1280 Route 46 West, Suite 9, Parsippany NJ, 07054

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

Re: Notice of Exempt Modification Application
88 Parsonage Hill Road, Northford CT 06472

October 27, 2017

Dear Ms. Bachman

Sprint Spectrum Realty Company, L.P. ("Sprint"), is submitting to the Connecticut Siting Council for a Notice of Exempt Modification for Proposed Modifications to an Existing Telecommunications Facility located at the above-referenced site. Sprint currently maintains 3 existing panel antenna and 9 remote radio units at the 190' level of the Tower. Sprint proposes to add 3 panel antennas (1 per sector) and 3 remote radio unit (1 per sector) at 190' tower level as well as 1 fiber cable and 11 jumper cables, batteries in existing ground based battery cabinet and new 2.5 equipment in existing radio cabinet.

The Sprint installation was initially approved on 7/22/1999 by the Town of North Branford, there does not appear to have been a commensurate CT Siting Council Approval. The documents enclosed reflect the reality of the current installations on the Tower.

If you have any questions, please feel free to contact me.

Thank you,

By: *Paul F. Sagristano*

Paul F. Sagristano
Cherundolo Consulting
917.841.0247
psagristano@lrivassoc.com

1280 Route 46 West, Suite 9, Parsippany NJ, 07054

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

Re: Notice of Exempt Modification Application
88 Parsonage Hill Road, Northford CT 06472

Latitude : N41.3680
Longitude: W72.8093

Dear Ms. Bachman:

Sprint currently maintains 3 existing panel antenna and 6 remote radio units at the 190' centerline level of the existing monopole. Sprint proposes to add 3 panel antenna and 3 remote radio unit at 190' centerline on the tower. Sprint further proposes to add 1 fiber cable, 11 jumper cables, a new 2.5 radio equipment in the existing ground based radio cabinet, and new batteries in the existing ground based battery cabinet. Sprint is performing a new high-performance upgrade for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

The original building permit was approved July 22, 1999. There does not appear to have been a commensurate CT Siting Council approval for this Tower Share.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, for construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).
In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to Sean Loughran, VP of Finance and Admin of the CT State University System, the property owner and to Michael Paulhus, Town Manager for North Branford as well as Thomas Cowell, Building official and Zoning Enforcement official for the Town of North Branford and Joseph Ochenkowski, Jr., managing member of the Ochenkowski Towers LLC .
Attached is a summary of the planned modifications, including power density calculations reflecting the change in Sprint's operations at the site. Also included is documentation of the structural sufficiency of the tower with proposed modifications to accommodate the revised antenna configuration.

Existing Facility

The Northford facility is located at 88 Parsonage Hill Road, and is owned by Ochenkowski Towers, LLC, the Site coordinates are: N41.3680, W72.8093.

The existing facility consists of a 190' Self Support Lattice Tower. Sprint currently operates wireless communications equipment on a platform on a concrete slab at the facility and has 3 antennas and 3 RRU's mounted on at a centerline of 190' feet.

Statutory Considerations

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

1. The height of the overall structure will be unaffected.

2. The proposed changes will not require an extension of the property boundaries.

3. The proposed additions will not increase the noise level at the existing facility by

six decibels or more, or to levels that exceed state and/or local criteria

4. The changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the Federal Communications Commission safety standard.

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

6. The existing structure and its foundation can support the proposed loading.

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

Respectfully submitted,

Paul F. Sagristano

Paul F. Sagristano
Charles Cherundolo Consulting
917-841-0247
psagristano@lrivassoc.com

PFS/mtf

Additional Recipients:
Michael Paulhus, Town Manager for North Branford – Via Fed Ex
Thomas Cowell, Building official and Zoning Enforcement official Town of North Branford - Via Fed Ex
Joseph Ochenkowski, Jr., managing member of the Ochenkowski Towers LLC – Via Fed Ex

October 30,2017

Dear Customer:

The following is the proof-of-delivery for tracking number 770611051272.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	J.SCHWEBOWSKI	**Delivery location:**	88 PARSONAGE HILL ROAD NORTHFORD, CT 06472
Service type:	FedEx Express Saver	**Delivery date:**	Oct 30, 2017 11:00
Special Handling:	Deliver Weekday Direct Signature Required		

NO SIGNATURE IMAGE IS AVAILABLE VIA THIS TRACKING APPLICATION.
The proof of delivery details appear below; however, no signature image is available at this time.

Shipping Information:

Tracking number:	770611051272	**Ship date:**	Oct 27, 2017
		Weight:	1.0 lbs/0.5 kg

Recipient:
Ken Ochenkowski, Jr.
Ochenkowski Towers, LLC
88 Parsonage Hill Road
NORTHFORD, CT 06472 US

Shipper:
Paul Sagristano
CCC
4 Davis Road West
Suite 5
OLD LYME, CT 06371 US

Reference
CT03XC030 CSC to Owner

Thank you for choosing FedEx.

October 30,2017

Dear Customer:

The following is the proof-of-delivery for tracking number 770611183190.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	G.GINA	**Delivery location:**	909 FOXON ROAD NORTH BRANFORD, CT 06471
Service type:	FedEx Express Saver	**Delivery date:**	Oct 30, 2017 15:06
Special Handling:	Deliver Weekday Direct Signature Required		

NO SIGNATURE IMAGE IS AVAILABLE VIA THIS TRACKING APPLICATION.
The proof of delivery details appear below; however, no signature image is available at this time.

Shipping Information:

Tracking number:	770611183190	**Ship date:**	Oct 27, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Michael Paulhus, Town Manager
Town of North Branford
909 Foxon Road
NORTH BRANFORD, CT 06471 US

Shipper:
Paul Sagristano
CCC
4 Davis Road West
Suite 5
OLD LYME, CT 06371 US

Reference
CT03XC030 - CSC to Town Manage

Thank you for choosing FedEx.

November 2,2017

Dear Customer:

The following is the proof-of-delivery for tracking number 770611253145.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	p.schaffer	**Delivery location:**	909 foxon rd NORTHFORD, CT 06472
Service type:	FedEx Express Saver	**Delivery date:**	Oct 31, 2017 09:38
Special Handling:	Deliver Weekday Direct Signature Required		

NO SIGNATURE IMAGE IS AVAILABLE VIA THIS TRACKING APPLICATION.
The proof of delivery details appear below; however, no signature image is available at this time.

Shipping Information:

Tracking number:	770611253145	**Ship date:**	Oct 27, 2017
		Weight:	0.5 lbs/0.2 kg

Recipient:
Thomas Cowell ZEO, BO
Town of North Branford
909 Foxon Road
NORTHFORD, CT 06472 US

Shipper:
Paul Sagristano
CCC
4 Davis Road West
Suite 5
OLD LYME, CT 06371 US

Reference
CT03XC030 CSC to ZEO

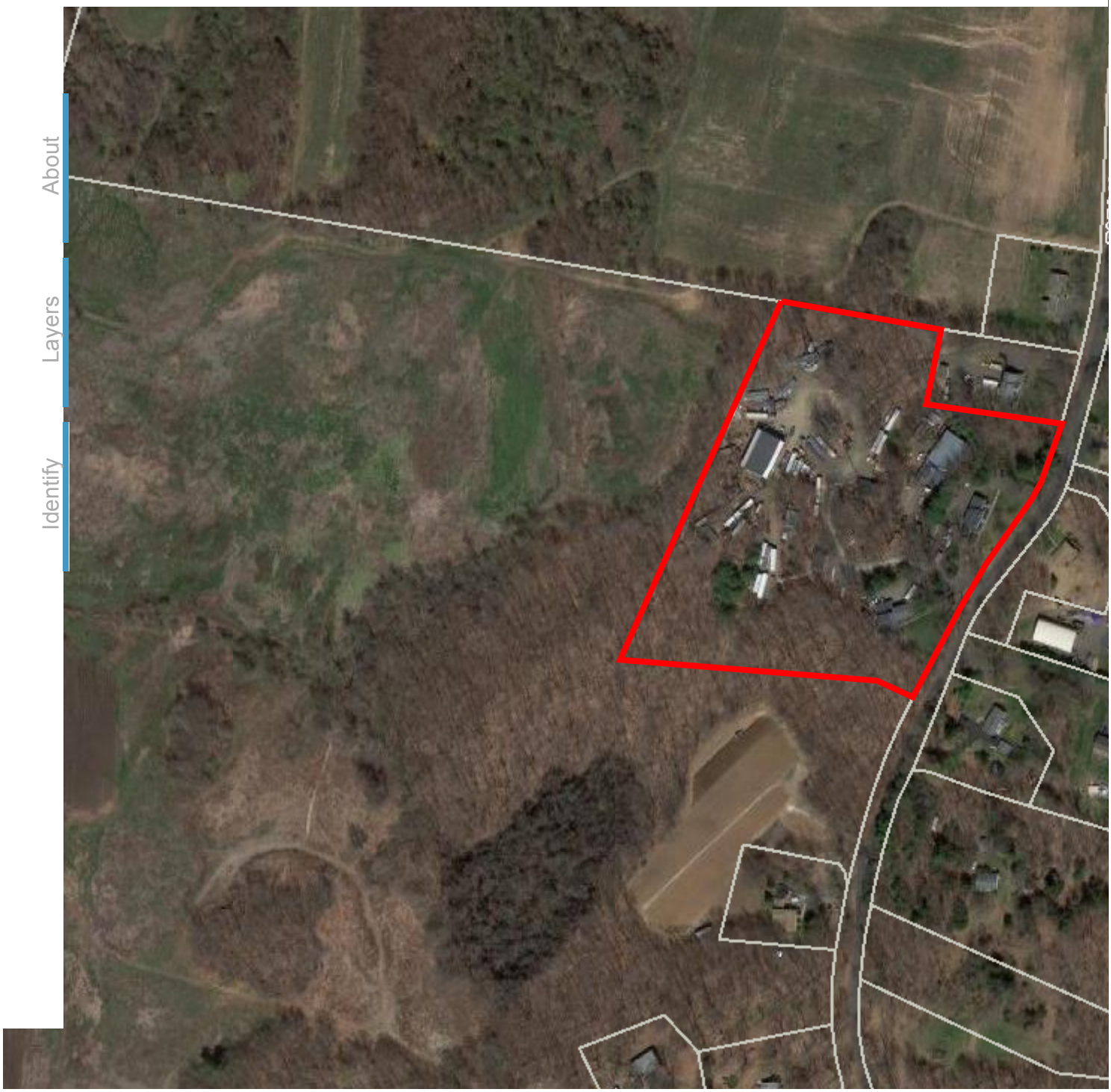
Thank you for choosing FedEx.

Szwabowski

About

Layers

Identify



Email Map Link

Copy and paste the following string into an email to link to the current map view:

100m

Close

300ft

Tighe&Bond

lat:41.3682, long:-72.8070

88 PARSONAGE HILL RD

Location	88 PARSONAGE HILL RD	**Mblu**	51/A 7/ / /
Acct#	002953	**Owner**	SZWABOWSKI JEAN 1/3
Assessment	$864,000	**Appraisal**	$1,248,800
PID	3060	**Building Count**	3

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$691,400	$557,400	$1,248,800

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$473,900	$390,100	$864,000

Owner of Record

Owner	SZWABOWSKI JEAN 1/3	**Sale Price**	$90,000
Co-Owner	OCHENKOWSKI J J JR 1/3 & K W 1/3 EACH	**Certificate**	
Address	84 PARSONAGE HL RD NORTHFORD, CT 06472-1445	**Book & Page**	429/1132
		Sale Date	12/23/2009

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
SZWABOWSKI JEAN 1/3	$90,000		429/1132	12/23/2009
SZWABOWSKI JEAN &	$90,000		429/1128	12/23/2009
SZWABOWSKI JEAN &	$0		276/ 749	12/15/1998
OCHENKOWSKI VERONICA TIC +	$400,000		269/ 844	05/11/1998
OCHENKOWSKI VERONICA	$0		040/ 206	11/14/1960

Building Information

Building 1 : Section 1

Year Built:	1949
Living Area:	1,996
Replacement Cost:	$197,304
Building Percent Good:	55

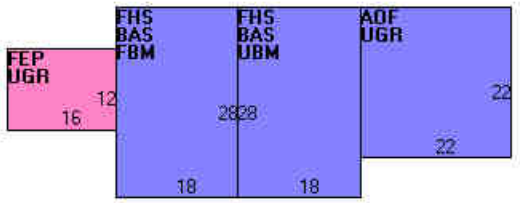
Replacement Cost Less Depreciation: $108,500

Building Attributes	
Field	**Description**
Style	RES TYPE COMM
Model	Res Type Com
Grade:	Above Avg
Stories:	1 1/2 Stories
Occupancy	2
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Plastered
Interior Wall 2	Plywood Panel
Interior Flr 1	Carpet
Interior Flr 2	Hardwood
Heat Fuel	Oil
Heat Type:	Forced Air-Duc
AC Type:	Central
Total Bedrooms:	2 Bedrooms
Total Bthrms:	2
Total Half Baths:	1
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	Average
Kitchen Style:	Average

Building Photo

(http://images.vgsi.com/photos/NorthBranfordCTPhotos//\00\00\

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,008	1,008
FHS	Half Story, Finished	1,008	504
AOF	Office, (Average)	484	484
FBM	Basement, Finished	504	0
FEP	Porch, Enclosed, Finished	192	0
UBM	Basement, Unfinished	504	0
UGR	Garage, Unfinished	676	0
		4,376	1,996

Building 1 : Section 1

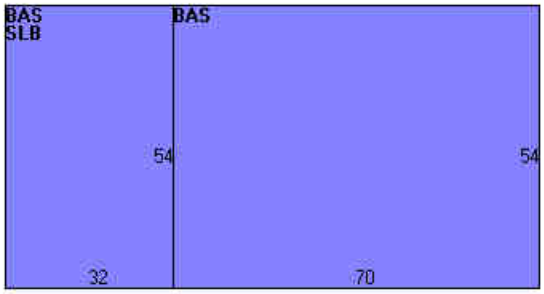
Year Built: 1949
Living Area: 0
Replacement Cost: $197,304
Building Percent Good: 55
Replacement Cost Less Depreciation: $108,500

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	

Building Photo

(http://images.vgsi.com/photos/NorthBranfordCTPhotos//default.

Building Layout



Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Building 2 : Section 1

Year Built: 1958
Living Area: 2,286
Replacement Cost: $183,022
Building Percent Good: 64
Replacement Cost Less Depreciation: $117,100

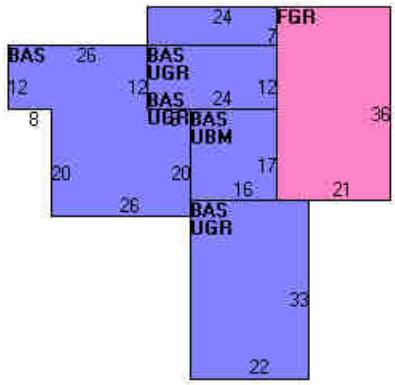
Building Attributes : Bldg 2 of 3	
Field	**Description**
Style	Ranch
Model	Residential
Grade:	Average
Stories:	1 Story
Occupancy	1

Building Photo

(http://images.vgsi.com/photos/NorthBranfordCTPhotos//default.

Building Layout

Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Carpet
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	3 Bedrooms
Total Bthrms:	2
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	5 Rooms
Bath Style:	Average
Kitchen Style:	Average



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,286	2,286
FGR	Garage, Framed	756	0
UBM	Basement, Unfinished	272	0
UGR	Garage, Unfinished	1,182	0
		4,496	2,286

Building 3 : Section 1

Year Built: 1973
Living Area: 600
Replacement Cost: $38,964
Building Percent Good: 49
Replacement Cost Less Depreciation: $19,100

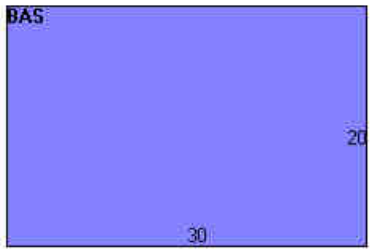
Building Attributes : Bldg 3 of 3	
Field	**Description**
STYLE	Industrial
MODEL	Ind or Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Rolled Compos
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	

Building Photo

(http://images.vgsi.com/photos/NorthBranfordCTPhotos//default.

Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Heat Pump
Bldg Use	COMM WHSE MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	031I
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	LIGHT
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	0
% Comn Wall	12

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	600	600
		600	600

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
FPL2	FIREPLACE 1.5 STY	1 UNITS	$2,800	1

Land

Land Use

Use Code	010M
Description	SINGLE FAM MDL-03
Zone	R40
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	9.31
Frontage	0
Depth	0
Assessed Value	$390,100
Appraised Value	$557,400

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
ELCB	ELECTRONIC COMM BLDG			576 S.F.	$64,800	1
PAV1	PAVING-ASPHALT			4000 S.F.	$3,400	3
SHD1	SHED FRAME			220 S.F.	$800	2
ELCB	ELECTRONIC COMM BLDG			576 S.F.	$64,800	1
FN5	FENCE-10'CHAIN			300 L.F.	$3,200	3
BRN1	BARN - 1 STORY			5058 S.F.	$13,000	1

SHD8	SHED UNDER 144 SF			128 S.F.	$15,000	3
FGR2	GARAGE-GOOD			1200 S.F.	$27,000	3
SHD1	SHED FRAME			288 S.F.	$1,700	1
	RADIO TOWER			175	$17,500	3
	RADIO TOWER			175 HEIGHT	$87,500	3
TW1	CELL TOWER			125 HEIGHT	$50,600	3
ELCB	ELECTRONIC COMM BLDG			360 S.F.	$60,800	3
ELCB	ELECTRONIC COMM BLDG			200 S.F.	$33,800	3

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$691,400	$557,400	$1,248,800
2015	$691,400	$557,400	$1,248,800
2014	$548,500	$361,400	$909,900

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$473,900	$390,100	$864,000
2015	$473,900	$390,100	$864,000
2014	$373,700	$252,900	$626,600

BUILDING PERMIT

JOB WEATHER CARD

APPLICANT Pinnacle Site Development, Inc. DATE July 28, 19 99 ADDRESS [redacted] (CONTR'S LICENSE) 5986

PERMIT TO Antennas (TYPE OF IMPROVEMENT) ( ) NO. STORY (PROPOSED USE) NUMBER OF DWELLING UNITS

AT (LOCATION) 88 Parsonage Hill Road (Sprint Cellular Antennas) (NO.) (STREET) ZONING DISTRICT

BETWEEN (CROSS STREET) AND (CROSS STREET)

SUBDIVISION LOT 7 BLOCK 31 LOT SIZE

BUILDING IS TO BE FT. WIDE BY FT. LONG BY FT. IN HEIGHT AND SHALL CONFORM IN CONSTRUCTI

TO TYPE USE GROUP BASEMENT WALLS OR FOUNDATION (TYPE)

REMARKS: Installation of additional telecommunications antennas on existing tower and equipment on a ground pad per all applicable codes.

FORM NO. BOCA - BP 1994

AREA OR VOLUME (CUBIC/SQUARE FEET) ESTIMATED COST $ 20,000.00 PERMIT FEE $ 240.00(+$20 (+$3.20 Edu. Fee)

OWNER Jean Szumborski

ADDRESS 88 Parsonage Hill Road, Bloomfield, CT 06072

BUILDING DEPT. BY

THIS PERMIT CONVEYS NO RIGHT TO OCCUPY ANY STREET, ALLEY OR SIDEWALK OR ANY PART THEREOF. EITHER TEMPORARILY PERMANENTLY. ENCROACHMENTS ON PUBLIC PROPERTY, NOT SPECIFICALLY PERMITTED UNDER THE BUILDING CODE, MUST BE A PROVED BY THE JURISDICTION. STREET OR ALLEY GRADES AS WELL AS DEPTH AND LOCATION OF PUBLIC SEWERS MAY BE OBTAIN FROM THE DEPARTMENT OF PUBLIC WORKS. THE ISSUANCE OF THIS PERMIT DOES NOT RELEASE THE APPLICANT FROM THE CONDITIO OF ANY APPLICABLE SUBDIVISION RESTRICTIONS.

MINIMUM OF THREE CALLED INSPECTIONS REQUIRED FOR ALL CONSTRUCTION WORK:
1. FOUNDATIONS OR FOOTINGS
2. PRIOR TO COVERING STRUCTURAL MEMBERS (READY FOR LATH OR FINISH COVERING).

APPROVED PLANS MUST BE RETAINED ON JOB AND THIS CARD KEPT POSTED UNTIL FINAL INSPECTION HAS BEEN MADE. WHERE A CERTIFICATE OF OCCUPANCY IS REQUIRED, SUCH BUILDING SHALL NOT BE OCCUPIED UNTIL FINAL INSPECTION HAS BEEN MADE.

WHERE APPLICABLE SEPARATE PERMITS ARE REQUIRED FOR ELECTRICAL, PLUMBING AND MECHANICAL INSTALLATIONS.

EFORE

ST THIS CARD SO IT IS VISIBLE FROM STREET

TION APPROVALS	PLUMBING INSPECTION APPROVALS	ELECTRICAL INSPECTION APPROVALS
	1	1
	2	2
	HEATING INSPECTING APPROVALS	REFRIGERATION INSPECTION APPROVALS
	1	1
	2	2

No-BRANFORD
BUILDING DEPT

EDUC FEE	$3.20
ST	$3.20
C/of O	$10.00
ST	$13.20
MICROFLM	$10.00
ST	$23.20
BLdPERMT	$240.00
ST	$263.20
ST	$263.20
CHK	$263.20
CG	$0.00

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EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT03XC030

Northford / Oshencowski
88 Parsonage Hill Road
Northford, CT 06472

October 16, 2017

EBI Project Number: 6217004504

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	6.92 %

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

EBI Consulting
environmental | engineering | due diligence

October 16, 2017

SPRINT
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Emissions Analysis for Site: **CT03XC030 – Northford / Oshencowski**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **88 Parsonage Hill Road, Northford, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu W/cm^2$). The general population exposure limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **88 Parsonage Hill Road, Northford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) 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.

7) 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 manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **RFS APXVSPP18-C-A20 and the RFS APXVTM14-C-120** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **190 feet** above ground level (AGL) for **Sector A**, **190 feet** above ground level (AGL) for **Sector B** and **190 feet** above ground level (AGL) for Sector C.

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

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	**190 feet**	Height (AGL):	**190 feet**	Height (AGL):	**190 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts
ERP (W):	7,537.38	ERP (W):	7,537.38	ERP (W):	7,537.38
Antenna A1 MPE%	**0.91 %**	Antenna B1 MPE%	**0.91 %**	Antenna C1 MPE%	**0.91 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVTM14-C-120	Make / Model:	RFS APXVTM14-C-120	Make / Model:	RFS APXVTM14-C-120
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	**190 feet**	Height (AGL):	**190 feet**	Height (AGL):	**190 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	**0.66 %**	Antenna B2 MPE%	**0.66 %**	Antenna C2 MPE%	**0.66 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**1.57 %**
Nextel	0.24 %
Motient	0.54 %
T-Mobile	0.63 %
AT&T	1.88 %
Verizon Wireless	2.06 %
Site Total MPE %:	**6.92 %**

SPRINT Sector A Total:	1.57 %
SPRINT Sector B Total:	1.57 %
SPRINT Sector C Total:	1.57 %
Site Total:	6.92 %

SPRINT _ Max Values per Frequency Band / Technology Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	437.55	190	0.46	850 MHz	567	0.08%
Sprint 850 MHz LTE	2	437.55	190	0.93	850 MHz	567	0.17%
Sprint 1900 MHz (PCS) CDMA	5	622.47	190	3.30	1900 MHz (PCS)	1000	0.33%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	190	3.30	1900 MHz (PCS)	1000	0.33%
Sprint 2500 MHz (BRS) LTE	8	778.09	190	6.61	2500 MHz (BRS)	1000	0.66%
						Total:	**1.57%**

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 SPRINT 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:

SPRINT Sector	Power Density Value (%)
Sector A:	1.57 %
Sector B:	1.57 %
Sector C:	1.57 %
SPRINT Maximum Total (per sector):	1.57 %
Site Total:	6.92 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.92 %** 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.

COM-EX Consultants

CT03XC030
"DO MACRO UPGRADE"

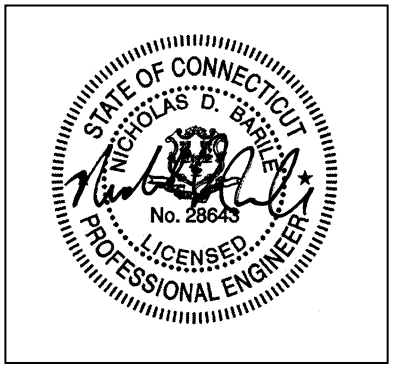
88 Parsonage Hill Road,
Northford, CT 06472
New Haven County

Structural Analysis of Self-Support Tower

September 25, 2017

Item	Pass/Fail	Capacity
Tower	**PASS**	71.6%
Foundation	**PASS**	46.7%

Nicholas D. Barile, PE
Connecticut Professional Engineer
License No. 28643
Com-Ex Project No. **17042-CHE**



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Executive Summary

At the request of Sprint, COM-EX has performed a structural analysis of the antenna mounting system for the proposed antenna equipment loading under the *2015 International Building Code, ASCE 7, and AISC (LRFD14).* Information pertaining to the antenna mounts was obtained from:

- Construction Drawings completed by Com-Ex Consultants, dated 09/25/17

Conclusions

Per our analysis, the self-supported tower can support proposed loading under *2015 International Building Code*.

General Comments

If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, COM-EX should be notified immediately to perform a revised analysis. This report is not a condition assessment and assumes good workmanship will be used and systems will be properly maintained.

Limitations

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of COM-EX.

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COM EX
Consultants

Attachment A

Proposed Equipment

Alpha Sector Antenna Configuration
Rad Center: 190'-0"
(1) (N) APXVTM14-C-I20 RFS Antenna
(1) (N) 2500 MHz RRH, 8x20-25

Beta Sector Antenna Configuration
Rad Center: 190'-0"
(1) (N) APXVTM14-C-I20 RFS Antenna
(1) (N) 2500 MHz RRH, 8x20-25

Gamma Sector Antenna Configuration
Rad Center: 190'-0"
(1) (N) APXVTM14-C-I20 RFS Antenna
(1) (N) 2500 MHz RRH, 8x20-25

Foundation

Leg Forces	Original Design Reactions	Current Analysis	% Capacity
Uplift (kips)	741.6	301	40.5%
Axial (kips)	841.1	360	42.8%
Shear (kips)	81.4	38	46.7%

1.35 comparison conversion factor used per TIA-222-G.

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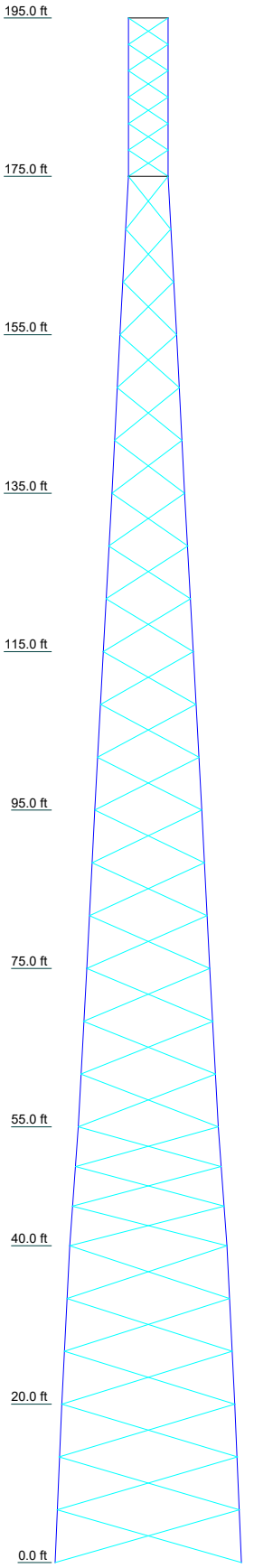
Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
Legs	SR 3	SR 3 3/4	SR 4	SR 4 1/4		SR 4 1/2		SR 4 3/4		SR 5
Leg Grade	A572-50									
Diagonals	SR 1 1/4	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x5/16	L3x3x1/4	L3x3x3/8	L3 1/2x3 1/2x5/16	L4x4x1/4		L4x4x5/16	L4x4x3/8
Diagonal Grade	A36									
Top Girts	SR 1 1/4									
Face Width (ft)	23.5		7.1143	9.2286	11.3429	13.4572	15.5715	17.6858	19.8	21.9144
# Panels @ (ft)	5	6 @ 3.33333			18 @ 6.66667			3 @ 5	6 @ 6.66667	
Weight (K)	48.5	2.4	2.8	3.5	4.0	4.7	5.3	5.8	5.0	6.8	8.2



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVTM14-C-I20	190	AM-X-CD-16-65-00T-RET	172
2500 MHz RRH, 8X20-25	190	(2) RRUS11	172
Existing Antenna	190	80010121	172
Existing RRH	190	(2) 21401 TMA	172
Empty Mount	190	AM-X-CD-16-65-00T-RET	172
Empty Mount	190	(2) RRUS11	172
APXVTM14-C-I20	190	80010121	172
2500 MHz RRH, 8X20-25	190	(2) 21401 TMA	172
Existing Antenna	190	DC6-48-60-18-8F	172
Existing RRH	190	Frames Sector	172
Empty Mount	190	(4) DB844H90E-XY	160
Empty Mount	190	(4) DB844H90E-XY	160
APXVTM14-C-I20	190	(4) DB844H90E-XY	160
2500 MHz RRH, 8X20-25	190	(2) FD9R6004-2C-3L	145
Existing Antenna	190	BXA-70063/6CF	145
Existing RRH	190	BXA-171085/8CF	145
Empty Mount	190	LPA-80080/4 CF	145
Empty Mount	190	(2) FD9R6004-2C-3L	145
Sector Frames	180	BXA-70063/6CF	145
TMA	180	BXA-171085/8CF	145
AIR21	180	LPA-80080/4 CF	145
TMA	180	(2) FD9R6004-2C-3L	145
AIR21	180	BXA-70063/6CF	145
TMA	180	BXA-171085/8CF	145
AIR21	180	LPA-80080/4 CF	145
Sector Frames	180	SECTOR FRAMES	145
AM-X-CD-16-65-00T-RET	172	GPS	80
(2) RRUS11	172	2ft Standoff	80
80010121	172	GPS	80
(2) 21401 TMA	172	2ft Standoff	80

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 New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 111 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 71.6%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 360 K
SHEAR: 38 K

UPLIFT: -301 K
SHEAR: 32 K

AXIAL 131 K
SHEAR 14 K *MOMENT 1643 kip-ft*
TORQUE 3 kip-ft
50 mph WIND - 0.750 in ICE

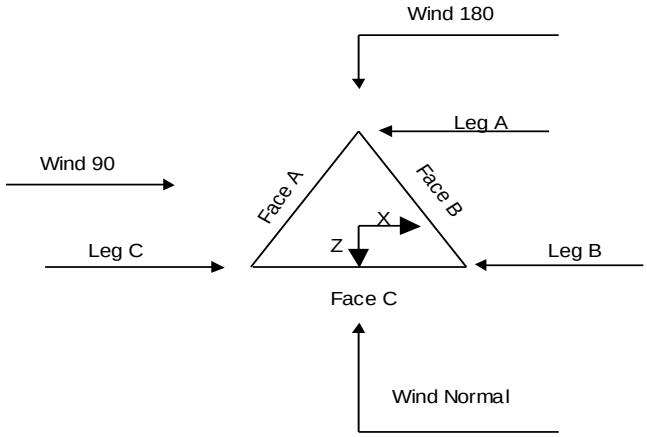
AXIAL 67 K
SHEAR 64 K *MOMENT 6863 kip-ft*
TORQUE 12 kip-ft
REACTIONS - 111 mph WIND

Phone: FAX:	Job: *AZ6_COOPER PEAK*		
	Project: *Self-Supported Tower*		
	Client: Young Design Corp	Drawn by:	App'd:
	Code: TIA-222-G	Date: 09/19/17	Scale: NTS
	Path: D:\SZS Engineering\COMEX\AL\17042-CHE - CT03XC030 - DD Macro Upgrade\Structural Report\DATA\17042-CHE Tower.eri		Dwg No. E-1

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 195.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 5.000 ft at the top and 23.500 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 111 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 0.750 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.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	195.000-175.000			5.000	1	20.000
T2	175.000-155.000			5.000	1	20.000
T3	155.000-135.000			7.114	1	20.000
T4	135.000-115.000			9.229	1	20.000
T5	115.000-95.000			11.343	1	20.000
T6	95.000-75.000			13.457	1	20.000
T7	75.000-55.000			15.572	1	20.000
T8	55.000-40.000			17.686	1	15.000
T9	40.000-20.000			19.800	1	20.000
T10	20.000-0.000			21.914	1	20.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	195.000-175.000	3.333	X Brace	No	No	0.000	0.000
T2	175.000-155.000	6.667	X Brace	No	No	0.000	0.000
T3	155.000-135.000	6.667	X Brace	No	No	0.000	0.000
T4	135.000-115.000	6.667	X Brace	No	No	0.000	0.000
T5	115.000-95.000	6.667	X Brace	No	No	0.000	0.000
T6	95.000-75.000	6.667	X Brace	No	No	0.000	0.000
T7	75.000-55.000	6.667	X Brace	No	No	0.000	0.000
T8	55.000-40.000	5.000	X Brace	No	No	0.000	0.000
T9	40.000-20.000	6.667	X Brace	No	No	0.000	0.000
T10	20.000-0.000	6.667	X Brace	No	No	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 195.000-175.000	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T2 175.000-155.000	Solid Round	3 3/4	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T3 155.000-135.000	Solid Round	4	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)
T4 135.000-115.000	Solid Round	4 1/4	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T5 115.000-95.000	Solid Round	4 1/4	A572-50 (50 ksi)	Single Angle	L3x3x3/8	A36 (36 ksi)
T6 95.000-75.000	Solid Round	4 1/2	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T7 75.000-55.000	Solid Round	4 3/4	A572-50 (50 ksi)	Single Angle	L4x4x1/4	A36 (36 ksi)
T8 55.000-40.000	Solid Round	4 3/4	A572-50 (50 ksi)	Single Angle	L4x4x1/4	A36 (36 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T9 40.000-20.000	Solid Round	4 3/4	A572-50 (50 ksi)	Single Angle	L4x4x5/16	A36 (36 ksi)
T10 20.000-0.000	Solid Round	5	A572-50 (50 ksi)	Single Angle	L4x4x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 195.000-175.000	Solid Round	1 1/4	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T2 175.000-155.000	Solid Round	1 1/4	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 195.000-175.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T2 175.000-155.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T3 155.000-135.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T4 135.000-115.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T5 115.000-95.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T6 95.000-75.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T7 75.000-55.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T8 55.000-40.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T9 40.000-20.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T10 20.000-0.000	0.000	0.000	A36 (36 ksi)	1	1	1	36.000	36.000	36.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 195.000-175.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 175.000-155.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 155.000-135.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 135.000-115.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 115.000-95.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 95.000-75.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 75.000-55.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 55.000-40.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 40.000-20.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 20.000-0.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 195.000-175.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 175.000-155.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 155.000-135.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 135.000-115.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	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
T5 115.000-95.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 95.000-75.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 75.000-55.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 55.000-40.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T9 40.000-20.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T10 20.000-0.000	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
Hybrid Cable	C	No	Ar (CaAa)	190.000 - 0.000	0.500	0.15	3	3	0.500 1.397	1.540		0.002
RET Cable	C	No	Ar (CaAa)	195.000 - 0.000	0.500	0	4	4	0.500 0.000	0.500		0.000
Safety Cable	B	No	Ar (CaAa)	195.000 - 0.000	0.500	0	1	1	0.000	0.375		0.000
1-5/8" Coax	C	No	Ar (CaAa)	180.000 - 0.000	0.500	0.02	1	1	0.000	1.980		0.001
1-5/8" Hybriflex	C	No	Ar (CaAa)	180.000 - 0.000	0.500	0.04	1	1	0.000	1.980		0.001
1-5/8" Coax	C	No	Ar (CaAa)	172.000 - 0.000	0.500	0.06	1	1	0.000	1.980		0.001
Copper Wire	C	No	Ar (CaAa)	172.000 - 0.000	0.500	0.08	1	1	0.000	0.440		0.000
RG6 Fiber	C	No	Ar (CaAa)	172.000 - 0.000	0.500	-0.02	1	1	0.000	0.440		0.000
1-5/8" Coax	C	No	Ar (CaAa)	160.000 - 0.000	0.500	-0.04	1	1	0.000	1.980		0.001
1-5/8" Coax	C	No	Ar (CaAa)	145.000 - 0.000	0.500	-0.06	1	1	0.000	1.980		0.001
1/2: Fiber	C	No	Ar (CaAa)	145.000 - 0.000	0.500	0.08	1	1	0.000	0.650		0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
Ladder	B	No	CaAa (In Face)	195.000 - 0.000	0.500	0	1	No Ice	0.200	0.007
								1/2" Ice	0.000	0.000
								1" Ice	0.000	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	195.000-175.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	12.910	0.000	0.107
T2	175.000-155.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	27.012	0.000	0.189
T3	155.000-135.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	33.470	0.000	0.220
T4	135.000-115.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	36.100	0.000	0.232
T5	115.000-95.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	36.100	0.000	0.232
T6	95.000-75.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	36.100	0.000	0.232
T7	75.000-55.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	36.100	0.000	0.232
T8	55.000-40.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	3.563	0.000	0.108
		C	0.000	0.000	27.075	0.000	0.174
T9	40.000-20.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	36.100	0.000	0.232
T10	20.000-0.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.750	0.000	0.144
		C	0.000	0.000	36.100	0.000	0.232

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	195.000-175.000	A	1.782	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	7.879	0.000	0.098
		C		0.000	0.000	45.621	0.000	0.587
T2	175.000-155.000	A	1.762	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	7.798	0.000	0.096
		C		0.000	0.000	93.969	0.000	1.310
T3	155.000-135.000	A	1.739	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	7.707	0.000	0.094
		C		0.000	0.000	114.991	0.000	1.621
T4	135.000-115.000	A	1.714	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	7.605	0.000	0.092
		C		0.000	0.000	123.409	0.000	1.730
T5	115.000-95.000	A	1.684	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	7.486	0.000	0.089
		C		0.000	0.000	122.059	0.000	1.692
T6	95.000-75.000	A	1.649	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	7.345	0.000	0.086
		C		0.000	0.000	120.453	0.000	1.648
T7	75.000-55.000	A	1.605	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	7.171	0.000	0.082
		C		0.000	0.000	118.464	0.000	1.594
T8	55.000-40.000	A	1.556	0.000	0.000	0.000	0.000	0.000

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	5.229	0.000	0.058
		C		0.000	0.000	87.154	0.000	1.151
T9	40.000-20.000	A	1.486	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	6.693	0.000	0.072
		C		0.000	0.000	113.024	0.000	1.451
T10	20.000-0.000	A	1.331	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	6.075	0.000	0.060
		C		0.000	0.000	105.993	0.000	1.277

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	195.000-175.000	0.171	1.122	0.098	0.692
T2	175.000-155.000	-0.079	2.155	-0.118	2.153
T3	155.000-135.000	-0.046	3.148	-0.119	3.314
T4	135.000-115.000	-0.030	3.722	-0.139	4.122
T5	115.000-95.000	-0.036	4.280	-0.167	4.770
T6	95.000-75.000	-0.039	4.492	-0.189	5.227
T7	75.000-55.000	-0.041	4.608	-0.210	5.595
T8	55.000-40.000	-0.040	4.371	-0.213	5.456
T9	40.000-20.000	-0.049	5.257	-0.267	6.473
T10	20.000-0.000	-0.051	5.460	-0.313	6.772

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Hybrid Cable	175.00 - 190.00	0.6000	0.6000
T1	2	RET Cable	175.00 - 195.00	0.6000	0.6000
T1	3	Ladder	175.00 - 195.00	0.8000	0.8000
T1	4	Safety Cable	175.00 - 195.00	0.6000	0.6000
T1	5	1-5/8" Coax	175.00 - 180.00	0.6000	0.6000
T1	6	1-5/8" Hybriflex	175.00 - 180.00	0.6000	0.6000
T2	1	Hybrid Cable	155.00 - 175.00	0.6000	0.6000
T2	2	RET Cable	155.00 - 175.00	0.6000	0.6000
T2	3	Ladder	155.00 - 175.00	0.8000	0.8000
T2	4	Safety Cable	155.00 - 175.00	0.6000	0.6000
T2	5	1-5/8" Coax	155.00 - 175.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	6	1-5/8" Hybriflex	155.00 - 175.00	0.6000	0.6000
T2	7	1-5/8" Coax	155.00 - 172.00	0.6000	0.6000
T2	8	Copper Wire	155.00 - 172.00	0.6000	0.6000
T2	9	RG6 Fiber	155.00 - 172.00	0.6000	0.6000
T2	10	1-5/8" Coax	155.00 - 160.00	0.6000	0.6000
T3	1	Hybrid Cable	135.00 - 155.00	0.6000	0.6000
T3	2	RET Cable	135.00 - 155.00	0.6000	0.6000
T3	3	Ladder	135.00 - 155.00	0.8000	0.8000
T3	4	Safety Cable	135.00 - 155.00	0.6000	0.6000
T3	5	1-5/8" Coax	135.00 - 155.00	0.6000	0.6000
T3	6	1-5/8" Hybriflex	135.00 - 155.00	0.6000	0.6000
T3	7	1-5/8" Coax	135.00 - 155.00	0.6000	0.6000
T3	8	Copper Wire	135.00 - 155.00	0.6000	0.6000
T3	9	RG6 Fiber	135.00 - 155.00	0.6000	0.6000
T3	10	1-5/8" Coax	135.00 - 155.00	0.6000	0.6000
T3	11	1-5/8" Coax	135.00 - 145.00	0.6000	0.6000
T3	12	1/2: Fiber	135.00 - 145.00	0.6000	0.6000
T4	1	Hybrid Cable	115.00 - 135.00	0.6000	0.6000
T4	2	RET Cable	115.00 - 135.00	0.6000	0.6000
T4	3	Ladder	115.00 - 135.00	0.8000	0.8000
T4	4	Safety Cable	115.00 - 135.00	0.6000	0.6000
T4	5	1-5/8" Coax	115.00 - 135.00	0.6000	0.6000
T4	6	1-5/8" Hybriflex	115.00 - 135.00	0.6000	0.6000
T4	7	1-5/8" Coax	115.00 - 135.00	0.6000	0.6000
T4	8	Copper Wire	115.00 - 135.00	0.6000	0.6000
T4	9	RG6 Fiber	115.00 - 135.00	0.6000	0.6000
T4	10	1-5/8" Coax	115.00 - 135.00	0.6000	0.6000
T4	11	1-5/8" Coax	115.00 - 135.00	0.6000	0.6000
T4	12	1/2: Fiber	115.00 - 135.00	0.6000	0.6000
T5	1	Hybrid Cable	95.00 - 115.00	0.6000	0.6000
T5	2	RET Cable	95.00 - 115.00	0.6000	0.6000
T5	3	Ladder	95.00 - 115.00	0.8000	0.8000
T5	4	Safety Cable	95.00 - 115.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	5	1-5/8" Coax	95.00 - 115.00	0.6000	0.6000
T5	6	1-5/8" Hybriflex	95.00 - 115.00	0.6000	0.6000
T5	7	1-5/8" Coax	95.00 - 115.00	0.6000	0.6000
T5	8	Copper Wire	95.00 - 115.00	0.6000	0.6000
T5	9	RG6 Fiber	95.00 - 115.00	0.6000	0.6000
T5	10	1-5/8" Coax	95.00 - 115.00	0.6000	0.6000
T5	11	1-5/8" Coax	95.00 - 115.00	0.6000	0.6000
T5	12	1/2: Fiber	95.00 - 115.00	0.6000	0.6000
T6	1	Hybrid Cable	75.00 - 95.00	0.6000	0.6000
T6	2	RET Cable	75.00 - 95.00	0.6000	0.6000
T6	3	Ladder	75.00 - 95.00	0.8000	0.8000
T6	4	Safety Cable	75.00 - 95.00	0.6000	0.6000
T6	5	1-5/8" Coax	75.00 - 95.00	0.6000	0.6000
T6	6	1-5/8" Hybriflex	75.00 - 95.00	0.6000	0.6000
T6	7	1-5/8" Coax	75.00 - 95.00	0.6000	0.6000
T6	8	Copper Wire	75.00 - 95.00	0.6000	0.6000
T6	9	RG6 Fiber	75.00 - 95.00	0.6000	0.6000
T6	10	1-5/8" Coax	75.00 - 95.00	0.6000	0.6000
T6	11	1-5/8" Coax	75.00 - 95.00	0.6000	0.6000
T6	12	1/2: Fiber	75.00 - 95.00	0.6000	0.6000
T7	1	Hybrid Cable	55.00 - 75.00	0.6000	0.6000
T7	2	RET Cable	55.00 - 75.00	0.6000	0.6000
T7	3	Ladder	55.00 - 75.00	0.8000	0.8000
T7	4	Safety Cable	55.00 - 75.00	0.6000	0.6000
T7	5	1-5/8" Coax	55.00 - 75.00	0.6000	0.6000
T7	6	1-5/8" Hybriflex	55.00 - 75.00	0.6000	0.6000
T7	7	1-5/8" Coax	55.00 - 75.00	0.6000	0.6000
T7	8	Copper Wire	55.00 - 75.00	0.6000	0.6000
T7	9	RG6 Fiber	55.00 - 75.00	0.6000	0.6000
T7	10	1-5/8" Coax	55.00 - 75.00	0.6000	0.6000
T7	11	1-5/8" Coax	55.00 - 75.00	0.6000	0.6000
T7	12	1/2: Fiber	55.00 - 75.00	0.6000	0.6000
T8	1	Hybrid Cable	40.00 - 55.00	0.6000	0.6000
T8	2	RET Cable	40.00 - 55.00	0.6000	0.6000
T8	3	Ladder	40.00 - 55.00	0.8000	0.8000
T8	4	Safety Cable	40.00 - 55.00	0.6000	0.6000
T8	5	1-5/8" Coax	40.00 - 55.00	0.6000	0.6000
T8	6	1-5/8" Hybriflex	40.00 - 55.00	0.6000	0.6000
T8	7	1-5/8" Coax	40.00 - 55.00	0.6000	0.6000
T8	8	Copper Wire	40.00 - 55.00	0.6000	0.6000
T8	9	RG6 Fiber	40.00 - 55.00	0.6000	0.6000
T8	10	1-5/8" Coax	40.00 - 55.00	0.6000	0.6000
T8	11	1-5/8" Coax	40.00 - 55.00	0.6000	0.6000
T8	12	1/2: Fiber	40.00 - 55.00	0.6000	0.6000
T9	1	Hybrid Cable	20.00 - 40.00	0.6000	0.6000
T9	2	RET Cable	20.00 - 40.00	0.6000	0.6000
T9	3	Ladder	20.00 - 40.00	0.8000	0.8000
T9	4	Safety Cable	20.00 - 40.00	0.6000	0.6000
T9	5	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T9	6	1-5/8" Hybriflex	20.00 - 40.00	0.6000	0.6000
T9	7	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T9	8	Copper Wire	20.00 - 40.00	0.6000	0.6000
T9	9	RG6 Fiber	20.00 - 40.00	0.6000	0.6000
T9	10	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T9	11	1-5/8" Coax	20.00 - 40.00	0.6000	0.6000
T9	12	1/2: Fiber	20.00 - 40.00	0.6000	0.6000
T10	1	Hybrid Cable	0.00 - 20.00	0.6000	0.6000
T10	2	RET Cable	0.00 - 20.00	0.6000	0.6000
T10	3	Ladder	0.00 - 20.00	0.8000	0.8000
T10	4	Safety Cable	0.00 - 20.00	0.6000	0.6000
T10	5	1-5/8" Coax	0.00 - 20.00	0.6000	0.6000
T10	6	1-5/8" Hybriflex	0.00 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	7	1-5/8" Coax	0.00 - 20.00	0.6000	0.6000
T10	8	Copper Wire	0.00 - 20.00	0.6000	0.6000
T10	9	RG6 Fiber	0.00 - 20.00	0.6000	0.6000
T10	10	1-5/8" Coax	0.00 - 20.00	0.6000	0.6000
T10	11	1-5/8" Coax	0.00 - 20.00	0.6000	0.6000
T10	12	1/2: Fiber	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVTM14-C-I20	A	From Leg	4.000 5.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	6.340 6.970 7.600	3.610 4.250 4.890	0.056 0.095 0.133
2500 MHz RRH, 8X20-25	A	From Leg	4.000 5.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	4.050 4.430 4.810	1.530 1.830 2.130	0.070 0.097 0.124
Existing Antenna	A	From Leg	4.000 1.666 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	9.290 10.290 11.290	5.220 6.060 6.900	0.041 0.056 0.072
Existing RRH	A	From Leg	0.000 0.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	2.090 2.510 2.930	1.730 2.120 2.510	0.060 0.087 0.114
Empty Mount	A	From Leg	4.000 -1.660 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	1.880 2.720 3.560	1.880 2.720 3.560	0.035 0.055 0.075
Empty Mount	A	From Leg	4.000 -5.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	1.880 2.720 3.560	1.880 2.720 3.560	0.035 0.055 0.075
APXVTM14-C-I20	B	From Leg	4.000 5.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	6.340 6.970 7.600	3.610 4.250 4.890	0.056 0.095 0.133
2500 MHz RRH, 8X20-25	B	From Leg	4.000 5.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	4.050 4.430 4.810	1.530 1.830 2.130	0.070 0.097 0.124
Existing Antenna	B	From Leg	4.000 1.666 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	9.290 10.290 11.290	5.220 6.060 6.900	0.041 0.056 0.072
Existing RRH	B	From Leg	0.000 0.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	2.090 2.510 2.930	1.730 2.120 2.510	0.060 0.087 0.114
Empty Mount	B	From Leg	4.000 -1.660 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	1.880 2.720 3.560	1.880 2.720 3.560	0.035 0.055 0.075
Empty Mount	B	From Leg	4.000 -5.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	1.880 2.720 3.560	1.880 2.720 3.560	0.035 0.055 0.075
APXVTM14-C-I20	C	From Leg	4.000 5.000 0.000	0.000	190.000	No Ice 1/2" Ice 1" Ice	6.340 6.970 7.600	3.610 4.250 4.890	0.056 0.095 0.133

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
2500 MHz RRH, 8X20-25	C	From Leg	4.000	0.000	190.000	No Ice	4.050	1.530	0.070
			5.000			1/2" Ice	4.430	1.830	0.097
			0.000			1" Ice	4.810	2.130	0.124
Existing Antenna	C	From Leg	4.000	0.000	190.000	No Ice	9.290	5.220	0.041
			1.666			1/2" Ice	10.290	6.060	0.056
			0.000			1" Ice	11.290	6.900	0.072
Existing RRH	C	From Leg	0.000	0.000	190.000	No Ice	2.090	1.730	0.060
			0.000			1/2" Ice	2.510	2.120	0.087
			0.000			1" Ice	2.930	2.510	0.114
Empty Mount	C	From Leg	4.000	0.000	190.000	No Ice	1.880	1.880	0.035
			-1.660			1/2" Ice	2.720	2.720	0.055
			0.000			1" Ice	3.560	3.560	0.075
Empty Mount	C	From Leg	4.000	0.000	190.000	No Ice	1.880	1.880	0.035
			-5.000			1/2" Ice	2.720	2.720	0.055
			0.000			1" Ice	3.560	3.560	0.075
Sector Frames	C	None		0.000	180.000	No Ice	75.300	75.300	0.000
						1/2" Ice	80.000	80.000	2.500
						1" Ice	84.700	84.700	5.130
TMA	A	From Leg	0.000	0.000	180.000	No Ice	1.167	0.540	0.013
			0.000			1/2" Ice	1.390	0.710	0.021
			0.000			1" Ice	1.613	0.880	0.028
AIR21	A	From Leg	0.000	0.000	180.000	No Ice	5.920	4.220	0.083
			0.000			1/2" Ice	6.530	4.840	0.124
			0.000			1" Ice	7.140	5.460	0.174
TMA	B	From Leg	0.000	0.000	180.000	No Ice	1.167	0.540	0.013
			0.000			1/2" Ice	1.390	0.710	0.021
			0.000			1" Ice	1.613	0.880	0.028
AIR21	B	From Leg	0.000	0.000	180.000	No Ice	5.920	4.220	0.083
			0.000			1/2" Ice	6.530	4.840	0.124
			0.000			1" Ice	7.140	5.460	0.174
TMA	C	From Leg	0.000	0.000	180.000	No Ice	1.167	0.540	0.013
			0.000			1/2" Ice	1.390	0.710	0.021
			0.000			1" Ice	1.613	0.880	0.028
AIR21	C	From Leg	0.000	0.000	180.000	No Ice	5.920	4.220	0.083
			0.000			1/2" Ice	6.530	4.840	0.124
			0.000			1" Ice	7.140	5.460	0.174
Sector Frames	C	None		0.000	180.000	No Ice	15.000	15.000	0.500
						1/2" Ice	20.600	20.600	0.650
						1" Ice	26.200	26.200	0.800
AM-X-CD-16-65-00T-RET	A	From Leg	0.000	0.000	172.000	No Ice	8.020	4.640	0.049
			0.000			1/2" Ice	8.820	5.500	0.095
			0.000			1" Ice	9.620	6.360	0.141
(2) RRUS11	A	From Leg	0.000	0.000	172.000	No Ice	2.780	1.190	0.051
			0.000			1/2" Ice	3.100	1.420	0.071
			0.000			1" Ice	3.420	1.650	0.092
80010121	A	From Leg	0.000	0.000	172.000	No Ice	7.540	5.440	0.055
			0.000			1/2" Ice	9.060	7.000	0.161
			0.000			1" Ice	10.580	8.560	0.266
(2) 21401 TMA	A	From Leg	0.000	0.000	172.000	No Ice	1.288	0.500	0.014
			0.000			1/2" Ice	1.527	0.700	0.022
			0.000			1" Ice	1.766	0.900	0.029
AM-X-CD-16-65-00T-RET	B	From Leg	0.000	0.000	172.000	No Ice	8.020	4.640	0.049
			0.000			1/2" Ice	8.820	5.500	0.095
			0.000			1" Ice	9.620	6.360	0.141
(2) RRUS11	B	From Leg	0.000	0.000	172.000	No Ice	2.780	1.190	0.051
			0.000			1/2" Ice	3.100	1.420	0.071
			0.000			1" Ice	3.420	1.650	0.092

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
80010121	B	From Leg	0.000	0.000	172.000	No Ice	7.540	5.440	0.055
			0.000			1/2" Ice	9.060	7.000	0.161
			0.000			1" Ice	10.580	8.560	0.266
(2) 21401 TMA	B	From Leg	0.000	0.000	172.000	No Ice	1.288	0.500	0.014
			0.000			1/2" Ice	1.527	0.700	0.022
			0.000			1" Ice	1.766	0.900	0.029
AM-X-CD-16-65-00T-RET	C	From Leg	0.000	0.000	172.000	No Ice	8.020	4.640	0.049
			0.000			1/2" Ice	8.820	5.500	0.095
			0.000			1" Ice	9.620	6.360	0.141
(2) RRUS11	C	From Leg	0.000	0.000	172.000	No Ice	2.780	1.190	0.051
			0.000			1/2" Ice	3.100	1.420	0.071
			0.000			1" Ice	3.420	1.650	0.092
80010121	C	From Leg	0.000	0.000	172.000	No Ice	7.540	5.440	0.055
			0.000			1/2" Ice	9.060	7.000	0.161
			0.000			1" Ice	10.580	8.560	0.266
(2) 21401 TMA	C	From Leg	0.000	0.000	172.000	No Ice	1.288	0.500	0.014
			0.000			1/2" Ice	1.527	0.700	0.022
			0.000			1" Ice	1.766	0.900	0.029
DC6-48-60-18-8F	C	From Leg	0.000	0.000	172.000	No Ice	2.560	0.940	0.033
			0.000			1/2" Ice	2.910	1.370	0.051
			0.000			1" Ice	3.260	1.800	0.068
Frames Sector	C	None		0.000	172.000	No Ice	15.000	15.000	0.500
						1/2" Ice	20.600	20.600	0.650
						1" Ice	26.200	26.200	0.800
(4) DB844H90E-XY	A	From Leg	0.000	0.000	160.000	No Ice	3.060	3.610	0.014
			0.000			1/2" Ice	3.610	4.150	0.040
			0.000			1" Ice	4.160	4.690	0.067
(4) DB844H90E-XY	B	From Leg	0.000	0.000	160.000	No Ice	3.060	3.610	0.014
			0.000			1/2" Ice	3.610	4.150	0.040
			0.000			1" Ice	4.160	4.690	0.067
(4) DB844H90E-XY	C	From Leg	0.000	0.000	160.000	No Ice	3.060	3.610	0.014
			0.000			1/2" Ice	3.610	4.150	0.040
			0.000			1" Ice	4.160	4.690	0.067
(2) FD9R6004-2C-3L	A	From Leg	0.000	0.000	145.000	No Ice	0.310	0.090	0.003
			0.000			1/2" Ice	0.430	0.170	0.085
			0.000			1" Ice	0.550	0.250	0.167
BXA-70063/6CF	A	From Leg	0.000	0.000	145.000	No Ice	7.570	4.160	0.017
			0.000			1/2" Ice	8.360	5.030	0.059
			0.000			1" Ice	9.150	5.900	0.102
BXA-171085/8CF	A	From Leg	0.000	0.000	145.000	No Ice	2.920	2.140	0.009
			0.000			1/2" Ice	3.470	2.720	0.018
			0.000			1" Ice	4.020	3.300	0.027
LPA-80080/4 CF	A	From Leg	0.000	0.000	145.000	No Ice	2.620	0.001	0.012
			0.000			1/2" Ice	3.160	5.930	0.045
			0.000			1" Ice	3.700	11.860	0.078
(2) FD9R6004-2C-3L	B	From Leg	0.000	0.000	145.000	No Ice	0.310	0.090	0.003
			0.000			1/2" Ice	0.430	0.170	0.085
			0.000			1" Ice	0.550	0.250	0.167
BXA-70063/6CF	B	From Leg	0.000	0.000	145.000	No Ice	7.570	4.160	0.017
			0.000			1/2" Ice	8.360	5.030	0.059
			0.000			1" Ice	9.150	5.900	0.102
BXA-171085/8CF	B	From Leg	0.000	0.000	145.000	No Ice	2.920	2.140	0.009
			0.000			1/2" Ice	3.470	2.720	0.018
			0.000			1" Ice	4.020	3.300	0.027
LPA-80080/4 CF	B	From Leg	0.000	0.000	145.000	No Ice	2.620	0.001	0.012
			0.000			1/2" Ice	3.160	5.930	0.045
			0.000			1" Ice	3.700	11.860	0.078

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) FD9R6004-2C-3L	C	From Leg	0.000	0.000	145.000	No Ice	0.310	0.090	0.003
			0.000			1/2" Ice	0.430	0.170	0.085
			0.000			1" Ice	0.550	0.250	0.167
BXA-70063/6CF	C	From Leg	0.000	0.000	145.000	No Ice	7.570	4.160	0.017
			0.000			1/2" Ice	8.360	5.030	0.059
			0.000			1" Ice	9.150	5.900	0.102
BXA-171085/8CF	C	From Leg	0.000	0.000	145.000	No Ice	2.920	2.140	0.009
			0.000			1/2" Ice	3.470	2.720	0.018
			0.000			1" Ice	4.020	3.300	0.027
LPA-80080/4 CF	C	From Leg	0.000	0.000	145.000	No Ice	2.620	0.001	0.012
			0.000			1/2" Ice	3.160	5.930	0.045
			0.000			1" Ice	3.700	11.860	0.078
SECTOR FRAMES	A	From Leg	0.000	0.000	145.000	No Ice	15.000	15.000	0.500
			0.000			1/2" Ice	20.600	20.600	0.650
			0.000			1" Ice	26.200	26.200	0.800
GPS	A	From Leg	2.000	0.000	80.000	No Ice	2.000	2.000	0.040
			0.000			1/2" Ice	3.000	3.000	0.063
			0.000			1" Ice	4.000	4.000	0.086
2ft Standoff	A	From Leg	0.000	0.000	80.000	No Ice	2.630	2.630	0.050
			0.000			1/2" Ice	4.340	4.240	0.100
			0.000			1" Ice	6.050	5.850	0.150
GPS	B	From Leg	2.000	0.000	80.000	No Ice	2.000	2.000	0.040
			0.000			1/2" Ice	3.000	3.000	0.063
			0.000			1" Ice	4.000	4.000	0.086
2ft Standoff	B	From Leg	0.000	0.000	80.000	No Ice	2.630	2.630	0.050
			0.000			1/2" Ice	4.340	4.240	0.100
			0.000			1" Ice	6.050	5.850	0.150

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	185.000	1.441	0.039	105.000	A	0.000	17.631	10.000	56.72	0.000	0.000
195.000-175.0					B	0.000	17.631		56.72	4.750	0.000
00					C	0.000	17.631		56.72	12.910	0.000
T2	165.000	1.406	0.038	127.402	A	10.711	13.018	12.523	52.78	0.000	0.000
175.000-155.0					B	10.711	13.018		52.78	4.750	0.000
00					C	10.711	13.018		52.78	27.012	0.000
T3	145.000	1.369	0.037	170.105	A	12.659	13.358	13.358	51.34	0.000	0.000
155.000-135.0					B	12.659	13.358		51.34	4.750	0.000
00					C	12.659	13.358		51.34	33.470	0.000
T4	125.000	1.326	0.036	212.808	A	17.767	14.193	14.193	44.41	0.000	0.000
135.000-115.0					B	17.767	14.193		44.41	4.750	0.000
00					C	17.767	14.193		44.41	36.100	0.000
T5	105.000	1.279	0.034	255.094	A	20.520	14.193	14.193	40.89	0.000	0.000
115.000-95.00					B	20.520	14.193		40.89	4.750	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
0					C	20.520	14.193		40.89	36.100	0.000
T6	85.000	1.223	0.033	297.797	A	27.241	15.028	15.028	35.55	0.000	0.000
95.000-75.000					B	27.241	15.028		35.55	4.750	0.000
					C	27.241	15.028		35.55	36.100	0.000
T7	65.000	1.156	0.031	340.501	A	34.990	15.863	15.863	31.19	0.000	0.000
75.000-55.000					B	34.990	15.863		31.19	4.750	0.000
					C	34.990	15.863		31.19	36.100	0.000
T8	47.500	1.082	0.029	287.096	A	37.981	11.914	11.914	23.88	0.000	0.000
55.000-40.000					B	37.981	11.914		23.88	3.563	0.000
					C	37.981	11.914		23.88	27.075	0.000
T9	30.000	0.982	0.026	425.072	A	42.966	15.863	15.863	26.96	0.000	0.000
40.000-20.000					B	42.966	15.863		26.96	4.750	0.000
					C	42.966	15.863		26.96	36.100	0.000
T10	10.000	0.85	0.023	462.484	A	46.472	16.684	16.684	26.42	0.000	0.000
20.000-0.000					B	46.472	16.684		26.42	4.750	0.000
					C	46.472	16.684		26.42	36.100	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	185.000	1.441	0.008	1.782	110.941	A	0.000	51.271	21.881	42.68	0.000	0.000
195.000-175.000						B	0.000	51.271		42.68	7.879	0.000
						C	0.000	51.271		42.68	45.621	0.000
T2	165.000	1.406	0.008	1.762	133.283	A	10.711	41.279	24.291	46.72	0.000	0.000
175.000-155.000						B	10.711	41.279		46.72	7.798	0.000
						C	10.711	41.279		46.72	93.969	0.000
T3	145.000	1.369	0.007	1.739	175.911	A	12.659	42.590	24.975	45.20	0.000	0.000
155.000-135.000						B	12.659	42.590		45.20	7.707	0.000
						C	12.659	42.590		45.20	114.991	0.000
T4	125.000	1.326	0.007	1.714	218.528	A	17.767	45.937	25.639	40.25	0.000	0.000
135.000-115.000						B	17.767	45.937		40.25	7.605	0.000
						C	17.767	45.937		40.25	123.409	0.000
T5	105.000	1.279	0.007	1.684	260.716	A	20.520	48.480	25.441	36.87	0.000	0.000
115.000-95.000						B	20.520	48.480		36.87	7.486	0.000
						C	20.520	48.480		36.87	122.059	0.000
T6	85.000	1.223	0.007	1.649	303.301	A	27.241	51.707	26.041	32.98	0.000	0.000
95.000-75.000						B	27.241	51.707		32.98	7.345	0.000
						C	27.241	51.707		32.98	120.453	0.000
T7	65.000	1.156	0.006	1.605	345.859	A	34.990	54.667	26.584	29.65	0.000	0.000
75.000-55.000						B	34.990	54.667		29.65	7.171	0.000
						C	34.990	54.667		29.65	118.464	0.000
T8	47.500	1.082	0.006	1.556	290.994	A	37.981	49.260	19.718	22.60	0.000	0.000
55.000-40.000						B	37.981	49.260		22.60	5.229	0.000
						C	37.981	49.260		22.60	87.154	0.000
T9	30.000	0.982	0.005	1.486	430.031	A	42.966	57.705	25.786	25.61	0.000	0.000
40.000-20.000						B	42.966	57.705		25.61	6.693	0.000
						C	42.966	57.705		25.61	113.024	0.000
T10	10.000	0.85	0.005	1.331	466.925	A	46.472	56.499	25.568	24.83	0.000	0.000
20.000-0.000						B	46.472	56.499		24.83	6.075	0.000
						C	46.472	56.499		24.83	105.993	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	185.000	1.441	0.011	105.000	A	0.000	17.631	10.000	56.72	0.000	0.000
195.000-175.0					B	0.000	17.631		56.72	4.750	0.000
00					C	0.000	17.631		56.72	12.910	0.000
T2	165.000	1.406	0.011	127.402	A	10.711	13.018	12.523	52.78	0.000	0.000
175.000-155.0					B	10.711	13.018		52.78	4.750	0.000
00					C	10.711	13.018		52.78	27.012	0.000
T3	145.000	1.369	0.011	170.105	A	12.659	13.358	13.358	51.34	0.000	0.000
155.000-135.0					B	12.659	13.358		51.34	4.750	0.000
00					C	12.659	13.358		51.34	33.470	0.000
T4	125.000	1.326	0.010	212.808	A	17.767	14.193	14.193	44.41	0.000	0.000
135.000-115.0					B	17.767	14.193		44.41	4.750	0.000
00					C	17.767	14.193		44.41	36.100	0.000
T5	105.000	1.279	0.010	255.094	A	20.520	14.193	14.193	40.89	0.000	0.000
115.000-95.00					B	20.520	14.193		40.89	4.750	0.000
0					C	20.520	14.193		40.89	36.100	0.000
T6	85.000	1.223	0.010	297.797	A	27.241	15.028	15.028	35.55	0.000	0.000
95.000-75.000					B	27.241	15.028		35.55	4.750	0.000
					C	27.241	15.028		35.55	36.100	0.000
T7	65.000	1.156	0.009	340.501	A	34.990	15.863	15.863	31.19	0.000	0.000
75.000-55.000					B	34.990	15.863		31.19	4.750	0.000
					C	34.990	15.863		31.19	36.100	0.000
T8	47.500	1.082	0.008	287.096	A	37.981	11.914	11.914	23.88	0.000	0.000
55.000-40.000					B	37.981	11.914		23.88	3.563	0.000
					C	37.981	11.914		23.88	27.075	0.000
T9	30.000	0.982	0.008	425.072	A	42.966	15.863	15.863	26.96	0.000	0.000
40.000-20.000					B	42.966	15.863		26.96	4.750	0.000
					C	42.966	15.863		26.96	36.100	0.000
T10	10.000	0.85	0.007	462.484	A	46.472	16.684	16.684	26.42	0.000	0.000
20.000-0.000					B	46.472	16.684		26.42	4.750	0.000
					C	46.472	16.684		26.42	36.100	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.251	2.409	A	0.168	2.707	0.039	1	1	9.985	1.261	0.063	C
195.000-175.0			B	0.168	2.707		1	1	9.985			
00			C	0.168	2.707		1	1	9.985			
T2	0.334	2.820	A	0.186	2.643	0.038	1	1	17.681	2.134	0.107	C
175.000-155.0			B	0.186	2.643		1	1	17.681			
00			C	0.186	2.643		1	1	17.681			
T3	0.365	3.514	A	0.153	2.761	0.037	1	1	19.549	2.423	0.121	C
155.000-135.0			B	0.153	2.761		1	1	19.549			
00			C	0.153	2.761		1	1	19.549			
T4	0.377	3.983	A	0.15	2.771	0.036	1	1	24.946	2.855	0.143	C
135.000-115.0			B	0.15	2.771		1	1	24.946			
00			C	0.15	2.771		1	1	24.946			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T5	0.377	4.722	A	0.136	2.823	0.034	1	1	27.704	3.017	0.151	C
115.000-95.00			B	0.136	2.823		1	1	27.704			
0			C	0.136	2.823		1	1	27.704			
T6	0.377	5.298	A	0.142	2.801	0.033	1	1	34.756	3.419	0.171	C
95.000-75.000			B	0.142	2.801		1	1	34.756			
			C	0.142	2.801		1	1	34.756			
T7	0.377	5.754	A	0.149	2.774	0.031	1	1	42.865	3.799	0.190	C
75.000-55.000			B	0.149	2.774		1	1	42.865			
			C	0.149	2.774		1	1	42.865			
T8	0.283	5.028	A	0.174	2.686	0.029	1	1	44.066	3.387	0.226	C
55.000-40.000			B	0.174	2.686		1	1	44.066			
			C	0.174	2.686		1	1	44.066			
T9	0.377	6.844	A	0.138	2.815	0.026	1	1	51.072	3.784	0.189	C
40.000-20.000			B	0.138	2.815		1	1	51.072			
			C	0.138	2.815		1	1	51.072			
T10	0.377	8.159	A	0.137	2.822	0.023	1	1	55.064	3.500	0.175	C
20.000-0.000			B	0.137	2.822		1	1	55.064			
			C	0.137	2.822		1	1	55.064			
Sum Weight:	3.493	48.531						OTM	2457.357 kip-ft	29.579		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T1	0.251	2.409	A	0.168	2.707	0.039	0.8	1	9.985	1.261	0.063	C
195.000-175.0			B	0.168	2.707		0.8	1	9.985			
00			C	0.168	2.707		0.8	1	9.985			
T2	0.334	2.820	A	0.186	2.643	0.038	0.8	1	15.538	1.952	0.098	C
175.000-155.0			B	0.186	2.643		0.8	1	15.538			
00			C	0.186	2.643		0.8	1	15.538			
T3	0.365	3.514	A	0.153	2.761	0.037	0.8	1	17.017	2.205	0.110	C
155.000-135.0			B	0.153	2.761		0.8	1	17.017			
00			C	0.153	2.761		0.8	1	17.017			
T4	0.377	3.983	A	0.15	2.771	0.036	0.8	1	21.393	2.557	0.128	C
135.000-115.0			B	0.15	2.771		0.8	1	21.393			
00			C	0.15	2.771		0.8	1	21.393			
T5	0.377	4.722	A	0.136	2.823	0.034	0.8	1	23.600	2.679	0.134	C
115.000-95.00			B	0.136	2.823		0.8	1	23.600			
0			C	0.136	2.823		0.8	1	23.600			
T6	0.377	5.298	A	0.142	2.801	0.033	0.8	1	29.308	2.994	0.150	C
95.000-75.000			B	0.142	2.801		0.8	1	29.308			
			C	0.142	2.801		0.8	1	29.308			
T7	0.377	5.754	A	0.149	2.774	0.031	0.8	1	35.867	3.287	0.164	C
75.000-55.000			B	0.149	2.774		0.8	1	35.867			
			C	0.149	2.774		0.8	1	35.867			
T8	0.283	5.028	A	0.174	2.686	0.029	0.8	1	36.470	2.883	0.192	C
55.000-40.000			B	0.174	2.686		0.8	1	36.470			
			C	0.174	2.686		0.8	1	36.470			
T9	0.377	6.844	A	0.138	2.815	0.026	0.8	1	42.479	3.243	0.162	C
40.000-20.000			B	0.138	2.815		0.8	1	42.479			
			C	0.138	2.815		0.8	1	42.479			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T10	0.377	8.159	A	0.137	2.822	0.023	0.8	1	45.769	2.992	0.150	C
20.000-0.000			B	0.137	2.822		0.8	1	45.769			
			C	0.137	2.822		0.8	1	45.769			
Sum Weight:	3.493	48.531						OTM	2208.539 kip-ft	26.055		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.251	2.409	A	0.168	2.707	0.039	0.85	1	9.985	1.261	0.063	C
195.000-175.0			B	0.168	2.707		0.85	1	9.985			
00			C	0.168	2.707		0.85	1	9.985			
T2	0.334	2.820	A	0.186	2.643	0.038	0.85	1	16.074	1.998	0.100	C
175.000-155.0			B	0.186	2.643		0.85	1	16.074			
00			C	0.186	2.643		0.85	1	16.074			
T3	0.365	3.514	A	0.153	2.761	0.037	0.85	1	17.650	2.260	0.113	C
155.000-135.0			B	0.153	2.761		0.85	1	17.650			
00			C	0.153	2.761		0.85	1	17.650			
T4	0.377	3.983	A	0.15	2.771	0.036	0.85	1	22.281	2.631	0.132	C
135.000-115.0			B	0.15	2.771		0.85	1	22.281			
00			C	0.15	2.771		0.85	1	22.281			
T5	0.377	4.722	A	0.136	2.823	0.034	0.85	1	24.626	2.764	0.138	C
115.000-95.00			B	0.136	2.823		0.85	1	24.626			
0			C	0.136	2.823		0.85	1	24.626			
T6	0.377	5.298	A	0.142	2.801	0.033	0.85	1	30.670	3.100	0.155	C
95.000-75.000			B	0.142	2.801		0.85	1	30.670			
			C	0.142	2.801		0.85	1	30.670			
T7	0.377	5.754	A	0.149	2.774	0.031	0.85	1	37.617	3.415	0.171	C
75.000-55.000			B	0.149	2.774		0.85	1	37.617			
			C	0.149	2.774		0.85	1	37.617			
T8	0.283	5.028	A	0.174	2.686	0.029	0.85	1	38.369	3.009	0.201	C
55.000-40.000			B	0.174	2.686		0.85	1	38.369			
			C	0.174	2.686		0.85	1	38.369			
T9	0.377	6.844	A	0.138	2.815	0.026	0.85	1	44.627	3.378	0.169	C
40.000-20.000			B	0.138	2.815		0.85	1	44.627			
			C	0.138	2.815		0.85	1	44.627			
T10	0.377	8.159	A	0.137	2.822	0.023	0.85	1	48.093	3.119	0.156	C
20.000-0.000			B	0.137	2.822		0.85	1	48.093			
			C	0.137	2.822		0.85	1	48.093			
Sum Weight:	3.493	48.531						OTM	2270.744 kip-ft	26.936		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.685	4.561	A	0.462	1.954	0.008	1	1	34.110	0.658	0.033	C
195.000-175.0			B	0.462	1.954		1	1	34.110			
00			C	0.462	1.954		1	1	34.110			
T2	1.407	5.482	A	0.39	2.084	0.008	1	1	36.800	0.896	0.045	C
175.000-155.0			B	0.39	2.084		1	1	36.800			
00			C	0.39	2.084		1	1	36.800			
T3	1.715	6.377	A	0.314	2.259	0.007	1	1	38.360	1.014	0.051	C
155.000-135.0			B	0.314	2.259		1	1	38.360			
00			C	0.314	2.259		1	1	38.360			
T4	1.822	7.487	A	0.292	2.319	0.007	1	1	45.160	1.124	0.056	C
135.000-115.0			B	0.292	2.319		1	1	45.160			
00			C	0.292	2.319		1	1	45.160			
T5	1.781	8.547	A	0.265	2.394	0.007	1	1	49.062	1.154	0.058	C
115.000-95.00			B	0.265	2.394		1	1	49.062			
0			C	0.265	2.394		1	1	49.062			
T6	1.734	9.865	A	0.26	2.407	0.007	1	1	57.624	1.218	0.061	C
95.000-75.000			B	0.26	2.407		1	1	57.624			
			C	0.26	2.407		1	1	57.624			
T7	1.676	11.096	A	0.259	2.41	0.006	1	1	67.097	1.267	0.063	C
75.000-55.000			B	0.259	2.41		1	1	67.097			
			C	0.259	2.41		1	1	67.097			
T8	1.209	10.356	A	0.3	2.297	0.006	1	1	67.480	1.053	0.070	C
55.000-40.000			B	0.3	2.297		1	1	67.480			
			C	0.3	2.297		1	1	67.480			
T9	1.523	12.635	A	0.234	2.486	0.005	1	1	76.508	1.190	0.060	C
40.000-20.000			B	0.234	2.486		1	1	76.508			
			C	0.234	2.486		1	1	76.508			
T10	1.337	13.619	A	0.221	2.529	0.005	1	1	79.149	1.051	0.053	C
20.000-0.000			B	0.221	2.529		1	1	79.149			
			C	0.221	2.529		1	1	79.149			
Sum Weight:	14.889	90.024						OTM	960.443 kip-ft	10.626		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.685	4.561	A	0.462	1.954	0.008	0.8	1	34.110	0.658	0.033	C
195.000-175.0			B	0.462	1.954		0.8	1	34.110			
00			C	0.462	1.954		0.8	1	34.110			
T2	1.407	5.482	A	0.39	2.084	0.008	0.8	1	34.657	0.867	0.043	C
175.000-155.0			B	0.39	2.084		0.8	1	34.657			
00			C	0.39	2.084		0.8	1	34.657			
T3	1.715	6.377	A	0.314	2.259	0.007	0.8	1	35.828	0.978	0.049	C
155.000-135.0			B	0.314	2.259		0.8	1	35.828			
00			C	0.314	2.259		0.8	1	35.828			
T4	1.822	7.487	A	0.292	2.319	0.007	0.8	1	41.607	1.074	0.054	C
135.000-115.0			B	0.292	2.319		0.8	1	41.607			
00			C	0.292	2.319		0.8	1	41.607			
T5	1.781	8.547	A	0.265	2.394	0.007	0.8	1	44.958	1.096	0.055	C
115.000-95.00			B	0.265	2.394		0.8	1	44.958			
0			C	0.265	2.394		0.8	1	44.958			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T6	1.734	9.865	A	0.26	2.407	0.007	0.8	1	52.176	1.144	0.057	C
95.000-75.000			B	0.26	2.407		0.8	1	52.176			
			C	0.26	2.407		0.8	1	52.176			
T7	1.676	11.096	A	0.259	2.41	0.006	0.8	1	60.099	1.177	0.059	C
75.000-55.000			B	0.259	2.41		0.8	1	60.099			
			C	0.259	2.41		0.8	1	60.099			
T8	1.209	10.356	A	0.3	2.297	0.006	0.8	1	59.884	0.965	0.064	C
55.000-40.000			B	0.3	2.297		0.8	1	59.884			
			C	0.3	2.297		0.8	1	59.884			
T9	1.523	12.635	A	0.234	2.486	0.005	0.8	1	67.915	1.093	0.055	C
40.000-20.000			B	0.234	2.486		0.8	1	67.915			
			C	0.234	2.486		0.8	1	67.915			
T10	1.337	13.619	A	0.221	2.529	0.005	0.8	1	69.855	0.959	0.048	C
20.000-0.000			B	0.221	2.529		0.8	1	69.855			
			C	0.221	2.529		0.8	1	69.855			
Sum Weight:	14.889	90.024						OTM	917.842 kip-ft	10.011		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T1	0.685	4.561	A	0.462	1.954	0.008	0.85	1	34.110	0.658	0.033	C
195.000-175.0			B	0.462	1.954		0.85	1	34.110			
00			C	0.462	1.954		0.85	1	34.110			
T2	1.407	5.482	A	0.39	2.084	0.008	0.85	1	35.193	0.874	0.044	C
175.000-155.0			B	0.39	2.084		0.85	1	35.193			
00			C	0.39	2.084		0.85	1	35.193			
T3	1.715	6.377	A	0.314	2.259	0.007	0.85	1	36.461	0.987	0.049	C
155.000-135.0			B	0.314	2.259		0.85	1	36.461			
00			C	0.314	2.259		0.85	1	36.461			
T4	1.822	7.487	A	0.292	2.319	0.007	0.85	1	42.495	1.087	0.054	C
135.000-115.0			B	0.292	2.319		0.85	1	42.495			
00			C	0.292	2.319		0.85	1	42.495			
T5	1.781	8.547	A	0.265	2.394	0.007	0.85	1	45.984	1.111	0.056	C
115.000-95.00			B	0.265	2.394		0.85	1	45.984			
0			C	0.265	2.394		0.85	1	45.984			
T6	1.734	9.865	A	0.26	2.407	0.007	0.85	1	53.538	1.162	0.058	C
95.000-75.000			B	0.26	2.407		0.85	1	53.538			
			C	0.26	2.407		0.85	1	53.538			
T7	1.676	11.096	A	0.259	2.41	0.006	0.85	1	61.848	1.200	0.060	C
75.000-55.000			B	0.259	2.41		0.85	1	61.848			
			C	0.259	2.41		0.85	1	61.848			
T8	1.209	10.356	A	0.3	2.297	0.006	0.85	1	61.783	0.987	0.066	C
55.000-40.000			B	0.3	2.297		0.85	1	61.783			
			C	0.3	2.297		0.85	1	61.783			
T9	1.523	12.635	A	0.234	2.486	0.005	0.85	1	70.063	1.117	0.056	C
40.000-20.000			B	0.234	2.486		0.85	1	70.063			
			C	0.234	2.486		0.85	1	70.063			
T10	1.337	13.619	A	0.221	2.529	0.005	0.85	1	72.179	0.982	0.049	C
20.000-0.000			B	0.221	2.529		0.85	1	72.179			
			C	0.221	2.529		0.85	1	72.179			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
Sum Weight:	14.889	90.024						OTM	928.492 kip-ft	10.164		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.251	2.409	A	0.168	2.707	0.011	1	1	9.985	0.369	0.018	C
195.000-175.0			B	0.168	2.707		1	1	9.985			
00			C	0.168	2.707		1	1	9.985			
T2	0.334	2.820	A	0.186	2.643	0.011	1	1	17.681	0.623	0.031	C
175.000-155.0			B	0.186	2.643		1	1	17.681			
00			C	0.186	2.643		1	1	17.681			
T3	0.365	3.514	A	0.153	2.761	0.011	1	1	19.549	0.708	0.035	C
155.000-135.0			B	0.153	2.761		1	1	19.549			
00			C	0.153	2.761		1	1	19.549			
T4	0.377	3.983	A	0.15	2.771	0.010	1	1	24.946	0.834	0.042	C
135.000-115.0			B	0.15	2.771		1	1	24.946			
00			C	0.15	2.771		1	1	24.946			
T5	0.377	4.722	A	0.136	2.823	0.010	1	1	27.704	0.881	0.044	C
115.000-95.00			B	0.136	2.823		1	1	27.704			
0			C	0.136	2.823		1	1	27.704			
T6	0.377	5.298	A	0.142	2.801	0.010	1	1	34.756	0.999	0.050	C
95.000-75.000			B	0.142	2.801		1	1	34.756			
			C	0.142	2.801		1	1	34.756			
T7	0.377	5.754	A	0.149	2.774	0.009	1	1	42.865	1.110	0.055	C
75.000-55.000			B	0.149	2.774		1	1	42.865			
			C	0.149	2.774		1	1	42.865			
T8	0.283	5.028	A	0.174	2.686	0.008	1	1	44.066	0.989	0.066	C
55.000-40.000			B	0.174	2.686		1	1	44.066			
			C	0.174	2.686		1	1	44.066			
T9	0.377	6.844	A	0.138	2.815	0.008	1	1	51.072	1.106	0.055	C
40.000-20.000			B	0.138	2.815		1	1	51.072			
			C	0.138	2.815		1	1	51.072			
T10	0.377	8.159	A	0.137	2.822	0.007	1	1	55.064	1.023	0.051	C
20.000-0.000			B	0.137	2.822		1	1	55.064			
			C	0.137	2.822		1	1	55.064			
Sum Weight:	3.493	48.531						OTM	718.001 kip-ft	8.642		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.251	2.409	A	0.168	2.707	0.011	0.8	1	9.985	0.369	0.018	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
195.000-175.0			B	0.168	2.707		0.8	1	9.985			
00			C	0.168	2.707		0.8	1	9.985			
T2	0.334	2.820	A	0.186	2.643	0.011	0.8	1	15.538	0.570	0.029	C
175.000-155.0			B	0.186	2.643		0.8	1	15.538			
00			C	0.186	2.643		0.8	1	15.538			
T3	0.365	3.514	A	0.153	2.761	0.011	0.8	1	17.017	0.644	0.032	C
155.000-135.0			B	0.153	2.761		0.8	1	17.017			
00			C	0.153	2.761		0.8	1	17.017			
T4	0.377	3.983	A	0.15	2.771	0.010	0.8	1	21.393	0.747	0.037	C
135.000-115.0			B	0.15	2.771		0.8	1	21.393			
00			C	0.15	2.771		0.8	1	21.393			
T5	0.377	4.722	A	0.136	2.823	0.010	0.8	1	23.600	0.783	0.039	C
115.000-95.00			B	0.136	2.823		0.8	1	23.600			
0			C	0.136	2.823		0.8	1	23.600			
T6	0.377	5.298	A	0.142	2.801	0.010	0.8	1	29.308	0.875	0.044	C
95.000-75.000			B	0.142	2.801		0.8	1	29.308			
			C	0.142	2.801		0.8	1	29.308			
T7	0.377	5.754	A	0.149	2.774	0.009	0.8	1	35.867	0.961	0.048	C
75.000-55.000			B	0.149	2.774		0.8	1	35.867			
			C	0.149	2.774		0.8	1	35.867			
T8	0.283	5.028	A	0.174	2.686	0.008	0.8	1	36.470	0.842	0.056	C
55.000-40.000			B	0.174	2.686		0.8	1	36.470			
			C	0.174	2.686		0.8	1	36.470			
T9	0.377	6.844	A	0.138	2.815	0.008	0.8	1	42.479	0.948	0.047	C
40.000-20.000			B	0.138	2.815		0.8	1	42.479			
			C	0.138	2.815		0.8	1	42.479			
T10	0.377	8.159	A	0.137	2.822	0.007	0.8	1	45.769	0.874	0.044	C
20.000-0.000			B	0.137	2.822		0.8	1	45.769			
			C	0.137	2.822		0.8	1	45.769			
Sum Weight:	3.493	48.531						OTM	645.300 kip-ft	7.613		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.251	2.409	A	0.168	2.707	0.011	0.85	1	9.985	0.369	0.018	C
195.000-175.0			B	0.168	2.707		0.85	1	9.985			
00			C	0.168	2.707		0.85	1	9.985			
T2	0.334	2.820	A	0.186	2.643	0.011	0.85	1	16.074	0.584	0.029	C
175.000-155.0			B	0.186	2.643		0.85	1	16.074			
00			C	0.186	2.643		0.85	1	16.074			
T3	0.365	3.514	A	0.153	2.761	0.011	0.85	1	17.650	0.660	0.033	C
155.000-135.0			B	0.153	2.761		0.85	1	17.650			
00			C	0.153	2.761		0.85	1	17.650			
T4	0.377	3.983	A	0.15	2.771	0.010	0.85	1	22.281	0.769	0.038	C
135.000-115.0			B	0.15	2.771		0.85	1	22.281			
00			C	0.15	2.771		0.85	1	22.281			
T5	0.377	4.722	A	0.136	2.823	0.010	0.85	1	24.626	0.807	0.040	C
115.000-95.00			B	0.136	2.823		0.85	1	24.626			
0			C	0.136	2.823		0.85	1	24.626			
T6	0.377	5.298	A	0.142	2.801	0.010	0.85	1	30.670	0.906	0.045	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
95.000-75.000			B	0.142	2.801		0.85	1	30.670			
			C	0.142	2.801		0.85	1	30.670			
T7	0.377	5.754	A	0.149	2.774	0.009	0.85	1	37.617	0.998	0.050	C
75.000-55.000			B	0.149	2.774		0.85	1	37.617			
			C	0.149	2.774		0.85	1	37.617			
T8	0.283	5.028	A	0.174	2.686	0.008	0.85	1	38.369	0.879	0.059	C
55.000-40.000			B	0.174	2.686		0.85	1	38.369			
			C	0.174	2.686		0.85	1	38.369			
T9	0.377	6.844	A	0.138	2.815	0.008	0.85	1	44.627	0.987	0.049	C
40.000-20.000			B	0.138	2.815		0.85	1	44.627			
			C	0.138	2.815		0.85	1	44.627			
T10	0.377	8.159	A	0.137	2.822	0.007	0.85	1	48.093	0.911	0.046	C
20.000-0.000			B	0.137	2.822		0.85	1	48.093			
			C	0.137	2.822		0.85	1	48.093			
Sum Weight:	3.493	48.531						OTM	663.475 kip-ft	7.870		

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
APXVTM14-C-I20	0.000	0.056	5.000	-6.887	190.000	1.449	0.039	6.340	3.610
2500 MHz RRH, 8X20-25	0.000	0.070	5.000	-6.887	190.000	1.449	0.039	4.050	1.530
Existing Antenna	0.000	0.041	1.666	-6.887	190.000	1.449	0.039	9.290	5.220
Existing RRH	0.000	0.060	0.000	-2.887	190.000	1.449	0.039	2.090	1.730
Empty Mount	0.000	0.035	-1.660	-6.887	190.000	1.449	0.039	1.880	1.880
Empty Mount	0.000	0.035	-5.000	-6.887	190.000	1.449	0.039	1.880	1.880
APXVTM14-C-I20	120.000	0.056	3.464	7.774	190.000	1.449	0.039	6.340	3.610
2500 MHz RRH, 8X20-25	120.000	0.070	3.464	7.774	190.000	1.449	0.039	4.050	1.530
Existing Antenna	120.000	0.041	5.131	4.886	190.000	1.449	0.039	9.290	5.220
Existing RRH	120.000	0.060	2.500	1.443	190.000	1.449	0.039	2.090	1.730
Empty Mount	120.000	0.035	6.794	2.006	190.000	1.449	0.039	1.880	1.880
Empty Mount	120.000	0.035	8.464	-0.887	190.000	1.449	0.039	1.880	1.880
APXVTM14-C-I20	240.000	0.056	-8.464	-0.887	190.000	1.449	0.039	6.340	3.610
2500 MHz RRH, 8X20-25	240.000	0.070	-8.464	-0.887	190.000	1.449	0.039	4.050	1.530
Existing Antenna	240.000	0.041	-6.797	2.001	190.000	1.449	0.039	9.290	5.220
Existing RRH	240.000	0.060	-2.500	1.443	190.000	1.449	0.039	2.090	1.730
Empty Mount	240.000	0.035	-5.134	4.881	190.000	1.449	0.039	1.880	1.880
Empty Mount	240.000	0.035	-3.464	7.774	190.000	1.449	0.039	1.880	1.880
Sector Frames	0.000	0.000	0.000	0.000	180.000	1.432	0.038	75.300	75.300
TMA	0.000	0.013	0.000	-2.887	180.000	1.432	0.038	1.167	0.540
AIR21	0.000	0.083	0.000	-2.887	180.000	1.432	0.038	5.920	4.220
TMA	120.000	0.013	2.500	1.443	180.000	1.432	0.038	1.167	0.540
AIR21	120.000	0.083	2.500	1.443	180.000	1.432	0.038	5.920	4.220
TMA	240.000	0.013	-2.500	1.443	180.000	1.432	0.038	1.167	0.540
AIR21	240.000	0.083	-2.500	1.443	180.000	1.432	0.038	5.920	4.220
Sector Frames	0.000	0.500	0.000	0.000	180.000	1.432	0.038	15.000	15.000
AM-X-CD-16-65-00T-RET	0.000	0.049	0.000	-3.070	172.000	1.419	0.038	8.020	4.640
RRUS11	0.000	0.101	0.000	-3.070	172.000	1.419	0.038	5.560	2.380

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
80010121	0.000	0.055	0.000	-3.070	172.000	1.419	0.038	7.540	5.440
21401 TMA	0.000	0.028	0.000	-3.070	172.000	1.419	0.038	2.576	1.000
AM-X-CD-16-65-00T-RET	120.000	0.049	2.659	1.535	172.000	1.419	0.038	8.020	4.640
RRUS11	120.000	0.101	2.659	1.535	172.000	1.419	0.038	5.560	2.380
80010121	120.000	0.055	2.659	1.535	172.000	1.419	0.038	7.540	5.440
21401 TMA	120.000	0.028	2.659	1.535	172.000	1.419	0.038	2.576	1.000
AM-X-CD-16-65-00T-RET	240.000	0.049	-2.659	1.535	172.000	1.419	0.038	8.020	4.640
RRUS11	240.000	0.101	-2.659	1.535	172.000	1.419	0.038	5.560	2.380
80010121	240.000	0.055	-2.659	1.535	172.000	1.419	0.038	7.540	5.440
21401 TMA	240.000	0.028	-2.659	1.535	172.000	1.419	0.038	2.576	1.000
DC6-48-60-18-8F	240.000	0.033	-2.659	1.535	172.000	1.419	0.038	2.560	0.940
Frames Sector	0.000	0.500	0.000	0.000	172.000	1.419	0.038	15.000	15.000
DB844H90E-XY	0.000	0.056	0.000	-3.802	160.000	1.397	0.037	12.240	14.440
DB844H90E-XY	120.000	0.056	3.293	1.901	160.000	1.397	0.037	12.240	14.440
DB844H90E-XY	240.000	0.056	-3.293	1.901	160.000	1.397	0.037	12.240	14.440
FD9R6004-2C-3L	0.000	0.006	0.000	-4.718	145.000	1.369	0.037	0.620	0.180
BXA-70063/6CF	0.000	0.017	0.000	-4.718	145.000	1.369	0.037	7.570	4.160
BXA-171085/8CF	0.000	0.009	0.000	-4.718	145.000	1.369	0.037	2.920	2.140
LPA-80080/4 CF	0.000	0.012	0.000	-4.718	145.000	1.369	0.037	2.620	0.001
FD9R6004-2C-3L	120.000	0.006	4.086	2.359	145.000	1.369	0.037	0.620	0.180
BXA-70063/6CF	120.000	0.017	4.086	2.359	145.000	1.369	0.037	7.570	4.160
BXA-171085/8CF	120.000	0.009	4.086	2.359	145.000	1.369	0.037	2.920	2.140
LPA-80080/4 CF	120.000	0.012	4.086	2.359	145.000	1.369	0.037	2.620	0.001
FD9R6004-2C-3L	240.000	0.006	-4.086	2.359	145.000	1.369	0.037	0.620	0.180
BXA-70063/6CF	240.000	0.017	-4.086	2.359	145.000	1.369	0.037	7.570	4.160
BXA-171085/8CF	240.000	0.009	-4.086	2.359	145.000	1.369	0.037	2.920	2.140
LPA-80080/4 CF	240.000	0.012	-4.086	2.359	145.000	1.369	0.037	2.620	0.001
SECTOR FRAMES	0.000	0.500	0.000	-4.718	145.000	1.369	0.037	15.000	15.000
GPS	0.000	0.040	0.000	-10.685	80.000	1.208	0.032	2.000	2.000
2ft Standoff	0.000	0.050	0.000	-8.685	80.000	1.208	0.032	2.630	2.630
GPS	120.000	0.040	9.254	5.343	80.000	1.208	0.032	2.000	2.000
2ft Standoff	120.000	0.050	7.521	4.343	80.000	1.208	0.032	2.630	2.630
	Sum Weight:	3.892							

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
APXVTM14-C-I20	0.000	0.193	5.000	-6.887	190.000	1.449	0.008	8.592	5.897	1.787
2500 MHz RRH, 8X20-25	0.000	0.167	5.000	-6.887	190.000	1.449	0.008	5.408	2.602	1.787
Existing Antenna	0.000	0.097	1.666	-6.887	190.000	1.449	0.008	12.864	8.222	1.787
Existing RRH	0.000	0.156	0.000	-2.887	190.000	1.449	0.008	3.591	3.124	1.787
Empty Mount	0.000	0.106	-1.660	-6.887	190.000	1.449	0.008	4.882	4.882	1.787
Empty Mount	0.000	0.106	-5.000	-6.887	190.000	1.449	0.008	4.882	4.882	1.787
APXVTM14-C-I20	120.000	0.193	3.464	7.774	190.000	1.449	0.008	8.592	5.897	1.787
2500 MHz RRH, 8X20-25	120.000	0.167	3.464	7.774	190.000	1.449	0.008	5.408	2.602	1.787
Existing Antenna	120.000	0.097	5.131	4.886	190.000	1.449	0.008	12.864	8.222	1.787
Existing RRH	120.000	0.156	2.500	1.443	190.000	1.449	0.008	3.591	3.124	1.787
Empty Mount	120.000	0.106	6.794	2.006	190.000	1.449	0.008	4.882	4.882	1.787
Empty Mount	120.000	0.106	8.464	-0.887	190.000	1.449	0.008	4.882	4.882	1.787
APXVTM14-C-I20	240.000	0.193	-8.464	-0.887	190.000	1.449	0.008	8.592	5.897	1.787
2500 MHz RRH,	240.000	0.167	-8.464	-0.887	190.000	1.449	0.008	5.408	2.602	1.787

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
8X20-25										
Existing Antenna	240.000	0.097	-6.797	2.001	190.000	1.449	0.008	12.864	8.222	1.787
Existing RRH	240.000	0.156	-2.500	1.443	190.000	1.449	0.008	3.591	3.124	1.787
Empty Mount	240.000	0.106	-5.134	4.881	190.000	1.449	0.008	4.882	4.882	1.787
Empty Mount	240.000	0.106	-3.464	7.774	190.000	1.449	0.008	4.882	4.882	1.787
Sector Frames	0.000	1.176	0.000	0.000	180.000	1.432	0.008	92.007	92.007	1.777
TMA	0.000	0.040	0.000	-2.887	180.000	1.432	0.008	1.960	1.144	1.777
AIR21	0.000	0.239	0.000	-2.887	180.000	1.432	0.008	8.088	6.424	1.777
TMA	120.000	0.040	2.500	1.443	180.000	1.432	0.008	1.960	1.144	1.777
AIR21	120.000	0.239	2.500	1.443	180.000	1.432	0.008	8.088	6.424	1.777
TMA	240.000	0.040	-2.500	1.443	180.000	1.432	0.008	1.960	1.144	1.777
AIR21	240.000	0.239	-2.500	1.443	180.000	1.432	0.008	8.088	6.424	1.777
Sector Frames	0.000	1.033	0.000	0.000	180.000	1.432	0.008	34.906	34.906	1.777
AM-X-CD-16-65-00T-RET	0.000	0.213	0.000	-3.070	172.000	1.419	0.008	10.851	7.683	1.769
RRUS11	0.000	0.249	0.000	-3.070	172.000	1.419	0.008	7.825	4.008	1.769
80010121	0.000	0.428	0.000	-3.070	172.000	1.419	0.008	12.919	10.960	1.769
21401 TMA	0.000	0.082	0.000	-3.070	172.000	1.419	0.008	4.267	2.415	1.769
AM-X-CD-16-65-00T-RET	120.000	0.213	2.659	1.535	172.000	1.419	0.008	10.851	7.683	1.769
RRUS11	120.000	0.249	2.659	1.535	172.000	1.419	0.008	7.825	4.008	1.769
80010121	120.000	0.428	2.659	1.535	172.000	1.419	0.008	12.919	10.960	1.769
21401 TMA	120.000	0.082	2.659	1.535	172.000	1.419	0.008	4.267	2.415	1.769
AM-X-CD-16-65-00T-RET	240.000	0.213	-2.659	1.535	172.000	1.419	0.008	10.851	7.683	1.769
RRUS11	240.000	0.249	-2.659	1.535	172.000	1.419	0.008	7.825	4.008	1.769
80010121	240.000	0.428	-2.659	1.535	172.000	1.419	0.008	12.919	10.960	1.769
21401 TMA	240.000	0.082	-2.659	1.535	172.000	1.419	0.008	4.267	2.415	1.769
DC6-48-60-18-8F	240.000	0.096	-2.659	1.535	172.000	1.419	0.008	3.798	2.462	1.769
Frames Sector	0.000	1.031	0.000	0.000	172.000	1.419	0.008	34.816	34.816	1.769
DB844H90E-XY	0.000	0.426	0.000	-3.802	160.000	1.397	0.008	19.969	22.028	1.757
DB844H90E-XY	120.000	0.426	3.293	1.901	160.000	1.397	0.008	19.969	22.028	1.757
DB844H90E-XY	240.000	0.426	-3.293	1.901	160.000	1.397	0.008	19.969	22.028	1.757
FD9R6004-2C-3L	0.000	0.576	0.000	-4.718	145.000	1.369	0.007	1.455	0.737	1.739
BXA-70063/6CF	0.000	0.165	0.000	-4.718	145.000	1.369	0.007	10.318	7.186	1.739
BXA-171085/8CF	0.000	0.041	0.000	-4.718	145.000	1.369	0.007	4.833	4.158	1.739
LPA-80080/4 CF	0.000	0.127	0.000	-4.718	145.000	1.369	0.007	4.498	20.627	1.739
FD9R6004-2C-3L	120.000	0.576	4.086	2.359	145.000	1.369	0.007	1.455	0.737	1.739
BXA-70063/6CF	120.000	0.165	4.086	2.359	145.000	1.369	0.007	10.318	7.186	1.739
BXA-171085/8CF	120.000	0.041	4.086	2.359	145.000	1.369	0.007	4.833	4.158	1.739
LPA-80080/4 CF	120.000	0.127	4.086	2.359	145.000	1.369	0.007	4.498	20.627	1.739
FD9R6004-2C-3L	240.000	0.576	-4.086	2.359	145.000	1.369	0.007	1.455	0.737	1.739
BXA-70063/6CF	240.000	0.165	-4.086	2.359	145.000	1.369	0.007	10.318	7.186	1.739
BXA-171085/8CF	240.000	0.041	-4.086	2.359	145.000	1.369	0.007	4.833	4.158	1.739
LPA-80080/4 CF	240.000	0.127	-4.086	2.359	145.000	1.369	0.007	4.498	20.627	1.739
SECTOR FRAMES	0.000	1.022	0.000	-4.718	145.000	1.369	0.007	34.480	34.480	1.739
GPS	0.000	0.115	0.000	-10.685	80.000	1.208	0.007	5.278	5.278	1.639
2ft Standoff	0.000	0.214	0.000	-8.685	80.000	1.208	0.007	8.235	7.907	1.639
GPS	120.000	0.115	9.254	5.343	80.000	1.208	0.007	5.278	5.278	1.639
2ft Standoff	120.000	0.214	7.521	4.343	80.000	1.208	0.007	8.235	7.907	1.639
	Sum Weight:	15.249								

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
APXVTM14-C-I20	0.000	0.056	5.000	-6.887	190.000	1.449	0.011	6.340	3.610
2500 MHz RRH, 8X20-25	0.000	0.070	5.000	-6.887	190.000	1.449	0.011	4.050	1.530
Existing Antenna	0.000	0.041	1.666	-6.887	190.000	1.449	0.011	9.290	5.220
Existing RRH	0.000	0.060	0.000	-2.887	190.000	1.449	0.011	2.090	1.730
Empty Mount	0.000	0.035	-1.660	-6.887	190.000	1.449	0.011	1.880	1.880
Empty Mount	0.000	0.035	-5.000	-6.887	190.000	1.449	0.011	1.880	1.880
APXVTM14-C-I20	120.000	0.056	3.464	7.774	190.000	1.449	0.011	6.340	3.610
2500 MHz RRH, 8X20-25	120.000	0.070	3.464	7.774	190.000	1.449	0.011	4.050	1.530
Existing Antenna	120.000	0.041	5.131	4.886	190.000	1.449	0.011	9.290	5.220
Existing RRH	120.000	0.060	2.500	1.443	190.000	1.449	0.011	2.090	1.730
Empty Mount	120.000	0.035	6.794	2.006	190.000	1.449	0.011	1.880	1.880
Empty Mount	120.000	0.035	8.464	-0.887	190.000	1.449	0.011	1.880	1.880
APXVTM14-C-I20	240.000	0.056	-8.464	-0.887	190.000	1.449	0.011	6.340	3.610
2500 MHz RRH, 8X20-25	240.000	0.070	-8.464	-0.887	190.000	1.449	0.011	4.050	1.530
Existing Antenna	240.000	0.041	-6.797	2.001	190.000	1.449	0.011	9.290	5.220
Existing RRH	240.000	0.060	-2.500	1.443	190.000	1.449	0.011	2.090	1.730
Empty Mount	240.000	0.035	-5.134	4.881	190.000	1.449	0.011	1.880	1.880
Empty Mount	240.000	0.035	-3.464	7.774	190.000	1.449	0.011	1.880	1.880
Sector Frames	0.000	0.000	0.000	0.000	180.000	1.432	0.011	75.300	75.300
TMA	0.000	0.013	0.000	-2.887	180.000	1.432	0.011	1.167	0.540
AIR21	0.000	0.083	0.000	-2.887	180.000	1.432	0.011	5.920	4.220
TMA	120.000	0.013	2.500	1.443	180.000	1.432	0.011	1.167	0.540
AIR21	120.000	0.083	2.500	1.443	180.000	1.432	0.011	5.920	4.220
TMA	240.000	0.013	-2.500	1.443	180.000	1.432	0.011	1.167	0.540
AIR21	240.000	0.083	-2.500	1.443	180.000	1.432	0.011	5.920	4.220
Sector Frames	0.000	0.500	0.000	0.000	180.000	1.432	0.011	15.000	15.000
AM-X-CD-16-65-00T-RET	0.000	0.049	0.000	-3.070	172.000	1.419	0.011	8.020	4.640
RRUS11	0.000	0.101	0.000	-3.070	172.000	1.419	0.011	5.560	2.380
80010121	0.000	0.055	0.000	-3.070	172.000	1.419	0.011	7.540	5.440
21401 TMA	0.000	0.028	0.000	-3.070	172.000	1.419	0.011	2.576	1.000
AM-X-CD-16-65-00T-RET	120.000	0.049	2.659	1.535	172.000	1.419	0.011	8.020	4.640
RRUS11	120.000	0.101	2.659	1.535	172.000	1.419	0.011	5.560	2.380
80010121	120.000	0.055	2.659	1.535	172.000	1.419	0.011	7.540	5.440
21401 TMA	120.000	0.028	2.659	1.535	172.000	1.419	0.011	2.576	1.000
AM-X-CD-16-65-00T-RET	240.000	0.049	-2.659	1.535	172.000	1.419	0.011	8.020	4.640
RRUS11	240.000	0.101	-2.659	1.535	172.000	1.419	0.011	5.560	2.380
80010121	240.000	0.055	-2.659	1.535	172.000	1.419	0.011	7.540	5.440
21401 TMA	240.000	0.028	-2.659	1.535	172.000	1.419	0.011	2.576	1.000
DC6-48-60-18-8F	240.000	0.033	-2.659	1.535	172.000	1.419	0.011	2.560	0.940
Frames Sector	0.000	0.500	0.000	0.000	172.000	1.419	0.011	15.000	15.000
DB844H90E-XY	0.000	0.056	0.000	-3.802	160.000	1.397	0.011	12.240	14.440
DB844H90E-XY	120.000	0.056	3.293	1.901	160.000	1.397	0.011	12.240	14.440
DB844H90E-XY	240.000	0.056	-3.293	1.901	160.000	1.397	0.011	12.240	14.440
FD9R6004-2C-3L	0.000	0.006	0.000	-4.718	145.000	1.369	0.011	0.620	0.180
BXA-70063/6CF	0.000	0.017	0.000	-4.718	145.000	1.369	0.011	7.570	4.160
BXA-171085/8CF	0.000	0.009	0.000	-4.718	145.000	1.369	0.011	2.920	2.140
LPA-80080/4 CF	0.000	0.012	0.000	-4.718	145.000	1.369	0.011	2.620	0.001
FD9R6004-2C-3L	120.000	0.006	4.086	2.359	145.000	1.369	0.011	0.620	0.180
BXA-70063/6CF	120.000	0.017	4.086	2.359	145.000	1.369	0.011	7.570	4.160
BXA-171085/8CF	120.000	0.009	4.086	2.359	145.000	1.369	0.011	2.920	2.140
LPA-80080/4 CF	120.000	0.012	4.086	2.359	145.000	1.369	0.011	2.620	0.001
FD9R6004-2C-3L	240.000	0.006	-4.086	2.359	145.000	1.369	0.011	0.620	0.180
BXA-70063/6CF	240.000	0.017	-4.086	2.359	145.000	1.369	0.011	7.570	4.160
BXA-171085/8CF	240.000	0.009	-4.086	2.359	145.000	1.369	0.011	2.920	2.140
LPA-80080/4 CF	240.000	0.012	-4.086	2.359	145.000	1.369	0.011	2.620	0.001

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
SECTOR FRAMES	0.000	0.500	0.000	-4.718	145.000	1.369	0.011	15.000	15.000
GPS	0.000	0.040	0.000	-10.685	80.000	1.208	0.009	2.000	2.000
2ft Standoff	0.000	0.050	0.000	-8.685	80.000	1.208	0.009	2.630	2.630
GPS	120.000	0.040	9.254	5.343	80.000	1.208	0.009	2.000	2.000
2ft Standoff	120.000	0.050	7.521	4.343	80.000	1.208	0.009	2.630	2.630
	Sum Weight:	3.892							

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	1.2D+1.6W (pattern 1) 0 deg - No Ice
4	1.2D+1.6W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.6 Wind 0 deg - No Ice
6	1.2 Dead+1.6 Wind 30 deg - No Ice
7	1.2D+1.6W (pattern 1) 30 deg - No Ice
8	1.2D+1.6W (pattern 2) 30 deg - No Ice
9	0.9 Dead+1.6 Wind 30 deg - No Ice
10	1.2 Dead+1.6 Wind 60 deg - No Ice
11	1.2D+1.6W (pattern 1) 60 deg - No Ice
12	1.2D+1.6W (pattern 2) 60 deg - No Ice
13	0.9 Dead+1.6 Wind 60 deg - No Ice
14	1.2 Dead+1.6 Wind 90 deg - No Ice
15	1.2D+1.6W (pattern 1) 90 deg - No Ice
16	1.2D+1.6W (pattern 2) 90 deg - No Ice
17	0.9 Dead+1.6 Wind 90 deg - No Ice
18	1.2 Dead+1.6 Wind 120 deg - No Ice
19	1.2D+1.6W (pattern 1) 120 deg - No Ice
20	1.2D+1.6W (pattern 2) 120 deg - No Ice
21	0.9 Dead+1.6 Wind 120 deg - No Ice
22	1.2 Dead+1.6 Wind 150 deg - No Ice
23	1.2D+1.6W (pattern 1) 150 deg - No Ice
24	1.2D+1.6W (pattern 2) 150 deg - No Ice
25	0.9 Dead+1.6 Wind 150 deg - No Ice
26	1.2 Dead+1.6 Wind 180 deg - No Ice
27	1.2D+1.6W (pattern 1) 180 deg - No Ice
28	1.2D+1.6W (pattern 2) 180 deg - No Ice
29	0.9 Dead+1.6 Wind 180 deg - No Ice
30	1.2 Dead+1.6 Wind 210 deg - No Ice
31	1.2D+1.6W (pattern 1) 210 deg - No Ice
32	1.2D+1.6W (pattern 2) 210 deg - No Ice
33	0.9 Dead+1.6 Wind 210 deg - No Ice
34	1.2 Dead+1.6 Wind 240 deg - No Ice
35	1.2D+1.6W (pattern 1) 240 deg - No Ice
36	1.2D+1.6W (pattern 2) 240 deg - No Ice
37	0.9 Dead+1.6 Wind 240 deg - No Ice
38	1.2 Dead+1.6 Wind 270 deg - No Ice
39	1.2D+1.6W (pattern 1) 270 deg - No Ice
40	1.2D+1.6W (pattern 2) 270 deg - No Ice
41	0.9 Dead+1.6 Wind 270 deg - No Ice
42	1.2 Dead+1.6 Wind 300 deg - No Ice
43	1.2D+1.6W (pattern 1) 300 deg - No Ice
44	1.2D+1.6W (pattern 2) 300 deg - No Ice
45	0.9 Dead+1.6 Wind 300 deg - No Ice
46	1.2 Dead+1.6 Wind 330 deg - No Ice

Comb. No.	Description
47	1.2D+1.6W (pattern 1) 330 deg - No Ice
48	1.2D+1.6W (pattern 2) 330 deg - No Ice
49	0.9 Dead+1.6 Wind 330 deg - No Ice
50	1.2 Dead+1.0 Ice
51	1.2 Dead+1.0 Wind 0 deg+1.0 Ice
52	1.2 Dead+1.0 Wind 30 deg+1.0 Ice
53	1.2 Dead+1.0 Wind 60 deg+1.0 Ice
54	1.2 Dead+1.0 Wind 90 deg+1.0 Ice
55	1.2 Dead+1.0 Wind 120 deg+1.0 Ice
56	1.2 Dead+1.0 Wind 150 deg+1.0 Ice
57	1.2 Dead+1.0 Wind 180 deg+1.0 Ice
58	1.2 Dead+1.0 Wind 210 deg+1.0 Ice
59	1.2 Dead+1.0 Wind 240 deg+1.0 Ice
60	1.2 Dead+1.0 Wind 270 deg+1.0 Ice
61	1.2 Dead+1.0 Wind 300 deg+1.0 Ice
62	1.2 Dead+1.0 Wind 330 deg+1.0 Ice
63	Dead+Wind 0 deg - Service
64	Dead+Wind 30 deg - Service
65	Dead+Wind 60 deg - Service
66	Dead+Wind 90 deg - Service
67	Dead+Wind 120 deg - Service
68	Dead+Wind 150 deg - Service
69	Dead+Wind 180 deg - Service
70	Dead+Wind 210 deg - Service
71	Dead+Wind 240 deg - Service
72	Dead+Wind 270 deg - Service
73	Dead+Wind 300 deg - Service
74	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	195 - 175	Leg	Max Tension	13	15.854	-0.270	0.156
			Max. Compression	18	-18.720	-0.447	-0.238
			Max. Mx	39	-1.502	-1.165	-0.001
			Max. My	3	2.153	-0.072	-1.160
			Max. Vy	38	1.028	0.551	-0.089
			Max. Vx	2	1.052	-0.000	0.601
		Diagonal	Max Tension	38	4.197	0.000	0.000
			Max. Compression	14	-4.223	0.000	0.000
			Max. Mx	59	0.773	-0.012	0.000
			Max. My	30	-1.425	-0.004	-0.001
			Max. Vy	59	0.018	-0.012	0.000
			Max. Vx	30	0.000	-0.004	-0.001
		Top Girt	Max Tension	44	0.045	0.000	0.000
			Max. Compression	4	-0.078	0.000	0.000
			Max. Mx	50	-0.037	0.036	0.000
			Max. My	16	-0.016	0.000	0.000
			Max. Vy	50	-0.029	0.000	0.000
			Max. Vx	16	-0.000	0.000	0.000
T2	175 - 155	Leg	Max Tension	13	56.801	-0.290	-0.001
			Max. Compression	34	-62.952	0.451	0.035
			Max. Mx	11	19.645	1.641	-0.010
			Max. My	47	-2.511	-0.031	-1.634
			Max. Vy	10	-0.752	-0.535	-0.006
			Max. Vx	23	-0.715	-0.012	-0.422
		Diagonal	Max Tension	38	6.223	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	14	-6.291	0.000	0.000
			Max. Mx	57	1.162	0.034	0.005
			Max. My	55	-0.018	0.033	-0.006
			Max. Vy	57	0.034	0.034	0.005
			Max. Vx	55	0.002	0.000	0.000
		Top Girt	Max Tension	37	0.251	0.000	0.000
			Max. Compression	10	-0.302	0.000	0.000
			Max. Mx	50	-0.084	0.036	0.000
			Max. My	16	-0.025	0.000	0.000
			Max. Vy	50	-0.029	0.000	0.000
			Max. Vx	16	-0.000	0.000	0.000
T3	155 - 135	Leg	Max Tension	13	97.569	-0.635	0.098
			Max. Compression	2	-107.656	0.069	0.001
			Max. Mx	27	71.423	0.892	-0.000
			Max. My	39	-4.841	-0.028	1.149
			Max. Vy	27	0.498	-0.640	-0.000
			Max. Vx	14	-0.574	-0.027	0.685
		Diagonal	Max Tension	30	6.761	0.000	0.000
			Max. Compression	30	-6.837	0.000	0.000
			Max. Mx	61	1.322	0.059	-0.008
			Max. My	60	-0.807	0.047	-0.009
			Max. Vy	61	0.050	0.059	-0.008
			Max. Vx	60	0.003	0.000	0.000
T4	135 - 115	Leg	Max Tension	13	133.403	-0.200	-0.012
			Max. Compression	34	-147.877	0.355	0.011
			Max. Mx	5	-145.869	0.357	0.001
			Max. My	22	-6.832	-0.006	-0.312
			Max. Vy	42	0.117	-0.302	0.003
			Max. Vx	34	-0.092	-0.120	0.241
		Diagonal	Max Tension	30	6.479	0.000	0.000
			Max. Compression	30	-6.545	0.000	0.000
			Max. Mx	57	1.255	0.089	0.012
			Max. My	59	-0.130	0.086	-0.012
			Max. Vy	57	0.065	0.089	0.012
			Max. Vx	59	-0.004	0.000	0.000
T5	115 - 95	Leg	Max Tension	13	164.232	-0.254	-0.010
			Max. Compression	34	-184.102	0.257	0.012
			Max. Mx	5	-157.668	0.357	0.001
			Max. My	22	-7.064	-0.006	-0.312
			Max. Vy	42	-0.101	-0.346	0.010
			Max. Vx	18	-0.093	-0.186	-0.287
		Diagonal	Max Tension	38	6.738	0.000	0.000
			Max. Compression	38	-6.870	0.000	0.000
			Max. Mx	57	1.212	0.136	-0.018
			Max. My	55	-0.147	0.132	-0.018
			Max. Vy	57	0.088	0.136	-0.018
			Max. Vx	55	-0.005	0.000	0.000
T6	95 - 75	Leg	Max Tension	13	192.765	-0.341	-0.010
			Max. Compression	34	-218.929	0.196	0.010
			Max. Mx	34	-207.310	0.371	0.012
			Max. My	6	-11.722	-0.059	-0.418
			Max. Vy	37	0.202	0.370	0.012
			Max. Vx	3	-0.201	-0.171	-0.286
		Diagonal	Max Tension	38	7.523	0.000	0.000
			Max. Compression	38	-7.572	0.000	0.000
			Max. Mx	57	1.308	0.182	0.023
			Max. My	58	-1.106	0.173	0.024
			Max. Vy	57	0.106	0.182	0.023
			Max. Vx	58	0.006	0.000	0.000
T7	75 - 55	Leg	Max Tension	13	220.736	-0.159	-0.011
			Max. Compression	34	-253.728	0.749	0.004

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	34	-253.728	0.749	0.004
			Max. My	6	-13.410	-0.123	-0.759
			Max. Vy	2	-0.189	0.748	0.001
			Max. Vx	6	-0.242	-0.123	-0.759
		Diagonal	Max Tension	38	8.350	0.000	0.000
			Max. Compression	38	-8.622	0.000	0.000
			Max. Mx	58	1.387	0.241	0.031
			Max. My	53	1.906	0.225	-0.031
			Max. Vy	58	0.123	0.241	0.031
			Max. Vx	53	-0.006	0.000	0.000
T8	55 - 40	Leg	Max Tension	13	237.638	-0.377	-0.001
			Max. Compression	34	-276.896	0.003	0.020
			Max. Mx	34	-262.900	0.749	0.004
			Max. My	6	-14.897	-0.174	-0.873
			Max. Vy	2	0.244	0.748	0.001
			Max. Vx	6	-0.331	-0.174	-0.873
		Diagonal	Max Tension	39	6.667	0.000	0.000
			Max. Compression	39	-6.645	0.000	0.000
			Max. Mx	58	0.190	0.263	-0.044
			Max. My	53	-0.753	0.237	-0.046
			Max. Vy	58	0.133	0.263	-0.044
			Max. Vx	53	-0.009	0.000	0.000
T9	40 - 20	Leg	Max Tension	13	262.970	-0.351	-0.008
			Max. Compression	34	-310.354	0.019	0.014
			Max. Mx	5	-292.641	0.362	0.000
			Max. My	6	-16.856	-0.118	-0.820
			Max. Vy	5	0.116	0.362	0.000
			Max. Vx	30	-0.181	-0.068	0.764
		Diagonal	Max Tension	38	10.492	0.000	0.000
			Max. Compression	38	-10.449	0.000	0.000
			Max. Mx	58	0.722	0.354	-0.044
			Max. My	53	-2.411	0.342	-0.045
			Max. Vy	58	0.156	0.354	-0.044
			Max. Vx	53	-0.008	0.000	0.000
T10	20 - 0	Leg	Max Tension	13	295.536	-0.242	-0.009
			Max. Compression	34	-352.676	0.000	0.000
			Max. Mx	34	-337.436	0.549	0.007
			Max. My	30	-21.493	-0.070	0.809
			Max. Vy	2	-0.138	0.548	-0.000
			Max. Vx	30	-0.233	-0.070	0.809
		Diagonal	Max Tension	38	13.679	0.000	0.000
			Max. Compression	38	-13.827	0.000	0.000
			Max. Mx	58	2.306	0.415	0.039
			Max. My	53	1.988	0.414	-0.039
			Max. Vy	58	0.169	0.415	0.039
			Max. Vx	53	-0.006	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	34	359.573	32.767	-18.604
	Max. H_x	34	359.573	32.767	-18.604
	Max. H_z	9	-262.463	-23.119	16.760
	Min. Vert	13	-300.754	-28.022	15.910
	Min. H_x	13	-300.754	-28.022	15.910

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H_z	34	359.573	32.767	-18.604
Leg B	Max. Vert	18	359.382	-32.721	-18.617
	Max. H_x	45	-299.966	27.970	15.917
	Max. H_z	49	-261.592	23.048	16.789
	Min. Vert	45	-299.966	27.970	15.917
	Min. H_x	18	359.382	-32.721	-18.617
	Min. H_z	18	359.382	-32.721	-18.617
Leg A	Max. Vert	2	358.926	0.035	37.640
	Max. H_x	41	16.324	5.865	1.122
	Max. H_z	2	358.926	0.035	37.640
	Min. Vert	29	-300.307	-0.032	-32.185
	Min. H_x	17	16.939	-5.862	1.166
	Min. H_z	29	-300.307	-0.032	-32.185

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	55.916	0.000	0.000	3.220	-3.337	-0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	67.099	0.036	-64.354	-6849.524	-10.276	1.430
1.2D+1.6W (pattern 1) 0 deg - No Ice	67.099	0.036	-62.607	-6519.437	-10.276	1.429
1.2D+1.6W (pattern 2) 0 deg - No Ice	67.099	0.022	-44.295	-4824.521	-7.771	0.804
0.9 Dead+1.6 Wind 0 deg - No Ice	50.324	0.036	-64.354	-6846.050	-9.267	1.427
1.2 Dead+1.6 Wind 30 deg - No Ice	67.098	30.114	-52.088	-5675.363	-3290.157	6.478
1.2D+1.6W (pattern 1) 30 deg - No Ice	67.099	29.242	-50.575	-5389.495	-3125.109	6.506
1.2D+1.6W (pattern 2) 30 deg - No Ice	67.099	20.910	-36.174	-4024.045	-2333.873	6.848
0.9 Dead+1.6 Wind 30 deg - No Ice	50.324	30.115	-52.088	-5672.616	-3287.001	6.482
1.2 Dead+1.6 Wind 60 deg - No Ice	67.099	50.903	-29.389	-3228.779	-5603.136	9.376
1.2D+1.6W (pattern 1) 60 deg - No Ice	67.099	49.391	-28.516	-3063.736	-5317.271	9.375
1.2D+1.6W (pattern 2) 60 deg - No Ice	67.099	35.464	-20.475	-2293.893	-3983.866	10.597
0.9 Dead+1.6 Wind 60 deg - No Ice	50.324	50.903	-29.389	-3227.625	-5598.456	9.374
1.2 Dead+1.6 Wind 90 deg - No Ice	67.099	60.167	-0.036	-2.387	-6565.436	10.516
1.2D+1.6W (pattern 1) 90 deg - No Ice	67.099	58.420	-0.036	-2.388	-6235.348	10.516
1.2D+1.6W (pattern 2) 90 deg - No Ice	67.099	41.783	-0.022	0.119	-4657.216	12.287
0.9 Dead+1.6 Wind 90 deg - No Ice	50.324	60.167	-0.036	-3.348	-6560.145	10.540
1.2 Dead+1.6 Wind 120 deg - No Ice	67.099	55.750	32.145	3425.146	-5942.349	9.753
1.2D+1.6W (pattern 1) 120 deg - No Ice	67.099	54.237	31.272	3260.102	-5656.486	9.754
1.2D+1.6W (pattern 2) 120 deg	67.099	38.372	22.129	2414.814	-4187.392	11.600

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
- No Ice						
0.9 Dead+1.6 Wind 120 deg - No Ice	50.324	55.750	32.145	3421.963	-5937.496	9.754
1.2 Dead+1.6 Wind 150 deg - No Ice	67.099	30.052	52.052	5676.836	-3279.300	4.004
1.2D+1.6W (pattern 1) 150 deg - No Ice	67.099	29.179	50.539	5390.971	-3114.256	4.005
1.2D+1.6W (pattern 2) 150 deg - No Ice	67.099	20.873	36.153	4028.025	-2327.359	5.430
0.9 Dead+1.6 Wind 150 deg - No Ice	50.324	30.052	52.052	5672.164	-3276.156	3.984
1.2 Dead+1.6 Wind 180 deg - No Ice	67.099	-0.036	58.715	6458.327	2.245	-1.450
1.2D+1.6W (pattern 1) 180 deg - No Ice	67.099	-0.036	56.969	6128.239	2.245	-1.449
1.2D+1.6W (pattern 2) 180 deg - No Ice	67.099	-0.022	40.912	4592.892	-0.258	-0.824
0.9 Dead+1.6 Wind 180 deg - No Ice	50.324	-0.036	58.715	6453.126	3.245	-1.447
1.2 Dead+1.6 Wind 210 deg - No Ice	67.100	-30.114	52.089	5683.092	3282.115	-6.496
1.2D+1.6W (pattern 1) 210 deg - No Ice	67.099	-29.242	50.575	5397.233	3117.069	-6.506
1.2D+1.6W (pattern 2) 210 deg - No Ice	67.099	-20.910	36.174	4031.782	2325.836	-6.849
0.9 Dead+1.6 Wind 210 deg - No Ice	50.324	-30.115	52.088	5678.421	3280.971	-6.482
1.2 Dead+1.6 Wind 240 deg - No Ice	67.099	-55.786	32.208	3435.992	5940.581	-11.183
1.2D+1.6W (pattern 1) 240 deg - No Ice	67.099	-54.274	31.335	3270.948	5654.718	-11.183
1.2D+1.6W (pattern 2) 240 deg - No Ice	67.099	-38.393	22.166	2421.322	4183.120	-12.403
0.9 Dead+1.6 Wind 240 deg - No Ice	50.324	-55.786	32.208	3432.801	5937.733	-11.181
1.2 Dead+1.6 Wind 270 deg - No Ice	67.099	-60.167	0.036	10.135	6557.408	-10.516
1.2D+1.6W (pattern 1) 270 deg - No Ice	67.099	-58.420	0.036	10.134	6227.321	-10.516
1.2D+1.6W (pattern 2) 270 deg - No Ice	67.099	-41.783	0.022	7.633	4649.189	-12.287
0.9 Dead+1.6 Wind 270 deg - No Ice	50.324	-60.167	0.036	9.164	6554.127	-10.540
1.2 Dead+1.6 Wind 300 deg - No Ice	67.099	-50.867	-29.326	-3217.937	5588.848	-7.926
1.2D+1.6W (pattern 1) 300 deg - No Ice	67.099	-49.354	-28.453	-3052.894	5302.983	-7.926
1.2D+1.6W (pattern 2) 300 deg - No Ice	67.099	-35.442	-20.437	-2287.387	3972.082	-9.773
0.9 Dead+1.6 Wind 300 deg - No Ice	50.324	-50.867	-29.326	-3216.791	5586.183	-7.927
1.2 Dead+1.6 Wind 330 deg - No Ice	67.099	-30.052	-52.052	-5669.100	3271.280	-4.004
1.2D+1.6W (pattern 1) 330 deg - No Ice	67.099	-29.179	-50.539	-5383.236	3106.236	-4.005
1.2D+1.6W (pattern 2) 330 deg - No Ice	67.099	-20.873	-36.153	-4020.289	2319.338	-5.430
0.9 Dead+1.6 Wind 330 deg - No Ice	50.324	-30.052	-52.052	-5666.363	3270.146	-3.984
1.2 Dead+1.0 Ice	131.345	0.000	0.000	50.432	2.834	0.000
1.2 Dead+1.0 Wind 0 deg+1.0	131.345	0.003	-14.475	-1563.335	2.255	0.402

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
Ice 1.2 Dead+1.0 Wind 30 deg+1.0 Ice	131.345	7.011	-12.138	-1319.608	-788.961	1.673
1.2 Dead+1.0 Wind 60 deg+1.0 Ice	131.345	12.007	-6.933	-735.461	-1358.748	2.428
1.2 Dead+1.0 Wind 90 deg+1.0 Ice	131.345	14.017	-0.003	50.062	-1579.741	2.634
1.2 Dead+1.0 Wind 120 deg+1.0 Ice	131.345	12.537	7.235	857.137	-1395.207	2.257
1.2 Dead+1.0 Wind 150 deg+1.0 Ice	131.345	7.006	12.135	1420.326	-787.931	0.961
1.2 Dead+1.0 Wind 180 deg+1.0 Ice	131.345	-0.003	13.860	1621.861	3.443	-0.414
1.2 Dead+1.0 Wind 210 deg+1.0 Ice	131.345	-7.011	12.138	1420.920	794.657	-1.673
1.2 Dead+1.0 Wind 240 deg+1.0 Ice	131.345	-12.540	7.240	858.166	1401.498	-2.660
1.2 Dead+1.0 Wind 270 deg+1.0 Ice	131.345	-14.017	0.003	51.250	1585.438	-2.634
1.2 Dead+1.0 Wind 300 deg+1.0 Ice	131.345	-12.004	-6.927	-734.432	1363.851	-2.014
1.2 Dead+1.0 Wind 330 deg+1.0 Ice	131.345	-7.006	-12.135	-1319.014	793.629	-0.961
Dead+Wind 0 deg - Service	55.916	0.007	-11.752	-1247.777	-4.486	0.261
Dead+Wind 30 deg - Service	55.916	5.499	-9.512	-1033.447	-603.184	1.180
Dead+Wind 60 deg - Service	55.916	9.296	-5.367	-586.855	-1025.389	1.710
Dead+Wind 90 deg - Service	55.916	10.987	-0.007	2.078	-1201.044	1.928
Dead+Wind 120 deg - Service	55.916	10.181	5.870	627.731	-1087.311	1.781
Dead+Wind 150 deg - Service	55.916	5.488	9.505	1038.746	-601.204	0.724
Dead+Wind 180 deg - Service	55.916	-0.007	10.722	1181.399	-2.201	-0.264
Dead+Wind 210 deg - Service	55.916	-5.499	9.512	1039.889	596.496	-1.180
Dead+Wind 240 deg - Service	55.916	-10.187	5.882	629.710	1081.766	-2.042
Dead+Wind 270 deg - Service	55.916	-10.987	0.007	4.364	1194.357	-1.928
Dead+Wind 300 deg - Service	55.916	-9.289	-5.355	-584.878	1017.560	-1.447
Dead+Wind 330 deg - Service	55.916	-5.488	-9.505	-1032.304	594.518	-0.724

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-55.916	0.000	0.000	55.916	0.000	0.000%
2	0.036	-67.099	-64.354	-0.036	67.099	64.354	0.000%
3	0.036	-67.099	-62.607	-0.036	67.099	62.607	0.000%
4	0.022	-67.099	-44.295	-0.022	67.099	44.295	0.000%
5	0.036	-50.324	-64.354	-0.036	50.324	64.354	0.000%
6	30.115	-67.099	-52.088	-30.114	67.098	52.088	0.002%
7	29.242	-67.099	-50.575	-29.242	67.099	50.575	0.000%
8	20.910	-67.099	-36.174	-20.910	67.099	36.174	0.000%
9	30.115	-50.324	-52.088	-30.115	50.324	52.088	0.000%
10	50.903	-67.099	-29.389	-50.903	67.099	29.389	0.000%
11	49.391	-67.099	-28.516	-49.391	67.099	28.516	0.000%
12	35.464	-67.099	-20.475	-35.464	67.099	20.475	0.000%
13	50.903	-50.324	-29.389	-50.903	50.324	29.389	0.000%
14	60.167	-67.099	-0.036	-60.167	67.099	0.036	0.000%
15	58.420	-67.099	-0.036	-58.420	67.099	0.036	0.000%
16	41.783	-67.099	-0.022	-41.783	67.099	0.022	0.000%
17	60.167	-50.324	-0.036	-60.167	50.324	0.036	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
18	55.750	-67.099	32.145	-55.750	67.099	-32.145	0.000%
19	54.237	-67.099	31.272	-54.237	67.099	-31.272	0.000%
20	38.372	-67.099	22.129	-38.372	67.099	-22.129	0.000%
21	55.750	-50.324	32.145	-55.750	50.324	-32.145	0.000%
22	30.052	-67.099	52.052	-30.052	67.099	-52.052	0.000%
23	29.179	-67.099	50.539	-29.179	67.099	-50.539	0.000%
24	20.873	-67.099	36.153	-20.873	67.099	-36.153	0.000%
25	30.052	-50.324	52.052	-30.052	50.324	-52.052	0.000%
26	-0.036	-67.099	58.715	0.036	67.099	-58.715	0.000%
27	-0.036	-67.099	56.969	0.036	67.099	-56.969	0.000%
28	-0.022	-67.099	40.912	0.022	67.099	-40.912	0.000%
29	-0.036	-50.324	58.715	0.036	50.324	-58.715	0.000%
30	-30.115	-67.099	52.088	30.114	67.100	-52.089	0.002%
31	-29.242	-67.099	50.575	29.242	67.099	-50.575	0.000%
32	-20.910	-67.099	36.174	20.910	67.099	-36.174	0.000%
33	-30.115	-50.324	52.088	30.115	50.324	-52.088	0.000%
34	-55.786	-67.099	32.208	55.786	67.099	-32.208	0.000%
35	-54.274	-67.099	31.335	54.274	67.099	-31.335	0.000%
36	-38.393	-67.099	22.166	38.393	67.099	-22.166	0.000%
37	-55.786	-50.324	32.208	55.786	50.324	-32.208	0.000%
38	-60.167	-67.099	0.036	60.167	67.099	-0.036	0.000%
39	-58.420	-67.099	0.036	58.420	67.099	-0.036	0.000%
40	-41.783	-67.099	0.022	41.783	67.099	-0.022	0.000%
41	-60.167	-50.324	0.036	60.167	50.324	-0.036	0.000%
42	-50.867	-67.099	-29.326	50.867	67.099	29.326	0.000%
43	-49.354	-67.099	-28.453	49.354	67.099	28.453	0.000%
44	-35.442	-67.099	-20.437	35.442	67.099	20.437	0.000%
45	-50.867	-50.324	-29.326	50.867	50.324	29.326	0.000%
46	-30.052	-67.099	-52.052	30.052	67.099	52.052	0.000%
47	-29.179	-67.099	-50.539	29.179	67.099	50.539	0.000%
48	-20.873	-67.099	-36.153	20.873	67.099	36.153	0.000%
49	-30.052	-50.324	-52.052	30.052	50.324	52.052	0.000%
50	0.000	-131.345	0.000	0.000	131.345	0.000	0.000%
51	0.003	-131.345	-14.475	-0.003	131.345	14.475	0.000%
52	7.011	-131.345	-12.138	-7.011	131.345	12.138	0.000%
53	12.007	-131.345	-6.933	-12.007	131.345	6.933	0.000%
54	14.017	-131.345	-0.003	-14.017	131.345	0.003	0.000%
55	12.537	-131.345	7.235	-12.537	131.345	-7.235	0.000%
56	7.006	-131.345	12.135	-7.006	131.345	-12.135	0.000%
57	-0.003	-131.345	13.860	0.003	131.345	-13.860	0.000%
58	-7.011	-131.345	12.138	7.011	131.345	-12.138	0.000%
59	-12.540	-131.345	7.240	12.540	131.345	-7.240	0.000%
60	-14.017	-131.345	0.003	14.017	131.345	-0.003	0.000%
61	-12.004	-131.345	-6.927	12.004	131.345	6.927	0.000%
62	-7.006	-131.345	-12.135	7.006	131.345	12.135	0.000%
63	0.007	-55.916	-11.752	-0.007	55.916	11.752	0.000%
64	5.499	-55.916	-9.512	-5.499	55.916	9.512	0.000%
65	9.296	-55.916	-5.367	-9.296	55.916	5.367	0.000%
66	10.987	-55.916	-0.007	-10.987	55.916	0.007	0.000%
67	10.181	-55.916	5.870	-10.181	55.916	-5.870	0.000%
68	5.488	-55.916	9.505	-5.488	55.916	-9.505	0.000%
69	-0.007	-55.916	10.722	0.007	55.916	-10.722	0.000%
70	-5.499	-55.916	9.512	5.499	55.916	-9.512	0.000%
71	-10.187	-55.916	5.882	10.187	55.916	-5.882	0.000%
72	-10.987	-55.916	0.007	10.987	55.916	-0.007	0.000%
73	-9.289	-55.916	-5.355	9.289	55.916	5.355	0.000%
74	-5.488	-55.916	-9.505	5.488	55.916	9.505	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00000001
4	Yes	4	0.00000001	0.00000001
5	Yes	4	0.00000001	0.00000001
6	Yes	4	0.00000001	0.00000137
7	Yes	4	0.00000001	0.00000001
8	Yes	4	0.00000001	0.00000001
9	Yes	4	0.00000001	0.00000001
10	Yes	4	0.00000001	0.00000059
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00000001
13	Yes	4	0.00000001	0.00000001
14	Yes	4	0.00000001	0.00000058
15	Yes	4	0.00000001	0.00000001
16	Yes	4	0.00000001	0.00000001
17	Yes	4	0.00000001	0.00000065
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00000001
20	Yes	4	0.00000001	0.00000001
21	Yes	4	0.00000001	0.00000001
22	Yes	4	0.00000001	0.00000057
23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000001
25	Yes	4	0.00000001	0.00000001
26	Yes	4	0.00000001	0.00000058
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000142
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000058
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000065
42	Yes	4	0.00000001	0.00000058
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000057
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001
51	Yes	4	0.00000001	0.00000001
52	Yes	4	0.00000001	0.00000001
53	Yes	4	0.00000001	0.00000001
54	Yes	4	0.00000001	0.00000001
55	Yes	4	0.00000001	0.00000001
56	Yes	4	0.00000001	0.00000001
57	Yes	4	0.00000001	0.00000001
58	Yes	4	0.00000001	0.00000001
59	Yes	4	0.00000001	0.00000001

60	Yes	4	0.00000001	0.00000001
61	Yes	4	0.00000001	0.00000001
62	Yes	4	0.00000001	0.00000001
63	Yes	4	0.00000001	0.00000001
64	Yes	4	0.00000001	0.00000001
65	Yes	4	0.00000001	0.00000001
66	Yes	4	0.00000001	0.00000001
67	Yes	4	0.00000001	0.00000001
68	Yes	4	0.00000001	0.00000001
69	Yes	4	0.00000001	0.00000001
70	Yes	4	0.00000001	0.00000001
71	Yes	4	0.00000001	0.00000001
72	Yes	4	0.00000001	0.00000001
73	Yes	4	0.00000001	0.00000001
74	Yes	4	0.00000001	0.00000001

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	195 - 175	3	20.000	3.333	53.3 K=1.00	7.069	-11.274	258.358	0.044
T2	175 - 155	3 3/4	20.037	6.679	85.5 K=1.00	11.045	-62.952	291.256	0.216 [1]
T3	155 - 135	4	20.037	6.679	80.1 K=1.00	12.566	-107.656	353.539	0.305 [1]
T4	135 - 115	4 1/4	20.037	6.679	75.4 K=1.00	14.186	-147.877	421.102	0.351 [1]
T5	115 - 95	4 1/4	20.037	6.679	75.4 K=1.00	14.186	-184.102	421.102	0.437 [1]
T6	95 - 75	4 1/2	20.037	6.679	71.2 K=1.00	15.904	-218.929	493.803	0.443 [1]
T7	75 - 55	4 3/4	20.037	6.679	67.5 K=1.00	17.721	-253.728	571.525	0.444 [1]
T8	55 - 40	4 3/4	15.050	5.017	50.7 K=1.00	17.721	-276.896	660.825	0.419 [1]
T9	40 - 20	4 3/4	20.037	6.679	67.5 K=1.00	17.721	-310.354	571.525	0.543 [1]
T10	20 - 0	5	20.021	6.674	64.1 K=1.00	19.635	-352.676	654.491	0.539 [1]

[1] P_u / ϕP_n controls

Leg Bending Design Data (Compression)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	195 - 175	3	1.133	16.875	0.067	0.000	16.875	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T2	175 - 155	3 3/4	0.452	32.959	0.014	0.000	32.959	0.000
T3	155 - 135	4	0.069	40.000	0.002	0.000	40.000	0.000
T4	135 - 115	4 1/4	0.356	47.978	0.007	0.000	47.978	0.000
T5	115 - 95	4 1/4	0.257	47.978	0.005	0.000	47.978	0.000
T6	95 - 75	4 1/2	0.196	56.953	0.003	0.000	56.953	0.000
T7	75 - 55	4 3/4	0.749	66.982	0.011	0.000	66.982	0.000
T8	55 - 40	4 3/4	0.020	66.982	0.000	0.000	66.982	0.000
T9	40 - 20	4 3/4	0.024	66.982	0.000	0.000	66.982	0.000
T10	20 - 0	5	0.000	78.125	0.000	0.000	78.125	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	195 - 175	3	0.044	0.067	0.000	0.089 ✔	1.000	4.8.1 ✔
T2	175 - 155	3 3/4	0.216	0.014	0.000	0.216 [1] ✔	1.000	4.8.1 ✔
T3	155 - 135	4	0.305	0.002	0.000	0.305 [1] ✔	1.000	4.8.1 ✔
T4	135 - 115	4 1/4	0.351	0.007	0.000	0.351 [1] ✔	1.000	4.8.1 ✔
T5	115 - 95	4 1/4	0.437	0.005	0.000	0.437 [1] ✔	1.000	4.8.1 ✔
T6	95 - 75	4 1/2	0.443	0.003	0.000	0.443 [1] ✔	1.000	4.8.1 ✔
T7	75 - 55	4 3/4	0.444	0.011	0.000	0.444 [1] ✔	1.000	4.8.1 ✔
T8	55 - 40	4 3/4	0.419	0.000	0.000	0.419 [1] ✔	1.000	4.8.1 ✔
T9	40 - 20	4 3/4	0.543	0.000	0.000	0.543 [1] ✔	1.000	4.8.1 ✔
T10	20 - 0	5	0.539	0.000	0.000	0.539 [1] ✔	1.000	4.8.1 ✔

[1] $P_u / \phi P_n$ controls

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	195 - 175	1 1/4	6.009	2.854	109.6 K=1.00	1.227	-4.223	21.124	0.200 [1] ✔
T2	175 - 155	L2 1/2x2 1/2x3/16	9.498	4.777	115.8 K=1.00	0.902	-6.291	14.425	0.436 [1] ✔
T3	155 - 135	L2 1/2x2 1/2x5/16	11.103	5.563	136.5	1.460	-6.837	17.696	0.386 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
					K=1.00				✔
T4	135 - 115	L3x3x1/4	12.856	6.427	130.3	1.440	-6.517	19.093	0.341 [1]
					K=1.00				✔
T5	115 - 95	L3x3x3/8	14.704	7.351	150.3	2.110	-6.870	21.106	0.326 [1]
					K=1.00				✔
T6	95 - 75	L3 1/2x3 1/2x5/16	16.616	8.296	144.3	2.090	-7.572	22.683	0.334 [1]
					K=1.00				✔
T7	75 - 55	L4x4x1/4	18.572	9.263	139.8	1.940	-8.622	22.419	0.385 [1]
					K=1.00				✔
T8	55 - 40	L4x4x1/4	20.081	10.018	151.2	1.940	-6.645	19.166	0.347 [1]
					K=1.00				✔
T9	40 - 20	L4x4x5/16	22.570	11.262	170.9	2.400	-10.449	18.573	0.563 [1]
					K=1.00				✔
T10	20 - 0	L4x4x3/8	24.174	12.008	182.9	2.860	-13.827	19.323	0.716 [1]
					K=1.00				✔

[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	195 - 175	1 1/4	5.000	4.750	182.4	1.227	-0.078	8.333	0.009 [1]
					K=1.00				✔
T2	175 - 155	1 1/4	5.000	4.750	182.4	1.227	-0.302	8.333	0.036 [1]
					K=1.00				✔

[1] P_u / ϕP_n controls

Tension Checks

Leg 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	195 - 175	3	20.000	3.333	53.3	7.069	8.985	318.086	0.028
T2	175 - 155	3 3/4	20.037	6.679	85.5	11.045	56.801	497.010	0.114 [1]
T3	155 - 135	4	20.037	6.679	80.1	12.566	97.569	565.487	0.173 [1]
T4	135 - 115	4 1/4	20.037	6.679	75.4	14.186	133.403	638.381	0.209 [1]
T5	115 - 95	4 1/4	20.037	6.679	75.4	14.186	164.232	638.381	0.257 [1]
T6	95 - 75	4 1/2	20.037	6.679	71.2	15.904	192.765	715.694	0.269 [1]
T7	75 - 55	4 3/4	20.037	6.679	67.5	17.721	220.736	797.425	0.277 [1]
T8	55 - 40	4 3/4	15.050	5.017	50.7	17.721	237.638	797.425	0.298 [1]
T9	40 - 20	4 3/4	20.037	6.679	67.5	17.721	262.970	797.425	0.330 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	5	20.021	6.674	64.1	19.635	295.536	883.573	0.334 [1]

[1] P_u / ϕP_n controls

Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	195 - 175	3	1.134	16.875	0.067	0.000	16.875	0.000
T2	175 - 155	3 3/4	0.290	32.959	0.009	0.000	32.959	0.000
T3	155 - 135	4	0.642	40.000	0.016	0.000	40.000	0.000
T4	135 - 115	4 1/4	0.200	47.978	0.004	0.000	47.978	0.000
T5	115 - 95	4 1/4	0.255	47.978	0.005	0.000	47.978	0.000
T6	95 - 75	4 1/2	0.342	56.953	0.006	0.000	56.953	0.000
T7	75 - 55	4 3/4	0.160	66.982	0.002	0.000	66.982	0.000
T8	55 - 40	4 3/4	0.377	66.982	0.006	0.000	66.982	0.000
T9	40 - 20	4 3/4	0.351	66.982	0.005	0.000	66.982	0.000
T10	20 - 0	5	0.242	78.125	0.003	0.000	78.125	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	195 - 175	3	0.028	0.067	0.000	0.081 ✔	1.000	4.8.1 ✔
T2	175 - 155	3 3/4	0.114	0.009	0.000	0.114 [1] ✔	1.000	4.8.1 ✔
T3	155 - 135	4	0.173	0.016	0.000	0.173 [1] ✔	1.000	4.8.1 ✔
T4	135 - 115	4 1/4	0.209	0.004	0.000	0.209 [1] ✔	1.000	4.8.1 ✔
T5	115 - 95	4 1/4	0.257	0.005	0.000	0.257 [1] ✔	1.000	4.8.1 ✔
T6	95 - 75	4 1/2	0.269	0.006	0.000	0.269 [1] ✔	1.000	4.8.1 ✔
T7	75 - 55	4 3/4	0.277	0.002	0.000	0.277 [1] ✔	1.000	4.8.1 ✔
T8	55 - 40	4 3/4	0.298	0.006	0.000	0.298 [1] ✔	1.000	4.8.1 ✔
T9	40 - 20	4 3/4	0.330	0.005	0.000	0.330 [1] ✔	1.000	4.8.1 ✔
T10	20 - 0	5	0.334	0.003	0.000	0.334 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Diagonal 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	195 - 175	1 1/4	6.009	2.854	109.6	1.227	4.197	39.761	0.106 [1] ✔
T2	175 - 155	L2 1/2x2 1/2x3/16	9.498	4.777	73.7	0.902	6.223	29.225	0.213 [1] ✔
T3	155 - 135	L2 1/2x2 1/2x5/16	11.103	5.563	87.7	1.460	6.761	47.304	0.143 [1] ✔
T4	135 - 115	L3x3x1/4	11.674	5.845	75.4	1.440	6.479	46.656	0.139 [1] ✔
T5	115 - 95	L3x3x3/8	14.704	7.351	96.6	2.110	6.738	68.364	0.099 [1] ✔
T6	95 - 75	L3 1/2x3 1/2x5/16	16.616	8.296	92.2	2.090	7.523	67.716	0.111 [1] ✔
T7	75 - 55	L4x4x1/4	18.572	9.263	88.9	1.940	8.350	62.856	0.133 [1] ✔
T8	55 - 40	L4x4x1/4	20.081	10.018	96.2	1.940	6.667	62.856	0.106 [1] ✔
T9	40 - 20	L4x4x5/16	22.570	11.262	109.0	2.400	10.492	77.760	0.135 [1] ✔
T10	20 - 0	L4x4x3/8	24.174	12.008	117.1	2.860	13.679	92.664	0.148 [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	195 - 175	1 1/4	5.000	4.750	182.4	1.227	0.045	39.761	0.001 [1] ✔
T2	175 - 155	1 1/4	5.000	4.750	182.4	1.227	0.251	39.761	0.006 [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	195 - 175	Leg	3	1	-11.270	258.358	8.8	Pass
		Leg	3	2	-11.315	258.358	8.8	Pass
		Leg	3	3	-11.274	258.358	8.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Diagonal	1 1/4	7	-4.222	21.124	20.0	Pass
		Diagonal	1 1/4	8	-4.223	21.124	20.0	Pass
		Diagonal	1 1/4	9	-4.202	21.124	19.9	Pass
		Diagonal	1 1/4	10	-4.202	21.124	19.9	Pass
		Diagonal	1 1/4	11	-4.187	21.124	19.8	Pass
		Diagonal	1 1/4	12	-4.186	21.124	19.8	Pass
		Diagonal	1 1/4	13	-2.998	21.124	14.2	Pass
		Diagonal	1 1/4	14	-2.999	21.124	14.2	Pass
		Diagonal	1 1/4	15	-2.969	21.124	14.1	Pass
		Diagonal	1 1/4	16	-2.969	21.124	14.1	Pass
		Diagonal	1 1/4	17	-2.966	21.124	14.0	Pass
		Diagonal	1 1/4	18	-2.965	21.124	14.0	Pass
		Diagonal	1 1/4	19	-1.562	21.124	7.4	Pass
		Diagonal	1 1/4	20	-1.561	21.124	7.4	Pass
		Diagonal	1 1/4	21	-1.541	21.124	7.3	Pass
		Diagonal	1 1/4	22	-1.541	21.124	7.3	Pass
		Diagonal	1 1/4	23	-1.536	21.124	7.3	Pass
		Diagonal	1 1/4	24	-1.537	21.124	7.3	Pass
		Diagonal	1 1/4	25	-1.690	21.124	8.0	Pass
		Diagonal	1 1/4	26	-1.691	21.124	8.0	Pass
		Diagonal	1 1/4	27	-1.675	21.124	7.9	Pass
		Diagonal	1 1/4	28	-1.676	21.124	7.9	Pass
		Diagonal	1 1/4	29	-1.673	21.124	7.9	Pass
		Diagonal	1 1/4	30	-1.672	21.124	7.9	Pass
		Diagonal	1 1/4	31	-0.967	21.124	4.6	Pass
		Diagonal	1 1/4	32	-0.965	21.124	4.6	Pass
		Diagonal	1 1/4	33	-0.955	21.124	4.5	Pass
		Diagonal	1 1/4	34	-0.962	21.124	4.6	Pass
		Diagonal	1 1/4	35	-0.959	21.124	4.5	Pass
		Diagonal	1 1/4	36	-0.954	21.124	4.5	Pass
		Diagonal	1 1/4	37	-0.074	21.124	0.4	Pass
		Diagonal	1 1/4	38	-0.074	21.124	0.3	Pass
		Diagonal	1 1/4	39	-0.074	21.124	0.3	Pass
		Diagonal	1 1/4	40	-0.077	21.124	0.4	Pass
		Diagonal	1 1/4	41	-0.077	21.124	0.4	Pass
		Diagonal	1 1/4	42	-0.074	21.124	0.4	Pass
		Top Girt	1 1/4	4	-0.078	8.333	0.9	Pass
		Top Girt	1 1/4	5	-0.078	8.333	0.9	Pass
		Top Girt	1 1/4	6	-0.078	8.333	0.9	Pass
T2	175 - 155	Leg	3 3/4	43	-62.952	291.256	21.6	Pass
		Leg	3 3/4	44	-62.860	291.256	21.6	Pass
		Leg	3 3/4	45	-62.731	291.256	21.5	Pass
		Diagonal	L2 1/2x2 1/2x3/16	49	-6.290	14.425	43.6	Pass
		Diagonal	L2 1/2x2 1/2x3/16	50	-6.291	14.425	43.6	Pass
		Diagonal	L2 1/2x2 1/2x3/16	51	-6.134	14.425	42.5	Pass
		Diagonal	L2 1/2x2 1/2x3/16	52	-6.139	14.425	42.6	Pass
		Diagonal	L2 1/2x2 1/2x3/16	53	-6.185	14.425	42.9	Pass
		Diagonal	L2 1/2x2 1/2x3/16	54	-6.179	14.425	42.8	Pass
		Diagonal	L2 1/2x2 1/2x3/16	55	-6.159	15.413	40.0	Pass
		Diagonal	L2 1/2x2 1/2x3/16	56	-6.154	15.413	39.9	Pass
		Diagonal	L2 1/2x2 1/2x3/16	57	-5.993	15.413	38.9	Pass
		Diagonal	L2 1/2x2 1/2x3/16	58	-5.998	15.413	38.9	Pass
		Diagonal	L2 1/2x2 1/2x3/16	59	-6.056	15.413	39.3	Pass
		Diagonal	L2 1/2x2 1/2x3/16	60	-6.056	15.413	39.3	Pass
		Diagonal	L2 1/2x2 1/2x3/16	61	-5.729	16.326	35.1	Pass
		Diagonal	L2 1/2x2 1/2x3/16	62	-5.719	16.326	35.0	Pass
		Diagonal	L2 1/2x2 1/2x3/16	63	-5.620	16.326	34.4	Pass
		Diagonal	L2 1/2x2 1/2x3/16	64	-5.624	16.326	34.4	Pass
		Diagonal	L2 1/2x2 1/2x3/16	65	-5.647	16.326	34.6	Pass
		Diagonal	L2 1/2x2 1/2x3/16	66	-5.654	16.326	34.6	Pass
		Top Girt	1 1/4	46	-0.297	8.333	3.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Top Girt	1 1/4	47	-0.302	8.333	3.6	Pass
		Top Girt	1 1/4	48	-0.297	8.333	3.6	Pass
T3	155 - 135	Leg	4	67	-107.497	353.539	30.4	Pass
		Leg	4	68	-107.309	353.539	30.4	Pass
		Leg	4	69	-107.656	353.539	30.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	70	-6.537	17.696	36.9	Pass
		Diagonal	L2 1/2x2 1/2x5/16	71	-6.532	17.696	36.9	Pass
		Diagonal	L2 1/2x2 1/2x5/16	72	-6.801	17.696	38.4	Pass
		Diagonal	L2 1/2x2 1/2x5/16	73	-6.782	17.696	38.3	Pass
		Diagonal	L2 1/2x2 1/2x5/16	74	-6.814	17.696	38.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	75	-6.837	17.696	38.6	Pass
		Diagonal	L2 1/2x2 1/2x5/16	76	-6.298	19.461	32.4	Pass
		Diagonal	L2 1/2x2 1/2x5/16	77	-6.296	19.461	32.4	Pass
		Diagonal	L2 1/2x2 1/2x5/16	78	-6.338	19.461	32.6	Pass
		Diagonal	L2 1/2x2 1/2x5/16	79	-6.330	19.461	32.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	80	-6.367	19.461	32.7	Pass
		Diagonal	L2 1/2x2 1/2x5/16	81	-6.376	19.461	32.8	Pass
		Diagonal	L2 1/2x2 1/2x5/16	82	-6.258	21.185	29.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	83	-6.253	21.185	29.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	84	-6.023	21.185	28.4	Pass
		Diagonal	L2 1/2x2 1/2x5/16	85	-6.032	21.185	28.5	Pass
		Diagonal	L2 1/2x2 1/2x5/16	86	-6.072	21.185	28.7	Pass
		Diagonal	L2 1/2x2 1/2x5/16	87	-6.068	21.185	28.6	Pass
T4	135 - 115	Leg	4 1/4	88	-147.877	421.102	35.1	Pass
		Leg	4 1/4	89	-147.638	421.102	35.1	Pass
		Leg	4 1/4	90	-147.800	421.102	35.1	Pass
		Diagonal	L3x3x1/4	91	-6.444	19.093	33.8	Pass
		Diagonal	L3x3x1/4	92	-6.440	19.093	33.7	Pass
		Diagonal	L3x3x1/4	93	-6.488	19.093	34.0	Pass
		Diagonal	L3x3x1/4	94	-6.481	19.093	33.9	Pass
		Diagonal	L3x3x1/4	95	-6.506	19.093	34.1	Pass
		Diagonal	L3x3x1/4	96	-6.517	19.093	34.1	Pass
		Diagonal	L3x3x1/4	97	-6.404	20.684	31.0	Pass
		Diagonal	L3x3x1/4	98	-6.400	20.684	30.9	Pass
		Diagonal	L3x3x1/4	99	-6.504	20.684	31.4	Pass
		Diagonal	L3x3x1/4	100	-6.494	20.684	31.4	Pass
		Diagonal	L3x3x1/4	101	-6.520	20.684	31.5	Pass
		Diagonal	L3x3x1/4	102	-6.535	20.684	31.6	Pass
		Diagonal	L3x3x1/4	103	-6.372	22.285	28.6	Pass
		Diagonal	L3x3x1/4	104	-6.369	22.285	28.6	Pass
		Diagonal	L3x3x1/4	105	-6.512	22.285	29.2	Pass
		Diagonal	L3x3x1/4	106	-6.501	22.285	29.2	Pass
		Diagonal	L3x3x1/4	107	-6.530	22.285	29.3	Pass
		Diagonal	L3x3x1/4	108	-6.545	22.285	29.4	Pass
T5	115 - 95	Leg	4 1/4	109	-184.102	421.102	43.7	Pass
		Leg	4 1/4	110	-183.837	421.102	43.7	Pass
		Leg	4 1/4	111	-183.854	421.102	43.7	Pass
		Diagonal	L3x3x3/8	112	-6.870	21.106	32.6	Pass
		Diagonal	L3x3x3/8	113	-6.865	21.106	32.5	Pass
		Diagonal	L3x3x3/8	114	-6.789	21.106	32.2	Pass
		Diagonal	L3x3x3/8	115	-6.787	21.106	32.2	Pass
		Diagonal	L3x3x3/8	116	-6.807	21.106	32.3	Pass
		Diagonal	L3x3x3/8	117	-6.814	21.106	32.3	Pass
		Diagonal	L3x3x3/8	118	-6.682	23.005	29.0	Pass
		Diagonal	L3x3x3/8	119	-6.677	23.005	29.0	Pass
		Diagonal	L3x3x3/8	120	-6.639	23.005	28.9	Pass
		Diagonal	L3x3x3/8	121	-6.636	23.005	28.8	Pass
		Diagonal	L3x3x3/8	122	-6.657	23.005	28.9	Pass
		Diagonal	L3x3x3/8	123	-6.665	23.005	29.0	Pass
		Diagonal	L3x3x3/8	124	-6.619	25.139	26.3	Pass
		Diagonal	L3x3x3/8	125	-6.614	25.139	26.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Diagonal	L3x3x3/8	126	-6.619	25.139	26.3	Pass
		Diagonal	L3x3x3/8	127	-6.614	25.139	26.3	Pass
		Diagonal	L3x3x3/8	128	-6.637	25.139	26.4	Pass
		Diagonal	L3x3x3/8	129	-6.647	25.139	26.4	Pass
T6	95 - 75	Leg	4 1/2	130	-218.929	493.803	44.3	Pass
		Leg	4 1/2	131	-218.769	493.803	44.3	Pass
		Leg	4 1/2	132	-218.666	493.803	44.3	Pass
		Diagonal	L3 1/2x3 1/2x5/16	133	-7.572	22.683	33.4	Pass
		Diagonal	L3 1/2x3 1/2x5/16	134	-7.563	22.683	33.3	Pass
		Diagonal	L3 1/2x3 1/2x5/16	135	-7.479	22.683	33.0	Pass
		Diagonal	L3 1/2x3 1/2x5/16	136	-7.482	22.683	33.0	Pass
		Diagonal	L3 1/2x3 1/2x5/16	137	-7.404	22.683	32.6	Pass
		Diagonal	L3 1/2x3 1/2x5/16	138	-7.411	22.683	32.7	Pass
		Diagonal	L3 1/2x3 1/2x5/16	139	-7.289	24.539	29.7	Pass
		Diagonal	L3 1/2x3 1/2x5/16	140	-7.283	24.539	29.7	Pass
		Diagonal	L3 1/2x3 1/2x5/16	141	-7.128	24.539	29.0	Pass
		Diagonal	L3 1/2x3 1/2x5/16	142	-7.130	24.539	29.1	Pass
		Diagonal	L3 1/2x3 1/2x5/16	143	-7.157	24.539	29.2	Pass
		Diagonal	L3 1/2x3 1/2x5/16	144	-7.161	24.539	29.2	Pass
		Diagonal	L3 1/2x3 1/2x5/16	145	-7.021	26.611	26.4	Pass
		Diagonal	L3 1/2x3 1/2x5/16	146	-7.015	26.611	26.4	Pass
		Diagonal	L3 1/2x3 1/2x5/16	147	-6.906	26.611	26.0	Pass
		Diagonal	L3 1/2x3 1/2x5/16	148	-6.906	26.611	26.0	Pass
		Diagonal	L3 1/2x3 1/2x5/16	149	-6.923	26.611	26.0	Pass
		Diagonal	L3 1/2x3 1/2x5/16	150	-6.928	26.611	26.0	Pass
T7	75 - 55	Leg	4 3/4	151	-253.728	571.525	44.4	Pass
		Leg	4 3/4	152	-253.551	571.525	44.4	Pass
		Leg	4 3/4	153	-253.342	571.525	44.3	Pass
		Diagonal	L4x4x1/4	154	-8.622	22.419	38.5	Pass
		Diagonal	L4x4x1/4	155	-8.610	22.419	38.4	Pass
		Diagonal	L4x4x1/4	156	-8.451	22.419	37.7	Pass
		Diagonal	L4x4x1/4	157	-8.458	22.419	37.7	Pass
		Diagonal	L4x4x1/4	158	-8.364	22.419	37.3	Pass
		Diagonal	L4x4x1/4	159	-8.370	22.419	37.3	Pass
		Diagonal	L4x4x1/4	160	-8.102	24.072	33.7	Pass
		Diagonal	L4x4x1/4	161	-8.091	24.072	33.6	Pass
		Diagonal	L4x4x1/4	162	-7.964	24.072	33.1	Pass
		Diagonal	L4x4x1/4	163	-7.970	24.072	33.1	Pass
		Diagonal	L4x4x1/4	164	-7.876	24.072	32.7	Pass
		Diagonal	L4x4x1/4	165	-7.880	24.072	32.7	Pass
		Diagonal	L4x4x1/4	166	-7.925	25.716	30.8	Pass
		Diagonal	L4x4x1/4	167	-7.914	25.716	30.8	Pass
		Diagonal	L4x4x1/4	168	-7.830	25.716	30.4	Pass
		Diagonal	L4x4x1/4	169	-7.834	25.716	30.5	Pass
		Diagonal	L4x4x1/4	170	-7.726	25.716	30.0	Pass
		Diagonal	L4x4x1/4	171	-7.733	25.716	30.1	Pass
T8	55 - 40	Leg	4 3/4	172	-276.896	660.825	41.9	Pass
		Leg	4 3/4	173	-276.714	660.825	41.9	Pass
		Leg	4 3/4	174	-276.437	660.825	41.8	Pass
		Diagonal	L4x4x1/4	175	-6.645	19.166	34.7	Pass
		Diagonal	L4x4x1/4	176	-6.632	19.166	34.6	Pass
		Diagonal	L4x4x1/4	177	-6.418	19.166	33.5	Pass
		Diagonal	L4x4x1/4	178	-6.431	19.166	33.6	Pass
		Diagonal	L4x4x1/4	179	-6.348	19.166	33.1	Pass
		Diagonal	L4x4x1/4	180	-6.348	19.166	33.1	Pass
		Diagonal	L4x4x1/4	181	-6.534	20.538	31.8	Pass
		Diagonal	L4x4x1/4	182	-6.519	20.538	31.7	Pass
		Diagonal	L4x4x1/4	183	-6.322	20.538	30.8	Pass
		Diagonal	L4x4x1/4	184	-6.334	20.538	30.8	Pass
		Diagonal	L4x4x1/4	185	-6.245	20.538	30.4	Pass
		Diagonal	L4x4x1/4	186	-6.248	20.538	30.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Diagonal	L4x4x1/4	187	-6.184	22.059	28.0	Pass
		Diagonal	L4x4x1/4	188	-6.135	22.059	27.8	Pass
		Diagonal	L4x4x1/4	189	-5.960	22.059	27.0	Pass
		Diagonal	L4x4x1/4	190	-6.054	22.059	27.4	Pass
		Diagonal	L4x4x1/4	191	-5.947	22.059	27.0	Pass
		Diagonal	L4x4x1/4	192	-5.883	22.059	26.7	Pass
T9	40 - 20	Leg	4 3/4	193	-310.354	571.525	54.3	Pass
		Leg	4 3/4	194	-310.173	571.525	54.3	Pass
		Leg	4 3/4	195	-309.804	571.525	54.2	Pass
		Diagonal	L4x4x5/16	196	-10.449	18.573	56.3	Pass
		Diagonal	L4x4x5/16	197	-10.439	18.573	56.2	Pass
		Diagonal	L4x4x5/16	198	-10.138	18.573	54.6	Pass
		Diagonal	L4x4x5/16	199	-10.151	18.573	54.7	Pass
		Diagonal	L4x4x5/16	200	-10.081	18.573	54.3	Pass
		Diagonal	L4x4x5/16	201	-10.079	18.573	54.3	Pass
		Diagonal	L4x4x5/16	202	-10.339	19.732	52.4	Pass
		Diagonal	L4x4x5/16	203	-10.326	19.732	52.3	Pass
		Diagonal	L4x4x5/16	204	-10.052	19.732	50.9	Pass
		Diagonal	L4x4x5/16	205	-10.063	19.732	51.0	Pass
		Diagonal	L4x4x5/16	206	-9.989	19.732	50.6	Pass
		Diagonal	L4x4x5/16	207	-9.989	19.732	50.6	Pass
		Diagonal	L4x4x5/16	208	-9.910	20.998	47.2	Pass
		Diagonal	L4x4x5/16	209	-9.900	20.998	47.1	Pass
		Diagonal	L4x4x5/16	210	-9.646	20.998	45.9	Pass
		Diagonal	L4x4x5/16	211	-9.657	20.998	46.0	Pass
		Diagonal	L4x4x5/16	212	-9.580	20.998	45.6	Pass
		Diagonal	L4x4x5/16	213	-9.579	20.998	45.6	Pass
T10	20 - 0	Leg	5	214	-352.676	654.491	53.9	Pass
		Leg	5	215	-352.493	654.491	53.9	Pass
		Leg	5	216	-352.032	654.491	53.8	Pass
		Diagonal	L4x4x3/8	217	-13.827	19.323	71.6	Pass
		Diagonal	L4x4x3/8	218	-13.817	19.323	71.5	Pass
		Diagonal	L4x4x3/8	219	-13.443	19.323	69.6	Pass
		Diagonal	L4x4x3/8	220	-13.455	19.323	69.6	Pass
		Diagonal	L4x4x3/8	221	-13.395	19.323	69.3	Pass
		Diagonal	L4x4x3/8	222	-13.394	19.323	69.3	Pass
		Diagonal	L4x4x3/8	223	-13.388	20.166	66.4	Pass
		Diagonal	L4x4x3/8	224	-13.379	20.166	66.3	Pass
		Diagonal	L4x4x3/8	225	-13.031	20.166	64.6	Pass
		Diagonal	L4x4x3/8	226	-13.042	20.166	64.7	Pass
		Diagonal	L4x4x3/8	227	-12.980	20.166	64.4	Pass
		Diagonal	L4x4x3/8	228	-12.978	20.166	64.4	Pass
		Diagonal	L4x4x3/8	229	-13.183	21.063	62.6	Pass
		Diagonal	L4x4x3/8	230	-13.175	21.063	62.5	Pass
		Diagonal	L4x4x3/8	231	-12.845	21.063	61.0	Pass
		Diagonal	L4x4x3/8	232	-12.856	21.063	61.0	Pass
		Diagonal	L4x4x3/8	233	-12.793	21.063	60.7	Pass
		Diagonal	L4x4x3/8	234	-12.790	21.063	60.7	Pass
							Summary	
						Leg (T9)	54.3	Pass
						Diagonal (T10)	71.6	Pass
						Top Girt (T2)	3.6	Pass
						RATING =	**71.6**	**Pass**

Phone:
FAX:

Search Results

Query Date: Tue Sep 19 2017
Latitude: 41.3680
Longitude: -72.8093

ASCE 7-10 Windspeeds (3-sec peak gust in mph*):

Risk Category I: 115
Risk Category II: 126
Risk Category III-IV: 136
MRI 10-Year:** 77
MRI 25-Year:** 87
MRI 50-Year:** 94
MRI 100-Year:** 102

ASCE 7-05 Windspeed:
111 (3-sec peak gust in mph)
ASCE 7-93 Windspeed:
82 (fastest mile in mph)

*Miles per hour
**Mean Recurrence Interval

Users should consult with local building officials to determine if there are community-specific wind speed requirements that govern.

Print your results

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"DO MACRO UPGRADE"

CT03XC030
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

KEY MAP

SCALE = N.T.S.

SITE LOCATION INFORMATION

SITE ID NUMBER:	CT03XC030
SITE NAME:	NORTHFORD / OSHENCOWSKI
SITE ADDRESS:	88 PARSONAGE HILL ROAD NORTHFORD, CT 06472
PARCEL ID:	51 A 7
CENSUS TRACT:	186200
CENSUS BLOCK:	2011
PROPERTY OWNER:	JEAN SZWABOWSKI & J J OCHENKOWSKI JR
APPLICANT:	SPRINT 6100 SPRINT PARKWAY OVERLAND PARK, KS 66251
COUNTY:	NEW HAVEN COUNTY

SITE CHARACTERISTICS

LATITUDE:	41.36801
LONGITUDE:	-72.809302
STRUCTURE TYPE:	SELF-SUPPORT TOWER
LOCATION OF PROPOSED EQUIPMENT:	EXISTING ANTENNA PLATFORM
STRUCTURE HEIGHT:	±190'-0" AGL
ANTENNA (RAD CENTER):	±190'-0" AGL (ALPHA) ±190'-0" AGL (BETA) ±190'-0" AGL (GAMMA)

SHEET INDEX

SIGNATURE BLOCK:

SPRINT REPRESENTATIVE:	DATE
SPRINT RF ENGINEER:	DATE
PROPERTY OWNER:	DATE

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	09/25/17	ISSUED FOR CONSTRUCTION
1	08/16/17	REVISED PER NEW RFDS
0	05/17/17	INITIAL SUBMISSION

DRAWN BY:	AM
CHECKED BY:	DTS
SCALE:	AS NOTED
JOB NO:	17042-CHE

INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY CONNECTICUT SEAL & SIGNATURE OF A LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

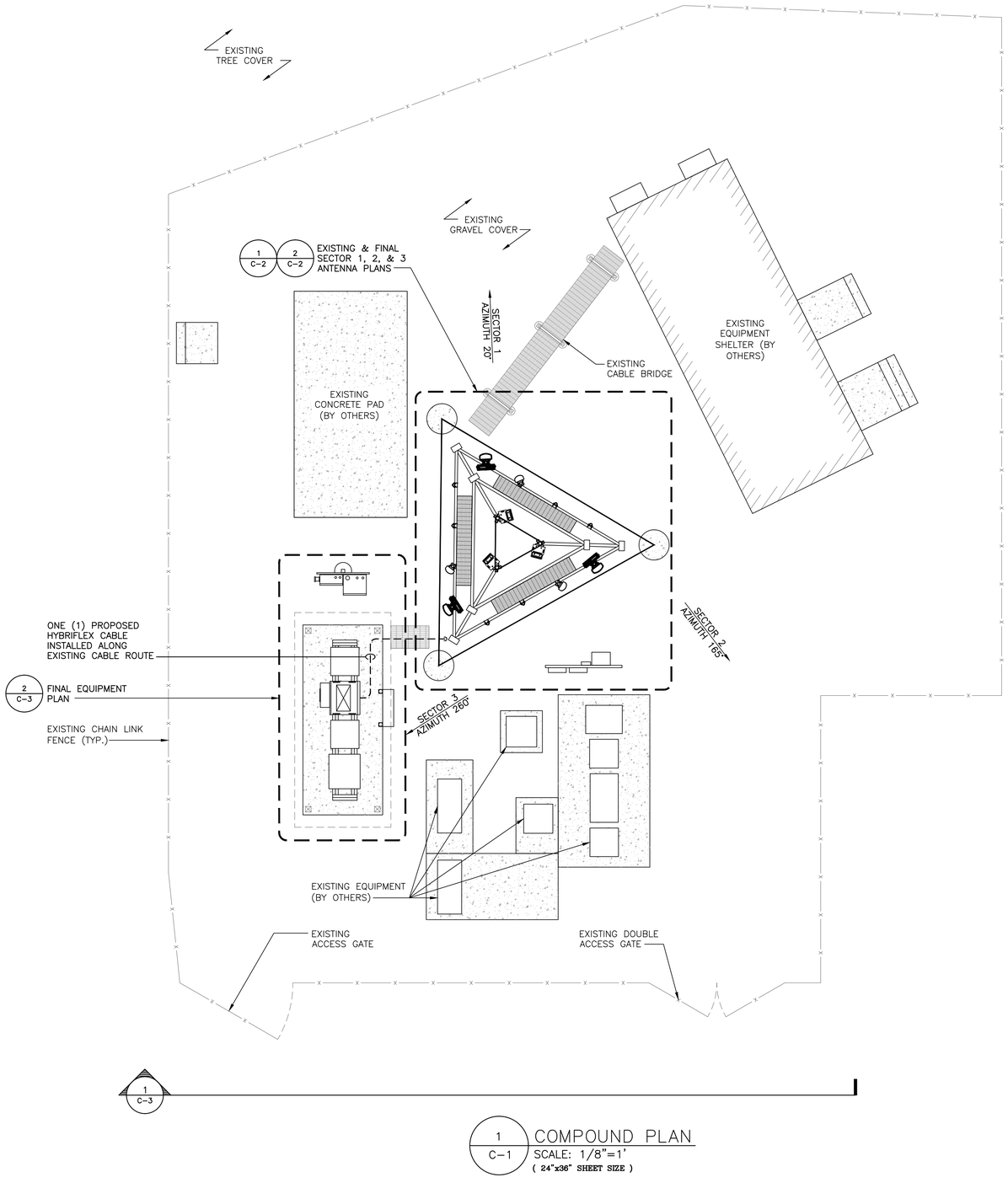
CT03XC030
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

DRAWING TITLE:

TITLE SHEET

DRAWING SHEET: 1 OF 10

T-1



1 C-1 COMPOUND PLAN
SCALE: 1/8"=1'
(24"x36" SHEET SIZE)

GENERAL NOTES:

1. SUBJECT PROPERTY IS KNOWN AS TAX PARCEL ID 51 A 7, CENSUS TRACT 186200, CENSUS BLOCK 2011 AS SHOWN THE OFFICIAL TAX MAP OF THE TOWN OF NORTHFORD, CT.
2. THE APPLICANT PROPOSES TO INSTALL THREE (3) NEW ANTENNAS AND THREE (3) NEW RADIO HEADS ON PROPOSED ANTENNA MOUNTS (TYPICAL FOR ONE (1) PER SECTOR).
3. CONTRACTOR SHALL NOT COMMENCE ANY WORK UNTIL HE OBTAINS, AT HIS OWN EXPENSE, ALL INSURANCE REQUIRED BY SPRINT, THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
4. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH OF THE DRAWINGS HAVE BEEN REVISED TO INDICATED "ISSUED FOR CONSTRUCTION".
5. SITE INFORMATION SHOWN TAKEN FROM PLANS PREPARED BY FULLERTON ENGINEERING DESIGN FOR SPRINT'S INSTALLATION ON THIS FACILITY. DRAWINGS ENTITLED "SPRINT, SITE NAME: NORTHFORD/OSHENCOWSKI, SPRINT NUMBER: CT03XC030" DATED 03/03/14 REVISED 03/31/14. ADDITIONAL SITE INFORMATION WAS SUPPLEMENTED WITH A LIMITED SITE VISIT BY COM-EX CONSULTANTS 05/10/17.
6. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES OR OTHER PUBLIC AUTHORITIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THIS PROJECT IN ACCORDANCE WITH THE OVERALL INTENT OF THESE DRAWINGS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
10. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
11. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
13. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
14. THE CONSTRUCTION CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL CONSTRUCTION MEANS AND METHODS. THE CONSTRUCTION CONTRACTOR IS ALSO RESPONSIBLE FOR ALL JOB SITE SAFETY.
15. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.
16. THE CONTRACTOR IS TO REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND RELATED PARTIES. THE SUBCONTRACTOR SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT EFFECTS THEIR WORK.
17. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON THE SITE AT ALL TIMES AND INSURE THE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA CONTRACTOR FURNISH 3 SETS OF REDLINE "AS-BUILT" DRAWINGS TO SPRINT UPON COMPLETION OF THE WORK.
18. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAT BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL INCLUDED AS PART OF THE WORK.
19. ALL MATERIAL PROVIDED BY IS TO BE REVIEWED BY THE CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTOR PRIOR TO INSTALLATION. ANY DEFICIENCIES TO PROVIDE MATERIALS SHALL BE BROUGHT TO THE CONSTRUCTION MANAGERS ATTENTION IMMEDIATELY.
20. THE MATERIALS INSTALLED SHALL MEET REQUIREMENTS OF CONTRACTORS DOCUMENTS. NO SUBSTITUTIONS ARE ALLOWED.
21. THE CONTRACTOR SHALL COORDINATE ALL CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR THE LOCATIONS OF ALL OPENINGS, RECESSES, BUILT-IN WORK, ETC..
22. THE CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTACT DOCUMENTS.
23. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
24. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST-ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAND PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
25. THE CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
27. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS MAY TAKE PRECEDENCE.
28. THE CONTRACTOR SHALL REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
29. THE CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE AND DISPOSE OF ALL DEBRIS AND RUBBISH. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
30. BEFORE FINAL ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT, TEMPORARY WORKS, UNUSED AND USELESS MATERIALS, RUBBISH AND TEMPORARY STRUCTURES.
31. DESIGN REQUIREMENTS PER INTERNATIONAL BUILDING CODE 2015 AND THE EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
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3		
2	09/25/17	ISSUED FOR CONSTRUCTION
1	08/16/17	REVISED PER NEW RFDS
0	05/17/17	INITIAL SUBMISSION

DRAWN BY:	AM
CHECKED BY:	DTS
SCALE:	AS NOTED
JOB NO:	17042-CHE

INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR CONSTRUCTION USE UNLESS ACCOMPANIED BY ORIGINAL EMBOSSED SEAL & SIGNATURE OF A LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

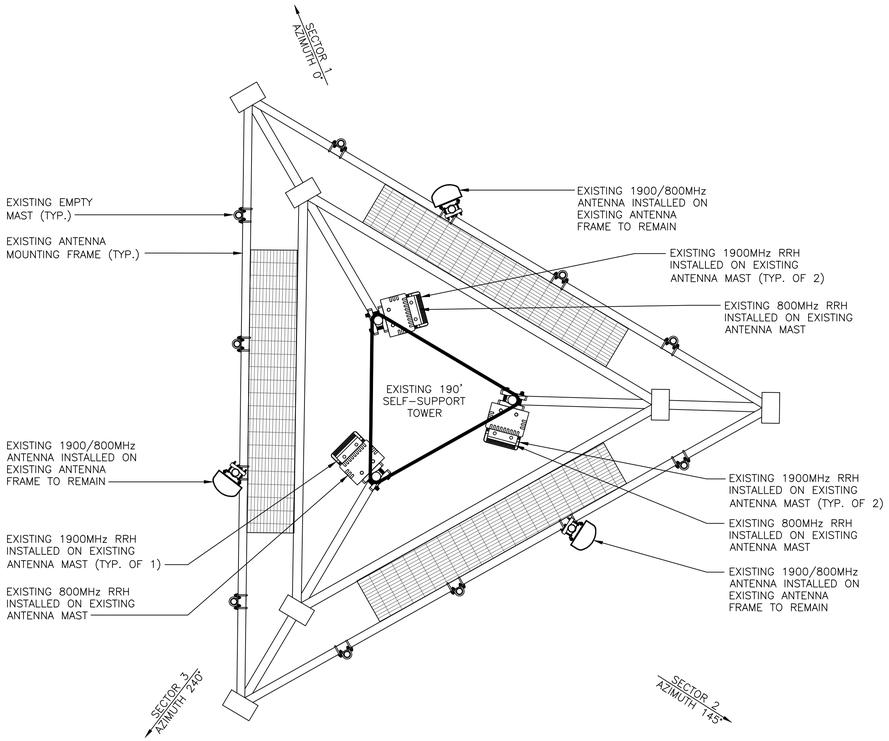
CT03XC030
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

DRAWING TITLE:

COMPOUND PLAN & GENERAL NOTES

DRAWING SHEET: 2 OF 10

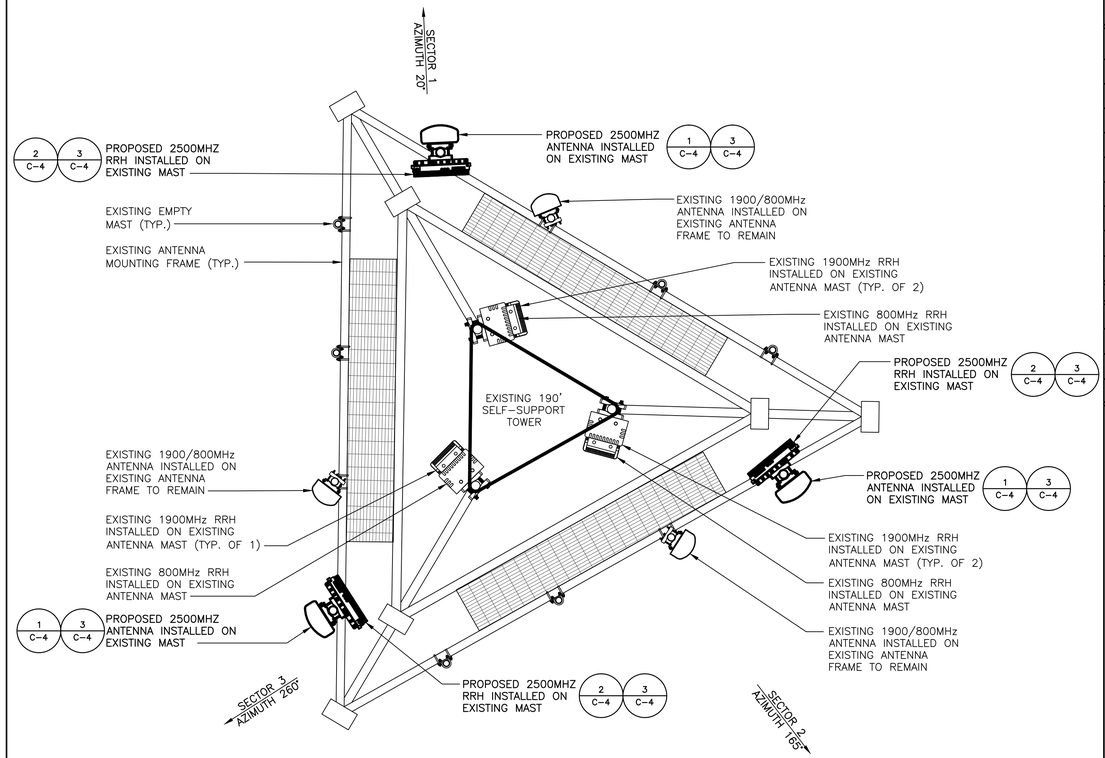
C-1



1 / C-2 EXISTING SECTOR 1, 2, & 3 ANTENNA PLAN

SCALE: 1/2"=1'

LOADING SHOWN ON THIS SET OF DRAWINGS IS BASED ON THE STRUCTURAL ANALYSIS PERFORMED BY COM-EX CONSULTANTS, DATED 09/25/17. CONTRACTOR TO NOTIFY COM-EX AND SPRINT IN THE EVENT SITE CONDITIONS DIFFER FROM WHAT IS REPRESENTED IN THE STRUCTURAL ANALYSIS. NO SUBSTITUTIONS ARE PERMITTED WITHOUT ADDITIONAL ANALYSIS.



2 / C-2 FINAL SECTOR 1, 2, & 3 ANTENNA PLAN

SCALE: 1/2"=1'

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

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OVERLAND PARK, KS 66251

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DRAWN BY:	AM
CHECKED BY:	DTS
SCALE:	AS NOTED
JOB NO:	17042-CHE

INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR CONSTRUCTION USE UNLESS ACCOMPANIED BY THE EMBOSSED SEAL & SIGNATURE OF THE LICENSED ENGINEER

STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 28643 · REGISTERED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

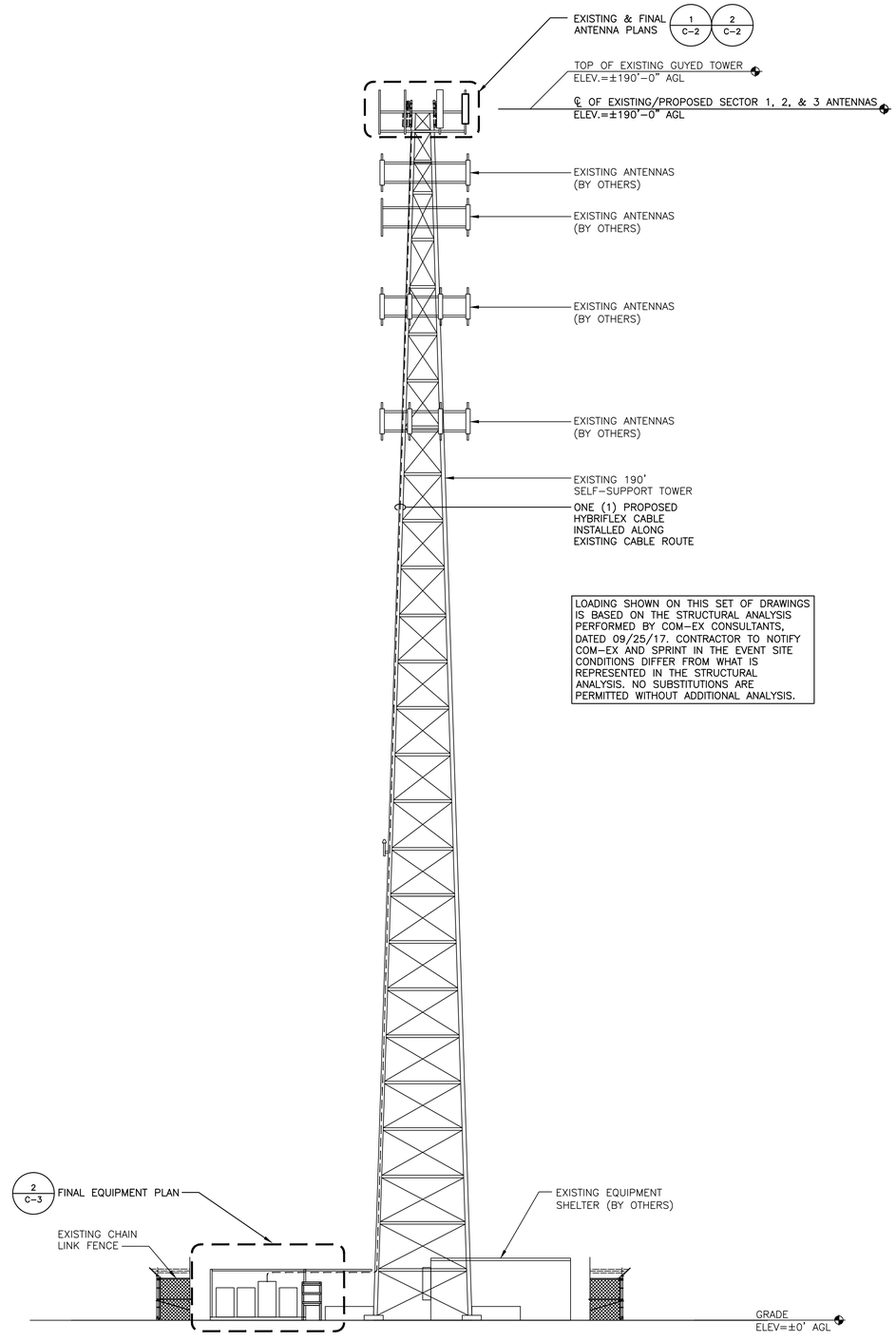
CT03XC030
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

DRAWING TITLE:

EXISTING & FINAL ANTENNA PLANS

DRAWING SHEET: 3 OF 10

C-2

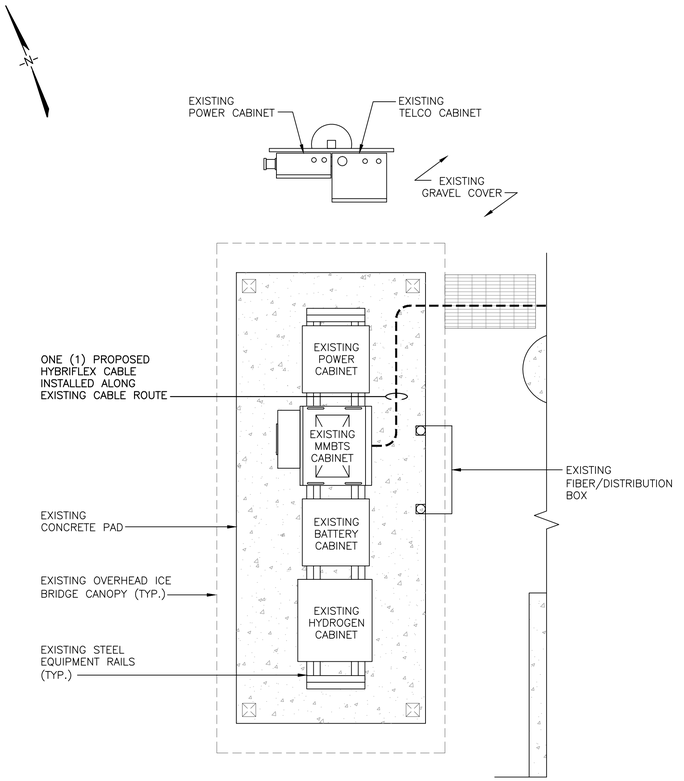


1 C-3 ELEVATION
SCALE: 3/32"=1'
(24"x36" SHEET SIZE)

BILL OF MATERIALS

	DESCRIPTION	QUANTITY EACH	DIMENSIONS (HxWxD)	WEIGHT (LBS) EACH	MANUFACTURER: PART/ MODEL#
ANTENNAS	2500 MHz PANEL ANTENNA – SECTOR 1	1	56.3"x12.6"x6.3"	56.2 LBS W/OUT MOUNTING HARDWARE	RFS: APXVTM14-ALU-120
	2500 MHz RRH, 8x20-25	1	26.1"x18.6"x6.7"	70 LBS W/OUT MOUNTING HARDWARE	ALCATEL LUCENT
	2500 MHz PANEL ANTENNA – SECTOR 2	1	56.3"x12.6"x6.3"	56.2 LBS W/OUT MOUNTING HARDWARE	RFS: APXVTM14-ALU-120
	2500 MHz RRH, 8x20-25	1	26.1"x18.6"x6.7"	70 LBS W/OUT MOUNTING HARDWARE	ALCATEL LUCENT
	2500 MHz PANEL ANTENNA – SECTOR 3	1	56.3"x12.6"x6.3"	56.2 LBS W/OUT MOUNTING HARDWARE	RFS: APXVTM14-ALU-120
	2500 MHz RRH, 8x20-25	1	26.1"x18.6"x6.7"	70 LBS W/OUT MOUNTING HARDWARE	ALCATEL LUCENT

	DESCRIPTION	QUANTITY EACH	DIMENSIONS (LENGTH)	WEIGHT (LBS/FOOT)	MANUFACTURER: SIZE/PART/MODEL#
CABLES	SECTOR 1 HYBRIFLEX RUN (BTS TO RRH)	1	±225'	1.3 LBS	RFS: 1-1/4" / HB114-1-08U4-M5J
	SECTOR 1 COAX CABLE JUMPERS	11	10'	N/A	LDF4-50 (OR EQUIVALENT)
	SECTOR 1 R.E.T. CABLES	4	(3) 10' / (1) 2'	N/A	TBD
	SECTOR 2 HYBRIFLEX RUN (BTS TO RRH)	N/A	N/A	N/A	N/A
	SECTOR 2 COAX CABLE JUMPERS	11	10'	N/A	LDF4-50 (OR EQUIVALENT)
	SECTOR 2 R.E.T. CABLES	4	(3) 10' / (1) 2'	N/A	TBD
	SECTOR 3 HYBRIFLEX RUN (BTS TO RRH)	N/A	N/A	N/A	N/A
	SECTOR 3 COAX CABLE JUMPERS	11	10'	N/A	LDF4-50 (OR EQUIVALENT)
	SECTOR 3 R.E.T. CABLES	4	(3) 10' / (1) 2'	N/A	TBD



2 C-3 FINAL EQUIPMENT PLAN
SCALE: 3/8"=1'

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SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
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0	05/17/17	INITIAL SUBMISSION

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SCALE:	AS NOTED
JOB NO:	17042-CHE

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NICHOLAS D. DARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

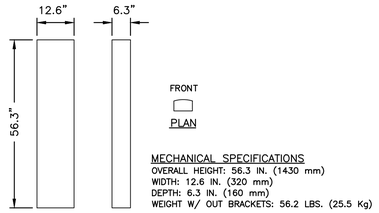
CT03XC030
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

DRAWING TITLE:

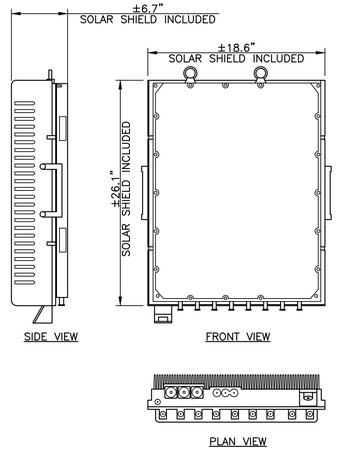
ELEVATION, B.O.M. & FINAL EQUIPMENT PLAN

DRAWING SHEET: 4 OF 10

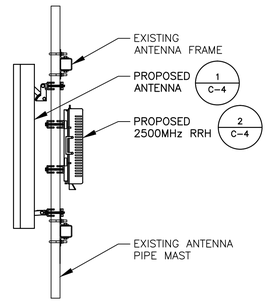
C-3



1 / C-4 2500MHz ANTENNA
RFS: APXVTM14-ALU-I20
SCALE: NTS



2 / C-4 2500MHz RRH DETAIL
SCALE: N.T.S.



3 / C-4 SECTOR 1, 2, & 3 ANTENNA
& RRH INSTALLATION DETAIL
SCALE: N.T.S.

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STATE OF CONNECTICUT
NICHOLAS D. BARILE
No. 28643
LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

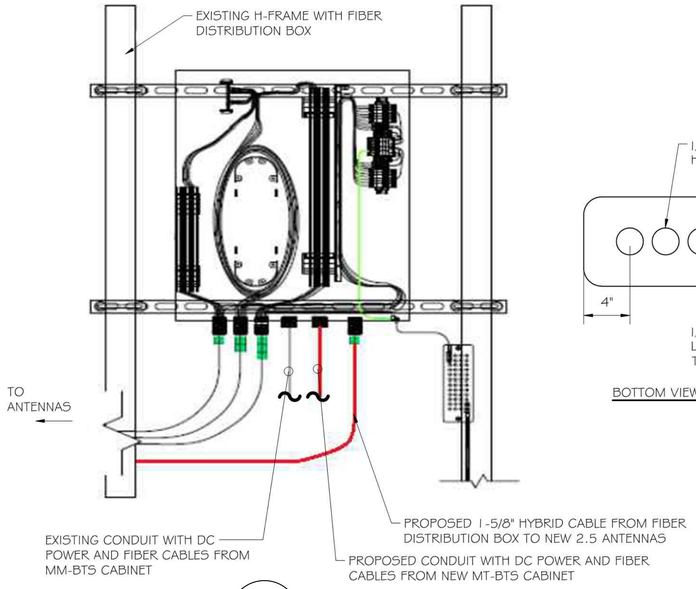
CT03XC030
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

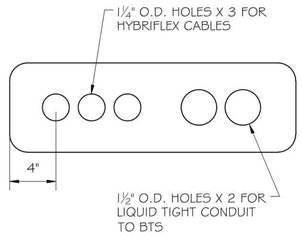
DRAWING TITLE:

CONSTRUCTION DETAILS

DRAWING SHEET: 5 OF 10

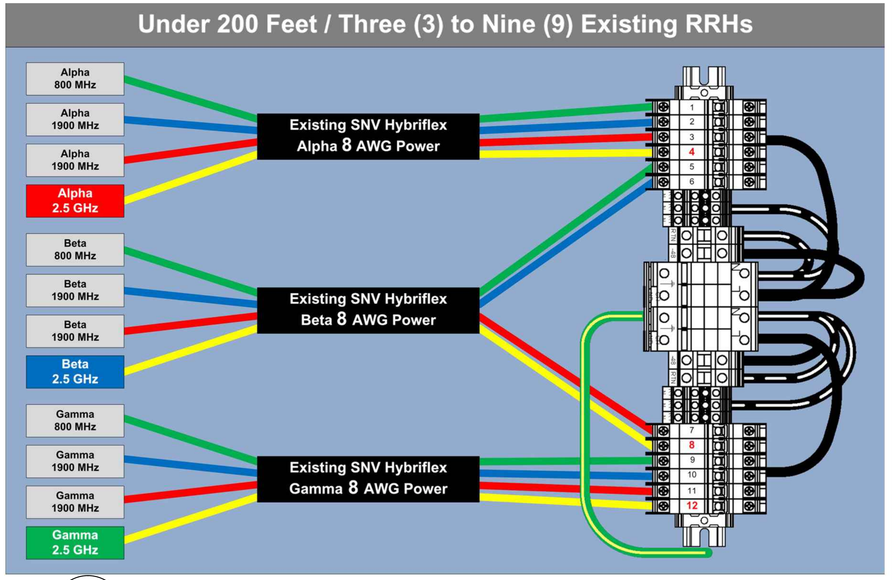
C-4



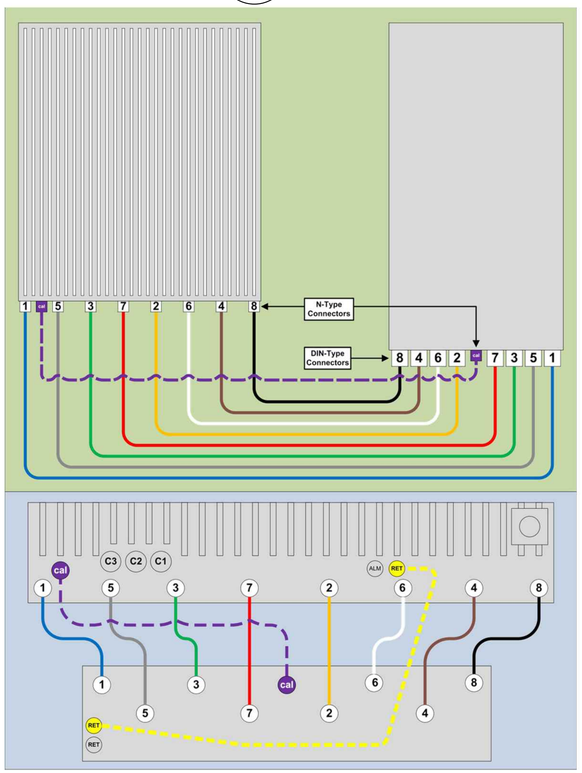


BOTTOM VIEW - FIBER DISTRIBUTION BOX

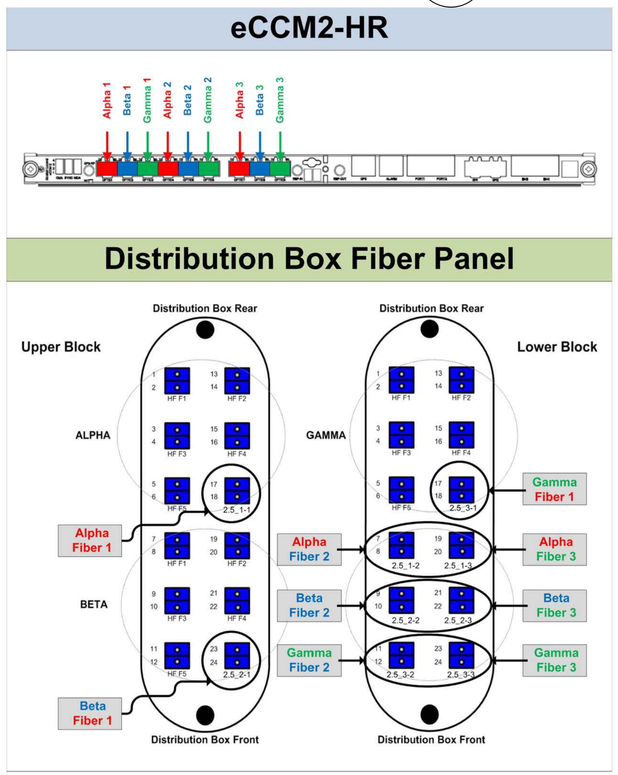
1 / C-5 TYPICAL FIBER DISTRIBUTION BOX DETAIL
SCALE: NTS



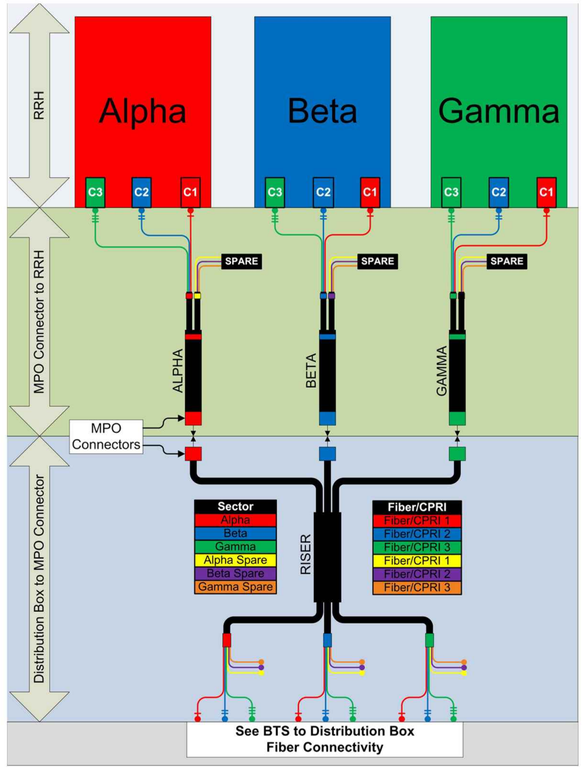
2 / C-5 RRH TO DISTRIBUTION BOX POWER CONNECTIVITY DETAIL
SCALE: NTS



3 / C-5 8T8R DETAIL
SCALE: NTS



4 / C-5 BTS TO DISTRIBUTION BOX FIBER CONNECTIVITY DETAIL
SCALE: NTS



5 / C-5 RRH TO DISTRIBUTION BOX FIBER CONNECTIVITY DETAIL
SCALE: NTS

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DRAWING TITLE:

FIBER PLUMBING DIAGRAM

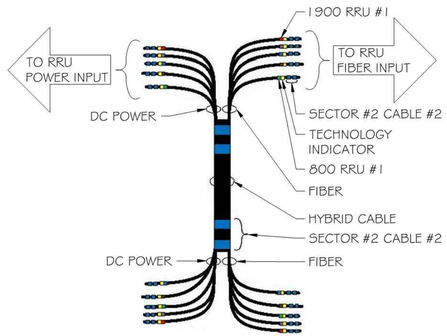
DRAWING SHEET: 6 OF 10

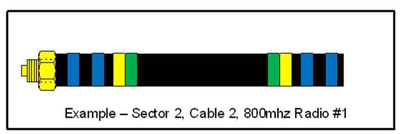
C-5

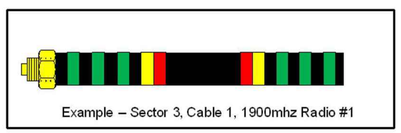
2.5 FREQUENCY	INDICATOR		ID
2500 -1	YEL	WHT	GRN
2500 -2	YEL	WHT	RED
2500 -3	YEL	WHT	BRN
2500 -4	YEL	WHT	BLU
2500 -5	YEL	WHT	SLT
2500 -6	YEL	WHT	ORG
2500 -7	YEL	WHT	WHT
2500 -8	YEL	WHT	PPL

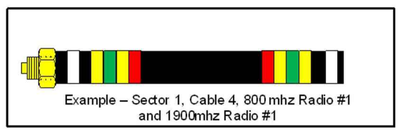
NV FREQUENCY	INDICATOR	ID
800-1	YEL	GRN
1900-1	YEL	RED
1900-2	YEL	BRN
1900-3	YEL	BLU
1900-4	YEL	SLT
800-1	YEL	ORG
RESERVED	YEL	WHT
RESERVED	YEL	PPL

Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
1	2	Blue	No Tape	No Tape
1	3	Brown	No Tape	No Tape
1	4	White	No Tape	No Tape
1	5	Red	No Tape	No Tape
1	6	Grey	No Tape	No Tape
1	7	Purple	No Tape	No Tape
1	8	Orange	No Tape	No Tape
2 Beta	1	Green	Green	No Tape
2	2	Blue	Blue	No Tape
2	3	Brown	Brown	No Tape
2	4	White	White	No Tape
2	5	Red	Red	No Tape
2	6	Grey	Grey	No Tape
2	7	Purple	Purple	No Tape
2	8	Orange	Orange	No Tape
3 Gamma	1	Green	Green	Green
3	2	Blue	Blue	Blue
3	3	Brown	Brown	Brown
3	4	White	White	White
3	5	Red	Red	Red
3	6	Grey	Grey	Grey
3	7	Purple	Purple	Purple
3	8	Orange	Orange	Orange




Example – Sector 2, Cable 2, 800mhz Radio #1


Example – Sector 3, Cable 1, 1900mhz Radio #1


Example – Sector 1, Cable 4, 800 mhz Radio #1 and 1900mhz Radio #1

1 / C-6 COLOR CODING CHARTS
SCALE: NTS

CABLE MARKING NOTES

1. ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.
2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAKOUT UNIT. THERE SHALL BE 1" SPACE BETWEEN EACH RING.
3. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.
4. THE 2" COLORED TAPE(S) SHALL BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.
5. SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE SECOND CABLE IDENTIFIED BY BLUE BANDS OF TAPE
6. HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.
7. HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.
8. INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

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SCALE:	AS NOTED
JOB NO:	17042-CHE

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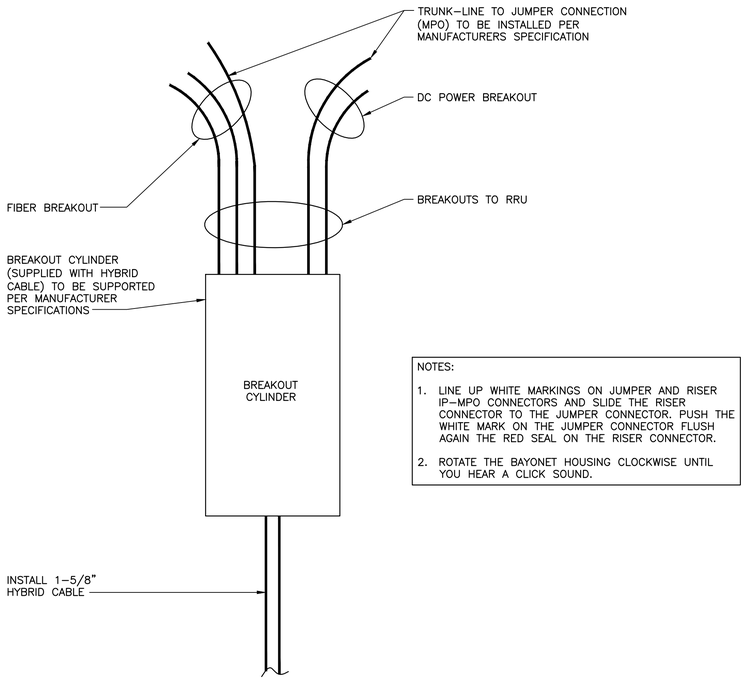
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

DRAWING TITLE:

CABLE COLOR CODING

DRAWING SHEET: 7 OF 10

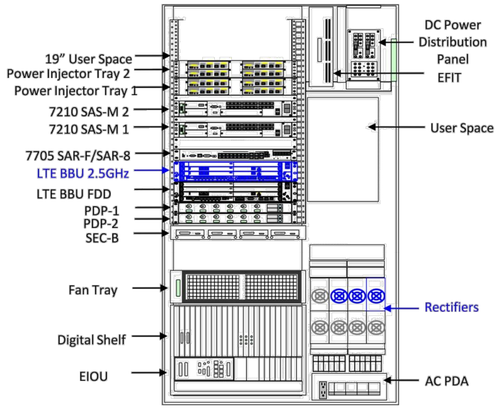
C-6



NOTES:

1. LINE UP WHITE MARKINGS ON JUMPER AND RISER IP–MPO CONNECTORS AND SLIDE THE RISER CONNECTOR TO THE JUMPER CONNECTOR. PUSH THE WHITE MARK ON THE JUMPER CONNECTOR FLUSH AGAIN THE RED SEAL ON THE RISER CONNECTOR.
2. ROTATE THE BAYONET HOUSING CLOCKWISE UNTIL YOU HEAR A CLICK SOUND.

1 / C–7 HYBRID BREAKOUT DETAIL
SCALE: NTS



2 / C–7 EXISTING MMBS CABINET
SCALE: NTS

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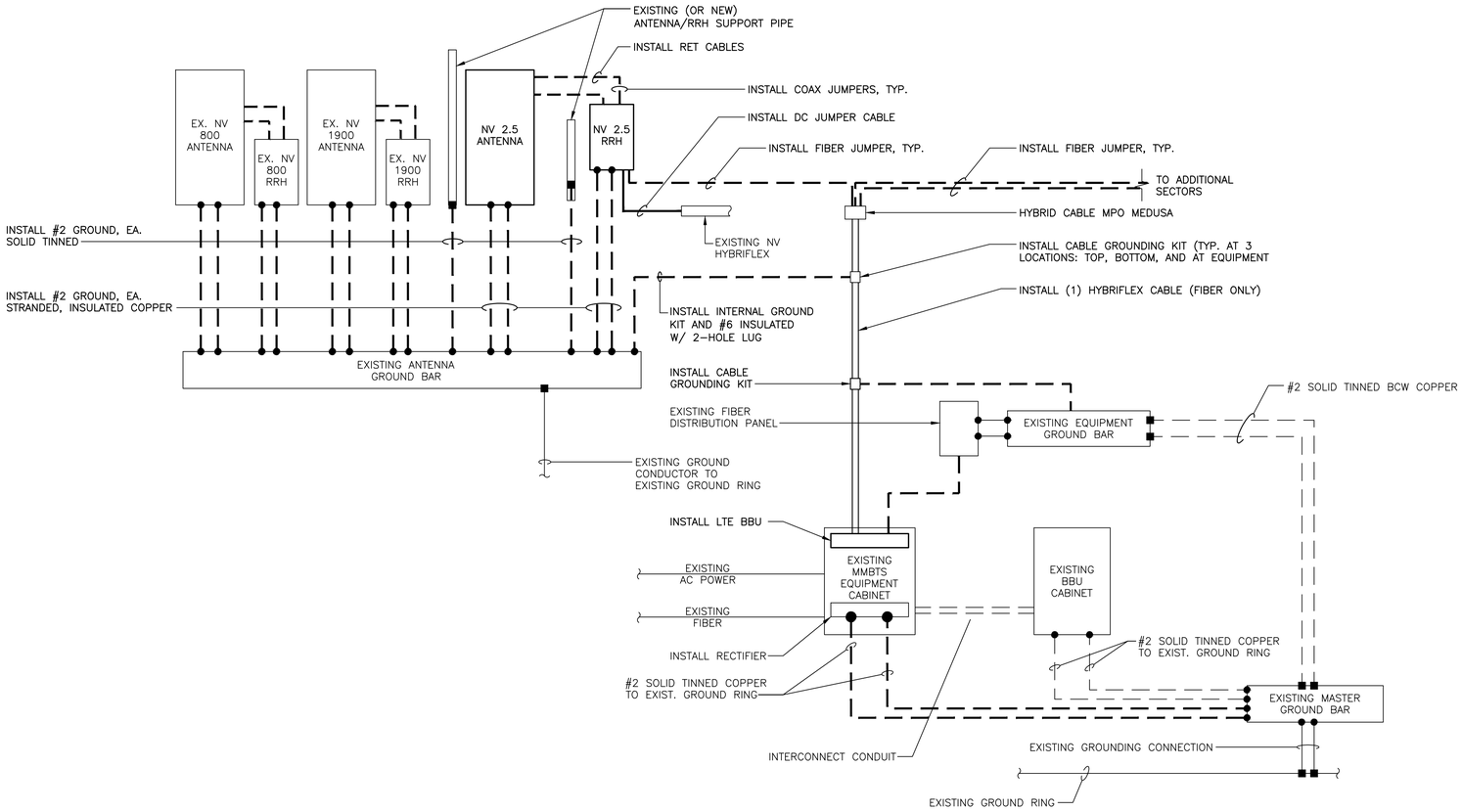
DRAWING TITLE:

EQUIPMENT DETAILS

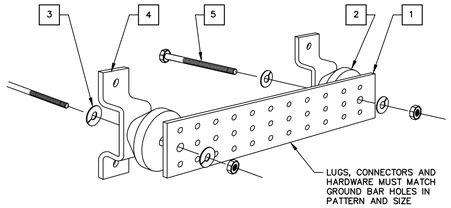
DRAWING SHEET: 8 OF 10

C-7



1 E-1 TYPICAL POWER & GROUNDING ONE-LINE DIAGRAM

SCALE: N.T.S.



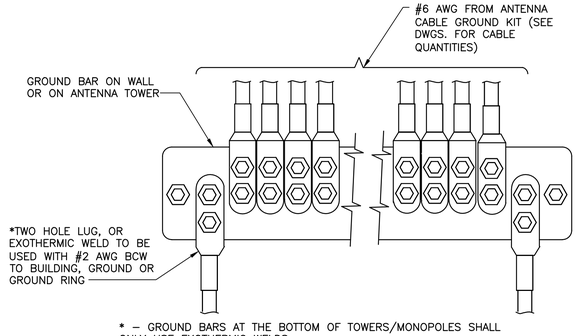
LEGEND

1. COPPER GROUND BAR, 7/16"X 4" X 20", NEWTON INSTRUMENT CO. CAT. NO. B-6142. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
5. 5/8-11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

GROUND BAR SCHEDULE				
TYPE	QTY.	MANUFACTURER	CAT. NO.	REMARKS
MGB	2	HARGER	GB14420TMGB	OR EQUAL
CGB	3	HARGER	GB14412TMGB	OR EQUAL

2 E-1 TYPICAL GROUND BAR DETAIL

SCALE: NTS



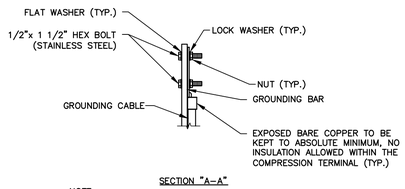
* - GROUND BARS AT THE BOTTOM OF TOWERS/MONOPOLES SHALL ONLY USE EXOTHERMIC WELDS.

- ATTACH "DO NOT DISCONNECT" LABELS TO GROUND BARS. CAN USE BRASS TAG "DO NOT DISCONNECT" AT EACH HYBRIFLEX GROUND POINT OR BACK-A-LITE PLATE LABEL ON GROUND BAR.

- CONNECT SEQUENCE- BOLT/WASHER/NO-OX/GROUND BAR/NO-OX/WASHER/LOCK-WASHER/NUT. THIS IS REPEATED FOR EACH LUG CONNECTION POINT.

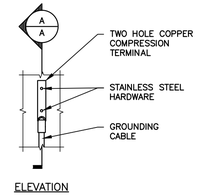
3 E-1 TYPICAL GROUND BAR CONNECTION PLAN

SCALE: NTS



SECTION "A-A"

NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.



ELEVATION

4 E-1 TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: NTS

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
4. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
5. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THNN INSULATION.
6. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
7. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
8. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
9. GROUNDING SHALL COMPLY WITH NEC ART. 250.
10. GROUND HYBRIFLEX CABLE SHIELDS AT 3 LOCATIONS USING MANUFACTURER'S HYBRIFLEX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
11. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
12. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
13. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
14. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
15. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
16. BOND ANTENNA MOUNTING BRACKETS, HYBRIFLEX CABLE GROUND KITS, AND RRHs TO EGB PLACED NEAR THE ANTENNA LOCATION.
17. BOND ANTENNA EGB'S AND MGB TO GROUND RING.
18. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULT FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
19. CONTRACTOR SHALL CONDUCT ANTENNA, HYBRIFLEX CABLES, AND RRH RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
20. CONTRACTOR (CERTIFIED ELECTRICIAN) SHALL CHECK CAPACITY OF EXISTING SERVICE & PANEL ON SITE TO DETERMINE IF CAPACITY EXISTS TO ACCOMMODATE THE ADDED LOAD OF THIS PROJECT. ADVISE ENGINEER OF ANY DISCREPANCY.

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Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	09/25/17	ISSUED FOR CONSTRUCTION
1	08/16/17	REVISED PER NEW RFDS
0	05/17/17	INITIAL SUBMISSION

DRAWN BY:	AM
CHECKED BY:	DTS
SCALE:	AS NOTED
JOB NO:	17042-CHE

INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR CONSTRUCTION PURPOSE UNLESS ACCOMPANIED BY THE EMBOSSED SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

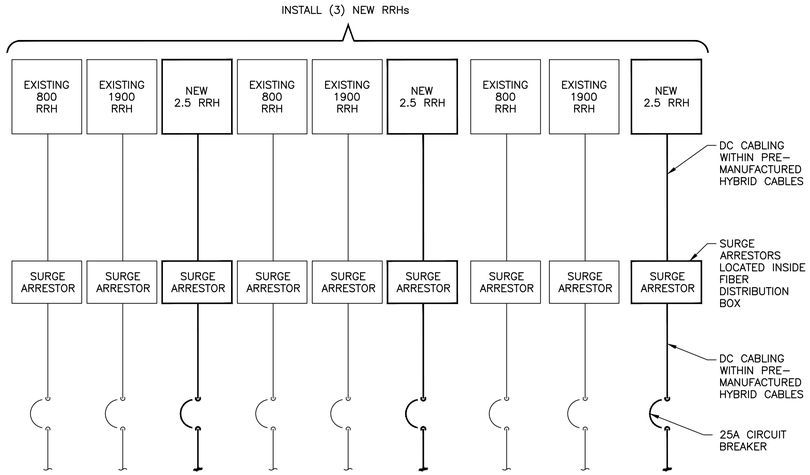
CT03XC030
88 PARSONAGE HILL ROAD
NORTHFORD, CT 06472
NEW HAVEN COUNTY

DRAWING TITLE:

GROUNDING DETAILS

DRAWING SHEET: 9 OF 10

E-1



1 / E–2 DC ONE–LINE DIAGRAM
SCALE: NTS

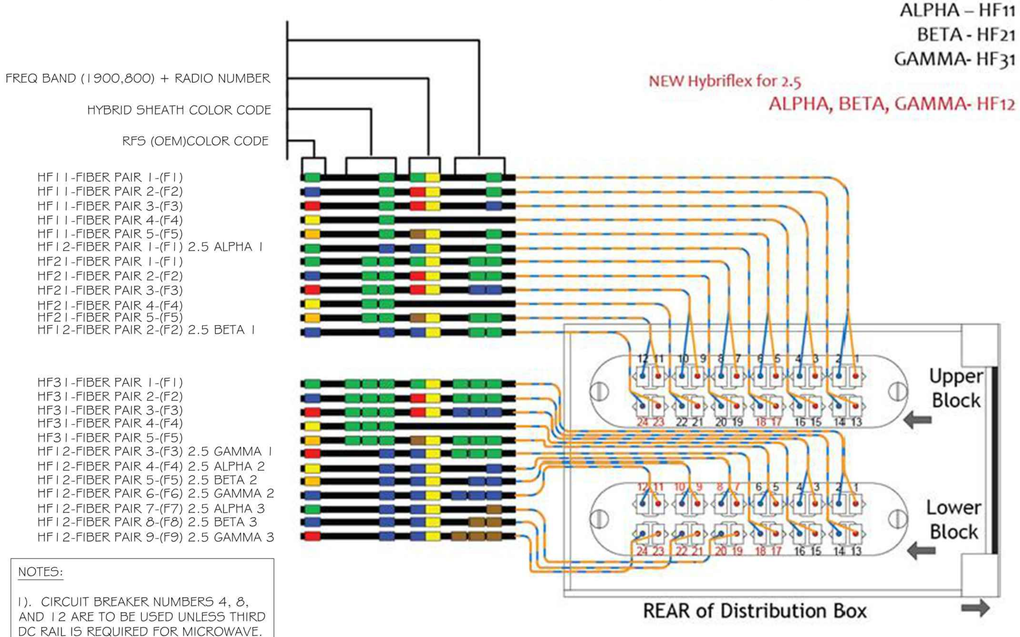
A/C PANEL SCHEDULE						
VOLTAGE:	240V/120		PANEL STATUS:	EXISTING	N TO GROUND BOND:	YES
MAIN BREAKER:	200 AMP		MODEL NUMBER:	TBD	INTERNAL TVSS:	YES
MOUNT:	AT GRADE		PHASE:	1	WIRE:	3
ENCLOSURE:	NEMA 3R		BUSS RATING:	200 AMP	GROUND BAR:	YES
			NEUTRAL BAR:	YES		

2 / E–2 AC PANEL SCHEDULE
SCALE: NTS

Each sector has separate Hybriflex cable .
Hybriflex cable naming as follows:

ALPHA – HF11
BETA - HF21
GAMMA- HF31

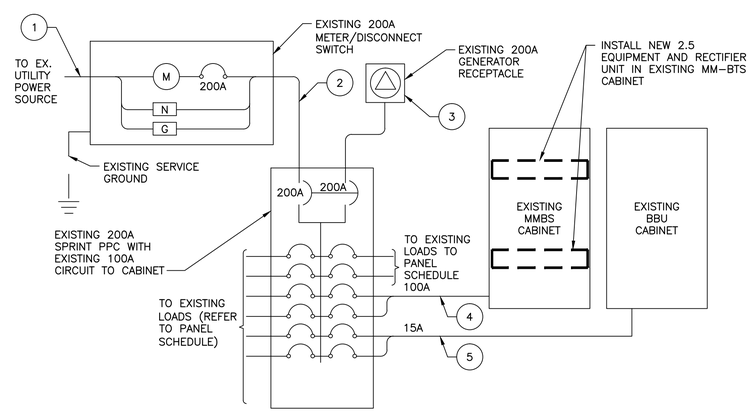
NEW Hybriflex for 2.5
ALPHA, BETA, GAMMA- HF12



NOTES:

1). CIRCUIT BREAKER NUMBERS 4, 8, AND 12 ARE TO BE USED UNLESS THIRD DC RAIL IS REQUIRED FOR MICROWAVE.
2). USE DC POWER LOOP.
3). ALL UNUSED DC FEEDERS TO BE TERMINATED WITH WIRE NUTS AND TAPED.
4). REMOVE ALL DEBRIS FROM INTERIOR OF FIBER DISTRIBUTION BOX WHEN COMPLETE.

3 / E–2 TYPICAL FIBER DISTRIBUTION
SCALE: NTS



CIRCUIT SCHEDULE			
NO.	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/ DISCONNECT	EXISTING
2	METER/ DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	EX. MMBS CABINET	(3) #2 AWG, (1) #8 GND IN 1–1/2" CONDUIT
5	TRANSFER & LOAD CENTER	EX. BBU CABINET	(2) #12 AWG, (1) #12 GND IN 3/4" CONDUIT

4 / E–2 ELECTRICAL ONE–LINE DIAGRAM
SCALE: NTS

COM-EX Consultants
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NEW HAVEN COUNTY

DRAWING TITLE:

DC POWER DETAILS & PANEL SCHEDULES

DRAWING SHEET: **10 OF 10**

E-2