	1.420	0.000	0.000	27.187	0.000	0.36
		B		0.000	0.000	17.734	0.000	0.24
		C		0.000	0.000	32.806	0.000	0.39
T4	93'3"-31'32"-86'8"-1'32"	A	1.410	0.000	0.000	27.102	0.000	0.35
		B		0.000	0.000	23.529	0.000	0.34
		C		0.000	0.000	32.697	0.000	0.38
T5	86'8"-1'32"-80'	A	1.399	0.000	0.000	27.011	0.000	0.35
		B		0.000	0.000	37.415	0.000	0.50
		C		0.000	0.000	32.581	0.000	0.38
T6	80'-60'	A	1.375	0.000	0.000	80.422	0.000	1.04
		B		0.000	0.000	142.395	0.000	1.88
		C		0.000	0.000	96.967	0.000	1.12
T7	60'-40'	A	1.329	0.000	0.000	79.275	0.000	1.01
		B		0.000	0.000	166.093	0.000	2.25
		C		0.000	0.000	95.504	0.000	1.09
T8	40'-20'	A	1.263	0.000	0.000	77.608	0.000	0.96
		B		0.000	0.000	173.574	0.000	2.27
		C		0.000	0.000	99.056	0.000	1.09
T9	20'-10'	A	1.178	0.000	0.000	37.740	0.000	0.45
		B		0.000	0.000	83.997	0.000	1.07
		C		0.000	0.000	48.002	0.000	0.51
T10	10'-0'	A	1.056	0.000	0.000	36.201	0.000	0.41
		B		0.000	0.000	79.958	0.000	0.97
		C		0.000	0.000	45.794	0.000	0.46

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
T1	132'-120'	2.8276	-2.2458	3.0072	-5.6152
T2	120'-100'	5.1147	-10.6992	5.3959	-13.3291
T3	100'-93'3"-31'32"	12.6034	-8.6803	14.1997	-9.5730
T4	93'3"-31'32"-86'8"-1'32"	14.0615	-7.7538	16.5561	-7.8694
T5	86'8"-1'32"-80'	16.1788	-4.6418	19.0707	-4.2546
T6	80'-60'	20.5980	-4.0320	23.9782	-3.4041
T7	60'-40'	20.7136	-7.0493	25.1330	-8.0562
T8	40'-20'	24.7872	-7.9839	29.1809	-7.6489
T9	20'-10'	25.1349	-8.1387	30.3503	-8.1658

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Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
T10	10'-0"	23.5336	-7.6630	28.8926	-8.0411

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	120.00 - 132.00	0.6000	0.6000
T1	4	Safety Line 3/8	120.00 - 132.00	0.6000	0.6000
T1	8	HB078-1-08U3-M3J(7/8)	120.00 - 130.00	0.6000	0.6000
T1	14	HB158-21U6S24-xxM_TMO (1-5/8)	120.00 - 130.00	0.6000	0.6000
T2	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	100.00 - 120.00	0.6000	0.6000
T2	4	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T2	8	HB078-1-08U3-M3J(7/8)	100.00 - 120.00	0.6000	0.6000
T2	14	HB158-21U6S24-xxM_TMO (1-5/8)	100.00 - 120.00	0.6000	0.6000
T2	17	Feedline Ladder (Af)	100.00 - 117.00	0.6000	0.6000
T2	18	HB158-1-08U8-S8J18(1-5/8)	100.00 - 117.00	0.6000	0.6000
T2	19	LDF5-50A(7/8)	100.00 - 117.00	0.6000	0.6000
T2	24	LDF5-50A(7/8)	100.00 - 104.00	0.6000	0.6000
T2	28	PWRT-608-S(13/16)	100.00 - 104.00	0.6000	0.6000
T2	29	FB-L98B-034-XXX(3/8)	100.00 - 104.00	0.6000	0.6000
T2	30	2" Flexible Conduit	100.00 - 104.00	0.6000	0.6000
T2	31	FB-L98B-235-XXX(3/8)	100.00 - 104.00	0.0000	0.0000
T2	32	PWRT-608-S(13/16)	100.00 - 104.00	0.6000	0.6000
T3	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	93.33 - 100.00	0.6000	0.6000
T3	4	Safety Line 3/8	93.33 - 100.00	0.6000	0.6000
T3	8	HB078-1-08U3-M3J(7/8)	93.33 - 100.00	0.6000	0.6000
T3	14	HB158-21U6S24-xxM_TMO (1-5/8)	93.33 - 100.00	0.6000	0.6000
T3	17	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T3	18	HB158-1-08U8-S8J18(1-5/8)	93.33 - 100.00	0.6000	0.6000
T3	19	LDF5-50A(7/8)	93.33 - 100.00	0.6000	0.6000
T3	24	LDF5-50A(7/8)	93.33 - 100.00	0.6000	0.6000
T3	28	PWRT-608-S(13/16)	93.33 - 100.00	0.6000	0.6000
T3	29	FB-L98B-034-XXX(3/8)	93.33 - 100.00	0.6000	0.6000
T3	30	2" Flexible Conduit	93.33 - 100.00	0.6000	0.6000
T3	31	FB-L98B-235-XXX(3/8)	93.33 - 100.00	0.0000	0.0000
T3	32	PWRT-608-S(13/16)	93.33 - 100.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T3	34	T-Bracket	93.33 - 94.00	0.6000	0.6000
T3	43	CU12PSM9P6XXX(1-1/2)	93.33 - 94.00	0.6000	0.6000
T4	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	86.67 - 93.33	0.6000	0.6000
T4	4	Safety Line 3/8	86.67 - 93.33	0.6000	0.6000
T4	8	HB078-1-08U3-M3J(7/8)	86.67 - 93.33	0.6000	0.6000
T4	14	HB158-21U6S24-xxM_TMO (1-5/8)	86.67 - 93.33	0.6000	0.6000
T4	17	Feedline Ladder (Af)	86.67 - 93.33	0.6000	0.6000
T4	18	HB158-1-08U8-S8J18(1-5/8)	86.67 - 93.33	0.6000	0.6000
T4	19	LDF5-50A(7/8)	86.67 - 93.33	0.6000	0.6000
T4	24	LDF5-50A(7/8)	86.67 - 93.33	0.6000	0.6000
T4	28	PWRT-608-S(13/16)	86.67 - 93.33	0.6000	0.6000
T4	29	FB-L98B-034-XXX(3/8)	86.67 - 93.33	0.6000	0.6000
T4	30	2" Flexible Conduit	86.67 - 93.33	0.6000	0.6000
T4	31	FB-L98B-235-XXX(3/8)	86.67 - 93.33	0.0000	0.0000
T4	32	PWRT-608-S(13/16)	86.67 - 93.33	0.6000	0.6000
T4	34	T-Bracket	86.67 - 93.33	0.6000	0.6000
T4	43	CU12PSM9P6XXX(1-1/2)	86.67 - 93.33	0.6000	0.6000
T5	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	80.00 - 86.67	0.6000	0.6000
T5	4	Safety Line 3/8	80.00 - 86.67	0.6000	0.6000
T5	8	HB078-1-08U3-M3J(7/8)	80.00 - 86.67	0.6000	0.6000
T5	14	HB158-21U6S24-xxM_TMO (1-5/8)	80.00 - 86.67	0.6000	0.6000
T5	17	Feedline Ladder (Af)	80.00 - 86.67	0.6000	0.6000
T5	18	HB158-1-08U8-S8J18(1-5/8)	80.00 - 86.67	0.6000	0.6000
T5	19	LDF5-50A(7/8)	80.00 - 86.67	0.6000	0.6000
T5	24	LDF5-50A(7/8)	80.00 - 86.67	0.6000	0.6000
T5	28	PWRT-608-S(13/16)	80.00 - 86.67	0.6000	0.6000
T5	29	FB-L98B-034-XXX(3/8)	80.00 - 86.67	0.6000	0.6000
T5	30	2" Flexible Conduit	80.00 - 86.67	0.6000	0.6000
T5	31	FB-L98B-235-XXX(3/8)	80.00 - 86.67	0.0000	0.0000
T5	32	PWRT-608-S(13/16)	80.00 - 86.67	0.6000	0.6000
T5	34	T-Bracket	80.00 - 86.67	0.6000	0.6000
T5	38	AL5-50(7/8)	80.00 - 84.00	0.6000	0.6000
T5	39	AL5-50(7/8)	80.00 - 84.00	0.6000	0.6000
T5	40	HCS 6X12 6AWG(1-3/8)	80.00 - 84.00	0.6000	0.6000
T5	41	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	80.00 - 84.00	0.6000	0.6000
T5	43	CU12PSM9P6XXX(1-1/2)	80.00 - 86.67	0.6000	0.6000
T6	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	60.00 - 80.00	0.6000	0.6000
T6	4	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T6	6	Feedline Ladder (Af)	60.00 - 63.00	0.6000	0.6000
T6	8	HB078-1-08U3-M3J(7/8)	60.00 - 80.00	0.6000	0.6000
T6	9	LCF12-50J(1/2)	60.00 - 63.00	0.6000	0.6000
T6	14	HB158-21U6S24-xxM_TMO (1-5/8)	60.00 - 80.00	0.6000	0.6000
T6	17	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T6	18	HB158-1-08U8-S8J18(1-5/8)	60.00 - 80.00	0.6000	0.6000
T6	19	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.6000
T6	24	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.6000
T6	28	PWRT-608-S(13/16)	60.00 - 80.00	0.6000	0.6000
T6	29	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.6000	0.6000
T6	30	2" Flexible Conduit	60.00 - 80.00	0.6000	0.6000
T6	31	FB-L98B-235-XXX(3/8)	60.00 - 80.00	0.0000	0.0000
T6	32	PWRT-608-S(13/16)	60.00 - 80.00	0.6000	0.6000
T6	34	T-Bracket	60.00 - 80.00	0.6000	0.6000
T6	38	AL5-50(7/8)	60.00 - 80.00	0.6000	0.6000
T6	39	AL5-50(7/8)	60.00 - 80.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T6	40	HCS 6X12 6AWG(1-3/8)	60.00 - 80.00	0.6000	0.6000
T6	41	MLE HYBRID	60.00 - 80.00	0.6000	0.6000
		9POWER/18FIBER RL			
		2(1-5/8)			
T6	43	CU12PSM9P6XXX(1-1/2)	60.00 - 80.00	0.6000	0.6000
T7	3	Step Pegs (5/8" SR) 7.5-in w/	40.00 - 60.00	0.6000	0.6000
		30" Step			
T7	4	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T7	6	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T7	7	LDF4-50A(1/2)	40.00 - 56.00	0.6000	0.6000
T7	8	HB078-1-08U3-M3J(7/8)	40.00 - 60.00	0.6000	0.6000
T7	9	LCF12-50J(1/2)	40.00 - 60.00	0.6000	0.6000
T7	14	HB158-21U6S24-xxM_TMO	40.00 - 60.00	0.6000	0.6000
		(1-5/8)			
T7	15	LDF4-50A(1/2)	40.00 - 46.00	0.6000	0.6000
T7	17	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T7	18	HB158-1-08U8-S8J18(1-5/8)	40.00 - 60.00	0.6000	0.6000
T7	19	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.6000
T7	24	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.6000
T7	28	PWRT-608-S(13/16)	40.00 - 60.00	0.6000	0.6000
T7	29	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.6000	0.6000
T7	30	2" Flexible Conduit	40.00 - 60.00	0.6000	0.6000
T7	31	FB-L98B-235-XXX(3/8)	40.00 - 60.00	0.0000	0.0000
T7	32	PWRT-608-S(13/16)	40.00 - 60.00	0.6000	0.6000
T7	34	T-Bracket	40.00 - 60.00	0.6000	0.6000
T7	38	AL5-50(7/8)	40.00 - 60.00	0.6000	0.6000
T7	39	AL5-50(7/8)	40.00 - 60.00	0.6000	0.6000
T7	40	HCS 6X12 6AWG(1-3/8)	40.00 - 60.00	0.6000	0.6000
T7	41	MLE HYBRID	40.00 - 60.00	0.6000	0.6000
		9POWER/18FIBER RL			
		2(1-5/8)			
T7	43	CU12PSM9P6XXX(1-1/2)	40.00 - 60.00	0.6000	0.6000
T8	1	Step Pegs (5/8" SR) 7.5-in w/	20.00 - 40.00	0.6000	0.6000
		30" Step			
T8	2	Step Pegs (5/8" SR) 7.5-in w/	20.00 - 40.00	0.6000	0.6000
		30" Step			
T8	3	Step Pegs (5/8" SR) 7.5-in w/	20.00 - 40.00	0.6000	0.6000
		30" Step			
T8	4	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T8	6	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	7	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T8	8	HB078-1-08U3-M3J(7/8)	20.00 - 40.00	0.6000	0.6000
T8	9	LCF12-50J(1/2)	20.00 - 40.00	0.6000	0.6000
T8	14	HB158-21U6S24-xxM_TMO	20.00 - 40.00	0.6000	0.6000
		(1-5/8)			
T8	15	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T8	17	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	18	HB158-1-08U8-S8J18(1-5/8)	20.00 - 40.00	0.6000	0.6000
T8	19	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T8	24	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T8	28	PWRT-608-S(13/16)	20.00 - 40.00	0.6000	0.6000
T8	29	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.6000	0.6000
T8	30	2" Flexible Conduit	20.00 - 40.00	0.6000	0.6000
T8	31	FB-L98B-235-XXX(3/8)	20.00 - 40.00	0.0000	0.0000
T8	32	PWRT-608-S(13/16)	20.00 - 40.00	0.6000	0.6000
T8	34	T-Bracket	20.00 - 40.00	0.6000	0.6000
T8	38	AL5-50(7/8)	20.00 - 40.00	0.6000	0.6000
T8	39	AL5-50(7/8)	20.00 - 40.00	0.6000	0.6000
T8	40	HCS 6X12 6AWG(1-3/8)	20.00 - 40.00	0.6000	0.6000
T8	41	MLE HYBRID	20.00 - 40.00	0.6000	0.6000
		9POWER/18FIBER RL			
		2(1-5/8)			

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T8	43	CU12PSM9P6XXX(1-1/2)	20.00 - 40.00	0.6000	0.6000
T9	1	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	10.00 - 20.00	0.6000	0.6000
T9	2	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	10.00 - 20.00	0.6000	0.6000
T9	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	10.00 - 20.00	0.6000	0.6000
T9	4	Safety Line 3/8	10.00 - 20.00	0.6000	0.6000
T9	6	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T9	7	LDF4-50A(1/2)	10.00 - 20.00	0.6000	0.6000
T9	8	HB078-1-08U3-M3J(7/8)	10.00 - 20.00	0.6000	0.6000
T9	9	LCF12-50J(1/2)	10.00 - 20.00	0.6000	0.6000
T9	14	HB158-21U6S24-xxM_TMO (1-5/8)	10.00 - 20.00	0.6000	0.6000
T9	15	LDF4-50A(1/2)	10.00 - 20.00	0.6000	0.6000
T9	17	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T9	18	HB158-1-08U8-S8J18(1-5/8)	10.00 - 20.00	0.6000	0.6000
T9	19	LDF5-50A(7/8)	10.00 - 20.00	0.6000	0.6000
T9	24	LDF5-50A(7/8)	10.00 - 20.00	0.6000	0.6000
T9	28	PWRT-608-S(13/16)	10.00 - 20.00	0.6000	0.6000
T9	29	FB-L98B-034-XXX(3/8)	10.00 - 20.00	0.6000	0.6000
T9	30	2" Flexible Conduit	10.00 - 20.00	0.6000	0.6000
T9	31	FB-L98B-235-XXX(3/8)	10.00 - 20.00	0.0000	0.0000
T9	32	PWRT-608-S(13/16)	10.00 - 20.00	0.6000	0.6000
T9	34	T-Bracket	10.00 - 20.00	0.6000	0.6000
T9	38	AL5-50(7/8)	10.00 - 20.00	0.6000	0.6000
T9	39	AL5-50(7/8)	10.00 - 20.00	0.6000	0.6000
T9	40	HCS 6X12 6AWG(1-3/8)	10.00 - 20.00	0.6000	0.6000
T9	41	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	10.00 - 20.00	0.6000	0.6000
T9	43	CU12PSM9P6XXX(1-1/2)	10.00 - 20.00	0.6000	0.6000
T10	1	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	0.00 - 10.00	0.6000	0.6000
T10	2	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	0.00 - 10.00	0.6000	0.6000
T10	3	Step Pegs (5/8" SR) 7.5-in w/ 30" Step	0.00 - 10.00	0.6000	0.6000
T10	4	Safety Line 3/8	0.00 - 10.00	0.6000	0.6000
T10	6	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T10	7	LDF4-50A(1/2)	0.00 - 10.00	0.6000	0.6000
T10	8	HB078-1-08U3-M3J(7/8)	0.00 - 10.00	0.6000	0.6000
T10	9	LCF12-50J(1/2)	0.00 - 10.00	0.6000	0.6000
T10	14	HB158-21U6S24-xxM_TMO (1-5/8)	0.00 - 10.00	0.6000	0.6000
T10	15	LDF4-50A(1/2)	0.00 - 10.00	0.6000	0.6000
T10	17	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T10	18	HB158-1-08U8-S8J18(1-5/8)	0.00 - 10.00	0.6000	0.6000
T10	19	LDF5-50A(7/8)	0.00 - 10.00	0.6000	0.6000
T10	24	LDF5-50A(7/8)	0.00 - 10.00	0.6000	0.6000
T10	28	PWRT-608-S(13/16)	0.00 - 10.00	0.6000	0.6000
T10	29	FB-L98B-034-XXX(3/8)	0.00 - 10.00	0.6000	0.6000
T10	30	2" Flexible Conduit	0.00 - 10.00	0.6000	0.6000
T10	31	FB-L98B-235-XXX(3/8)	0.00 - 10.00	0.0000	0.0000
T10	32	PWRT-608-S(13/16)	0.00 - 10.00	0.6000	0.6000
T10	34	T-Bracket	0.00 - 10.00	0.6000	0.6000
T10	38	AL5-50(7/8)	0.00 - 10.00	0.6000	0.6000
T10	39	AL5-50(7/8)	0.00 - 10.00	0.6000	0.6000
T10	40	HCS 6X12 6AWG(1-3/8)	0.00 - 10.00	0.6000	0.6000
T10	41	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	0.00 - 10.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T10	43	CU12PSM9P6XXX(1-1/2)	0.00 - 10.00	0.6000	0.6000

Discrete Tower Loads

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>

4" x 5' Pipe	A	From Leg	0.00 0' 3'	0.0000	130'	No Ice 1.60 1/2" Ice 1.94 1" Ice 2.26 2" Ice 2.92	1.60 1.94 2.26 2.92	0.05 0.06 0.08 0.13
4" x 5' Pipe	B	From Leg	0.00 0' 3'	0.0000	130'	No Ice 1.60 1/2" Ice 1.94 1" Ice 2.26 2" Ice 2.92	1.60 1.94 2.26 2.92	0.05 0.06 0.08 0.13
130								
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	130'	No Ice 5.19 1/2" Ice 5.59 1" Ice 6.02 2" Ice 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	130'	No Ice 5.19 1/2" Ice 5.59 1" Ice 6.02 2" Ice 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	130'	No Ice 5.19 1/2" Ice 5.59 1" Ice 6.02 2" Ice 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
APXVAARR24_43-U-NA20_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	130'	No Ice 14.69 1/2" Ice 15.46 1" Ice 16.23 2" Ice 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	130'	No Ice 14.69 1/2" Ice 15.46 1" Ice 16.23 2" Ice 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	130'	No Ice 14.69 1/2" Ice 15.46 1" Ice 16.23 2" Ice 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
RADIO 4480 B71_TMO	A	From Leg	4.00 0' 0'	0.0000	130'	No Ice 2.85 1/2" Ice 3.06 1" Ice 3.28 2" Ice 3.74	1.38 1.54 1.71 2.07	0.09 0.11 0.14 0.20
RADIO 4480 B71_TMO	B	From Leg	4.00 0' 0'	0.0000	130'	No Ice 2.85 1/2" Ice 3.06 1" Ice 3.28 2" Ice 3.74	1.38 1.54 1.71 2.07	0.09 0.11 0.14 0.20
RADIO 4480 B71_TMO	C	From Leg	4.00 0'	0.0000	130'	No Ice 2.85 1/2" Ice 3.06	1.38 1.54	0.09 0.11

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	HRT 084 943242 (BU 806377)	Page	15 of 35
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	Client	Crown Castle	Designed by	APJ

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C_{AA} Front</i> <i>ft²</i>	<i>C_{AA} Side</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
			0'			1" Ice 3.28	1.71	0.14
						2" Ice 3.74	2.07	0.20
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00	0.0000	130'	No Ice 2.14	1.69	0.11
			0'			1/2" Ice 2.32	1.85	0.13
			0'			1" Ice 2.51	2.02	0.16
						2" Ice 2.91	2.39	0.22
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00	0.0000	130'	No Ice 2.14	1.69	0.11
			0'			1/2" Ice 2.32	1.85	0.13
			0'			1" Ice 2.51	2.02	0.16
						2" Ice 2.91	2.39	0.22
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00	0.0000	130'	No Ice 2.14	1.69	0.11
			0'			1/2" Ice 2.32	1.85	0.13
			0'			1" Ice 2.51	2.02	0.16
						2" Ice 2.91	2.39	0.22
ANT450D6-9	A	From Leg	1.00	0.0000	130'	No Ice 1.40	1.40	0.02
			0'			1/2" Ice 2.50	2.50	0.02
			6'			1" Ice 3.60	3.60	0.03
						2" Ice 5.80	5.80	0.04
ANT450D6-9	A	From Leg	1.00	0.0000	130'	No Ice 1.40	1.40	0.02
			0'			1/2" Ice 2.50	2.50	0.02
			0'			1" Ice 3.60	3.60	0.03
						2" Ice 5.80	5.80	0.04
DB413-B	B	From Leg	1.00	0.0000	130'	No Ice 2.55	2.55	0.03
			0'			1/2" Ice 4.59	4.59	0.04
			11'			1" Ice 6.63	6.63	0.05
						2" Ice 10.71	10.71	0.07
(2) 2.4" Dia x 8-ft Mount Pipe	A	From Leg	4.00	0.0000	130'	No Ice 1.90	1.90	0.03
			0'			1/2" Ice 2.73	2.73	0.04
			0'			1" Ice 3.40	3.40	0.06
						2" Ice 4.40	4.40	0.12
(2) 2.4" Dia x 8-ft Mount Pipe	B	From Leg	4.00	0.0000	130'	No Ice 1.90	1.90	0.03
			0'			1/2" Ice 2.73	2.73	0.04
			0'			1" Ice 3.40	3.40	0.06
						2" Ice 4.40	4.40	0.12
(2) 2.4" Dia x 8-ft Mount Pipe	C	From Leg	4.00	0.0000	130'	No Ice 1.90	1.90	0.03
			0'			1/2" Ice 2.73	2.73	0.04
			0'			1" Ice 3.40	3.40	0.06
						2" Ice 4.40	4.40	0.12
Site Pro 1 VFA10-HD-S	A	From Leg	2.00	0.0000	130'	No Ice 11.40	7.00	0.55
			0'			1/2" Ice 17.30	11.30	0.65
			0'			1" Ice 22.60	15.30	0.80
						2" Ice 35.00	24.20	0.95
Site Pro 1 VFA10-HD-S	B	From Leg	2.00	0.0000	130'	No Ice 11.40	7.00	0.55
			0'			1/2" Ice 17.30	11.30	0.65
			0'			1" Ice 22.60	15.30	0.80
						2" Ice 35.00	24.20	0.95
Site Pro 1 VFA10-HD-S	C	From Leg	2.00	0.0000	130'	No Ice 11.40	7.00	0.55
			0'			1/2" Ice 17.30	11.30	0.65
			0'			1" Ice 22.60	15.30	0.80
						2" Ice 35.00	24.20	0.95
117								
LBX-6515DS-T0M w/ Mount Pipe	A	From Leg	4.00	0.0000	117'	No Ice 8.63	6.10	0.05
			0'			1/2" Ice 9.19	7.28	0.11
			0'			1" Ice 9.72	8.17	0.19
						2" Ice 10.81	9.98	0.36
LBX-6515DS-T0M w/ Mount Pipe	B	From Leg	4.00	0.0000	117'	No Ice 8.63	6.10	0.05
			0'			1/2" Ice 9.19	7.28	0.11

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	HRT 084 943242 (BU 806377)	Page	16 of 35
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	Client	Crown Castle	Designed by	APJ

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C_{AA} Front</i> <i>ft²</i>	<i>C_{AA} Side</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
			0'			1" Ice 9.72	8.17	0.19
						2" Ice 10.81	9.98	0.36
LNx-6514DS-T4M w/ Mount Pipe	C	From Leg	4.00	0.0000	117'	No Ice 4.09	3.30	0.06
			0'			1/2" Ice 4.49	3.68	0.13
			0'			1" Ice 4.89	4.06	0.20
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.00	0.0000	117'	2" Ice 5.71	4.87	0.38
			0'			No Ice 4.09	3.30	0.07
			0'			1/2" Ice 4.49	3.68	0.13
			0'			1" Ice 4.89	4.07	0.20
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.00	0.0000	117'	2" Ice 5.72	4.87	0.39
			0'			No Ice 4.09	3.30	0.07
			0'			1/2" Ice 4.49	3.68	0.13
			0'			1" Ice 4.89	4.07	0.20
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.00	0.0000	117'	2" Ice 5.72	4.87	0.39
			0'			No Ice 4.09	3.30	0.07
			0'			1/2" Ice 4.49	3.68	0.13
			0'			1" Ice 4.89	4.07	0.20
MT6407-77A w/ Mount Pipe	A	From Leg	4.00	0.0000	117'	2" Ice 5.72	4.87	0.39
			0'			No Ice 4.91	2.68	0.10
			2'			1/2" Ice 5.26	3.14	0.14
						1" Ice 5.61	3.62	0.18
MT6407-77A w/ Mount Pipe	B	From Leg	4.00	0.0000	117'	2" Ice 6.36	4.63	0.29
			0'			No Ice 4.91	2.68	0.10
			2'			1/2" Ice 5.26	3.14	0.14
						1" Ice 5.61	3.62	0.18
MT6407-77A w/ Mount Pipe	C	From Leg	4.00	0.0000	117'	2" Ice 6.36	4.63	0.29
			0'			No Ice 4.91	2.68	0.10
			2'			1/2" Ice 5.26	3.14	0.14
						1" Ice 5.61	3.62	0.18
CBRS	A	From Leg	4.00	0.0000	117'	2" Ice 6.36	4.63	0.29
			0'			No Ice 1.54	0.61	0.02
			-2'			1/2" Ice 1.79	0.80	0.04
						1" Ice 2.06	1.02	0.05
CBRS	B	From Leg	4.00	0.0000	117'	2" Ice 2.67	1.51	0.09
			0'			No Ice 1.54	0.61	0.02
			-2'			1/2" Ice 1.79	0.80	0.04
						1" Ice 2.06	1.02	0.05
CBRS	C	From Leg	4.00	0.0000	117'	2" Ice 2.67	1.51	0.09
			0'			No Ice 1.54	0.61	0.02
			-2'			1/2" Ice 1.79	0.80	0.04
						1" Ice 2.06	1.02	0.05
DB-T1-6Z-8AB-0Z	A	From Leg	4.00	0.0000	117'	2" Ice 2.67	1.51	0.09
			0'			No Ice 4.80	2.00	0.04
			-2'			1/2" Ice 5.07	2.19	0.08
						1" Ice 5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	B	From Leg	4.00	0.0000	117'	2" Ice 5.93	2.81	0.21
			0'			No Ice 4.80	2.00	0.04
			-2'			1/2" Ice 5.07	2.19	0.08
						1" Ice 5.35	2.39	0.12
RFV01U-D2A	A	From Leg	4.00	0.0000	117'	2" Ice 5.93	2.81	0.21
			0'			No Ice 1.88	1.01	0.07
			-2'			1/2" Ice 2.05	1.14	0.09
						1" Ice 2.22	1.28	0.11
RFV01U-D2A	B	From Leg	4.00	0.0000	117'	2" Ice 2.60	1.59	0.15
			0'			No Ice 1.88	1.01	0.07
			-2'			1/2" Ice 2.05	1.14	0.09
						1" Ice 2.22	1.28	0.11

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	Client	Crown Castle	Designed by	APJ

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
RFV01U-D2A	C	From Leg	4.00 0' -2'	0.0000	117'	2" Ice 2.60 No Ice 1.88 1/2" Ice 2.05 1" Ice 2.22 2" Ice 2.60	1.59 1.01 1.14 1.28 1.59	0.15 0.07 0.09 0.11 0.15
RFV01U-D1A	A	From Leg	4.00 0' -2'	0.0000	117'	2" Ice 2.60 No Ice 1.88 1/2" Ice 2.05 1" Ice 2.22 2" Ice 2.60	1.59 1.25 1.39 1.54 1.86	0.15 0.08 0.10 0.12 0.18
RFV01U-D1A	B	From Leg	4.00 0' -2'	0.0000	117'	2" Ice 2.60 No Ice 1.88 1/2" Ice 2.05 1" Ice 2.22 2" Ice 2.60	1.59 1.25 1.39 1.54 1.86	0.15 0.08 0.10 0.12 0.18
RFV01U-D1A	C	From Leg	4.00 0' -2'	0.0000	117'	2" Ice 2.60 No Ice 1.88 1/2" Ice 2.05 1" Ice 2.22 2" Ice 2.60	1.59 1.25 1.39 1.54 1.86	0.15 0.08 0.10 0.12 0.18
2.4" Dia x 6-ft Pipe	A	From Leg	4.00 0' 0'	0.0000	117'	2" Ice 2.60 No Ice 1.43 1/2" Ice 1.93 1" Ice 2.30 2" Ice 3.06	1.86 1.43 1.93 2.30 3.06	0.18 0.02 0.03 0.05 0.09
2.4" Dia x 6-ft Pipe	B	From Leg	4.00 0' 0'	0.0000	117'	2" Ice 3.06 No Ice 1.43 1/2" Ice 1.93 1" Ice 2.30 2" Ice 3.06	3.06 1.43 1.93 2.30 3.06	0.09 0.02 0.03 0.05 0.09
2.4" Dia x 6-ft Pipe	C	From Leg	4.00 0' 0'	0.0000	117'	2" Ice 3.06 No Ice 1.43 1/2" Ice 1.93 1" Ice 2.30 2" Ice 3.06	3.06 1.43 1.93 2.30 3.06	0.09 0.02 0.03 0.05 0.09
Sector Mount [SM 505-3]	C	None		0.0000	117'	2" Ice 3.06 No Ice 31.66 1/2" Ice 44.64 1" Ice 57.44 2" Ice 82.68	3.06 31.66 44.64 57.44 82.68	0.09 1.73 2.36 3.19 5.45
104								
AIR 6419 B77G_CCIV2 w/ Mount Pipe	A	From Leg	4.00 0' 2'	0.0000	104'	2" Ice 5.31 No Ice 4.00 1/2" Ice 4.31 1" Ice 4.63 2" Ice 5.31	4.34 2.62 3.02 3.44 4.34	0.26 0.08 0.12 0.16 0.26
AIR 6419 B77G_CCIV2 w/ Mount Pipe	B	From Leg	4.00 0' 2'	0.0000	104'	2" Ice 5.31 No Ice 4.00 1/2" Ice 4.31 1" Ice 4.63 2" Ice 5.31	4.34 2.62 3.02 3.44 4.34	0.26 0.08 0.12 0.16 0.26
AIR 6419 B77G_CCIV2 w/ Mount Pipe	C	From Leg	4.00 0' 2'	0.0000	104'	2" Ice 5.31 No Ice 4.00 1/2" Ice 4.31 1" Ice 4.63 2" Ice 5.31	4.34 2.62 3.02 3.44 4.34	0.26 0.08 0.12 0.16 0.26
AIR 6449 B77D w/ Mount Pipe	A	From Leg	4.00 0' -2'	0.0000	104'	2" Ice 5.02 No Ice 3.58 1/2" Ice 3.92 1" Ice 4.27 2" Ice 5.02	3.57 2.31 2.60 2.91 3.57	0.28 0.09 0.13 0.17 0.28
AIR 6449 B77D w/ Mount Pipe	B	From Leg	4.00 0' -2'	0.0000	104'	2" Ice 5.02 No Ice 3.58 1/2" Ice 3.92 1" Ice 4.27 2" Ice 5.02	3.57 2.31 2.60 2.91 3.57	0.28 0.09 0.13 0.17 0.28
AIR 6449 B77D w/ Mount Pipe	C	From Leg	4.00 0' -2'	0.0000	104'	2" Ice 5.02 No Ice 3.58 1/2" Ice 3.92 1" Ice 4.27	3.57 2.31 2.60 2.91	0.28 0.09 0.13 0.17

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
TPA65R-BU6D_CCIV2 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	104'	2" Ice 5.02 No Ice 11.96 1/2" Ice 12.70 1" Ice 13.46 2" Ice 15.02	3.57 5.97 6.63 7.30 8.69	0.28 0.09 0.18 0.28 0.51
TPA65R-BU6D_CCIV2 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	104'	No Ice 11.96 1/2" Ice 12.70 1" Ice 13.46 2" Ice 15.02	5.97 6.63 7.30 8.69	0.09 0.18 0.28 0.51
TPA65R-BU8D_CCIV2 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 15.89 1/2" Ice 16.81 1" Ice 17.76 2" Ice 19.70	7.89 8.74 9.60 11.37	0.12 0.23 0.36 0.66
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 11.96 1/2" Ice 12.70 1" Ice 13.46 2" Ice 15.02	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	104'	No Ice 11.96 1/2" Ice 12.70 1" Ice 13.46 2" Ice 15.02	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 15.89 1/2" Ice 16.81 1" Ice 17.76 2" Ice 19.70	7.89 8.74 9.60 11.37	0.14 0.25 0.38 0.68
DC9-48-60-24-8C-EV_CCIV 2	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1.53 1/2" Ice 1.69 1" Ice 1.85 2" Ice 2.21	1.53 1.69 1.85 2.21	0.02 0.03 0.05 0.10
DC6-48-60-18-8F	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1.21 1/2" Ice 1.89 1" Ice 2.11 2" Ice 2.57	1.21 1.89 2.11 2.57	0.03 0.05 0.08 0.14
DC6-48-60-18-8F	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1.21 1/2" Ice 1.89 1" Ice 2.11 2" Ice 2.57	1.21 1.89 2.11 2.57	0.03 0.05 0.08 0.14
RRUS 32 B30	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 2.73 1/2" Ice 2.95 1" Ice 3.18 2" Ice 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
RRUS 32 B30	B	From Leg	4.00 0' 0'	0.0000	104'	No Ice 2.73 1/2" Ice 2.95 1" Ice 3.18 2" Ice 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
RRUS 32 B30	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 2.73 1/2" Ice 2.95 1" Ice 3.18 2" Ice 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
RRUS 32 B2	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 2.73 1/2" Ice 2.95 1" Ice 3.18 2" Ice 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
RRUS 32 B2	B	From Leg	4.00 0' 0'	0.0000	104'	No Ice 2.73 1/2" Ice 2.95 1" Ice 3.18 2" Ice 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
RRUS 32 B2	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	2.73 2.95 3.18 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
RRUS 4478 B14	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 4478 B14	B	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 4478 B14	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	0.06 0.08 0.09 0.14
RRUS 4449 B5/B12	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	B	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	A	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	B	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	C	From Leg	4.00 0' 0'	0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16
Sector Mount [SM 502-3]	C	None		0.0000	104'	No Ice 1/2" Ice 1" Ice 2" Ice	29.82 42.21 54.43 78.49	29.82 42.21 54.43 78.49	1.67 2.27 3.05 5.18
94									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	HRT 084 943242 (BU 806377)	Page	20 of 35
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	Client	Crown Castle	Designed by	APJ

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C_{AA} Front</i> <i>ft²</i>	<i>C_{AA} Side</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
TA08025-B604	A	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.96 1/2" Ice 2.14 1" Ice 2.32 2" Ice 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B604	B	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.96 1/2" Ice 2.14 1" Ice 2.32 2" Ice 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B604	C	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.96 1/2" Ice 2.14 1" Ice 2.32 2" Ice 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B605	A	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.96 1/2" Ice 2.14 1" Ice 2.32 2" Ice 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
TA08025-B605	B	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.96 1/2" Ice 2.14 1" Ice 2.32 2" Ice 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
TA08025-B605	C	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.96 1/2" Ice 2.14 1" Ice 2.32 2" Ice 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
RDIDC-9181-PF-48	A	From Leg	4.00 0' 0'	0.0000	94'	No Ice 2.01 1/2" Ice 2.19 1" Ice 2.37 2" Ice 2.76	1.17 1.31 1.46 1.78	0.02 0.04 0.06 0.11
(2) 2.4" Dia x 8-ft Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.90 1/2" Ice 2.73 1" Ice 3.40 2" Ice 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 2.4" Dia x 8-ft Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.90 1/2" Ice 2.73 1" Ice 3.40 2" Ice 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 2.4" Dia x 8-ft Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	94'	No Ice 1.90 1/2" Ice 2.73 1" Ice 3.40 2" Ice 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
Commscope MTC3975083 (3)	C	None		0.0000	94'	No Ice 23.85 1/2" Ice 34.12 1" Ice 44.39 2" Ice 64.93	23.85 34.12 44.39 64.93	1.26 1.80 2.35 3.43
84								
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	84'	No Ice 3.14 1/2" Ice 3.45 1" Ice 3.77 2" Ice 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	84'	No Ice 3.14 1/2" Ice 3.45 1" Ice 3.77 2" Ice 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	84'	No Ice 3.14 1/2" Ice 3.45 1" Ice 3.77 2" Ice 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	HRT 084 943242 (BU 806377)	Page	21 of 35
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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C_{AA} Front</i> <i>ft²</i>	<i>C_{AA} Side</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	84'	No Ice 14.69 1/2" Ice 15.46 1" Ice 16.23 2" Ice 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	84'	No Ice 14.69 1/2" Ice 15.46 1" Ice 16.23 2" Ice 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	84'	No Ice 14.69 1/2" Ice 15.46 1" Ice 16.23 2" Ice 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 6' 0'	0.0000	84'	No Ice 3.76 1/2" Ice 4.12 1" Ice 4.48 2" Ice 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00 6' 0'	0.0000	84'	No Ice 3.76 1/2" Ice 4.12 1" Ice 4.48 2" Ice 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00 6' 0'	0.0000	84'	No Ice 3.76 1/2" Ice 4.12 1" Ice 4.48 2" Ice 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
KRY 112 144/1	A	From Leg	4.00 0' 0'	0.0000	84'	No Ice 0.35 1/2" Ice 0.43 1" Ice 0.51 2" Ice 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Leg	4.00 0' 0'	0.0000	84'	No Ice 0.35 1/2" Ice 0.43 1" Ice 0.51 2" Ice 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	C	From Leg	4.00 0' 0'	0.0000	84'	No Ice 0.35 1/2" Ice 0.43 1" Ice 0.51 2" Ice 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
RADIO 4449 B12/B71	A	From Leg	4.00 0' 0'	0.0000	84'	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97 2" Ice 2.33	1.15 1.29 1.44 1.75	0.08 0.09 0.11 0.16
RADIO 4449 B12/B71	B	From Leg	4.00 0' 0'	0.0000	84'	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97 2" Ice 2.33	1.15 1.29 1.44 1.75	0.08 0.09 0.11 0.16
RADIO 4449 B12/B71	C	From Leg	4.00 0' 0'	0.0000	84'	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97 2" Ice 2.33	1.15 1.29 1.44 1.75	0.08 0.09 0.11 0.16
Sitepro VFA12-U (1)	A	From Leg	2.00 0' 0'	0.0000	84'	No Ice 8.93 1/2" Ice 15.18 1" Ice 21.43 2" Ice 33.93	4.46 8.51 12.56 20.66	0.30 0.40 0.50 0.71
Sitepro VFA12-U (1)	B	From Leg	2.00 0' 0'	0.0000	84'	No Ice 8.93 1/2" Ice 15.18 1" Ice 21.43 2" Ice 33.93	4.46 8.51 12.56 20.66	0.30 0.40 0.50 0.71
Sitepro VFA12-U (1)	C	From Leg	2.00 0' 0'	0.0000	84'	No Ice 8.93 1/2" Ice 15.18 1" Ice 21.43 2" Ice 33.93	4.46 8.51 12.56 20.66	0.30 0.40 0.50 0.71

[illegible]

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Load Combinations

<i>Comb. No.</i>	<i>Description</i>
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
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	Project	TEP No. 217456.645480	Date	10:14:57 01/14/22
	Client	Crown Castle	Designed by	APJ

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	132 - 120	Leg	Max Tension	7	2.84	0.12	-0.00
			Max. Compression	10	-5.67	0.21	0.02
			Max. Mx	22	-1.11	0.60	-0.02
			Max. My	8	-1.50	-0.00	-0.62
			Max. Vy	14	0.47	-0.32	0.02
		Diagonal	Max. Vx	20	0.48	-0.00	-0.31
			Max Tension	12	1.24	0.00	0.00
			Max. Compression	25	-1.18	0.00	0.00
			Max. Mx	28	0.19	0.02	0.00
			Max. My	12	-1.17	0.00	0.00
		Top Girt	Max. Vy	28	-0.02	0.02	0.00
			Max. Vx	12	-0.00	0.00	0.00
			Max Tension	6	0.11	0.00	0.00
			Max. Compression	11	-0.08	0.00	0.00
			Max. Mx	26	0.02	-0.06	0.00
			Max. My	26	0.02	0.00	0.00
			Max. Vy	26	0.04	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
T2	120 - 100	Leg	Max Tension	7	15.31	-0.40	0.01
			Max. Compression	2	-23.44	0.17	-0.00
			Max. Mx	14	2.75	0.68	0.03
			Max. My	20	-3.02	-0.03	0.69
			Max. Vy	6	-0.88	-0.40	0.01
		Diagonal	Max. Vx	8	0.74	-0.01	0.21
			Max Tension	12	3.02	0.00	0.00
			Max. Compression	12	-2.99	0.00	0.00
			Max. Mx	28	0.16	0.03	0.00
			Max. My	38	-0.87	0.02	-0.00
		Top Girt	Max. Vy	28	0.03	0.02	0.00
			Max. Vx	38	0.00	0.00	0.00
			Max Tension	6	0.16	0.00	0.00
			Max. Compression	19	-0.06	0.00	0.00
			Max. Mx	26	0.12	-0.06	0.00
			Max. My	26	0.12	0.00	0.00
			Max. Vy	26	0.04	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
T3	100 - 93.3333	Leg	Max Tension	7	20.22	-0.27	0.01
			Max. Compression	2	-30.76	0.26	-0.04
			Max. Mx	6	18.99	-0.28	0.01
			Max. My	8	-5.22	-0.05	0.46
			Max. Vy	14	0.46	-0.19	0.04
		Diagonal	Max. Vx	16	-0.38	0.03	0.02
			Max Tension	13	3.57	0.00	0.00
			Max. Compression	12	-3.68	0.00	0.00
			Max. Mx	28	0.42	0.06	0.01
			Max. My	36	0.94	0.05	-0.01
		Top Girt	Max. Vy	28	-0.04	0.06	0.01
			Max. Vx	36	0.00	0.00	0.00
			Max Tension	7	26.49	0.00	-0.01
			Max. Compression	2	-38.36	-0.12	-0.02
			Max. Mx	18	-37.92	0.26	0.01
T4	93.3333 - 86.6667	Leg	Max. My	4	-6.34	-0.07	-0.33
			Max. Vy	18	0.09	0.26	0.01
			Max. Vx	4	0.11	-0.07	-0.33
		Diagonal	Max Tension	12	3.91	0.00	0.00
			Max. Compression	12	-3.93	0.00	0.00
			Max. Mx	28	1.05	0.05	-0.01
			Max. My	38	-1.23	0.04	-0.01
			Max. Vy	28	0.04	0.04	0.01
			Max. Vx	38	0.00	0.00	0.00
			Max. Vy	28	0.04	0.04	0.01

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	86.6667 - 80	Leg	Max Tension	7	33.78	0.00	-0.01
			Max. Compression	2	-47.49	0.02	-0.03
			Max. Mx	2	-47.47	0.38	0.00
			Max. My	4	-6.57	-0.07	-0.33
			Max. Vy	6	0.50	-0.27	0.00
		Diagonal	Max. Vx	16	-0.29	0.05	-0.03
			Max Tension	13	4.88	0.03	-0.00
			Max. Compression	12	-4.91	0.00	0.00
			Max. Mx	28	0.84	0.07	0.01
			Max. My	30	1.33	0.07	0.01
			Max. Vy	28	-0.04	0.07	0.01
			Max. Vx	30	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	24	0.46	0.00	0.00
			Max. Compression	25	-0.45	0.00	0.00
			Max. Mx	30	-0.06	0.03	0.00
			Max. My	8	-0.43	0.01	0.00
			Max. Vy	30	-0.03	0.03	0.00
			Max. Vx	30	0.00	0.00	0.00
			Max Tension	7	55.16	-0.11	-0.02
T6	80 - 60	Leg	Max. Compression	2	-72.20	0.14	-0.01
			Max. Mx	6	53.04	-0.18	-0.01
			Max. My	4	-8.84	-0.03	-0.23
			Max. Vy	22	0.07	-0.18	0.01
			Max. Vx	4	0.09	-0.03	-0.23
		Diagonal	Max Tension	24	4.78	0.00	0.00
			Max. Compression	24	-4.84	0.00	0.00
			Max. Mx	31	0.80	0.08	0.01
			Max. My	27	-1.79	0.06	-0.01
			Max. Vy	29	0.05	0.07	0.01
			Max. Vx	27	0.00	0.00	0.00
T7	60 - 40	Leg	Max Tension	15	75.13	-0.14	0.03
			Max. Compression	2	-95.91	0.40	-0.07
			Max. Mx	37	-0.91	-0.56	-0.02
			Max. My	5	-7.70	0.02	-0.26
			Max. Vy	37	0.15	-0.56	-0.02
		Diagonal	Max. Vx	4	-0.08	-0.03	-0.23
			Max Tension	24	5.23	0.00	0.00
			Max. Compression	24	-5.21	0.00	0.00
			Max. Mx	31	0.80	0.11	0.01
			Max. My	33	-1.20	0.08	0.01
			Max. Vy	29	0.06	0.10	0.01
			Max. Vx	33	-0.00	0.00	0.00
T8	40 - 20	Leg	Max Tension	15	92.39	-0.26	0.08
			Max. Compression	2	-116.48	0.68	-0.09
			Max. Mx	37	0.60	-0.99	-0.02
			Max. My	4	-10.98	-0.08	-0.65
			Max. Vy	37	0.18	-0.99	-0.02
		Diagonal	Max. Vx	4	-0.16	-0.08	-0.65
			Max Tension	24	6.00	0.00	0.00
			Max. Compression	24	-6.07	0.00	0.00
			Max. Mx	29	0.63	0.15	-0.02
			Max. My	27	1.63	0.13	-0.02
			Max. Vy	29	0.08	0.13	0.02
			Max. Vx	27	0.00	0.00	0.00
T9	20 - 10	Leg	Max Tension	15	101.54	-0.53	0.09
			Max. Compression	2	-127.62	-0.34	-0.05
			Max. Mx	37	4.05	-0.99	-0.02
			Max. My	4	-12.63	-0.15	-0.96
			Max. Vy	37	-0.22	-0.99	-0.02
			Max. Vx	4	0.19	-0.15	-0.96

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T10	10 - 0	Diagonal	Max Tension	24	6.18	0.00	0.00
			Max. Compression	24	-6.17	0.00	0.00
			Max. Mx	29	0.24	0.23	-0.02
			Max. My	32	-3.00	0.20	0.03
			Max. Vy	29	0.09	0.23	-0.02
			Max. Vx	32	-0.00	0.00	0.00
		Leg	Max Tension	15	109.86	0.08	0.07
			Max. Compression	2	-137.76	0.00	0.00
			Max. Mx	2	-137.59	1.17	0.01
			Max. My	4	-13.02	-0.15	-0.96
			Max. Vy	2	-0.33	1.17	0.01
			Max. Vx	4	-0.25	-0.15	-0.96
		Diagonal	Max Tension	25	6.27	0.10	0.01
			Max. Compression	2	-6.82	0.00	0.00
			Max. Mx	31	2.69	0.14	-0.03
			Max. My	27	2.16	0.14	-0.03
			Max. Vy	30	0.08	0.14	0.03
			Max. Vx	27	0.01	0.00	0.00
		Secondary Horizontal	Max Tension	4	0.39	0.00	0.00
			Max. Compression	5	-0.32	0.00	0.00
			Max. Mx	28	-0.02	0.09	0.01
			Max. My	30	-0.17	0.08	0.01
			Max. Vy	28	0.05	0.09	0.01
			Max. Vx	30	-0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	138.96	14.33	-8.06
	Max. H _x	18	138.96	14.33	-8.06
	Max. H _z	7	-113.04	-12.07	6.76
	Min. Vert	7	-113.04	-12.07	6.76
	Min. H _x	7	-113.04	-12.07	6.76
	Min. H _z	18	138.96	14.33	-8.06
Leg B	Max. Vert	10	141.13	-14.10	-8.69
	Max. H _x	23	-111.62	11.80	7.32
	Max. H _z	25	-97.38	9.82	7.57
	Min. Vert	23	-111.62	11.80	7.32
	Min. H _x	10	141.13	-14.10	-8.69
	Min. H _z	10	141.13	-14.10	-8.69
Leg A	Max. Vert	2	143.37	0.81	16.98
	Max. H _x	20	13.71	2.32	1.08
	Max. H _z	2	143.37	0.81	16.98
	Min. Vert	15	-114.26	-0.77	-14.31
	Min. H _x	11	-53.47	-2.28	-6.94
	Min. H _z	15	-114.26	-0.77	-14.31

Tower Mast Reaction Summary

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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	32.79	0.00	-0.00	-7.08	-15.98	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	39.35	-0.00	-27.17	-2117.42	-18.24	25.61
0.9 Dead+1.0 Wind 0 deg - No Ice	29.51	-0.00	-27.17	-2115.30	-13.44	25.61
1.2 Dead+1.0 Wind 30 deg - No Ice	39.35	12.89	-22.36	-1768.94	-1033.60	23.15
0.9 Dead+1.0 Wind 30 deg - No Ice	29.51	12.89	-22.36	-1766.82	-1028.80	23.15
1.2 Dead+1.0 Wind 60 deg - No Ice	39.35	21.55	-12.44	-999.80	-1735.37	5.85
0.9 Dead+1.0 Wind 60 deg - No Ice	29.51	21.55	-12.44	-997.68	-1730.58	5.85
1.2 Dead+1.0 Wind 90 deg - No Ice	39.35	25.26	0.01	-7.46	-2026.43	-9.44
0.9 Dead+1.0 Wind 90 deg - No Ice	29.51	25.26	0.01	-5.33	-2021.64	-9.44
1.2 Dead+1.0 Wind 120 deg - No Ice	39.35	22.86	13.21	1027.07	-1809.97	-14.83
0.9 Dead+1.0 Wind 120 deg - No Ice	29.51	22.86	13.21	1029.19	-1805.18	-14.83
1.2 Dead+1.0 Wind 150 deg - No Ice	39.35	12.90	22.36	1744.21	-1030.45	-20.08
0.9 Dead+1.0 Wind 150 deg - No Ice	29.51	12.90	22.36	1746.33	-1025.65	-20.08
1.2 Dead+1.0 Wind 180 deg - No Ice	39.35	0.01	25.79	2015.13	-20.37	-25.62
0.9 Dead+1.0 Wind 180 deg - No Ice	29.51	0.01	25.79	2017.25	-15.58	-25.62
1.2 Dead+1.0 Wind 210 deg - No Ice	39.35	-12.89	22.35	1751.63	994.95	-23.17
0.9 Dead+1.0 Wind 210 deg - No Ice	29.51	-12.89	22.35	1753.75	999.74	-23.17
1.2 Dead+1.0 Wind 240 deg - No Ice	39.35	-22.74	13.13	1025.06	1770.36	-5.86
0.9 Dead+1.0 Wind 240 deg - No Ice	29.51	-22.74	13.13	1027.18	1775.15	-5.86
1.2 Dead+1.0 Wind 270 deg - No Ice	39.35	-25.25	-0.01	-9.73	1987.78	9.44
0.9 Dead+1.0 Wind 270 deg - No Ice	29.51	-25.25	-0.01	-7.61	1992.57	9.44
1.2 Dead+1.0 Wind 300 deg - No Ice	39.35	-21.66	-12.52	-1001.69	1697.91	14.81
0.9 Dead+1.0 Wind 300 deg - No Ice	29.51	-21.66	-12.52	-999.57	1702.70	14.81
1.2 Dead+1.0 Wind 330 deg - No Ice	39.35	-12.90	-22.36	-1761.14	992.11	20.09
0.9 Dead+1.0 Wind 330 deg - No Ice	29.51	-12.90	-22.36	-1759.01	996.90	20.09
1.2 Dead+1.0 Ice+1.0 Temp	95.07	0.00	-0.00	-14.56	-72.15	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	95.07	-0.00	-8.33	-664.62	-71.93	9.42
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	95.07	4.07	-7.05	-569.83	-392.34	7.76
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	95.07	6.97	-4.02	-333.29	-624.14	2.36
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	95.07	8.09	0.00	-14.32	-711.97	-3.39
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	95.07	7.17	4.14	310.10	-633.95	-6.56
1.2 Dead+1.0 Wind 150	95.07	4.08	7.06	539.33	-391.86	-8.25

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<i>Load Combination</i>	<i>Vertical K</i>	<i>Shear_x K</i>	<i>Shear_z K</i>	<i>Overturning Moment, M_x kip-ft</i>	<i>Overturning Moment, M_z kip-ft</i>	<i>Torque kip-ft</i>
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180	95.07	0.00	8.11	622.58	-72.43	-9.42
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210	95.07	-4.07	7.05	540.62	247.97	-7.77
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240	95.07	-7.16	4.13	310.52	490.88	-2.37
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	95.07	-8.09	-0.00	-14.85	567.60	3.39
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	95.07	-6.98	-4.04	-332.84	478.51	6.55
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	95.07	-4.08	-7.06	-568.44	247.56	8.25
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	32.79	-0.00	-7.41	-581.61	-15.72	6.96
Dead+Wind 30 deg - Service	32.79	3.52	-6.10	-486.70	-292.35	6.29
Dead+Wind 60 deg - Service	32.79	5.88	-3.39	-277.16	-483.55	1.58
Dead+Wind 90 deg - Service	32.79	6.89	0.00	-6.80	-562.84	-2.58
Dead+Wind 120 deg - Service	32.79	6.24	3.60	275.04	-503.86	-4.04
Dead+Wind 150 deg - Service	32.79	3.52	6.10	470.43	-291.49	-5.46
Dead+Wind 180 deg - Service	32.79	0.00	7.03	544.24	-16.30	-6.96
Dead+Wind 210 deg - Service	32.79	-3.52	6.10	472.45	260.31	-6.30
Dead+Wind 240 deg - Service	32.79	-6.20	3.58	274.50	471.56	-1.59
Dead+Wind 270 deg - Service	32.79	-6.89	-0.00	-7.42	530.81	2.57
Dead+Wind 300 deg - Service	32.79	-5.91	-3.42	-277.67	451.84	4.03
Dead+Wind 330 deg - Service	32.79	-3.52	-6.10	-484.57	259.54	5.46

Solution Summary

<i>Load Comb.</i>	<i>Sum of Applied Forces</i>			<i>Sum of Reactions</i>			<i>% Error</i>
	<i>PX K</i>	<i>PY K</i>	<i>PZ K</i>	<i>PX K</i>	<i>PY K</i>	<i>PZ K</i>	
1	0.00	-32.79	0.00	-0.00	32.79	0.00	0.000%
2	-0.00	-39.35	-27.17	0.00	39.35	27.17	0.000%
3	-0.00	-29.51	-27.17	0.00	29.51	27.17	0.000%
4	12.89	-39.35	-22.36	-12.89	39.35	22.36	0.000%
5	12.89	-29.51	-22.36	-12.89	29.51	22.36	0.000%
6	21.55	-39.35	-12.44	-21.55	39.35	12.44	0.000%
7	21.55	-29.51	-12.44	-21.55	29.51	12.44	0.000%
8	25.26	-39.35	0.01	-25.26	39.35	-0.01	0.000%
9	25.26	-29.51	0.01	-25.26	29.51	-0.01	0.000%
10	22.86	-39.35	13.21	-22.86	39.35	-13.21	0.000%
11	22.86	-29.51	13.21	-22.86	29.51	-13.21	0.000%
12	12.90	-39.35	22.36	-12.90	39.35	-22.36	0.000%
13	12.90	-29.51	22.36	-12.90	29.51	-22.36	0.000%
14	0.01	-39.35	25.79	-0.01	39.35	-25.79	0.000%
15	0.01	-29.51	25.79	-0.01	29.51	-25.79	0.000%
16	-12.89	-39.35	22.35	12.89	39.35	-22.35	0.000%
17	-12.89	-29.51	22.35	12.89	29.51	-22.35	0.000%
18	-22.74	-39.35	13.13	22.74	39.35	-13.13	0.000%
19	-22.74	-29.51	13.13	22.74	29.51	-13.13	0.000%
20	-25.25	-39.35	-0.01	25.25	39.35	0.01	0.000%
21	-25.25	-29.51	-0.01	25.25	29.51	0.01	0.000%
22	-21.66	-39.35	-12.52	21.66	39.35	12.52	0.000%
23	-21.66	-29.51	-12.52	21.66	29.51	12.52	0.000%
24	-12.90	-39.35	-22.36	12.90	39.35	22.36	0.000%
25	-12.90	-29.51	-22.36	12.90	29.51	22.36	0.000%
26	0.00	-95.07	0.00	-0.00	95.07	0.00	0.000%
27	-0.00	-95.07	-8.33	0.00	95.07	8.33	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
28	4.07	-95.07	-7.05	-4.07	95.07	7.05	0.000%
29	6.97	-95.07	-4.02	-6.97	95.07	4.02	0.000%
30	8.09	-95.07	0.00	-8.09	95.07	-0.00	0.000%
31	7.17	-95.07	4.14	-7.17	95.07	-4.14	0.000%
32	4.08	-95.07	7.06	-4.08	95.07	-7.06	0.000%
33	0.00	-95.07	8.11	-0.00	95.07	-8.11	0.000%
34	-4.07	-95.07	7.05	4.07	95.07	-7.05	0.000%
35	-7.16	-95.07	4.13	7.16	95.07	-4.13	0.000%
36	-8.09	-95.07	-0.00	8.09	95.07	0.00	0.000%
37	-6.98	-95.07	-4.04	6.98	95.07	4.04	0.000%
38	-4.08	-95.07	-7.06	4.08	95.07	7.06	0.000%
39	-0.00	-32.79	-7.41	0.00	32.79	7.41	0.000%
40	3.52	-32.79	-6.10	-3.52	32.79	6.10	0.000%
41	5.88	-32.79	-3.39	-5.88	32.79	3.39	0.000%
42	6.89	-32.79	0.00	-6.89	32.79	-0.00	0.000%
43	6.24	-32.79	3.60	-6.24	32.79	-3.60	0.000%
44	3.52	-32.79	6.10	-3.52	32.79	-6.10	0.000%
45	0.00	-32.79	7.03	-0.00	32.79	-7.03	0.000%
46	-3.52	-32.79	6.10	3.52	32.79	-6.10	0.000%
47	-6.20	-32.79	3.58	6.20	32.79	-3.58	0.000%
48	-6.89	-32.79	-0.00	6.89	32.79	0.00	0.000%
49	-5.91	-32.79	-3.42	5.91	32.79	3.42	0.000%
50	-3.52	-32.79	-6.10	3.52	32.79	6.10	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	132 - 120	2.165	39	0.1383	0.0158
T2	120 - 100	1.815	39	0.1349	0.0153
T3	100 - 93.3333	1.260	39	0.1185	0.0131
T4	93.3333 - 86.6667	1.095	39	0.1112	0.0127
T5	86.6667 - 80	0.938	39	0.1020	0.0121
T6	80 - 60	0.796	39	0.0916	0.0114
T7	60 - 40	0.444	39	0.0629	0.0083
T8	40 - 20	0.204	39	0.0394	0.0051
T9	20 - 10	0.060	39	0.0204	0.0024
T10	10 - 0	0.017	39	0.0102	0.0012

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130'	4" x 5' Pipe	39	2.106	0.1380	0.0158	Inf
117'	LBX-6515DS-T0M w/ Mount Pipe	39	1.728	0.1333	0.0150	163169
104'	AIR 6419 B77G_CCIV2 w/ Mount Pipe	39	1.364	0.1226	0.0135	43922
94'	MX08FRO665-21 w/ Mount Pipe	39	1.111	0.1120	0.0128	97897
84'	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	0.879	0.0979	0.0119	32281

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
63'	SB1-190BB	39	0.490	0.0668	0.0088	41420
56'	GPS-TMG-20N	39	0.387	0.0577	0.0076	41556
46'	KS24019-L112A	39	0.265	0.0458	0.0060	45863

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	132 - 120	7.873	2	0.5014	0.0583
T2	120 - 100	6.606	2	0.4893	0.0564
T3	100 - 93.3333	4.589	2	0.4305	0.0485
T4	93.3333 - 86.6667	3.991	2	0.4041	0.0470
T5	86.6667 - 80	3.417	2	0.3711	0.0448
T6	80 - 60	2.902	2	0.3333	0.0421
T7	60 - 40	1.619	2	0.2288	0.0306
T8	40 - 20	0.744	2	0.1433	0.0186
T9	20 - 10	0.218	2	0.0742	0.0090
T10	10 - 0	0.062	2	0.0373	0.0046

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
130'	4" x 5' Pipe	2	7.662	0.5001	0.0581	393738
117'	LBX-6515DS-T0M w/ Mount Pipe	2	6.291	0.4835	0.0554	49365
104'	AIR 6419 B77G_CCIV2 w/ Mount Pipe	2	4.968	0.4450	0.0498	12189
94'	MX08FRO665-21 w/ Mount Pipe	2	4.050	0.4070	0.0471	27479
84'	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	3.204	0.3562	0.0438	8917
63'	SB1-190BB	2	1.786	0.2433	0.0325	11377
56'	GPS-TMG-20N	2	1.412	0.2101	0.0280	11404
46'	KS24019-L112A	2	0.965	0.1667	0.0220	12585

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	132	Leg	A325X	0.6250	4	0.71	20.34	0.035	1.05	Bolt Tension
		Diagonal	A325X	0.6250	1	1.24	6.79	0.183	1.05	Member Block Shear
T2	120	Top Girt	A325X	0.6250	1	0.11	7.83	0.014	1.05	Member Bearing
		Leg	A325X	0.7500	4	3.83	30.10	0.127	1.05	Bolt Tension
		Diagonal	A325X	0.6250	1	3.02	6.79	0.444	1.05	Member Block

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
		Top Girt	A325X	0.6250	1	0.41	7.83	0.052	1.05	Shear
T3	100	Diagonal	A325X	0.6250	1	3.57	7.83	0.455	1.05	Member Bearing
T4	93.3333	Diagonal	A325X	0.6250	1	3.91	7.83	0.499	1.05	Member Bearing
T5	86.6667	Leg	A325X	0.8750	4	8.25	41.56	0.199	1.05	Bolt Tension
		Diagonal	A325X	0.6250	1	4.88	7.83	0.623	1.05	Member Bearing
		Secondary Horizontal	A325N	0.6250	1	0.82	5.46	0.151	1.05	Member Block Shear
T6	80	Leg	A325X	0.8750	4	13.79	41.56	0.332	1.05	Bolt Tension
		Diagonal	A325X	0.6250	1	4.78	7.83	0.611	1.05	Member Bearing
T7	60	Leg	A325X	1.0000	4	18.78	54.52	0.345	1.05	Bolt Tension
		Diagonal	A325X	0.6250	1	5.23	7.83	0.668	1.05	Member Bearing
T8	40	Leg	A325X	1.0000	4	23.10	54.52	0.424	1.05	Bolt Tension
		Diagonal	A325X	0.6250	1	6.00	11.70	0.513	1.05	Member Bearing
T9	20	Diagonal	A325X	0.6250	1	6.18	11.70	0.528	1.05	Member Bearing
T10	10	Diagonal	A325X	0.7500	1	6.27	14.14	0.443	1.05	Member Bearing
		Secondary Horizontal	A325N	0.6250	1	2.39	9.53	0.251	1.05	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	132 - 120	ROHN 2 STD	12'	4'	61.0 K=1.00	1.0745	-5.67	36.84	0.154 ¹
T2	120 - 100	ROHN 2.5 STD	20'3/8"	5'1/8"	63.4 K=1.00	1.7040	-23.44	57.13	0.410 ¹
T3	100 - 93.3333	ROHN 3 STD	6'8-5/32'	6'8-5/32'	68.9 K=1.00	2.2285	-30.76	70.89	0.434 ¹
T4	93.3333 - 86.6667	ROHN 3 STD	6'8-5/32'	6'8-5/32'	68.9 K=1.00	2.2285	-38.36	70.87	0.541 ¹
T5	86.6667 - 80	ROHN 3 STD	6'8-1/32'	3'5-5/32'	35.4 K=1.00	2.2285	-47.49	91.52	0.519 ¹
T6	80 - 60	ROHN 3 X-STR	20'15/32"	6'8-5/32'	70.5 K=1.00	3.0159	-72.20	94.34	0.765 ¹
T7	60 - 40	ROHN 4 X-STR	20'3/8"	6'8-5/32'	54.3 K=1.00	4.4074	-95.91	159.91	0.600 ¹
T8	40 - 20	ROHN 5 X-STR	20'3/8"	10'1/4"	65.4 K=1.00	6.1120	-116.48	201.25	0.579 ¹
T9	20 - 10	ROHN 5 X-STR	10'1/4"	10'1/4"	65.4 K=1.00	6.1120	-127.62	201.25	0.634 ¹
T10	10 - 0	ROHN 5 X-STR	10'1/4"	5'1-13/16"	33.6 K=1.00	6.1120	-137.76	253.28	0.544 ¹

¹ P_u / φP_n controls

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	Client	Crown Castle	Designed by	APJ

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	132 - 120	L1 3/4x1 3/4x3/16	7'8"-7/8"	3'7"-11/16"	127.1 K=1.00	0.6211	-1.18	11.00	0.107 ¹
T2	120 - 100	L1 3/4x1 3/4x3/16	9'9"-19/32"	4'9"-15/32"	167.4 K=1.00	0.6211	-2.99	6.34	0.472 ¹
T3	100 - 93.3333	L2 1/2x2 1/2x3/16	11'2"-5/8"	5'6"-1/4"	133.7 K=1.00	0.9023	-3.68	14.44	0.255 ¹
T4	93.3333 - 86.6667	L2 1/2x2 1/2x3/16	11'9"-19/32"	5'10"-3/32"	141.5 K=1.00	0.9023	-3.93	12.89	0.305 ¹
T5	86.6667 - 80	L2 1/2x2 1/2x3/16	12'4"-5/16"	6'19/32"	146.8 K=1.00	0.9023	-4.91	11.98	0.410 ¹
T6	80 - 60	L2 1/2x2 1/2x3/16	14'1"-3/32"	6'11"-17/32"	168.7 K=1.00	0.9023	-4.84	9.07	0.533 ¹
T7	60 - 40	L3x3x3/16	15'10"-13/16"	7'9"-23/32"	157.2 K=1.00	1.0900	-5.21	12.62	0.413 ¹
T8	40 - 20	L3x3x1/4	19'1"-3/16"	9'5"-13/32"	193.9 K=1.00	1.4400	-6.07	10.96	0.554 ¹
T9	20 - 10	L3 1/2x3 1/2x1/4	19'11"-17/32"	9'10"-9/16"	170.9 K=1.00	1.6900	-6.17	16.57	0.372 ¹
T10	10 - 0	L3 1/2x3 1/2x1/4	20'9"-31/32"	10'3"-19/32"	178.1 K=1.00	1.6900	-6.82	15.25	0.447 ¹

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T5	86.6667 - 80	L1 1/2x1 1/2x3/16	10'4"-13/16"	4'11"-1/32"	201.1 K=1.00	0.5273	-0.82	3.73	0.221 ¹
T10	10 - 0	L2 1/2x2 1/2x3/16	18'3"-1/8"	8'9"-1/8"	212.4 K=1.00	0.9023	-2.39	5.72	0.417 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	132 - 120	L2x2x3/16	6'7"-3/16"	6'2"-1/32"	187.8 K=1.00	0.7150	-0.08	5.80	0.014 ¹
T2	120 - 100	L2x2x3/16	6'7"-13/16"	6'2"-1/32"	187.8 K=1.00	0.7150	-0.41	5.80	0.070 ¹

¹ P_u / φP_n controls

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Tension Checks

Leg Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	132 - 120	ROHN 2 STD	12'	4'	61.0	1.0745	2.84	48.35	0.059 ¹
T2	120 - 100	ROHN 2.5 STD	20'3/8"	5'1/8"	63.4	1.7040	15.31	76.68	0.200 ¹
T3	100 - 93.3333	ROHN 3 STD	6'8-5/32'	6'8-5/32'	68.9	2.2285	20.22	100.28	0.202 ¹
T4	93.3333 - 86.6667	ROHN 3 STD	6'8-5/32'	6'8-5/32'	68.9	2.2285	26.49	100.28	0.264 ¹
T5	86.6667 - 80	ROHN 3 STD	6'8-1/32'	3'3"	33.5	2.2285	33.78	100.28	0.337 ¹
T6	80 - 60	ROHN 3 X-STR	20'15/32"	6'8-5/32'	70.5	3.0159	55.16	135.72	0.406 ¹
T7	60 - 40	ROHN 4 X-STR	20'3/8"	6'8-5/32'	54.3	4.4074	75.13	198.34	0.379 ¹
T8	40 - 20	ROHN 5 X-STR	20'3/8"	10'1/4"	65.4	6.1120	92.39	275.04	0.336 ¹
T9	20 - 10	ROHN 5 X-STR	10'1/4"	10'1/4"	65.4	6.1120	101.54	275.04	0.369 ¹
T10	10 - 0	ROHN 5 X-STR	10'1/4"	4'10-7/16"	31.8	6.1120	109.86	275.04	0.399 ¹

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	132 - 120	L1 3/4x1 3/4x3/16	7'8-7/8"	3'7-11/16"	84.0	0.3604	1.24	15.68	0.079 ¹
T2	120 - 100	L1 3/4x1 3/4x3/16	9'9-19/32"	4'9-15/32"	109.8	0.3604	3.02	15.68	0.192 ¹
T3	100 - 93.3333	L2 1/2x2 1/2x3/16	11'2-5/8"	5'6-1/4"	86.9	0.5713	3.57	24.85	0.143 ¹
T4	93.3333 - 86.6667	L2 1/2x2 1/2x3/16	11'9-19/32"	5'10-3/32"	91.8	0.5713	3.91	24.85	0.157 ¹
T5	86.6667 - 80	L2 1/2x2 1/2x3/16	12'4-5/16"	6'19/32"	95.2	0.5713	4.88	24.85	0.196 ¹
T6	80 - 60	L2 1/2x2 1/2x3/16	13'5-7/8"	6'7-29/32"	104.5	0.5713	4.78	24.85	0.192 ¹
T7	60 - 40	L3x3x3/16	15'10-13/16"	7'9-23/32"	101.3	0.7120	5.23	30.97	0.169 ¹
T8	40 - 20	L3x3x1/4	19'1-3/16"	9'5-13/32"	124.0	0.9394	6.00	45.79	0.131 ¹
T9	20 - 10	L3 1/2x3 1/2x1/4	19'11-17/32"	9'10-9/16"	110.1	1.1269	6.18	54.94	0.112 ¹
T10	10 - 0	L3 1/2x3 1/2x1/4	20'9-31/32"	10'3-19/32"	114.9	1.1034	6.27	53.79	0.117 ¹

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¹ $P_u / \phi P_n$ controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	86.6667 - 80	L1 1/2x1 1/2x3/16	10'4-13/16"	4'11-1/32"	265.5	0.2900	0.82	12.62	0.065 ¹
T10	10 - 0	L2 1/2x2 1/2x3/16	18'3-1/8"	8'9-1/8"	274.4	0.5713	2.39	24.85	0.096 ¹

¹ $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	132 - 120	L2x2x3/16	6'7-3/16"	6'2-1/32"	124.6	0.4308	0.11	18.74	0.006 ¹
T2	120 - 100	L2x2x3/16	6'7-13/16"	6'2-1/32"	124.6	0.4308	0.41	18.74	0.022 ¹

¹ $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	132 - 120	Leg	ROHN 2 STD	2	-5.67	38.68	14.7	Pass
T2	120 - 100	Leg	ROHN 2.5 STD	27	-23.44	59.99	39.1	Pass
T3	100 - 93.3333	Leg	ROHN 3 STD	57	-30.76	74.44	41.3	Pass
T4	93.3333 - 86.6667	Leg	ROHN 3 STD	66	-38.36	74.41	51.6	Pass
T5	86.6667 - 80	Leg	ROHN 3 STD	75	-47.49	96.10	49.4	Pass
T6	80 - 60	Leg	ROHN 3 X-STR	87	-72.20	99.05	72.9	Pass
T7	60 - 40	Leg	ROHN 4 X-STR	108	-95.91	167.91	57.1	Pass
T8	40 - 20	Leg	ROHN 5 X-STR	129	-116.48	211.31	55.1	Pass
T9	20 - 10	Leg	ROHN 5 X-STR	144	-127.62	211.31	60.4	Pass
T10	10 - 0	Leg	ROHN 5 X-STR	153	-137.76	265.94	51.8	Pass
T1	132 - 120	Diagonal	L1 3/4x1 3/4x3/16	16	-1.18	11.55	10.2	Pass
T2	120 - 100	Diagonal	L1 3/4x1 3/4x3/16	33	-2.99	6.66	44.9	Pass
T3	100 - 93.3333	Diagonal	L2 1/2x2 1/2x3/16	60	-3.68	15.16	24.3	Pass
T4	93.3333 - 86.6667	Diagonal	L2 1/2x2 1/2x3/16	69	-3.93	13.54	29.0	Pass
T5	86.6667 - 80	Diagonal	L2 1/2x2 1/2x3/16	78	-4.91	12.58	39.0	Pass
T6	80 - 60	Diagonal	L2 1/2x2 1/2x3/16	91	-4.84	9.53	50.8	Pass
T7	60 - 40	Diagonal	L3x3x3/16	112	-5.21	13.25	39.4	Pass
T8	40 - 20	Diagonal	L3x3x1/4	133	-6.07	11.51	52.7	Pass
T9	20 - 10	Diagonal	L3 1/2x3 1/2x1/4	148	-6.17	17.40	35.5	Pass

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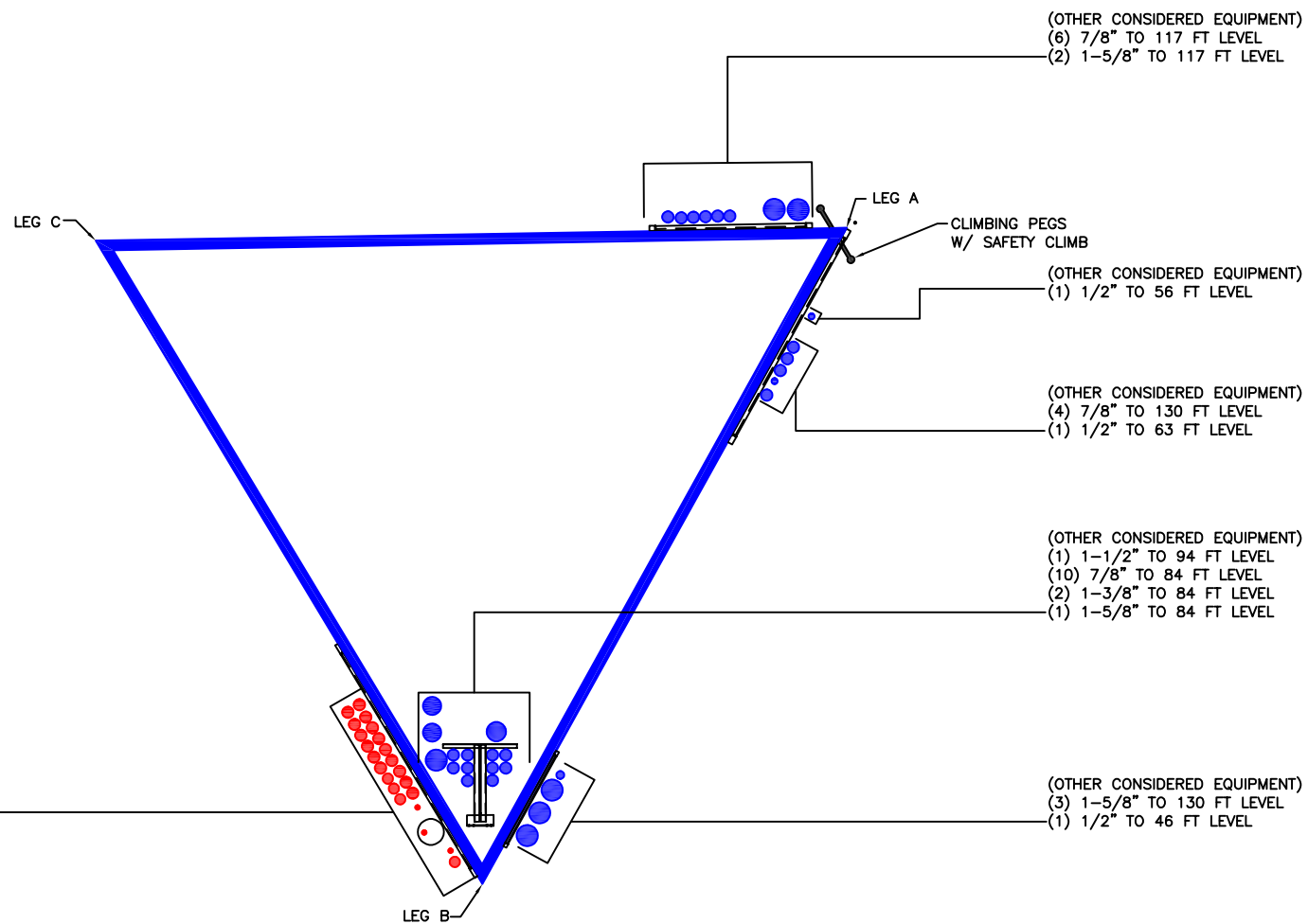
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T10	10 - 0	Diagonal	L3 1/2x3 1/2x1/4	157	-6.82	16.01	42.6	Pass
T5	86.6667 - 80	Secondary Horizontal	L1 1/2x1 1/2x3/16	83	-0.82	3.92	21.0	Pass
T10	10 - 0	Secondary Horizontal	L2 1/2x2 1/2x3/16	161	-2.39	6.01	39.8	Pass
T1	132 - 120	Top Girt	L2x2x3/16	6	-0.08	6.09	1.3	Pass
T2	120 - 100	Top Girt	L2x2x3/16	29	-0.41	6.09	6.7	Pass
Summary								
Leg (T6)							72.9	Pass
Diagonal (T8)							52.7	Pass
Secondary Horizontal (T10)							39.8	Pass
Top Girt (T2)							6.7	Pass
Bolt Checks							63.6	Pass
RATING =							72.9	Pass

132-ft Self-Supporting Tower Structural Analysis Report
TEP Project Number 217456.645480, Order 586240, Revision 0

January 14, 2022
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APPENDIX B

BASE LEVEL DRAWING



132-ft Self-Supporting Tower Structural Analysis Report
TEP Project Number 217456.645480, Order 586240, Revision 0

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APPENDIX C

ADDITIONAL CALCULATIONS

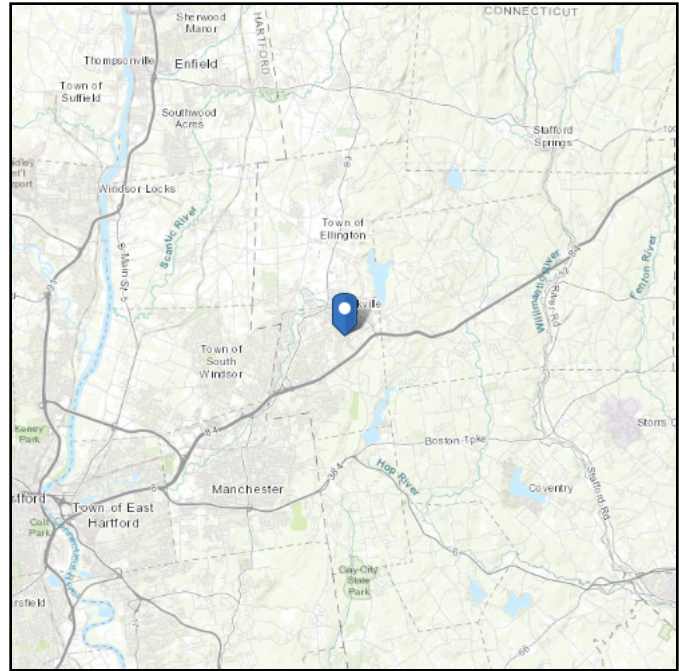
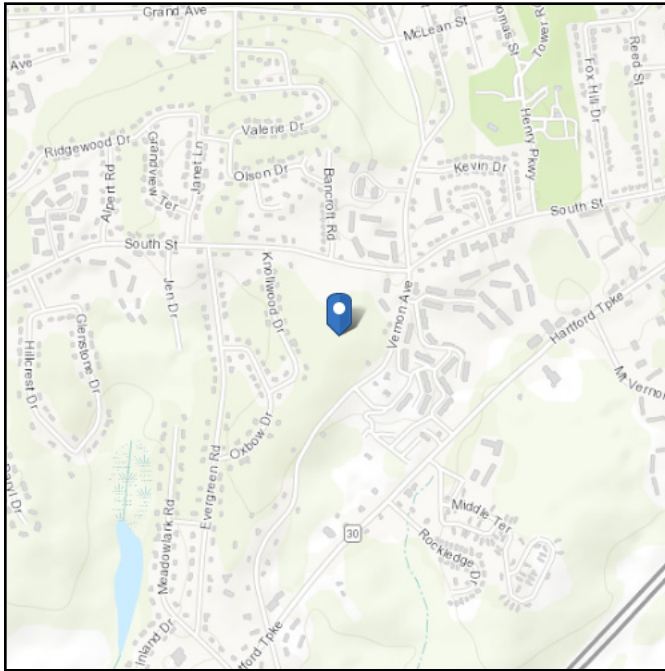


ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Elevation: 654.83 ft (NAVD 88)
Latitude: 41.853475
Longitude: -72.452089



Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Jan 13 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

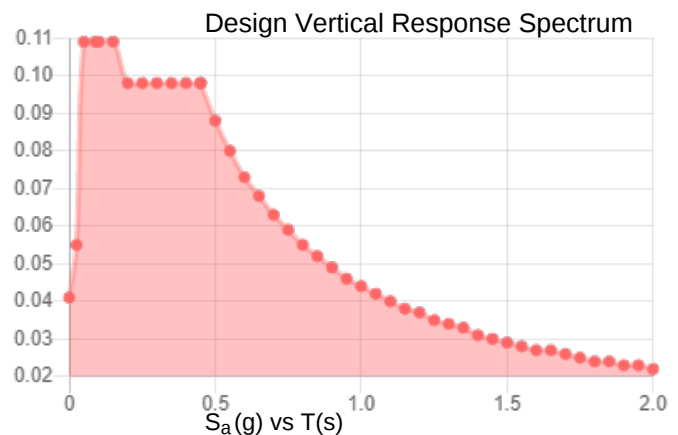
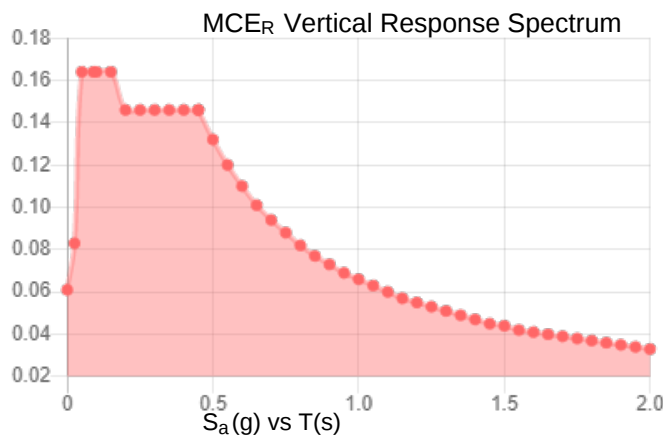
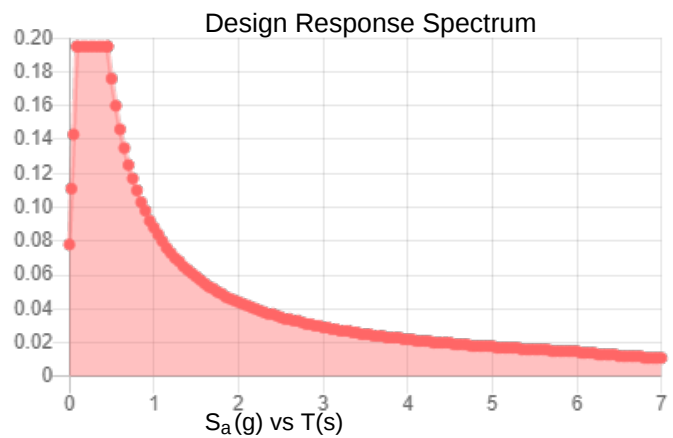
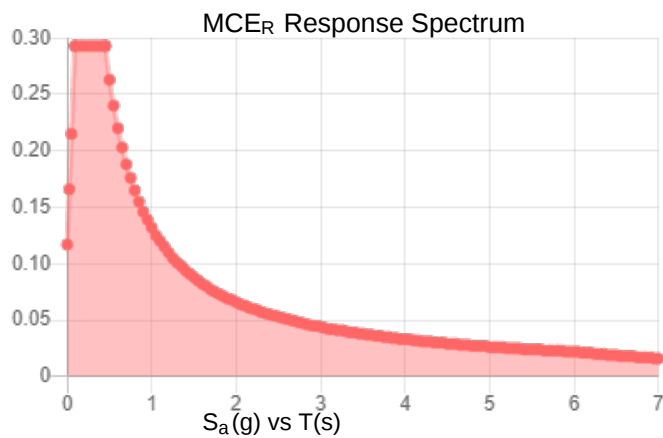
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	0.183	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.098
F_v :	2.4	PGA _M :	0.156
S_{MS} :	0.293	F_{PGA} :	1.6
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.195	C_v :	0.7

Seismic Design Category B



Data Accessed: Thu Jan 13 2022

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.



Ice

Results:

Ice Thickness: 1.50 in.
Concurrent Temperature: 5 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Thu Jan 13 2022

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Self Support Anchor Rod Capacity



Site Info	
BU #	806377
Site Name	HRT 084 943242
Order #	586240 Rev. 0

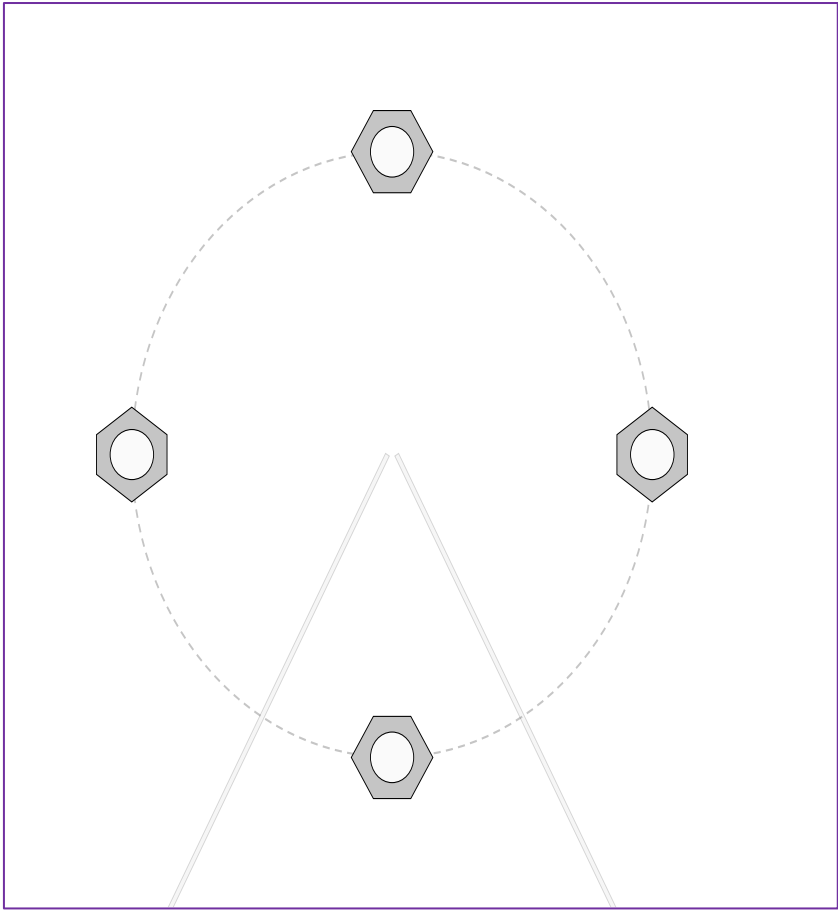
Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	1.375

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	143.00	114.00
Shear Force (kips)	17.00	14.00

*TIA-222-H Section 15.5 Applied

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.000
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	0.000

*Anchor Rod Eccentricity Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(4) 1" $\varnothing$ bolts (A449 N; Fy=92 ksi, Fu=120 ksi)
l_{ar} (in): 1.375

Anchor Rod Summary			(units of kips, kip-in)
Pu_t = 28.5	ϕPn_t = 54.54	Stress Rating	
Vu = 3.5	ϕVn = 35.34	49.8%	
Mu = n/a	ϕMn = n/a	Pass	

SST Unit Base Foundation

BU #: 806377
 Site Name: HRT 084 943242
 App. Number: 586240 Rev. 0

TIA-222 Revision: H

Top & Bot. Pad Rein. Different?:	☐
Tower Centroid Offset?:	☒
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions			
Global Moment, M :	2117	ft-kips	
Global Axial, P :	39	kips	
Global Shear, V :	27	kips	
Leg Compression, P_{comp} :	143	kips	
Leg Comp. Shear, V_{u, comp} :	17	kips	
Leg Uplift, P_{uplift} :	114	kips	
Leg Uplift. Shear, V_{u, uplift} :	14	kips	
Tower Height, H :	132	ft	
Base Face Width, BW :	18.77	ft	
BP Dist. Above Fdn, bp_{dist} :	2.375	in	

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	109.80	27.00	23.4%	Pass
<i>Bearing Pressure (ksf)</i>	22.50	1.69	7.5%	Pass
<i>Overturning (kip*ft)</i>	4267.81	2404.57	56.3%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	871.48	39.10	4.3%	Pass
<i>Pier Flexure (Tension) (kip*ft)</i>	657.70	32.20	4.7%	Pass
<i>Pier Compression (kip)</i>	4119.38	147.51	3.4%	Pass
<i>Pad Flexure (kip*ft)</i>	3850.11	113.22	2.8%	Pass
<i>Pad Shear - 1-way (kips)</i>	1086.07	18.04	1.6%	Pass
<i>Pad Shear - Comp 2-way (ksi)</i>	0.164	0.012	7.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	1648.65	23.46	1.4%	Pass
<i>Pad Shear - Tension 2-way (ksi)</i>	0.164	0.011	6.2%	Pass
<i>Flexural 2-way (Tension) (kip*ft)</i>	1648.65	19.32	1.1%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating*:	7.0%
Soil Rating*:	56.3%

Pier Properties		
Pier Shape:	Square	
Pier Diameter, dpier :	3.3	ft
Ext. Above Grade, E :	2.30	ft
Pier Rebar Size, Sc :	9	
Pier Rebar Quantity, mc :	12	
Pier Tie/Spiral Size, St :	5	
Pier Tie/Spiral Quantity, mt :	2	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	4.25	in

Pad Properties		
Depth, D :	2.60	ft
Pad Width, W₁ :	24.00	ft
Pad Thickness, T :	4.20	ft
Pad Rebar Size (Bottom dir. 2), Sp₂ :	8	
Pad Rebar Quantity (Bottom dir. 2), mp₂ :	24	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, Fy :	60	ksi
Concrete Compressive Strength, F'c :	3	ksi
Dry Concrete Density, δc :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	115	pcf
Ultimate Gross Bearing, Qult :	30.000	ksf
Cohesion, Cu :	0.000	ksf
Friction Angle, φ :	33	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.4	
Neglected Depth, N :	3.3	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	16	ft

<-- Toggle between Gross and Net



AT&T SITE NUMBER: CTL01082
AT&T SITE NAME: VERNON NE
AT&T FA CODE: 10035095
AT&T PACE NUMBER: MRCTB055906, MRCTB055897, MRCTB053864, MRCTB055327, MRCTB053914
AT&T PROJECT: 5G NR 1SR CBAND, 5G NR ACTIVATION, BBU RECONFIGURATION WITH NEW IDS

BUSINESS UNIT #: 806377
SITE ADDRESS: 197 SOUTH ST
COUNTY: VERNON, CT 06066
SITE TYPE: TOLLAND
TOWER HEIGHT: SELF SUPPORT TOWER
132'-0"



AT&T SITE NUMBER:
CTL01082

BU #: 806377
HRT 084 943242

197 SOUTH ST
VERNON, CT 06066

EXISTING
132'-0" SELF SUPPORT
TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	2/25/22	TDG	PRELIMINARY REVIEW	KT
0	4/11/22	TDG	CONSTRUCTION	KT



B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

T-1

REVISION:

0

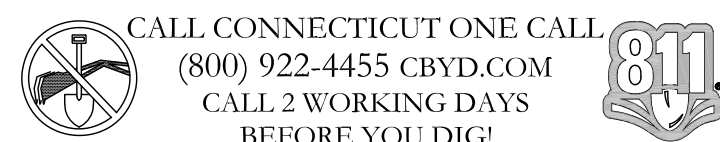
SITE INFORMATION

CROWN CASTLE USA INC. HRT 084 943242
SITE NAME:
SITE ADDRESS: 197 SOUTH ST
VERNON, CT 06066
COUNTY: TOLLAND
MAP/PARCEL #: 39065B0016A
AREA OF CONSTRUCTION: EXISTING
LATITUDE: 41.853475
LONGITUDE: -72.452089
LAT/LONG TYPE: NAD83
GROUND ELEVATION: 625'
CURRENT ZONING: R-22
JURISDICTION: CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION: U
TYPE OF CONSTRUCTION: IIB
A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER: CONNECTICUT WATER CO
93 WEST MAIN ST
CLINTON, CT 06413
TOWER OWNER: CROWN CASTLE USA INC
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
CARRIER/APPLICANT: AT&T TOWER ASSET GROUP
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300
ELECTRIC PROVIDER: NORTHEAST UTILITIES
800-286-2000
TELCO PROVIDER: LIGHTOWER
833-718-1831

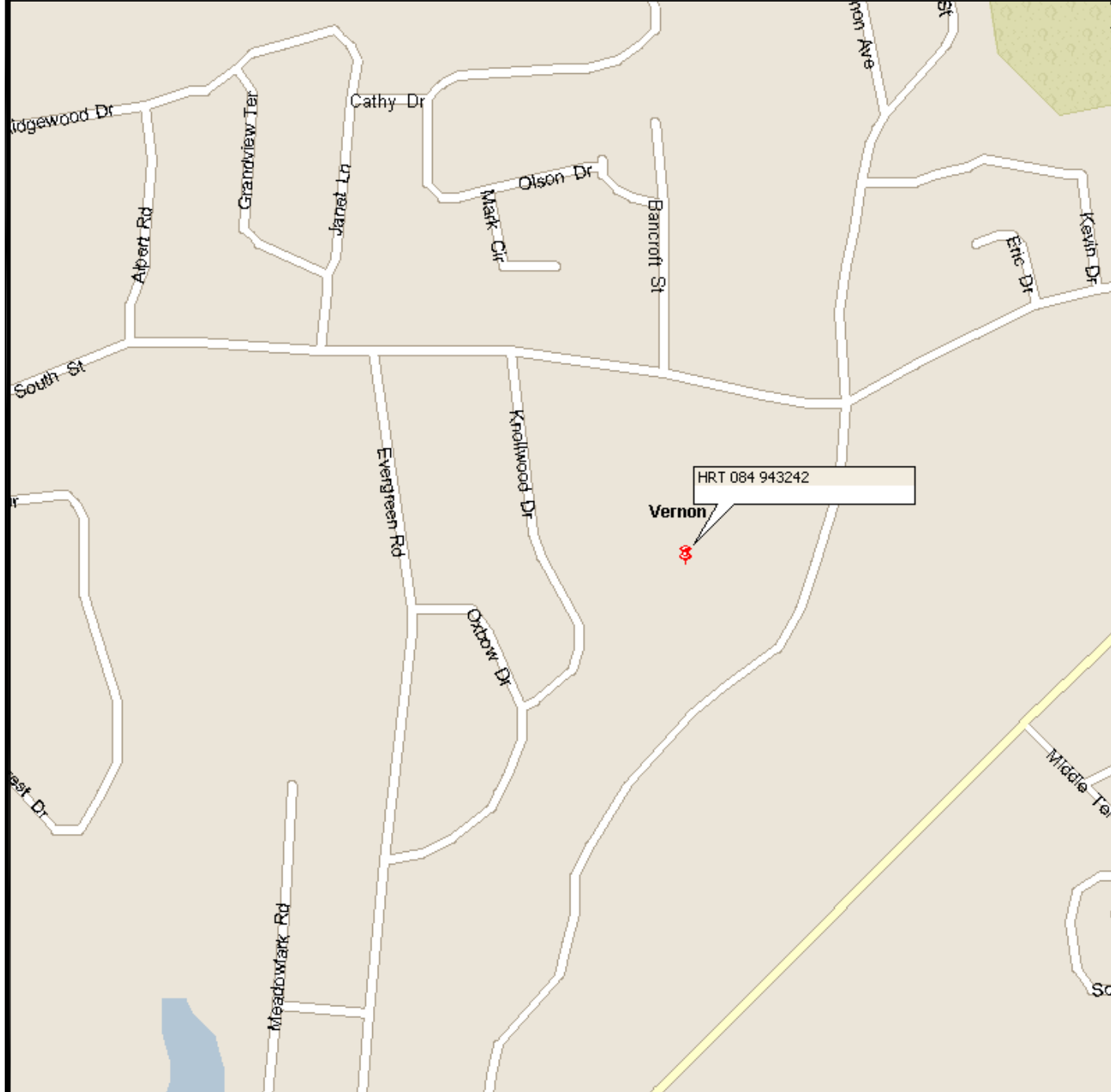
DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EXISTING & FINAL EQUIPMENT PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	FINAL EQUIPMENT SCHEDULE
C-4	EQUIPMENT MOUNTING DETAILS
C-5	EQUIPMENT SPECS
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

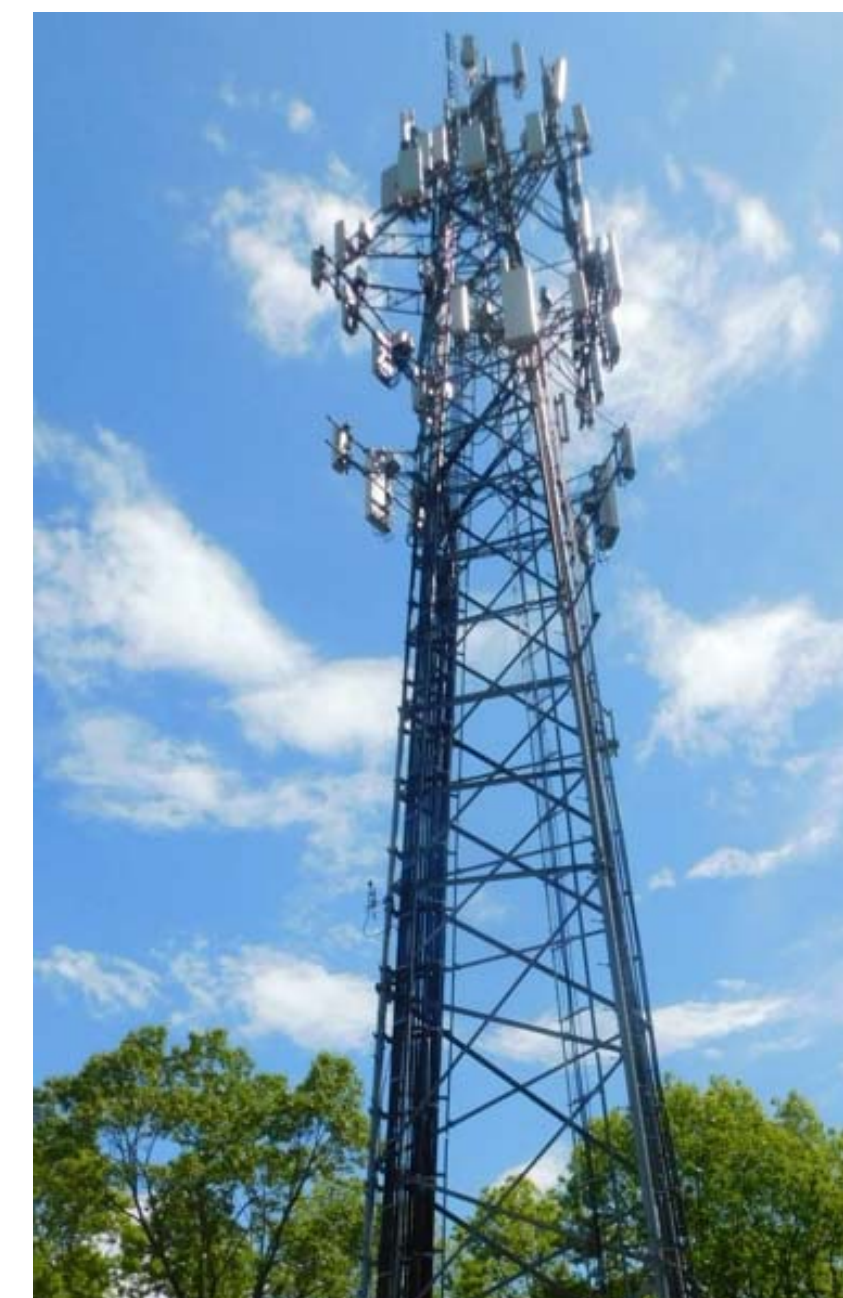


LOCATION MAP



NO SCALE

SITE PHOTO



PROJECT TEAM

A&E FIRM: B+T GROUP
1717 S. BOULDER AVE.
TULSA, OK 74119
MARVIN PHILLIPS
marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS: 8000 AVALON BLVD, SUITE 700
ALPHARETTA, GA 30009
VERONICA CHAPMAN - PROJECT MANAGER
VERONICA.CHAPMAN@CROWNCastle.COM
JASON D'AMICO - CONSTRUCTION MANAGER
JASON.DAMICO@CROWNCastle.COM

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

- TOWER SCOPE OF WORK:
- REMOVE (3) KATHREIN - 800-10121 ANTENNAS
 - REMOVE (2) CCI - HPA-65R-BUU-H6 ANTENNAS
 - REMOVE (1) CCI - HPA-65R-BUU-H8 ANTENNAS
 - REMOVE (3) ERICSSON - RRUS-32 B2 RRU's
 - REMOVE (3) CCI - DTMABP7819VG12A TMAs
 - REMOVE (6) KATHREIN - 782 10250 DIPLEXERS
 - RELOCATE (2) CCI - TPA65R-BU6DA-K ANTENNAS TO POSITION 2
 - RELOCATE (1) CCI - TPA65R-BU8DA-K ANTENNA TO POSITION 2
 - RELOCATE ALL RRHs ON RRH DUAL MOUNTS TO (6) NEW 2-1/2" SCH 40 X 6'-0" MOUNT PIPES ON SECTOR MOUNT V-FRAME
 - INSTALL (6) ERICSSON - AIR6449 B77D (BELOW) +AIR6419 B77G (ABOVE) STACKED ANTENNAS
 - INSTALL (6) Y-CABLES
 - INSTALL (6) DUAL RADIO MOUNTS

- GROUND SCOPE OF WORK:
- INSTALL (4) RECTIFIERS IN EXISTING POWER PLANT
 - INSTALL (1) -6648 (+Acce) 4-WAY GPS SPLITTER

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

APPLICABLE CODES/REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2015 IBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	TOWER ENGINEERING PROFESSIONALS
DATED:	1/14/22
MOUNT ANALYSIS:	TOWER ENGINEERING PROFESSIONALS
DATED:	1/7/22
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	
RFDS REVISION:	PRELIMINARY
DATED:	3/23/22
ORDER ID:	586240
REVISION:	0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

- NOTICE TO PROCEED-- NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800-788-7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
- "LOOK UP" -- CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
- PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED-STD-10253, TO CERTIFY THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
- ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED-STD-10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS." IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR 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.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GREENFIELD GROUNDING NOTES:

- 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.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
- METAL CONDUIT AND TRAY SHALL BE GROUNDDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
- EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 ft. OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
- GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING 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 CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
- BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: AT&T
TOWER OWNER: CROWN CASTLE USA INC.
- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
- NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 CROWN CASTLE.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
- CONCRETE EXPOSED TO FREEZE--THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER.....40 ksi
#5 BARS AND LARGER.....60 ksi
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 BARS AND LARGER.....2"
#5 BARS AND SMALLER.....1-1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLAB AND WALLS.....3/4"
BEAMS AND COLUMNS.....1-1/2"
- A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
 - ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
 - ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
- EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TO CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS NOT ALLOWABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECIMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
- METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "AT&T".
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
	A PHASE	BLACK
120/240V, 1Ø	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
277/480V, 3Ø	GROUND	GREEN
	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
DC VOLTAGE	NEUTRAL	GREY
	GROUND	GREEN
	POS (+)	RED**
	NEG (-)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT



575 MOROSGO DRIVE
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AT&T SITE NUMBER:
CTL01082

BU #: **806377**
HRT **084 943242**

197 SOUTH ST
VERNON, CT 06066

EXISTING
132'-0" SELF SUPPORT
TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	2/25/22	TDG	PRELIMINARY REVIEW	KT
0	4/11/22	TDG	CONSTRUCTION	KT



4/11/22

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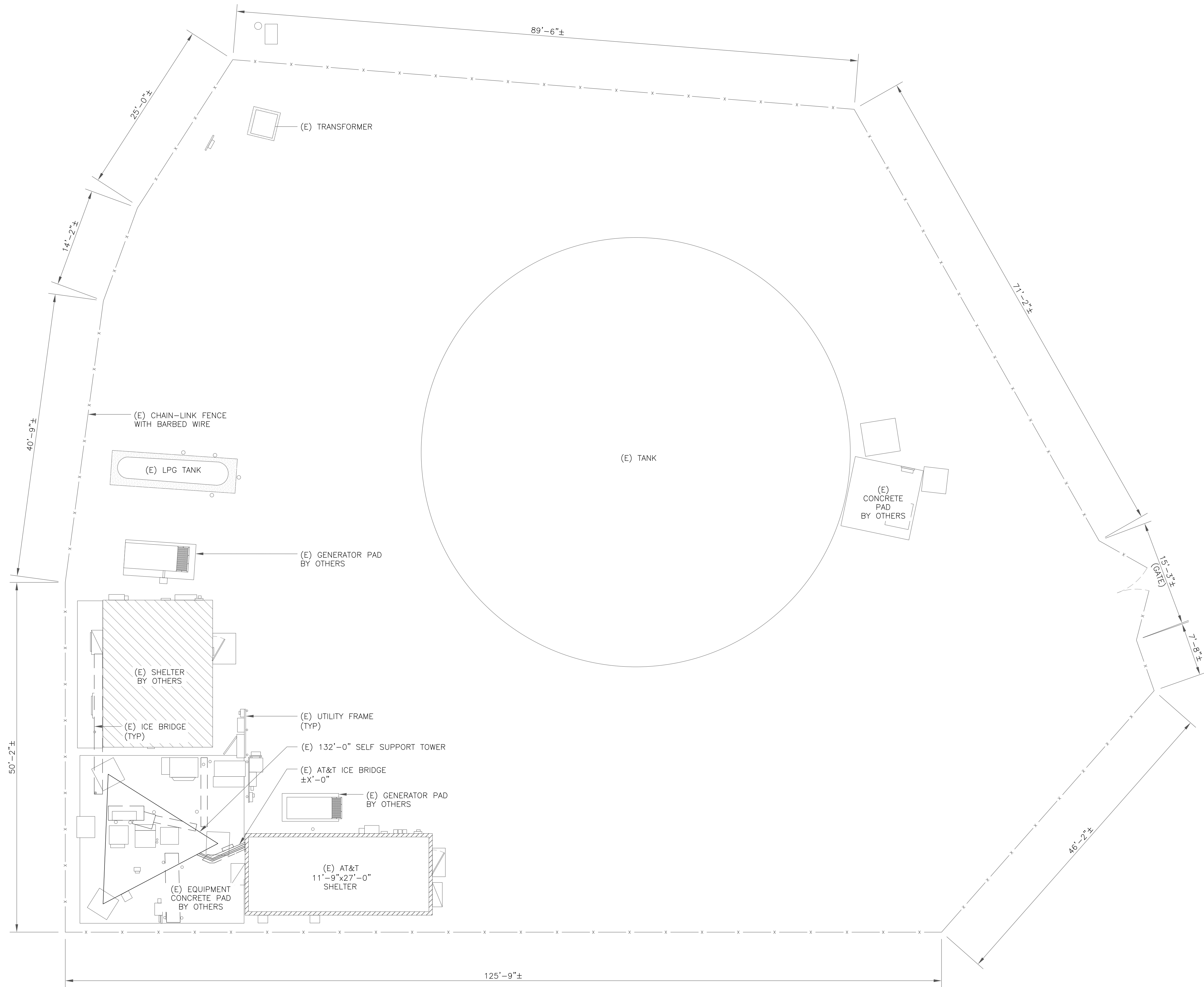
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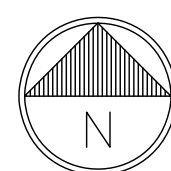
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1 SITE PLAN
SCALE: 1/8"=1'-0" (FULL SIZE)
1/16"=1'-0" (11x17)



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GROUND SCOPE OF WORK:

- INSTALL (4) RECTIFIERS IN EXISTING POWER PLANT
- INSTALL (1) -6648(+Acade) 4-WAY GPS SPLITTER

NOTE:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.



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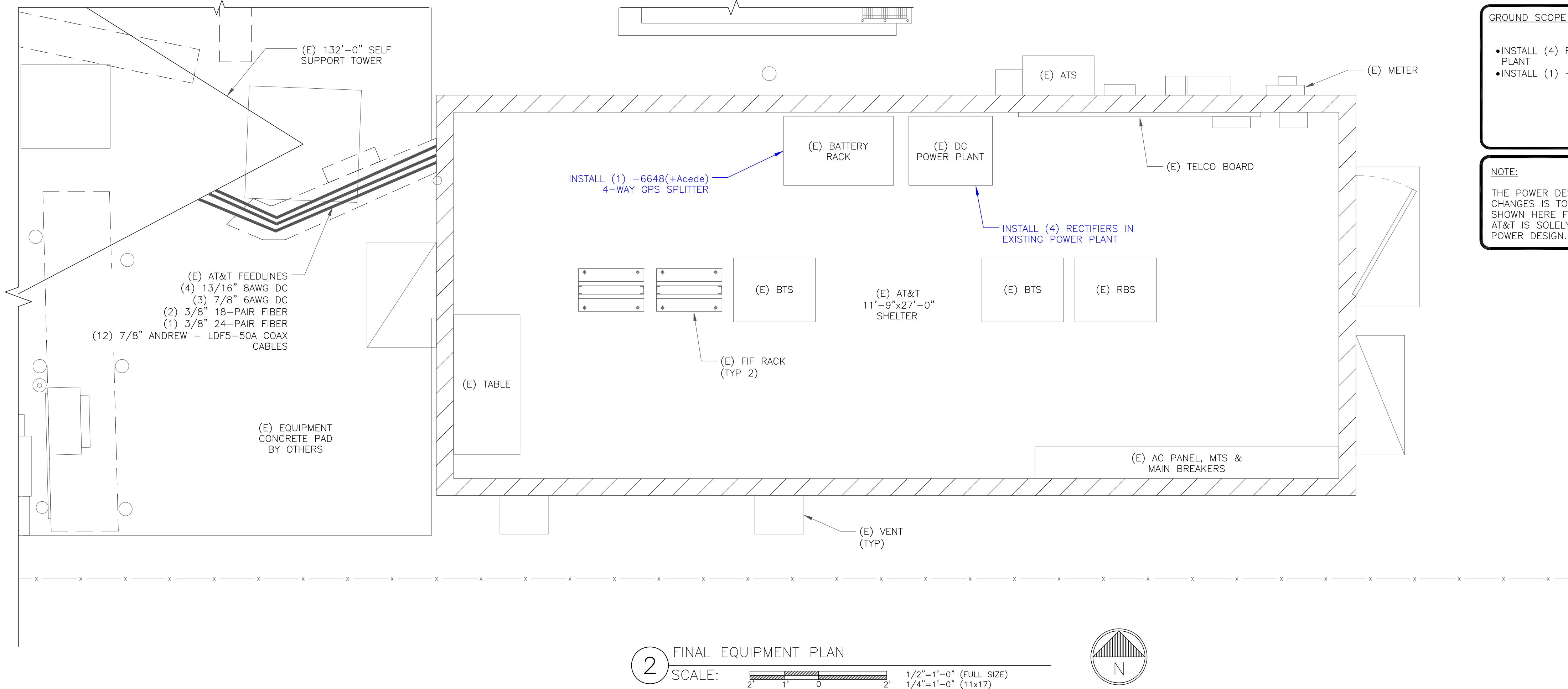
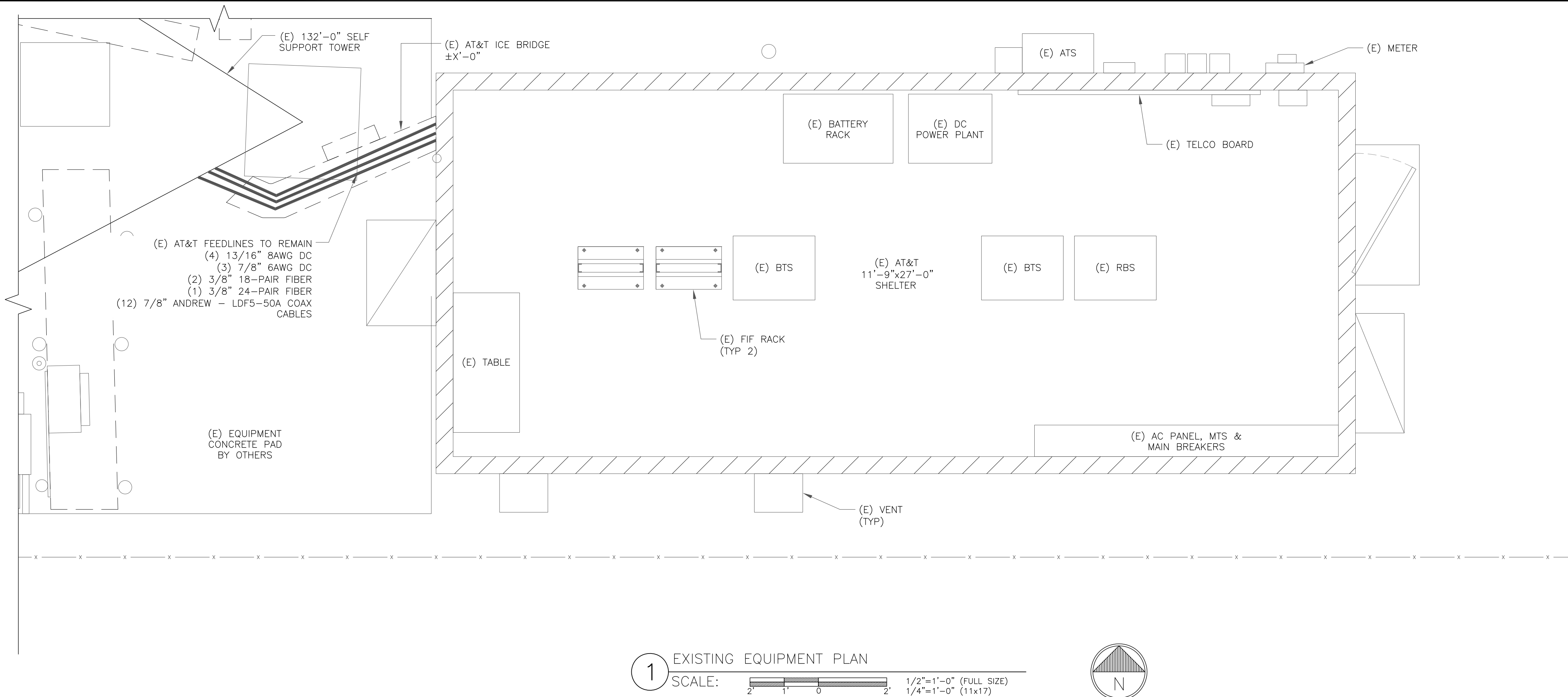
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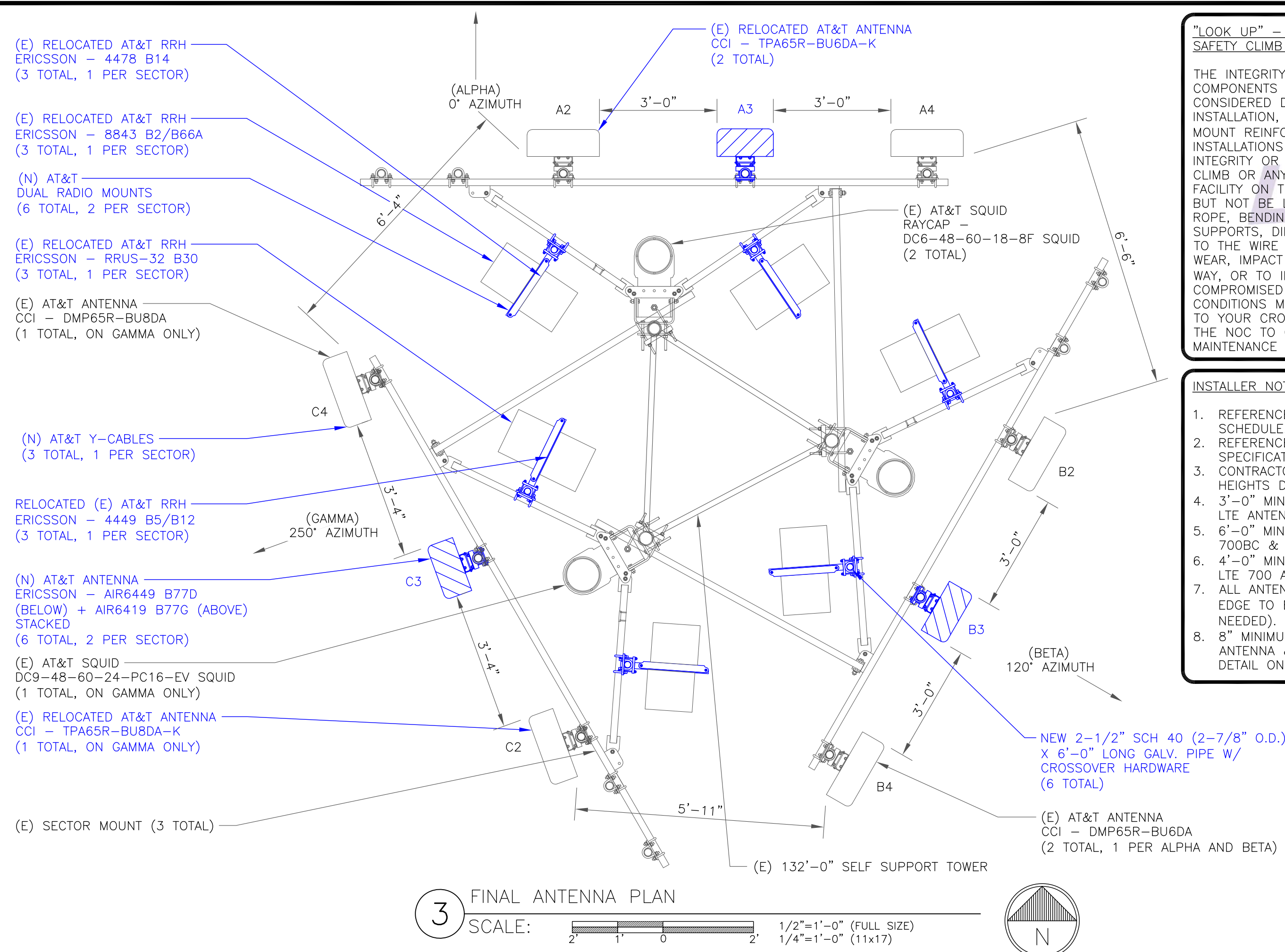
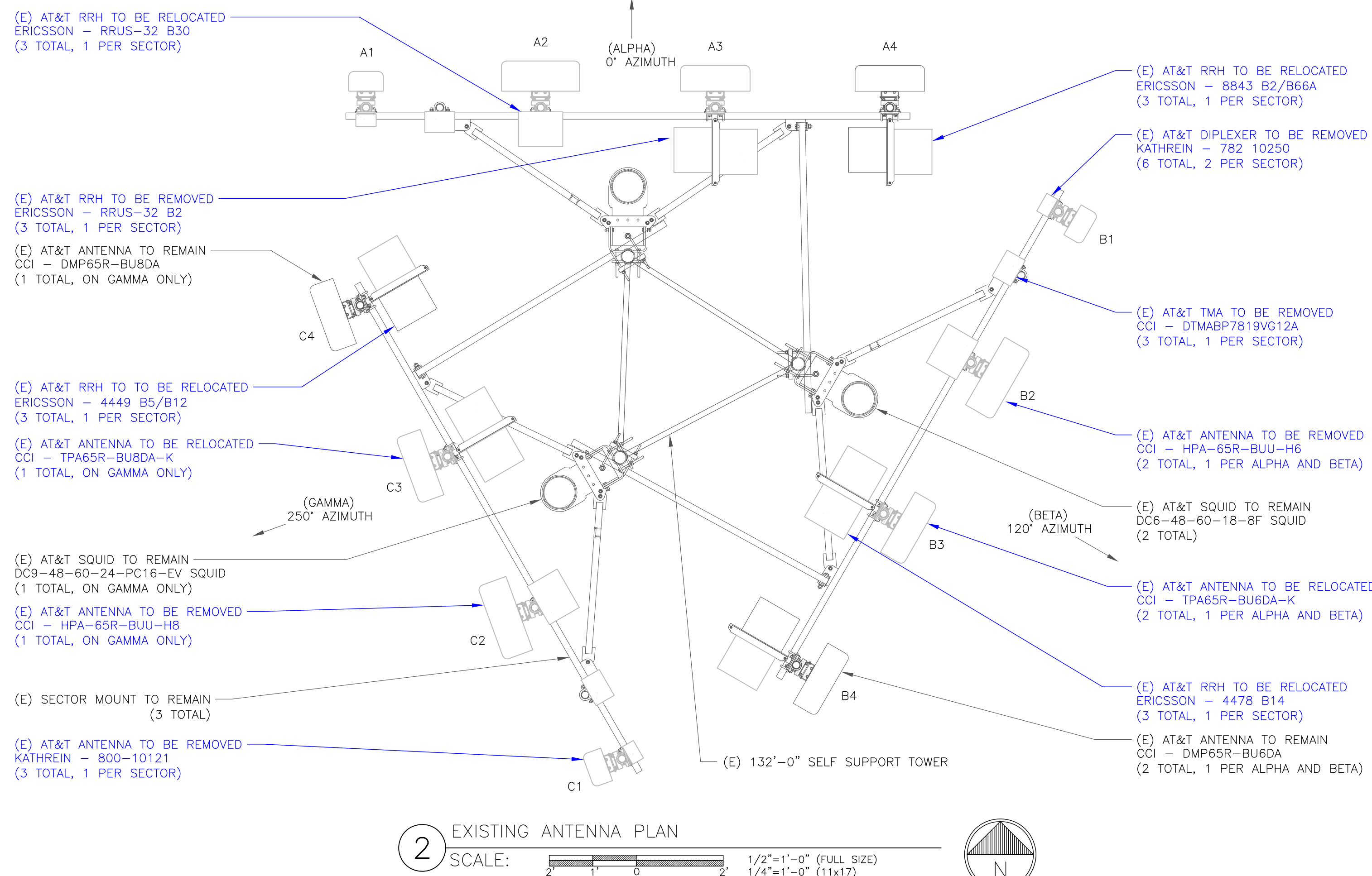
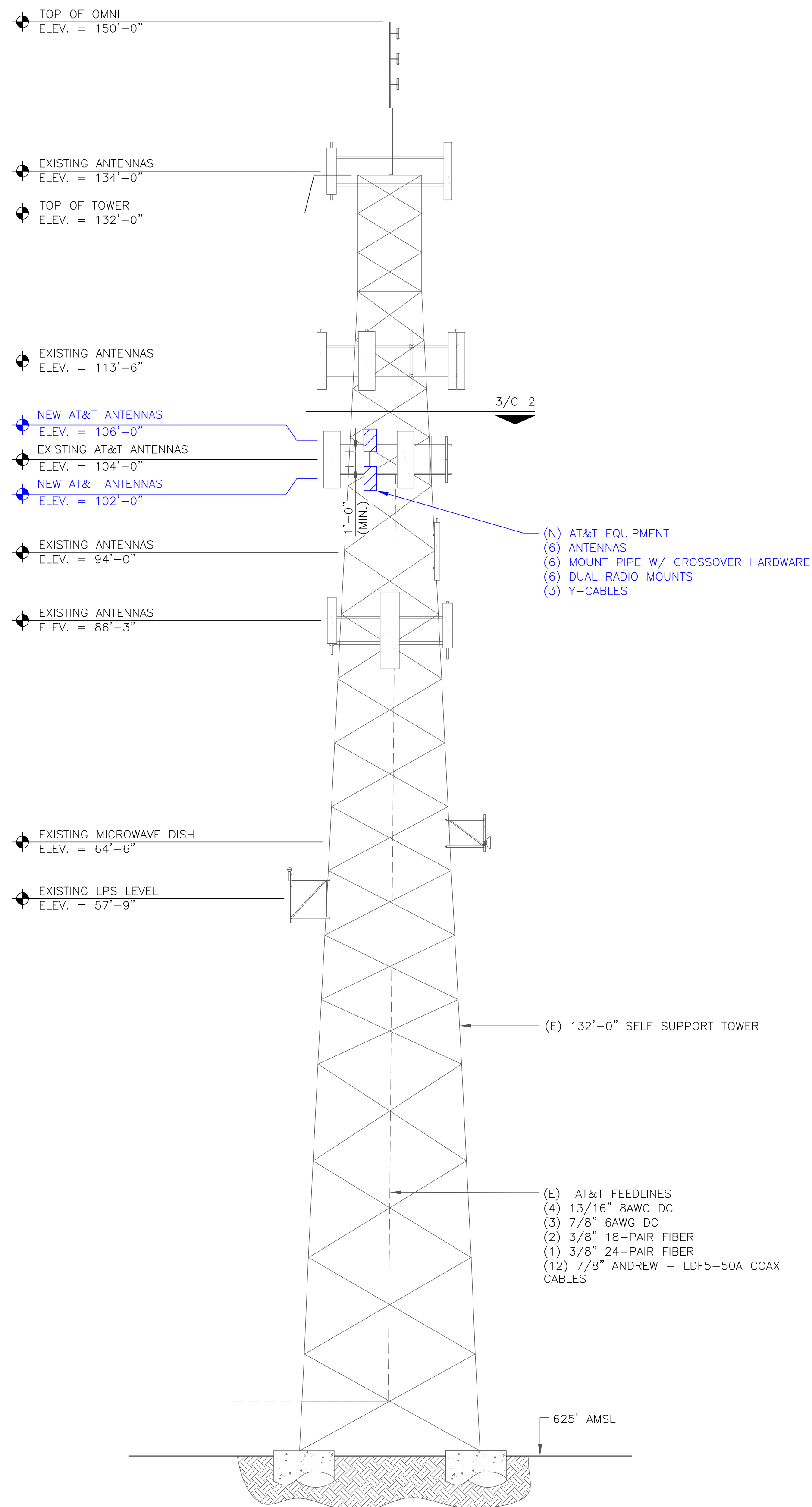
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"LOOK UP" – CROWN CASTLE USA INC.
SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION, TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE, ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY ALL ANTENNA TIP HEIGHTS DO NOT EXCEED BEACON BASE HEIGHT.
4. 3'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE ANTENNAS ON SAME SECTOR.
5. 6'-0" MINIMUM DISTANCE REQUIRED BETWEEN 700B/C & 700D/E ANTENNAS ON SAME SECTOR.
6. 4'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE 700 ANTENNAS ON OPPOSING SECTORS.
7. ALL ANTENNA MEASUREMENT DISTANCES MUST BE EDGE TO EDGE (RELOCATE ANTENNAS AS NEEDED).
8. 8" MINIMUM DISTANCE REQUIRED BETWEEN ANTENNA & RADIO. SEE GENERIC EXAMPLE DETAIL ON SHEET C-4.



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C-2

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FINAL ANTENNA AND FEEDLINE SCHEDULE																		
POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	SURGE PROTECTION	DC/FIBER CABLES	RRHs QTY & MODEL ON TOWER	LOCATION	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE
ALPHA SECTOR																		
A1	—	—	—	—	—	—	—	—	—	—	—	(1) (E) DC6-48-60-18-8F	(2) (E) 13/16" 8AWG DC (1) (E) 3/8" 18-PAIR FIBER TRUNK	—	—	—	—	—
A2	LTE 700/LTE 1900/LTE AWS	EXISTING	0°	CCI — TPA65R-BU6DA-K	104'-0"	—	3°/3°/3°/3°/5°/5°/5°	7/8"	154'-0"	2	—			(1) ERICSSON — 4478 B14 (1) ERICSSON — 8843 B2/B66A	TOWER	N	N	N
A3	5G CBAND	NEW	0°	ERICSSON — AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED	102'-0" 106'-0"	—	0°	—	—	—	—			—	—	N	N	N
A4	LTE 700/LTE WCS/5G 850	EXISTING	0°	CCI — DMP65R-BU6DA	104'-0"	—	8°/3°/4°	7/8"	154'-0"	2	—			(1) ERICSSON — 4449 B5/B12 (1) ERICSSON — RRUS-32 B30	TOWER	N	N	N
BETA SECTOR																		
B1	—	—	—	—	—	—	—	—	—	—	—	(1) (E) DC6-48-60-18-8F	(2) (E) 13/16" 8AWG DC (1) (E) 3/8" 18-PAIR FIBER TRUNK	—	—	—	—	—
B2	LTE 700/LTE 1900/LTE AWS	EXISTING	120°	CCI — TPA65R-BU6DA-K	104'-0"	—	3°/3°/3°/3°/5°/5°/5°	7/8"	154'-0"	2	—			(1) ERICSSON — 4478 B14 (1) ERICSSON — 8843 B2/B66A	TOWER	N	N	N
B3	5G CBAND	NEW	120°	ERICSSON — AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED	102'-0" 106'-0"	—	0°	—	—	—	—			—	—	N	N	N
B4	LTE 700/LTE WCS/5G 850	EXISTING	120°	CCI — DMP65R-BU6DA	104'-0"	—	8°/3°/4°	7/8"	154'-0"	2	—			(1) ERICSSON — 4449 B5/B12 (1) ERICSSON — RRUS-32 B30	TOWER	N	N	N
GAMMA SECTOR																		
C1	—	—	—	—	—	—	—	—	—	—	—	(1) (E) DC9-48-60-24-PC 16-EV	(3) (E) 7/8" 6AWG DC (1) (E) 3/8" 24-PAIR FIBER	—	—	—	—	—
C2	LTE 700/LTE 1900/LTE AWS	EXISTING	250°	CCI — TPA65R-BU8DA-K	104'-0"	—	3°/3°/3°/3°/5°/5°/5°	7/8"	154'-0"	2	—			(1) ERICSSON — 4478 B14 (1) ERICSSON — 8843 B2/B66A	TOWER	N	N	N
C3	5G CBAND	NEW	250°	ERICSSON — AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED	102'-0" 106'-0"	—	0°	—	—	—	—			—	—	N	N	N
C4	LTE 700/LTE WCS/5G 850	EXISTING	250°	CCI — DMP65R-BU8DA	104'-0"	—	8°/3°/4°	7/8"	154'-0"	2	—			(1) ERICSSON — 4449 B5/B12 (1) ERICSSON — RRUS-32 B30	TOWER	N	N	N

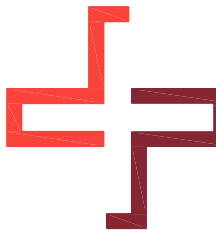
NOTE: BLUE DENOTES NEW EQUIPMENT



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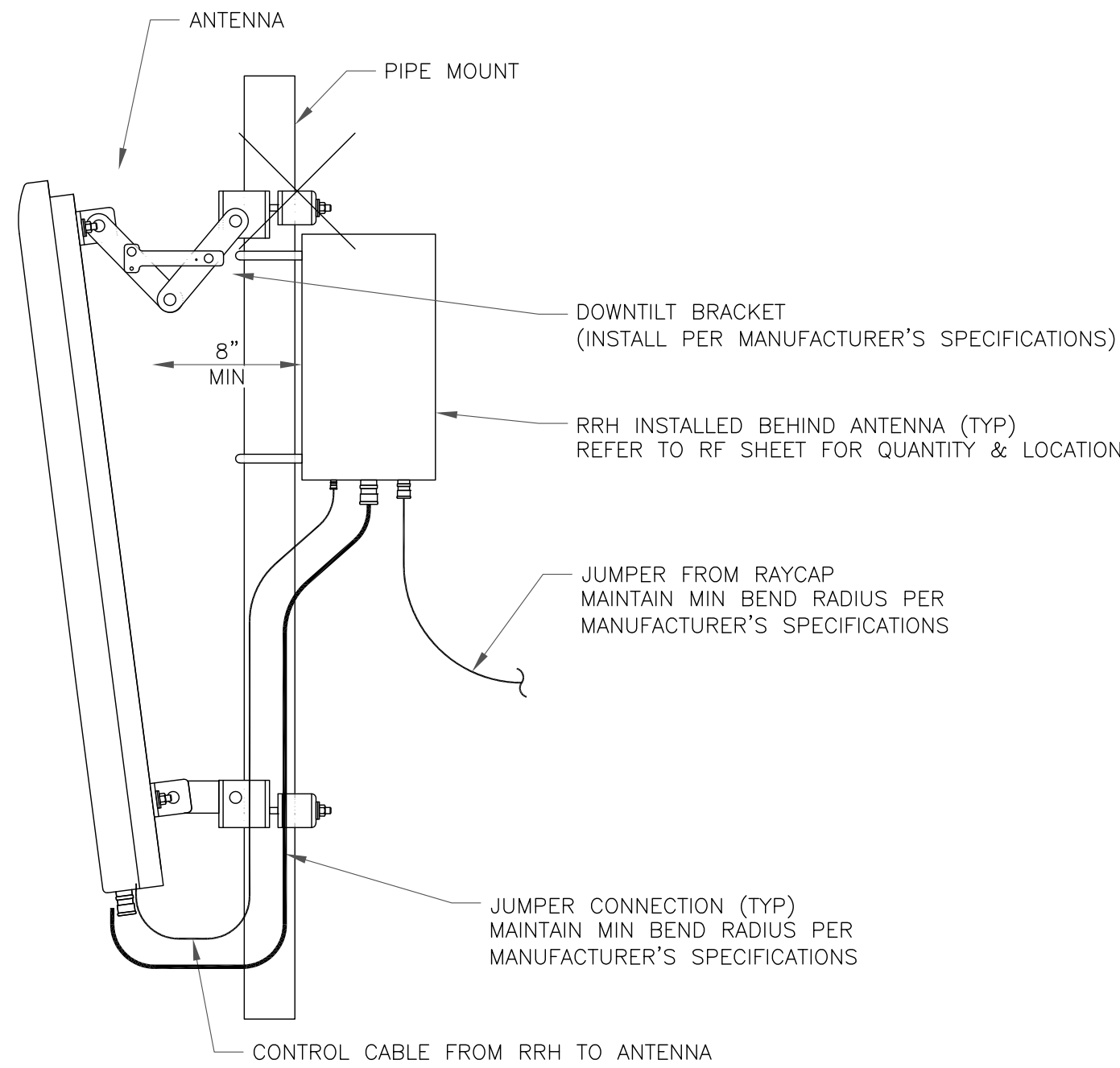


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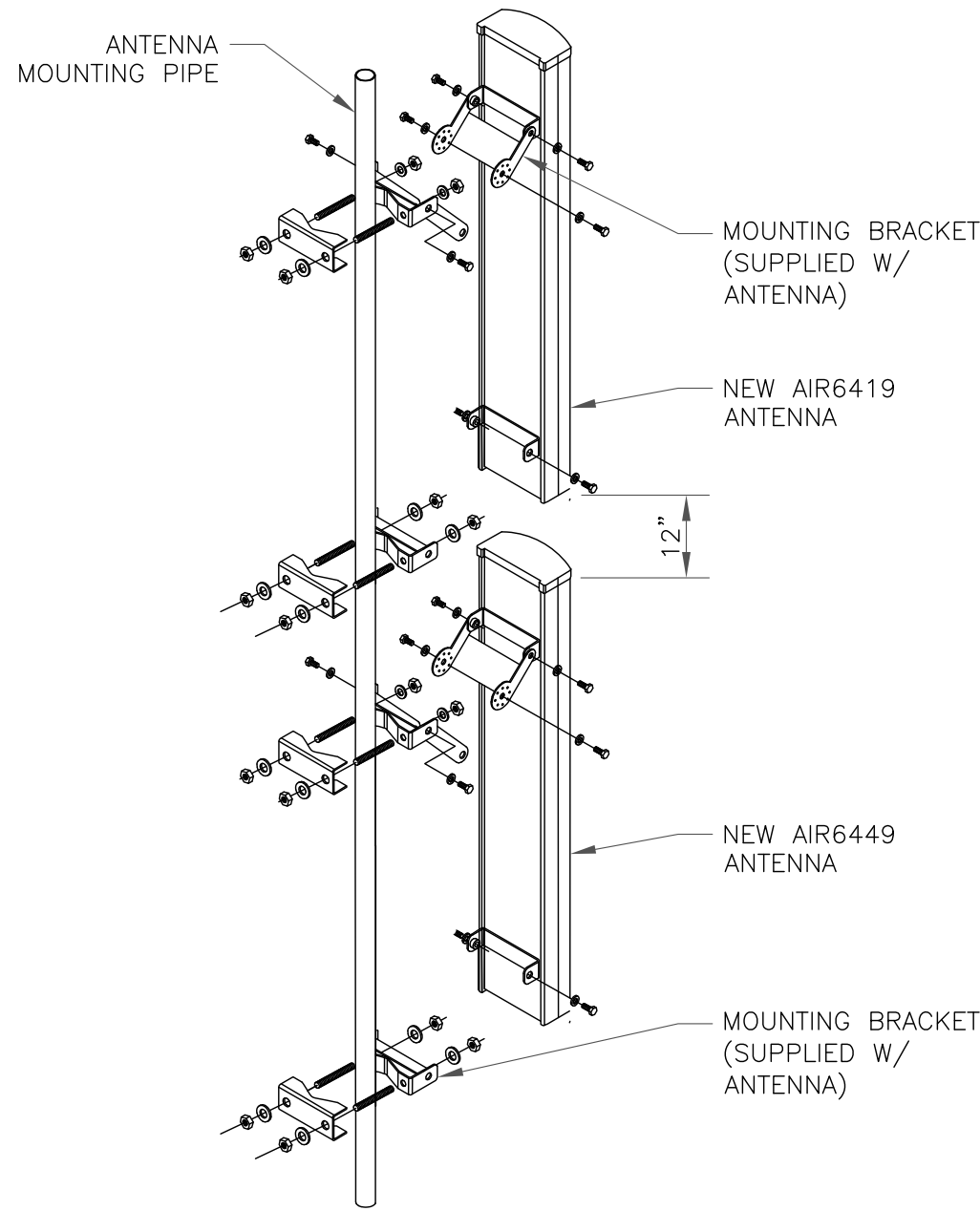
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SHEET NUMBER:
C-3

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1 GENERIC ANTENNA MOUNTING ELEVATION
SCALE: NOT TO SCALE

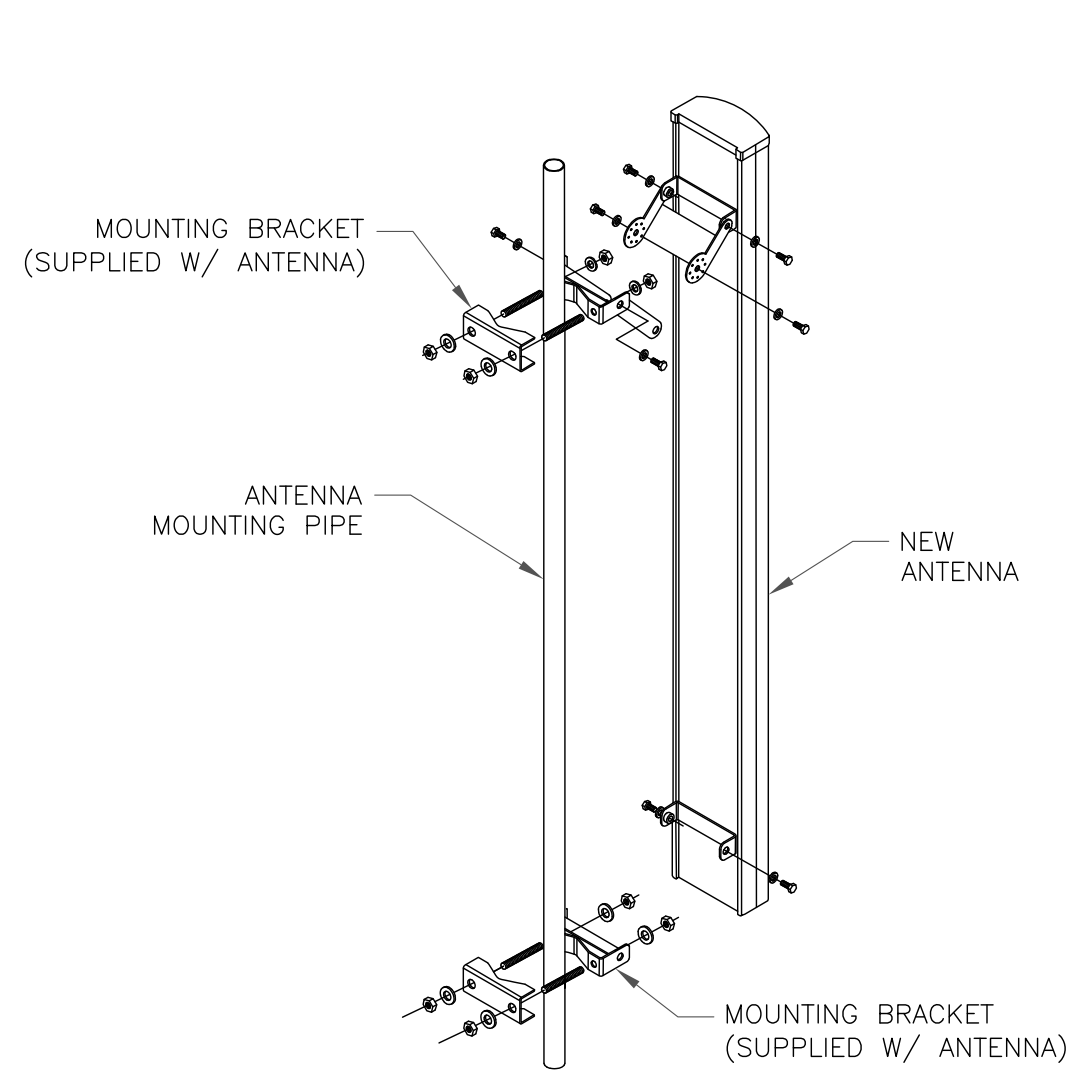


2 STACKED ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

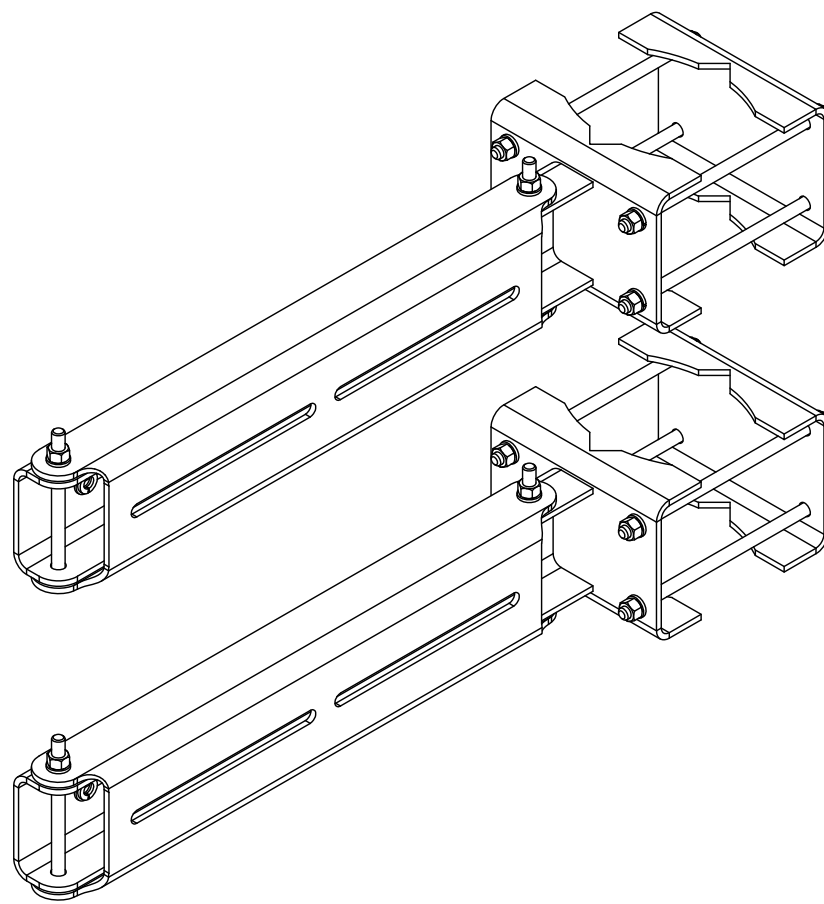
3 NOT USED
SCALE: NOT TO SCALE

INSTALLER NOTE:

1. ALL PIPES, BRACKETS, AND MISCELLANEOUS
HARDWARE TO BE GALVANIZED UNLESS
NOTED OTHERWISE.



4 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

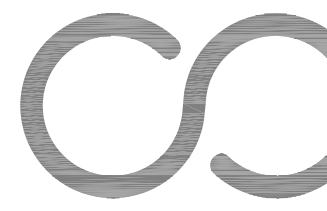


5 DUAL RADIO MOUNT
SCALE: NOT TO SCALE

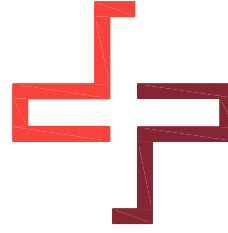
6 NOT USED
SCALE: NOT TO SCALE



575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065



1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T SITE NUMBER:
CTL01082

BU #: **806377**
HRT 084 943242

197 SOUTH ST
VERNON, CT 06066

EXISTING
132'-0" SELF SUPPORT
TOWER

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	2/25/22	TDG	PRELIMINARY REVIEW	KT
0	4/11/22	TDG	CONSTRUCTION	KT



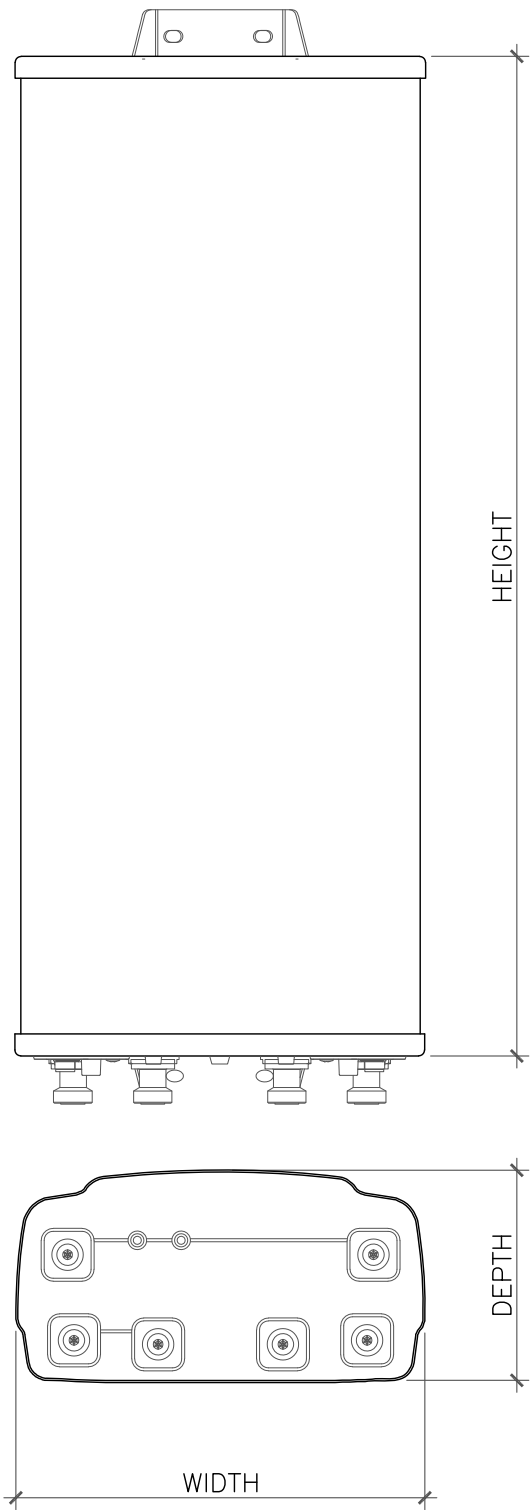
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C-4

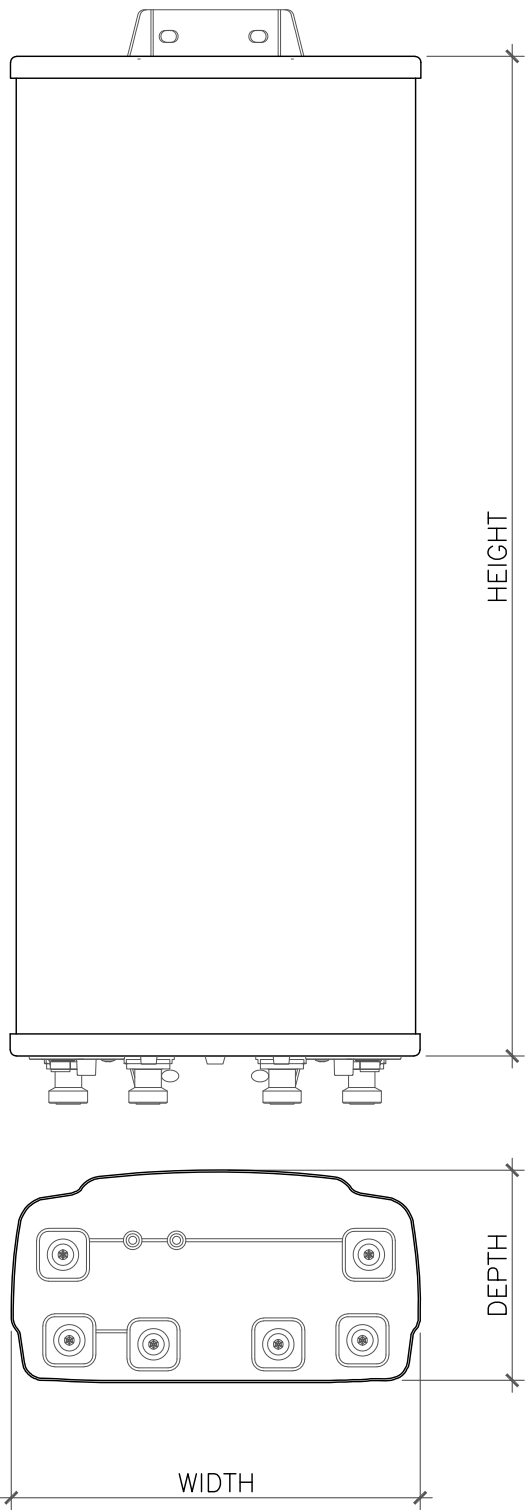
REVISION:
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78785.003.01_HRT 084 943242.dwg - Sheet:C-5 - User: kevin.turkall - Apr 11, 2022 - 2:16pm



ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
ERICSSON - AIR6449 B77D	30.39"	15.87"	8.07"	81.60 lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
ERICSSON - AIR6419 B77G	28.30"	16.10"	7.90"	66.10 lbs

2 ANTENNA DETAIL
SCALE: NOT TO SCALE

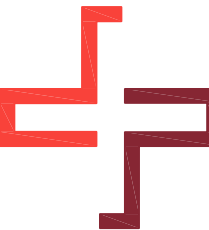
3 NOT USED
SCALE: NOT TO SCALE



AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300



**CROWN
CASTLE**
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CLIFTON PARK, NY 12065



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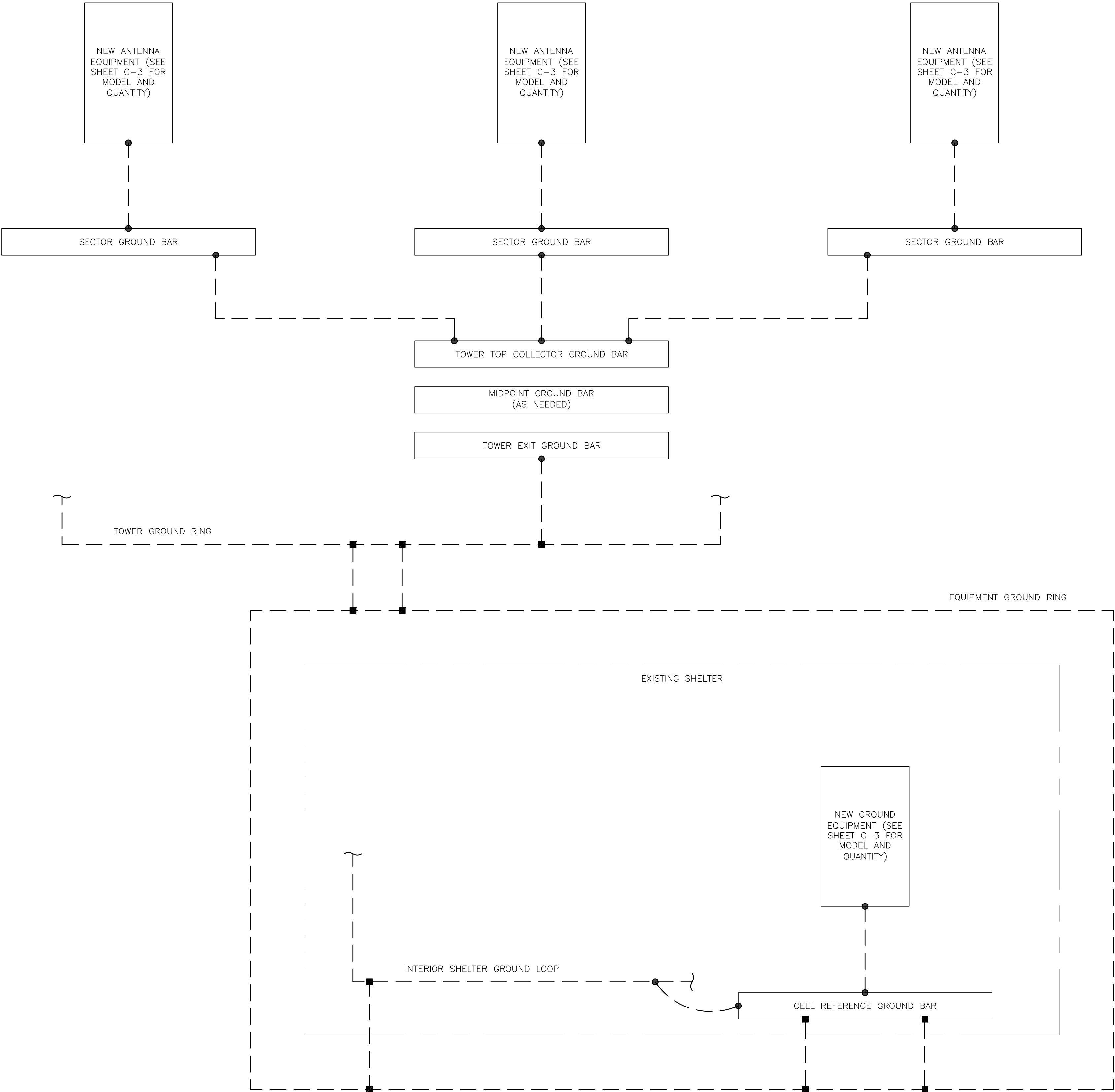
REVISION:

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4 NOT USED
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE



- GROUNDING PLAN LEGEND:
- GROUND WIRE
 - EXOTHERMIC WELD
 - MECHANICAL CONNECTION
 - ⊙ COPPER GROUND ROD
 - ⊗ GROUND ROD W/ TEST WELL

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

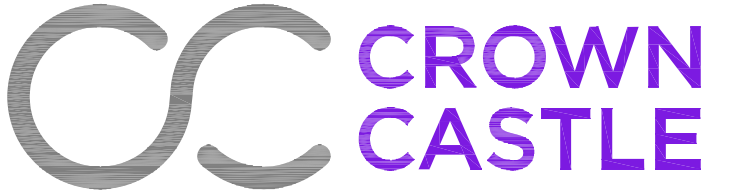
HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.



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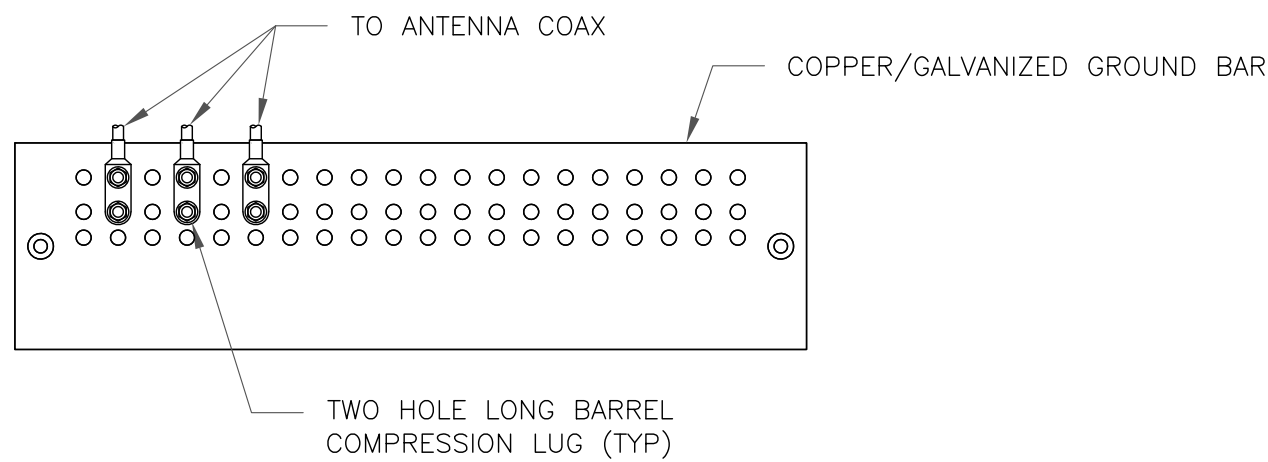
SHEET NUMBER:

G-1

REVISION:

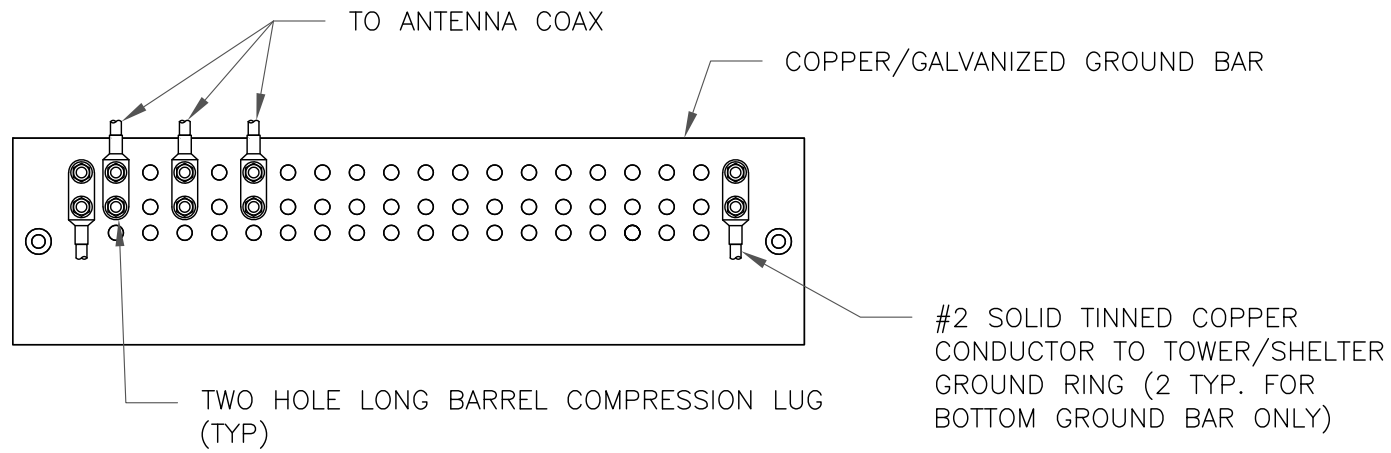
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1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE



- NOTES:
- DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
 - EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 - GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

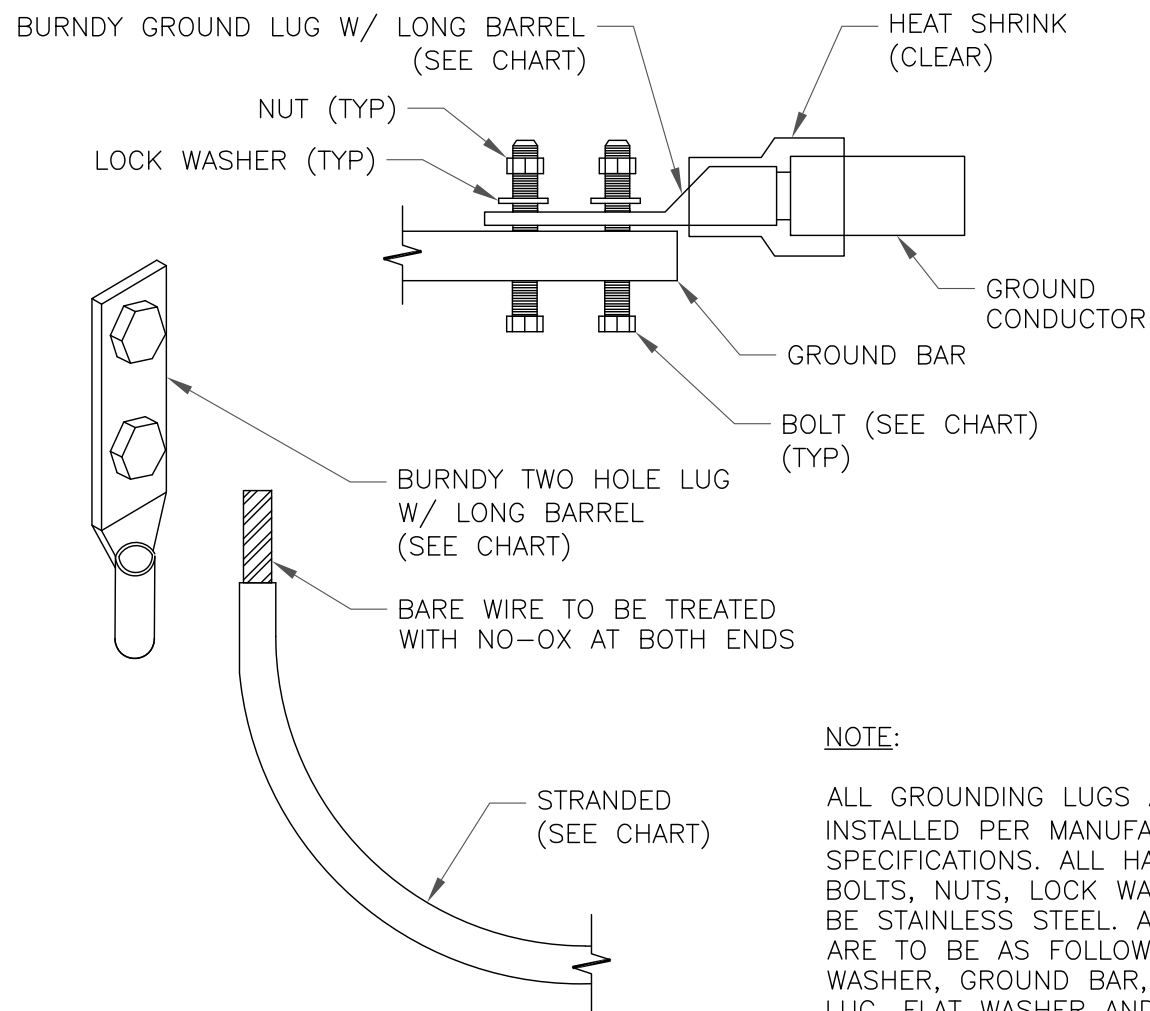
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



- NOTES:
- EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 - GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
 - GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

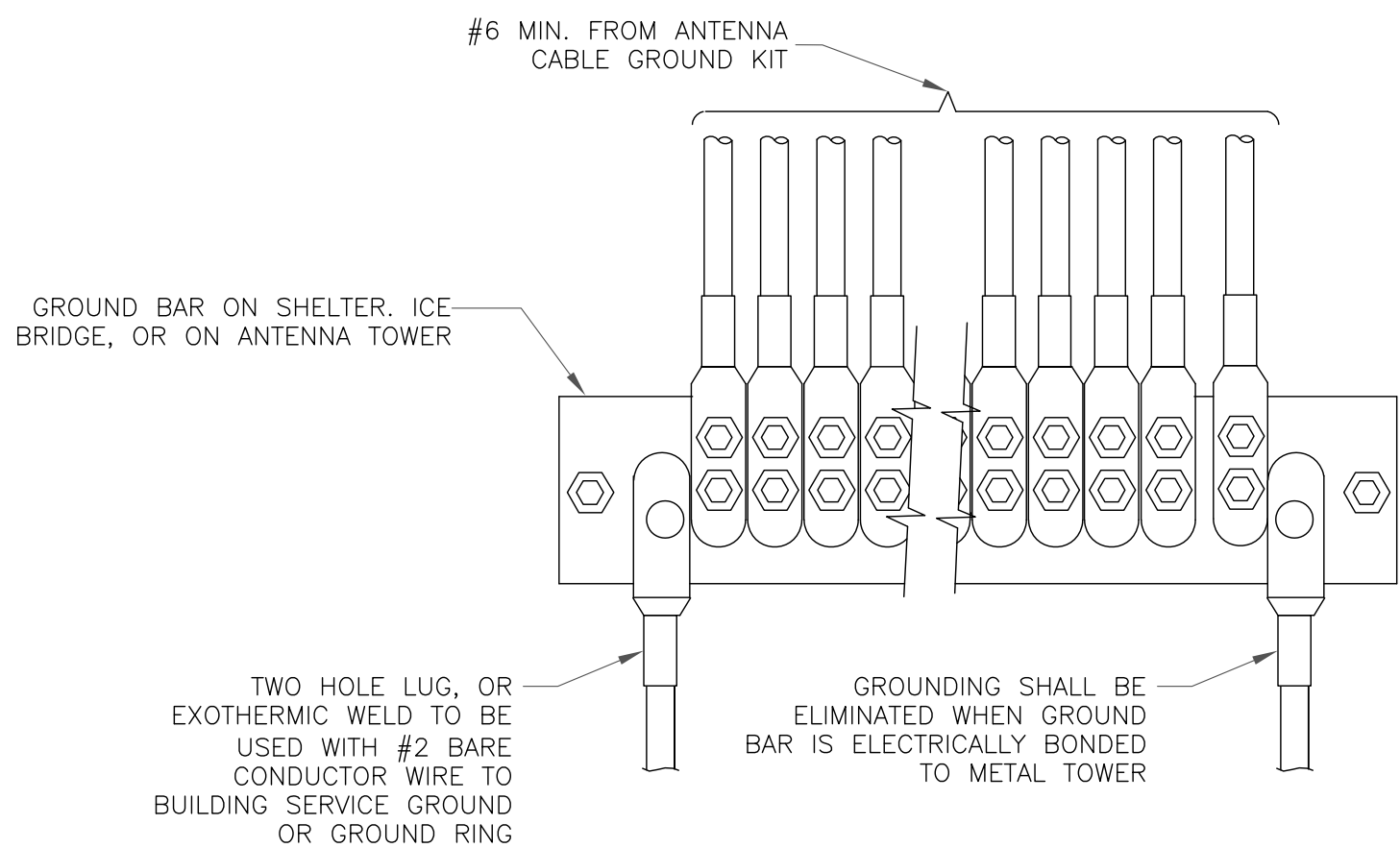
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT

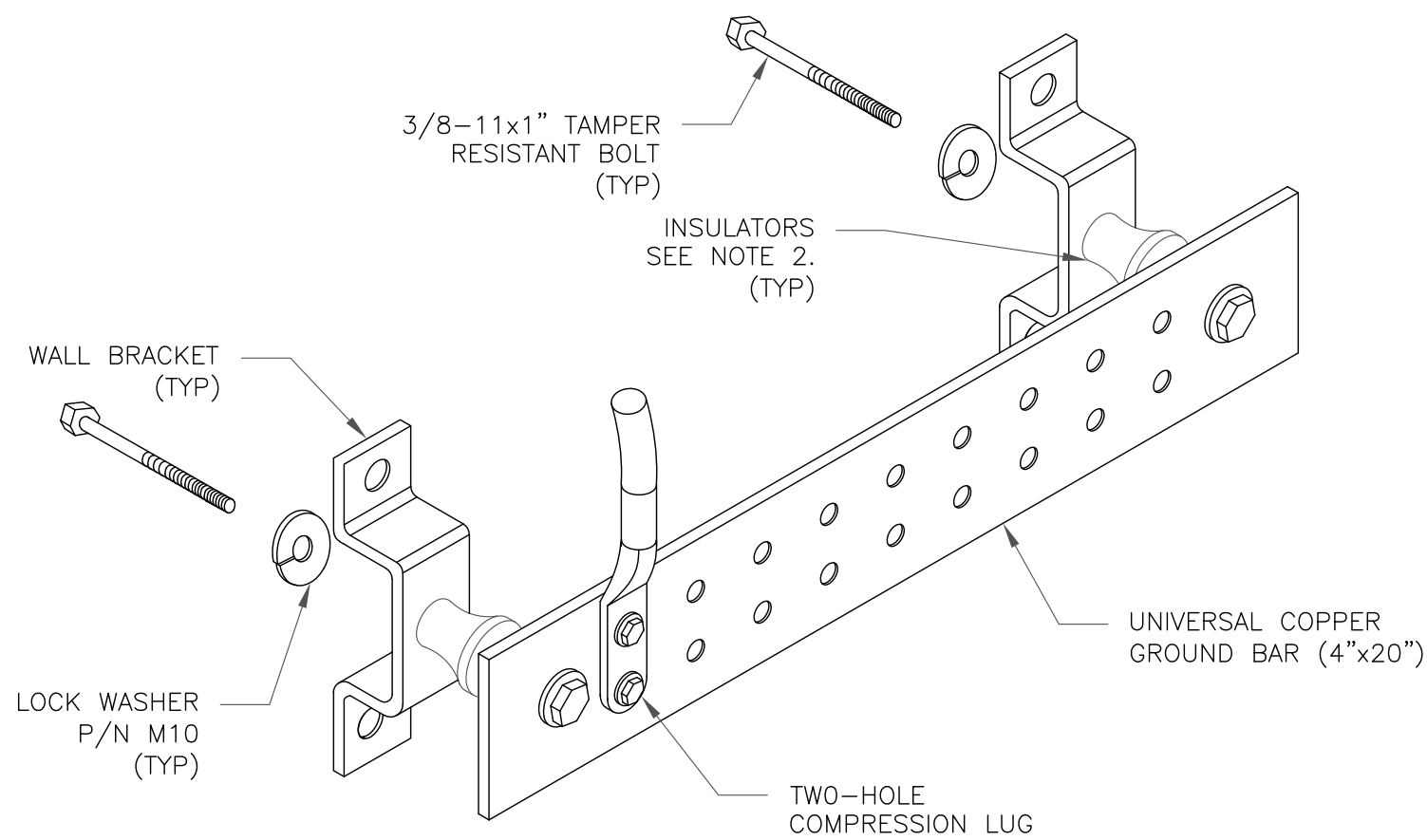


- NOTE:
- ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE

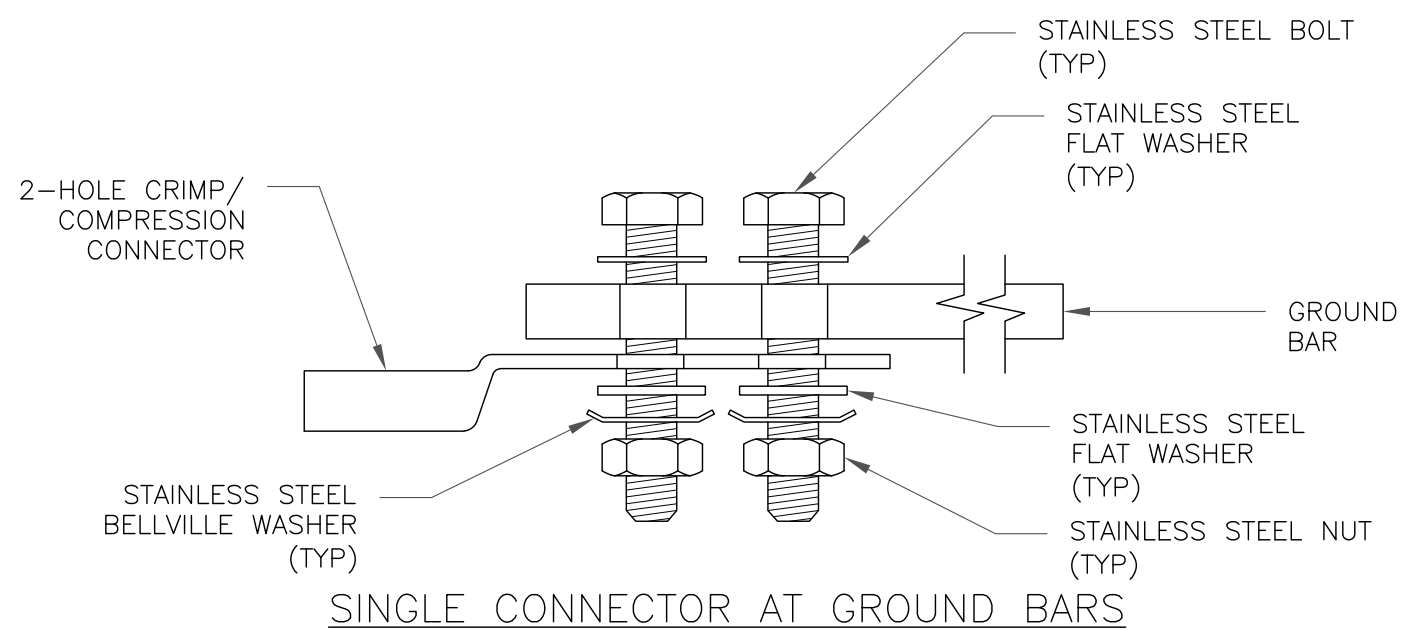


4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

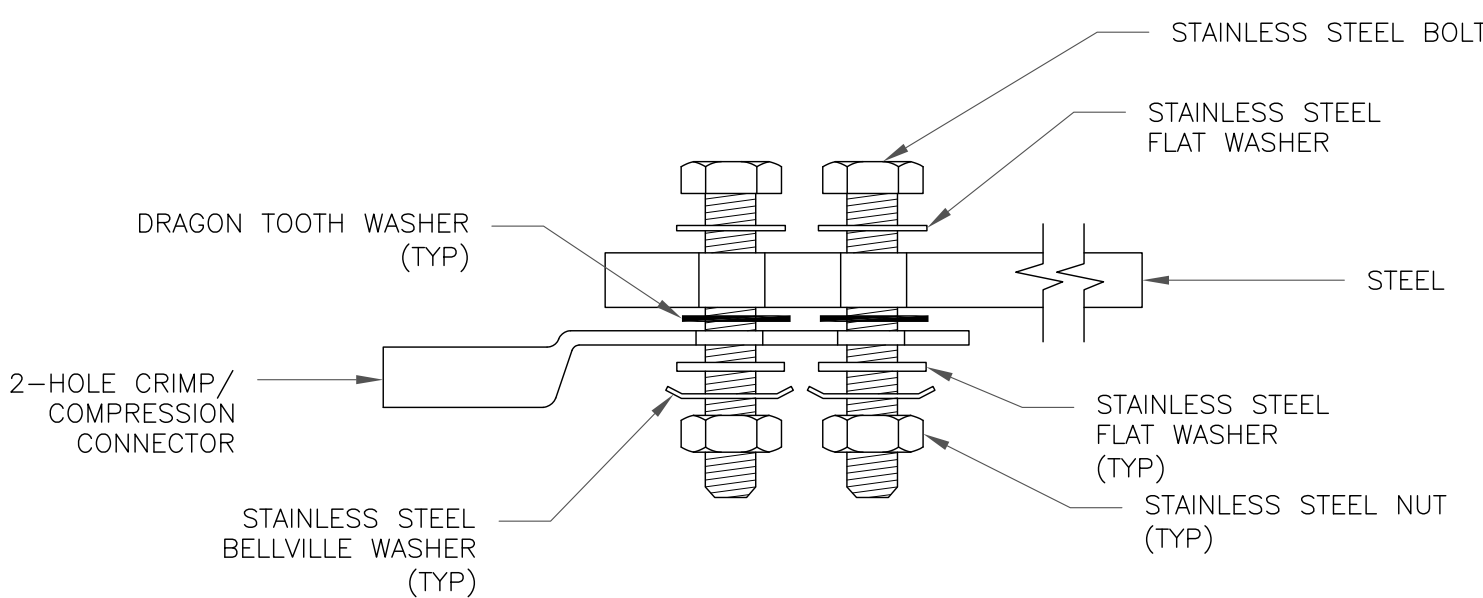


- NOTES:
- DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
 - OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

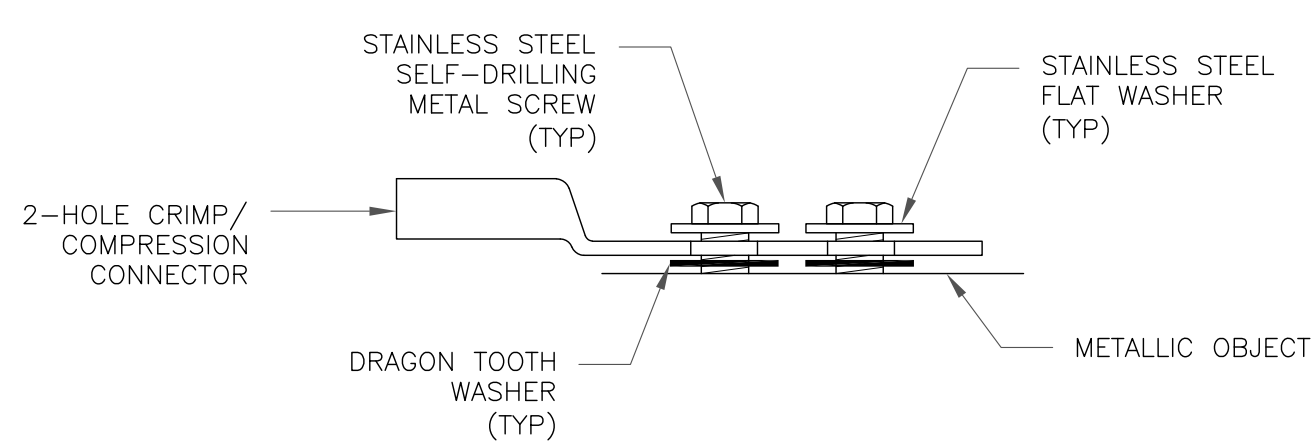
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



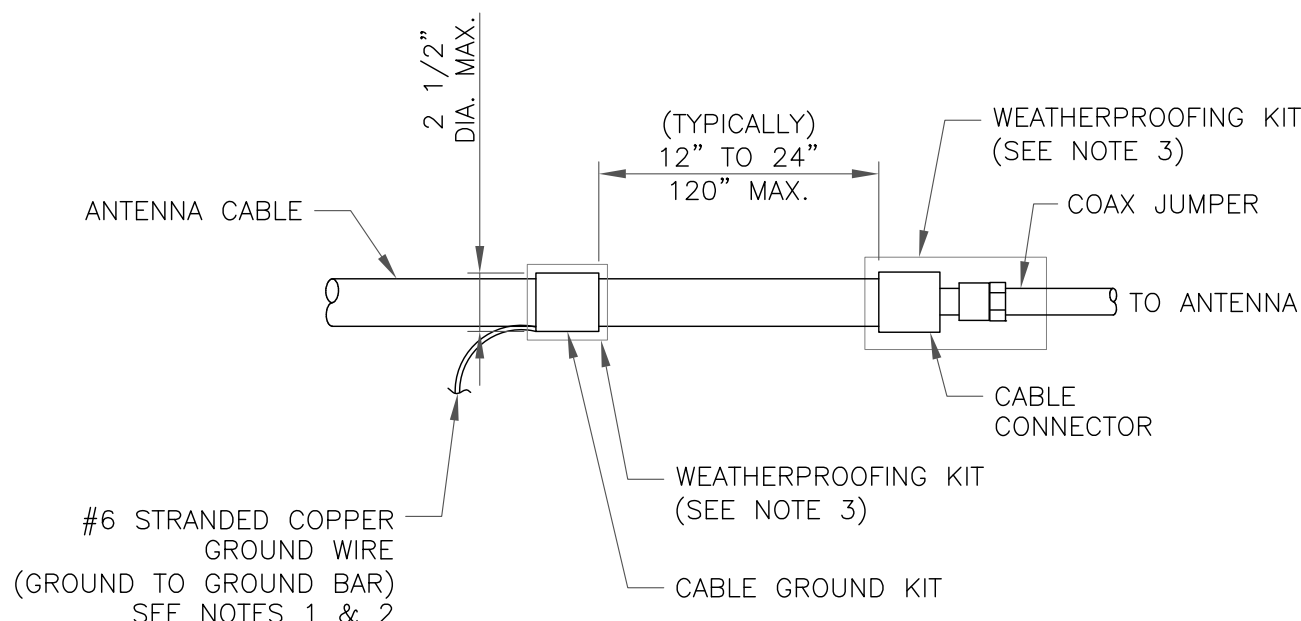
SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS

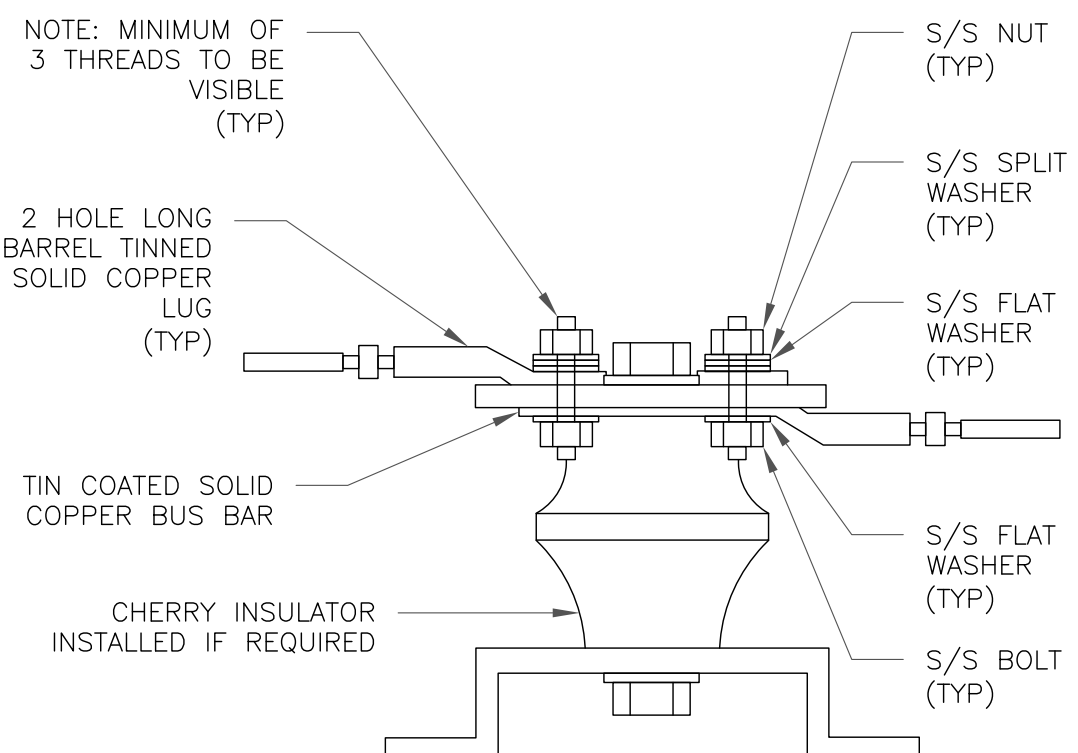


SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS



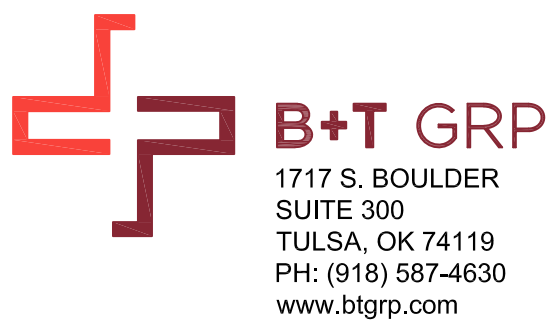
- NOTES:
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 - GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 - WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



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