

May 28, 2020

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification
3965 Congress Street, Fairfield, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 80-foot level of the existing 150-foot tower adjacent to the Fairfield Fire Department at 6935 Congress Street in Fairfield, Connecticut (the “Property”). The tower and underlying property are owned by the Town of Fairfield. The Town of Fairfield approved the existing fire department tower in 1994. The Council approved Cellco’s shared use of the tower in 2004. A copy of the Town’s 1994 approval for the tower and Council’s 2004 exempt modification approval of the Cellco installation are included in Attachment 1.

Cellco now intends to modify its facility by removing nine (9) existing antennas and three (3) remote radio heads (“RRHs”) and installing six (6) new antennas, six (6) new RRHs and three (3) antenna/RRH integrated units. The existing antenna mounts will be reinforced as part of these proposed facility modifications. A set of project plans showing the proposed facility modifications and the specifications for Cellco’s new antennas, RRHs and antenna/RRH integrated units are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Fairfield’s First Selectwoman, Brenda Kupchick; and James Wendt, Fairfield’s Planning Director.

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

20790576-v1

Melanie A. Bachman, Esq.

May 28, 2020

Page 2

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas, RRHs, and antenna/RRH integrated units will be installed at the 80-foot level on the 150-foot tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

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

4. The installation of new antennas, RRHs and antenna/RRH integrated units will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for the modified facility is included in Attachment 3.

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

6. The tower, its foundation and antenna mounts, with certain modifications, can support Cellco's proposed facility modifications. (See Structural Analysis Report included in Attachment 4 and Mount Structural Analysis Report included in Attachment 5).

A copy of the parcel map and Property owner information is included in Attachment 6. A Certificate of Mailing verifying that this filing was sent to municipal officials is included in Attachment 7.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Brenda Kupchick, Fairfield First Selectwoman

James Wendt, Fairfield Planning Director

Tim Parks

ATTACHMENT 1

Return



Town of Fairfield
Town Planning and Zoning Department

Zoning Compliance Permit

Hse Num: 3965 Street: Congress Street Map: 170 Parcel: 41 - Unit: 0000 Permit # 23333

Zone: AAA FIRM: Date: 05/25/1994 Occupancy/Use: per plans Receipt # 0

Description: 10' x 30' equipment shelter + 150' antenna

Applicant: Fairfield Town Of

State Fee: \$30.00

Town Fee: \$50.00

Total: \$80.00

Print Date: 07/16/2019

Return



Town of Fairfield
Town Planning and Zoning Department

Zoning Compliance Permit

Hse Num: 3965 Street: Congress Street Map: 170 Parcel: 41 - Unit: 0000 Permit # 26289

Zone: AAA FIRM: Date: 05/27/1998 Occupancy/Use: per plans Receipt # 0

Description: 9 1/2' x 11' concrete equipment pad & 9 new antennas on exist pole

Applicant: Town of Fairfield

State Fee: \$30.00

Town Fee: \$50.00

Total: \$80.00

Print Date: 07/16/2019



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us

www.ct.gov/csc

May 21, 2004

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-051-040427** - Celco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 3965 Congress Street, Fairfield, Connecticut

Dear Attorney Baldwin:

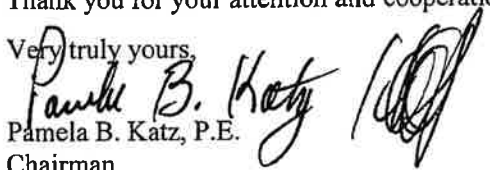
At a public meeting held on May 19, 2004, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the recommendations on pages three and four of the structural analysis report sealed by Jim Walker, P.E. be implemented prior to the antenna installation.

The proposed modifications are to be implemented as specified here and in your notice dated April 27, 2004. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,


Pamela B. Katz, P.E.

Chairman

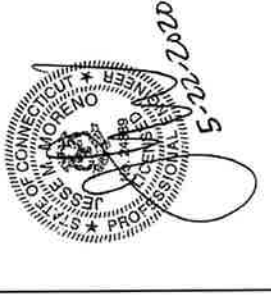
PBK/laf

c: Honorable Kenneth A. Flatto, First Selectman, Town of Fairfield
Joseph E. Devonshuk, Town Planner, Town of Fairfield
Thomas F. Flynn III, Nextel Communications, Inc.
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
Michele G. Briggs, Southwestern Bell Mobile Systems, LLC
Stephen J. Humes, Esq., LeBoeuf Lamb Greene & MacRae LLP
Christopher B. Fisher, Esq., Cuddy & Feder LLP

ATTACHMENT 2

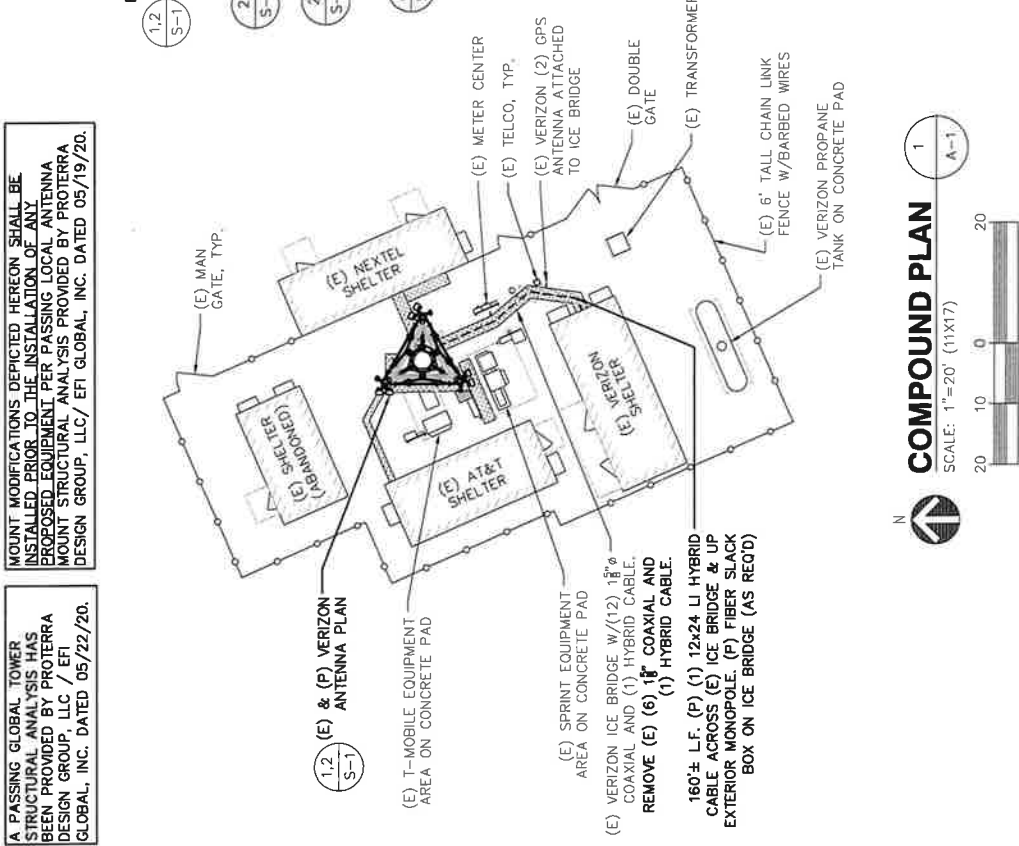
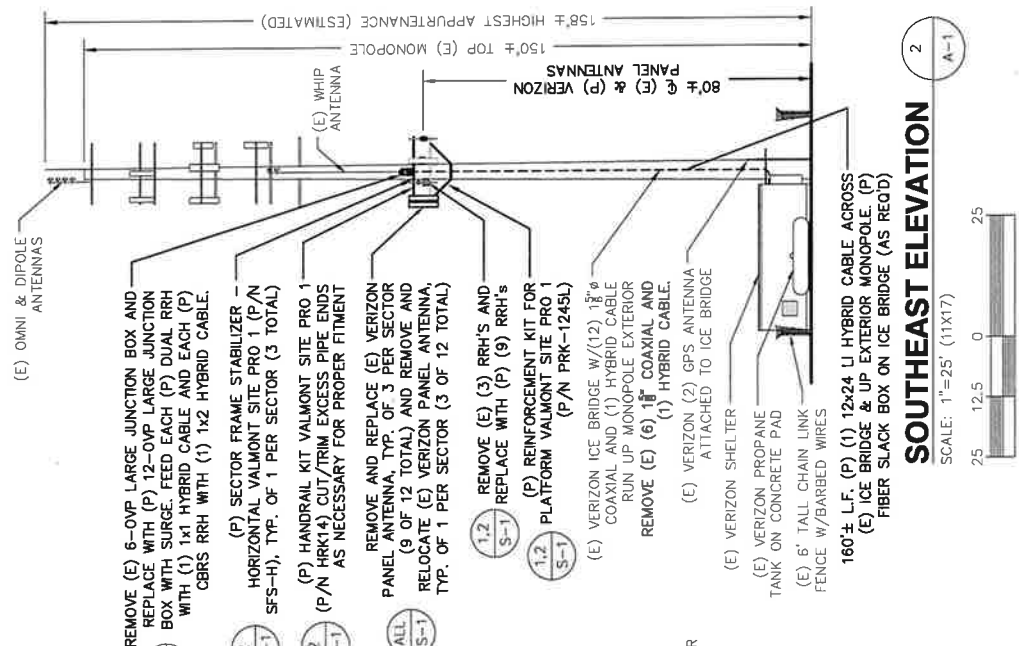
A PASSING GLOBAL TOWER STRUCTURAL ANALYSIS HAS BEEN PROVIDED BY PROTERRA DESIGN GROUP, LLC / EFI GLOBAL, INC. DATED 05/22/20.

MOUNT MODIFICATIONS DEPICTED HEREON SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF ANY PROPOSED EQUIPMENT PER PASSING LOCAL ANTENNA MOUNT STRUCTURAL ANALYSIS PROVIDED BY PROTERRA DESIGN GROUP, LLC / EFI GLOBAL, INC. DATED 05/19/20.



GENERAL NOTES

- VERIFY COAX CONFIGURATION, ANTENNA CONFIGURATION, AND ANTENNA HEIGHT WITH LATEST RF DATA SHEET PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL SCHEDULE AND SEQUENCE ALL REQUIRED WORK WITH THE OWNER'S REPRESENTATIVE AND CONSTRUCTION MANAGER.
- REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER.
- DIRECT THE PROJECT THROUGH CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND SEQUENCE MEANS, METHODS, TECHNIQUES, AND PROCEDURES FOR THE WORK.
- ANTENNAS & EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS & GLOBAL STRUCTURAL ANALYSIS OF TOWER (BY OTHERS) REPLACE AND/OR REUSE (E) MOUNTING HARDWARE, INSPECT FOR DAMAGE, AND REPLACE AS NECESSARY TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND ENGINEER.
- EQUIPMENT LOCATIONS AND CONDITIONS TO BE FIELD VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAME.
- NORTH SHOWN IS APPROXIMATE. NOT ALL (E) OR (P) IMPROVEMENTS ARE SHOWN FOR CLARITY.
- MATCH EXISTING ANTENNA TIP ELEVATIONS AS ZONING OR FAA APPROVALS DICTATE.



DESIGNED BY:	JWG/JMM	JOB #:	17-017
DRAWN BY:	TBD	REV. #	1
DATE:	05/22/20	A-1	
SHEET:	1 OF 5		

REVISIONS	
0	PER RFDS DATED SEPTEMBER 19, 2019
1	PER RFDS DATED MAY 12, 2020

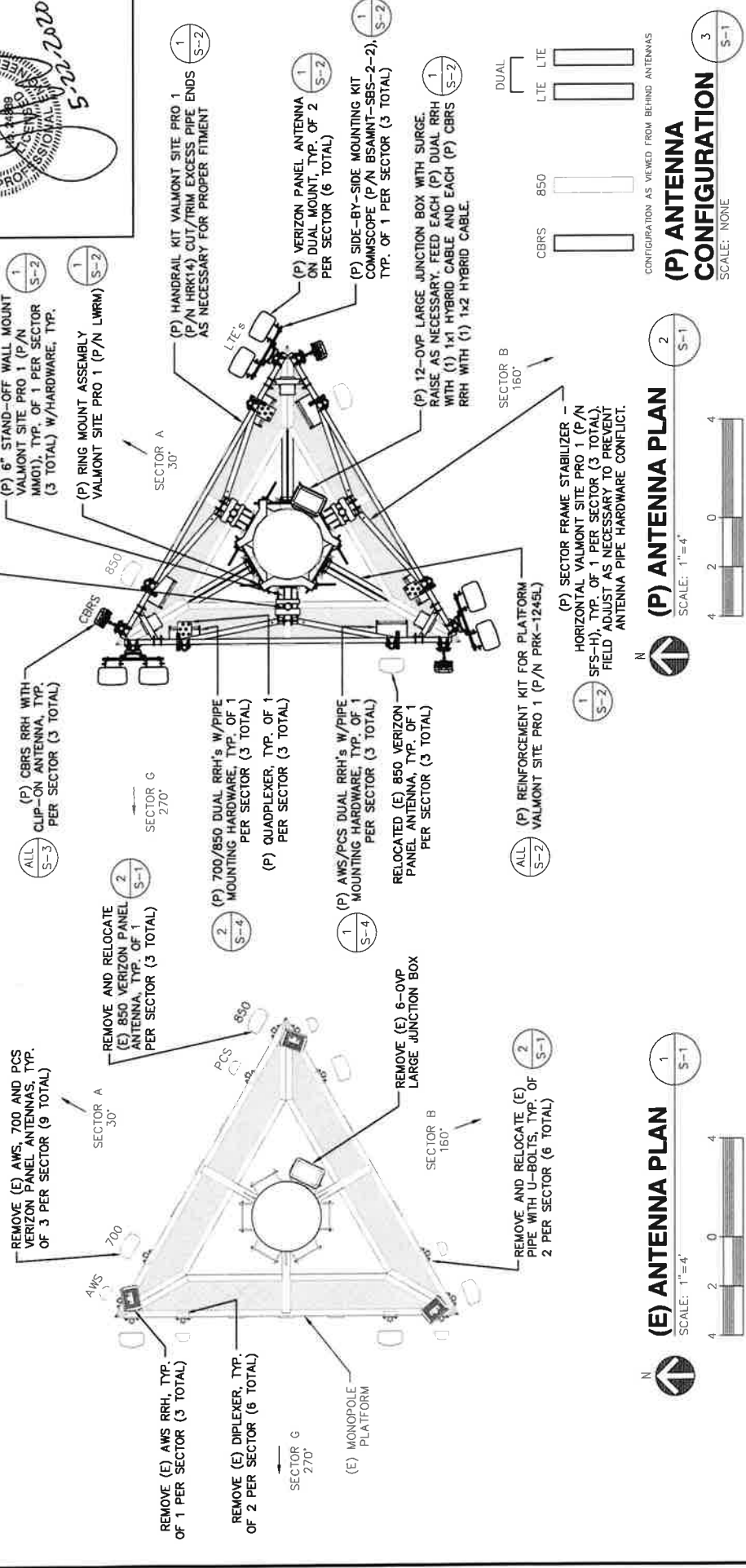
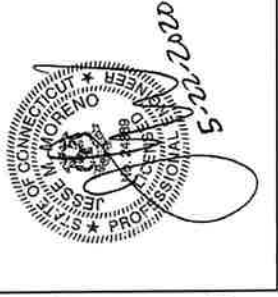
FAIRFIELD CT
PCS/850 LTE/CBRS ADD
LOCATION CODE 467147
 FIRE STATION 5
 3965 CONGRESS STREET
 FAIRFIELD, CT 06824



20 ALEXANDER DRIVE
 WALLINGFORD, CT 06492

ProTerra
 DESIGN GROUP, LLC
 4 Boy Road
 Building A, Suite 200
 Haverhill, MA 01035
 (413)320-4918

MOUNT MODIFICATIONS DEPICTED HEREON SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF ANY PROPOSED EQUIPMENT PER PASSING LOCAL ANTENNA MOUNT STRUCTURAL ANALYSIS PROVIDED BY PROTERRA DESIGN GROUP, LLC/ ETI GLOBAL, INC. DATED 05/19/20.



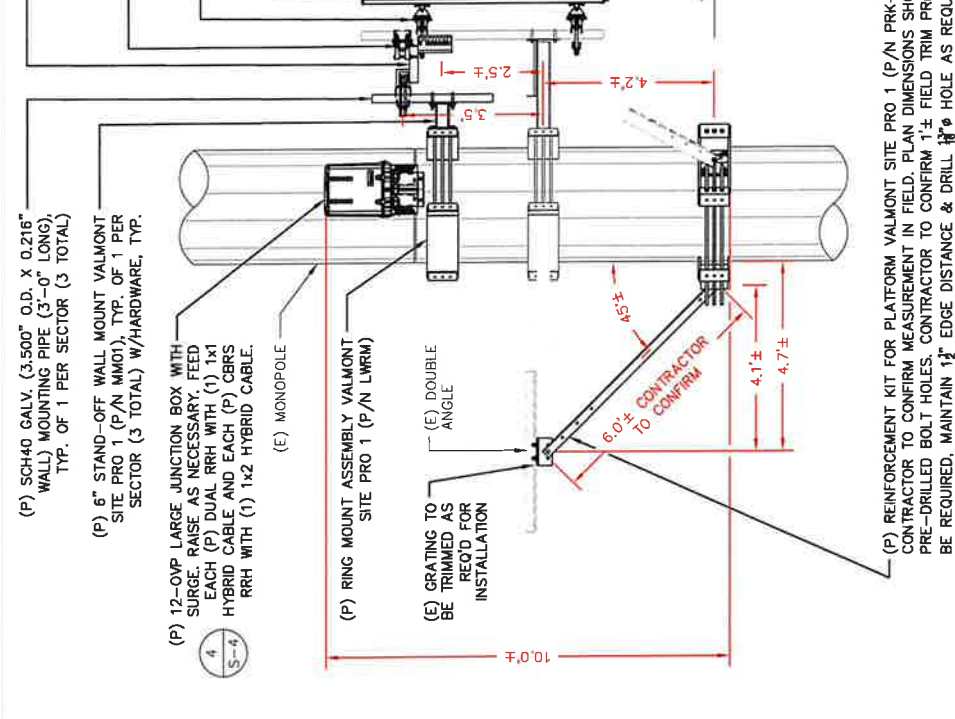
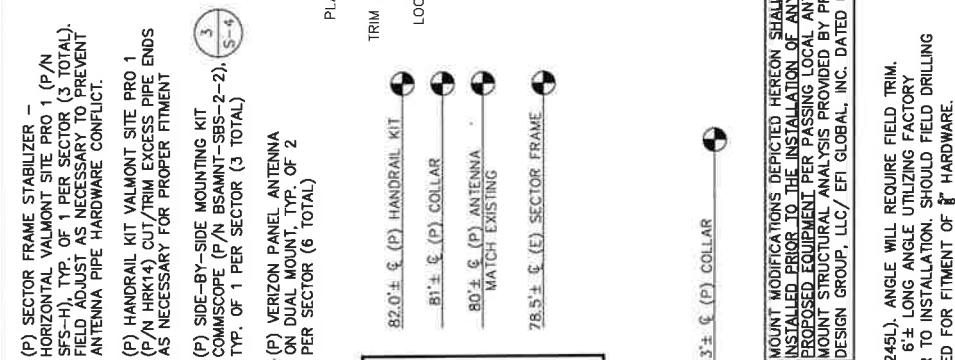
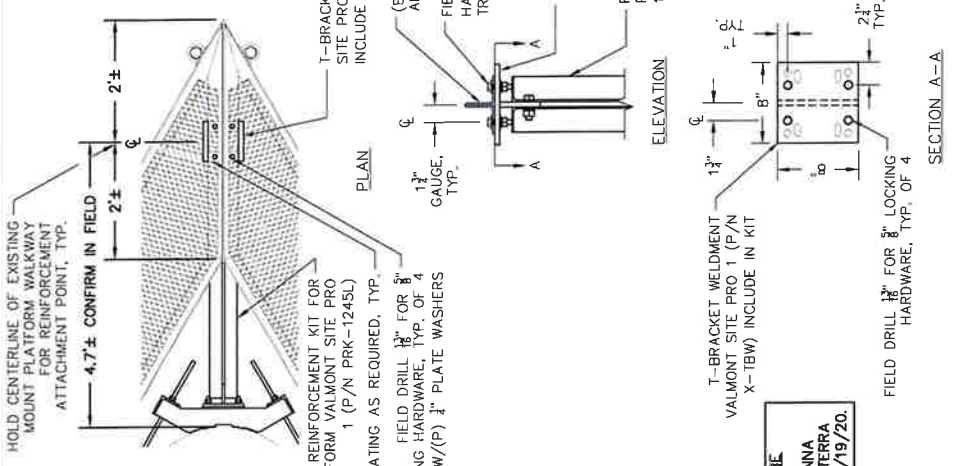
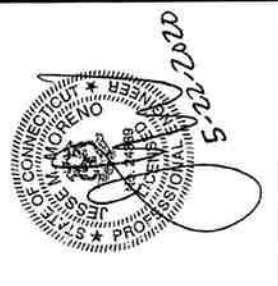
(E) ANTENNA PLAN
SCALE: 1"=4'

(P) ANTENNA PLAN
SCALE: 1"=4'



(P) ANTENNA CONFIGURATION
SCALE: NONE

ProTerra DESIGN GROUP, LLC 4 Boy Road Building A, Suite 200 Healey, MA 01035 (413)320-4918	verizon 20 ALEXANDER DRIVE WALLINGFORD, CT 06492	FAIRFIELD 2 CT PCS/850 LTE/CBRs ADD LOCATION CODE 467147 FIRE STATION 5 3965 CONGRESS STREET FAIRFIELD, CT 06824		DESIGNED BY: JWG/JMM JOB #: 17-017
		REVISIONS 0 PER RFDS DATED SEPTEMBER 19, 2019 1 PER RFDS DATED MAY 12, 2020	DRAWN BY: TBD REV. #: 1	DATE: 05/22/20 SHEET: 2 OF 5



- (P) SECTOR FRAME STABILIZER - HORIZONTAL VALMONT SITE PRO 1 (P/N SFS-H), TYP. OF 1 PER SECTOR (3 TOTAL). FIELD ADJUST AS NECESSARY TO PREVENT ANTENNA PIPE HARDWARE CONFLICT.
- (P) HANDRAIL KIT VALMONT SITE PRO 1 (P/N HRK14) CUT TRIM EXCESS PIPE ENDS AS NECESSARY FOR PROPER FITMENT
- (P) SIDE-BY-SIDE MOUNTING KIT COMSCOPE (P/N BSAMNT-SBS-2-2), TYP. OF 1 PER SECTOR (3 TOTAL) ON DUAL MOUNT, TYP. OF 2 PER SECTOR (6 TOTAL)

- 82.0'± (P) HANDRAIL KIT
- 81'± (P) COLLAR
- 80'± (P) ANTENNA MATCH EXISTING
- 78.5'± (E) SECTOR FRAME

- 74.3'± (P) COLLAR

MOUNT MODIFICATIONS DEPICTED HEREON SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF ANY PROPOSED EQUIPMENT PER PASSING LOCAL ANTENNA MOUNT STRUCTURAL ANALYSIS PROVIDED BY PROTERRA DESIGN GROUP, LLC/ EFI GLOBAL, INC. DATED 05/19/20.

CONTRACTOR TO APPLY COLD GALVANIZING COMPOUND TO ALL FIELD DRILLED, CUT OR EXPOSED AREAS.

(P) ANTENNA MOUNT ELEVATION

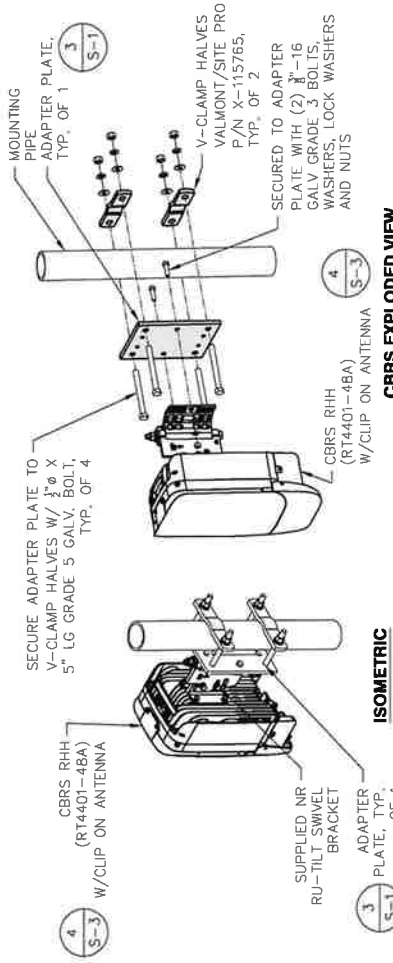
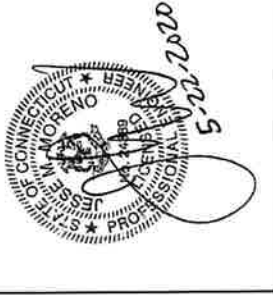
SCALE: NONE

T-BRACKET TO PLATFORM ATTACHMENT DETAIL

SCALE: NONE

<p>DESIGN GROUP, LLC 4 Bay Road Building A, Suite 200 Bedford, MA 01035 (413)320-4918</p>	<p>20 ALEXANDER DRIVE WALLINGFORD, CT 06492</p>	<p>FAIRFIELD 2 CT PCS/850 LTE/CBRS ADD LOCATION CODE 467147 FIRE STATION 5 3965 CONGRESS STREET FAIRFIELD, CT 06824</p>	<p>DESIGNED BY: JWG/JMM JOB #: 17-017</p>								
		<p>REVISIONS</p> <table border="1"> <tr> <td>0</td> <td>PER RFDS DATED SEPTEMBER 19, 2019</td> <td>TBD</td> <td>REV. #:</td> <td>1</td> </tr> <tr> <td>1</td> <td>PER RFDS DATED MAY 12, 2020</td> <td>05/22/20</td> <td>DATE:</td> <td></td> </tr> </table>	0	PER RFDS DATED SEPTEMBER 19, 2019	TBD	REV. #:	1	1	PER RFDS DATED MAY 12, 2020	05/22/20	DATE:
0	PER RFDS DATED SEPTEMBER 19, 2019	TBD	REV. #:	1							
1	PER RFDS DATED MAY 12, 2020	05/22/20	DATE:								

S-2



ISOMETRIC
ADAPTER PLATE, TYP. OF 1

ISOMETRIC
V-CLAMP HALVES VALMONT/SITE PRO P/N X-115765, TYP. OF 2

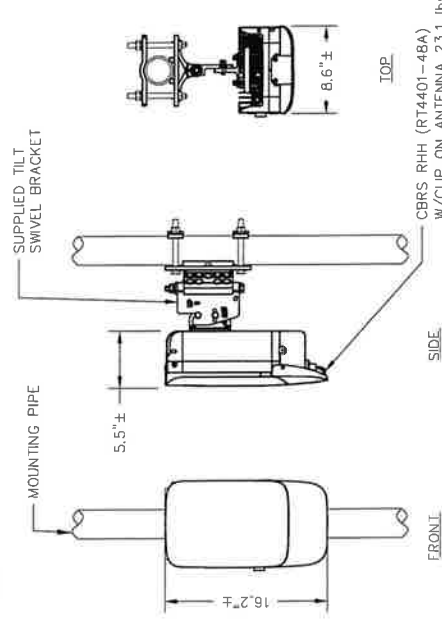
ISOMETRIC
MOUNTING PIPE ADAPTER PLATE, TYP. OF 1

ISOMETRIC
V-CLAMP HALVES VALMONT/SITE PRO P/N X-115765, TYP. OF 2

ISOMETRIC
CBRS RHH (RT4401-48A) W/CLIP ON ANTENNA

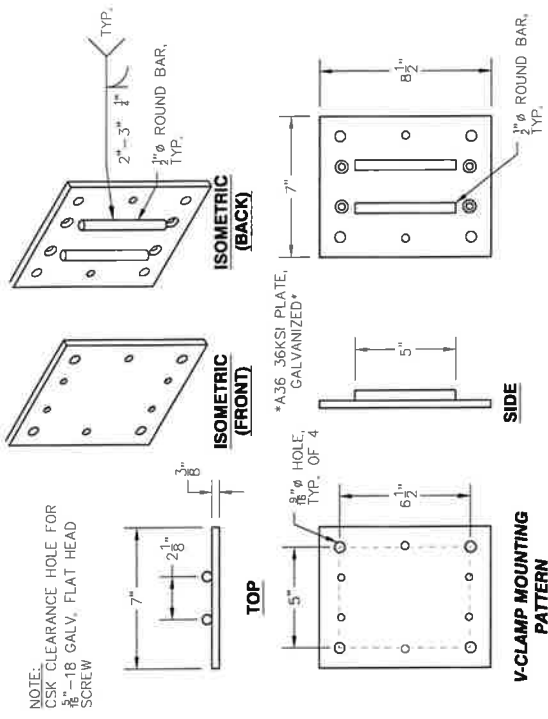
(P) CBRS ANTENNA PIPE MOUNTING DETAIL

SCALE: NONE



(P) CBRS ANTENNA

SCALE: NONE

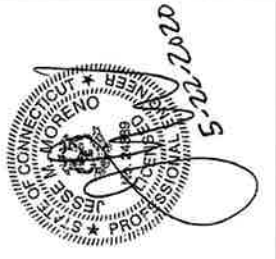


(P) ADAPTER PLATE

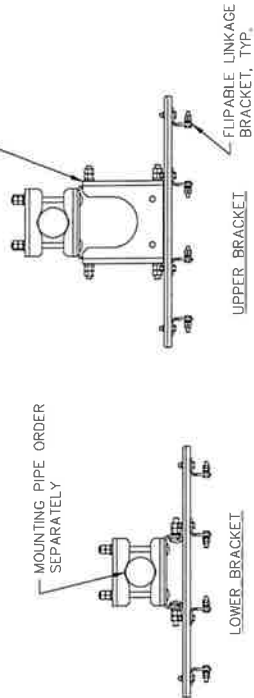
SCALE: NONE



ProTerra DESIGN GROUP, LLC 4 Bay Road Building A, Suite 200 Hadley, MA 01035 (413)320-6918	verizon 20 ALEXANDER DRIVE WALLINGFORD, CT 06492	FAIRFIELD 2 CT PCS/850 LTE/CBRS ADD LOCATION CODE 467147 FIRE STATION 5 3965 CONGRESS STREET FAIRFIELD, CT 06824	DESIGNED BY: JWG/JMM DRAWN BY: TBD DATE: 05/22/20 SHEET: 4 OF 5	JOB #: 17-017 REV. #: 1
		REVISIONS 0 PER RFDS DATED SEPTEMBER 19, 2019 1 PER RFDS DATED MAY 12, 2020	SHEET: 4 OF 5	JOB #: 17-017 REV. #: 1



SIDE-BY-SIDE MOUNTING KIT COMMSCOPE (P/N BSAMNT-SBS-2-2) FOR JAHH ANTENNAS, TYP. OF 1 PER SECTOR (3 TOTAL)

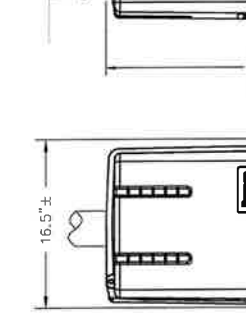


(P) DUAL ANTENNA MOUNTING DETAIL

SCALE: NONE

3
S-4

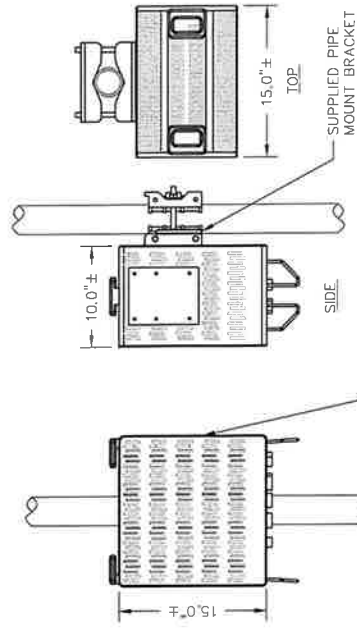
INSTALLATION NOTES:
1. INSTALL ALL EQUIPMENT, MOUNTING BRACKETS, AND HARDWARE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. GROUND DISTRIBUTION BOXES ACCORDANCE WITH MANUFACTURER'S MOUNTING PIPES, AND RRHS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. INSTALL EQUIPMENT AND MOUNTING BRACKETS TO PRESERVE CLIMBING ACCESS ON TOWER.
4. EQUIPMENT TO BE INSTALLED AT VERIZON RAD. CENTER IN ACCORDANCE WITH GLOBAL TOWER STRUCTURAL ANALYSIS AND MOUNT ANALYSIS.



(P) LARGE JUNCTION BOX MOUNTING DETAIL

SCALE: NONE

4
S-4

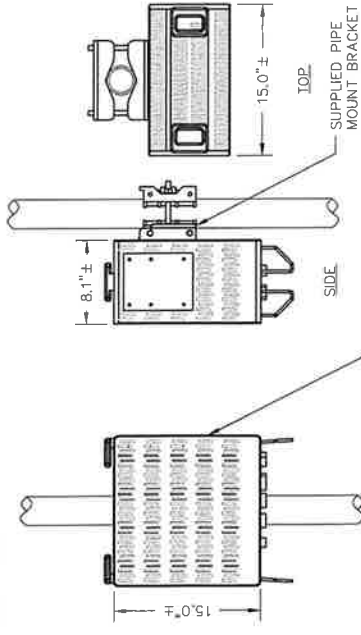


AWS 2100 LTE AND PCS 1900 LTE (B2/B66A RRH) DUAL-BAND RRH 97.5 lbs

(P) AWS/PCS RRH MOUNTING DETAIL

SCALE: NONE

1
S-4



700 LTE AND 850 LTE (B5/B13 RRH) DUAL-BAND RRH 82.0 lbs

(P) 700/850 RRH MOUNTING DETAIL

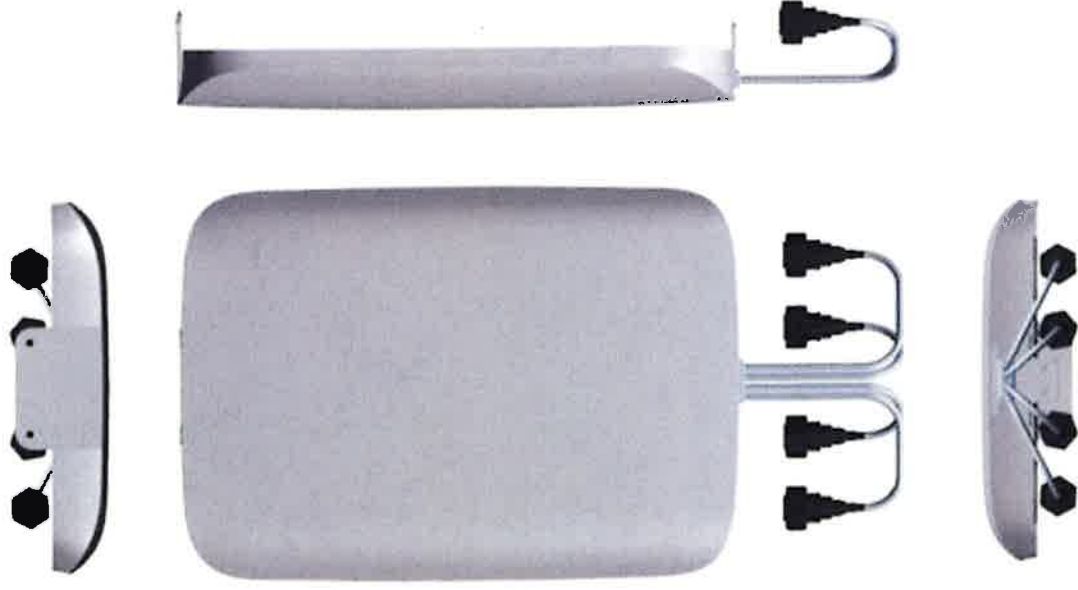
SCALE: NONE

2
S-4

ProTerra DESIGN GROUP, LLC 4 Bay Road Building A, Suite 200 Peasey, MA 01025 (413)320-4918	verizon 20 ALEXANDER DRIVE WALLINGFORD, CT 06492	FAIRFIELD 2 CT PCS/850 LTE/CBRS ADD LOCATION CODE 467147 FIRE STATION 5 3965 CONGRESS STREET FAIRFIELD, CT 06824	REVISIONS 0 PER RFDS DATED SEPTEMBER 19, 2019 1 PER RFDS DATED MAY 12, 2020	DESIGNED BY: JWG/JMM DRAWN BY: TBD DATE: 05/22/20 SHEET: 5 OF 5	JOB #: 17-017 REV. #: 1 S-4
		REVISIONS 0 PER RFDS DATED SEPTEMBER 19, 2019 1 PER RFDS DATED MAY 12, 2020			DESIGNED BY: JWG/JMM DRAWN BY: TBD DATE: 05/22/20 SHEET: 5 OF 5

[CBRS] Clip-on Antenna Specifications

VZW accepted IP45 in FLD, but IP55 is Samsung Spec.

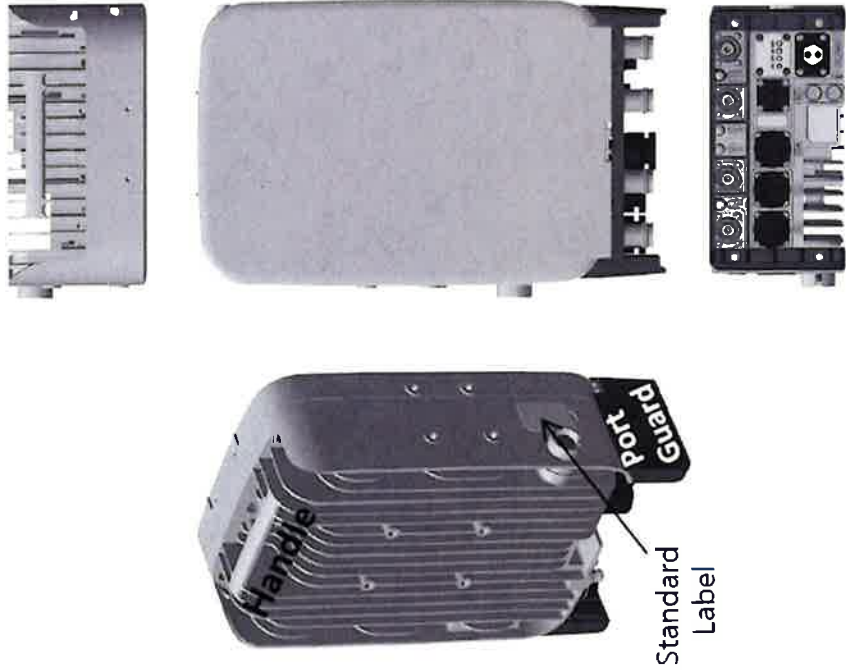


Items	Clip-on Antenna, BASTA**
Antenna Gain	12.5 ± 0.5 dBi (Max 13 dBi)
Horizontal BW (-3dB)	65° ± 5°
Vertical BW (-3dB)	17° ± 3°
Electrical Tilt	8° (fixed) ± 2°
Front-to-Back Ratio	> 25 dB
Port-to-Port Tracking	< 3 dB
VSWR	< 1.5
Isolation	> 25 dB
Ingress Protection	IP55
Size	220(W) × 313(H) × 34.3(D) mm (*) (8.7 × 12.3 × 1.4 inch.)
Weight	< 2.0 kg [Typ. 1.3 kg]
It is required that the radio should be weatherproofed properly with JMA WPS Boot with external antenna or with Weatherproof Boot for clip-on antennas.	

Antenna includes integrated cable with connector
 * Design is subject to minor change

** Ant. spec. follows NGMN recommendations on Base Station Antenna Standards (BASTA). For example, 'mean ± tolerance of 86.6%' is applied to double-sided specification of statistical RF parameters.

[CBRS RRH] Spec.



Standard Label

Current Size: 216 x 307 x 105.5 mm (6.99L)
 (8.5 x 12.1 x 4.1 inch., excluding Port Guard)

Design is subject to minor change

Item	Specification
Band	Band 48 (3.5 GHz)
Frequency	3550~3700 MHz
IBW	150 MHz
OBW	80 MHz
# of Carriers	5/10/15/20 MHz x 4 carriers
RF Chain	4TX / 4RX
RF Output Power & EIRP	4 path x 5 W (Total: 20 W = 43 dBm) (EIRP: 47 dBm / 10 MHz)
RX Sensitivity	Typical : -101.5 dBm @ 1 Rx (3GPP 36.104, Wide Area)
Modulation	256-QAM support (1024-QAM with 1~2dB power back-off) -48 VDC (-38 to -57 VDC, 1 SKU), with clip-on AC-DC converter (Option)
Input Power	
Power Consumption	About 160 Watt @ 100% RF load, typical conditions
Volume	Under 7L (w/o Antenna), Under 9.6L (with antenna)
Weight	Under 8.0 kg (18.64 lb) (w/o Antenna), Under 10.5 Kg (with ant.)
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (W/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 Category A [B48] : FCC 47 CFR 96.41 e)
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, duplex or Bi-Di
CPRI Cascade	Not supported
# of Antenna Port	4
External Alarm (UDA)	4
RET	AISG 2.2
TMA & built-in Bias-T I//F and PIM cancellation	Not supported
Mounting Options	Pole, wall, tower, back to back, side by side (for external ant), 3 RRH with Clip-on Antenna on the pole
Antenna Type	Integrated (Clip-on) antenna (Option), External antenna (Option)
NB-IoT	Not Supported (HW Resource reserved for 1 Guard Band NB-IoT per LTE carrier)
Spectrum Analyzer	TX/RX Support
External Alarm (UDA)	4
5G NR	Support with S/W upgrade
XRAN	Support with S/W upgrade

JAHH-65B-R3B



8-port sector antenna, 2x 698–787, 2x 824–894 and 4x 1695–2360 MHz, 65° HPBW, 3x RET and low bands have diplexers. Internal SBT's on first LB(Port 1) and first HB(Port 5).

- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One RET for 700MHz, one RET for 850MHz, and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO
- Internal filter on low band and interleaved dipole technology providing for attractive, low wind load mechanical package
- Separate RS-485 RET input/output for low and high band

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Effective Projective Area (EPA), frontal	0.28 m ² 3.014 ft ²
Effective Projective Area (EPA), lateral	0.24 m ² 2.583 ft ²
Grounding Type	RF connector body grounded to reflector and mounting bracket
Performance Note	Outdoor usage Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
Radome Material	Fiberglass, UV resistant
Radiator Material	Aluminum Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, low band	4
RF Connector Quantity, total	8

Remote Electrical Tilt (RET) Information, General

RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	2 female 2 male

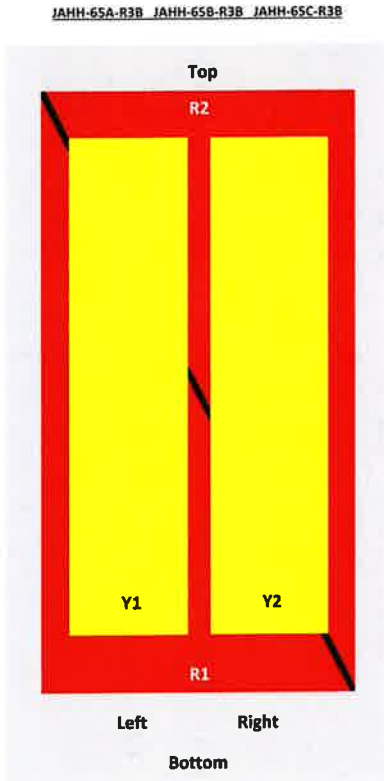
Dimensions

Width	350 mm 13.78 in
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JAHH-65B-R3B

Length 1828 mm | 71.969 in
Depth 208 mm | 8.189 in

Array Layout



Array	Freq (MHz)	Combs	RET (SRFT)	AISG RET UID
R1	698-787	1-2	1	ANXXXXXXXXXXXXXXX1
R2	824-894	3-4	2	ANXXXXXXXXXXXXXXX2
Y1	1695-2360	5-6	3	ANXXXXXXXXXXXXXXX3
Y2	1695-2360	7-8		

View from the front of the antenna
 (Sizes of colored boxes are not true depictions of array sizes)

Electrical Specifications

Impedance 50 ohm
Operating Frequency Band 1695 – 2360 MHz | 698 – 787 MHz | 824 – 894 MHz
Polarization ±45°

Remote Electrical Tilt (RET) Information, Electrical

Protocol 3GPP/AISG 2.0 (Single RET)
Power Consumption, idle state, maximum 2 W

JAHH-65B-R3B

Power Consumption, normal conditions, maximum	13 W
Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 Port 5
Internal RET	High band (1) Low band (2)

Electrical Specifications

Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.5	15.8	18	18.4	18.5	18.8
Beamwidth, Horizontal, degrees	67	65	63	63	65	68
Beamwidth, Vertical, degrees	12.4	10.5	5.7	5.2	4.9	4.4
Beam Tilt, degrees	2–14	2–14	0–10	0–10	0–10	0–10
USLS (First Lobe), dB	18	18	20	20	21	23
Front-to-Back Ratio at 180°, dB	32	34	31	35	36	38
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	30	30	30	30	30	30
VSWR Return loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50° C, maximum, watts	200	200	300	300	300	250

Electrical Specifications, BASTA

Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
Gain by Beam Tilt, average, dBi	2° 14.3 8° 14.3 14° 14.3	2° 15.0 8° 14.9 14° 15.4	0° 17.2 5° 17.6 10° 17.6	0° 17.6 5° 18.2 10° 18.2	0° 17.7 5° 18.3 10° 18.3	0° 17.9 5° 18.7 10° 18.7
Beamwidth, Horizontal Tolerance, degrees	±1.2	±1.4	±4	±2.4	±2.9	±2.7
Beamwidth, Vertical Tolerance, degrees	±0.9	±0.5	±0.3	±0.2	±0.3	±0.1
USLS, beampeak to 20° above beampeak, dB	18	17	17	18	19	18
Front-to-Back Total Power at 180° ± 30°, dB	25	24	26	29	27	29
CPR at Boresight, dB	22	23	20	21	21	24

JAHH-65B-R3B

CPR at Sector, dB 11 12 11 11 11 8

Mechanical Specifications

Wind Loading at Velocity, frontal 301.0 N @ 150 km/h | 67.7 lbf @ 150 km/h
Wind Loading at Velocity, lateral 254.0 N @ 150 km/h | 57.1 lbf @ 150 km/h
Wind Loading at Velocity, maximum 143.4 lbf @ 150 km/h | 638.0 N @ 150 km/h
Wind Speed, maximum 241 km/h | 149.75 mph

Packaging and Weights

Width, packed 456 mm | 17.953 in
Depth, packed 357 mm | 14.055 in
Length, packed 1975 mm | 77.756 in
Net Weight, without mounting kit 29.2 kg | 64.375 lb
Weight, gross 42.5 kg | 93.696 lb

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant/Exempted



Included Products

BSAMNT-3 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance

SAMSUNG

Dual-Band Radio Unit AWS/PCS (B66/B2) RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



The RFV01U-D1A RU targets dual-band support across Band 66 (AWS) and Band 2 (PCS), making it an ideal product for broad coverage footprints across multiple common mid-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation
- Built-in Broadcast Auxiliary Services (BAS) filter ensures compliant AWS operation without impacting footprint

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
B66: DL(2,110-2,180MHz)/UL(1,710-1,780MHz)
B2: DL(1,930-1,990MHz)/UL(1,850-1,910MHz)
Instantaneous Bandwidth:
70MHz(B66) + 60MHz(B2)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 255mm (36.8L)
Weight: 38.3kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

SAMSUNG

Dual-Band Radio Unit 700/850MHz (B13/B5) RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



The RFV01U-D2A RU targets dual-band support across Band 13 (700MHz) and Band 5 (850MHz), making it an ideal product for broad coverage footprints across multiple common low-end, long-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
 B13: DL(746-756MHz)/UL(777-787MHz)
 B5: DL(869-894MHz)/UL(824-849MHz)
Instantaneous Bandwidth: 10MHz(B13) + 25MHz(B5)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 207mm (29.9L)
Weight: 31.9kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

ATTACHMENT 3

Site Name: Fairfield 2 Tower Height: 150 Ft		General	Power	Density	CALC.			MAX. PERMISS	FRACTIO	
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	POWER DENS	FREQ.	EXP.	N	MPE	Total	
*AT&T-UMTS	1	252	127	850	0.0062	0.5667	0.11%			
*AT&T-PCS-UMTS	1	1476	127	700	0.0363	0.4667	0.78%			
*AT&T-PCS-UMTS	1	1000	127	850	0.0246	0.5667	0.43%			
*AT&T-GSM	1	1000	127	850	0.0246	0.5667	0.43%			
*AT&T-LTE	2	3664	127	1900	0.1800	1.0000	1.80%			
*AT&T-PCS-LTE	1	1285	127	2300	0.0316	1.0000	0.32%			
*T-Mobile	2	2308	116	2100	0.1372	1.0000	1.37%			
*T-Mobile	2	2057	116	1900	0.1223	1.0000	1.22%			
*T-Mobile	2	592	116	600	0.0352	0.4000	0.88%			
*T-Mobile	2	649	116	700	0.0386	0.4667	0.83%			
*T-Mobile	4	1102	116	1900	0.1310	1.0000	1.31%			
*T-Mobile	2	1295	116	2100	0.0770	1.0000	0.77%			
*Sprint	1	438	138	850	0.0090	0.5667	0.16%			
*Sprint	2	438	138	850	0.0181	0.5667	0.32%			
*Sprint	5	623	138	1900	0.0643	1.0000	0.64%			
*Sprint	2	1556	138	1900	0.0642	1.0000	0.64%			
*Sprint	8	778	138	2500	0.1285	1.0000	1.28%			
*Sprint	2	795	138	11500	0.0328	1.0000	0.33%			
*Sprint	2	576	150	19500	0.0200	1.0000	0.20%			
*Nextel	18	100	156	851	0.0288	0.5673	0.51%			
*Town	1	40	108	470.46	0.0014	0.3136	0.04%			
*Town	1	40	108	470.47	0.0014	0.3136	0.04%			
*Town	1	40	108	470.48	0.0014	0.3137	0.04%			
VZW PCS	1	1561	80	0.0877	1970	1.0	8.77%			
VZW Cellular LTE	1	500	80	0.0281	869	0.579333	4.85%			
VZW Cellular	1	500	80	0.0281	880	0.58666	4.79%			
VZW AWS	1	1528	80	0.0858	2145	1.0	8.58%			
VZW 700	1	646	80	0.0363	746	0.497333	7.30%			
VZW CBRS	1	50	80	0.0028	746	2.3666	0.12%		48.87%	
* Source: Siting Council										

ATTACHMENT 4

STRUCTURAL ANALYSIS REPORT – REV.1
MONOPOLE TOWER

Prepared For:



Verizon Wireless
118 Flanders Road – Third Floor
Westborough, MA 01581



Structure Rating:

Monopole Tower:	83.2% (Pass)
Base Plate:	50.3% (Pass)
Anchor Bolts:	75.3% (Pass)
Foundation:	72.8% (Pass)

Sincerely,



Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057
EFI Global, Inc.
1117 Perimeter Center West, Suite E500
Atlanta, GA 30338
Tel: (770) 693-0835

Reviewed By:

ProTerra Design Group, LLC



Site Name: Fairfield 2 CT
Location Code: 467147
3965 Congress Street
Fairfield, CT 06824

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1.0 – SUBJECT AND REFERENCES

1.1 – STRUCTURE

2.0 – EXISTING AND PROPOSED APPURTENANCES

3.0 – CODES AND LOADING

4.0 – STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING
STRUCTURES

5.0 – ANALYSIS AND ASSUMPTIONS

6.0 – RESULTS AND CONCLUSION

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A –SOFTWARE OUTPUT

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the 150 ft. monopole tower located at 3965 Congress Street, Fairfield, CT 06824 for the addition and alteration of wireless telecommunication appurtenances proposed by Verizon.

The structural analysis is based on the following documentation provided to Proterra Design Group, LLC. (Proterra):

- Exempt Modification Application prepared by Northeast Site Solutions, dated 09/18/2019.
- Foundation analysis calculation sheet, provided by Tectonic via email dated 11/21/2019.
- RFDS provided by Verizon, dated 05/12/2020.
- Site Photographs, dated 11/05/2019.
- Mount Analysis Report - Rev.1 prepared by EFI Global, Inc., dated 05/19/2020.
- Preliminary Construction Drawings by ProTerra Design Group, LLC., dated 05/12/2020.

1.1 STRUCTURE

The monopole is formed by the following sections:

Section Length (ft.)	Lap Splice (in)	Shaft Thickness (in)	Top Dia./Bottom Dia. (in/in)	Steel Yield Strength (ksi)
44.17	62	0.28130	23.610/33.469	65
53.17	74	0.37500	31.965/41.643	65
54.00	-	0.43750	39.769/49.598	65

- The monopole is 12 sided.
- The monopole has been modified in the past to accommodate additional loading by welding WT shapes to the pole shaft.
- It is connected to the foundation with anchor bolts and a base plate.

2.0 EXISTING AND PROPOSED APPURTENANCES

The analysis is based on the following proposed appurtenances:

Existing Configuration of Verizon Appurtenances:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
80.0	(3) Antel BXA-70063-6CF-2-850MHZ (3) Antel BXA-70063-6CF-2-750MHZ (3) Antel BXA-171063-12CF-EDIN-2 (3) Antel BXA-171063 (3) Alcatel lucent RRH2x40-AWS (1) 6-OVP Box	(12) 1-5/8" (1) 1-1/4"	(1) 14' Low Profile Platform

Proposed and Final Configuration of Verizon Appurtenances:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
80.0	(3) BXA-70063-6CF-850MHz (6) Andrew JAHH-65B-R3B (3) CBRS Antenna and RRH – RT4401-48A (3) B5/B13 RRH* (3) B2/B66A RRH* (3) CBC78T-DS-43-2X (1) 12-OVP Box	(6) 1-5/8" (1) 12x24 Hybrid	(1) 14' Low Profile Platform w/ (3) Proposed 3.5"x0.216" – 3' Long pipe (3) Proposed Valmont Sitepro1 – MM01 (3) Proposed Commscope – BSAMNT-SBS-2-2 (3) Proposed Valmont Sitepro1 – SFS-H (1) Proposed Valmont Sitepro1 – LWRM (1) Proposed Valmont Sitepro1 – HRK14 (1) Proposed Valmont Sitepro1 – PRK1245-L

*Proposed RRUs to be mounted behind the antennas.

Existing Appurtenances by Others:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
154.0	(2) 1.5"x10 Dipole (1) 3"x12' Omni	(2) 7/8" (1) 1-1/4"	(3) T-Arms
149.0	(12) Mount Pipes		
138.0	(3) DT465B-2XR-V2 w/ Mount Pipe (3) APXVSP18-C-A20 w/ Mount Pipe (3) RRUS A2 B13 (3) RRUS 32 B30 (3) RRH4X45-19 (3) FD-RRH-2X50-800 (3) Mount Pipe	(1) 1/2" (1) 1" (3) 1-1/4"	(1) 13' Low-Profile Platform
129.0	(3) RRUS 11 (3) RRUS 12 (3) RRU A2 (1) DC6-48-60-18-8F		(1) Collar Mount
127.0	(3) HPA-65R-BUU-H6 w/ Mount Pipe (6) 7770.0 w/ Mount Pipe (3) 80010965 w/ Mount Pipe (3) LGP214nn (3) RADIO 4415 B30 (3) RRUS 4449 B5/B12 (1) DC6-48-60-18-8F	(1) 0.4" (2) 13/16" (2) 1/2" (12) 1-1/4"	(1) 13' Low-Profile Platform
116.0	(3) APXVARR24_43-C-NA20 w/ Mount Pipe (3) AIR 32 B66Aa B2a (3) RADIO 4449 B12/B71 (3) Twin Style TMA	(12) 1-1/4" (2) 1-5/8" (1) 0.32"	(1) 13' Low-Profile Platform w/ Handrail Kit
111.5	(1) 1.25"x15' Whip		
108.0	(1) 2"x8' Dipole	(3) 7/8"	(4) 6' Standoff
94.0	(2) 2"x20' Whip		
40.0	(1) GPS Antenna	-	3' Standoff

***Proposed RRUs to be mounted behind the antennas.**

3.0 CODES AND LOADING

This analysis has been performed in accordance with the 2018 Connecticut State Building Code, based upon an ultimate 3-second gust wind speed of 125 mph (Risk Category II) converted to a nominal 3-second gust wind speed of 97 mph per section 1609.3.1 as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. The following loading criteria were used in the analysis for Fairfield County, Connecticut:

- Ultimate wind speed 125 mph converted to 97 mph without ice (W_o)
- Basic wind speed 50 mph with 3/4" radial and escalating ice (V_i)
- Exposure Category B
- Topographic Category 1
- Risk Category II ($I_w = 1.0$)

The following load combinations were used with wind blowing at 0°, 30°, 60°, and 90°, measured from a line normal to the face of the tower:

- $1.2 D + 1.6 W_o$
- $0.9 D + 1.6 W_o$
- $1.2 D + 1.0 D_i + 1.0 W_i + 1.0 T_i$

D: Dead load of structures and appurtenances, excluding guy assemblies

D_i : Weight of ice due to factored ice thickness (based upon t_i)

T_i : Load effects due to temperature

W_o : Wind load without ice (based upon V)

W_i : Weight of ice due to factored ice thickness (based upon V_i)

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

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

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

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

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed appurtenances. Any deviation of the appurtenances and placement, etc., will require Proterra to generate an additional structural analysis.

5.0 ANALYSIS AND ASSUMPTIONS

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

6.0 RESULTS AND CONCLUSION

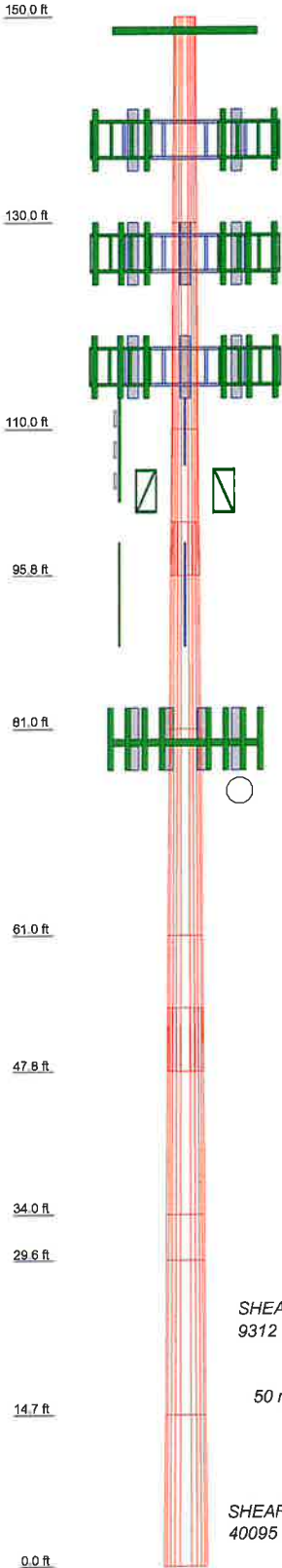
Based on a structural analysis per ANSI/TIA-222-G, the existing monopole tower has **adequate** structural capacity for the proposed changes by Verizon. For the code specified load combinations and as a maximum, the tower reinforcing members between 14.67 & 31 ft. are stressed to **83.2%** of their structural capacity. The monopole shaft, anchor rods, and base plate, and foundation are stressed to **70.0%**, **75.3%**, **50.3%**, and **72.8%** of their structural capacities, respectively.

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

Should you need any clarifications or have any questions about this report, please contact EFI at telecom@efiglobal.com.

APPENDIX A
SOFTWARE OUTPUT

Section	1	2	3	4	5	6	7	8	9	10
Length (ft)	20.00	20.00	14.17	20.00	20.00	13.17	20.00	4.42	14.91	14.67
Number of Sides	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.2813	0.2813	0.2813	0.3750	0.3750	0.3750	0.4375	0.4375	0.5800	0.7000
Socket Length (ft)			5.17			6.17				
Top Dia (in)	23.6100	27.2500	30.8900	31.9854	35.6055	39.2455	39.7695	43.4095	44.2134	46.9276
Bot Dia (in)	27.2500	30.9800	33.4690	35.6055	39.2455	41.6425	43.4095	44.2134	46.9276	49.5976
Grade					A572-85					
Weight (lb)	1550.3	1774.7	1393.1	2745.6	3044.7	2168.3	3945.4	919.0	4283.0	5351.6



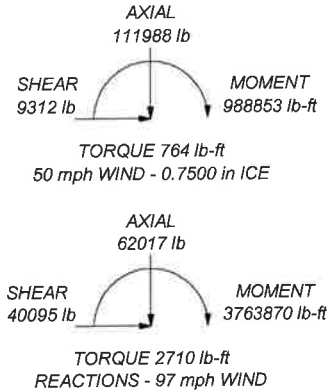
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 70%

ALL REACTIONS
ARE FACTORED



EFI Global, INC efi global 1117 Perimeter Center West, Ste E500 Atlanta, GA Phone: 770-693-0835 FAX:		Job: Fairfield 2 CT Project: 1978021 Client: Verizon Drawn by: Ahmet Colakoglu App'd: Code: TIA-222-G Date: 05/18/20 Scale: NTS Path:	
		Dwg No. E-1	

tnxTower EFI Global, INC 1117 Perimeter Center West, Ste E500 Atlanta, GA Phone: 770-693-0835 FAX:	Job Fairfield 2 CT	Page 1 of 23
	Project 1978021	Date 14:44:18 05/18/20
	Client Verizon	Designed by Ahmet Colakoglu

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Basic wind speed of 97 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

Options

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs 	<ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <li style="padding-left: 20px;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
--	---	---

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-130.00	20.00	0.00	12	23.6100	27.2500	0.2813	1.1252	A572-65 (65 ksi)
L2	130.00-110.00	20.00	0.00	12	27.2500	30.8900	0.2813	1.1252	A572-65 (65 ksi)
L3	110.00-95.83	14.17	5.17	12	30.8900	33.4690	0.2813	1.1252	A572-65

tnxTower EFI Global, INC 1117 Perimeter Center West, Ste E500 Atlanta, GA Phone: 770-693-0835 FAX:	Job Fairfield 2 CT	Page 2 of 23
	Project 1978021	Date 14:44:18 05/18/20
	Client Verizon	Designed by Ahmet Colakoglu

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade (65 ksi)
L4	95.83-81.00	20.00	0.00	12	31.9654	35.6055	0.3750	1.5000	A572-65 (65 ksi)
L5	81.00-61.00	20.00	0.00	12	35.6055	39.2455	0.3750	1.5000	A572-65 (65 ksi)
L6	61.00-47.83	13.17	6.17	12	39.2455	41.6425	0.3750	1.5000	A572-65 (65 ksi)
L7	47.83-34.00	20.00	0.00	12	39.7695	43.4095	0.4375	1.7500	A572-65 (65 ksi)
L8	34.00-29.58	4.42	0.00	12	43.4095	44.2134	0.4375	1.7500	A572-65 (65 ksi)
L9	29.58-14.67	14.91	0.00	12	44.2134	46.9276	0.5800	2.3200	A572-65 (65 ksi)
L10	14.67-0.00	14.67		12	46.9276	49.5976	0.7000	2.8000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	24.3436	21.1308	1467.8550	8.3517	12.2300	120.0211	2974.2723	10.3999	5.5736	19.814
L2	28.1120	24.4279	2267.7313	9.6548	14.1155	160.6554	4595.0384	12.0227	6.5491	23.282
L3	31.8804	27.7249	3315.4784	10.9579	16.0010	207.2042	6718.0582	13.6454	7.5246	26.75
L4	34.5504	30.0610	4226.1316	11.8812	17.3369	243.7645	8563.2885	14.7951	8.2158	29.207
L5	36.7292	32.5408	5051.5284	12.6125	18.4436	295.6119	10363.1118	16.3373	9.1288	32.766
L6	40.4976	38.1455	6739.5284	13.9156	20.3292	445.2602	18341.3384	23.1005	9.5128	25.367
L7	42.9792	42.5408	10831.7236	14.7738	21.5708	502.1472	21948.0086	24.5251	10.1552	27.081
L8	44.7865	46.9361	12688.4429	15.3840	22.4861	634.5444	28911.7336	29.7944	10.4612	23.911
L9	45.6187	49.8305	14268.4429	15.6718	22.9025	658.6299	30564.8792	30.3518	10.6767	24.404
L10	48.3784	55.4090	19802.8173	16.5924	24.3085	976.3229	48089.3735	42.6016	11.0222	19.004
	48.3361	61.6693	23732.9413	16.5495	24.3085	1169.1919	57589.2543	51.2826	10.7006	15.287
	51.1003	66.5588	28421.2976	17.5053	25.6916	1309.2183	68155.3646	54.2446	11.4162	16.309

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 Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L1				1	1	1			
150.00-130.00				1	1	1			
L2				1	1	1			
130.00-110.00				1	1	1			
L3				1	1	1			
110.00-95.83				1	1	1			
L4 95.83-81.00				1	1	1			
L5 81.00-61.00				1	1	1			
L6 61.00-47.83				1	1	1			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L7 47.83-34.00				1	1	1			
L8 34.00-29.58				1	1	1			
L9 29.58-14.67				1	1	1			
L10 14.67-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement	Total Number	Number Per Row	Start/End Position	Width or Diameter	Perimeter	Weight
				ft				in	in	plf

Black Cable .4"	C	No	Surface Ar (CaAa)	127.00 - 0.00	1	1	0.000	0.5200		0.14
PWRT-608-S(13/16")	C	No	Surface Ar (CaAa)	127.00 - 0.00	2	2	0.000	0.8200		0.62
RG-6(1/2")	C	No	Surface Ar (CaAa)	127.00 - 0.00	1	1	0.000	0.5840		0.15
RG-6(1/2")	C	No	Surface Ar (CaAa)	127.00 - 0.00	1	1	0.000	0.5840		0.15

RF 1-5/8 inch-50(1-5/8")	C	No	Surface Ar (CaAa)	80.00 - 0.00	6	6	-0.500	1.9700		0.97
FLC 114-50J(1-1/4")	C	No	Surface Ar (CaAa)	80.00 - 0.00	1	1	-0.300	1.5800		0.70

FLC 114-50J(1-1/4")	A	No	Surface Ar (CaAa)	116.00 - 0.00	24	12	-0.250	1.5800		0.70
FLC 114-50J(1-1/4")	A	No	Surface Ar (CaAa)	127.00 - 116.00	12	12	-0.250	1.5800		0.70
HCS 6x12 4AWG (1-5/8)	A	No	Surface Ar (CaAa)	116.00 - 0.00	2	2	0.000	1.6600		2.40
Black Cable .32"	A	No	Surface Ar (CaAa)	116.00 - 0.00	1	1	0.000	0.3125		0.07

Step Bolts	C	No	Surface Ar (CaAa)	140.00 - 12.25	1	1	0.000	0.3750		2.00
Safety Line 3/8	C	No	Surface Ar (CaAa)	150.00 - 12.25	1	1	0.000	0.3750		0.22

WT6x25 Reinforcement	A	No	Surface Ar (CaAa)	15.94 - 0.00	1	1	0.000	8.0000		25.00
WT6x25 Reinforcement	A	No	Surface Ar (CaAa)	15.94 - 0.00	1	1	0.500	8.0000		25.00
WT6x25 Reinforcement	B	No	Surface Ar (CaAa)	15.94 - 0.00	1	1	0.250	8.0000		25.00
WT6x25 Reinforcement	C	No	Surface Ar (CaAa)	15.94 - 0.00	1	1	0.000	8.0000		25.00
WT6x25 Reinforcement	A	No	Surface Ar (CaAa)	31.00 - 0.00	1	1	-0.250	8.0000		25.00
WT6x25 Reinforcement	A	No	Surface Ar (CaAa)	31.00 - 0.00	1	1	0.250	8.0000		25.00
WT6x25 Reinforcement	B	No	Surface Ar (CaAa)	31.00 - 0.00	1	1	0.000	8.0000		25.00
WT6x25 Reinforcement	C	No	Surface Ar (CaAa)	31.00 - 0.00	1	1	0.250	8.0000		25.00

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Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)					0.250		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
AVA5-50 (7/8")	C	No	No	Inside Pole	104.00 - 0.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.30 0.30 0.30
AVA5-50 (7/8")	C	No	No	Inside Pole	149.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.30 0.30 0.30
LCF114-50J(1-1/4")	C	No	No	Inside Pole	149.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.70 0.70 0.70
* FLC 12-50J(1/2")	C	No	No	Inside Pole	138.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.17 0.17 0.17
1" Rigid Conduit	C	No	No	Inside Pole	138.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.50 0.50 0.50
LCF114-50J(1-1/4")	C	No	No	Inside Pole	138.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.70 0.70 0.70

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L1	150.00-130.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	1.125	0.000	60.06
L2	130.00-110.00	A	0.000	0.000	34.411	0.000	222.42
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	7.158	0.000	126.36
L3	110.00-95.83	A	0.000	0.000	32.014	0.000	307.06
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.779	0.000	100.45
L4	95.83-81.00	A	0.000	0.000	33.505	0.000	321.37
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.048	0.000	110.78
L5	81.00-61.00	A	0.000	0.000	45.185	0.000	433.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	33.616	0.000	273.28
L6	61.00-47.83	A	0.000	0.000	29.754	0.000	285.39
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	23.019	0.000	184.25

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
L7	47.83-34.00	A	0.000	0.000	31.245	0.000	299.70
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	24.172	0.000	193.48
L8	34.00-29.58	A	0.000	0.000	12.258	0.000	166.78
		B	0.000	0.000	1.136	0.000	35.50
		C	0.000	0.000	8.861	0.000	97.34
L9	29.58-14.67	A	0.000	0.000	59.573	0.000	1132.10
		B	0.000	0.000	12.944	0.000	404.50
		C	0.000	0.000	39.004	0.000	613.09
L10	14.67-0.00	A	0.000	0.000	80.087	0.000	1784.90
		B	0.000	0.000	23.472	0.000	733.50
		C	0.000	0.000	48.193	0.000	911.54

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
L1	150.00-130.00	A	1.733	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	11.523	0.000	193.94
L2	130.00-110.00	A	1.706	0.000	0.000	54.827	0.000	879.53
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	46.163	0.000	650.18
L3	110.00-95.83	A	1.681	0.000	0.000	56.575	0.000	1010.16
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	36.126	0.000	504.57
L4	95.83-81.00	A	1.655	0.000	0.000	59.211	0.000	1057.22
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	37.809	0.000	533.73
L5	81.00-61.00	A	1.619	0.000	0.000	78.992	0.000	1385.86
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	94.370	0.000	1329.83
L6	61.00-47.83	A	1.577	0.000	0.000	51.626	0.000	894.70
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	62.752	0.000	871.38
L7	47.83-34.00	A	1.532	0.000	0.000	54.213	0.000	939.54
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	65.897	0.000	915.05
L8	34.00-29.58	A	1.494	0.000	0.000	20.192	0.000	408.98
		B		0.000	0.000	1.560	0.000	60.11
		C		0.000	0.000	22.002	0.000	335.58
L9	29.58-14.67	A	1.441	0.000	0.000	92.240	0.000	2295.89
		B		0.000	0.000	17.606	0.000	673.37
		C		0.000	0.000	85.201	0.000	1566.37
L10	14.67-0.00	A	1.289	0.000	0.000	116.631	0.000	3192.08
		B		0.000	0.000	31.038	0.000	1162.84
		C		0.000	0.000	86.534	0.000	1853.89

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in

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Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L1	150.00-130.00	0.0000	0.3275	0.0000	2.1212
L2	130.00-110.00	-5.1272	-1.7912	-3.9103	1.3412
L3	110.00-95.83	-6.3142	-2.4146	-5.0220	0.5890
L4	95.83-81.00	-6.4778	-2.4722	-5.2295	0.6259
L5	81.00-61.00	-3.0830	0.3644	-2.5958	2.6060
L6	61.00-47.83	-3.0392	0.5109	-2.6115	2.8031
L7	47.83-34.00	-3.0964	0.5257	-2.6835	2.8896
L8	34.00-29.58	-3.4086	0.0900	-3.1456	2.3698
L9	29.58-14.67	-4.0598	-0.5963	-3.7908	1.4420
L10	14.67-0.00	-3.2174	-1.2636	-3.2246	0.0553

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	22	Step Bolts	130.00 - 140.00	1.0000	1.0000
L1	23	Safety Line 3/8	130.00 - 150.00	1.0000	1.0000
L2	9	Black Cable 4"	110.00 - 127.00	1.0000	1.0000
L2	10	PWRT-608-S(13/16")	110.00 - 127.00	1.0000	1.0000
L2	11	RG-6(1/2")	110.00 - 127.00	1.0000	1.0000
L2	12	RG-6(1/2")	110.00 - 127.00	1.0000	1.0000
L2	17	FLC 114-50J(1-1/4")	110.00 - 116.00	1.0000	1.0000
L2	18	FLC 114-50J(1-1/4")	116.00 - 127.00	1.0000	1.0000
L2	19	HCS 6x12 4AWG (1-5/8)	110.00 - 116.00	1.0000	1.0000
L2	20	Black Cable .32"	110.00 - 116.00	1.0000	1.0000
L2	22	Step Bolts	110.00 - 130.00	1.0000	1.0000
L2	23	Safety Line 3/8	110.00 - 130.00	1.0000	1.0000
L3	9	Black Cable 4"	95.83 - 110.00	1.0000	1.0000
L3	10	PWRT-608-S(13/16")	95.83 - 110.00	1.0000	1.0000
L3	11	RG-6(1/2")	95.83 - 110.00	1.0000	1.0000
L3	12	RG-6(1/2")	95.83 - 110.00	1.0000	1.0000
L3	17	FLC 114-50J(1-1/4")	95.83 - 110.00	1.0000	1.0000
L3	19	HCS 6x12 4AWG (1-5/8)	95.83 - 110.00	1.0000	1.0000
L3	20	Black Cable .32"	95.83 - 110.00	1.0000	1.0000
L3	22	Step Bolts	95.83 - 110.00	1.0000	1.0000
L3	23	Safety Line 3/8	95.83 - 110.00	1.0000	1.0000
L5	9	Black Cable 4"	61.00 - 81.00	1.0000	1.0000
L5	10	PWRT-608-S(13/16")	61.00 - 81.00	1.0000	1.0000
L5	11	RG-6(1/2")	61.00 - 81.00	1.0000	1.0000
L5	12	RG-6(1/2")	61.00 - 81.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L5	14	RF 1-5/8 inch-50(1-5/8")	61.00 - 80.00	1.0000	1.0000
L5	15	FLC 114-50J(1-1/4")	61.00 - 80.00	1.0000	1.0000
L5	17	FLC 114-50J(1-1/4")	61.00 - 81.00	1.0000	1.0000
L5	19	HCS 6x12 4AWG (1-5/8)	61.00 - 81.00	1.0000	1.0000
L5	20	Black Cable .32"	61.00 - 81.00	1.0000	1.0000
L5	22	Step Bolts	61.00 - 81.00	1.0000	1.0000
L5	23	Safety Line 3/8	61.00 - 81.00	1.0000	1.0000
L6	9	Black Cable .4"	47.83 - 61.00	1.0000	1.0000
L6	10	PWRT-608-S(13/16")	47.83 - 61.00	1.0000	1.0000
L6	11	RG-6(1/2")	47.83 - 61.00	1.0000	1.0000
L6	12	RG-6(1/2")	47.83 - 61.00	1.0000	1.0000
L6	14	RF 1-5/8 inch-50(1-5/8")	47.83 - 61.00	1.0000	1.0000
L6	15	FLC 114-50J(1-1/4")	47.83 - 61.00	1.0000	1.0000
L6	17	FLC 114-50J(1-1/4")	47.83 - 61.00	1.0000	1.0000
L6	19	HCS 6x12 4AWG (1-5/8)	47.83 - 61.00	1.0000	1.0000
L6	20	Black Cable .32"	47.83 - 61.00	1.0000	1.0000
L6	22	Step Bolts	47.83 - 61.00	1.0000	1.0000
L6	23	Safety Line 3/8	47.83 - 61.00	1.0000	1.0000
L8	9	Black Cable .4"	29.58 - 34.00	1.0000	1.0000
L8	10	PWRT-608-S(13/16")	29.58 - 34.00	1.0000	1.0000
L8	11	RG-6(1/2")	29.58 - 34.00	1.0000	1.0000
L8	12	RG-6(1/2")	29.58 - 34.00	1.0000	1.0000
L8	14	RF 1-5/8 inch-50(1-5/8")	29.58 - 34.00	1.0000	1.0000
L8	15	FLC 114-50J(1-1/4")	29.58 - 34.00	1.0000	1.0000
L8	17	FLC 114-50J(1-1/4")	29.58 - 34.00	1.0000	1.0000
L8	19	HCS 6x12 4AWG (1-5/8)	29.58 - 34.00	1.0000	1.0000
L8	20	Black Cable .32"	29.58 - 34.00	1.0000	1.0000
L8	22	Step Bolts	29.58 - 34.00	1.0000	1.0000
L8	23	Safety Line 3/8	29.58 - 34.00	1.0000	1.0000
L8	29	WT6x25 Reinforcement	29.58 - 31.00	1.0000	1.0000
L8	30	WT6x25 Reinforcement	29.58 - 31.00	1.0000	1.0000
L8	31	WT6x25 Reinforcement	29.58 - 31.00	1.0000	1.0000
L8	32	WT6x25 Reinforcement	29.58 - 31.00	1.0000	1.0000
L9	9	Black Cable .4"	14.67 - 29.58	1.0000	1.0000
L9	10	PWRT-608-S(13/16")	14.67 - 29.58	1.0000	1.0000
L9	11	RG-6(1/2")	14.67 - 29.58	1.0000	1.0000
L9	12	RG-6(1/2")	14.67 - 29.58	1.0000	1.0000
L9	14	RF 1-5/8 inch-50(1-5/8")	14.67 - 29.58	1.0000	1.0000
L9	15	FLC 114-50J(1-1/4")	14.67 - 29.58	1.0000	1.0000
L9	17	FLC 114-50J(1-1/4")	14.67 - 29.58	1.0000	1.0000
L9	19	HCS 6x12 4AWG (1-5/8)	14.67 - 29.58	1.0000	1.0000
L9	20	Black Cable .32"	14.67 - 29.58	1.0000	1.0000
L9	22	Step Bolts	14.67 - 29.58	1.0000	1.0000
L9	23	Safety Line 3/8	14.67 - 29.58	1.0000	1.0000
L9	25	WT6x25 Reinforcement	14.67 - 15.94	1.0000	1.0000
L9	26	WT6x25 Reinforcement	14.67 - 15.94	1.0000	1.0000
L9	27	WT6x25 Reinforcement	14.67 - 15.94	1.0000	1.0000
L9	28	WT6x25 Reinforcement	14.67 - 15.94	1.0000	1.0000
L9	29	WT6x25 Reinforcement	14.67 - 29.58	1.0000	1.0000
L9	30	WT6x25 Reinforcement	14.67 - 29.58	1.0000	1.0000
L9	31	WT6x25 Reinforcement	14.67 - 29.58	1.0000	1.0000
L9	32	WT6x25 Reinforcement	14.67 - 29.58	1.0000	1.0000
L10	9	Black Cable .4"	0.00 - 14.67	1.0000	1.0000
L10	10	PWRT-608-S(13/16")	0.00 - 14.67	1.0000	1.0000
L10	11	RG-6(1/2")	0.00 - 14.67	1.0000	1.0000
L10	12	RG-6(1/2")	0.00 - 14.67	1.0000	1.0000
L10	14	RF 1-5/8 inch-50(1-5/8")	0.00 - 14.67	1.0000	1.0000
L10	15	FLC 114-50J(1-1/4")	0.00 - 14.67	1.0000	1.0000
L10	17	FLC 114-50J(1-1/4")	0.00 - 14.67	1.0000	1.0000
L10	19	HCS 6x12 4AWG (1-5/8)	0.00 - 14.67	1.0000	1.0000
L10	20	Black Cable .32"	0.00 - 14.67	1.0000	1.0000
L10	22	Step Bolts	12.25 - 14.67	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L10	23	Safety Line 3/8	12.25 - 14.67	1.0000	1.0000
L10	25	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000
L10	26	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000
L10	27	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000
L10	28	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000
L10	29	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000
L10	30	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000
L10	31	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000
L10	32	WT6x25 Reinforcement	0.00 - 14.67	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C_{AA} Front	C_{AA} Side	Weight	
			ft ft ft	°	ft	ft ²	ft ²	lb	
GPS_A	C	From Leg	4.00	0.0000	40.00	No Ice	0.26	0.26	9.00
			0.00			1/2" Ice	0.32	0.32	9.00
			0.00			1" Ice	0.38	0.38	10.00
3' Stand Off	C	From Leg	2.00	0.0000	40.00	No Ice	0.85	1.67	70.00
			0.00			1/2" Ice	1.14	2.34	80.00
			0.00			1" Ice	1.43	3.01	90.00

BXA-70063-6CF-EDIN-0 w/ Mount Pipe	A	From Leg	4.00	0.0000	80.00	No Ice	7.81	5.80	42.25
			0.00			1/2" Ice	8.36	6.95	103.01
			0.00			1" Ice	8.87	7.82	171.49
BXA-70063-6CF-EDIN-0 w/ Mount Pipe	B	From Leg	4.00	0.0000	80.00	No Ice	7.81	5.80	42.25
			0.00			1/2" Ice	8.36	6.95	103.01
			0.00			1" Ice	8.87	7.82	171.49
BXA-70063-6CF-EDIN-0 w/ Mount Pipe	C	From Leg	4.00	0.0000	80.00	No Ice	7.81	5.80	42.25
			0.00			1/2" Ice	8.36	6.95	103.01
			0.00			1" Ice	8.87	7.82	171.49
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.0000	80.00	No Ice	5.50	4.38	96.10
			0.00			1/2" Ice	5.97	4.84	169.32
			0.00			1" Ice	6.45	5.30	253.57
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.0000	80.00	No Ice	5.50	4.38	96.10
			0.00			1/2" Ice	5.97	4.84	169.32
			0.00			1" Ice	6.45	5.30	253.57
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.0000	80.00	No Ice	5.50	4.38	96.10
			0.00			1/2" Ice	5.97	4.84	169.32
			0.00			1" Ice	6.45	5.30	253.57
(2) JAHH-65B-R3B	A	From Leg	4.00	0.0000	80.00	No Ice	5.29	3.05	63.30
			0.00			1/2" Ice	5.75	3.48	121.38
			0.00			1" Ice	6.22	3.93	185.75
(2) JAHH-65B-R3B	B	From Leg	4.00	0.0000	80.00	No Ice	5.29	3.05	63.30
			0.00			1/2" Ice	5.75	3.48	121.38
			0.00			1" Ice	6.22	3.93	185.75
(2) JAHH-65B-R3B	C	From Leg	4.00	0.0000	80.00	No Ice	5.29	3.05	63.30
			0.00			1/2" Ice	5.75	3.48	121.38
			0.00			1" Ice	6.22	3.93	185.75
Samsung Telecomm - CBRS	A	From Leg	4.00	0.0000	80.00	No Ice	1.53	0.75	23.14
			0.00			1/2" Ice	1.69	0.87	35.07

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			Vert							
			ft	ft	°	ft	ft ²	ft ²	lb	
			ft							
			0.00				1" Ice	1.85	0.99	49.34
Samsung Telecomm - CBRS	B	From Leg	4.00		0.0000	80.00	No Ice	1.53	0.75	23.14
			0.00				1/2" Ice	1.69	0.87	35.07
			0.00				1" Ice	1.85	0.99	49.34
Samsung Telecomm - CBRS	C	From Leg	4.00		0.0000	80.00	No Ice	1.53	0.75	23.14
			0.00				1/2" Ice	1.69	0.87	35.07
			0.00				1" Ice	1.85	0.99	49.34
B13/B5	A	From Leg	4.00		0.0000	80.00	No Ice	1.86	0.87	40.80
			0.00				1/2" Ice	2.03	1.00	55.36
			0.00				1" Ice	2.20	1.14	72.46
B13/B5	B	From Leg	4.00		0.0000	80.00	No Ice	1.86	0.87	40.80
			0.00				1/2" Ice	2.03	1.00	55.36
			0.00				1" Ice	2.20	1.14	72.46
B13/B5	C	From Leg	4.00		0.0000	80.00	No Ice	1.86	0.87	40.80
			0.00				1/2" Ice	2.03	1.00	55.36
			0.00				1" Ice	2.20	1.14	72.46
RRUS 8843 B2/B66A	A	From Leg	0.00		0.0000	80.00	No Ice	1.64	1.35	72.00
			0.00				1/2" Ice	1.80	1.50	89.60
			0.00				1" Ice	1.97	1.65	109.91
RRUS 8843 B2/B66A	B	From Leg	0.00		0.0000	80.00	No Ice	1.64	1.35	72.00
			0.00				1/2" Ice	1.80	1.50	89.60
			0.00				1" Ice	1.97	1.65	109.91
RRUS 8843 B2/B66A	C	From Leg	0.00		0.0000	80.00	No Ice	1.64	1.35	72.00
			0.00				1/2" Ice	1.80	1.50	89.60
			0.00				1" Ice	1.97	1.65	109.91
CBC78T-DS-43-2X	A	From Leg	0.00		0.0000	80.00	No Ice	0.37	0.51	20.70
			0.00				1/2" Ice	0.45	0.60	27.04
			0.00				1" Ice	0.53	0.70	35.07
CBC78T-DS-43-2X	B	From Leg	0.00		0.0000	80.00	No Ice	0.37	0.51	20.70
			0.00				1/2" Ice	0.45	0.60	27.04
			0.00				1" Ice	0.53	0.70	35.07
CBC78T-DS-43-2X	C	From Leg	0.00		0.0000	80.00	No Ice	0.37	0.51	20.70
			0.00				1/2" Ice	0.45	0.60	27.04
			0.00				1" Ice	0.53	0.70	35.07
COVP	C	From Leg	0.00		0.0000	80.00	No Ice	0.68	0.38	7.00
			0.00				1/2" Ice	0.78	0.46	13.32
			0.00				1" Ice	0.89	0.55	21.32
13' Low Profile Platform	C	None			0.0000	80.00	No Ice	24.33	24.33	1650.00
							1/2" Ice	30.22	30.22	2030.00
							1" Ice	36.11	36.11	2410.00

8'x2" Dia Dipole	C	From Leg	6.00		0.0000	104.00	No Ice	1.60	1.60	20.00
			0.00				1/2" Ice	2.42	2.42	30.00
			4.00				1" Ice	3.24	3.24	50.00
15'x1.25" Dia Whips	A	From Leg	6.00		0.0000	104.00	No Ice	1.88	1.88	20.00
			0.00				1/2" Ice	3.39	3.39	40.00
			7.50				1" Ice	4.93	4.93	60.00
20'x2" Dia Whips	C	From Leg	6.00		0.0000	104.00	No Ice	4.00	4.00	20.00
			0.00				1/2" Ice	6.03	6.03	50.00
			-10.00				1" Ice	8.07	8.07	90.00
20'x2" Dia Whips	A	From Leg	6.00		0.0000	104.00	No Ice	4.00	4.00	20.00
			0.00				1/2" Ice	6.03	6.03	50.00
			-10.00				1" Ice	8.07	8.07	90.00
6' Standoff	A	From Leg	3.00		0.0000	104.00	No Ice	0.85	1.67	70.00
			0.00				1/2" Ice	1.14	2.34	80.00
			0.00				1" Ice	1.43	3.01	90.00
6' Standoff	B	From Leg	3.00		0.0000	104.00	No Ice	0.85	1.67	70.00

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
			0.00			1/2" Ice 1.14	2.34	80.00
			0.00			1" Ice 1.43	3.01	90.00
6' Standoff	C	From Leg	3.00	0.0000	104.00	No Ice 0.85	1.67	70.00
			0.00			1/2" Ice 1.14	2.34	80.00
			0.00			1" Ice 1.43	3.01	90.00
6' Standoff	C	From Leg	3.00	0.0000	104.00	No Ice 0.85	1.67	70.00
			0.00			1/2" Ice 1.14	2.34	80.00
			0.00			1" Ice 1.43	3.01	90.00
(2) Collar Mount	C	None		0.0000	105.00	No Ice 1.14	1.14	320.00
						1/2" Ice 1.49	1.49	340.00
						1" Ice 1.91	1.91	370.00
(2) Collar Mount	C	None		0.0000	106.00	No Ice 1.14	1.14	320.00
						1/2" Ice 1.49	1.49	340.00
						1" Ice 1.91	1.91	370.00

(2) RADIO 4449 B12/B71	B	From Leg	4.00	0.0000	116.00	No Ice 1.65	1.16	70.00
			0.00			1/2" Ice 1.81	1.30	90.00
			0.00			1" Ice 1.98	1.45	110.00
RADIO 4449 B12/B71	C	From Leg	4.00	0.0000	116.00	No Ice 1.65	1.16	70.00
			0.00			1/2" Ice 1.81	1.30	90.00
			0.00			1" Ice 1.98	1.45	110.00
(4) Twin Style TMA	B	From Leg	4.00	0.0000	116.00	No Ice 6.68	3.48	70.00
			0.00			1/2" Ice 7.07	4.12	120.00
			0.00			1" Ice 7.48	4.78	180.00
(2) Twin Style TMA	C	From Leg	4.00	0.0000	116.00	No Ice 6.68	3.48	70.00
			0.00			1/2" Ice 7.07	4.12	120.00
			0.00			1" Ice 7.48	4.78	180.00
(2)	B	From Leg	4.00	0.0000	116.00	No Ice 11.65	6.52	129.71
APXVARR24_43-C-NA20			0.00			1/2" Ice 12.36	7.17	242.88
w/ Mount Pipe			0.00			1" Ice 13.09	7.84	370.18
APXVARR24_43-C-NA20	C	From Leg	4.00	0.0000	116.00	No Ice 11.65	6.52	129.71
w/ Mount Pipe			0.00			1/2" Ice 12.36	7.17	242.88
			0.00			1" Ice 13.09	7.84	370.18
AIR 32 B2a/B66Aa w/ Mount Pipe	A	From Leg	4.00	0.0000	116.00	No Ice 6.75	6.07	153.07
			0.00			1/2" Ice 7.20	6.87	214.04
			0.00			1" Ice 7.65	7.58	281.89
AIR 32 B2a/B66Aa w/ Mount Pipe	B	From Leg	4.00	0.0000	116.00	No Ice 6.75	6.07	153.07
			0.00			1/2" Ice 7.20	6.87	214.04
			0.00			1" Ice 7.65	7.58	281.89
AIR 32 B2a/B66Aa w/ Mount Pipe	C	From Leg	4.00	0.0000	116.00	No Ice 6.75	6.07	153.07
			0.00			1/2" Ice 7.20	6.87	214.04
			0.00			1" Ice 7.65	7.58	281.89
SitePro1 HRK12 Handrail kit	C	None		0.0000	116.00	No Ice 4.80	4.80	250.00
						1/2" Ice 6.70	6.70	290.00
						1" Ice 8.60	8.60	340.00
13' Low-Profile Platform	C	None		0.0000	116.00	No Ice 32.03	32.03	1340.00
						1/2" Ice 38.71	38.71	1800.00
						1" Ice 45.39	45.39	2260.00

HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.00	0.0000	127.00	No Ice 9.22	6.25	73.59
			0.00			1/2" Ice 9.98	6.96	143.40
			0.00			1" Ice 10.76	7.70	224.19
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.00	0.0000	127.00	No Ice 9.22	6.25	73.59
			0.00			1/2" Ice 9.98	6.96	143.40
			0.00			1" Ice 10.76	7.70	224.19
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00	0.0000	127.00	No Ice 9.22	6.25	73.59
			0.00			1/2" Ice 9.98	6.96	143.40

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			Vert							
			ft	ft			ft ²	ft ²	lb	
			ft							
(2) 7770.00 w/ Mount Pipe	A	From Leg	0.00		0.0000	127.00	1" Ice	10.76	7.70	224.19
			4.00				No Ice	5.75	4.25	55.38
			0.00				1/2" Ice	6.18	5.01	102.81
(2) 7770.00 w/ Mount Pipe	B	From Leg	0.00		0.0000	127.00	1" Ice	6.61	5.71	156.64
			4.00				No Ice	5.75	4.25	55.38
			0.00				1/2" Ice	6.18	5.01	102.81
(2) 7770.00 w/ Mount Pipe	C	From Leg	0.00		0.0000	127.00	1" Ice	6.61	5.71	156.64
			4.00				No Ice	5.75	4.25	55.38
			0.00				1/2" Ice	6.18	5.01	102.81
LGP214nn	A	From Leg	0.00		0.0000	127.00	1" Ice	6.61	5.71	156.64
			4.00				No Ice	1.10	0.35	10.00
			0.00				1/2" Ice	1.24	0.44	20.00
LGP214nn	B	From Leg	0.00		0.0000	127.00	1" Ice	1.38	0.54	30.00
			4.00				No Ice	1.10	0.35	10.00
			0.00				1/2" Ice	1.24	0.44	20.00
LGP214nn	C	From Leg	0.00		0.0000	127.00	1" Ice	1.38	0.54	30.00
			4.00				No Ice	1.10	0.35	10.00
			0.00				1/2" Ice	1.24	0.44	20.00
13' Low-Profile Platform	C	None	0.00		0.0000	127.00	1" Ice	1.38	0.54	30.00
			0.00				No Ice	24.53	24.53	1340.00
			0.00				1/2" Ice	29.94	29.94	1650.00
80010965 w/ Mount Pipe	A	From Leg	0.00		0.0000	127.00	1" Ice	35.35	35.35	1960.00
			4.00				No Ice	12.26	5.79	136.24
			0.00				1/2" Ice	13.03	6.47	226.19
80010965 w/ Mount Pipe	B	From Leg	0.00		0.0000	127.00	1" Ice	13.80	7.17	328.20
			4.00				No Ice	12.26	5.79	136.24
			0.00				1/2" Ice	13.03	6.47	226.19
80010965 w/ Mount Pipe	C	From Leg	0.00		0.0000	127.00	1" Ice	13.80	7.17	328.20
			4.00				No Ice	12.26	5.79	136.24
			0.00				1/2" Ice	13.03	6.47	226.19
RADIO 4415 B30	A	From Leg	0.00		0.0000	127.00	1" Ice	1.97	0.87	70.00
			4.00				No Ice	1.64	0.64	40.00
			0.00				1/2" Ice	1.80	0.75	50.00
RADIO 4415 B30	B	From Leg	0.00		0.0000	127.00	1" Ice	1.97	0.87	70.00
			4.00				No Ice	1.64	0.64	40.00
			0.00				1/2" Ice	1.80	0.75	50.00
RADIO 4415 B30	C	From Leg	0.00		0.0000	127.00	1" Ice	1.97	0.87	70.00
			4.00				No Ice	1.64	0.64	40.00
			0.00				1/2" Ice	1.80	0.75	50.00
RRUS 4449 B5/B12	A	From Leg	0.00		0.0000	127.00	1" Ice	1.97	0.87	70.00
			4.00				No Ice	1.97	1.41	70.00
			0.00				1/2" Ice	2.14	1.56	90.00
RRUS 4449 B5/B12	B	From Leg	0.00		0.0000	127.00	1" Ice	2.33	1.73	110.00
			4.00				No Ice	1.97	1.41	70.00
			0.00				1/2" Ice	2.14	1.56	90.00
RRUS 4449 B5/B12	C	From Leg	0.00		0.0000	127.00	1" Ice	2.33	1.73	110.00
			4.00				No Ice	1.97	1.41	70.00
			0.00				1/2" Ice	2.14	1.56	90.00
DC6-48-60-18-8F	A	From Leg	0.00		0.0000	127.00	1" Ice	2.33	1.73	110.00
			4.00				No Ice	0.92	0.92	20.00
			0.00				1/2" Ice	1.46	1.46	40.00
** DC6-48-60-18-8F	C	From Leg	0.00		0.0000	129.00	1" Ice	1.64	1.64	60.00
			4.00				No Ice	0.92	0.92	20.00
			0.00				1/2" Ice	1.46	1.46	40.00
RRUS 11	A	From Leg	0.00		0.0000	129.00	1" Ice	1.64	1.64	60.00
			4.00				No Ice	2.78	1.19	50.00
			0.00				1/2" Ice	1.46	1.46	40.00

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
			0.00			1/2" Ice 2.99	1.33	70.00
			0.00			1" Ice 3.21	1.49	100.00
RRUS 11	B	From Leg	4.00	0.0000	129.00	No Ice 2.78	1.19	50.00
			0.00			1/2" Ice 2.99	1.33	70.00
			0.00			1" Ice 3.21	1.49	100.00
RRUS 11	C	From Leg	4.00	0.0000	129.00	No Ice 2.78	1.19	50.00
			0.00			1/2" Ice 2.99	1.33	70.00
			0.00			1" Ice 3.21	1.49	100.00
RRUS 12	A	From Leg	4.00	0.0000	129.00	No Ice 3.15	1.29	60.00
			0.00			1/2" Ice 3.36	1.44	80.00
			0.00			1" Ice 3.59	1.60	110.00
RRUS 12	B	From Leg	4.00	0.0000	129.00	No Ice 3.15	1.29	60.00
			0.00			1/2" Ice 3.36	1.44	80.00
			0.00			1" Ice 3.59	1.60	110.00
RRUS 12	C	From Leg	4.00	0.0000	129.00	No Ice 3.15	1.29	60.00
			0.00			1/2" Ice 3.36	1.44	80.00
			0.00			1" Ice 3.59	1.60	110.00
RRU A2	A	From Leg	4.00	0.0000	129.00	No Ice 2.07	0.50	20.00
			0.00			1/2" Ice 2.25	0.61	30.00
			0.00			1" Ice 2.43	0.73	50.00
RRU A2	B	From Leg	4.00	0.0000	129.00	No Ice 2.07	0.50	20.00
			0.00			1/2" Ice 2.25	0.61	30.00
			0.00			1" Ice 2.43	0.73	50.00
RRU A2	C	From Leg	4.00	0.0000	129.00	No Ice 2.07	0.50	20.00
			0.00			1/2" Ice 2.25	0.61	30.00
			0.00			1" Ice 2.43	0.73	50.00
Collar Mount	C	None		0.0000	129.00	No Ice 1.14	1.14	320.00
						1/2" Ice 1.49	1.49	340.00
						1" Ice 1.91	1.91	370.00

RRUS A2 B13	A	From Leg	4.00	0.0000	138.00	No Ice 2.79	1.72	80.00
			0.00			1/2" Ice 3.00	1.90	100.00
			0.00			1" Ice 3.21	2.07	130.00
RRUS A2 B13	B	From Leg	4.00	0.0000	138.00	No Ice 2.79	1.72	80.00
			0.00			1/2" Ice 3.00	1.90	100.00
			0.00			1" Ice 3.21	2.07	130.00
RRUS A2 B13	C	From Leg	4.00	0.0000	138.00	No Ice 2.79	1.72	80.00
			0.00			1/2" Ice 3.00	1.90	100.00
			0.00			1" Ice 3.21	2.07	130.00
RRUS 32 B30	A	From Leg	4.00	0.0000	138.00	No Ice 2.69	1.57	60.00
			0.00			1/2" Ice 2.91	1.76	80.00
			0.00			1" Ice 3.14	1.95	100.00
RRUS 32 B30	B	From Leg	4.00	0.0000	138.00	No Ice 2.69	1.57	60.00
			0.00			1/2" Ice 2.91	1.76	80.00
			0.00			1" Ice 3.14	1.95	100.00
RRUS 32 B30	C	From Leg	4.00	0.0000	138.00	No Ice 2.69	1.57	60.00
			0.00			1/2" Ice 2.91	1.76	80.00
			0.00			1" Ice 3.14	1.95	100.00
DT465B-2XR-V2 w/ Mount Pipe	A	From Leg	4.00	0.0000	138.00	No Ice 5.50	4.38	91.16
			0.00			1/2" Ice 5.97	4.84	164.29
			0.00			1" Ice 6.45	5.30	248.43
DT465B-2XR-V2 w/ Mount Pipe	B	From Leg	4.00	0.0000	138.00	No Ice 5.50	4.38	91.16
			0.00			1/2" Ice 5.97	4.84	164.29
			0.00			1" Ice 6.45	5.30	248.43
DT465B-2XR-V2 w/ Mount Pipe	C	From Leg	4.00	0.0000	138.00	No Ice 5.50	4.38	91.16
			0.00			1/2" Ice 5.97	4.84	164.29
			0.00			1" Ice 6.45	5.30	248.43

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA}		Weight
			Horz	Vert			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	lb
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00	0.0000	138.00	No Ice	4.60	4.01	95.09
			0.00			1/2" Ice	5.05	4.45	159.53
			0.00			1" Ice	5.50	4.89	234.77
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00	0.0000	138.00	No Ice	4.60	4.01	95.09
			0.00			1/2" Ice	5.05	4.45	159.53
			0.00			1" Ice	5.50	4.89	234.77
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00	0.0000	138.00	No Ice	4.60	4.01	95.09
			0.00			1/2" Ice	5.05	4.45	159.53
			0.00			1" Ice	5.50	4.89	234.77
FD-RRH-2x50-800	A	From Leg	4.00	0.0000	138.00	No Ice	1.36	3.01	50.00
			0.00			1/2" Ice	1.52	3.22	80.00
			0.00			1" Ice	1.68	3.45	100.00
FD-RRH-2x50-800	B	From Leg	4.00	0.0000	138.00	No Ice	1.36	3.01	50.00
			0.00			1/2" Ice	1.52	3.22	80.00
			0.00			1" Ice	1.68	3.45	100.00
FD-RRH-2x50-800	C	From Leg	4.00	0.0000	138.00	No Ice	1.36	3.01	50.00
			0.00			1/2" Ice	1.52	3.22	80.00
			0.00			1" Ice	1.68	3.45	100.00
RRH4x45-19	A	From Leg	4.00	0.0000	138.00	No Ice	2.31	2.38	90.00
			0.00			1/2" Ice	2.52	2.58	110.00
			0.00			1" Ice	2.73	2.79	140.00
RRH4x45-19	B	From Leg	4.00	0.0000	138.00	No Ice	2.31	2.38	90.00
			0.00			1/2" Ice	2.52	2.58	110.00
			0.00			1" Ice	2.73	2.79	140.00
RRH4x45-19	C	From Leg	4.00	0.0000	138.00	No Ice	2.31	2.38	90.00
			0.00			1/2" Ice	2.52	2.58	110.00
			0.00			1" Ice	2.73	2.79	140.00
13' Low-Profile Platform	C	None		0.0000	138.00	No Ice	44.21	44.21	1770.00
						1/2" Ice	53.97	53.97	2320.00
						1" Ice	63.73	63.73	2870.00
						No Ice	1.43	1.43	20.00
2" STD Pipe (2.375 OD)x6'-0"	A	From Leg	4.00	0.0000	138.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00
			0.00			1" Ice	2.29	2.29	50.00
2" STD Pipe (2.375 OD)x6'-0"	B	From Leg	4.00	0.0000	138.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00
			0.00			1" Ice	2.29	2.29	50.00
2" STD Pipe (2.375 OD)x6'-0"	C	From Leg	4.00	0.0000	138.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00
			0.00			1" Ice	2.29	2.29	50.00
*** 10' x 1.5" Dia Dipole	B	From Leg	4.00	0.0000	149.00	No Ice	2.00	2.00	20.00
			0.00			1/2" Ice	3.02	3.02	40.00
			5.00			1" Ice	4.07	4.07	60.00
10' x 1.5" Dia Dipole	C	From Leg	4.00	0.0000	149.00	No Ice	2.00	2.00	20.00
			0.00			1/2" Ice	3.02	3.02	40.00
			5.00			1" Ice	4.07	4.07	60.00
12x3" Dia Omni	A	From Leg	4.00	0.0000	149.00	No Ice	3.60	3.60	40.00
			0.00			1/2" Ice	4.83	4.83	70.00
			5.00			1" Ice	6.08	6.08	100.00
13' T-Arms	C	None		0.0000	149.00	No Ice	11.59	11.59	770.00
						1/2" Ice	15.44	15.44	990.00
						1" Ice	19.29	19.29	1210.00
(4) 2" STD Pipe (2.375 OD)x6'-0"	A	From Leg	4.00	0.0000	149.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00
			0.00			1" Ice	2.29	2.29	50.00
(4) 2" STD Pipe (2.375 OD)x6'-0"	B	From Leg	4.00	0.0000	149.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral ft	Vert ft						
(4) 2" STD Pipe (2.375 OD)x6'-0"	C	From Leg	0.00		0.0000	149.00	1" Ice	2.29	2.29	50.00
			4.00				No Ice	1.43	1.43	20.00
			0.00				1/2" Ice	1.92	1.92	30.00
			0.00				1" Ice	2.29	2.29	50.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service

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Comb. No.	Description
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	150 - 130	Pole	Max Tension	3	0.10	0.48	-0.03
			Max. Compression	26	-14986.26	9.44	-1.99
			Max. Mx	8	-6440.42	-89295.13	-15.19
			Max. My	2	-6455.84	31.58	89242.48
			Max. Vy	20	-8105.32	89295.00	54.00
			Max. Vx	14	8094.61	-42.06	-89092.42
			Max. Torque	8			369.79
							0.00
L2	130 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38620.00	-4452.47	-10650.25
			Max. Mx	8	-15881.18	-395401.80	-4044.02
			Max. My	14	-15958.53	-2478.55	-392857.99
			Max. Vy	20	-20425.02	392527.11	-1654.90
			Max. Vx	14	19801.73	-2478.55	-392857.99
			Max. Torque	18			4233.33
							0.00
L3	110 - 95.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44160.07	-1661.43	-10115.82
			Max. Mx	8	-19186.67	-583762.72	-5720.01
			Max. My	14	-19260.99	-3356.23	-576440.45
			Max. Vy	20	-22386.87	582725.96	23.11
			Max. Vx	14	21774.50	-3356.23	-576440.45
			Max. Torque	18			4232.35
							0.00
L4	95.83 - 81	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52197.17	453.76	-10337.62
			Max. Mx	20	-23934.13	1054637.89	4125.78
			Max. My	14	-24002.14	-6588.25	-1035082.9
							5
			Max. Vy	20	-24686.90	1054637.89	4125.78
			Max. Vx	14	24070.88	-6588.25	-1035082.9
			Max. Torque	20			2880.78
L5	81 - 61	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69763.37	2796.93	-11596.66
			Max. Mx	20	-32429.21	1643090.77	7964.49
			Max. My	14	-32493.07	-9664.99	-1608525.4
							0
			Max. Vy	20	-30701.02	1643090.77	7964.49
			Max. Vx	14	29905.06	-9664.99	-1608525.4
			Max. Torque	20			2886.20
L6	61 - 47.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72696.34	3638.39	-12025.52
			Max. Mx	20	-34255.28	1860607.96	9303.35
			Max. My	14	-34312.32	-10713.56	-1820027.5
							7
			Max. Vy	20	-31399.49	1860607.96	9303.35

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vx	14	30563.67	-10713.56	-1820027.57
L7	47.83 - 34	Pole	Max. Torque	20			2881.94
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83809.55	6526.03	-13466.88
			Max. Mx	20	-41582.11	2511305.72	12996.10
			Max. My	14	-41619.96	-13406.46	-2452037.54
			Max. Vy	20	-33456.92	2511305.72	12996.10
			Max. Vx	14	32542.17	-13406.46	-2452037.54
L8	34 - 29.58	Pole	Max. Torque	20			2995.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86151.65	7187.17	-13622.63
			Max. Mx	20	-43162.12	2660324.32	13929.08
			Max. My	14	-43193.98	-14009.57	-2596661.56
			Max. Vy	20	-33890.70	2660324.32	13929.08
			Max. Vx	14	32966.15	-14009.57	-2596661.56
L9	29.58 - 14.67	Pole	Max. Torque	20			2995.07
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97497.46	10412.60	-13450.16
			Max. Mx	20	-51173.45	3184314.47	17445.55
			Max. My	14	-51187.64	-15337.06	-3105545.18
			Max. Vy	20	-36221.71	3184314.47	17445.55
			Max. Vx	14	35415.46	-15337.06	-3105545.18
L10	14.67 - 0	Pole	Max. Torque	20			2994.59
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-111987.90	14780.70	-12290.94
			Max. Mx	20	-62005.53	3740460.59	21442.13
			Max. My	14	-62005.96	-15714.12	-3645861.11
			Max. Vy	8	39301.44	-3726818.45	-23775.77
			Max. Vx	2	-38441.33	29502.54	3643505.73
			Max. Torque	20			2934.82

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	26	111987.90	-0.11	0.45
	Max. H _x	21	46512.70	39283.17	194.29
	Max. H _z	2	62016.82	194.27	38423.82
	Max. M _x	2	3643505.73	194.27	38423.82
	Max. M _z	8	3726818.45	-39283.52	-194.29
	Max. Torsion	20	2709.97	39282.54	194.28
	Min. Vert	3	46512.49	194.26	38422.30
	Min. H _x	9	46512.74	-39283.84	-194.29
	Min. H _z	15	46512.64	-194.28	-38425.05
	Min. M _x	14	-3645861.11	-194.28	-38423.81
	Min. M _z	20	-3740460.59	39282.54	194.28
	Min. Torsion	8	-2709.73	-39283.52	-194.29

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
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Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
Dead Only	51680.86	0.16	-0.71	796.67	5628.80	-0.09
1.2 Dead+1.6 Wind 0 deg - No Ice	62016.82	-194.27	-38423.82	-3643505.73	29502.48	-766.30
0.9 Dead+1.6 Wind 0 deg - No Ice	46512.49	-194.26	-38422.30	-3604621.98	27502.51	-790.73
1.2 Dead+1.6 Wind 30 deg - No Ice	62017.03	20178.60	-34646.91	-3244863.26	-1889461.87	639.71
0.9 Dead+1.6 Wind 30 deg - No Ice	46512.77	20178.62	-34646.94	-3210795.75	-1871098.51	586.38
1.2 Dead+1.6 Wind 60 deg - No Ice	62017.03	34593.35	-19572.94	-1832978.38	-3253713.13	1953.74
0.9 Dead+1.6 Wind 60 deg - No Ice	46512.77	34593.38	-19572.95	-1813830.94	-3220788.80	1886.91
1.2 Dead+1.6 Wind 90 deg - No Ice	62016.98	39283.52	194.29	23775.55	-3726818.45	2709.73
0.9 Dead+1.6 Wind 90 deg - No Ice	46512.74	39283.84	194.29	23194.80	-3688663.02	2647.08
1.2 Dead+1.6 Wind 120 deg - No Ice	62017.03	33313.14	19058.16	1838549.84	-3214102.58	2667.24
0.9 Dead+1.6 Wind 120 deg - No Ice	46512.77	33313.17	19058.17	1818492.57	-3181251.78	2625.40
1.2 Dead+1.6 Wind 150 deg - No Ice	62017.03	19451.88	32999.60	3165206.50	-1868234.03	1918.38
0.9 Dead+1.6 Wind 150 deg - No Ice	46512.77	19451.89	32999.63	3130945.85	-1849856.94	1908.46
1.2 Dead+1.6 Wind 180 deg - No Ice	62016.82	194.28	38423.81	3645861.11	-15714.18	765.37
0.9 Dead+1.6 Wind 180 deg - No Ice	46512.64	194.28	38425.05	3606647.58	-17217.19	790.07
1.2 Dead+1.6 Wind 210 deg - No Ice	62017.03	-20178.60	34646.91	3247204.52	1903255.76	-639.82
0.9 Dead+1.6 Wind 210 deg - No Ice	46512.77	-20178.62	34646.94	3212468.90	1881390.19	-586.23
1.2 Dead+1.6 Wind 240 deg - No Ice	62017.03	-34593.35	19572.94	1835307.80	3267496.74	-1953.54
0.9 Dead+1.6 Wind 240 deg - No Ice	46512.77	-34593.38	19572.95	1815495.61	3231073.22	-1886.45
1.2 Dead+1.6 Wind 270 deg - No Ice	62016.93	-39282.54	-194.28	-21442.35	3740460.59	-2709.97
0.9 Dead+1.6 Wind 270 deg - No Ice	46512.70	-39283.17	-194.29	-21527.38	3698853.80	-2647.07
1.2 Dead+1.6 Wind 300 deg - No Ice	62017.03	-33313.14	-19058.16	-1836203.00	3227866.00	-2668.22
0.9 Dead+1.6 Wind 300 deg - No Ice	46512.77	-33313.17	-19058.17	-1816815.60	3191521.75	-2626.11
1.2 Dead+1.6 Wind 330 deg - No Ice	62017.03	-19451.88	-32999.60	-3162847.29	1882007.99	-1919.73
0.9 Dead+1.6 Wind 330 deg - No Ice	46512.77	-19451.89	-32999.63	-3129260.02	1860134.36	-1909.52
1.2 Dead+1.0 Ice+1.0 Temp	111987.90	0.11	-0.45	12290.94	14780.70	-3.14
1.2 Dead+1.0 Wind 0 deg+1.0	111987.88	-34.90	-9102.53	-949261.56	18912.51	-411.83

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 30 deg+1.0	111987.88	4620.49	-7971.68	-820706.59	-468941.12	-49.49
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 60 deg+1.0	111987.88	7983.55	-4550.98	-465679.48	-826175.58	377.17
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 90 deg+1.0	111987.88	9312.17	34.88	16490.12	-959037.38	683.43
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120 deg+1.0	111987.89	7861.88	4521.01	496066.51	-827570.46	756.99
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 150 deg+1.0	111987.89	4590.62	7850.12	847137.34	-474448.33	671.49
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180 deg+1.0	111987.88	34.91	9102.50	974194.31	10867.52	404.95
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210 deg+1.0	111987.89	-4620.64	7971.94	845696.08	498751.90	42.64
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240 deg+1.0	111987.89	-7983.83	4551.12	490646.95	856009.58	-383.99
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270 deg+1.0	111987.88	-9312.16	-34.92	8445.23	988816.69	-690.25
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300 deg+1.0	111987.88	-7861.59	-4520.87	-471098.19	857296.07	-763.85
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330 deg+1.0	111987.88	-4590.45	-7849.86	-822147.24	504197.61	-678.40
Ice+1.0 Temp						
Dead+Wind 0 deg - Service	51680.84	-41.56	-8220.66	-774012.70	10532.74	-166.82
Dead+Wind 30 deg - Service	51680.84	4316.75	-7411.92	-689225.88	-397483.31	132.26
Dead+Wind 60 deg - Service	51680.84	7400.44	-4187.18	-389018.60	-687542.12	413.06
Dead+Wind 90 deg - Service	51680.84	8403.95	41.56	5765.85	-788136.33	575.81
Dead+Wind 120 deg - Service	51680.84	7126.53	4077.02	391603.35	-679082.43	568.63
Dead+Wind 150 deg - Service	51680.84	4161.26	7059.45	673652.45	-392933.79	410.77
Dead+Wind 180 deg - Service	51680.84	41.57	8220.64	775932.52	920.13	166.36
Dead+Wind 210 deg - Service	51680.84	-4316.74	7411.90	691145.20	408936.26	-132.68
Dead+Wind 240 deg - Service	51680.84	-7400.43	4187.17	390937.59	698994.71	-413.46
Dead+Wind 270 deg - Service	51680.84	-8403.94	-41.57	-3846.73	799588.46	-576.23
Dead+Wind 300 deg - Service	51680.84	-7126.52	-4077.03	-389683.76	690534.46	-569.09
Dead+Wind 330 deg - Service	51680.84	-4161.25	-7059.47	-671732.51	404386.19	-411.25

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-51680.86	0.00	-0.16	51680.86	0.71	0.001%
2	-194.30	-62017.03	-38427.62	194.27	62016.82	38423.82	0.005%
3	-194.30	-46512.77	-38427.62	194.26	46512.49	38422.30	0.009%
4	20178.64	-62017.03	-34646.99	-20178.60	62017.03	34646.91	0.000%
5	20178.64	-46512.77	-34646.99	-20178.62	46512.77	34646.94	0.000%
6	34593.43	-62017.03	-19572.98	-34593.35	62017.03	19572.94	0.000%
7	34593.43	-46512.77	-19572.98	-34593.38	46512.77	19572.95	0.000%
8	39284.43	-62017.03	194.30	-39283.52	62016.98	-194.29	0.001%
9	39284.43	-46512.77	194.30	-39283.84	46512.74	-194.29	0.001%
10	33313.22	-62017.03	19058.20	-33313.14	62017.03	-19058.16	0.000%
11	33313.22	-46512.77	19058.20	-33313.17	46512.77	-19058.17	0.000%
12	19451.92	-62017.03	32999.68	-19451.88	62017.03	-32999.60	0.000%
13	19451.92	-46512.77	32999.68	-19451.89	46512.77	-32999.63	0.000%
14	194.30	-62017.03	38427.62	-194.28	62016.82	-38423.81	0.005%
15	194.30	-46512.77	38427.62	-194.28	46512.64	-38425.05	0.004%
16	-20178.64	-62017.03	34646.99	20178.60	62017.03	-34646.91	0.000%
17	-20178.64	-46512.77	34646.99	20178.62	46512.77	-34646.94	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
18	-34593.43	-62017.03	19572.98	34593.35	62017.03	-19572.94	0.000%
19	-34593.43	-46512.77	19572.98	34593.38	46512.77	-19572.95	0.000%
20	-39284.43	-62017.03	-194.30	39282.54	62016.93	194.28	0.003%
21	-39284.43	-46512.77	-194.30	39283.17	46512.70	194.29	0.002%
22	-33313.22	-62017.03	-19058.20	33313.14	62017.03	19058.16	0.000%
23	-33313.22	-46512.77	-19058.20	33313.17	46512.77	19058.17	0.000%
24	-19451.92	-62017.03	-32999.68	19451.88	62017.03	32999.60	0.000%
25	-19451.92	-46512.77	-32999.68	19451.89	46512.77	32999.63	0.000%
26	0.00	-111987.90	0.00	-0.11	111987.90	0.45	0.000%
27	-34.90	-111987.90	-9103.18	34.90	111987.88	9102.53	0.001%
28	4620.82	-111987.90	-7972.24	-4620.49	111987.88	7971.68	0.001%
29	7984.13	-111987.90	-4551.29	-7983.55	111987.88	4550.98	0.001%
30	9312.84	-111987.90	34.90	-9312.17	111987.88	-34.88	0.001%
31	7862.18	-111987.90	4521.19	-7861.88	111987.89	-4521.01	0.000%
32	4590.79	-111987.90	7850.42	-4590.62	111987.89	-7850.12	0.000%
33	34.90	-111987.90	9103.18	-34.91	111987.88	-9102.50	0.001%
34	-4620.82	-111987.90	7972.24	4620.64	111987.89	-7971.94	0.000%
35	-7984.13	-111987.90	4551.29	7983.83	111987.89	-4551.12	0.000%
36	-9312.84	-111987.90	-34.90	9312.16	111987.88	34.92	0.001%
37	-7862.18	-111987.90	-4521.19	7861.59	111987.88	4520.87	0.001%
38	-4590.79	-111987.90	-7850.42	4590.45	111987.88	7849.86	0.001%
39	-41.57	-51680.86	-8222.01	41.56	51680.84	8220.66	0.003%
40	4317.44	-51680.86	-7413.10	-4316.75	51680.84	7411.92	0.003%
41	7401.64	-51680.86	-4187.85	-7400.44	51680.84	4187.18	0.003%
42	8405.33	-51680.86	41.57	-8403.95	51680.84	-41.56	0.003%
43	7127.73	-51680.86	4077.71	-7126.53	51680.84	-4077.02	0.003%
44	4161.95	-51680.86	7060.64	-4161.26	51680.84	-7059.45	0.003%
45	41.57	-51680.86	8222.01	-41.57	51680.84	-8220.64	0.003%
46	-4317.44	-51680.86	7413.10	4316.74	51680.84	-7411.90	0.003%
47	-7401.64	-51680.86	4187.85	7400.43	51680.84	-4187.17	0.003%
48	-8405.33	-51680.86	-41.57	8403.94	51680.84	41.57	0.003%
49	-7127.73	-51680.86	-4077.71	7126.52	51680.84	4077.03	0.003%
50	-4161.95	-51680.86	-7060.64	4161.25	51680.84	7059.47	0.003%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.0000001	0.00000492
2	Yes	16	0.00007547	0.00005177
3	Yes	15	0.00010349	0.00009575
4	Yes	21	0.00000001	0.00012220
5	Yes	21	0.00000001	0.00008838
6	Yes	21	0.00000001	0.00011193
7	Yes	21	0.00000001	0.00008094
8	Yes	18	0.00000001	0.00010196
9	Yes	18	0.00000001	0.00007801
10	Yes	21	0.00000001	0.00012406
11	Yes	21	0.00000001	0.00008983
12	Yes	21	0.00000001	0.00011772
13	Yes	21	0.00000001	0.00008523
14	Yes	16	0.00007548	0.00012113
15	Yes	16	0.00005073	0.00009952
16	Yes	21	0.00000001	0.00011708
17	Yes	21	0.00000001	0.00008438
18	Yes	21	0.00000001	0.00012292

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19	Yes	21	0.00000001	0.00008879
20	Yes	17	0.00003690	0.00014194
21	Yes	17	0.00002441	0.00011061
22	Yes	21	0.00000001	0.00011562
23	Yes	21	0.00000001	0.00008371
24	Yes	21	0.00000001	0.00012037
25	Yes	21	0.00000001	0.00008731
26	Yes	13	0.00000001	0.00004553
27	Yes	18	0.00000001	0.00011099
28	Yes	18	0.00000001	0.00014323
29	Yes	18	0.00000001	0.00014202
30	Yes	18	0.00000001	0.00011533
31	Yes	19	0.00000001	0.00008297
32	Yes	19	0.00000001	0.00008108
33	Yes	18	0.00007160	0.00011683
34	Yes	19	0.00000001	0.00008151
35	Yes	19	0.00000001	0.00008297
36	Yes	18	0.00007146	0.00011666
37	Yes	18	0.00000001	0.00014540
38	Yes	18	0.00000001	0.00014750
39	Yes	15	0.00012349	0.00002551
40	Yes	15	0.00012328	0.00009218
41	Yes	15	0.00012336	0.00006430
42	Yes	15	0.00012354	0.00004373
43	Yes	15	0.00012349	0.00009740
44	Yes	15	0.00012349	0.00007478
45	Yes	15	0.00012359	0.00002638
46	Yes	15	0.00012333	0.00007284
47	Yes	15	0.00012334	0.00010177
48	Yes	15	0.00012347	0.00004194
49	Yes	15	0.00012338	0.00006807
50	Yes	15	0.00012337	0.00008478

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 130	19.637	46	1.0684	0.0028
L2	130 - 110	15.184	46	1.0502	0.0030
L3	110 - 95.83	10.948	46	0.9561	0.0027
L4	101 - 81	9.212	46	0.8833	0.0020
L5	81 - 61	5.792	46	0.7315	0.0014
L6	61 - 47.83	3.148	46	0.5262	0.0008
L7	54 - 34	2.433	46	0.4485	0.0006
L8	34 - 29.58	0.883	46	0.2690	0.0003
L9	29.58 - 14.67	0.656	46	0.2218	0.0003
L10	14.67 - 0	0.153	46	0.0999	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	10' x 1.5" Dia Dipole	46	19.413	1.0682	0.0028	113239
138.00	RRUS A2 B13	46	16.955	1.0627	0.0029	47183

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
129.00	DC6-48-60-18-8F	46	14.964	1.0478	0.0030	24225
127.00	HPA-65R-BUU-H6 w/ Mount Pipe	46	14.526	1.0424	0.0030	20166
116.00	(2) RADIO 4449 B12/B71	46	12.172	0.9957	0.0029	9428
106.00	(2) Collar Mount	46	10.162	0.9245	0.0024	7972
105.00	(2) Collar Mount	46	9.969	0.9162	0.0023	8153
104.00	8'x2" Dia Dipole	46	9.778	0.9079	0.0022	8332
80.00	BXA-70063-6CF-EDIN-0 w/ Mount Pipe	46	5.639	0.7229	0.0013	5953
40.00	GPS_A	46	1.262	0.3254	0.0004	5566

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 130	92.244	20	5.0284	0.0134
L2	130 - 110	71.314	20	4.9414	0.0145
L3	110 - 95.83	51.403	20	4.5007	0.0125
L4	101 - 81	43.240	20	4.1551	0.0095
L5	81 - 61	27.152	16	3.4386	0.0064
L6	61 - 47.83	14.759	16	2.4693	0.0037
L7	54 - 34	11.407	16	2.1040	0.0030
L8	34 - 29.58	4.139	16	1.2614	0.0016
L9	29.58 - 14.67	3.074	16	1.0398	0.0012
L10	14.67 - 0	0.719	16	0.4685	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
149.00	10' x 1.5" Dia Dipole	20	91.191	5.0272	0.0134	24844
138.00	RRUS A2 B13	20	79.636	5.0006	0.0142	10350
129.00	DC6-48-60-18-8F	20	70.281	4.9303	0.0145	5264
127.00	HPA-65R-BUU-H6 w/ Mount Pipe	20	68.223	4.9050	0.0145	4351
116.00	(2) RADIO 4449 B12/B71	20	57.162	4.6859	0.0138	2059
106.00	(2) Collar Mount	20	47.706	4.3506	0.0112	1737
105.00	(2) Collar Mount	20	46.800	4.3114	0.0108	1775
104.00	8'x2" Dia Dipole	20	45.900	4.2719	0.0105	1812
80.00	BXA-70063-6CF-EDIN-0 w/ Mount Pipe	16	26.438	3.3978	0.0063	1275
40.00	GPS_A	16	5.919	1.5262	0.0020	1186

Compression Checks

Pole Design Data

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio P _u / φP _n
L1	150 - 130 (1)	TP27.25x23.61x0.2813	20.00	0.00	0.0	24.4279	-6445.56	1743920.00	0.004
L2	130 - 110 (2)	TP30.89x27.25x0.2813	20.00	0.00	0.0	27.7249	-15882.40	1884920.00	0.008
L3	110 - 95.83 (3)	TP33.469x30.89x0.2813	14.17	0.00	0.0	29.2086	-19187.20	1941050.00	0.010
L4	95.83 - 81 (4)	TP35.6055x31.9654x0.375	20.00	0.00	0.0	42.5408	-23938.10	3058540.00	0.008
L5	81 - 61 (5)	TP39.2455x35.6055x0.375	20.00	0.00	0.0	46.9361	-32429.20	3254690.00	0.010
L6	61 - 47.83 (6)	TP41.6425x39.2455x0.375	13.17	0.00	0.0	48.4745	-34255.30	3318040.00	0.010
L7	47.83 - 34 (7)	TP43.4095x39.7695x0.4375	20.00	0.00	0.0	60.5368	-41582.10	4284320.00	0.010
L8	34 - 29.58 (8)	TP44.2134x43.4095x0.4375	4.42	0.00	0.0	61.6693	-43145.10	4334660.00	0.010
L9	29.58 - 14.67 (9)	TP46.9276x44.2134x0.58	14.91	0.00	0.0	86.5588	-51164.30	6380250.00	0.008
L10	14.67 - 0 (10)	TP49.5976x46.9276x0.7	14.67	0.00	0.0	110.215 0	-62005.30	8123960.00	0.008

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} lb-ft	φM _{ux} lb-ft	Ratio M _{ux} / φM _{ux}	M _{uy} lb-ft	φM _{uy} lb-ft	Ratio M _{uy} / φM _{uy}
L1	150 - 130 (1)	TP27.25x23.61x0.2813	89334.17	955775.00	0.093	0.00	955775.00	0.000
L2	130 - 110 (2)	TP30.89x27.25x0.2813	396701.67	1173925.00	0.338	0.00	1173925.00	0.000
L3	110 - 95.83 (3)	TP33.469x30.89x0.2813	585173.33	1274158.33	0.459	0.00	1274158.33	0.000
L4	95.83 - 81 (4)	TP35.6055x31.9654x0.375	1055941.67	2189316.67	0.482	0.00	2189316.67	0.000
L5	81 - 61 (5)	TP39.2455x35.6055x0.375	1643108.33	2572975.00	0.639	0.00	2572975.00	0.000
L6	61 - 47.83 (6)	TP41.6425x39.2455x0.375	1860633.33	2709850.00	0.687	0.00	2709850.00	0.000
L7	47.83 - 34 (7)	TP43.4095x39.7695x0.4375	2511341.67	3742341.67	0.671	0.00	3742341.67	0.000
L8	34 - 29.58 (8)	TP44.2134x43.4095x0.4375	2662166.67	3857858.33	0.690	0.00	3857858.33	0.000
L9	29.58 - 14.67 (9)	TP46.9276x44.2134x0.58	3197425.00	5997066.67	0.533	0.00	5997066.67	0.000
L10	14.67 - 0 (10)	TP49.5976x46.9276x0.7	3763866.67	8041874.67	0.468	0.00	8041874.67	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u lb	φV _n lb	Ratio V _u / φV _n	Actual T _u lb-ft	φT _n lb-ft	Ratio T _u / φT _n
L1	150 - 130 (1)	TP27.25x23.61x0.2813	8106.47	871958.00	0.009	185.20	1944850.00	0.000
L2	130 - 110 (2)	TP30.89x27.25x0.2813	20429.70	942459.00	0.022	2067.15	2387758.33	0.001
L3	110 - 95.83 (3)	TP33.469x30.89x0.2813	22405.40	970523.00	0.023	2263.52	2591233.33	0.001
L4	95.83 - 81 (4)	TP35.6055x31.9654x0.375	24703.00	1529270.00	0.016	2260.66	4455241.67	0.001
L5	81 - 61 (5)	TP39.2455x35.6055x0.375	30701.60	1627350.00	0.019	2882.16	5234225.00	0.001
L6	61 - 47.83 (6)	TP41.6425x39.2455x0.375	31400.00	1659020.00	0.019	2880.70	5512116.67	0.001
L7	47.83 - 34 (7)	TP43.4095x39.7695x0.4375	33457.50	2142160.00	0.016	2995.21	7614450.00	0.000
L8	34 - 29.58 (8)	TP44.2134x43.4095x0.4375	34685.50	2167330.00	0.016	1659.48	7849000.00	0.000
L9	29.58 - 14.67 (9)	TP46.9276x44.2134x0.58	37112.00	3190120.00	0.012	1246.67	12211582.67	0.000
L10	14.67 - 0 (10)	TP49.5976x46.9276x0.7	40112.80	4061980.00	0.010	681.97	16385166.67	0.000

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	Project	1978021	Date	14:44:18 05/18/20
	Client	Verizon	Designed by	Ahmet Colakoglu

Pole Interaction Design Data

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
L1	150 - 130 (1)	0.004	0.093	0.000	0.009	0.000	0.097	1.000	4.8.2
L2	130 - 110 (2)	0.008	0.338	0.000	0.022	0.001	0.347	1.000	4.8.2
L3	110 - 95.83 (3)	0.010	0.459	0.000	0.023	0.001	0.470	1.000	4.8.2
L4	95.83 - 81 (4)	0.008	0.482	0.000	0.016	0.001	0.490	1.000	4.8.2
L5	81 - 61 (5)	0.010	0.639	0.000	0.019	0.001	0.649	1.000	4.8.2
L6	61 - 47.83 (6)	0.010	0.687	0.000	0.019	0.001	0.697	1.000	4.8.2
L7	47.83 - 34 (7)	0.010	0.671	0.000	0.016	0.000	0.681	1.000	4.8.2
L8	34 - 29.58 (8)	0.010	0.690	0.000	0.016	0.000	0.700	1.000	4.8.2
L9	29.58 - 14.67 (9)	0.008	0.533	0.000	0.012	0.000	0.541	1.000	4.8.2
L10	14.67 - 0 (10)	0.008	0.468	0.000	0.010	0.000	0.476	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	150 - 130	Pole	TP27.25x23.61x0.2813	1	-6445.56	1743920.00	9.7	Pass
L2	130 - 110	Pole	TP30.89x27.25x0.2813	2	-15882.40	1884920.00	34.7	Pass
L3	110 - 95.83	Pole	TP33.469x30.89x0.2813	3	-19187.20	1941050.00	47.0	Pass
L4	95.83 - 81	Pole	TP35.6055x31.9654x0.375	4	-23938.10	3058540.00	49.0	Pass
L5	81 - 61	Pole	TP39.2455x35.6055x0.375	5	-32429.20	3254690.00	64.9	Pass
L6	61 - 47.83	Pole	TP41.6425x39.2455x0.375	6	-34255.30	3318040.00	69.7	Pass
L7	47.83 - 34	Pole	TP43.4095x39.7695x0.4375	7	-41582.10	4284320.00	68.1	Pass
L8	34 - 29.58	Pole	TP44.2134x43.4095x0.4375	8	-43145.10	4334660.00	70.0	Pass
L9	29.58 - 14.67	Pole	TP46.9276x44.2134x0.58	9	-51164.30	6380250.00	54.1	Pass
L10	14.67 - 0	Pole	TP49.5976x46.9276x0.7	10	-62005.30	8123960.00	47.6	Pass
Summary								
Pole (L8)							70.0	Pass
RATING =							70.0	Pass

CALCULATION SHEET

Check for Reinforcing Member - 14.67'-31' (4) WT6x25

$$I_{\text{pole}} := 18084 \cdot \text{in}^4$$

Pole moment of inertia.

$$I_{\text{reinf}} := 12155 \cdot \text{in}^4$$

Reinforcement moment of inertia

$$M_{\text{pole}} := 3197.4 \cdot \text{kip} \cdot \text{ft}$$

Moment in the composite section (TNX)

$$M_{\text{reinf}} := \frac{I_{\text{reinf}}}{I_{\text{pole}} + I_{\text{reinf}}} (M_{\text{pole}}) = 1.285 \times 10^3 \cdot \text{kip} \cdot \text{ft} \text{ Moment carried by the reinforcing members}$$

$$y_{\text{bar}} := 1.17 \cdot \text{in}$$

$$d_{\text{pole}} := 46.9276 \cdot \text{in}$$

$$s := d_{\text{pole}} + 2 \cdot (6 \cdot \text{in} - y_{\text{bar}}) = 4.716 \text{ ft}$$

$$P_{\text{reinf}} := \frac{M_{\text{reinf}}}{s} = 272.549 \cdot \text{kip}$$

Load carried by the reinforcing members

$$P_{\text{cap}} := 327.6 \cdot \text{kip}$$

Factored reinforcing member capacity per Tectonic

$$\frac{P_{\text{reinf}}}{P_{\text{cap}}} = 83.196 \cdot \%$$

CALCULATION SHEET

Check for Reinforcing Member - 0'-14.67' (8) WT6x25

$$I_{pole} := 21396 \cdot \text{in}^4$$

Pole moment of inertia.

$$I_{reinf} := 21887 \cdot \text{in}^4$$

Reinforcement moment of inertia

$$M_{pole} := 3763.8 \cdot \text{kip} \cdot \text{ft}$$

Moment in the composite section (TNX)

$$M_{reinf} := \frac{I_{reinf}}{I_{pole} + I_{reinf}} (M_{pole}) = 1.903 \times 10^3 \cdot \text{kip} \cdot \text{ft}$$
 Moment carried by the reinforcing members

$$y_{bar} := 1.17 \cdot \text{in}$$

$$d_{pole} := 46.9276 \cdot \text{in}$$

$$s := 4.14 \cdot \text{ft}$$

Force Couple spacing (per Tectonic)

$$n := 2$$

Number of Plates per group

$$P_{reinf} := \frac{M_{reinf}}{n \cdot s} = 229.861 \cdot \text{kip}$$

Load carried by the reinforcing members

$$P_{cap} := 327.6 \cdot \text{kip}$$

Factored reinforcing member capacity (per Tectonic)

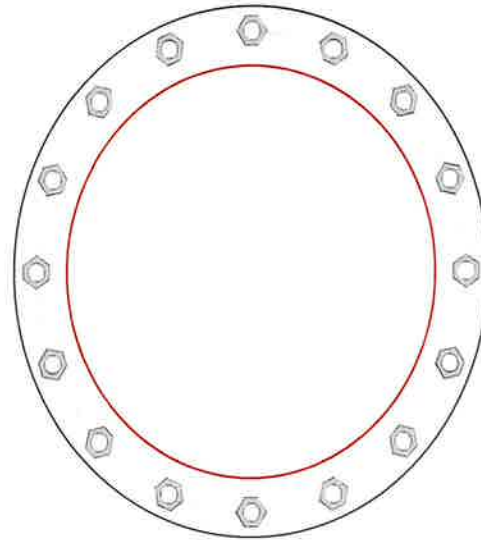
$$\frac{P_{reinf}}{P_{cap}} = 70.165 \cdot \%$$

Monopole Base Plate Connection

Site Info	
BU #	
Site Name	Faifield 2 CT
Order #	

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	Yes
l_{gr} (in)	0
Eta Factor, η	0.55

Applied Loads	
Moment (kip-ft)	3763.87
Axial Force (kips)	62.01
Shear Force (kips)	40.11



Connection Properties	Analysis Results			
Anchor Rod Data	<i>(units of kips, kip-in)</i>			
(16) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 57.85" BC	Anchor Rod Summary	$P_{u,t} = 191.19$	$\phi P_{n,t} = 260$	Stress Rating
Base Plate Data	$V_u = 2.51$	$\phi V_n = n/a$	$\phi M_n = n/a$	75.3%
63.85" OD x 2.75" Plate (A633 Gr.E; $F_y=60$ ksi, $F_u=75$ ksi)	$M_u = n/a$			Pass
Stiffener Data	Base Plate Summary	Max Stress (ksi):	27.17	(Flexural)
N/A		Allowable Stress (ksi):	54	
Pole Data		Stress Rating:	50.3%	Pass
49.5976" x 0.7" 12-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)				

Drilled Pier Foundation

BU #:
 Site Name: Fairfield 2 CT
 Order Number:

TIA-222 Revision: G
 Tower Type: Monopole

Applied Loads		
Comp.	Uplift	
Moment (kip-ft)	3763.87	
Axial Force (kips)	62.02	
Shear Force (kips)	40.09	

Material Properties	
Concrete Strength, f_c :	3 ksi
Rebar Strength, f_y :	60 ksi

Pier Design Data	
Depth	26.5 ft
Ext. Above Grade	1 ft
Pier Section 1	
<i>From 1' above grade to 26.5' below grade</i>	
Pier Diameter	7 ft
Rebar Quantity	40
Rebar Size	11
Clear Cover to Ties	4 in
Tie Size	4

Analysis Results		
Soil Lateral Capacity	Compression	Uplift
D_{veg} (ft from TOC)	6.86	-
Soil Safety Factor	1.83	-
Max Moment (kip-ft)	3998.80	-
Rating	72.8%	-
Soil Vertical Capacity	Compression	Uplift
Skin Friction (kips)	262.46	-
End Bearing (kips)	44.87	-
Weight of Concrete (kips)	129.98	-
Total Capacity (kips)	307.33	-
Axial (kips)	192.00	-
Rating	62.5%	-
Reinforced Concrete Capacity	Compression	Uplift
Critical Depth (ft from TOC)	6.81	-
Critical Moment (kip-ft)	3998.55	-
Critical Moment Capacity	9155.81	-
Rating	43.7%	-
Soil Interaction Rating:	72.8%	
Structural Foundation Rating:	43.7%	

Check Limitation	
Load Z Normalization:	N/A <input checked="" type="checkbox"/>

Soil Profile

of Layers: 3

Groundwater Depth: 5.5 ft

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	120	150		0	0.000	0.000	0.00	0.00			Cohesionless
2	4	5.5	1.5	120	150		35	0.687	0.687			1,5546	20	Cohesionless
3	5.5	26.5	21	42.6	87.6		30	0.709	0.709				10	Cohesionless

ATTACHMENT 5



Date: 5/19/2020



Submitted To: Verizon Wireless
118 Flanders Road – Third Floor
Westborough, MA 01581

Subject: Mount Structural Analysis Report – Rev.1

Verizon Wireless Designation: Site Name: Fairfield 2 CT

Site Data: 3965 Congress Street, Fairfield, CT 06824
Latitude 41° 11' 18.05", Longitude -73° 17' 56.67"

We are pleased to submit this "Mount Structural Analysis Report – Rev.1" to determine the structural capacity of the antenna mount utilized by Verizon Wireless at the above referenced site.

The purpose of the analysis is to determine acceptability of the mount stress level for the changes proposed by Verizon Wireless. Under the following load case we have determined the mount to have:

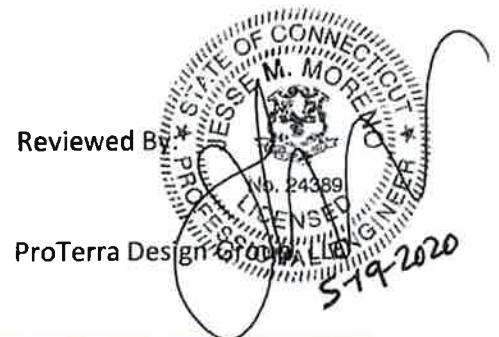
Existing + Proposed Equipment **Adequate Capacity (80.2%)**
Note: See Analysis Criteria for loading configuration

The analysis has been performed in accordance with the TIA-222-G Standard and the 2018 Connecticut State Building Code (2015 IBC).

We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Prepared by Consulting Engineer:

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057
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Atlanta, GA 30338
Tel: (770) 693-0835



1) ANALYSIS CRITERIA

The analysis was performed for the existing and proposed appurtenances as specified in the loading information referenced below, and per the following loading criteria of Table 1.

Table 1 – Loading and Analysis Criteria

Rad Center	80'
Structure Type	Monopole Tower
Exposure Category	B
Wind Speed	125 mph * $\sqrt{0.6}$ = 97 mph (ASD)
Ice Loading	0.75" with 50 mph Wind
Risk Category	II
Topographic Factor	Kzt = 1.0

Table 1.1 – Existing Appurtenance Configuration for Verizon

Qty	Model
3	Antel BXA-70063-6CF-2-850MHZ – Antennas
3	Antel BXA-70063-6CF-2-750MHZ – Antennas
3	Antel BXA-171063-12CF-EDIN-2 – Antennas
3	Antel BXA-171063 – Antennas
3	Alcatel lucent RRH2x40-AWS – RRUs
1	6-OVP Box

Table 1.2 – Proposed and Final Appurtenance Configuration for Verizon

Qty	Model
3	Antel BXA-70063-6CF-850MHZ – Antennas
6	Andrew JAHH-65B-R3B – Antennas*
3	CBRS Antenna and RRH – RT4401-48A
3	B5/B13 RRH - BR04C – RRUs
3	B2/B66A RRH - BR049 – RRUs
3	CBC78T-DS-43-2X – Quadplexers
1	12-OVP Box
3	Sch40 Galv. (3.5"O.D x 0.216") – 3'-0" Long Mounting pipe
3	Valmont Sitepro1 6" Stand-off Wall Mount (P/N MM01)
3	Commscope Side-by-Side Mounting Kit (P/N BSAMNT-SBS-2-2)
3	Valmont Sitepro1 Sector Frame Stabilizer – Horizontal (P/N SFS-H)
1	Valmont Sitepro1 Ring Mount Assembly (P/N LWRM)
1	Valmont Sitepro1 Handrail Kit (P/N HRK14)
1	Valmont Sitepro1 Platform Reinforcement Kit (P/N PRK-1245L)

*To be mounted on dual antenna mounts.

Table 1.3 – Assumed Material Properties

Member Type	ASTM Material Designation	Fy (ksi)	Fu (ksi)
Pipes	A53 Gr. B	35	60
Angles/Channels	A36	36	58
Rectangular HSS	A500 Gr. B – 46	46	58
Round HSS	A500 Gr. B – 42	42	58
Others (UNO)	A572 Gr. 50	50	65

2) ANALYSIS PROCEDURE

The analysis is based on the following information:

Table 2 – Documents

Document	Provided By	Date
Antenna Plan Drawings	ProTerra Design Group, LLC	05/12/2020
Site Photos	ProTerra Design Group, LLC	11/05/2019
RFDS	Verizon	05/12/2020
Mount Structural Analysis Report	Paul J. Ford & Company	08/24/2018
Structural Analysis Report	Paul J. Ford & Company	10/10/2017

2.1) Analysis Method

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

2.2) Analysis Conditions and Assumptions

- 1) The mount was built and installed in accordance with the manufacturer's specifications.
- 2) The mount has been maintained and will be maintained in accordance with the manufacturer's specifications. All structural members and connections of the mount are in good condition and can achieve theoretical strength.
- 3) The configuration of antennas is as specified in "1) Analysis Criteria".
- 4) The analysis was performed for the subject mount only. It does not include an evaluation of the other mounts or the tower, which should be analyzed by others.
- 5) The evaluation does not include any antenna rigging loads. The equipment should not be rigged using the subject antenna mount as the support.
- 6) The analysis includes a minimum 250 lbf maintenance point load at the worst-case location on the mount, as well as a minimum 250 lbf maintenance point load at each antenna location in conjunction with a 30 mph wind load.
- 7) Any steel grating represented in this model is for loading purposes only and it is not considered to provide any structural restraint or support.
- 8) Member sizes per the available site photos, mount structural analysis report, and assumed based on our experience with similar structures. Please refer to calculation output in the appendix of this report for sizes and lengths assumed.
- 9) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
- 10) This analysis assumes that the mount modifications proposed in the preliminary construction drawings by ProTerra Design Group, LLC., dated 05/12/2020, have been or will be installed prior to the equipment upgrade proposed in this analysis.

ProTerra Design Group, LLC must be notified immediately if any of these assumptions are discovered to be incorrect. The results of this analysis may be affected if any of the assumptions are not valid or have been made in error.

3) ANALYSIS RESULTS AND CONCLUSION

The analysis results are shown on the table below.

Table 3.1 – Mount Component Stresses vs. Capacity

Component	% Capacity	Pass / Fail
Horizontal Face Angle	80.2	Pass
Grating Angle	72.9	Pass
Horizontal Standoff Tube	<20.0	Pass
Antenna Mount Pipe	20.9	Pass
Handrail Pipe	<20.0	Pass
Handrail Connection Angle	27.1	Pass
SFS-H Stabilizer Kit	<20.0	Pass
Kicker Support Angle	<20.0	Pass

Platform Mount: The existing platform mount has **adequate** capacity for the proposed changes by Verizon. For the code specified load combinations and as a maximum, the mount members are stressed to **80.2%** of their structural capacity.

Note: This analysis assumes that the mount modifications proposed in the preliminary construction drawings by ProTerra Design Group, LLC., dated 05/12/2020, have been or will be installed prior to the equipment upgrade proposed in this analysis.

APPENDIX
INPUT LOADS
ANALYSIS OUTPUT

CLIENT: Proterra Design Group
 PROJECT: Bayleaf 2 CT
 SUBJECT: Arizona Units - TM 222 C Standard (chapter 16 revision)

Tower Height Radius and Speed, V	150.00 97	ft mph (= Ultimate Speed / Spd(0.6))	Type of Mount	Sector
Basic Wind Speed Wind, V	50	mph		
Maintenance Load Factor, Lu	0.0957			
Design Ice Thickness, t	0.75	inches		

Table 3.3 Imperative Factors

Structure Classification	Wind Load Without Ice	Wind Load With Ice	Ice Thickness	Embargo
1	1	1	1	1

Table 3.4 Exposure Category Coefficients

Exposure Category	Z ₀	z	K _z min	K _z	K _z max
1	1200	7	0.7	0.8	0.95

Table 2.4 Topographic Categories
 K_t 1.00

Table 3.2 Wind Directionality Factor, K_d

Structure Type	K _d
1	0.95

Does NOT CHANGE

Table 3.1 Gust Effect Factor, G_f

Structure Type	G _f
1	1.00

Does NOT CHANGE

Table 3.1 Shielding Factor, K_s

Structure Type	K _s
1	0.10

Does NOT CHANGE

Table 3.1 Ice Factors

Category	Factor
1	0.75
2	0.10
3	1.0
4	2.4
5	3

CLIENT: ProTerra Design Group
 PROJECT: Facility 2 CT
 SUBJECT: Antenna Loads - 1M 220 Q Standard (shopper 16 in stock)

80.00 Antenna AND Mount Without Ice

Post	Height (ft)	Weight (lb)	H (in)	W (in)	D (in)	Ka	**A ₁ (ft ²)	**A ₂ (ft ²)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K _s	K _d	q _r (psf)	Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (psf)	Total Dead Load	Lateral Load (Statemic)	Vertical Load (Statemic)
Post 1	80.00	23.1	16.2	6.6	5.5	0.90	0.97	0.62	1.88	2.85	1.20	1.22	0.927	0.927	21.2	22.2	0.0	14.4	23.1	14	1	1
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
Post 2	80.00	17.0	71.0	11.2	6.2	0.90	5.52	2.56	6.34	13.65	1.37	1.62	0.927	0.927	21.2	142.5	70.4	11	79	17	0	1
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
Post 3	80.00	84.4	15.0	15.0	8.1	0.90	1.56	0.84	1.00	1.65	1.20	1.20	0.927	0.927	21.2	35.8	19.3	70.2	53	17.6	7	6
	80.00	84.4	15.0	15.0	10.0	0.90	1.56	0.84	1.00	1.65	1.20	1.20	0.927	0.927	21.2	35.8	23.9	84.4	53	17.6	7	6
	80.00	20.7	6.4	6.9	9.6	0.90	0.31	0.43	0.93	0.67	1.20	1.20	0.927	0.927	21.2	7.0	9.8	20.7	53	17.6	7	6
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
Post 4	80.00	83.3	72.0	13.8	8.2	0.90	6.80	4.10	5.22	8.76	1.32	1.48	0.927	0.927	21.2	342.0	220.5	126.6	270	127	5	6
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0
	80.00	0.0	0.0	0.0	0.0	0.90	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0	0

** Enter N/A in the W column for front sheathed antennas

** A₁ is the product of H and W

** A₂ is the product of H and D

Height (ft)	L (in)	W (in)	D (in)	Weight (lb/ft)	Ca	K _s	K _d	q _r (psf)	Wind Load (PLF)	Lateral Load (Statemic)	Vertical Load (Statemic)
80.00	0.00	1.50	0.75	0.75	1.20	0.927	0.927	19.1	7		
80.00	12.00	3.50	0.75	0.75	1.20	0.927	0.927	19.1	5		
80.00	0.00	2.88	0.75	0.75	1.20	0.927	0.927	19.1	5		
80.00	12.00	2.38	0.75	0.75	1.20	0.927	0.927	19.1	5		
80.00	0.00	0.75	0.75	0.75	1.20	0.927	0.927	19.1	10		
80.00	12.00	2.88	0.75	0.75	2.00	0.927	0.927	19.1	6		
80.00	12.00	2.88	0.75	0.75	2.00	0.927	0.927	19.1	6		
80.00	12.00	2.88	0.75	0.75	2.00	0.927	0.927	19.1	13		
80.00	12.00	4.00	4.00	4.00	2.00	0.927	0.927	19.1	6		
80.00	12.00	2.50	2.50	2.50	2.00	0.927	0.927	19.1	10		
80.00	12.00	3.00	3.00	3.00	2.00	0.927	0.927	19.1	10		
80.00	0.00	1.50	4.00	4.00	2.00	0.927	0.927	19.1	10		
80.00	0.00	3.63	5.38	5.38	2.00	0.927	0.927	19.1	10		

The dimension L is the height dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** Ca will equal 1.2 for round members and 2.0 for flat members

CLIENT: Pro Terra Design Group
 PROJECT: Fulford 3 CT
 SUBJECT: Address Labels - 11A-222 G Standard (Chapter 16 revision)

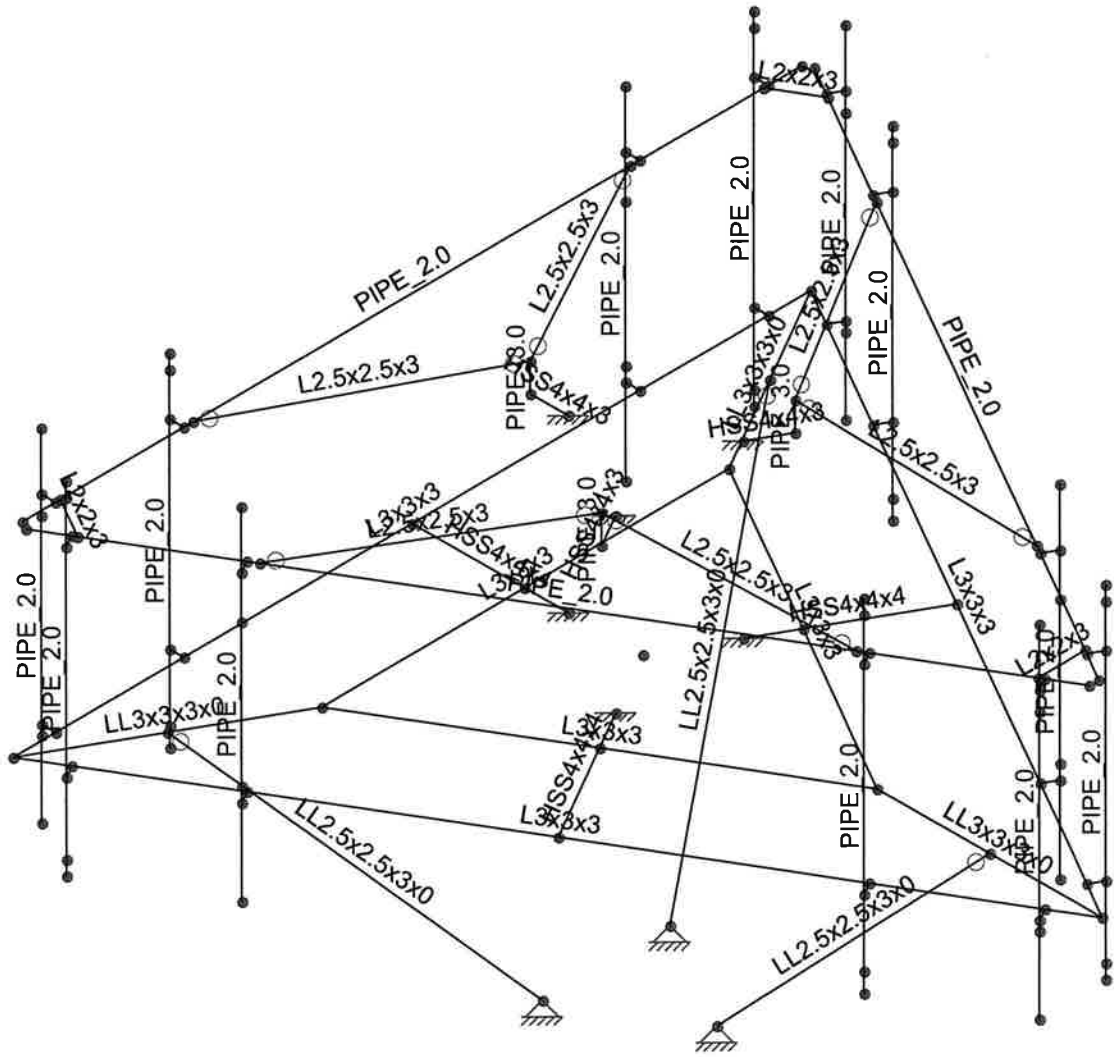
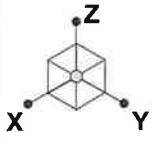
10 (ft) 1.03368 Kz 1.025351 reduction 0.9267

Mounting Pole	Height (ft)	#	Model Number	H (in)	W (in)	D (in)	Ka	*Aa (ft2)	*Aa (ft2)	Volume (ft3)	Weight (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz (psf)	Pounds									
															Ice Wind Load (Front)	Common Wind Load (Front)	Common Wind Load (Slide)	Ice Dead Load						
Pos 1	80.00	1	Empty	16.2	6.6	5.5	0.90	0.64	0.57	0.73	40.98	0.70	0.70	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	41
	80.00	1	CBRS Antenna and RRH - FT44014E	16.2	6.6	5.5	0.90	0.64	0.57	0.73	40.98	0.70	0.70	0.927	5.6	2.3	2.0	8.2	5.8	4.1	0.0	0.0	0.0	0.0
	80.00	1	Empty	16.2	6.6	5.5	0.90	0.64	0.57	0.73	40.98	0.70	0.70	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	80.00	1	Empty	16.2	6.6	5.5	0.90	0.64	0.57	0.73	40.98	0.70	0.70	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pos 2	80.00	1	Empty	21.0	11.2	9.2	0.90	1.35	1.81	2.95	15.75	0.76	0.64	0.927	5.6	7.5	7.7	45.9	28.8	161	0.0	0.0	0.0	0.0
	80.00	1	Antenna 550V/1065 BCT-R50MHZ	21.0	11.2	9.2	0.90	1.35	1.81	2.95	15.75	0.76	0.64	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	80.00	1	Empty	21.0	11.2	9.2	0.90	1.35	1.81	2.95	15.75	0.76	0.64	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	80.00	1	Empty	21.0	11.2	9.2	0.90	1.35	1.81	2.95	15.75	0.76	0.64	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pos 3	80.00	1	Empty	15.0	15.0	8.1	0.90	0.76	0.60	1.14	64.12	0.70	0.70	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	80.00	1	B5613 RRH-BR04C	15.0	15.0	8.1	0.90	0.76	0.60	1.14	64.12	0.70	0.70	0.927	5.6	2.7	2.1	12.2	7.3	94	0.0	0.0	0.0	0.0
	80.00	1	B2680A RRH-R04G	15.0	15.0	8.1	0.90	0.76	0.60	1.14	64.12	0.70	0.70	0.927	5.6	1.3	1.6	7.5	4.2	27	0.0	0.0	0.0	0.0
	80.00	1	Antenna 550V/1065 BCT-R50MHZ	15.0	15.0	8.1	0.90	0.76	0.60	1.14	64.12	0.70	0.70	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pos 4	80.00	2	Empty	72.0	13.8	8.2	0.90	2.03	1.90	3.62	274.15	0.74	0.79	0.927	5.6	15.3	15.2	107.7	75.9	428	0.0	0.0	0.0	0.0
	80.00	2	Antenna JARR-6SB-R3B	72.0	13.8	8.2	0.90	2.03	1.90	3.62	274.15	0.74	0.79	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	80.00	2	Empty	72.0	13.8	8.2	0.90	2.03	1.90	3.62	274.15	0.74	0.79	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	80.00	2	Empty	72.0	13.8	8.2	0.90	2.03	1.90	3.62	274.15	0.74	0.79	0.927	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Aa, Aa, Volume Ice and Weight Ice are calculated per unit
 **Ca will equal 1.2 for all ice load calculations

Mount	Height (ft)	Member	L (in)	W (in)	D (in)	**Aa (ft2)	Volume (ft3)	Weight (lbs)	**Ca (FRONT)	Kz (psf)	PIF		
											Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
Pos 1	80.00	4 STD Pipe	0.00	4.50	0.00	0.43	0.18	10.29	1.20	0.927	5.1	2.6	4.4
	80.00	3 STD Pipe	12.00	3.50	0.00	0.40	0.14	8.05	1.20	0.927	5.1	2.4	3.7
	80.00	2 STD Pipe	12.00	2.50	0.00	0.42	0.14	7.65	1.20	0.927	5.1	2.5	5.1
	80.00	1 STD Pipe	12.00	1.50	0.00	0.40	0.11	6.37	1.20	0.927	5.1	2.5	4.6
Pos 2	80.00	4 STD Pipe	0.00	4.50	0.00	0.43	0.18	10.29	1.20	0.927	5.1	2.6	4.4
	80.00	3 STD Pipe	12.00	3.50	0.00	0.40	0.14	8.05	1.20	0.927	5.1	2.4	3.7
	80.00	2 STD Pipe	12.00	2.50	0.00	0.42	0.14	7.65	1.20	0.927	5.1	2.5	5.1
	80.00	1 STD Pipe	12.00	1.50	0.00	0.40	0.11	6.37	1.20	0.927	5.1	2.5	4.6
Pos 3	80.00	4 STD Pipe	0.00	4.50	0.00	0.43	0.18	10.29	1.20	0.927	5.1	2.6	4.4
	80.00	3 STD Pipe	12.00	3.50	0.00	0.40	0.14	8.05	1.20	0.927	5.1	2.4	3.7
	80.00	2 STD Pipe	12.00	2.50	0.00	0.42	0.14	7.65	1.20	0.927	5.1	2.5	5.1
	80.00	1 STD Pipe	12.00	1.50	0.00	0.40	0.11	6.37	1.20	0.927	5.1	2.5	4.6
Pos 4	80.00	4 STD Pipe	0.00	4.50	0.00	0.43	0.18	10.29	1.20	0.927	5.1	2.6	4.4
	80.00	3 STD Pipe	12.00	3.50	0.00	0.40	0.14	8.05	1.20	0.927	5.1	2.4	3.7
	80.00	2 STD Pipe	12.00	2.50	0.00	0.42	0.14	7.65	1.20	0.927	5.1	2.5	5.1
	80.00	1 STD Pipe	12.00	1.50	0.00	0.40	0.11	6.37	1.20	0.927	5.1	2.5	4.6

The dimension L is the longest dimension of the member
 ** The dimension W is the height_gz width of the member that resists wind load
 *Aa is the area of ice bulk up on the LW plane
 ** Ca will equal 1.2 for all ice load calculations



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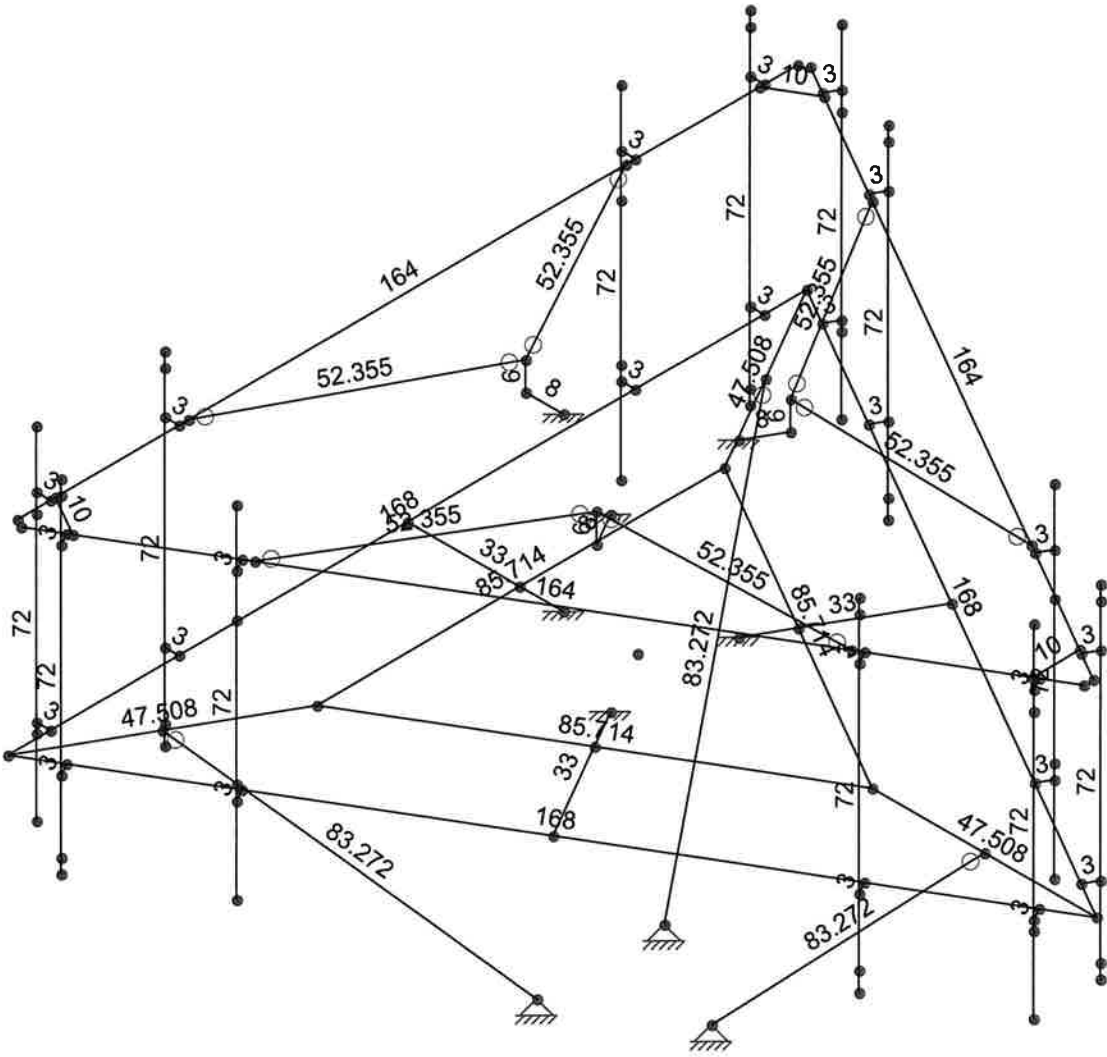
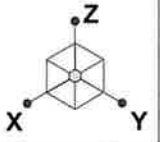
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1

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Member Length (in) Displayed
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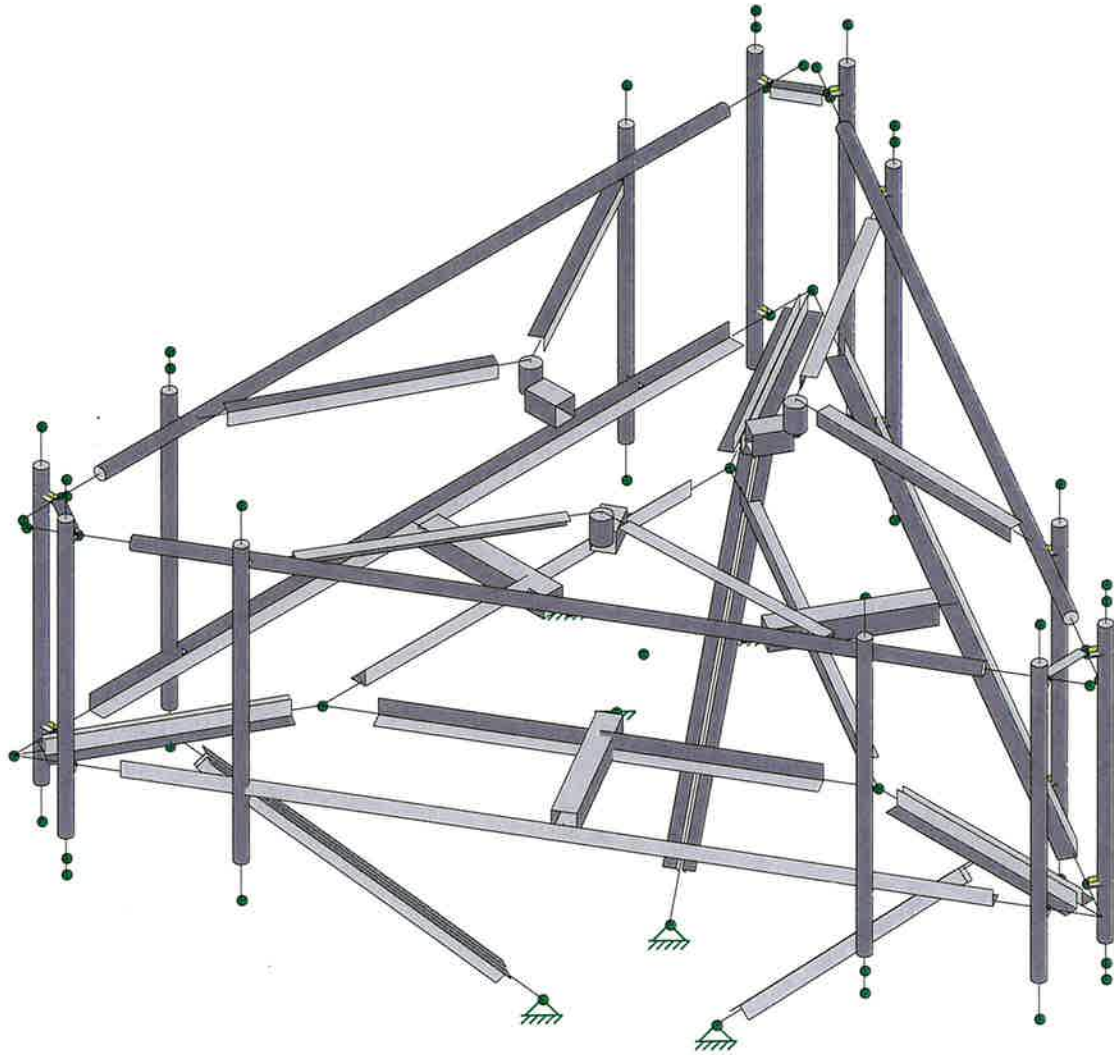
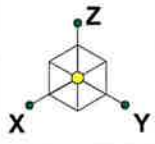
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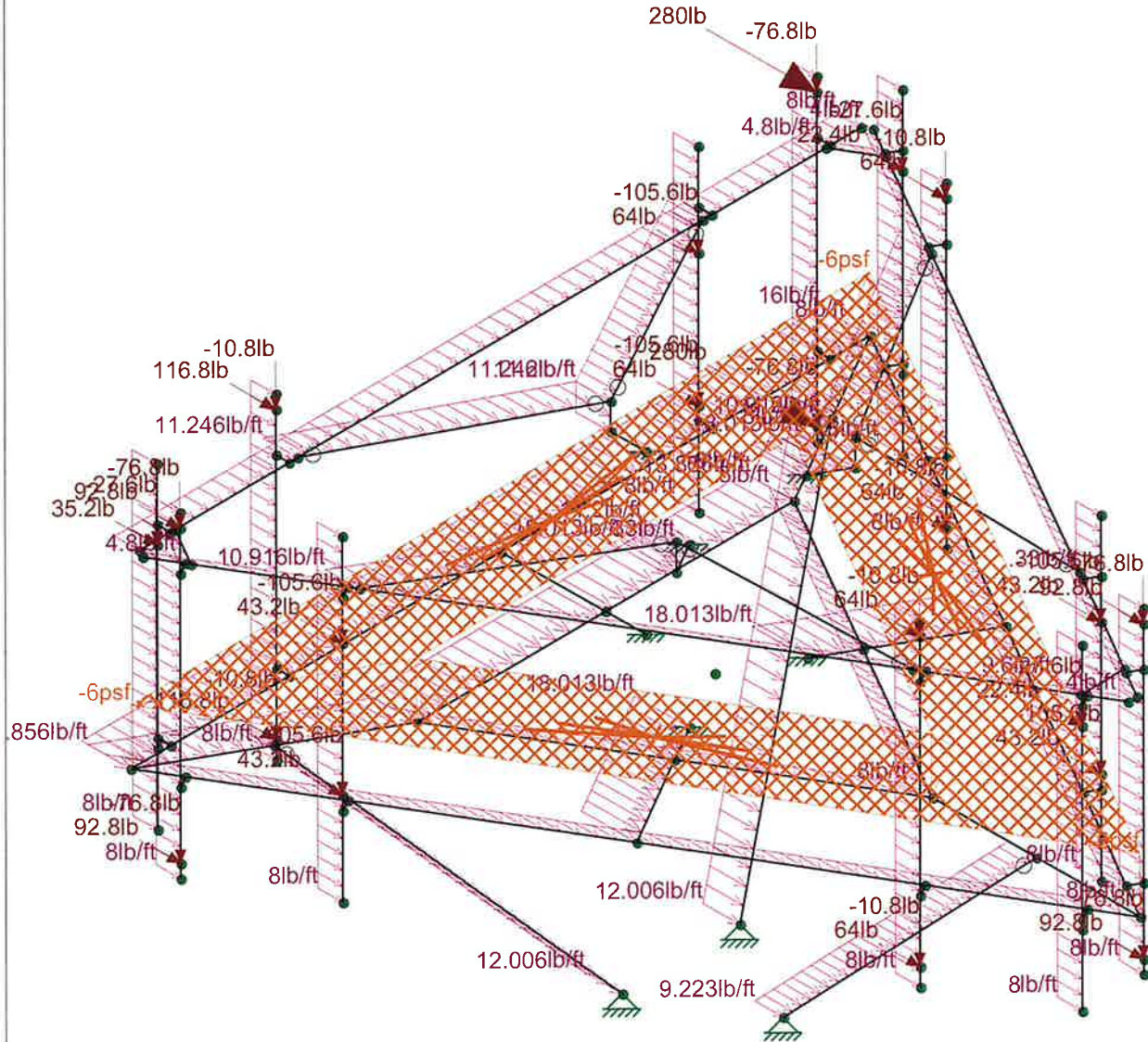
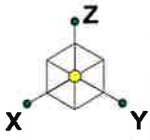
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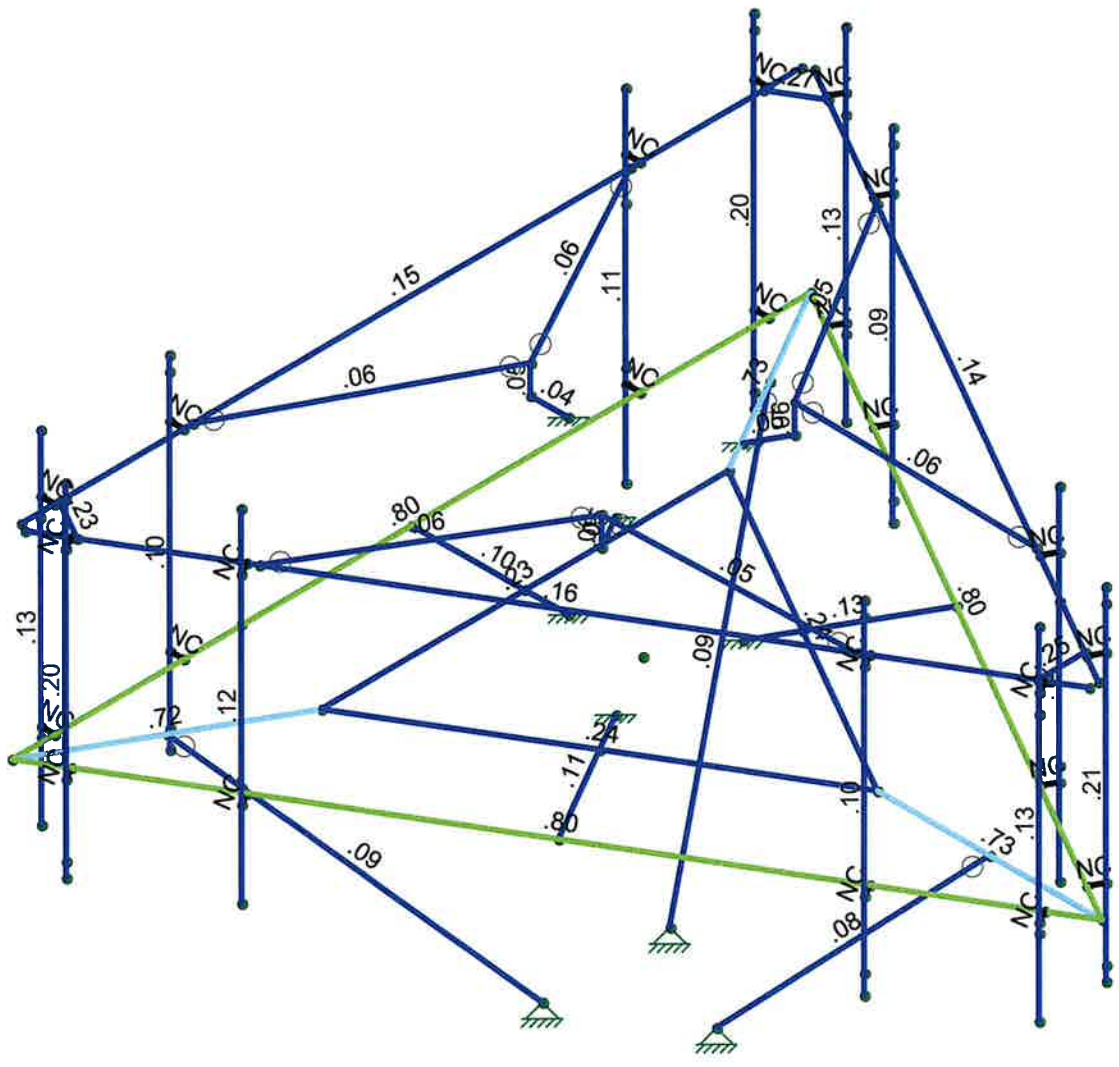
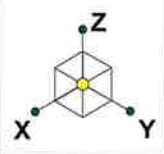
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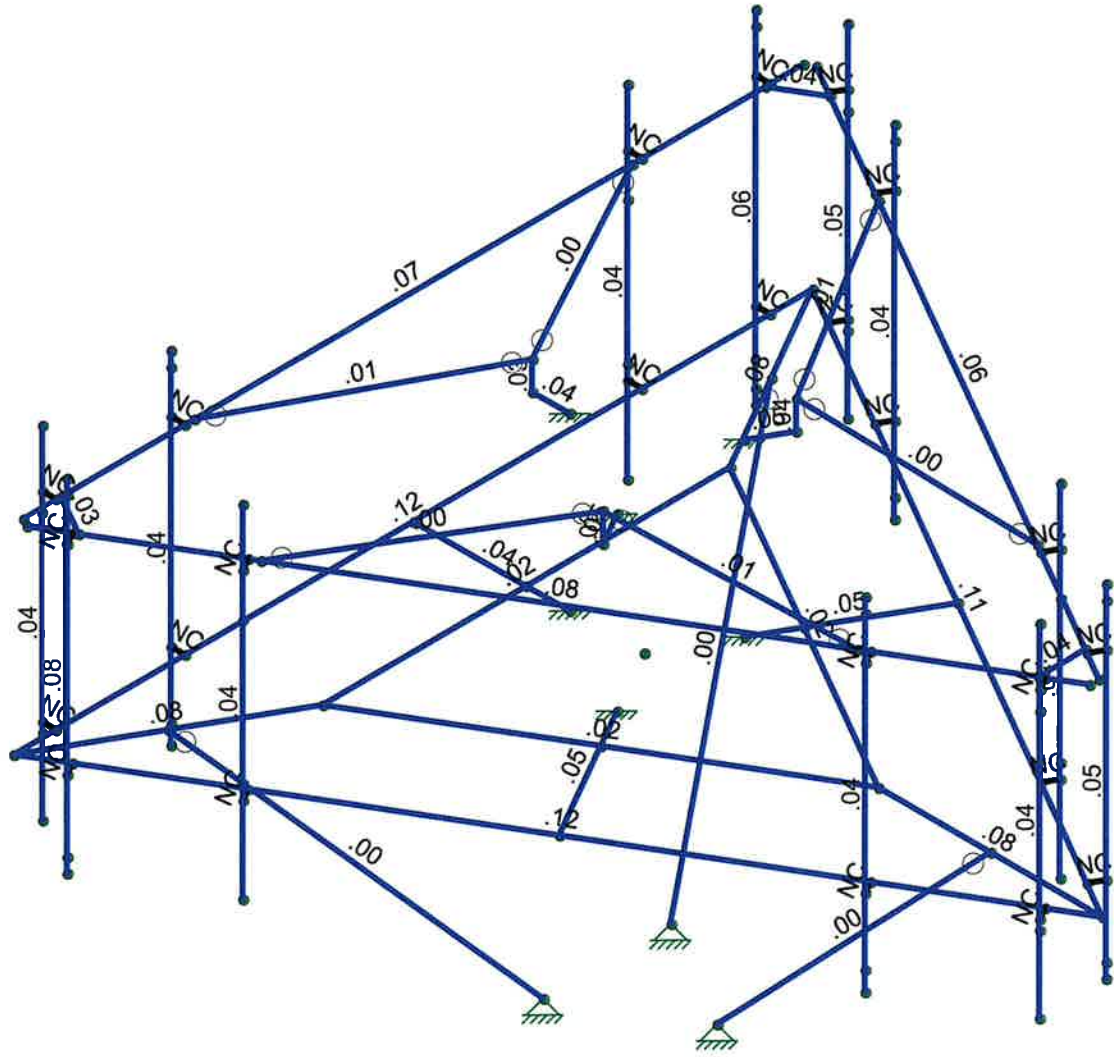
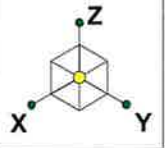
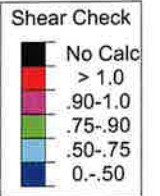
Code Check

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



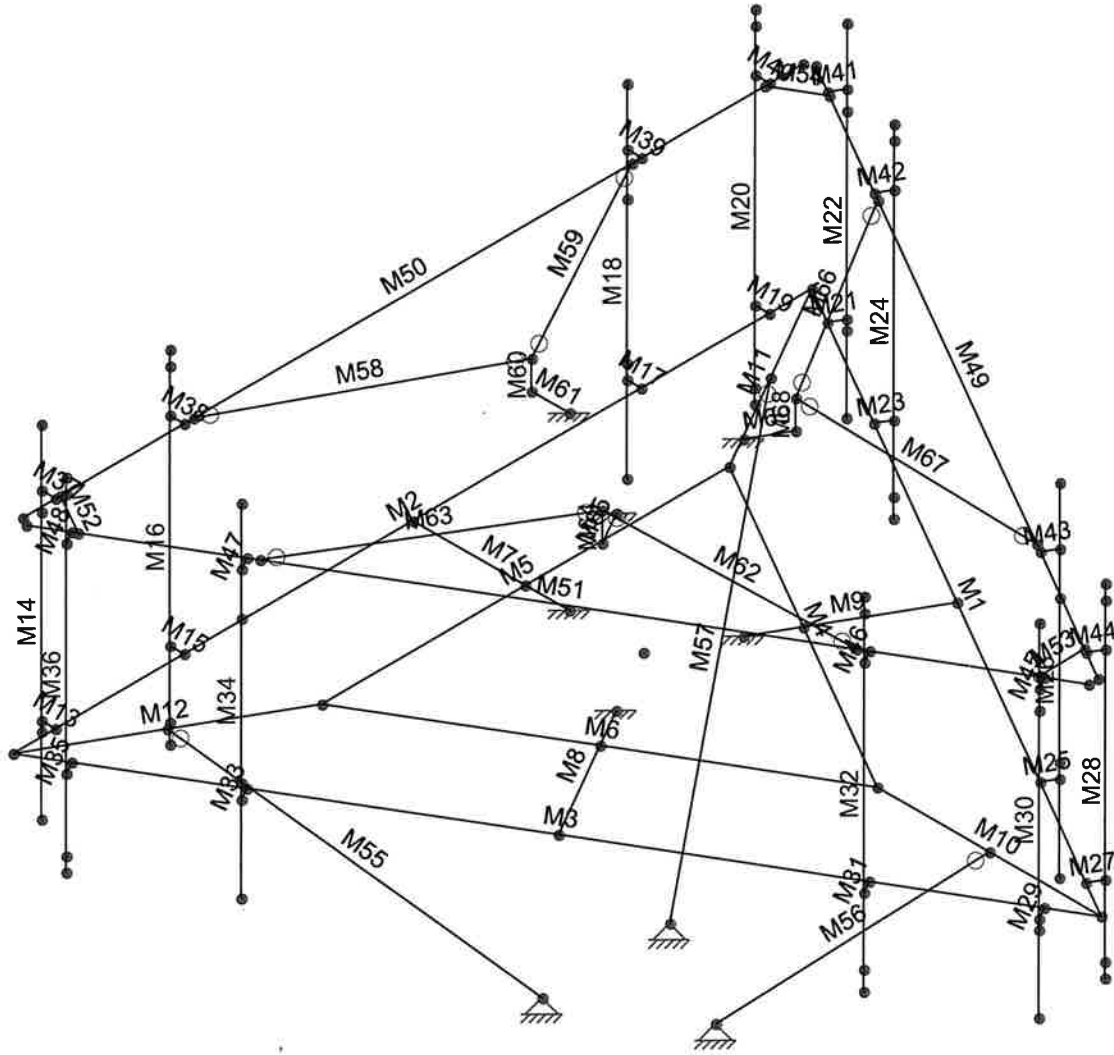
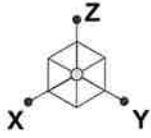
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Member Shear Checks Displayed
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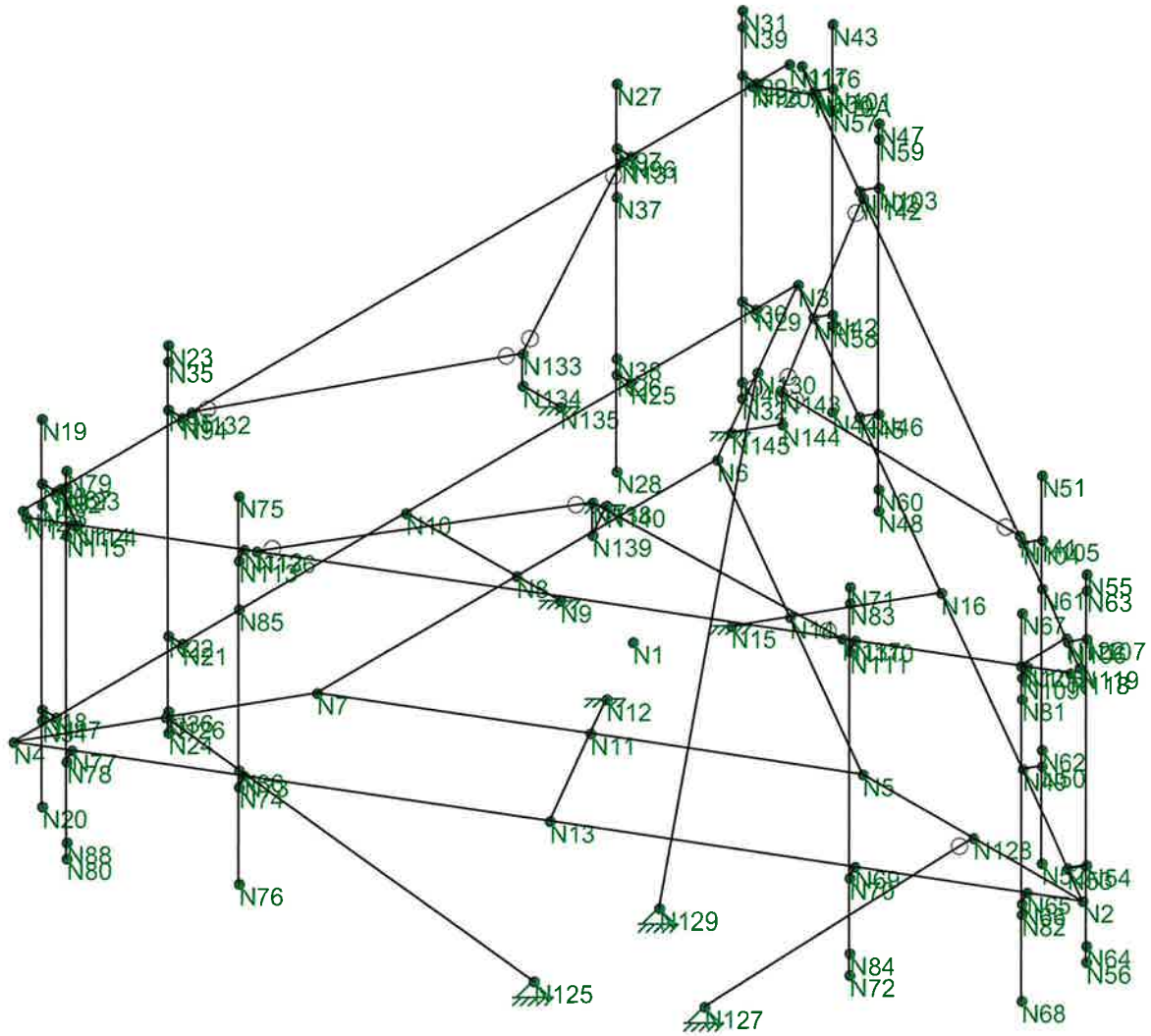
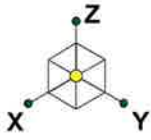
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Company : Proterra Design Group, LLC
 Designer : DU
 Job Number : 1978021
 Model Name : Fairfield 2 CT

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Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Increase Nailing Capacity for Wind?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automaticly Iterate Stiffness for Walls?	Yes
Maximum Iteration Number for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Z
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 13th(360-05): ASD
Cold Formed Steel Code	AISI NAS-01: ASD
Wood Code	AF&PA NDS-05/08: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-05
Masonry Code	ACI 530-05: ASD
Aluminum Code	AA ADM1-05: ASD - Building

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



Company : Proterra Design Group, LLC
 Designer : DU
 Job Number : 1978021
 Model Name : Fairfield 2 CT

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Global, Continued

Seismic Code	ASCE 7-05
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct Z	.035
Ct X	.035
T Z (sec)	Not Entered
T X (sec)	Not Entered
R Z	8.5
R X	8.5
Ct Exp. Z	.75
Ct Exp. X	.75
SD1	1
SDS	1
S1	1
TL (sec)	Not Entered
Occupancy Cat	I or II
Om Z	1
Om X	1
Rho Z	1
Rho X	1

Vertical Project Grid Locations

Label	Distance [in]	Increment [in]
No Data to Print ...		

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1/E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HR1A	C15x50	Beam	Wide Fla...	A36 Gr.36	Typical	14.7	11	404	2.65

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M13	N17	N18			RIGID	None	None	RIGID	Typical
2	M15	N21	N22			RIGID	None	None	RIGID	Typical
3	M17	N25	N26			RIGID	None	None	RIGID	Typical
4	M19	N29	N30			RIGID	None	None	RIGID	Typical
5	M21	N41	N42			RIGID	None	None	RIGID	Typical
6	M23	N45	N46			RIGID	None	None	RIGID	Typical
7	M25	N49	N50			RIGID	None	None	RIGID	Typical
8	M27	N53	N54			RIGID	None	None	RIGID	Typical
9	M29	N65	N66			RIGID	None	None	RIGID	Typical
10	M31	N69	N70			RIGID	None	None	RIGID	Typical
11	M33	N73	N74			RIGID	None	None	RIGID	Typical
12	M35	N77	N78			RIGID	None	None	RIGID	Typical



Company : Proterra Design Group, LLC
 Designer : DU
 Job Number : 1978021
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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
13	M14	N20	N19			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
14	M16	N24	N23			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
15	M18	N28	N27			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
16	M20	N32	N31			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
17	M22	N44	N43			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
18	M24	N48	N47			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
19	M26	N52	N51			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
20	M28	N56	N55			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
21	M30	N68	N67			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
22	M32	N72	N71			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
23	M34	N76	N75			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
24	M36	N80	N79			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
25	M10	N2	N5		90	LL3x3x3x0	Beam	Wide Flange	A36 Gr.36	Typical
26	M11	N6	N3		90	LL3x3x3x0	Beam	Wide Flange	A36 Gr.36	Typical
27	M12	N4	N7		90	LL3x3x3x0	Beam	Wide Flange	A36 Gr.36	Typical
28	M1	N3	N2		90	L3x3x3	Beam	Wide Flange	A36 Gr.36	Typical
29	M2	N3	N4			L3x3x3	Beam	Wide Flange	A36 Gr.36	Typical
30	M3	N2	N4		90	L3x3x3	Beam	Wide Flange	A36 Gr.36	Typical
31	M4	N6	N5			L3x3x3	Beam	Wide Flange	A36 Gr.36	Typical
32	M5	N6	N7		90	L3x3x3	Beam	Wide Flange	A36 Gr.36	Typical
33	M6	N5	N7			L3x3x3	Beam	Wide Flange	A36 Gr.36	Typical
34	M7	N9	N10			HSS4x4x4	Beam	Wide Flange	A500 Gr.46	Typical
35	M8	N12	N13			HSS4x4x4	Beam	Wide Flange	A500 Gr.46	Typical
36	M9	N15	N16			HSS4x4x4	Beam	Wide Flange	A500 Gr.46	Typical
37	M37	N92	N93			RIGID	None	None	RIGID	Typical
38	M38	N94	N95			RIGID	None	None	RIGID	Typical
39	M39	N96	N97			RIGID	None	None	RIGID	Typical
40	M40	N98	N99			RIGID	None	None	RIGID	Typical
41	M41	N100	N101			RIGID	None	None	RIGID	Typical
42	M42	N102	N103			RIGID	None	None	RIGID	Typical
43	M43	N104	N105			RIGID	None	None	RIGID	Typical
44	M44	N106	N107			RIGID	None	None	RIGID	Typical
45	M45	N108	N109			RIGID	None	None	RIGID	Typical
46	M46	N110	N111			RIGID	None	None	RIGID	Typical
47	M47	N112	N113			RIGID	None	None	RIGID	Typical
48	M48	N114	N115			RIGID	None	None	RIGID	Typical
49	M49	N116	N119			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
50	M50	N117	N120			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
51	M51	N118	N121			PIPE 2.0	Beam	Wide Flange	A53 Gr.B	Typical
52	M52	N124	N123		90	L2x2x3	Beam	Wide Flange	A36 Gr.36	Typical
53	M53	N121A	N122			L2x2x3	Beam	Wide Flange	A36 Gr.36	Typical
54	M54	N120A	N119A		90	L2x2x3	Beam	Wide Flange	A36 Gr.36	Typical
55	M55	N125	N126	N1		LL2.5x2.5x3x0	Beam	Wide Flange	A36 Gr.36	Typical
56	M56	N127	N128	N1		LL2.5x2.5x3x0	Beam	Wide Flange	A36 Gr.36	Typical
57	M57	N129	N130	N1		LL2.5x2.5x3x0	Beam	Wide Flange	A36 Gr.36	Typical
58	M58	N132	N133		90	L2.5x2.5x3	Beam	Wide Flange	A36 Gr.36	Typical
59	M59	N133	N131		90	L2.5x2.5x3	Beam	Wide Flange	A36 Gr.36	Typical
60	M60	N133	N134			PIPE 3.0	Beam	Wide Flange	A53 Gr.B	Typical
61	M61	N134	N135			HSS4x4x3	Beam	Wide Flange	A500 Gr.46	Typical
62	M62	N138	N137			L2.5x2.5x3	Beam	Wide Flange	A36 Gr.36	Typical
63	M63	N136	N138			L2.5x2.5x3	Beam	Wide Flange	A36 Gr.36	Typical
64	M64	N138	N139			PIPE 3.0	Beam	Wide Flange	A53 Gr.B	Typical
65	M65	N139	N140			HSS4x4x3	Beam	Wide Flange	A500 Gr.46	Typical
66	M66	N143	N142			L2.5x2.5x3	Beam	Wide Flange	A36 Gr.36	Typical
67	M67	N141	N143			L2.5x2.5x3	Beam	Wide Flange	A36 Gr.36	Typical
68	M68	N143	N144			PIPE 3.0	Beam	Wide Flange	A53 Gr.B	Typical
69	M69	N144	N145			HSS4x4x3	Beam	Wide Flange	A500 Gr.46	Typical



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Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	TOM	Inactive	Seismic Design ...
1	M13						Yes			None
2	M15						Yes			None
3	M17						Yes			None
4	M19						Yes			None
5	M21						Yes			None
6	M23						Yes			None
7	M25						Yes			None
8	M27						Yes			None
9	M29						Yes			None
10	M31						Yes			None
11	M33						Yes			None
12	M35						Yes			None
13	M14						Yes			None
14	M16						Yes			None
15	M18						Yes			None
16	M20						Yes			None
17	M22						Yes			None
18	M24						Yes			None
19	M26						Yes			None
20	M28						Yes			None
21	M30						Yes			None
22	M32						Yes			None
23	M34						Yes			None
24	M36						Yes			None
25	M10						Yes			None
26	M11						Yes			None
27	M12						Yes			None
28	M1						Yes			None
29	M2						Yes			None
30	M3						Yes			None
31	M4						Yes			None
32	M5						Yes			None
33	M6						Yes			None
34	M7						Yes			None
35	M8						Yes			None
36	M9						Yes			None
37	M37						Yes			None
38	M38						Yes			None
39	M39						Yes			None
40	M40						Yes			None
41	M41						Yes			None
42	M42						Yes			None
43	M43						Yes			None
44	M44						Yes			None
45	M45						Yes			None
46	M46						Yes			None
47	M47						Yes			None
48	M48						Yes			None
49	M49						Yes			None
50	M50						Yes			None
51	M51						Yes			None
52	M52						Yes			None
53	M53						Yes			None
54	M54						Yes			None
55	M55		BenPIN				Yes			None
56	M56		BenPIN				Yes			None



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Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	TOM	Inactive	Seismic Design...
57	M57		BenPIN				Yes			None
58	M58	BenPIN	BenPIN				Yes			None
59	M59	BenPIN	BenPIN				Yes			None
60	M60						Yes			None
61	M61						Yes			None
62	M62	BenPIN	BenPIN				Yes			None
63	M63	BenPIN	BenPIN				Yes			None
64	M64						Yes			None
65	M65						Yes			None
66	M66	BenPIN	BenPIN				Yes			None
67	M67	BenPIN	BenPIN				Yes			None
68	M68						Yes			None
69	M69						Yes			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length...	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bo...L-tor...	Kyy	Kzz	Cb	Funct...
1	M14	PIPE 2.0	72			Lbyy					Lateral
2	M16	PIPE 2.0	72			Lbyy					Lateral
3	M18	PIPE 2.0	72			Lbyy					Lateral
4	M20	PIPE 2.0	72			Lbyy					Lateral
5	M22	PIPE 2.0	72			Lbyy					Lateral
6	M24	PIPE 2.0	72			Lbyy					Lateral
7	M26	PIPE 2.0	72			Lbyy					Lateral
8	M28	PIPE 2.0	72			Lbyy					Lateral
9	M30	PIPE 2.0	72			Lbyy					Lateral
10	M32	PIPE 2.0	72			Lbyy					Lateral
11	M34	PIPE 2.0	72			Lbyy					Lateral
12	M36	PIPE 2.0	72			Lbyy					Lateral
13	M10	LL3x3x3x0	47.508			Lbyy					Lateral
14	M11	LL3x3x3x0	47.508			Lbyy					Lateral
15	M12	LL3x3x3x0	47.508			Lbyy					Lateral
16	M1	L3x3x3	168	84	84						Lateral
17	M2	L3x3x3	168	84	84						Lateral
18	M3	L3x3x3	168	84	84						Lateral
19	M4	L3x3x3	85.714	43	43						Lateral
20	M5	L3x3x3	85.714	43	43						Lateral
21	M6	L3x3x3	85.714	43	43						Lateral
22	M7	HSS4x4x4	33			Lbyy					Lateral
23	M8	HSS4x4x4	33			Lbyy					Lateral
24	M9	HSS4x4x4	33			Lbyy					Lateral
25	M49	PIPE 2.0	164	84	84						Lateral
26	M50	PIPE 2.0	164	84	84						Lateral
27	M51	PIPE 2.0	164	84	84						Lateral
28	M52	L2x2x3	10			Lbyy					Lateral
29	M53	L2x2x3	10			Lbyy					Lateral
30	M54	L2x2x3	10			Lbyy					Lateral
31	M55	LL2.5x2.5x3x0	83.272			Lbyy					Lateral
32	M56	LL2.5x2.5x3x0	83.272			Lbyy					Lateral
33	M57	LL2.5x2.5x3x0	83.272			Lbyy					Lateral
34	M58	L2.5x2.5x3	52.355			Lbyy					Lateral
35	M59	L2.5x2.5x3	52.355			Lbyy					Lateral
36	M60	PIPE 3.0	6			Lbyy					Lateral
37	M61	HSS4x4x3	8			Lbyy					Lateral
38	M62	L2.5x2.5x3	52.355			Lbyy					Lateral
39	M63	L2.5x2.5x3	52.355			Lbyy					Lateral



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Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length...	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bo...L-tor...	Kyy	Kzz	Cb	Funct...
40	M64	PIPE 3.0	6			Lbyy					Lateral
41	M65	HSS4x4x3	8			Lbyy					Lateral
42	M66	L2.5x2.5x3	52.355			Lbyy					Lateral
43	M67	L2.5x2.5x3	52.355			Lbyy					Lateral
44	M68	PIPE 3.0	6			Lbyy					Lateral
45	M69	HSS4x4x3	8			Lbyy					Lateral

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	0	96.994845	0	0	
3	N3	-84.	-48.497423	0	0	
4	N4	84.	-48.497423	0	0	
5	N5	0	49.486845	0	0	
6	N6	-42.856865	-24.743423	0	0	
7	N7	42.856865	-24.743423	0	0	
8	N8	0.	-24.743423	0	0	
9	N9	0.	-15.497423	0	0	
10	N10	0.	-48.497423	0	0	
11	N11	21.428433	12.371711	0	0	
12	N12	13.421162	7.748711	0	0	
13	N13	42.	24.248711	0	0	
14	N14	-21.428433	12.371711	0	0	
15	N15	-13.421162	7.748711	0	0	
16	N16	-42.	24.248711	0	0	
17	N17	75.	-48.497423	0	0	
18	N18	75.	-51.497423	0	0	
19	N19	75.	-51.497423	54	0	
20	N20	75.	-51.497423	-18	0	
21	N21	48.	-48.497423	0	0	
22	N22	48.	-51.497423	0	0	
23	N23	48.	-51.497423	54	0	
24	N24	48.	-51.497423	-18	0	
25	N25	-48.	-48.497423	0	0	
26	N26	-48.	-51.497423	0	0	
27	N27	-48.	-51.497423	54	0	
28	N28	-48.	-51.497423	-18	0	
29	N29	-75.	-48.497423	0	0	
30	N30	-75.	-51.497423	0	0	
31	N31	-75.	-51.497423	54	0	
32	N32	-75.	-51.497423	-18	0	
33	N33	75.	-51.497423	38	0	
34	N34	75.	-51.497423	-2	0	
35	N35	48.	-51.497423	51	0	
36	N36	48.	-51.497423	-14	0	
37	N37	-48.	-51.497423	33	0	
38	N38	-48.	-51.497423	3	0	
39	N39	-75.	-51.497423	51	0	
40	N40	-75.	-51.497423	-15	0	
41	N41	-79.5	-40.703194	0	0	
42	N42	-82.098076	-39.203194	0	0	
43	N43	-82.098076	-39.203194	54	0	
44	N44	-82.098076	-39.203194	-18	0	
45	N45	-66	-17.320508	0	0	
46	N46	-68.598076	-15.820508	0	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
47	N47	-68.598076	-15.820508	54	0	
48	N48	-68.598076	-15.820508	-18	0	
49	N49	-18	65.817931	0	0	
50	N50	-20.598076	67.317931	0	0	
51	N51	-20.598076	67.317931	54	0	
52	N52	-20.598076	67.317931	-18	0	
53	N53	-4.5	89.200617	0	0	
54	N54	-7.098076	90.700617	0	0	
55	N55	-7.098076	90.700617	54	0	
56	N56	-7.098076	90.700617	-18	0	
57	N57	-82.098076	-39.203194	38	0	
58	N58	-82.098076	-39.203194	-2	0	
59	N59	-68.598076	-15.820508	51	0	
60	N60	-68.598076	-15.820508	-14	0	
61	N61	-20.598076	67.317931	33	0	
62	N62	-20.598076	67.317931	3	0	
63	N63	-7.098076	90.700617	51	0	
64	N64	-7.098076	90.700617	-15	0	
65	N65	4.5	89.200617	0	0	
66	N66	7.098076	90.700617	0	0	
67	N67	7.098076	90.700617	54	0	
68	N68	7.098076	90.700617	-18	0	
69	N69	18.	65.817931	0	0	
70	N70	20.598076	67.317931	0	0	
71	N71	20.598076	67.317931	54	0	
72	N72	20.598076	67.317931	-18	0	
73	N73	66.	-17.320508	0	0	
74	N74	68.598076	-15.820508	0	0	
75	N75	68.598076	-15.820508	54	0	
76	N76	68.598076	-15.820508	-18	0	
77	N77	79.5	-40.703194	0	0	
78	N78	82.098076	-39.203194	0	0	
79	N79	82.098076	-39.203194	54	0	
80	N80	82.098076	-39.203194	-18	0	
81	N81	7.098076	90.700617	38	0	
82	N82	7.098076	90.700617	-2	0	
83	N83	20.598076	67.317931	51	0	
84	N84	20.598076	67.317931	-14	0	
85	N85	68.598076	-15.820508	33	0	
86	N86	68.598076	-15.820508	3	0	
87	N87	82.098076	-39.203194	51	0	
88	N88	82.098076	-39.203194	-15	0	
89	N92	75.	-48.497423	42	0	
90	N93	75.	-51.497423	42	0	
91	N94	48.	-48.497423	42	0	
92	N95	48.	-51.497423	42	0	
93	N96	-48.	-48.497423	42	0	
94	N97	-48.	-51.497423	42	0	
95	N98	-75.	-48.497423	42	0	
96	N99	-75.	-51.497423	42	0	
97	N100	-79.5	-40.703194	42	0	
98	N101	-82.098076	-39.203194	42	0	
99	N102	-66	-17.320508	42	0	
100	N103	-68.598076	-15.820508	42	0	
101	N104	-18	65.817931	42	0	
102	N105	-20.598076	67.317931	42	0	
103	N106	-4.5	89.200617	42	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
104	N107	-7.098076	90.700617	42	0	
105	N108	4.5	89.200617	42	0	
106	N109	7.098076	90.700617	42	0	
107	N110	18.	65.817931	42	0	
108	N111	20.598076	67.317931	42	0	
109	N112	66.	-17.320508	42	0	
110	N113	68.598076	-15.820508	42	0	
111	N114	79.5	-40.703194	42	0	
112	N115	82.098076	-39.203194	42	0	
113	N116	-83.	-46.765372	42	0	
114	N117	-82.	-48.497423	42	0	
115	N118	1	95.262794	42	0	
116	N119	-1.	95.262794	42	0	
117	N120	82.	-48.497423	42	0	
118	N121	83	-46.765372	42	0	
119	N119A	-79.	-39.837169	42	0	
120	N120A	-74.	-48.497423	42	0	
121	N121A	5	88.334591	42	0	
122	N122	-5.	88.334591	42	0	
123	N123	74.	-48.497423	42	0	
124	N124	79	-39.837169	42	0	
125	N125	13.421162	-7.748711	-60	0	
126	N126	63.428433	-36.620423	0	0	
127	N127	-0.	15.497423	-60	0	
128	N128	-0.	73.240845	0	0	
129	N129	-13.421162	-7.748712	-60	0	
130	N130	-63.428433	-36.620423	0	0	
131	N131	-46.	-48.497423	42	0	
132	N132	46.	-48.497423	42	0	
133	N133	0.	-23.497423	42	0	
134	N134	0.	-23.497423	36	0	
135	N135	0.	-15.497423	36	0	
136	N136	65.	-15.588457	42	0	
137	N137	19.	64.08588	42	0	
138	N138	20.349365	11.748711	42	0	
139	N139	20.349365	11.748711	36	0	
140	N140	13.421162	7.748711	36	0	
141	N141	-19	64.08588	42	0	
142	N142	-65	-15.588457	42	0	
143	N143	-20.349365	11.748711	42	0	
144	N144	-20.349365	11.748711	36	0	
145	N145	-13.421162	7.748711	36	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]	Footing
1	N9	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
2	N12	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
3	N15	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
4	N125	Reaction	Reaction	Reaction				
5	N127	Reaction	Reaction	Reaction				
6	N129	Reaction	Reaction	Reaction				
7	N135	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
8	N140	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
9	N145	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	



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Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(M... Surface...
1	DEAD LOAD	None			-1	21			3
2	DEAD LOAD ICE	None				21		45	3
3	WIND LOAD (NO ICE) FRONT	None				21		45	
4	WIND LOAD (NO ICE) SIDE	None				21		45	
5	WIND LOAD (ICE) FRONT	None				21		45	
6	WIND LOAD (ICE) SIDE	None				21		45	
7	LIVE LOAD1	None				1			
8	LIVE LOAD2	None				1			
9	LIVE LOAD3	None				1			
10	MAINTENANCE LOAD1	None				1			
11	MAINTENANCE LOAD2	None				1			
12	MAINTENANCE LOAD3	None				1			
13	MAINTENANCE LOAD4	None				1			
14	BLC 1 Transient Area Loads	None						63	
15	BLC 2 Transient Area Loads	None						63	

Joint Loads and Enforced Displacements (BLC 1 : DEAD LOAD)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N33	L	Z	-23
2	N35	L	Z	-9
3	N36	L	Z	-9
4	N37	L	Z	-88
5	N38	L	Z	-88
6	N39	L	Z	-64
7	N40	L	Z	-64
8	N57	L	Z	-23
9	N59	L	Z	-9
10	N60	L	Z	-9
11	N61	L	Z	-88
12	N62	L	Z	-88
13	N63	L	Z	-64
14	N64	L	Z	-64
15	N81	L	Z	-23
16	N83	L	Z	-9
17	N84	L	Z	-9
18	N85	L	Z	-88
19	N86	L	Z	-88
20	N87	L	Z	-64
21	N88	L	Z	-64

Joint Loads and Enforced Displacements (BLC 2 : DEAD LOAD ICE)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N33	L	Z	-41
2	N35	L	Z	-81
3	N36	L	Z	-81
4	N37	L	Z	-82
5	N38	L	Z	-82
6	N39	L	Z	-215
7	N40	L	Z	-215
8	N57	L	Z	-41
9	N59	L	Z	-81
10	N60	L	Z	-81
11	N61	L	Z	-82
12	N62	L	Z	-82



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Joint Loads and Enforced Displacements (BLC 2 : DEAD LOAD ICE) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
13	N63	L	Z	-215
14	N64	L	Z	-215
15	N81	L	Z	-41
16	N83	L	Z	-81
17	N84	L	Z	-81
18	N85	L	Z	-82
19	N86	L	Z	-82
20	N87	L	Z	-215
21	N88	L	Z	-215

Joint Loads and Enforced Displacements (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N33	L	Y	22
2	N35	L	Y	73
3	N36	L	Y	73
4	N37	L	Y	40
5	N38	L	Y	40
6	N39	L	Y	175
7	N40	L	Y	175
8	N57	L	Y	14
9	N59	L	Y	40
10	N60	L	Y	40
11	N61	L	Y	27
12	N62	L	Y	27
13	N63	L	Y	58
14	N64	L	Y	58
15	N81	L	Y	14
16	N83	L	Y	40
17	N84	L	Y	40
18	N85	L	Y	27
19	N86	L	Y	27
20	N87	L	Y	58
21	N88	L	Y	58

Joint Loads and Enforced Displacements (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N33	L	X	14
2	N35	L	X	40
3	N36	L	X	40
4	N37	L	X	27
5	N38	L	X	27
6	N39	L	X	58
7	N40	L	X	58
8	N57	L	X	22
9	N59	L	X	73
10	N60	L	X	73
11	N61	L	X	40
12	N62	L	X	40
13	N63	L	X	175
14	N64	L	X	175
15	N81	L	X	22
16	N83	L	X	73
17	N84	L	X	73
18	N85	L	X	40
19	N86	L	X	40
20	N87	L	X	175



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Joint Loads and Enforced Displacements (BLC 4 : WIND LOAD (NO ICE) SIDE) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
21	N88	L	X	175

Joint Loads and Enforced Displacements (BLC 5 : WIND LOAD (ICE) FRONT)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N33	L	Y	8
2	N35	L	Y	23
3	N36	L	Y	23
4	N37	L	Y	14
5	N38	L	Y	14
6	N39	L	Y	54
7	N40	L	Y	54
8	N57	L	Y	6
9	N59	L	Y	15
10	N60	L	Y	15
11	N61	L	Y	11
12	N62	L	Y	11
13	N63	L	Y	19
14	N64	L	Y	19
15	N81	L	Y	6
16	N83	L	Y	15
17	N84	L	Y	15
18	N85	L	Y	11
19	N86	L	Y	11
20	N87	L	Y	19
21	N88	L	Y	19

Joint Loads and Enforced Displacements (BLC 6 : WIND LOAD (ICE) SIDE)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N33	L	X	6
2	N35	L	X	15
3	N36	L	X	15
4	N37	L	X	11
5	N38	L	X	11
6	N39	L	X	19
7	N40	L	X	19
8	N57	L	X	8
9	N59	L	X	23
10	N60	L	X	23
11	N61	L	X	14
12	N62	L	X	14
13	N63	L	X	54
14	N64	L	X	54
15	N81	L	X	8
16	N83	L	X	23
17	N84	L	X	23
18	N85	L	X	14
19	N86	L	X	14
20	N87	L	X	54
21	N88	L	X	54

Joint Loads and Enforced Displacements (BLC 7 : LIVE LOAD1)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N2	L	Z	-500



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Joint Loads and Enforced Displacements (BLC 8 : LIVE LOAD2)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N3	L	Z	-500

Joint Loads and Enforced Displacements (BLC 9 : LIVE LOAD3)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N4	L	Z	-500

Joint Loads and Enforced Displacements (BLC 10 : MAINTENANCE LOAD1)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N20	L	Z	-500

Joint Loads and Enforced Displacements (BLC 11 : MAINTENANCE LOAD2)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N24	L	Z	-500

Joint Loads and Enforced Displacements (BLC 12 : MAINTENANCE LOAD3)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N28	L	Z	-500

Joint Loads and Enforced Displacements (BLC 13 : MAINTENANCE LOAD4)

	Joint Label	L,D,M	Direction	Magnitude[(lb.k-ft), (in.rad), (lb*s^2/in, lb*s^2*in)]
1	N32	L	Z	-500

Member Point Loads

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in, %]
No Data to Print ...				

Member Distributed Loads (BLC 2 : DEAD LOAD ICE)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in, %]	End Location[in, %]
1	M14	Z	-8	-8	0	0
2	M16	Z	-8	-8	0	0
3	M18	Z	-8	-8	0	0
4	M20	Z	-8	-8	0	0
5	M22	Z	-8	-8	0	0
6	M24	Z	-8	-8	0	0
7	M26	Z	-8	-8	0	0
8	M28	Z	-8	-8	0	0
9	M30	Z	-8	-8	0	0
10	M32	Z	-8	-8	0	0
11	M34	Z	-8	-8	0	0
12	M36	Z	-8	-8	0	0
13	M10	Z	-11	-11	0	0
14	M11	Z	-11	-11	0	0
15	M12	Z	-11	-11	0	0
16	M1	Z	-8	-8	0	0
17	M2	Z	-8	-8	0	0
18	M3	Z	-8	-8	0	0
19	M4	Z	-8	-8	0	0
20	M5	Z	-8	-8	0	0
21	M6	Z	-8	-8	0	0
22	M7	Z	-20	-20	0	0
23	M8	Z	-20	-20	0	0



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Member Distributed Loads (BLC 2 : DEAD LOAD ICE) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in.%]	End Location[in.%]
24	M9	Z	-20	-20	0	0
25	M49	Z	-8	-8	0	0
26	M50	Z	-8	-8	0	0
27	M51	Z	-8	-8	0	0
28	M52	Z	-5	-5	0	0
29	M53	Z	-5	-5	0	0
30	M54	Z	-5	-5	0	0
31	M55	Z	-10	-10	0	0
32	M56	Z	-10	-10	0	0
33	M57	Z	-10	-10	0	0
34	M58	Z	-6	-6	0	0
35	M59	Z	-6	-6	0	0
36	M62	Z	-6	-6	0	0
37	M63	Z	-6	-6	0	0
38	M66	Z	-6	-6	0	0
39	M67	Z	-6	-6	0	0
40	M60	Z	-10	-10	0	0
41	M64	Z	-10	-10	0	0
42	M68	Z	-10	-10	0	0
43	M61	Z	-20	-20	0	0
44	M65	Z	-20	-20	0	0
45	M69	Z	-20	-20	0	0

Member Distributed Loads (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in.%]	End Location[in.%]
1	M14	PY	5	5	0	0
2	M16	PY	5	5	0	0
3	M18	PY	5	5	0	0
4	M20	PY	5	5	0	0
5	M22	PY	5	5	0	0
6	M24	PY	5	5	0	0
7	M26	PY	5	5	0	0
8	M28	PY	5	5	0	0
9	M30	PY	5	5	0	0
10	M32	PY	5	5	0	0
11	M34	PY	5	5	0	0
12	M36	PY	5	5	0	0
13	M10	PY	10	10	0	0
14	M11	PY	10	10	0	0
15	M12	PY	10	10	0	0
16	M1	PY	10	10	0	0
17	M2	PY	10	10	0	0
18	M3	PY	10	10	0	0
19	M4	PY	10	10	0	0
20	M5	PY	10	10	0	0
21	M6	PY	10	10	0	0
22	M7	PY	13	13	0	0
23	M8	PY	13	13	0	0
24	M9	PY	13	13	0	0
25	M49	PY	5	5	0	0
26	M50	PY	5	5	0	0
27	M51	PY	5	5	0	0
28	M52	PY	6	6	0	0
29	M53	PY	6	6	0	0
30	M54	PY	6	6	0	0
31	M55	PY	8	8	0	0



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Member Distributed Loads (BLC 3 : WIND LOAD (NO ICE) FRONT) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in.%]	End Location[in.%]
32	M56	PY	8	8	0	0
33	M57	PY	8	8	0	0
34	M58	PY	8	8	0	0
35	M59	PY	8	8	0	0
36	M62	PY	8	8	0	0
37	M63	PY	8	8	0	0
38	M66	PY	8	8	0	0
39	M67	PY	8	8	0	0
40	M60	PY	7	7	0	0
41	M64	PY	7	7	0	0
42	M68	PY	7	7	0	0
43	M61	PY	13	13	0	0
44	M65	PY	13	13	0	0
45	M69	PY	13	13	0	0

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in.%]	End Location[in.%]
1	M14	PX	5	5	0	0
2	M16	PX	5	5	0	0
3	M18	PX	5	5	0	0
4	M20	PX	5	5	0	0
5	M22	PX	5	5	0	0
6	M24	PX	5	5	0	0
7	M26	PX	5	5	0	0
8	M28	PX	5	5	0	0
9	M30	PX	5	5	0	0
10	M32	PX	5	5	0	0
11	M34	PX	5	5	0	0
12	M36	PX	5	5	0	0
13	M10	PX	10	10	0	0
14	M11	PX	10	10	0	0
15	M12	PX	10	10	0	0
16	M1	PX	10	10	0	0
17	M2	PX	10	10	0	0
18	M3	PX	10	10	0	0
19	M4	PX	10	10	0	0
20	M5	PX	10	10	0	0
21	M6	PX	10	10	0	0
22	M7	PX	13	13	0	0
23	M8	PX	13	13	0	0
24	M9	PX	13	13	0	0
25	M49	PX	5	5	0	0
26	M50	PX	5	5	0	0
27	M51	PX	5	5	0	0
28	M52	PX	6	6	0	0
29	M53	PX	6	6	0	0
30	M54	PX	6	6	0	0
31	M55	PX	8	8	0	0
32	M56	PX	8	8	0	0
33	M57	PX	8	8	0	0
34	M58	PX	8	8	0	0
35	M59	PX	8	8	0	0
36	M62	PX	8	8	0	0
37	M63	PX	8	8	0	0
38	M66	PX	8	8	0	0
39	M67	PX	8	8	0	0



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Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in.%]	End Location[in.%]
40	M60	PX	7	7	0	0
41	M64	PX	7	7	0	0
42	M68	PX	7	7	0	0
43	M61	PX	13	13	0	0
44	M65	PX	13	13	0	0
45	M69	PX	13	13	0	0

Member Distributed Loads (BLC 5 : WIND LOAD (ICE) FRONT)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in.%]	End Location[in.%]
1	M14	PY	3.7	3.7	0	0
2	M16	PY	3.7	3.7	0	0
3	M18	PY	3.7	3.7	0	0
4	M20	PY	3.7	3.7	0	0
5	M22	PY	3.7	3.7	0	0
6	M24	PY	3.7	3.7	0	0
7	M26	PY	3.7	3.7	0	0
8	M28	PY	3.7	3.7	0	0
9	M30	PY	3.7	3.7	0	0
10	M32	PY	3.7	3.7	0	0
11	M34	PY	3.7	3.7	0	0
12	M36	PY	3.7	3.7	0	0
13	M10	PY	5.1	5.1	0	0
14	M11	PY	5.1	5.1	0	0
15	M12	PY	5.1	5.1	0	0
16	M1	PY	5.1	5.1	0	0
17	M2	PY	5.1	5.1	0	0
18	M3	PY	5.1	5.1	0	0
19	M4	PY	5.1	5.1	0	0
20	M5	PY	5.1	5.1	0	0
21	M6	PY	5.1	5.1	0	0
22	M7	PY	6.1	6.1	0	0
23	M8	PY	6.1	6.1	0	0
24	M9	PY	6.1	6.1	0	0
25	M49	PY	3.7	3.7	0	0
26	M50	PY	3.7	3.7	0	0
27	M51	PY	3.7	3.7	0	0
28	M52	PY	4.1	4.1	0	0
29	M53	PY	4.1	4.1	0	0
30	M54	PY	4.1	4.1	0	0
31	M55	PY	4.6	4.6	0	0
32	M56	PY	4.6	4.6	0	0
33	M57	PY	4.6	4.6	0	0
34	M58	PY	4.6	4.6	0	0
35	M59	PY	4.6	4.6	0	0
36	M62	PY	4.6	4.6	0	0
37	M63	PY	4.6	4.6	0	0
38	M66	PY	4.6	4.6	0	0
39	M67	PY	4.6	4.6	0	0
40	M60	PY	4.4	4.4	0	0
41	M64	PY	4.4	4.4	0	0
42	M68	PY	4.4	4.4	0	0
43	M61	PY	6.1	6.1	0	0
44	M65	PY	6.1	6.1	0	0
45	M69	PY	6.1	6.1	0	0



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Member Distributed Loads (BLC 6 : WIND LOAD (ICE) SIDE)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[in, %]	End Location[in, %]
1	M14	PX	3.7	3.7	0	0
2	M16	PX	3.7	3.7	0	0
3	M18	PX	3.7	3.7	0	0
4	M20	PX	3.7	3.7	0	0
5	M22	PX	3.7	3.7	0	0
6	M24	PX	3.7	3.7	0	0
7	M26	PX	3.7	3.7	0	0
8	M28	PX	3.7	3.7	0	0
9	M30	PX	3.7	3.7	0	0
10	M32	PX	3.7	3.7	0	0
11	M34	PX	3.7	3.7	0	0
12	M36	PX	3.7	3.7	0	0
13	M10	PX	5.1	5.1	0	0
14	M11	PX	5.1	5.1	0	0
15	M12	PX	5.1	5.1	0	0
16	M1	PX	5.1	5.1	0	0
17	M2	PX	5.1	5.1	0	0
18	M3	PX	5.1	5.1	0	0
19	M4	PX	5.1	5.1	0	0
20	M5	PX	5.1	5.1	0	0
21	M6	PX	5.1	5.1	0	0
22	M7	PX	6.1	6.1	0	0
23	M8	PX	6.1	6.1	0	0
24	M9	PX	6.1	6.1	0	0
25	M49	PX	3.7	3.7	0	0
26	M50	PX	3.7	3.7	0	0
27	M51	PX	3.7	3.7	0	0
28	M52	PX	4.1	4.1	0	0
29	M53	PX	4.1	4.1	0	0
30	M54	PX	4.1	4.1	0	0
31	M55	PX	4.6	4.6	0	0
32	M56	PX	4.6	4.6	0	0
33	M57	PX	4.6	4.6	0	0
34	M58	PX	4.6	4.6	0	0
35	M59	PX	4.6	4.6	0	0
36	M62	PX	4.6	4.6	0	0
37	M63	PX	4.6	4.6	0	0
38	M66	PX	4.6	4.6	0	0
39	M67	PX	4.6	4.6	0	0
40	M60	PX	4.4	4.4	0	0
41	M64	PX	4.4	4.4	0	0
42	M68	PX	4.4	4.4	0	0
43	M61	PX	6.1	6.1	0	0
44	M65	PX	6.1	6.1	0	0
45	M69	PX	6.1	6.1	0	0

Member Distributed Loads (BLC 14 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[in, %]	End Location[in, %]
1	M11	Z	-9.007	-8.242	0	9.502
2	M11	Z	-8.242	-6.186	9.502	19.003
3	M11	Z	-6.186	-3.896	19.003	28.505
4	M11	Z	-3.896	-2.329	28.505	38.006
5	M11	Z	-2.329	-.428	38.006	47.508
6	M12	Z	-.428	-2.329	0	9.502
7	M12	Z	-2.329	-3.896	9.502	19.003
8	M12	Z	-3.896	-6.186	19.003	28.505



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Member Distributed Loads (BLC 14 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F]	End Magnitude[lb/ft.F]	Start Location[in.%]	End Location[in.%]
9	M12	Z	-6.186	-8.242	28.505	38.006
10	M12	Z	-8.242	-9.007	38.006	47.508
11	M2	Z	-607	-3.025	0	28
12	M2	Z	-3.025	-4.285	28	56
13	M2	Z	-4.285	-3.964	56	84
14	M2	Z	-3.964	-4.117	84	112
15	M2	Z	-4.117	-3.228	112	140
16	M2	Z	-3.228	-397	140	168
17	M5	Z	-4.218	-4.42	0	17.143
18	M5	Z	-4.42	-3.618	17.143	34.285
19	M5	Z	-3.618	-3.424	34.285	51.428
20	M5	Z	-3.424	-4.501	51.428	68.571
21	M5	Z	-4.501	-5.237	68.571	85.714
22	M7	Z	-1.491	-7.389	13.207	17.165
23	M7	Z	-7.389	-10.323	17.165	21.123
24	M7	Z	-10.323	-8.331	21.123	25.082
25	M7	Z	-8.331	-4.397	25.082	29.04
26	M7	Z	-4.397	-481	29.04	32.998
27	M10	Z	-428	-2.329	0	9.502
28	M10	Z	-2.329	-3.896	9.502	19.003
29	M10	Z	-3.896	-6.186	19.003	28.505
30	M10	Z	-6.186	-8.242	28.505	38.006
31	M10	Z	-8.242	-9.007	38.006	47.508
32	M3	Z	-397	-3.228	0	28
33	M3	Z	-3.228	-4.117	28	56
34	M3	Z	-4.117	-3.964	56	84
35	M3	Z	-3.964	-4.285	84	112
36	M3	Z	-4.285	-3.025	112	140
37	M3	Z	-3.025	-607	140	168
38	M6	Z	-5.237	-4.501	0	17.143
39	M6	Z	-4.501	-3.424	17.143	34.285
40	M6	Z	-3.424	-3.618	34.285	51.428
41	M6	Z	-3.618	-4.42	51.428	68.571
42	M6	Z	-4.42	-4.218	68.571	85.714
43	M8	Z	-1.491	-7.389	13.207	17.165
44	M8	Z	-7.389	-10.323	17.165	21.123
45	M8	Z	-10.323	-8.331	21.123	25.082
46	M8	Z	-8.331	-4.397	25.082	29.04
47	M8	Z	-4.397	-481	29.04	32.998
48	M1	Z	-397	-3.228	0	28
49	M1	Z	-3.228	-4.117	28	56
50	M1	Z	-4.117	-3.964	56	84
51	M1	Z	-3.964	-4.285	84	112
52	M1	Z	-4.285	-3.025	112	140
53	M1	Z	-3.025	-607	140	168
54	M4	Z	-5.237	-4.501	0	17.143
55	M4	Z	-4.501	-3.424	17.143	34.285
56	M4	Z	-3.424	-3.618	34.285	51.428
57	M4	Z	-3.618	-4.42	51.428	68.571
58	M4	Z	-4.42	-4.218	68.571	85.714
59	M9	Z	-1.491	-7.389	13.207	17.165
60	M9	Z	-7.389	-10.323	17.165	21.123
61	M9	Z	-10.323	-8.331	21.123	25.082
62	M9	Z	-8.331	-4.397	25.082	29.04
63	M9	Z	-4.397	-481	29.04	32.998



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Member Distributed Loads (BLC 15 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[in, %]	End Location[in, %]
1	M11	Z	-13.78	-12.611	0	9.502
2	M11	Z	-12.611	-9.465	9.502	19.003
3	M11	Z	-9.465	-5.961	19.003	28.505
4	M11	Z	-5.961	-3.564	28.505	38.006
5	M11	Z	-3.564	-.654	38.006	47.508
6	M12	Z	-.654	-3.564	0	9.502
7	M12	Z	-3.564	-5.961	9.502	19.003
8	M12	Z	-5.961	-9.465	19.003	28.505
9	M12	Z	-9.465	-12.611	28.505	38.006
10	M12	Z	-12.611	-13.78	38.006	47.508
11	M2	Z	-.929	-4.628	0	28
12	M2	Z	-4.628	-6.556	28	56
13	M2	Z	-6.556	-6.064	56	84
14	M2	Z	-6.064	-6.299	84	112
15	M2	Z	-6.299	-4.939	112	140
16	M2	Z	-4.939	-.608	140	168
17	M5	Z	-6.454	-6.763	0	17.143
18	M5	Z	-6.763	-5.536	17.143	34.285
19	M5	Z	-5.536	-5.239	34.285	51.428
20	M5	Z	-5.239	-6.886	51.428	68.571
21	M5	Z	-6.886	-8.013	68.571	85.714
22	M7	Z	-2.281	-11.305	13.207	17.165
23	M7	Z	-11.305	-15.794	17.165	21.123
24	M7	Z	-15.794	-12.747	21.123	25.082
25	M7	Z	-12.747	-6.727	25.082	29.04
26	M7	Z	-6.727	-.736	29.04	32.998
27	M10	Z	-.654	-3.564	0	9.502
28	M10	Z	-3.564	-5.961	9.502	19.003
29	M10	Z	-5.961	-9.465	19.003	28.505
30	M10	Z	-9.465	-12.611	28.505	38.006
31	M10	Z	-12.611	-13.78	38.006	47.508
32	M3	Z	-.608	-4.939	0	28
33	M3	Z	-4.939	-6.299	28	56
34	M3	Z	-6.299	-6.064	56	84
35	M3	Z	-6.064	-6.556	84	112
36	M3	Z	-6.556	-4.628	112	140
37	M3	Z	-4.628	-.928	140	168
38	M6	Z	-8.013	-6.886	0	17.143
39	M6	Z	-6.886	-5.239	17.143	34.285
40	M6	Z	-5.239	-5.536	34.285	51.428
41	M6	Z	-5.536	-6.763	51.428	68.571
42	M6	Z	-6.763	-6.454	68.571	85.714
43	M8	Z	-2.281	-11.305	13.207	17.165
44	M8	Z	-11.305	-15.794	17.165	21.123
45	M8	Z	-15.794	-12.747	21.123	25.082
46	M8	Z	-12.747	-6.727	25.082	29.04
47	M8	Z	-6.727	-.736	29.04	32.998
48	M1	Z	-.608	-4.939	0	28
49	M1	Z	-4.939	-6.299	28	56
50	M1	Z	-6.299	-6.064	56	84
51	M1	Z	-6.064	-6.556	84	112
52	M1	Z	-6.556	-4.628	112	140
53	M1	Z	-4.628	-.929	140	168
54	M4	Z	-8.013	-6.886	0	17.143
55	M4	Z	-6.886	-5.239	17.143	34.285
56	M4	Z	-5.239	-5.536	34.285	51.428
57	M4	Z	-5.536	-6.763	51.428	68.571



Company : Proterra Design Group, LLC
 Designer : DU
 Job Number : 1978021
 Model Name : Fairfield 2 CT

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Member Distributed Loads (BLC 15 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F]	End Magnitude[lb/ft,F]	Start Location[in,%]	End Location[in,%]
58	M4	Z	-6.763	-6.454	68.571	85.714
59	M9	Z	-2.281	-11.305	13.207	17.165
60	M9	Z	-11.305	-15.794	17.165	21.123
61	M9	Z	-15.794	-12.747	21.123	25.082
62	M9	Z	-12.747	-6.727	25.082	29.04
63	M9	Z	-6.727	-7.36	29.04	32.998

Member Area Loads (BLC 1 : DEAD LOAD)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N3	N6	N7	N4	Z	Two Way	-5
2	N4	N7	N5	N2	Z	Two Way	-5
3	N2	N5	N6	N3	Z	Two Way	-5

Member Area Loads (BLC 2 : DEAD LOAD ICE)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N3	N6	N7	N4	Z	Two Way	-7.65
2	N4	N7	N5	N2	Z	Two Way	-7.65
3	N2	N5	N6	N3	Z	Two Way	-7.65

Load Combinations

	Description	Solve	PD	SRSS	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.
1	DL + WL (NO ICE) 0 Degree	Yes	Y		1	1.2			3	1.6				
2	DL + WL (NO ICE) 30 Degree	Yes	Y		1	1.2			3	1.3...	4	.8		
3	DL + WL (NO ICE) 60 Degree	Yes	Y		1	1.2			3	.8	4	1.3...		
4	DL + WL (NO ICE) 90 Degree	Yes	Y		1	1.2					4	1.6		
5	DL + WL (NO ICE) 120 Degree	Yes	Y		1	1.2			3	-.8	4	1.3...		
6	DL + WL (NO ICE) 150 Degree	Yes	Y		1	1.2			3	-1.3...	4	.8		
7	DL + WL (NO ICE) 180 Degree	Yes	Y		1	1.2			3	-1.6				
8	DL + WL (NO ICE) 210 Degree	Yes	Y		1	1.2			3	-1.3...	4	-.8		
9	DL + WL (NO ICE) 240 Degree	Yes	Y		1	1.2			3	-.8	4	-1.3...		
10	DL + WL (NO ICE) 270 Degree	Yes	Y		1	1.2					4	-1.6		
11	DL + WL (NO ICE) 300 Degree	Yes	Y		1	1.2			3	.8	4	-1.3...		
12	DL + WL (NO ICE) 330 Degree	Yes	Y		1	1.2			3	1.3...	4	-.8		
13	DL + DL ICE + WL (ICE) 0 Degree	Yes	Y		1	1.2	2	1	5	1				
14	DL + DL ICE + WL (ICE) 30 Degree	Yes	Y		1	1.2	2	1	5	.866	6	.5		
15	DL + DL ICE + WL (ICE) 60 Degree	Yes	Y		1	1.2	2	1	5	.5	6	.866		
16	DL + DL ICE + WL (ICE) 90 Degree	Yes	Y		1	1.2	2	1			6	1		
17	DL + DL ICE + WL (ICE) 120 Degree	Yes	Y		1	1.2	2	1	5	-.5	6	.866		
18	DL + DL ICE + WL (ICE) 150 Degree	Yes	Y		1	1.2	2	1	5	-.866	6	.5		
19	DL + DL ICE + WL (ICE) 180 Degree	Yes	Y		1	1.2	2	1	5	-1				
20	DL + DL ICE + WL (ICE) 210 Degree	Yes	Y		1	1.2	2	1	5	-.866	6	-.5		
21	DL + DL ICE + WL (ICE) 240 Degree	Yes	Y		1	1.2	2	1	5	-.5	6	-.866		
22	DL + DL ICE + WL (ICE) 270 Degree	Yes	Y		1	1.2	2	1			6	-1		
23	DL + DL ICE + WL (ICE) 300 Degree	Yes	Y		1	1.2	2	1	5	.5	6	-.866		
24	DL + DL ICE + WL (ICE) 330 Degree	Yes	Y		1	1.2	2	1	5	.866	6	-.5		
25	DEAD LOAD + LIVE LOAD1	Yes	Y		1	1.2					7	1.5		
26	DEAD LOAD + LIVE LOAD2	Yes	Y		1	1.2					8	1.5		
27	DEAD LOAD + LIVE LOAD3	Yes	Y		1	1.2					9	1.5		
28	DL + MAIN L1+30MPH WL FRONT	Yes	Y		1	1.2	10	1.5	3	.096				
29	DL + MAIN L2+30MPH WL FRONT	Yes	Y		1	1.2	11	1.5	3	.096				
30	DL + MAIN L3+30MPH WL FRONT	Yes	Y		1	1.2	12	1.5	3	.096				
31	DL + MAIN L4+30MPH WL FRONT	Yes	Y		1	1.2	13	1.5	3	.096				
32	DL + MAIN L1+30MPH WL SIDE	Yes	Y		1	1.2	10	1.5	4	.096				



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Load Combinations (Continued)

	Description	Solve PD	SRSS	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.	BLCFac.
33	DL + MAIN L2+30MPH WL SIDE	Yes	Y	1	1.2	11	1.5	4	.096					
34	DL + MAIN L3+30MPH WL SIDE	Yes	Y	1	1.2	12	1.5	4	.096					
35	DL + MAIN L4+30MPH WL SIDE	Yes	Y	1	1.2	13	1.5	4	.096					
36	DL + MAIN L1+30MPH WL FRONT (R...	Yes	Y	1	1.2	10	1.5	3	-.096					
37	DL + MAIN L2+30MPH WL FRONT (R...	Yes	Y	1	1.2	11	1.5	3	-.096					
38	DL + MAIN L3+30MPH WL FRONT (R...	Yes	Y	1	1.2	12	1.5	3	-.096					
39	DL + MAIN L4+30MPH WL FRONT (R...	Yes	Y	1	1.2	13	1.5	3	-.096					
40	DL + MAIN L1+30MPH WL SIDE (REV...	Yes	Y	1	1.2	10	1.5	4	-.096					
41	DL + MAIN L2+30MPH WL SIDE (REV...	Yes	Y	1	1.2	11	1.5	4	-.096					
42	DL + MAIN L3+30MPH WL SIDE (REV...	Yes	Y	1	1.2	12	1.5	4	-.096					
43	DL + MAIN L4+30MPH WL SIDE (REV...	Yes	Y	1	1.2	13	1.5	4	-.096					

Envelope Joint Reactions

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	N9	max	1129.53	10	191.148	7	412.575	13	-.449	7	.289	42	.528	11
2		min	-1107.683	4	-329.21	1	121.82	26	-1.444	13	-.108	33	-.412	5
3	N12	max	921.773	11	1257.439	6	410.157	21	.592	23	-.432	3	1.173	5
4		min	-812.687	5	-1169.945	12	121.819	27	.168	38	-1.322	21	-1.058	11
5	N15	max	911.927	9	1548.156	8	410.294	17	.842	17	1.175	17	1.468	3
6		min	-1042.679	3	-1498.328	2	121.82	25	.315	11	.37	11	-1.35	9
7	N125	max	1754.176	21	-320.401	8	2166.012	17	0	1	0	1	0	1
8		min	598.667	2	-1021.433	14	725.673	11	0	1	0	1	0	1
9	N127	max	44.082	10	2021.918	19	2163.109	13	0	1	0	1	0	1
10		min	-44.059	4	701.99	2	742.285	7	0	1	0	1	0	1
11	N129	max	-591.16	12	-325.088	6	2165.734	21	0	1	0	1	0	1
12		min	-1755.425	17	-1020.544	24	728.215	3	0	1	0	1	0	1
13	N135	max	408.273	10	605.707	7	73.779	19	.254	1	.196	10	.268	10
14		min	-481.993	4	-541.7	1	26.255	1	-.318	7	-.233	4	-.317	4
15	N140	max	642.434	10	359.316	6	73.688	15	.229	12	.304	10	.338	5
16		min	-661.475	4	-455.511	12	26.134	10	-.165	6	-.341	4	-.387	11
17	N145	max	665.162	10	527.744	7	73.621	23	.249	1	.342	10	.376	2
18		min	-572.833	4	-495.883	1	26.357	5	-.249	7	-.268	4	-.425	8
19	Totals:	max	4440.93	10	3965.331	7	7892.333	14						
20		min	-4440.935	4	-3965.342	1	2881.295	8						

Envelope Joint Displacements

Joint	X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rot...	LC	Z Rot...	LC		
1	N1	m...	0	1	0	1	0	1	0	1	0	1		
2		min	0	1	0	1	0	1	0	1	0	1		
3	N2	m...	.038	3	.004	1	-.052	6	-1.352e-3	5	-7.178...	4	4.326...	5
4		min	-.031	9	-.003	7	-.189	24	-5.969e-3	25	-3.151...	22	-7.133...	11
5	N3	m...	.008	8	.028	3	-.05	2	5.74e-3	38	-2.748...	7	7.207...	12
6		min	-.012	2	-.023	9	-.189	21	5.034e-4	2	-4.431...	26	-9.988...	6
7	N4	m...	.007	9	.016	10	-.051	11	3.145e-3	41	6.178...	16	1.073...	9
8		min	-.009	3	-.022	4	-.189	17	-1.478e-3	4	1.338...	10	-1.354...	3
9	N5	m...	.007	4	.004	1	.049	23	2.016e-4	19	8.685...	4	7.667...	10
10		min	-.006	10	-.003	7	.014	5	-5.736e-5	1	-9.647...	10	-8.005...	4
11	N6	m...	.001	5	.005	2	.049	20	6.827e-4	8	3.519...	7	5.702...	8
12		min	-.002	11	-.005	8	.014	2	-6.665e-4	2	-1.886...	1	-6.039...	2
13	N7	m...	.002	5	.003	11	.048	17	1.169e-4	5	2.044...	27	1.035...	12
14		min	-.002	11	-.004	5	.015	11	-2.674e-4	11	-1.193...	21	-1.373...	6
15	N8	m...	0	5	0	1	-.001	7	7.896e-4	13	8.356...	33	9.925...	7
16		min	-.001	11	0	7	-.004	13	2.454e-4	7	-2.25e...	42	-1.657...	1
17	N9	m...	0	4	0	1	0	26	0	13	0	33	0	5



Company : Proterra Design Group, LLC
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Envelope Joint Displacements (Continued)

LC	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rot...	LC	Z Rot...	LC
18		min	0	10	0	7	0	13	0	7	0	42	0	11
19	N10	m...	.007	9	0	1	-.012	7	1.657e-3	13	5.135...	33	3.709...	9
20		min	-.01	3	0	7	-.037	13	5.104e-4	7	-1.071...	42	-5.289...	3
21	N11	m...	.002	5	.002	11	-.001	4	-6.646e-5	38	7.408...	21	3.307...	10
22		min	-.001	11	-.003	5	-.004	21	-2.952e-4	24	2.411...	3	-3.964...	4
23	N12	m...	0	5	0	12	0	27	0	38	0	21	0	11
24		min	0	11	0	6	0	21	0	23	0	3	0	5
25	N13	m...	.008	4	.011	10	-.012	4	3.858e-5	9	1.669...	21	5.025...	9
26		min	-.007	10	-.014	4	-.037	21	-4.585e-4	15	5.139...	3	-6.611...	3
27	N14	m...	.002	3	.003	3	-.001	11	-1.884e-4	12	-1.909...	10	4.33e-4	9
28		min	-.002	9	-.003	9	-.004	17	-4.888e-4	17	-6.264...	17	-4.994...	3
29	N15	m...	0	3	0	2	0	25	0	11	0	11	0	9
30		min	0	9	0	8	0	17	0	17	0	17	0	3
31	N16	m...	.01	3	.017	3	-.012	11	-4.419e-4	2	-2.839...	10	5.61e-4	9
32		min	-.008	9	-.014	9	-.037	17	-1.215e-3	20	-1.224...	16	-7.19e...	3
33	N17	m...	.007	9	.008	11	-.043	12	9.514e-4	32	2.434...	27	2.017...	8
34		min	-.01	3	-.018	5	-1.58	18	-1.392e-3	42	-1.133...	41	-1.103...	2
35	N18	m...	.012	8	.008	11	-.04	12	9.514e-4	32	2.434...	27	2.017...	8
36		min	-.012	2	-.018	5	-1.57	18	-1.392e-3	42	-1.133...	41	-1.103...	2
37	N19	m...	.051	38	.107	23	-.04	12	-1.92e-4	33	7.771...	34	9.78e-4	11
38		min	-.027	29	-.005	33	-1.57	18	-2.915e-3	21	-1.772...	41	-1.131...	5
39	N20	m...	.028	41	.008	28	-.04	12	9.435e-4	32	2.434...	27	2.017...	8
40		min	-.041	27	-.032	38	-1.57	18	-1.392e-3	42	-1.13e...	41	-1.103...	2
41	N21	m...	.007	9	.026	1	-.024	1	2.535e-3	1	1.149...	27	6.397...	37
42		min	-.01	3	-.068	19	-1.86	37	-4.417e-3	7	-1.073...	33	-1.36e...	1
43	N22	m...	.007	9	.026	1	-.032	1	2.535e-3	1	1.149...	27	6.397...	37
44		min	-.01	3	-.068	19	-1.86	37	-4.417e-3	7	-1.073...	33	-1.36e...	1
45	N23	m...	.041	38	.104	38	-.032	1	-8.945e-4	7	7.311...	27	1.336...	11
46		min	-.023	29	.001	29	-1.86	37	-3.191e-3	24	-1.414...	41	-8.688...	5
47	N24	m...	.004	37	.083	1	-.032	1	3.366e-3	1	1.179...	22	6.397...	37
48		min	-.021	24	-.153	7	-1.86	37	-5.248e-3	7	-2.591...	4	-1.36e...	1
49	N25	m...	.007	8	.026	1	-.063	2	1.809e-3	30	4.776...	34	-1.838...	9
50		min	-.011	2	-.08	19	-.23	38	-2.957e-4	37	-6.86e...	26	-8.686...	34
51	N26	m...	.007	8	.026	1	-.068	2	1.809e-3	30	4.776...	34	-1.838...	9
52		min	-.013	2	-.08	19	-.235	38	-2.957e-4	37	-6.86e...	26	-8.686...	34
53	N27	m...	.072	38	.02	29	-.068	2	3.475e-4	38	2.188...	38	1.848...	8
54		min	.002	1	-.086	38	-2.35	38	-8.634e-4	29	4.248...	26	-1.456...	2
55	N28	m...	.013	9	.052	1	-.068	2	1.796e-3	30	4.71e-4	34	-1.838...	9
56		min	-.02	3	-.079	7	-.236	38	-2.984e-4	37	-6.86e...	26	-8.686...	34
57	N29	m...	.008	8	.032	2	-.043	2	3.867e-3	12	2.528...	38	7.223...	1
58		min	-.012	2	-.037	8	-1.86	20	-1.502e-3	6	-1.056...	26	-2.523...	19
59	N30	m...	.003	9	.032	2	-.05	3	3.867e-3	12	2.528...	38	7.223...	1
60		min	-.012	3	-.037	8	-1.94	21	-1.502e-3	6	-1.056...	26	-2.523...	19
61	N31	m...	.078	38	.057	2	-.05	3	3.338e-3	7	3.001...	34	7.524...	11
62		min	0	29	-.143	8	-1.94	21	-1.99e-3	1	3.206...	11	-1.064...	5
63	N32	m...	.012	26	.125	1	-.05	3	5.947e-3	1	2.545...	42	7.223...	1
64		min	-.057	38	-.087	7	-1.94	21	-3.585e-3	7	-1.055...	26	-2.523...	19
65	N33	m...	.038	38	.068	10	-.04	12	-2.001e-4	33	8.78e-4	38	9.762...	10
66		min	0	29	-.008	4	-1.57	18	-2.76e-3	21	-1.124...	29	-1.03e...	4
67	N34	m...	.012	8	.006	11	-.04	12	9.497e-4	32	2.434...	27	2.017...	8
68		min	-.015	2	-.018	5	-1.57	18	-1.392e-3	42	-1.132...	41	-1.103...	2
69	N35	m...	.042	38	.097	38	-.032	1	-8.947e-4	7	7.311...	27	1.336...	11
70		min	-.019	29	-.002	29	-1.86	37	-3.191e-3	24	-1.414...	41	-8.688...	5
71	N36	m...	.004	37	.069	1	-.032	1	3.366e-3	1	1.179...	22	6.397...	37
72		min	-.016	24	-.132	7	-1.86	37	-5.247e-3	7	-2.587...	4	-1.36e...	1
73	N37	m...	.028	38	.001	1	-.068	2	2.924e-4	1	1.752...	38	1.451...	8
74		min	-.01	29	-.081	38	-2.35	38	-1.015e-3	37	2.049...	29	-1.288...	2



Company : Protterra Design Group, LLC
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 Job Number : 1978021
 Model Name : Fairfield 2 CT

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Envelope Joint Displacements (Continued)

Joint	X [in]	LC Y [in]	LC Z [in]	LC	X Rotation [rad]	LC Y Rot...	LC Z Rot... LC
75 N38 m...	.007	8 .022 1	-.068 2		1.382e-3	30 5.73e-4 34	1.298... 9
76 min	-.012	2 -.082 19	-.235 38		-4.428e-4	37 -3.538... 41	-8.022... 15
77 N39 m...	.07	38 .052 2	-.05 3		3.337e-3	7 3.001... 34	7.524... 11
78 min	-.001	29 -.133 8	-.194 21		-1.99e-3	1 3.224... 11	-1.064... 5
79 N40 m...	.008	26 .107 1	-.05 3		5.947e-3	1 2.545... 42	7.223... 1
80 min	-.049	38 -.077 7	-.194 21		-3.585e-3	7 -1.055... 26	-2.523... 19
81 N41 m...	.01	7 .03 2	-.043 4		2.509e-3	26 4.192... 7	1.882... 23
82 min	-.018	1 -.022 8	-.158 22		-5.485e-4	1 -7.525... 29	-8.797... 5
83 N42 m...	.011	7 .028 2	-.041 5		2.509e-3	26 4.192... 7	1.882... 23
84 min	-.02	1 -.023 8	-.156 23		-5.485e-4	1 -7.525... 29	-8.797... 5
85 N43 m...	.08	38 .029 2	-.041 5		2.526e-3	42 2.468... 42	1.207... 3
86 min	.002	29 -.118 8	-.156 23		1.412e-4	3 5.406... 33	-1.361... 9
87 N44 m...	.011	37 .047 26	-.041 5		2.509e-3	26 4.192... 7	1.882... 23
88 min	-.016	12 0 41	-.156 23		-5.039e-4	1 -7.525... 29	-8.797... 5
89 N45 m...	.022	5 .037 1	-.024 6		2.756e-3	10 4.e-3 10	5.644... 9
90 min	-.057	23 -.017 7	-.161 24		-1.064e-3	4 -2.805... 4	-3.454... 3
91 N46 m...	.022	5 .038 1	-.025 7		2.756e-3	10 4.e-3 10	5.644... 9
92 min	-.058	23 -.018 7	-.155 13		-1.064e-3	4 -2.805... 4	-3.454... 3
93 N47 m...	.082	8 .054 2	-.025 7		2.06e-3	38 2.89e-3 20	1.144... 4
94 min	-.015	2 -.139 8	-.155 13		-4.689e-4	2 7.724... 29	-6.794... 10
95 N48 m...	.075	4 .072 23	-.025 7		2.755e-3	10 4.831... 10	5.644... 9
96 min	-.127	10 -.02 5	-.155 13		-1.064e-3	4 -3.636... 4	-3.454... 3
97 N49 m...	.033	4 .041 23	-.069 5		2.344e-5	2 9.877... 2	-1.288... 11
98 min	-.078	10 -.002 5	-.229 23		-1.025e-3	19 -2.299... 8	-8.315... 17
99 N50 m...	.034	4 .043 23	-.07 4		2.344e-5	2 9.877... 2	-1.288... 11
100 min	-.077	10 0 5	-.233 22		-1.025e-3	19 -2.299... 8	-8.315... 17
101 N51 m...	.073	3 -.002 6	-.07 4		1.564e-3	24 5.996... 3	1.505... 12
102 min	-.163	9 -.017 24	-.233 22		1.824e-4	6 -1.423... 9	-1.11e... 6
103 N52 m...	.042	5 .03 12	-.07 4		6.415e-5	1 9.654... 2	-1.288... 11
104 min	-.062	11 -.011 6	-.233 22		-1.045e-3	19 -2.277... 8	-8.315... 17
105 N53 m...	.04	4 .011 12	-.049 5		1.208e-3	11 2.201... 11	3.017... 5
106 min	-.042	10 -.005 6	-.185 24		-1.362e-3	25 -2.944... 17	-2.432... 23
107 N54 m...	.04	4 .016 24	-.057 6		1.208e-3	11 2.201... 11	3.017... 5
108 min	-.039	10 -.005 6	-.192 24		-1.362e-3	25 -2.944... 17	-2.432... 23
109 N55 m...	.07	4 .027 1	-.057 6		1.249e-3	7 1.956... 4	9.891... 2
110 min	-.173	10 -.034 7	-.193 24		-3.977e-4	1 -4.007... 10	-1.302... 8
111 N56 m...	.118	4 .042 11	-.057 6		1.625e-3	12 2.195... 10	3.017... 5
112 min	-.068	10 -.033 5	-.192 24		-1.654e-3	6 -4.907... 4	-2.432... 23
113 N57 m...	.041	38 .032 2	-.041 5		2.243e-3	42 2.333... 42	1.094... 2
114 min	-.007	29 -.091 8	-.156 23		1.002e-4	3 4.547... 33	-1.147... 8
115 N58 m...	.01	7 .028 3	-.041 5		2.509e-3	26 4.192... 7	1.882... 23
116 min	-.019	1 -.019 9	-.156 23		-5.352e-4	1 -7.525... 29	-8.797... 5
117 N59 m...	.078	8 .053 2	-.025 7		2.06e-3	38 2.89e-3 20	1.144... 4
118 min	-.018	2 -.133 8	-.155 13		-4.688e-4	2 7.724... 29	-6.794... 10
119 N60 m...	.061	4 .063 24	-.025 7		2.755e-3	10 4.83e-3 10	5.644... 9
120 min	-.107	10 -.018 6	-.155 13		-1.064e-3	4 -3.636... 4	-3.454... 3
121 N61 m...	.06	3 .017 24	-.07 4		1.69e-3	23 9.477... 2	1.15e-3 12
122 min	-.133	9 .002 6	-.233 22		1.399e-4	5 -1.678... 8	-9.851... 6
123 N62 m...	.034	4 .045 23	-.07 4		8.005e-5	1 1.116... 2	-1.631... 11
124 min	-.081	10 0 5	-.233 22		-5.863e-4	19 -2.314... 8	-7.714... 18
125 N63 m...	.064	4 .025 1	-.057 6		1.249e-3	7 1.955... 4	9.891... 2
126 min	-.161	10 -.03 7	-.193 24		-3.975e-4	1 -4.006... 10	-1.302... 8
127 N64 m...	.103	4 .038 11	-.057 6		1.625e-3	12 2.195... 10	3.017... 5
128 min	-.062	10 -.028 5	-.192 24		-1.654e-3	6 -4.907... 4	-2.432... 23
129 N65 m...	.046	3 .008 3	-.041 8		2.657e-4	6 1.337... 3	1.863... 16
130 min	-.036	9 -.005 9	-.158 14		-1.707e-3	25 -2.948... 9	-8.579... 10
131 N66 m...	.044	3 .012 3	-.035 9		2.657e-4	6 1.337... 3	1.863... 16



Company : Proterra Design Group, LLC
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Envelope Joint Displacements (Continued)

Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rot...	LC	Z Rot...	LC
132		min		-.035	9	-.007	9	-1.707e-3	25	-2.948...	9	-8.579...	10
133	N67	m...		.041	3	.016	1	1.275e-3	18	-5.969...	33	9.784...	6
134		min		-.152	9	-.029	7	5.195e-5	25	-2.76e...	23	-1.134...	12
135	N68	m...		.04	25	.011	5	2.271e-4	6	1.298...	3	1.863...	16
136		min		.004	41	-.024	25	-1.707e-3	25	-2.91e...	9	-8.579...	10
137	N69	m...		.082	4	.032	15	1.046e-3	3	3.874...	9	5.006...	23
138		min		-.05	10	-.013	9	-8.5e-4	9	-2.46e...	3	-9.068...	5
139	N70	m...		.082	4	.033	15	1.046e-3	3	3.874...	9	5.006...	23
140		min		-.05	10	-.012	9	-8.5e-4	9	-2.46e...	3	-9.068...	5
141	N71	m...		.05	4	-.002	12	1.831e-3	18	4.345...	4	1.677...	8
142		min		-.157	10	-.022	18	1.905e-4	1	-2.992...	22	-1.214...	2
143	N72	m...		.136	3	.051	3	1.449e-3	2	1.108...	9	5.006...	23
144		min		-.066	9	-.031	9	-1.258e-3	8	-3.18e...	3	-9.068...	5
145	N73	m...		.067	15	.032	13	1.448e-3	4	2.382...	10	-9.29e...	5
146		min		-.003	9	.007	6	-2.238e-3	10	-1.135...	4	-8.305...	23
147	N74	m...		.068	15	.03	13	1.448e-3	4	2.382...	10	-9.29e...	5
148		min		-.002	9	.007	6	-2.238e-3	10	-1.135...	4	-8.305...	23
149	N75	m...		.06	10	.102	10	6.241e-4	33	5.737...	10	1.488...	4
150		min		-.027	4	-.018	4	-1.064e-3	42	-1.383...	16	-1.094...	10
151	N76	m...		.07	4	.036	4	1.448e-3	4	2.427...	10	-9.29e...	5
152		min		-.044	10	-.028	10	-2.238e-3	10	-1.179...	4	-8.305...	23
153	N77	m...		.011	15	.011	10	4.666e-4	27	3.95e-3	10	9.853...	9
154		min		-.004	10	-.012	4	-2.342e-3	21	-2.568...	4	-2.647...	3
155	N78	m...		.015	15	.014	10	4.666e-4	27	3.95e-3	10	9.853...	9
156		min		-.005	10	-.019	4	-2.342e-3	21	-2.568...	4	-2.647...	3
157	N79	m...		.055	34	.093	23	4.984e-4	37	2.16e-3	4	6.307...	6
158		min		-.024	41	-.013	33	-2.096e-3	24	-1.871...	10	-9.456...	12
159	N80	m...		.089	4	.005	27	4.663e-4	27	6.156...	10	9.853...	9
160		min		-.106	10	-.048	18	-2.69e-3	8	-4.775...	4	-2.647...	3
161	N81	m...		.055	3	.021	2	1.14e-3	18	-4.932...	33	9.852...	6
162		min		-.123	9	-.021	8	1.863e-4	12	-2.627...	22	-1.04e...	12
163	N82	m...		.041	3	.011	3	2.542e-4	6	1.325...	3	1.863...	16
164		min		-.029	9	-.007	9	-1.707e-3	25	-2.937...	9	-8.579...	10
165	N83	m...		.049	4	-.002	12	1.831e-3	18	4.342...	4	1.677...	8
166		min		-.149	10	-.017	18	1.907e-4	1	-2.992...	22	-1.214...	2
167	N84	m...		.123	3	.046	3	1.449e-3	2	1.107...	9	5.006...	23
168		min		-.062	9	-.027	9	-1.257e-3	8	-3.18e...	3	-9.068...	5
169	N85	m...		.054	23	.082	10	5.348e-4	33	8.67e-4	10	1.146...	4
170		min		0	4	-.026	4	-1.491e-3	10	-1.59e...	4	-9.814...	10
171	N86	m...		.07	15	.031	24	1.447e-3	4	2.127...	10	1.923...	5
172		min		.004	9	.004	5	-2.298e-3	10	-1.212...	4	-7.688...	23
173	N87	m...		.052	34	.087	23	4.983e-4	37	2.16e-3	4	6.307...	6
174		min		-.02	41	-.012	33	-2.096e-3	24	-1.871...	10	-9.456...	12
175	N88	m...		.075	4	.003	27	4.663e-4	27	6.156...	10	9.853...	9
176		min		-.087	10	-.041	18	-2.689e-3	8	-4.775...	4	-2.647...	3
177	N92	m...		.043	38	.074	10	-1.92e-4	33	7.763...	34	9.78e-4	11
178		min		-.007	29	-.007	33	-2.918e-3	21	-1.771...	41	-1.131...	5
179	N93	m...		.042	38	.074	10	-1.92e-4	33	7.763...	34	9.78e-4	11
180		min		-.006	29	-.007	33	-2.918e-3	21	-1.771...	41	-1.131...	5
181	N94	m...		.043	38	.077	38	-1.07e-3	37	7.311...	27	1.336...	11
182		min		-.007	29	-.012	29	-3.173e-3	20	-1.403...	41	-8.688...	5
183	N95	m...		.043	38	.077	38	-1.07e-3	37	7.311...	27	1.336...	11
184		min		-.006	29	-.012	29	-3.173e-3	20	-1.403...	41	-8.688...	5
185	N96	m...		.044	38	.009	29	3.467e-4	38	2.188...	38	1.848...	8
186		min		-.006	29	-.082	38	-8.626e-4	29	4.248...	26	-1.456...	2
187	N97	m...		.045	38	.009	29	3.467e-4	38	2.188...	38	1.848...	8
188		min		-.005	29	-.082	38	-8.626e-4	29	4.248...	26	-1.456...	2



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Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rot...	LC	Z Rot...	LC
189	N98	m...	.044	38	.037	2	-.052	3	2.544e-3	7	2.984...	34	7.524...	11
190		min	-.006	29	-.107	8	-.19	21	-1.197e-3	1	2.673...	11	-1.064...	5
191	N99	m...	.043	38	.037	2	-.05	3	2.544e-3	7	2.984...	34	7.524...	11
192		min	-.005	29	-.107	8	-.194	21	-1.197e-3	1	2.673...	11	-1.064...	5
193	N100	m...	.05	38	.034	2	-.043	5	2.526e-3	42	2.469...	42	1.207...	3
194		min	-.005	29	-.101	8	-.165	22	1.478e-4	3	5.398...	33	-1.361...	9
195	N101	m...	.05	38	.031	2	-.041	5	2.526e-3	42	2.469...	42	1.207...	3
196		min	-.005	29	-.098	8	-.156	23	1.478e-4	3	5.398...	33	-1.361...	9
197	N102	m...	.066	8	.053	3	-.031	7	2.048e-3	38	2.945...	21	1.144...	4
198		min	-.026	2	-.119	9	-.164	24	-3.031e-4	2	7.724...	29	-6.794...	10
199	N103	m...	.067	9	.05	3	-.025	7	2.048e-3	38	2.945...	21	1.144...	4
200		min	-.027	3	-.118	9	-.155	13	-3.031e-4	2	7.724...	29	-6.794...	10
201	N104	m...	.066	3	.005	12	-.071	4	1.569e-3	24	5.882...	3	1.505...	12
202		min	-.145	9	-.003	6	-.234	22	1.709e-4	6	-1.412...	9	-1.11e...	6
203	N105	m...	.066	3	.001	24	-.07	4	1.569e-3	24	5.882...	3	1.505...	12
204		min	-.145	9	0	37	-.233	22	1.709e-4	6	-1.412...	9	-1.11e...	6
205	N106	m...	.051	3	.024	1	-.057	7	9.772e-4	7	1.162...	4	9.891...	2
206		min	-.129	9	-.022	7	-.189	13	-1.261e-4	1	-3.213...	10	-1.302...	8
207	N107	m...	.049	3	.022	1	-.057	6	9.772e-4	7	1.162...	4	9.891...	2
208		min	-.128	9	-.019	7	-.193	24	-1.261e-4	1	-3.213...	10	-1.302...	8
209	N108	m...	.051	3	.022	1	-.04	8	1.271e-3	17	-5.977...	33	9.784...	6
210		min	-.13	9	-.025	7	-.166	14	5.195e-5	25	-2.755...	23	-1.134...	12
211	N109	m...	.052	3	.02	2	-.035	9	1.271e-3	17	-5.977...	33	9.784...	6
212		min	-.13	9	-.023	8	-.158	14	5.195e-5	25	-2.755...	23	-1.134...	12
213	N110	m...	.045	4	.004	2	-.022	10	1.79e-3	17	9.605...	4	1.677...	8
214		min	-.122	10	-.005	8	-.167	16	3.081e-4	25	-2.928...	23	-1.214...	2
215	N111	m...	.046	4	0	1	-.015	10	1.79e-3	17	9.605...	4	1.677...	8
216		min	-.124	10	-.001	7	-.158	16	3.081e-4	25	-2.928...	23	-1.214...	2
217	N112	m...	.052	10	.095	10	-.081	10	6.241e-4	33	5.869...	10	1.488...	4
218		min	-.01	4	-.028	4	-.231	16	-1.064e-3	42	-1.389...	16	-1.094...	10
219	N113	m...	.054	10	.093	10	-.083	10	6.241e-4	33	5.869...	10	1.488...	4
220		min	-.013	4	-.024	4	-.229	15	-1.064e-3	42	-1.389...	16	-1.094...	10
221	N114	m...	.046	38	.074	10	-.056	12	4.819e-4	37	1.367...	4	6.307...	6
222		min	-.008	29	-.007	33	-.189	17	-2.043e-3	24	-1.362...	41	-9.456...	12
223	N115	m...	.046	38	.072	10	-.057	11	4.819e-4	37	1.367...	4	6.307...	6
224		min	-.008	29	-.008	33	-.192	17	-2.043e-3	24	-1.362...	41	-9.456...	12
225	N116	m...	.05	38	.03	2	-.043	4	2.527e-3	42	2.469...	42	1.208...	3
226		min	-.006	29	-.097	8	-.168	22	1.49e-4	3	5.391...	33	-1.362...	9
227	N117	m...	.044	38	.04	2	-.042	4	2.544e-3	7	2.983...	34	7.511...	11
228		min	-.006	29	-.107	8	-.18	21	-1.197e-3	1	2.659...	11	-1.063...	5
229	N118	m...	.052	3	.025	1	-.042	8	1.267e-3	17	-5.984...	33	9.78e-4	6
230		min	-.13	9	-.028	7	-.168	14	5.077e-5	25	-2.757...	23	-1.134...	12
231	N119	m...	.046	4	.027	1	-.044	8	9.76e-4	7	1.163...	4	9.887...	2
232		min	-.123	10	-.026	7	-.18	14	-1.273e-4	1	-3.212...	10	-1.302...	8
233	N120	m...	.043	38	.081	10	-.045	12	-1.92e-4	33	7.776...	34	9.793...	11
234		min	-.007	29	-.012	4	-.167	18	-2.918e-3	21	-1.77e...	41	-1.132...	5
235	N121	m...	.046	38	.072	10	-.043	11	4.831e-4	37	1.367...	4	6.311...	6
236		min	-.01	29	-.008	33	-.18	17	-2.04e-3	24	-1.361...	41	-9.46e...	12
237	N119A	m...	.05	38	.035	2	-.043	5	2.59e-3	42	2.481...	22	1.24e-3	3
238		min	-.005	29	-.102	8	-.165	22	1.524e-4	3	5.487...	33	-1.421...	9
239	N120A	m...	.044	38	.037	2	-.053	3	2.385e-3	7	3.197...	34	7.957...	10
240		min	-.006	29	-.107	8	-.192	21	-1.025e-3	1	3.294...	11	-1.088...	4
241	N121A	m...	.051	3	.021	1	-.039	9	1.284e-3	17	-6.145...	33	9.88e-4	6
242		min	-.13	9	-.024	7	-.166	14	-2.559e-5	25	-2.772...	23	-1.171...	12
243	N122	m...	.051	3	.024	1	-.058	7	9.696e-4	19	9.718...	4	1.058...	2
244		min	-.13	9	-.022	7	-.19	13	-2.964e-5	1	-3.072...	10	-1.35e...	8
245	N123	m...	.043	38	.073	10	-.044	12	-1.726e-4	33	7.506...	34	9.997...	11



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Envelope Joint Displacements (Continued)

Joint	X [in]	LC Y [in]	LC Z [in]	LC	X Rotation [rad]	LC Y Rot...	LC Z Rot...	LC
246	min	-.007	29 -.007 33 -.165 18		-2.925e-3	21 -1.947...41 -1.18e...	5	
247	N124	m... .046	38 .074 10 -.058 12		5.027e-4	37 1.187...4 6.964...	6	
248		min	-.008	29 -.007 4 -.19 17		-2.092e-3	24 -1.356...41 -9.909...	12
249	N125	m... 0	2 0 14 0 11		6.452e-4	37 1.529...16 4.678...	41	
250		min	0	21 0 8 0 17		-7.166e-4	2 -2.2e-4 10 -9.253...	18
251	N126	m... .002	33 .006 11 .001 11		2.814e-3	41 6.033...16 2.676...	10	
252		min	-.002	42 -.008 5 -.009 17		-6.671e-5	3 1.581...10 -3.833...	4
253	N127	m... 0	4 0 2 0 7		1.557e-4	7 4.637...4 5.841...	9	
254		min	0	10 0 19 0 13		-1.265e-3	13 -1.236...10 -9.695...	16
255	N128	m... .029	4 .004 1 0 7		-1.755e-3	6 3.984...4 6.944...	9	
256		min	-.027	10 -.003 7 -.009 13		-6.061e-3	24 -1.923...10 -8.111...	3
257	N129	m... 0	17 0 24 0 3		1.471e-3	7 3.697...4 -2.403...	37	
258		min	0	12 0 6 0 21		-3.607e-4	1 -7.468...10 -1.296...	30
259	N130	m... .007	7 .02 2 .001 3		4.525e-3	20 -1.009...7 5.35e-4	8	
260		min	-.009	1 -.019 8 -.009 21		4.785e-4	2 -4.526...13 -6.516...	2
261	N131	m... .044	38 .01 29 -.068 2		2.921e-4	38 1.809...38 1.825...	8	
262		min	-.006	29 -.081 38 -.238 38		-8.671e-4	29 -5.359...26 -1.307...	2
263	N132	m... .043	38 .077 38 -.036 2		-1.065e-3	37 6.198...27 1.258...	11	
264		min	-.007	29 -.012 29 -.191 37		-3.117e-3	20 -1.233...41 -6.766...	5
265	N133	m... .003	4 .002 1 0 1		3.699e-4	7 3.269...4 1.05e-4	4	
266		min	-.002	10 -.002 7 0 7		-3.215e-4	1 -2.746...10 -8.863...	10
267	N134	m... 0	4 0 1 0 1		2.062e-4	7 2.003...4 1.05e-4	4	
268		min	0	10 0 7 0 7		-1.749e-4	1 -1.684...10 -8.863...	10
269	N135	m... 0	4 0 1 0 1		0	7 0 4 0 4	10	
270		min	0	10 0 7 0 19		0	1 0 10 0 10	4
271	N136	m... .054	10 .096 10 -.081 10		6.487e-4	33 5.769...10 1.309...	4	
272		min	-.013	4 -.03 4 -.234 16		-9.295e-4	42 -1.387...16 -7.893...	10
273	N137	m... .043	4 .002 2 -.021 10		1.952e-3	18 1.18e-4 4 1.715...	9	
274		min	-.12	10 -.004 8 -.168 16		3.838e-4	25 -2.747...23 -1.137...	3
275	N138	m... .003	4 .003 12 0 9		2.467e-4	6 4.175...4 1.287...	11	
276		min	-.003	10 -.002 6 0 3		-3.164e-4	12 -4.015...10 -1.123...	5
277	N139	m... 0	5 0 11 0 9		1.526e-4	6 2.404...4 1.287...	11	
278		min	0	11 0 5 0 3		-1.96e-4	12 -2.291...10 -1.123...	5
279	N140	m... 0	4 0 12 0 10		0	6 0 4 0 11		
280		min	0	10 0 6 0 15		0	12 0 10 0 5	
281	N141	m... .066	3 .003 12 -.072 4		1.516e-3	24 5.819...3 1.499...	11	
282		min	-.144	9 -.002 6 -.237 22		1.075e-4	7 -1.272...9 -9.782...	5
283	N142	m... .067	9 .053 3 -.03 7		1.861e-3	38 3.016...21 1.073...	5	
284		min	-.028	3 -.119 9 -.165 13		-3.261e-4	2 8.055...29 -4.956...	11
285	N143	m... .002	4 .003 2 0 5		3.527e-4	8 3.54e-4 4 1.413...	8	
286		min	-.003	10 -.003 8 0 11		-3.316e-4	2 -4.22e...10 -1.249...	2
287	N144	m... 0	3 0 2 0 5		2.169e-4	8 2.009...4 1.413...	8	
288		min	0	9 0 8 0 11		-2.048e-4	2 -2.439...10 -1.249...	2
289	N145	m... 0	4 0 1 0 5		0	7 0 4 0 8		
290		min	0	10 0 7 0 23		0	1 0 10 0 2	

Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pn...	phi*P...	phi*Mn y...	phi*Mn z...	Cb	Egn	
1	M2	L3x3x3	.802	0	20	.116	0	z	19	11984...	35316	1.32	2.15	2...	H2-1
2	M3	L3x3x3	.800	168	17	.116	168	y	16	11984...	35316	1.32	2.142	2...	H2-1
3	M1	L3x3x3	.798	168	22	.113	168	y	22	11984...	35316	1.32	2.147	2...	H2-1
4	M10	LL3x3x3x0	.729	0	22	.077	23.754	y	13	50531...	70632	4.823	2.345	1...	H1-...
5	M11	LL3x3x3x0	.726	47.508	19	.077	23.754	y	20	50531...	70632	4.823	2.345	1...	H1-...
6	M12	LL3x3x3x0	.723	0	14	.077	23.754	y	17	50531...	70632	4.823	2.345	1...	H1-...
7	M54	L2x2x3	.271	0	31	.042	10	y	30	22592...	2339...	.558	1.239	1...	H2-1



Company : Proterra Design Group, LLC
 Designer : DU
 Job Number : 1978021
 Model Name : Fairfield 2 CT

Nov 26, 2019

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pn...	phi*P...	phi*Mn v...	phi*Mn z...	Cb	Eqn
8	M53	L2x2x3	.246	10	4	.037	0	y	10	22592...	2339...	.558	1.239	1.... H2-1
9	M4	L3x3x3	.240	0	20	.020	0	z	19	24862...	35316	1.32	2.512	1.... H2-1
10	M6	L3x3x3	.238	0	23	.021	0	z	22	24862...	35316	1.32	2.508	1.... H2-1
11	M5	L3x3x3	.233	85.714	16	.020	0	y	14	24862...	35316	1.32	2.533	1.... H2-1
12	M52	L2x2x3	.231	0	4	.027	10	z	3	22592...	2339...	.558	1.239	1.... H2-1
13	M28	PIPE 2.0	.209	18	10	.055	18		11	20866...	32130	1.872	1.872	1.... H1-...
14	M20	PIPE 2.0	.204	18	7	.063	18		7	20866...	32130	1.872	1.872	1.... H1-...
15	M36	PIPE 2.0	.198	18	4	.079	18		4	20866...	32130	1.872	1.872	1.... H1-...
16	M51	PIPE 2.0	.156	155.458	4	.082	131.5...		4	17855...	32130	1.872	1.872	2.... H1-...
17	M50	PIPE 2.0	.152	32.458	38	.072	32.458		8	17855...	32130	1.872	1.872	1.... H1-...
18	M49	PIPE 2.0	.141	37.583	9	.062	131.5...		11	17855...	32130	1.872	1.872	1.... H1-...
19	M9	HSS4x4x4	.127	0	3	.054	0	y	8	13517...	1395...	16.181	16.181	3.... H1-...
20	M22	PIPE 2.0	.125	18	26	.047	60		10	20866...	32130	1.872	1.872	1.... H1-...
21	M14	PIPE 2.0	.125	18	27	.043	60		7	20866...	32130	1.872	1.872	1.... H1-...
22	M30	PIPE 2.0	.125	18	25	.036	60		14	20866...	32130	1.872	1.872	1.... H1-...
23	M26	PIPE 2.0	.116	18	20	.037	60		12	20866...	32130	1.872	1.872	1.... H1-...
24	M34	PIPE 2.0	.115	18	23	.038	60		4	20866...	32130	1.872	1.872	1.... H1-...
25	M8	HSS4x4x4	.113	0	17	.046	0	y	11	13517...	1395...	16.181	16.181	2.... H1-...
26	M18	PIPE 2.0	.111	18	30	.042	60		8	20866...	32130	1.872	1.872	1.... H1-...
27	M7	HSS4x4x4	.103	0	23	.042	9.281	z	42	13517...	1395...	16.181	16.181	4.... H1-...
28	M16	PIPE 2.0	.102	18	29	.036	18		12	20866...	32130	1.872	1.872	1.... H1-...
29	M32	PIPE 2.0	.097	18	10	.035	18		9	20866...	32130	1.872	1.872	1.... H1-...
30	M24	PIPE 2.0	.089	18	4	.037	18		4	20866...	32130	1.872	1.872	1.... H1-...
31	M57	LL2.5x2.5x3...	.085	41.636	19	.003	83.272	y	21	31558...	58320	3.3	2.55	1.... H1-...
32	M55	LL2.5x2.5x3...	.085	41.636	19	.003	83.272	y	17	31558...	58320	3.3	2.55	1.... H1-...
33	M56	LL2.5x2.5x3...	.085	41.636	23	.003	83.272	y	13	31558...	58320	3.3	2.55	1.... H1-...
34	M68	PIPE 3.0	.061	6	9	.036	6		9	65117...	65205	5.749	5.749	1.... H1-...
35	M58	L2.5x2.5x3	.058	26.723	1	.007	0	y	19	15583...	2919...	.873	1.717	1.... H2-1
36	M59	L2.5x2.5x3	.058	25.632	1	.003	52.355	z	12	15583...	2919...	.873	1.717	1.... H2-1
37	M64	PIPE 3.0	.057	6	4	.034	6		4	65117...	65205	5.749	5.749	1.... H1-...
38	M63	L2.5x2.5x3	.057	26.177	9	.004	0	y	8	15583...	2919...	.873	1.717	1.... H2-1
39	M67	L2.5x2.5x3	.056	26.177	5	.004	0	y	9	15583...	2919...	.873	1.717	1.... H2-1
40	M60	PIPE 3.0	.053	6	7	.031	6		7	65117...	65205	5.749	5.749	1.... H1-...
41	M62	L2.5x2.5x3	.051	26.177	4	.007	0	z	23	15583...	2919...	.873	1.717	1.... H2-1
42	M66	L2.5x2.5x3	.051	26.177	5	.007	52.355	z	21	15583...	2919...	.873	1.717	1.... H2-1
43	M69	HSS4x4x3	.049	8	9	.051	8	y	8	10662...	1068...	12.662	12.662	1.67 H1-...
44	M65	HSS4x4x3	.045	8	4	.047	8	y	11	10662...	1068...	12.662	12.662	1.... H1-...
45	M61	HSS4x4x3	.040	8	6	.038	8	y	4	10662...	1068...	12.662	12.662	1.... H1-...

ATTACHMENT 6

1700161
JOHNSON TI
3958 CONGRE

3958

3928

CONGRESS ST

CONGRESS ST

4013

Mac
3931e

1700420000
3931 CONGRESS LLC
3931 CONGRESS STREET

4009

4009

39650

1700400000
DOUGLAS MARY QUESICIO PETER D DOUGLAS
4009 CONGRESS STREET

1700410000
FAIRFIELD TOWN OF
3965 CONGRESS STREET

Fairfield Fire
Department
Station 5

170039A0000
O'HARA MARGARET
303 CROSS HIGHWAY

303

4009



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3965 CONGRESS STREET

[Sales](#) [Print](#) [Map It](#)

Location 3965 CONGRESS STREET **Mblu** 170/41/111
Acct# 05308 **Owner** FAIRFIELD TOWN OF
Assessment \$939,330 **Appraisal** \$1,341,900
PID 14189 **Building Count** 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$508,400	\$833,500	\$1,341,900
Assessment			
Valuation Year	Improvements	Land	Total
2017	\$355,880	\$583,450	\$939,330


Owner of Record

Owner FAIRFIELD TOWN OF **Sale Price** \$0
Co-Owner **Certificate**
Address 725 OLD POST ROAD **Book & Page** 0395/0523
 FAIRFIELD, CT 06824 **Sale Date** 01/01/1800

ATTACHMENT 7



Certificate of Mailing — Firm

Name and Address of Sender		TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here Postmark with Date of Receipt.			
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103		2	2	<div style="text-align: center;">  </div>			
Postmaster, per (name of receiving employee) V.P.							
USPS® Tracking Number Firm-specific Identifier		Address (Name, Street, City, State, and ZIP Code™)		Postage	Fee	Special Handling	Parcel Airlift
1.		Brenda Kupchick, First Selectwoman Town of Fairfield Sullivan Independence Hall 725 Old Post Road Fairfield, CT 06824					
2.		James Wondt, Planning Director Town of Fairfield Sullivan Independence Hall 725 Old Post Road Fairfield, CT 06824					
3.							
4.							
5.							
6.							

