Robinson+Cole

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Also admitted in Massachusetts
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April 20, 2021

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**
383 Torrington Road, Litchfield, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains an existing wireless telecommunications facility at the above-referenced property address (the "Property"). The facility consists of antennas and remote radio heads attached to a tower and related equipment on the ground, near the base of the tower. The tower and Cellco's shared use of the tower were approved by the Council in Docket No. 299. A copy of Docket No 299's Decision and Order is included in Attachment 1.

Cellco now intends to modify its facility by removing three (3) existing antennas and six (6) existing remote radio heads ("RRHs"); and installing three (3) newer model antennas on Cellco's existing antenna platform. A set of project plans showing Cellco's proposed facility modifications and new antennas specifications 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 Litchfield's Chief Elected Official and Land Use Officer.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be installed on Cellco's existing antenna platform.

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 Cellco's new antennas 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. Cellco does not intend to provide 5G service from this facility.

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

6. According to the attached Structural Analysis ("SA") and Mount Analysis ("MA"), the existing tower, tower foundation, tower base plate and antenna mounting device can support Cellco's proposed modifications. Copies of the SA and MA are included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials is included in Attachment 6.

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:

Denise Raap, Litchfield First Selectman
Dennis Tobin, Litchfield Land Use Administrator
Old Toll Gate Hill LLC, Property Owner
Aleksey Tyurin

Attachment 1

DOCKET NO. 299 – Sprint Spectrum, L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at 383 Torrington Road in Litchfield, Connecticut.	}	Connecticut
	}	Siting
	}	Council

August 24, 2005

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Pubic Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum, L.P. for the construction, maintenance and operation of a wireless telecommunications facility to be located at 383 Torrington Road, in Litchfield, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be designed as a monopole and shall be constructed no taller than 140 feet above ground level to provide telecommunications services to both public and private entities.

2. The Certificate Holder, in developing the facility, shall incorporate wetlands mitigation measures that shall include, but not be limited to, the installation of a small culvert underneath the proposed access road to hydraulically connect the wetlands separated by the access road and the inclusion of wildlife planting consisting of native shrubs and a wildlife conservation seed mix that would be planted in areas disturbed around the proposed facility and access road.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Litchfield and all parties and intervenors, as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas mountings, equipment building, access road, utility line, and landscaping; and

b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.

8. If the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

11. Any request for extension of the time periods referred to in Conditions 8 and 9 shall be filed with the Council not later than sixty days prior to the expiration date of this Certificate and shall be served on all parties and intervenors and the Town of Litchfield, as listed in the service list. Any proposed modifications to this Decision and Order shall likewise be so served.

12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Litchfield Enquirer and in the Waterbury Republican-American.

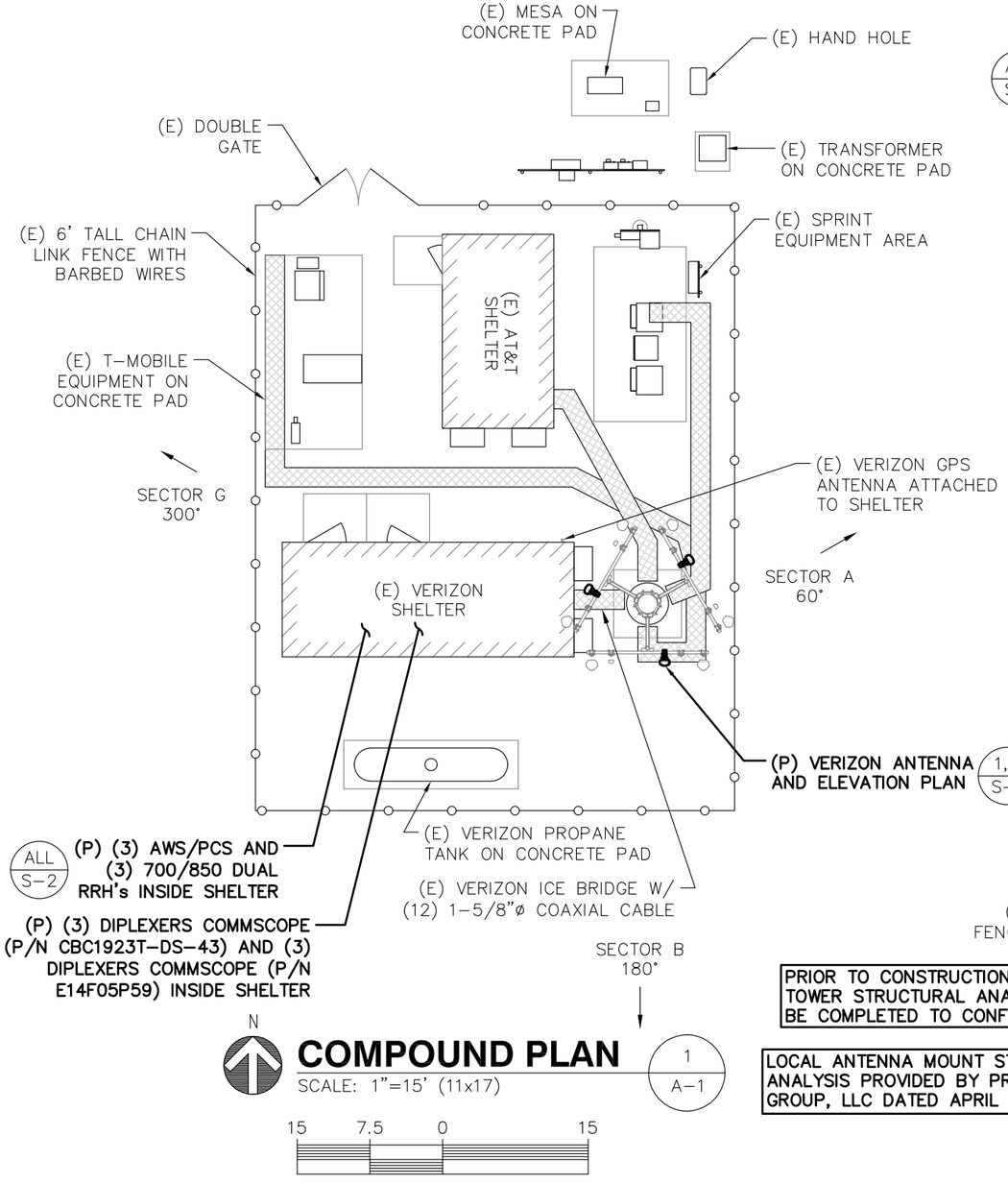
By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Status Granted	**Status Holder (name, address & phone number)**	**Representative (name, address & phone number)**
Applicant	Sprint Spectrum, L.P. d/b/a Sprint PCS	Thomas J. Regan, Esq. Brown Rudnick Berlack Israels LLP CityPlace I, 38th Floor 185 Asylum Street Hartford, CT 06103-3402 (860) 509-6522 (860) 509-6501 – f tregan@brbilaw.com
Intervenor (Approved 12/1/04)	Southwestern Bell Mobile Systems, LLC d/b/a Cingular Wireless	Wendell G. Davis, Esq. Blackwell, Davis & Spadaccini, LLC 158 East Center Street Manchester, CT 06040 860-432-0676 860-432-2926 – f wdavis@bds-law.com

Party (Approved on 1/24/05)	Town of Litchfield	Michael D. Rybak Guion, Stevens & Rybak, LLP P.O. Box 338 Litchfield, CT 06759-0338 860-567-0821 860-567-0825 – f mdr@litchlaw.com Leo Paul, Jr., First Selectman Town of Litchfield P.O. Box 488 Litchfield, CT 06759-0488 860-567-7550 860-567-7552 lfdselectman@optonline.net
Intervenor (Approved 2/2/05)	Jay Abbott 130 Norfolk Road Litchfield, CT 06759 860-567-8848 jlaskaatmarshfds@aol.com	
Intervenor (Approved 2/2/05)	Frank Rosa Georgiana Bianchi	Peter J. Tyrrell Levy & Droney, PC 74 Batterson Park Road Farmington, CT 06034 860-676-3069 860-676-3200 – f ptyrrell@ldlaw.com
Intervenor (Approved 2/2/05)	John Bolus 112 East Chestnut Hill Road Litchfield, CT 06759 860-567-4129 860-457-8720 – f Jsbolus@excite.com	
Intervenor (Approved 4/21/05)	Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 kbaldwin@rc.com

Attachment 2



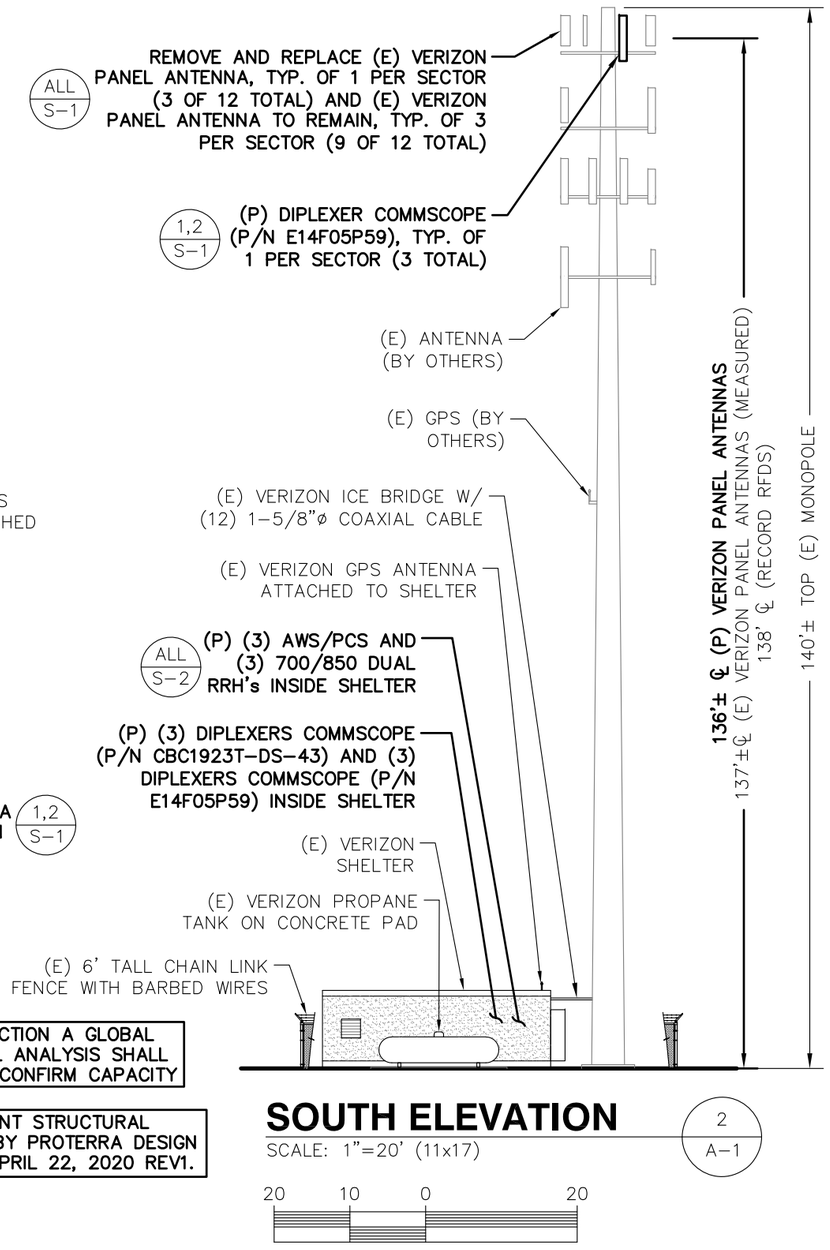
COMPOUND PLAN

SCALE: 1"=15' (11x17)

1 / A-1

PRIOR TO CONSTRUCTION A GLOBAL TOWER STRUCTURAL ANALYSIS SHALL BE COMPLETED TO CONFIRM CAPACITY

LOCAL ANTENNA MOUNT STRUCTURAL ANALYSIS PROVIDED BY PROTERRA DESIGN GROUP, LLC DATED APRIL 22, 2020 REV1.



SOUTH ELEVATION

SCALE: 1"=20' (11x17)

2 / A-1

GENERAL NOTES

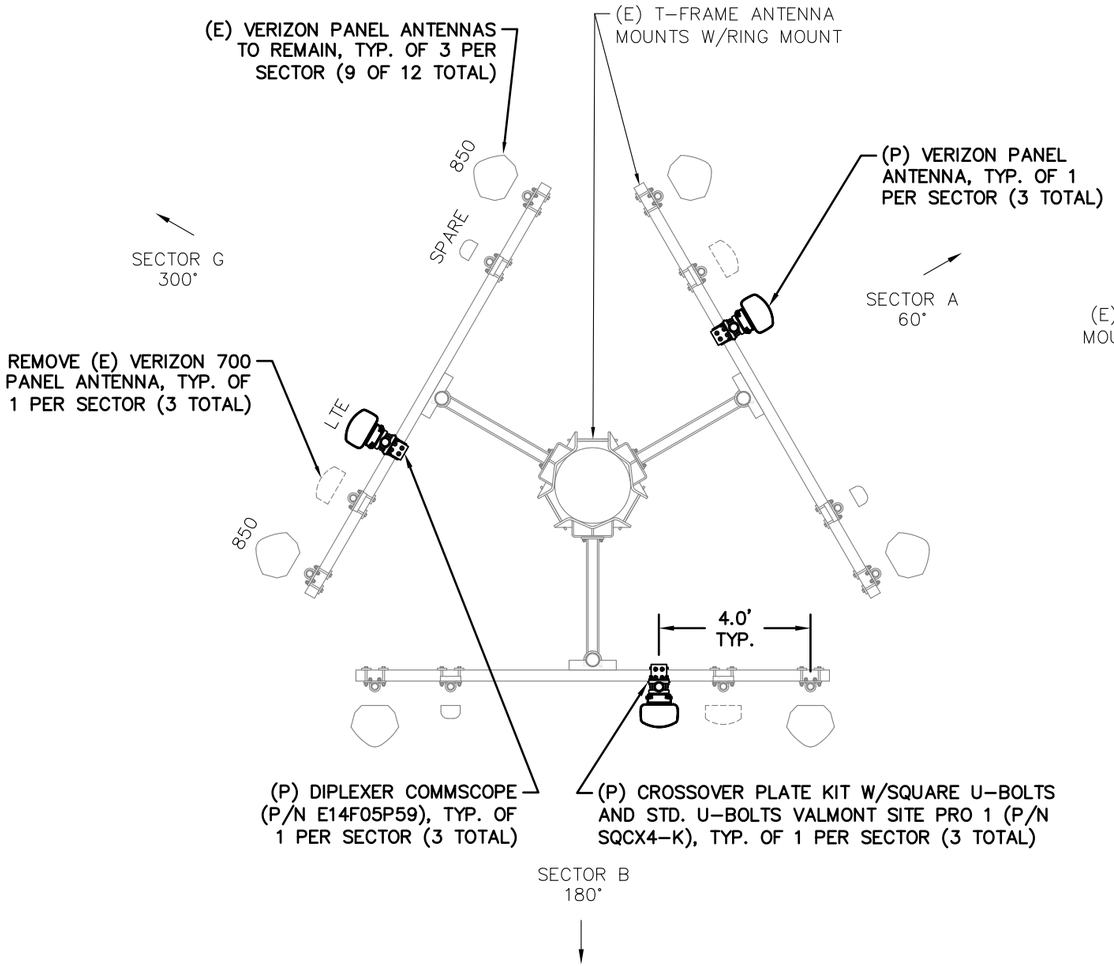
1. VERIFY COAX CONFIGURATION, ANTENNA CONFIGURATION, AND ANTENNA HEIGHT WITH LATEST RF DATA SHEET PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL SCHEDULE AND SEQUENCE ALL REQUIRED WORK WITH THE OWNER'S REPRESENTATIVE AND CONSTRUCTION MANAGER.
3. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER
4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES FOR THE WORK.
5. ANTENNAS & EQUIPMENT TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS & GLOBAL STRUCTURAL ANALYSIS OF TOWER (BY OTHERS)
6. REPLACE AND/OR REUSE (E) MOUNTING HARDWARE, INSPECT FOR DAMAGE, AND REPLACE AS NECESSARY TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND ENGINEER.
7. 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.
8. NORTH SHOWN IS APPROXIMATE. NOT ALL (E) OR (P) IMPROVEMENTS ARE SHOWN FOR CLARITY.
9. MATCH EXISTING ANTENNA TIP ELEVATIONS AS ZONING OR FAA APPROVALS DICTATE.
10. PROTERRA HAS NOT BEEN CONTRACTED TO PERFORM A GLOBAL TOWER STRUCTURAL ANALYSIS AND/OR AN ASSESSMENT OF THE STRUCTURE AND THEREFORE ASSUMES NO RESPONSIBILITY FOR THE STRUCTURAL CAPACITY OR MODIFICATIONS REQUIRED AS A RESULT THEREIN. A LOCAL MOUNT STRUCTURAL ANALYSIS HAS BEEN COMPLETED.

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

verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

LITCHFIELD NE CT
2020 UPGRADE
LOCATION CODE 468271
SBA SITE I.D.#: CT46123
383 TORRINGTON ROAD
LITCHFIELD, CT 06759

REVISIONS		DESIGNED BY: JWG/JMM	JOB #: 17-017
0	PER RFDS REV2 DATED JANUARY 27, 2020	DRAWN BY: TBD	REV. #: 1
1	PER RFDS REV3 DATED APRIL 3, 2020	DATE: 04/22/20	A-1
		SHEET: 1 OF 3	



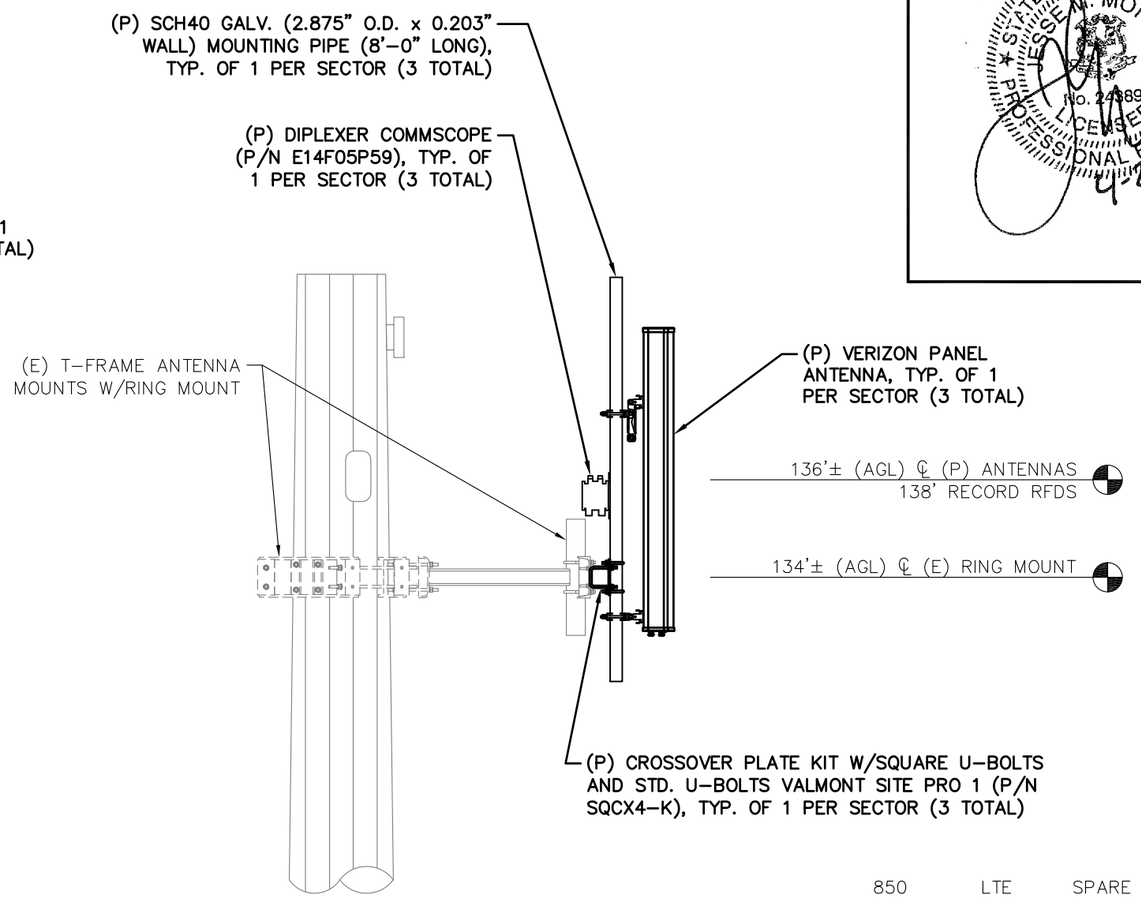
N

(P) ANTENNA PLAN

SCALE: 1"=4'

1 / S-1

4 2 0 4

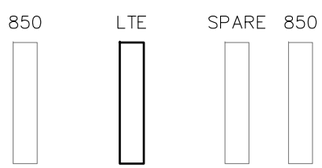


(P) ANTENNA ELEVATION

SCALE: 1"=3'

2 / S-1

3 1.5 0 3



CONFIGURATION AS VIEWED FROM BEHIND ANTENNAS BASED UPON RFDS REV3 DATED APRIL 3, 2020

(P) ANTENNA CONFIGURATION

SCALE: NONE

3 / S-1

ProTerra DESIGN GROUP, LLC
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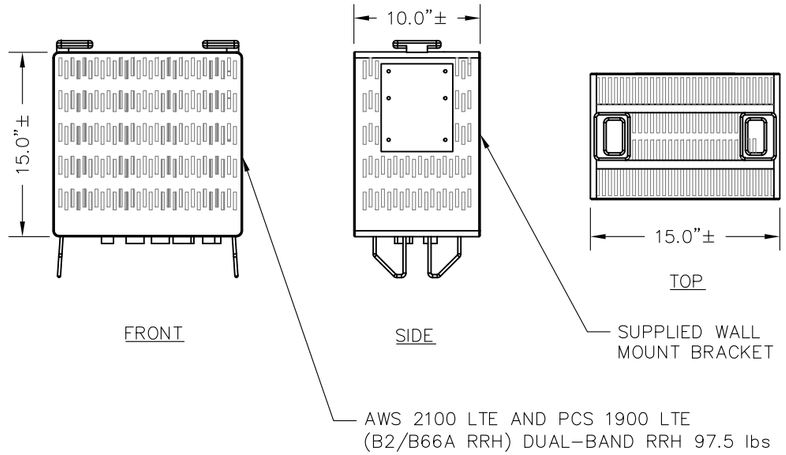
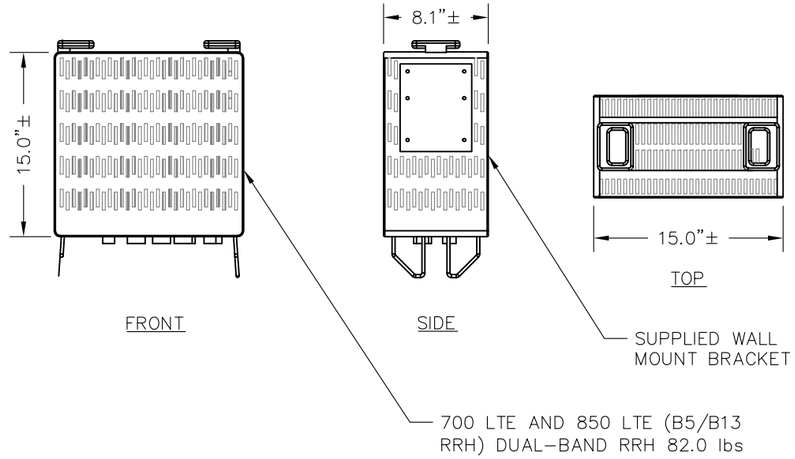
		SHEET: 2 OF 3	



(P) AWS/PCS RRH DETAIL (SHELTER

1
S-2

SCALE: NONE



(P) 700/850 RRH DETAIL (SHELTER)

2
S-2

SCALE: NONE

ProTerra
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Hadley, MA 01035
(413)320-4918

verizon
20 ALEXANDER DRIVE
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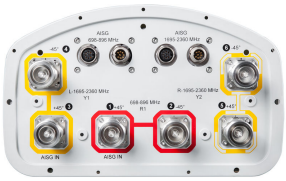
REVISIONS		DESIGNED BY: JWG/JMM	JOB #: 17-017
0	PER RFDS REV2 DATED JANUARY 27, 2020	DRAWN BY: TBD	REV. #: 1
1	PER RFDS REV3 DATED APRIL 3, 2020	DATE: 04/22/20	**S-2**
		SHEET: 3 OF 3	

NHH-85B-R2B



6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 85° HPBW, 2x RET. Both high bands share the same electrical tilt.

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

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Effective Projective Area (EPA), frontal	0.27 m² | 2.906 ft²
Effective Projective Area (EPA), lateral	0.22 m² | 2.368 ft²
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	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, low band	2
RF Connector Quantity, total	6

Remote Electrical Tilt (RET) Information, General

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

Dimensions

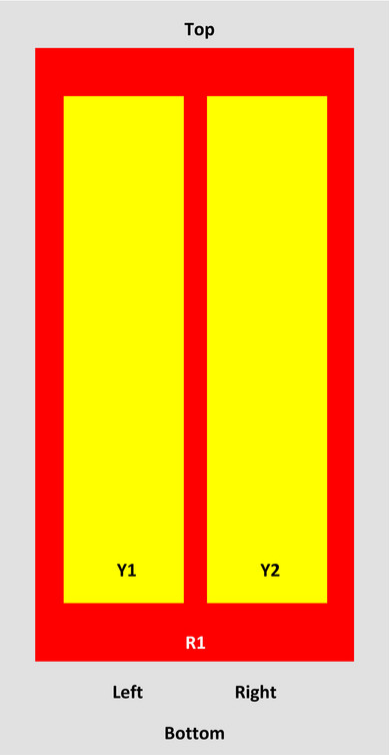
Width	301 mm | 11.85 in
Depth	180 mm | 7.087 in

NHH-85B-R2B

Length	1851 mm | 72.874 in

Array Layout

NHH



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-896	1-2	1	ANxxxxxxxxxxxxxxx1
Y1	1695-2360	3-4	2	ANxxxxxxxxxxxxxxx2
Y2	1695-2360	5-6		

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 – 896 MHz
Polarization	±45°
Total Input Power, maximum	900 W @ 50 °C

Remote Electrical Tilt (RET) Information, Electrical

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

NHH-85B-R2B

Power Consumption, normal conditions, maximum	13 W
Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 3
Internal RET	High band (1) | Low band (1)

Electrical Specifications

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain, dBi	14.4	14.4	17.1	17.6	17.9	18.1
Beamwidth, Horizontal, degrees	82.5	87	80	79.3	78	78
Beamwidth, Vertical, degrees	12.3	11.2	5.7	5.3	5	4.6
Beam Tilt, degrees	0–12	0–12	0–8	0–8	0–8	0–8
USLS (First Lobe), dB	18	16	14	16	17	18
Front-to-Back Ratio at 180°, dB	28	26	34	30	30	30
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	30	30	25	25	25	25
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	300	300	250	250	250	200

Electrical Specifications, BASTA

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain by all Beam Tilts, average, dBi	14.1	14.1	16.6	17.3	17.6	17.7
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.4	±0.4
Gain by Beam Tilt, average, dBi	0 ° | 14.1 6 ° | 14.2 12 ° | 14.0	0 ° | 14.0 6 ° | 14.3 12 ° | 13.8	0 ° | 16.6 4 ° | 16.6 8 ° | 16.7	0 ° | 17.3 4 ° | 17.4 8 ° | 17.3	0 ° | 17.6 4 ° | 17.6 8 ° | 17.5	0 ° | 17.6 4 ° | 17.8 8 ° | 17.6
Beamwidth, Horizontal Tolerance, degrees	±1.8	±2	±4.8	±4.0	±4.0	±2.6
Beamwidth, Vertical Tolerance, degrees	±0.8	±0.9	±0.2	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	18	16	14	15	16	17
Front-to-Back Total Power at	22	22	27	26	25	26

180° ± 30°, dB						
CPR at Boresight, dB	21	22	19	19	19	22
CPR at Sector, dB	20	20	15	17	17	16

Mechanical Specifications

Wind Loading at Velocity, frontal	283.0 N @ 150 km/h | 63.6 lbf @ 150 km/h
Wind Loading at Velocity, lateral	234.0 N @ 150 km/h | 52.6 lbf @ 150 km/h
Wind Loading at Velocity, maximum	122.5 lbf @ 150 km/h | 545.0 N @ 150 km/h
Wind Loading at Velocity, rear	287.0 N @ 150 km/h | 64.5 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 149.75 mph

Packaging and Weights

Width, packed	409 mm | 16.102 in
Depth, packed	299 mm | 11.772 in
Length, packed	1970 mm | 77.559 in
Net Weight, without mounting kit	19.8 kg | 43.651 lb
Weight, gross	31.9 kg | 70.327 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
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
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

Attachment 3

	General	Power	Density					
Site Name: Litchfield NE								
Tower Height: Verizon @ 136ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
AT&T-LTE	1	305	118	850	0.0087	0.5667	0.15%	
AT&T-LTE	2	2951	118	700	0.1692	0.4667	3.63%	
AT&T-PCS-LTE	2	1000	118	850	0.0573	0.5667	1.01%	
AT&T-UMTS	2	3664	118	1900	0.2101	1.0000	2.10%	
AT&T-PCS-UMTS	1	5070	118	2100	0.1454	1.0000	1.45%	
AT&T-GSM	1	1285	118	2300	0.0368	1.0000	0.37%	
Sprint	2	13	127	1900	0.0006	1.0000	0.01%	
Sprint	1	12	127	850	0.0003	0.5667	0.01%	
Sprint	2	13	127	2500	0.0006	1.0000	0.01%	
Verizon	7	274	138	1970	0.0396	1.0000	0.40%	
Verizon	9	301	138	869	0.0559	0.5793	0.97%	
Verizon	1	686	138	2145	0.0142	1.0000	0.14%	
Verizon	2	790	138	698	0.0326	0.4653	0.70%	
T-Mobile	1	865	108	700	0.0299	0.4667	0.64%	
T-Mobile	6	1102	108	1945	0.2285	1.0000	2.29%	
VZW 700	**2**	**931**	**136**	**0.0014**	**751**	**0.5007**	**0.28%**	
VZW Cellular LTE	**2**	**905**	**136**	**0.0014**	**874**	**0.5827**	**0.24%**	
VZW Cellular CDMA	**2**	**500**	**136**	**0.0008**	**874**	**0.5827**	**0.13%**	
VZW PCS	**2**	**1355**	**136**	**0.0021**	**1975**	**1.0000**	**0.21%**	
VZW AWS	**2**	**2120**	**136**	**0.0032**	**2120**	**1.0000**	**0.32%**	
								15.04%
* Source: Siting Council								

Attachment 4

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 139 ft. Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46123-A

Customer Site Name: Litchfield

Carrier Name: Verizon (App#: 128133, V5)

Carrier Site ID / Name: 324235 / Litchfield NE CT

Site Location: 383 Torrington Rd

Litchfield, Connecticut

Litchfield County

Latitude: 41.766278

Longitude: -73.178527

Analysis Result:

Max Structural Usage: 62.5% [Pass]

Max Foundation Usage: 61.3% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Delu Zhou

Tower Engineering Solutions
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Analysis Result:

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Max Foundation Usage: 61.3% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Delu Zhou

Introduction

The purpose of this report is to summarize the analysis results on the 139 ft. Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	FDH Project # 15BGLG1400 (SA Report), dated 03/19/2015
Foundation Drawing	EEI Project # 14854, dated 04/08/2008
Geotechnical Report	Clarence Welti Associates, Inc. Geotechnical Report, dated 08/19/2005
Modification Drawings	N/A
Mount Analysis	ProTerra Design Group, MA, dated 4/22/2020

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 120.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 93.0 mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	S_S = 0.184, S_1 = 0.065

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	140.0	3	Antel BXA-70063/6CF-2 - Panel	(3) T-Arms w/ ring mount	(12) 1 5/8"	Verizon
-		6	Antel LPA-80063/4CF - Panel			
-		3	Antel BXA-171063-8BF-2 - Panel			
-		6	RFS FD9R6004/2C-3L Diplexers			
6	127.0	3	RFS APXVSPP18-C-A20 - Panel	(3) T-Arms	(4) 1 1/4"	Sprint
7		3	Alcatel Lucent 1900 MHz			
8		3	Alcatel Lucent 800 MHz			
9		3	Alcatel Lucent 800 MHz Filters			
10		4	RFS ACU-A20-N RETs			
11		3	RFS APXVTM14-C-I20 - Panel			
12		3	Alcatel Lucent TD-RRH8x20-25			
13	118.0	3	Powerwave 7770 – Panel	(3) T-Arms w/ (6) 2" pipe steel brace	(12) 1 5/8" (6) 3/4" DC Power* (3) 7/16" Fiber* (1) 3" Conduit[2]	AT&T
14		1	AM-X-CD-14-65-00T- Panel			
15		18	LGP21401 TMA			
16		6	7020.00 RET			
17		3	Ericsson RRUS 11 - RRU			
18		3	Ericsson RRUS 12 - RRU			
19		18	Powerwave LGP13519 Diplexer			
20		3	Raycap DC6-48-60-18-8F ("Squid")			
21		1	AM-X-CD-16-65-00T-RET- Panel			
22		1	Cci OPA65R-BU6B - Panel			
23		2	Cci OPA65R-BU4B - Panel			
24		1	Cci HPA65R-BU6A - Panel			
25		2	SBNHH-1D65A - Panel			
26		1	800 10764 K- Panel			
27		3	B14 4478 - RRU			
28		3	4478 B5 - RRU			
29		3	RRUS 32 B30 - RRU			
30		3	4426 B66 - RRU			
31	108.0	3	RFS - APX16PV-16VL-E - Panel	Low Profile Platform	(18) 1 5/8"	T-Mobile
32		3	RFS - APXV18-209014 - Panel			
33		3	Andrew - LNX-6515DS - Panel			
34		12	TMA			
35		3	Kathrein 782 11056-Bias-T			

1. (1) 7/16" fiber and (2) 3/4" DC Power lines inside (2) 2" flex conduit

2. (1) 7/16" fiber and (2) 3/4" DC Power lines inside 3" Conduit

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	138.0	3	E14F05P59 Deplexer	(3) T-Arms w/ ring mount	(12) 1 5/8"	Verizon
2	137.0	6	Antel LPA-80063/4CF ___ Panel			
3	136.0	3	Commscope NHH-85B-R2B Panel			
4		3	Antel BXA-171063-8BF-EDIN-2 Panel			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**62.5%**	**54.7%**	**41.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2787.5	27.2	64.5

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.1761 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

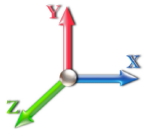
Usage Diagram - Max Ratio 62.47% at 0.0ft

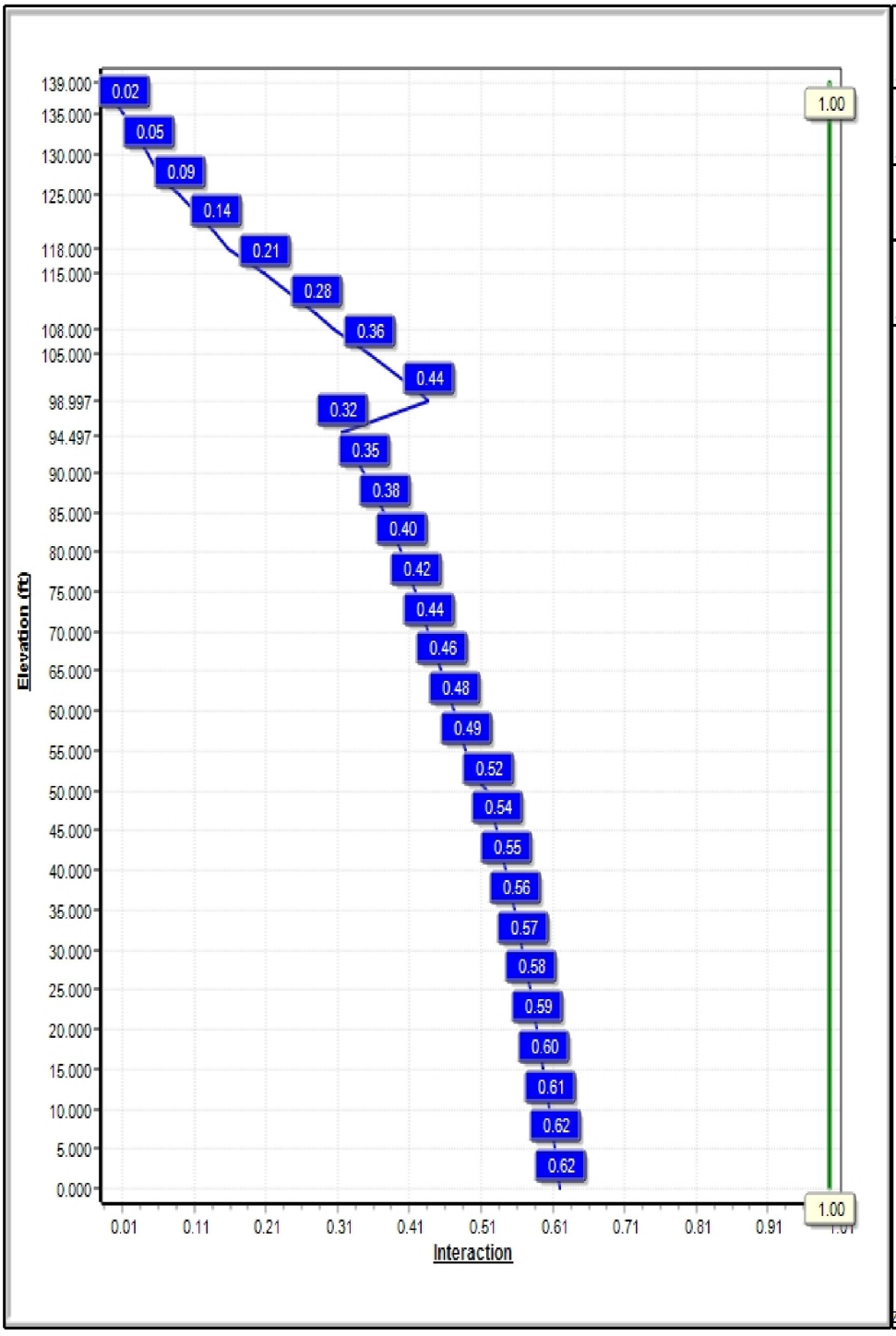
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield	**Exposure:**	C	
Height:	139.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

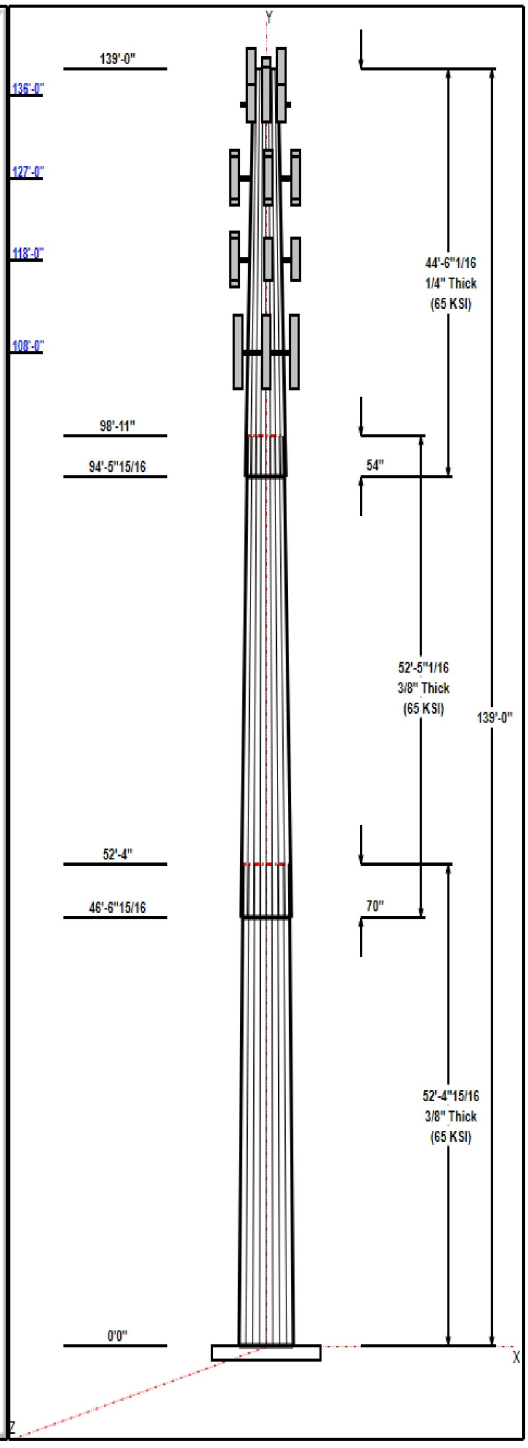
Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	24
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 93 mph Wind







Structure: CT46123-A-SBA

Type: Tapered
Site Name: Litchfield
Height: 139.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.24460

3/4/2021

Tower Engineering Solutions

Shaft Properties

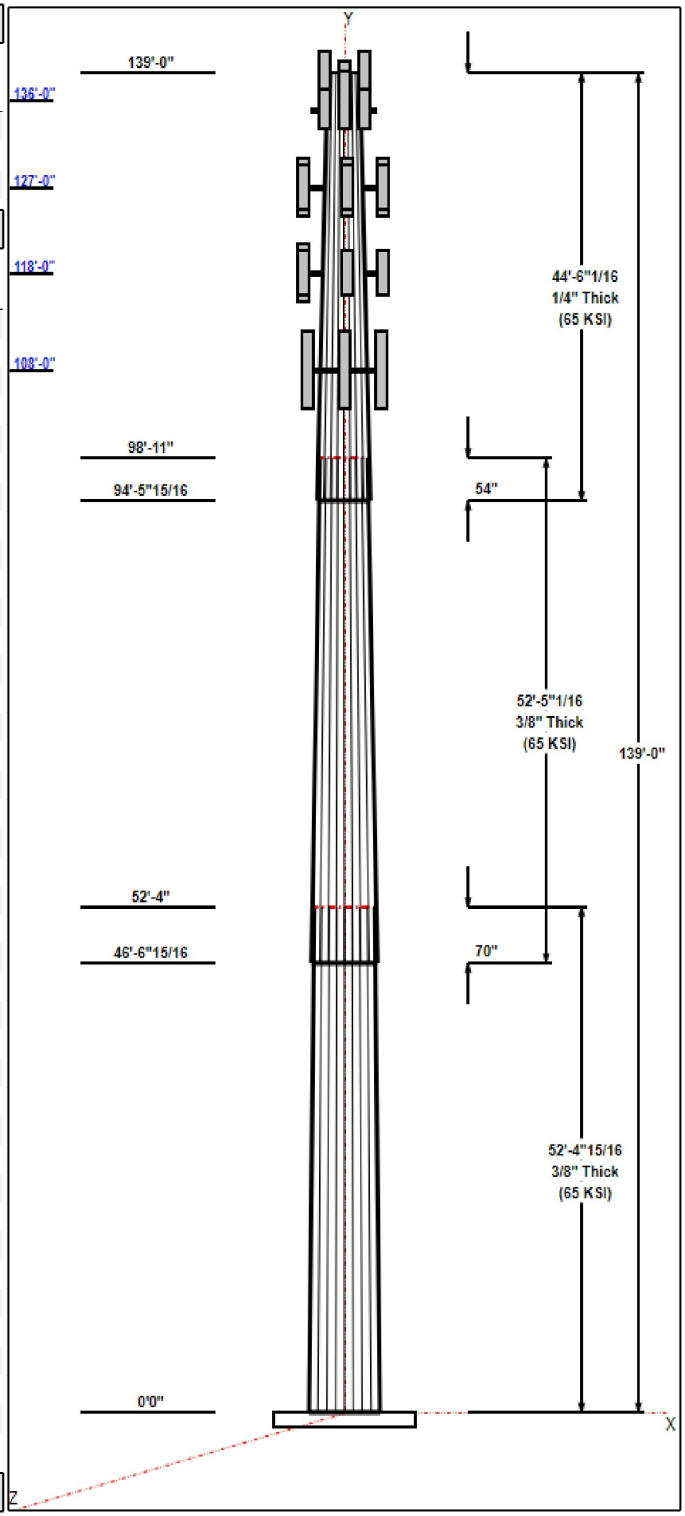
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.41	40.43	53.25	0.375		0.24460	65
2	52.42	29.78	42.61	0.375	Slip	0.24460	65
3	44.50	20.50	31.39	0.250	Slip	0.24460	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
138.00	138.00	3	E14F05P59 Deplexer	Verizon
137.00	139.00	6	LPA-80063/4CF ___	Verizon
136.00	136.00	3	NHH-85B-R2B	Verizon
136.00	137.00	3	Antel	Verizon
135.00	132.00	3	T-Arms w/ Ring Mount	Verizon
127.00	127.00	3	T-Arms	Sprint Nextel
127.00	127.00	3	Collar Mounts	Sprint Nextel
127.00	127.00	3	RFS APXVSPP18-C-A20	Sprint Nextel
127.00	127.00	3	Alcatel Lucent 1900 MHz	Sprint Nextel
127.00	127.00	3	Alcatel Lucent 800 MHz	Sprint Nextel
127.00	127.00	3	Alcatel Lucent 800 MHz	Sprint Nextel
127.00	127.00	4	RFS ACU-A20-N RETs	Sprint Nextel
127.00	127.00	3	RFS APXVTM14-C-I20	Sprint Nextel
127.00	127.00	3	Alcatel Lucent	Sprint Nextel
118.00	118.00	3	T-Arms	AT&T
118.00	118.00	3	Powerwave 7770	AT&T
118.00	118.00	1	KMW	AT&T
118.00	118.00	18	LGP21401 TMA	AT&T
118.00	118.00	6	Powerwave 7020.00 RET	AT&T
118.00	118.00	3	Ericsson RRU-11-RRU	AT&T
118.00	118.00	3	Ericsson RRU-12-RRU	AT&T
118.00	118.00	18	Powerwave LGP13519	AT&T
118.00	118.00	3	Raycap DC6-48-60-18-8F	AT&T
118.00	118.00	1	OPA65R-BU6B	AT&T
118.00	118.00	2	OPA65R-BU4B	AT&T
118.00	118.00	1	HPA65R-BU6A	AT&T
118.00	118.00	2	SBNHH-1D65A	AT&T
118.00	118.00	1	800 10764 K	AT&T
118.00	118.00	3	RRUS 4478 B14	AT&T
118.00	118.00	3	RRUS 4478 B5	AT&T
118.00	118.00	3	RRUS 32 B30	AT&T
118.00	118.00	3	4426 B66	AT&T
118.00	118.00	2	Steel Brace	AT&T
118.00	118.00	1	KMW	AT&T
108.00	108.00	1	Low Profile Platform	T-Mobile
108.00	108.00	3	APX16PV-16VL-E	T-Mobile
108.00	108.00	3	APXV18-209014	T-Mobile
108.00	108.00	3	LNX-6515DS	T-Mobile
108.00	108.00	12	TMA	T-Mobile
108.00	108.00	3	Kathrein 782 11056-Bias-T	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	136.00	Inside	1 5/8" Coax	Verizon
0.00	127.00	Inside	1 1/4" Coax	Sprint Nextel
0.00	118.00	Inside	1 5/8" Coax	AT&T



0.00	118.00	Inside	2" Conduit	AT&T
0.00	118.00	Inside	3" Conduit	AT&T
0.00	118.00	Inside	3/4" DC	AT&T
0.00	118.00	Inside	7/16" Fiber	AT&T
0.00	108.00	Inside	1 5/8" Coax	T-Mobile

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	72.0	60.0	Round

Reactions

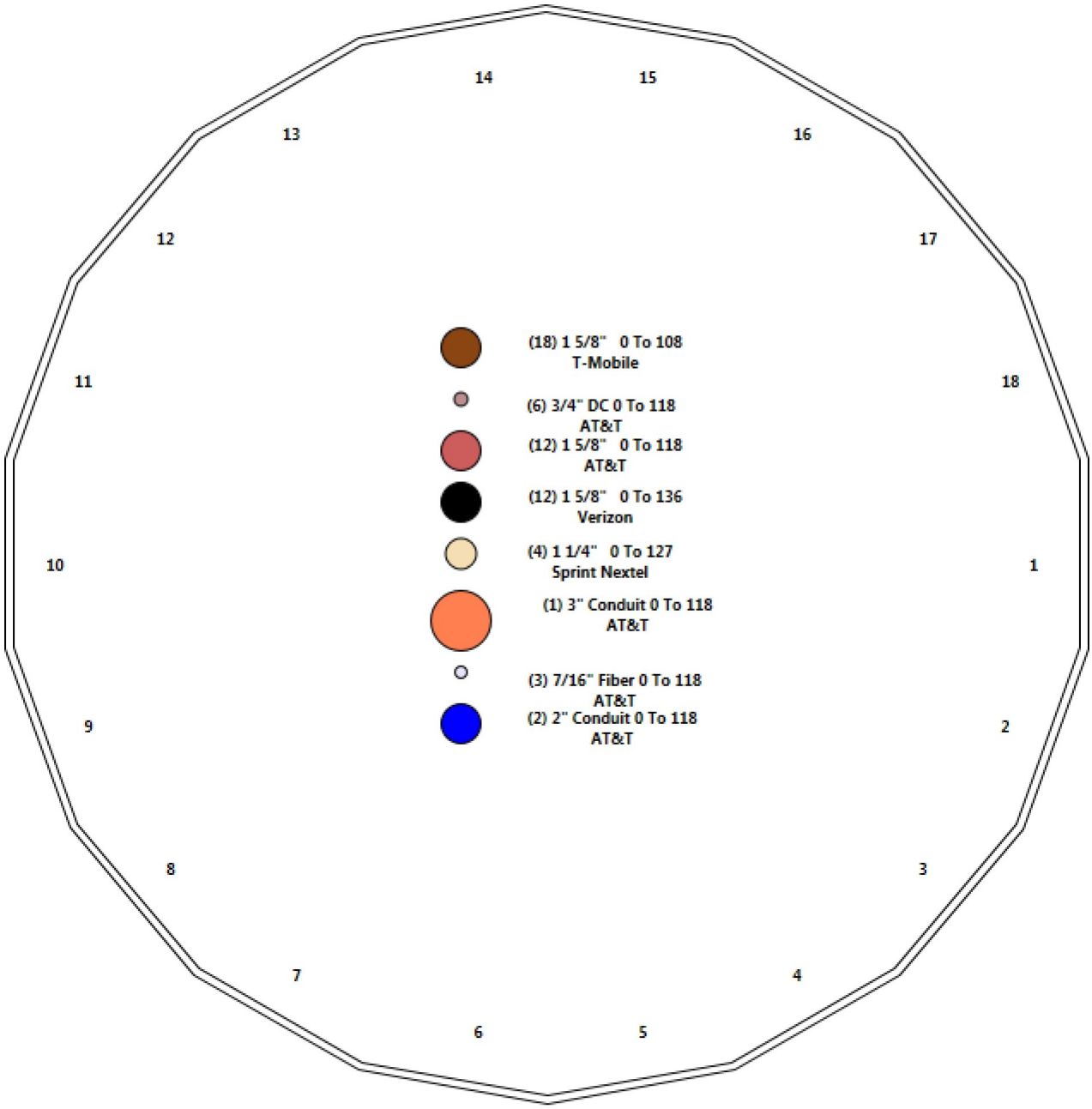
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	2787.5	27.2	43.6
0.9D + 1.6W 93 mph Wind	2760.4	27.2	32.7
1.2D + 1.0Di + 1.0Wi 40 mph Wind	612.9	5.9	64.5
1.2D + 1.0E	93.4	0.9	43.7
0.9D + 1.0E	92.5	0.9	32.8
1.0D + 1.0W 60 mph Wind	721.1	7.1	36.4

Structure: CT46123-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Litchfield
Height: 139.00 (ft)

3/4/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT46123-A-SBA		**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield		**Exposure:**	C	
Height:	139.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	52.410	0.3750	65		0.00	9,863
2	18	52.420	0.3750	65	Slip	70.00	7,605
3	18	44.503	0.2500	65	Slip	54.00	3,087
					Total Shaft Weight:		**20,555**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	53.25	0.00	62.93	22229.35	23.63	142.00	40.43	52.41	47.67	9663.96	17.60	107.8	0.244604
2	42.61	46.58	50.27	11326.74	18.62	113.62	29.78	99.00	35.00	3825.25	12.59	79.43	0.244604
3	31.39	94.50	24.71	3025.94	20.73	125.54	20.50	139.00	16.07	832.45	13.05	82.00	0.244604

Load Summary

Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	138.00	E14F05P59 Deplexer	3	8.27	0.72	0.67	26.92	1.202	0.67	0.00	0.00
2	137.00	LPA-80063/4CF ___	6	20.00	6.15	0.93	202.45	7.184	0.93	0.00	2.00
3	136.00	NHH-85B-R2B	3	43.70	8.17	0.85	245.23	9.491	0.85	0.00	0.00
4	136.00	Antel BXA-171063-8BF-EDIN-2	3	15.00	4.94	0.84	107.72	7.699	0.84	0.00	1.00
5	135.00	T-Arms w/ Ring Mount	3	400.00	10.00	0.75	676.31	18.635	0.75	0.00	-3.00
6	127.00	T-Arms	3	400.00	10.00	0.75	674.63	18.582	1.00	0.00	0.00
7	127.00	Collar Mounts	3	100.00	3.50	0.75	182.39	5.903	1.00	0.00	0.00
8	127.00	RFS APXVSPP18-C-A20	3	57.00	8.02	0.83	227.00	10.768	1.00	0.00	0.00
9	127.00	Alcatel Lucent 1900 MHz	3	44.00	3.80	0.67	151.36	5.167	1.00	0.00	0.00
10	127.00	Alcatel Lucent 800 MHz	3	53.00	2.49	0.67	125.74	3.615	1.00	0.00	0.00
11	127.00	Alcatel Lucent 800 MHz Filters	3	61.80	2.91	0.67	151.03	4.107	1.00	0.00	0.00
12	127.00	RFS ACU-A20-N RETs	4	1.00	0.14	0.67	5.23	0.432	1.00	0.00	0.00
13	127.00	RFS APXVTM14-C-I20	3	56.00	6.34	0.79	213.24	7.434	1.00	0.00	0.00
14	127.00	Alcatel Lucent TD-RRH8x20-25	3	70.00	4.05	0.67	178.26	4.849	1.00	0.00	0.00
15	118.00	T-Arms	3	350.00	8.00	0.75	588.54	14.815	1.00	0.00	0.00
16	118.00	Powerwave 7770	3	35.00	5.50	0.73	166.26	6.538	1.00	0.00	0.00
17	118.00	KMW AM-X-CD-16-65-00T-RET w/	1	48.50	8.02	0.75	206.93	10.748	1.00	0.00	0.00
18	118.00	LGP21401 TMA	18	14.10	1.29	0.67	38.51	2.106	1.00	0.00	0.00
19	118.00	Powerwave 7020.00 RET	6	2.20	0.40	0.67	12.19	0.872	1.00	0.00	0.00
20	118.00	Ericsson RRU-11-RRU	3	50.70	2.52	0.67	137.31	3.155	1.00	0.00	0.00
21	118.00	Ericsson RRU-12-RRU	3	60.00	2.70	0.67	125.43	3.344	1.00	0.00	0.00
22	118.00	Powerwave LGP13519 Diplexer	18	5.30	0.34	0.67	14.57	0.783	1.00	0.00	0.00
23	118.00	Raycap DC6-48-60-18-8F Surge	3	32.80	0.92	1.00	95.06	1.348	1.00	0.00	0.00
24	118.00	OPA65R-BU6B	1	71.20	7.92	0.99	307.19	9.166	1.00	0.00	0.00
25	118.00	OPA65R-BU4B	2	57.00	5.94	0.79	211.15	6.946	1.00	0.00	0.00
26	118.00	HPA65R-BU6A	1	46.90	9.49	0.79	268.43	10.814	1.00	0.00	0.00
27	118.00	SBNHH-1D65A	2	33.50	5.88	0.83	187.36	6.933	1.00	0.00	0.00
28	118.00	800 10764 K	1	40.80	5.88	0.75	165.29	7.972	1.00	0.00	0.00
29	118.00	RRUS 4478 B14	3	59.40	1.65	0.67	99.88	2.156	1.00	0.00	0.00
30	118.00	RRUS 4478 B5	3	59.90	1.84	0.67	107.62	2.376	1.00	0.00	0.00
31	118.00	RRUS 32 B30	3	60.00	2.74	0.67	145.43	3.450	1.00	0.00	0.00
32	118.00	4426 B66	3	59.40	1.65	0.67	99.88	2.156	1.00	0.00	0.00
33	118.00	Steel Brace	2	140.00	3.70	1.00	311.75	7.482	1.00	0.00	0.00
34	118.00	KMW AM-X-CW-14-65-00T-RET	1	30.80	5.00	0.75	139.68	6.830	1.00	0.00	0.00
35	108.00	Low Profile Platform	1	1500.00	22.00	1.00	2766.61	39.091	1.00	0.00	0.00
36	108.00	APX16PV-16VL-E	3	39.60	6.03	0.67	163.56	7.073	1.00	0.00	0.00
37	108.00	APXV18-209014	3	18.70	3.58	0.74	103.64	4.479	1.00	0.00	0.00
38	108.00	LNX-6515DS	3	48.50	11.47	0.80	270.96	14.616	1.00	0.00	0.00
39	108.00	TMA	12	10.50	0.59	0.67	24.96	1.142	1.00	0.00	0.00
40	108.00	Kathrein 782 11056-Bias-T	3	11.00	0.68	0.74	27.14	1.275	1.00	0.00	0.00
		Totals:	**151**	**9,392.91**			**23,110.02**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	136.00	(12) 1 5/8" Coax	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	127.00	(4) 1 1/4" Coax			0.00	Inside					
0.00	118.00	(12) 1 5/8" Coax			0.00	Inside					
0.00	118.00	(2) 2" Conduit			0.00	Inside					
0.00	118.00	(1) 3" Conduit			0.00	Inside					
0.00	118.00	(6) 3/4" DC			0.00	Inside					
0.00	118.00	(3) 7/16" Fiber			0.00	Inside					
0.00	108.00	(18) 1 5/8" Coax			0.00	Inside					

Shaft Section Properties

Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	53.250	62.932	22229.4	23.63	142.00	73.6	822.2	0.0
5.00		0.3750	52.027	61.477	20722.2	23.05	138.74	74.3	784.5	1058.3
10.00		0.3750	50.804	60.021	19284.8	22.48	135.48	75.0	747.7	1033.6
15.00		0.3750	49.581	58.565	17915.5	21.90	132.22	75.6	711.7	1008.8
20.00		0.3750	48.358	57.110	16612.5	21.33	128.95	76.3	676.6	984.0
25.00		0.3750	47.135	55.654	15374.3	20.75	125.69	77.0	642.4	959.3
30.00		0.3750	45.912	54.198	14199.2	20.18	122.43	77.7	609.1	934.5
35.00		0.3750	44.689	52.743	13085.6	19.60	119.17	78.3	576.7	909.7
40.00		0.3750	43.466	51.287	12031.8	19.03	115.91	79.0	545.2	885.0
45.00		0.3750	42.243	49.831	11036.1	18.45	112.65	79.7	514.6	860.2
46.58	Bot - Section 2	0.3750	41.857	49.372	10733.9	18.27	111.62	79.9	505.1	266.1
50.00		0.3750	41.020	48.376	10096.9	17.88	109.39	80.4	484.8	1149.1
52.41	Top - Section 1	0.3750	41.180	48.567	10217.0	17.95	109.81	0.0	0.0	795.0
55.00		0.3750	40.547	47.813	9748.5	17.65	108.12	80.6	473.5	424.7
60.00		0.3750	39.324	46.357	8885.0	17.08	104.86	81.3	445.0	801.1
65.00		0.3750	38.101	44.901	8074.0	16.50	101.60	82.0	417.4	776.3
70.00		0.3750	36.878	43.446	7313.9	15.93	98.34	82.5	390.6	751.6
75.00		0.3750	35.655	41.990	6603.1	15.35	95.08	82.5	364.8	726.8
80.00		0.3750	34.432	40.534	5939.9	14.78	91.82	82.5	339.8	702.0
85.00		0.3750	33.209	39.079	5322.7	14.20	88.56	82.5	315.7	677.3
90.00		0.3750	31.986	37.623	4749.8	13.63	85.29	82.5	292.5	652.5
94.50	Bot - Section 3	0.3750	30.886	36.314	4271.0	13.11	82.36	82.5	272.4	565.7
95.00		0.3750	30.763	36.168	4219.5	13.05	82.03	82.5	270.2	104.3
99.00	Top - Section 2	0.2500	30.285	23.832	2716.2	19.95	121.14	0.0	0.0	813.3
100.00		0.2500	30.040	23.637	2650.2	19.78	120.16	78.1	173.8	81.0
105.00		0.2500	28.817	22.667	2337.0	18.91	115.27	79.2	159.7	393.9
108.00		0.2500	28.083	22.084	2161.5	18.40	112.33	79.8	151.6	228.4
110.00		0.2500	27.594	21.696	2049.5	18.05	110.37	80.2	146.3	149.0
115.00		0.2500	26.371	20.726	1786.6	17.19	105.48	81.2	133.4	360.9
118.00		0.2500	25.637	20.144	1640.2	16.67	102.55	81.8	126.0	208.6
120.00		0.2500	25.147	19.755	1547.2	16.33	100.59	82.2	121.2	135.8
125.00		0.2500	23.924	18.785	1330.2	15.46	95.70	82.5	109.5	327.9
127.00		0.2500	23.435	18.397	1249.5	15.12	93.74	82.5	105.0	126.5
130.00		0.2500	22.701	17.815	1134.5	14.60	90.81	82.5	98.4	184.8
135.00		0.2500	21.478	16.844	959.0	13.74	85.91	82.5	87.9	294.8
136.00		0.2500	21.234	16.650	926.3	13.57	84.94	82.5	85.9	57.0
137.00		0.2500	20.989	16.456	894.3	13.39	83.96	82.5	83.9	56.3
138.00		0.2500	20.745	16.262	863.0	13.22	82.98	82.5	81.9	55.7
139.00		0.2500	20.500	16.068	832.5	13.05	82.00	82.5	80.0	55.0
										20554.8

Wind Loading - Shaft

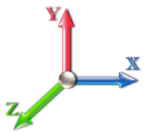
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	386.35	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	377.48	0.650	0.000	5.00	22.271	14.48	455.5	0.0	1270.0
10.00		1.00	0.85	17.879	19.67	368.60	0.650	0.000	5.00	21.754	14.14	444.9	0.0	1240.3
15.00		1.00	0.85	17.879	19.67	359.73	0.650	0.000	5.00	21.236	13.80	434.4	0.0	1210.6
20.00		1.00	0.90	18.971	20.87	361.40	0.650	0.000	5.00	20.719	13.47	449.6	0.0	1180.8
25.00		1.00	0.95	19.883	21.87	360.64	0.650	0.000	5.00	20.201	13.13	459.5	0.0	1151.1
30.00		1.00	0.98	20.661	22.73	358.09	0.650	0.000	5.00	19.684	12.79	465.3	0.0	1121.4
35.00		1.00	1.01	21.343	23.48	354.25	0.650	0.000	5.00	19.166	12.46	468.0	0.0	1091.7
40.00		1.00	1.04	21.951	24.15	349.43	0.650	0.000	5.00	18.649	12.12	468.3	0.0	1062.0
45.00		1.00	1.07	22.502	24.75	343.84	0.650	0.000	5.00	18.131	11.79	466.7	0.0	1032.3
46.58	Bot - Section 2	1.00	1.08	22.666	24.93	341.93	0.650	0.000	1.58	5.610	3.65	145.5	0.0	319.3
50.00		1.00	1.09	23.007	25.31	337.60	0.650	0.000	3.42	12.221	7.94	321.7	0.0	1378.9
52.41	Top - Section 1	1.00	1.10	23.236	25.56	334.41	0.650	0.000	2.41	8.458	5.50	224.8	0.0	954.0
55.00		1.00	1.12	23.473	25.82	337.08	0.650	0.000	2.59	8.956	5.82	240.5	0.0	509.6
60.00		1.00	1.14	23.907	26.30	329.92	0.650	0.000	5.00	16.896	10.98	462.1	0.0	961.3
65.00		1.00	1.16	24.313	26.74	322.36	0.650	0.000	5.00	16.379	10.65	455.6	0.0	931.6
70.00		1.00	1.17	24.696	27.17	314.46	0.650	0.000	5.00	15.861	10.31	448.1	0.0	901.9
75.00		1.00	1.19	25.057	27.56	306.24	0.650	0.000	5.00	15.344	9.97	439.8	0.0	872.2
80.00		1.00	1.21	25.400	27.94	297.75	0.650	0.000	5.00	14.827	9.64	430.8	0.0	842.4
85.00		1.00	1.22	25.726	28.30	289.02	0.650	0.000	5.00	14.309	9.30	421.1	0.0	812.7
90.00		1.00	1.24	26.037	28.64	280.05	0.650	0.000	5.00	13.792	8.96	410.8	0.0	783.0
94.50	Bot - Section 3	1.00	1.25	26.306	28.94	271.81	0.650	0.000	4.50	11.961	7.77	360.0	0.0	678.8
95.00		1.00	1.25	26.336	28.97	270.88	0.650	0.000	0.50	1.334	0.87	40.2	0.0	125.2
99.00	Top - Section 2	1.00	1.26	26.565	29.22	263.41	0.650	0.000	4.00	10.407	6.76	316.3	0.0	976.0
100.00		1.00	1.27	26.621	29.28	265.95	0.650	0.000	1.00	2.561	1.66	78.0	0.0	97.2
105.00		1.00	1.28	26.896	29.59	256.43	0.650	0.000	5.00	12.451	8.09	383.1	0.0	472.7
108.00	Appurtenance(s)	1.00	1.29	27.056	29.76	250.65	0.650	0.000	3.00	7.222	4.69	223.5	0.0	274.1
110.00		1.00	1.29	27.161	29.88	246.76	0.650	0.000	2.00	4.711	3.06	146.4	0.0	178.8
115.00		1.00	1.30	27.416	30.16	236.92	0.650	0.000	5.00	11.416	7.42	358.1	0.0	433.1
118.00	Appurtenance(s)	1.00	1.31	27.565	30.32	230.96	0.650	0.000	3.00	6.601	4.29	208.2	0.0	250.3
120.00		1.00	1.32	27.663	30.43	226.95	0.650	0.000	2.00	4.297	2.79	136.0	0.0	162.9
125.00		1.00	1.33	27.902	30.69	216.84	0.650	0.000	5.00	10.381	6.75	331.4	0.0	393.4
127.00	Appurtenance(s)	1.00	1.33	27.995	30.79	212.76	0.650	0.000	2.00	4.008	2.60	128.3	0.0	151.8
130.00		1.00	1.34	28.133	30.95	206.61	0.650	0.000	3.00	5.856	3.81	188.5	0.0	221.8
135.00	Appurtenance(s)	1.00	1.35	28.358	31.19	196.26	0.650	0.000	5.00	9.346	6.07	303.2	0.0	353.8
136.00	Appurtenance(s)	1.00	1.35	28.402	31.24	194.17	0.650	0.000	1.00	1.807	1.17	58.7	0.0	68.4
137.00	Appurtenance(s)	1.00	1.35	28.446	31.29	192.08	0.650	0.000	1.00	1.786	1.16	58.1	0.0	67.6
138.00	Appurtenance(s)	1.00	1.35	28.489	31.34	189.99	0.650	0.000	1.00	1.766	1.15	57.5	0.0	66.8
139.00		1.00	1.36	28.533	31.39	187.89	0.650	0.000	1.00	1.745	1.13	57.0	0.0	66.0
								Totals:	**139.00**			**11,545.5**		**24,665.8**

Discrete Appurtenance Forces

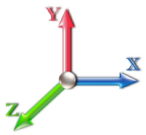
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	138.00	E14F05P59 Deplexer	3	28.489	31.338	0.54	0.80	1.16	29.77	0.000	0.000	58.05	0.00	0.00
2	137.00	LPA-80063/4CF ___	6	28.533	31.386	0.74	0.80	27.45	144.00	0.000	2.000	1378.65	0.00	2757.29
3	136.00	Antel	3	28.446	31.290	0.67	0.80	9.96	54.00	0.000	1.000	498.59	0.00	498.59
4	136.00	NHH-85B-R2B	3	28.402	31.242	0.68	0.80	16.67	157.32	0.000	0.000	833.13	0.00	0.00
5	135.00	T-Arms w/ Ring Mount	3	28.224	31.046	0.56	0.75	16.88	1440.00	0.000	-3.000	838.25	0.00	-2514.75
6	127.00	T-Arms	3	27.995	30.795	0.56	0.75	16.88	1440.00	0.000	0.000	831.46	0.00	0.00
7	127.00	Collar Mounts	3	27.995	30.795	0.56	0.75	5.91	360.00	0.000	0.000	291.01	0.00	0.00
8	127.00	RFS APXVSPP18-C-A20	3	27.995	30.795	0.66	0.80	15.98	205.20	0.000	0.000	787.16	0.00	0.00
9	127.00	Alcatel Lucent 1900 MHz	3	27.995	30.795	0.54	0.80	6.11	158.40	0.000	0.000	301.07	0.00	0.00
10	127.00	Alcatel Lucent 800 MHz	3	27.995	30.795	0.54	0.80	4.00	190.80	0.000	0.000	197.28	0.00	0.00
11	127.00	Alcatel Lucent 800 MHz	3	27.995	30.795	0.54	0.80	4.68	222.48	0.000	0.000	230.56	0.00	0.00
12	127.00	RFS ACU-A20-N RETs	4	27.995	30.795	0.54	0.80	0.30	4.80	0.000	0.000	14.79	0.00	0.00
13	127.00	RFS APXVTM14-C-I20	3	27.995	30.795	0.63	0.80	12.02	201.60	0.000	0.000	592.28	0.00	0.00
14	127.00	Alcatel Lucent	3	27.995	30.795	0.54	0.80	6.51	252.00	0.000	0.000	320.88	0.00	0.00
15	118.00	Steel Brace	2	27.565	30.322	1.00	1.00	7.40	336.00	0.000	0.000	359.01	0.00	0.00
16	118.00	4426 B66	3	27.565	30.322	0.54	0.80	2.65	213.84	0.000	0.000	128.72	0.00	0.00
17	118.00	RRUS 32 B30	3	27.565	30.322	0.54	0.80	4.41	216.00	0.000	0.000	213.75	0.00	0.00
18	118.00	RRUS 4478 B5	3	27.565	30.322	0.54	0.80	2.96	215.64	0.000	0.000	143.54	0.00	0.00
19	118.00	RRUS 4478 B14	3	27.565	30.322	0.54	0.80	2.65	213.84	0.000	0.000	128.72	0.00	0.00
20	118.00	800 10764 K	1	27.565	30.322	0.60	0.80	3.53	48.96	0.000	0.000	171.16	0.00	0.00
21	118.00	SBNHH-1D65A	2	27.565	30.322	0.66	0.80	7.81	80.40	0.000	0.000	378.84	0.00	0.00
22	118.00	Ericsson RRU-11-RRU	3	27.565	30.322	0.54	0.80	4.05	182.52	0.000	0.000	196.59	0.00	0.00
23	118.00	T-Arms	3	27.565	30.322	0.56	0.75	13.50	1260.00	0.000	0.000	654.96	0.00	0.00
24	118.00	Powerwave 7770	3	27.565	30.322	0.58	0.80	9.64	126.00	0.000	0.000	467.49	0.00	0.00
25	118.00	KMW	1	27.565	30.322	0.60	0.80	4.81	58.20	0.000	0.000	233.46	0.00	0.00
26	118.00	LGP21401 TMA	18	27.565	30.322	0.54	0.80	12.45	304.56	0.000	0.000	603.82	0.00	0.00
27	118.00	Powerwave 7020.00 RET	6	27.565	30.322	0.54	0.80	1.29	15.84	0.000	0.000	62.41	0.00	0.00
28	118.00	HPA65R-BU6A	1	27.565	30.322	0.63	0.80	6.00	56.28	0.000	0.000	290.98	0.00	0.00
29	118.00	KMW	1	27.565	30.322	0.60	0.80	3.00	36.96	0.000	0.000	145.55	0.00	0.00
30	118.00	OPA65R-BU4B	2	27.565	30.322	0.63	0.80	7.51	136.80	0.000	0.000	364.26	0.00	0.00
31	118.00	OPA65R-BU6B	1	27.565	30.322	0.79	0.80	6.27	85.44	0.000	0.000	304.32	0.00	0.00
32	118.00	Ericsson RRU-12-RRU	3	27.565	30.322	0.54	0.80	4.34	216.00	0.000	0.000	210.63	0.00	0.00
33	118.00	Raycap DC6-48-60-18-8F	3	27.565	30.322	0.80	0.80	2.21	118.08	0.000	0.000	107.12	0.00	0.00
34	118.00	Powerwave LGP13519	18	27.565	30.322	0.54	0.80	3.28	114.48	0.000	0.000	159.15	0.00	0.00
35	108.00	Kathrein 782 11056-Bias-T	3	27.056	29.762	0.59	0.80	1.21	39.60	0.000	0.000	57.51	0.00	0.00
36	108.00	TMA	12	27.056	29.762	0.54	0.80	3.79	151.20	0.000	0.000	180.71	0.00	0.00
37	108.00	LNX-6515DS	3	27.056	29.762	0.64	0.80	22.02	174.60	0.000	0.000	1048.69	0.00	0.00
38	108.00	APXV18-209014	3	27.056	29.762	0.59	0.80	6.36	67.32	0.000	0.000	302.77	0.00	0.00
39	108.00	APX16PV-16VL-E	3	27.056	29.762	0.54	0.80	9.70	142.56	0.000	0.000	461.73	0.00	0.00
40	108.00	Low Profile Platform	1	27.056	29.762	1.00	1.00	22.00	1800.00	0.000	0.000	1047.62	0.00	0.00
							Totals:		**11,271.49**			**15,596.65**		

Total Applied Force Summary

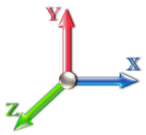
Structure:	CT46123-A-SBA		**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield		**Exposure:**	C	
Height:	139.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		455.53	1594.85	0.00	0.00
10.00		444.94	1565.13	0.00	0.00
15.00		434.36	1535.41	0.00	0.00
20.00		449.64	1505.69	0.00	0.00
25.00		459.50	1475.97	0.00	0.00
30.00		465.25	1446.25	0.00	0.00
35.00		467.96	1416.53	0.00	0.00
40.00		468.31	1386.81	0.00	0.00
45.00		466.75	1357.09	0.00	0.00
46.58		145.47	421.77	0.00	0.00
50.00		321.66	1601.27	0.00	0.00
52.41		224.83	1110.57	0.00	0.00
55.00		240.49	677.91	0.00	0.00
60.00		462.11	1286.16	0.00	0.00
65.00		455.57	1256.44	0.00	0.00
70.00		448.12	1226.72	0.00	0.00
75.00		439.84	1197.00	0.00	0.00
80.00		430.82	1167.28	0.00	0.00
85.00		421.13	1137.56	0.00	0.00
90.00		410.81	1107.84	0.00	0.00
94.50		359.97	970.93	0.00	0.00
95.00		40.19	157.86	0.00	0.00
99.00		316.29	1235.66	0.00	0.00
100.00		77.99	162.42	0.00	0.00
105.00		383.11	797.53	0.00	0.00
108.00	(25) attachments	3322.56	2844.29	0.00	0.00
110.00		146.39	263.78	0.00	0.00
115.00		358.05	645.58	0.00	0.00
118.00	(80) attachments	5532.64	4413.68	0.00	0.00
120.00		136.00	199.21	0.00	0.00
125.00		331.36	484.15	0.00	0.00
127.00	(28) attachments	3694.83	3223.39	0.00	0.00
130.00		188.47	266.72	0.00	0.00
135.00	(3) attachments	1141.45	1868.69	0.00	-2514.75
136.00	(6) attachments	1390.44	294.68	0.00	498.59
137.00	(6) attachments	1436.78	211.59	0.00	2757.29
138.00	(3) attachments	115.60	96.57	0.00	0.00
139.00		56.96	66.01	0.00	0.00
	Totals:	**27,142.18**	**43,676.97**	**0.00**	**741.14**

Calculated Forces

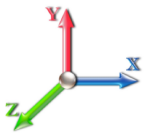
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.63	-27.21	0.00	-2787.5	0.00	2787.53	4169.21	2084.60	9065.11	4539.29	0.00	0.000	0.000	0.625
5.00	-41.96	-26.88	0.00	-2651.4	0.00	2651.49	4110.19	2055.10	8728.63	4370.80	0.09	-0.174	0.000	0.617
10.00	-40.31	-26.55	0.00	-2517.0	0.00	2517.09	4049.41	2024.70	8394.45	4203.46	0.37	-0.351	0.000	0.609
15.00	-38.70	-26.23	0.00	-2384.3	0.00	2384.32	3986.85	1993.43	8062.85	4037.42	0.84	-0.532	0.000	0.600
20.00	-37.11	-25.89	0.00	-2253.1	0.00	2253.17	3922.52	1961.26	7734.09	3872.79	1.49	-0.716	0.000	0.591
25.00	-35.56	-25.52	0.00	-2123.7	0.00	2123.74	3856.42	1928.21	7408.45	3709.73	2.34	-0.904	0.000	0.582
30.00	-34.04	-25.15	0.00	-1996.1	0.00	1996.13	3788.55	1894.27	7086.18	3548.36	3.39	-1.094	0.000	0.572
35.00	-32.55	-24.76	0.00	-1870.3	0.00	1870.39	3718.90	1859.45	6767.57	3388.81	4.64	-1.288	0.000	0.561
40.00	-31.09	-24.37	0.00	-1746.5	0.00	1746.59	3647.48	1823.74	6452.87	3231.23	6.10	-1.485	0.000	0.549
45.00	-29.69	-23.93	0.00	-1624.7	0.00	1624.76	3574.29	1787.15	6142.37	3075.75	7.76	-1.684	0.000	0.537
46.58	-29.23	-23.83	0.00	-1587.0	0.00	1587.03	3550.85	1775.42	6045.37	3027.18	8.33	-1.749	0.000	0.533
50.00	-27.59	-23.51	0.00	-1505.4	0.00	1505.48	3499.33	1749.66	5836.32	2922.50	9.63	-1.889	0.000	0.523
52.41	-26.44	-23.30	0.00	-1448.8	0.00	1448.82	3509.27	1754.63	5876.22	2942.48	10.61	-1.990	0.000	0.500
55.00	-25.71	-23.10	0.00	-1388.4	0.00	1388.48	3469.86	1734.93	5719.21	2863.86	11.72	-2.098	0.000	0.492
60.00	-24.37	-22.67	0.00	-1272.9	0.00	1272.98	3392.44	1696.22	5419.79	2713.92	14.02	-2.292	0.000	0.476
65.00	-23.06	-22.24	0.00	-1159.6	0.00	1159.62	3313.25	1656.62	5125.48	2566.55	16.53	-2.487	0.000	0.459
70.00	-21.78	-21.81	0.00	-1048.4	0.00	1048.41	3227.80	1613.90	4829.83	2418.50	19.24	-2.681	0.000	0.440
75.00	-20.53	-21.39	0.00	-939.34	0.00	939.34	3119.66	1559.83	4510.01	2258.36	22.15	-2.875	0.000	0.423
80.00	-19.32	-20.96	0.00	-832.42	0.00	832.42	3011.51	1505.75	4201.15	2103.70	25.26	-3.066	0.000	0.402
85.00	-18.14	-20.53	0.00	-727.63	0.00	727.63	2903.36	1451.68	3903.25	1954.53	28.57	-3.252	0.000	0.379
90.00	-17.00	-20.11	0.00	-624.96	0.00	624.96	2795.21	1397.61	3616.30	1810.84	32.08	-3.433	0.000	0.351
94.50	-16.03	-19.71	0.00	-534.54	0.00	534.54	2697.95	1348.98	3367.59	1686.30	35.39	-3.589	0.000	0.323
95.00	-15.84	-19.68	0.00	-524.62	0.00	524.62	2687.07	1343.53	3340.31	1672.64	35.76	-3.607	0.000	0.320
99.00	-14.60	-19.31	0.00	-445.95	0.00	445.95	1671.63	835.82	2062.09	1032.58	38.84	-3.738	0.000	0.441
100.00	-14.41	-19.25	0.00	-426.57	0.00	426.57	1662.31	831.15	2033.69	1018.35	39.63	-3.770	0.000	0.428
105.00	-13.59	-18.85	0.00	-330.31	0.00	330.31	1614.76	807.38	1893.73	948.27	43.69	-3.973	0.000	0.357
108.00	-10.96	-15.36	0.00	-273.75	0.00	273.75	1585.38	792.69	1811.10	906.90	46.22	-4.084	0.000	0.309
110.00	-10.68	-15.21	0.00	-243.04	0.00	243.04	1565.43	782.72	1756.61	879.61	47.94	-4.152	0.000	0.284
115.00	-10.03	-14.82	0.00	-166.99	0.00	166.99	1514.34	757.17	1622.58	812.50	52.37	-4.294	0.000	0.213
118.00	-6.04	-8.98	0.00	-122.51	0.00	122.51	1482.83	741.42	1543.76	773.03	55.09	-4.363	0.000	0.163
120.00	-5.84	-8.84	0.00	-104.55	0.00	104.55	1461.47	730.74	1491.92	747.07	56.93	-4.403	0.000	0.144
125.00	-5.38	-8.47	0.00	-60.38	0.00	60.38	1395.63	697.82	1354.03	678.02	61.58	-4.478	0.000	0.093
127.00	-2.45	-4.54	0.00	-43.43	0.00	43.43	1366.79	683.40	1298.36	650.14	63.46	-4.501	0.000	0.069
130.00	-2.20	-4.33	0.00	-29.82	0.00	29.82	1323.53	661.77	1217.05	609.43	66.29	-4.526	0.000	0.051
135.00	-0.43	-3.04	0.00	-8.18	0.00	8.18	1251.44	625.72	1087.38	544.50	71.04	-4.549	0.000	0.015
136.00	-0.25	-1.63	0.00	-4.64	0.00	4.64	1237.02	618.51	1062.32	531.95	71.99	-4.551	0.000	0.009
137.00	-0.15	-0.18	0.00	-0.25	0.00	0.25	1222.60	611.30	1037.55	519.55	72.94	-4.553	0.000	0.001
138.00	-0.06	-0.06	0.00	-0.06	0.00	0.06	1208.18	604.09	1013.08	507.29	73.90	-4.553	0.000	0.000
139.00	0.00	-0.06	0.00	0.00	0.00	0.00	1193.76	596.88	988.90	495.18	74.85	-4.553	0.000	0.000

Wind Loading - Shaft

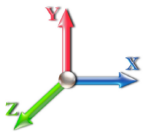
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	386.35	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	377.48	0.650	0.000	5.00	22.271	14.48	455.5	0.0	952.5
10.00		1.00	0.85	17.879	19.67	368.60	0.650	0.000	5.00	21.754	14.14	444.9	0.0	930.2
15.00		1.00	0.85	17.879	19.67	359.73	0.650	0.000	5.00	21.236	13.80	434.4	0.0	907.9
20.00		1.00	0.90	18.971	20.87	361.40	0.650	0.000	5.00	20.719	13.47	449.6	0.0	885.6
25.00		1.00	0.95	19.883	21.87	360.64	0.650	0.000	5.00	20.201	13.13	459.5	0.0	863.3
30.00		1.00	0.98	20.661	22.73	358.09	0.650	0.000	5.00	19.684	12.79	465.3	0.0	841.1
35.00		1.00	1.01	21.343	23.48	354.25	0.650	0.000	5.00	19.166	12.46	468.0	0.0	818.8
40.00		1.00	1.04	21.951	24.15	349.43	0.650	0.000	5.00	18.649	12.12	468.3	0.0	796.5
45.00		1.00	1.07	22.502	24.75	343.84	0.650	0.000	5.00	18.131	11.79	466.7	0.0	774.2
46.58	Bot - Section 2	1.00	1.08	22.666	24.93	341.93	0.650	0.000	1.58	5.610	3.65	145.5	0.0	239.5
50.00		1.00	1.09	23.007	25.31	337.60	0.650	0.000	3.42	12.221	7.94	321.7	0.0	1034.1
52.41	Top - Section 1	1.00	1.10	23.236	25.56	334.41	0.650	0.000	2.41	8.458	5.50	224.8	0.0	715.5
55.00		1.00	1.12	23.473	25.82	337.08	0.650	0.000	2.59	8.956	5.82	240.5	0.0	382.2
60.00		1.00	1.14	23.907	26.30	329.92	0.650	0.000	5.00	16.896	10.98	462.1	0.0	721.0
65.00		1.00	1.16	24.313	26.74	322.36	0.650	0.000	5.00	16.379	10.65	455.6	0.0	698.7
70.00		1.00	1.17	24.696	27.17	314.46	0.650	0.000	5.00	15.861	10.31	448.1	0.0	676.4
75.00		1.00	1.19	25.057	27.56	306.24	0.650	0.000	5.00	15.344	9.97	439.8	0.0	654.1
80.00		1.00	1.21	25.400	27.94	297.75	0.650	0.000	5.00	14.827	9.64	430.8	0.0	631.8
85.00		1.00	1.22	25.726	28.30	289.02	0.650	0.000	5.00	14.309	9.30	421.1	0.0	609.5
90.00		1.00	1.24	26.037	28.64	280.05	0.650	0.000	5.00	13.792	8.96	410.8	0.0	587.2
94.50	Bot - Section 3	1.00	1.25	26.306	28.94	271.81	0.650	0.000	4.50	11.961	7.77	360.0	0.0	509.1
95.00		1.00	1.25	26.336	28.97	270.88	0.650	0.000	0.50	1.334	0.87	40.2	0.0	93.9
99.00	Top - Section 2	1.00	1.26	26.565	29.22	263.41	0.650	0.000	4.00	10.407	6.76	316.3	0.0	732.0
100.00		1.00	1.27	26.621	29.28	265.95	0.650	0.000	1.00	2.561	1.66	78.0	0.0	72.9
105.00		1.00	1.28	26.896	29.59	256.43	0.650	0.000	5.00	12.451	8.09	383.1	0.0	354.5
108.00	Appurtenance(s)	1.00	1.29	27.056	29.76	250.65	0.650	0.000	3.00	7.222	4.69	223.5	0.0	205.6
110.00		1.00	1.29	27.161	29.88	246.76	0.650	0.000	2.00	4.711	3.06	146.4	0.0	134.1
115.00		1.00	1.30	27.416	30.16	236.92	0.650	0.000	5.00	11.416	7.42	358.1	0.0	324.8
118.00	Appurtenance(s)	1.00	1.31	27.565	30.32	230.96	0.650	0.000	3.00	6.601	4.29	208.2	0.0	187.7
120.00		1.00	1.32	27.663	30.43	226.95	0.650	0.000	2.00	4.297	2.79	136.0	0.0	122.2
125.00		1.00	1.33	27.902	30.69	216.84	0.650	0.000	5.00	10.381	6.75	331.4	0.0	295.1
127.00	Appurtenance(s)	1.00	1.33	27.995	30.79	212.76	0.650	0.000	2.00	4.008	2.60	128.3	0.0	113.9
130.00		1.00	1.34	28.133	30.95	206.61	0.650	0.000	3.00	5.856	3.81	188.5	0.0	166.3
135.00	Appurtenance(s)	1.00	1.35	28.358	31.19	196.26	0.650	0.000	5.00	9.346	6.07	303.2	0.0	265.4
136.00	Appurtenance(s)	1.00	1.35	28.402	31.24	194.17	0.650	0.000	1.00	1.807	1.17	58.7	0.0	51.3
137.00	Appurtenance(s)	1.00	1.35	28.446	31.29	192.08	0.650	0.000	1.00	1.786	1.16	58.1	0.0	50.7
138.00	Appurtenance(s)	1.00	1.35	28.489	31.34	189.99	0.650	0.000	1.00	1.766	1.15	57.5	0.0	50.1
139.00		1.00	1.36	28.533	31.39	187.89	0.650	0.000	1.00	1.745	1.13	57.0	0.0	49.5
								Totals:	**139.00**			**11,545.5**		**18,499.4**

Discrete Appurtenance Forces

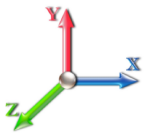
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	138.00	E14F05P59 Deplexer	3	28.489	31.338	0.54	0.80	1.16	22.33	0.000	0.000	58.05	0.00	0.00
2	137.00	LPA-80063/4CF ___	6	28.533	31.386	0.74	0.80	27.45	108.00	0.000	2.000	1378.65	0.00	2757.29
3	136.00	Antel	3	28.446	31.290	0.67	0.80	9.96	40.50	0.000	1.000	498.59	0.00	498.59
4	136.00	NHH-85B-R2B	3	28.402	31.242	0.68	0.80	16.67	117.99	0.000	0.000	833.13	0.00	0.00
5	135.00	T-Arms w/ Ring Mount	3	28.224	31.046	0.56	0.75	16.88	1080.00	0.000	-3.000	838.25	0.00	-2514.75
6	127.00	T-Arms	3	27.995	30.795	0.56	0.75	16.88	1080.00	0.000	0.000	831.46	0.00	0.00
7	127.00	Collar Mounts	3	27.995	30.795	0.56	0.75	5.91	270.00	0.000	0.000	291.01	0.00	0.00
8	127.00	RFS APXVSPP18-C-A20	3	27.995	30.795	0.66	0.80	15.98	153.90	0.000	0.000	787.16	0.00	0.00
9	127.00	Alcatel Lucent 1900 MHz	3	27.995	30.795	0.54	0.80	6.11	118.80	0.000	0.000	301.07	0.00	0.00
10	127.00	Alcatel Lucent 800 MHz	3	27.995	30.795	0.54	0.80	4.00	143.10	0.000	0.000	197.28	0.00	0.00
11	127.00	Alcatel Lucent 800 MHz	3	27.995	30.795	0.54	0.80	4.68	166.86	0.000	0.000	230.56	0.00	0.00
12	127.00	RFS ACU-A20-N RETs	4	27.995	30.795	0.54	0.80	0.30	3.60	0.000	0.000	14.79	0.00	0.00
13	127.00	RFS APXVTM14-C-I20	3	27.995	30.795	0.63	0.80	12.02	151.20	0.000	0.000	592.28	0.00	0.00
14	127.00	Alcatel Lucent	3	27.995	30.795	0.54	0.80	6.51	189.00	0.000	0.000	320.88	0.00	0.00
15	118.00	Steel Brace	2	27.565	30.322	1.00	1.00	7.40	252.00	0.000	0.000	359.01	0.00	0.00
16	118.00	4426 B66	3	27.565	30.322	0.54	0.80	2.65	160.38	0.000	0.000	128.72	0.00	0.00
17	118.00	RRUS 32 B30	3	27.565	30.322	0.54	0.80	4.41	162.00	0.000	0.000	213.75	0.00	0.00
18	118.00	RRUS 4478 B5	3	27.565	30.322	0.54	0.80	2.96	161.73	0.000	0.000	143.54	0.00	0.00
19	118.00	RRUS 4478 B14	3	27.565	30.322	0.54	0.80	2.65	160.38	0.000	0.000	128.72	0.00	0.00
20	118.00	800 10764 K	1	27.565	30.322	0.60	0.80	3.53	36.72	0.000	0.000	171.16	0.00	0.00
21	118.00	SBNHH-1D65A	2	27.565	30.322	0.66	0.80	7.81	60.30	0.000	0.000	378.84	0.00	0.00
22	118.00	Ericsson RRU-11-RRU	3	27.565	30.322	0.54	0.80	4.05	136.89	0.000	0.000	196.59	0.00	0.00
23	118.00	T-Arms	3	27.565	30.322	0.56	0.75	13.50	945.00	0.000	0.000	654.96	0.00	0.00
24	118.00	Powerwave 7770	3	27.565	30.322	0.58	0.80	9.64	94.50	0.000	0.000	467.49	0.00	0.00
25	118.00	KMW	1	27.565	30.322	0.60	0.80	4.81	43.65	0.000	0.000	233.46	0.00	0.00
26	118.00	LGP21401 TMA	18	27.565	30.322	0.54	0.80	12.45	228.42	0.000	0.000	603.82	0.00	0.00
27	118.00	Powerwave 7020.00 RET	6	27.565	30.322	0.54	0.80	1.29	11.88	0.000	0.000	62.41	0.00	0.00
28	118.00	HPA65R-BU6A	1	27.565	30.322	0.63	0.80	6.00	42.21	0.000	0.000	290.98	0.00	0.00
29	118.00	KMW	1	27.565	30.322	0.60	0.80	3.00	27.72	0.000	0.000	145.55	0.00	0.00
30	118.00	OPA65R-BU4B	2	27.565	30.322	0.63	0.80	7.51	102.60	0.000	0.000	364.26	0.00	0.00
31	118.00	OPA65R-BU6B	1	27.565	30.322	0.79	0.80	6.27	64.08	0.000	0.000	304.32	0.00	0.00
32	118.00	Ericsson RRU-12-RRU	3	27.565	30.322	0.54	0.80	4.34	162.00	0.000	0.000	210.63	0.00	0.00
33	118.00	Raycap DC6-48-60-18-8F	3	27.565	30.322	0.80	0.80	2.21	88.56	0.000	0.000	107.12	0.00	0.00
34	118.00	Powerwave LGP13519	18	27.565	30.322	0.54	0.80	3.28	85.86	0.000	0.000	159.15	0.00	0.00
35	108.00	Kathrein 782 11056-Bias-T	3	27.056	29.762	0.59	0.80	1.21	29.70	0.000	0.000	57.51	0.00	0.00
36	108.00	TMA	12	27.056	29.762	0.54	0.80	3.79	113.40	0.000	0.000	180.71	0.00	0.00
37	108.00	LNX-6515DS	3	27.056	29.762	0.64	0.80	22.02	130.95	0.000	0.000	1048.69	0.00	0.00
38	108.00	APXV18-209014	3	27.056	29.762	0.59	0.80	6.36	50.49	0.000	0.000	302.77	0.00	0.00
39	108.00	APX16PV-16VL-E	3	27.056	29.762	0.54	0.80	9.70	106.92	0.000	0.000	461.73	0.00	0.00
40	108.00	Low Profile Platform	1	27.056	29.762	1.00	1.00	22.00	1350.00	0.000	0.000	1047.62	0.00	0.00
							Totals:		**8,453.62**			**15,596.65**		

Total Applied Force Summary

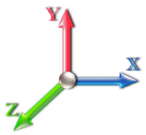
Structure:	CT46123-A-SBA		**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield		**Exposure:**	C	
Height:	139.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		455.53	1196.13	0.00	0.00
10.00		444.94	1173.84	0.00	0.00
15.00		434.36	1151.56	0.00	0.00
20.00		449.64	1129.27	0.00	0.00
25.00		459.50	1106.98	0.00	0.00
30.00		465.25	1084.69	0.00	0.00
35.00		467.96	1062.40	0.00	0.00
40.00		468.31	1040.11	0.00	0.00
45.00		466.75	1017.82	0.00	0.00
46.58		145.47	316.33	0.00	0.00
50.00		321.66	1200.95	0.00	0.00
52.41		224.83	832.93	0.00	0.00
55.00		240.49	508.44	0.00	0.00
60.00		462.11	964.62	0.00	0.00
65.00		455.57	942.33	0.00	0.00
70.00		448.12	920.04	0.00	0.00
75.00		439.84	897.75	0.00	0.00
80.00		430.82	875.46	0.00	0.00
85.00		421.13	853.17	0.00	0.00
90.00		410.81	830.88	0.00	0.00
94.50		359.97	728.20	0.00	0.00
95.00		40.19	118.40	0.00	0.00
99.00		316.29	926.75	0.00	0.00
100.00		77.99	121.82	0.00	0.00
105.00		383.11	598.14	0.00	0.00
108.00	(25) attachments	3322.56	2133.21	0.00	0.00
110.00		146.39	197.83	0.00	0.00
115.00		358.05	484.18	0.00	0.00
118.00	(80) attachments	5532.64	3310.26	0.00	0.00
120.00		136.00	149.41	0.00	0.00
125.00		331.36	363.12	0.00	0.00
127.00	(28) attachments	3694.83	2417.55	0.00	0.00
130.00		188.47	200.04	0.00	0.00
135.00	(3) attachments	1141.45	1401.52	0.00	-2514.75
136.00	(6) attachments	1390.44	221.01	0.00	498.59
137.00	(6) attachments	1436.78	158.69	0.00	2757.29
138.00	(3) attachments	115.60	72.43	0.00	0.00
139.00		56.96	49.50	0.00	0.00
	Totals:	**27,142.18**	**32,757.73**	**0.00**	**741.14**

Calculated Forces

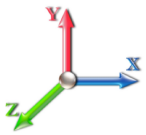
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-32.72	-27.19	0.00	-2760.4	0.00	2760.44	4169.21	2084.60	9065.11	4539.29	0.00	0.000	0.000	0.616
5.00	-31.44	-26.83	0.00	-2624.4	0.00	2624.48	4110.19	2055.10	8728.63	4370.80	0.09	-0.172	0.000	0.608
10.00	-30.19	-26.47	0.00	-2490.3	0.00	2490.34	4049.41	2024.70	8394.45	4203.46	0.37	-0.348	0.000	0.600
15.00	-28.96	-26.12	0.00	-2357.9	0.00	2357.97	3986.85	1993.43	8062.85	4037.42	0.83	-0.527	0.000	0.591
20.00	-27.75	-25.75	0.00	-2227.3	0.00	2227.36	3922.52	1961.26	7734.09	3872.79	1.48	-0.709	0.000	0.582
25.00	-26.57	-25.36	0.00	-2098.6	0.00	2098.62	3856.42	1928.21	7408.45	3709.73	2.32	-0.894	0.000	0.573
30.00	-25.41	-24.96	0.00	-1971.8	0.00	1971.82	3788.55	1894.27	7086.18	3548.36	3.36	-1.082	0.000	0.563
35.00	-24.27	-24.55	0.00	-1847.0	0.00	1847.02	3718.90	1859.45	6767.57	3388.81	4.59	-1.274	0.000	0.552
40.00	-23.16	-24.14	0.00	-1724.2	0.00	1724.25	3647.48	1823.74	6452.87	3231.23	6.03	-1.468	0.000	0.540
45.00	-22.10	-23.69	0.00	-1603.5	0.00	1603.56	3574.29	1787.15	6142.37	3075.75	7.67	-1.664	0.000	0.528
46.58	-21.75	-23.58	0.00	-1566.2	0.00	1566.20	3550.85	1775.42	6045.37	3027.18	8.24	-1.729	0.000	0.524
50.00	-20.51	-23.26	0.00	-1485.4	0.00	1485.48	3499.33	1749.66	5836.32	2922.50	9.53	-1.867	0.000	0.514
52.41	-19.64	-23.04	0.00	-1429.4	0.00	1429.42	3509.27	1754.63	5876.22	2942.48	10.49	-1.966	0.000	0.492
55.00	-19.08	-22.84	0.00	-1369.7	0.00	1369.74	3469.86	1734.93	5719.21	2863.86	11.59	-2.073	0.000	0.484
60.00	-18.06	-22.40	0.00	-1255.5	0.00	1255.56	3392.44	1696.22	5419.79	2713.92	13.87	-2.264	0.000	0.468
65.00	-17.07	-21.96	0.00	-1143.5	0.00	1143.56	3313.25	1656.62	5125.48	2566.55	16.34	-2.457	0.000	0.451
70.00	-16.10	-21.53	0.00	-1033.7	0.00	1033.75	3227.80	1613.90	4829.83	2418.50	19.02	-2.648	0.000	0.433
75.00	-15.15	-21.10	0.00	-926.12	0.00	926.12	3119.66	1559.83	4510.01	2258.36	21.89	-2.839	0.000	0.415
80.00	-14.23	-20.67	0.00	-820.64	0.00	820.64	3011.51	1505.75	4201.15	2103.70	24.97	-3.027	0.000	0.395
85.00	-13.34	-20.24	0.00	-717.31	0.00	717.31	2903.36	1451.68	3903.25	1954.53	28.23	-3.211	0.000	0.372
90.00	-12.48	-19.82	0.00	-616.10	0.00	616.10	2795.21	1397.61	3616.30	1810.84	31.69	-3.389	0.000	0.345
94.50	-11.74	-19.43	0.00	-526.98	0.00	526.98	2697.95	1348.98	3367.59	1686.30	34.96	-3.543	0.000	0.317
95.00	-11.60	-19.40	0.00	-517.20	0.00	517.20	2687.07	1343.53	3340.31	1672.64	35.33	-3.561	0.000	0.314
99.00	-10.67	-19.04	0.00	-439.66	0.00	439.66	1671.63	835.82	2062.09	1032.58	38.37	-3.690	0.000	0.433
100.00	-10.51	-18.98	0.00	-420.55	0.00	420.55	1662.31	831.15	2033.69	1018.35	39.15	-3.722	0.000	0.420
105.00	-9.89	-18.58	0.00	-325.66	0.00	325.66	1614.76	807.38	1893.73	948.27	43.16	-3.922	0.000	0.350
108.00	-7.97	-15.13	0.00	-269.91	0.00	269.91	1585.38	792.69	1811.10	906.90	45.65	-4.031	0.000	0.303
110.00	-7.76	-14.99	0.00	-239.65	0.00	239.65	1565.43	782.72	1756.61	879.61	47.36	-4.098	0.000	0.278
115.00	-7.27	-14.61	0.00	-164.72	0.00	164.72	1514.34	757.17	1622.58	812.50	51.73	-4.238	0.000	0.208
118.00	-4.38	-8.85	0.00	-120.90	0.00	120.90	1482.83	741.42	1543.76	773.03	54.41	-4.307	0.000	0.159
120.00	-4.23	-8.70	0.00	-103.20	0.00	103.20	1461.47	730.74	1491.92	747.07	56.22	-4.345	0.000	0.141
125.00	-3.89	-8.35	0.00	-59.68	0.00	59.68	1395.63	697.82	1354.03	678.02	60.81	-4.420	0.000	0.091
127.00	-1.76	-4.48	0.00	-42.98	0.00	42.98	1366.79	683.40	1298.36	650.14	62.67	-4.442	0.000	0.067
130.00	-1.57	-4.28	0.00	-29.54	0.00	29.54	1323.53	661.77	1217.05	609.43	65.46	-4.467	0.000	0.050
135.00	-0.27	-3.03	0.00	-8.15	0.00	8.15	1251.44	625.72	1087.38	544.50	70.15	-4.491	0.000	0.015
136.00	-0.15	-1.63	0.00	-4.63	0.00	4.63	1237.02	618.51	1062.32	531.95	71.09	-4.493	0.000	0.009
137.00	-0.11	-0.18	0.00	-0.24	0.00	0.24	1222.60	611.30	1037.55	519.55	72.03	-4.494	0.000	0.001
138.00	-0.04	-0.06	0.00	-0.06	0.00	0.06	1208.18	604.09	1013.08	507.29	72.97	-4.494	0.000	0.000
139.00	0.00	-0.06	0.00	0.00	0.00	0.00	1193.76	596.88	988.90	495.18	73.91	-4.494	0.000	0.000

Wind Loading - Shaft

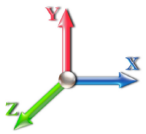
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	3.308	3.64	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	3.308	3.64	0.00	1.200	1.242	5.00	23.306	27.97	101.8	414.5	1684.5
10.00		1.00	0.85	3.308	3.64	0.00	1.200	1.331	5.00	22.863	27.44	99.8	434.7	1675.0
15.00		1.00	0.85	3.308	3.64	0.00	1.200	1.386	5.00	22.391	26.87	97.8	442.6	1653.2
20.00		1.00	0.90	3.509	3.86	0.00	1.200	1.427	5.00	21.908	26.29	101.5	444.9	1625.8
25.00		1.00	0.95	3.678	4.05	0.00	1.200	1.459	5.00	21.417	25.70	104.0	444.1	1595.2
30.00		1.00	0.98	3.822	4.20	0.00	1.200	1.486	5.00	20.922	25.11	105.6	441.1	1562.5
35.00		1.00	1.01	3.948	4.34	0.00	1.200	1.509	5.00	20.424	24.51	106.4	436.6	1528.3
40.00		1.00	1.04	4.061	4.47	0.00	1.200	1.529	5.00	19.923	23.91	106.8	430.9	1492.9
45.00		1.00	1.07	4.163	4.58	0.00	1.200	1.547	5.00	19.421	23.30	106.7	424.4	1456.6
46.58	Bot - Section 2	1.00	1.08	4.193	4.61	0.00	1.200	1.553	1.58	6.018	7.22	33.3	133.1	452.5
50.00		1.00	1.09	4.256	4.68	0.00	1.200	1.564	3.42	13.113	15.74	73.7	290.6	1669.4
52.41	Top - Section 1	1.00	1.10	4.298	4.73	0.00	1.200	1.571	2.41	9.089	10.91	51.6	202.8	1156.7
55.00		1.00	1.12	4.342	4.78	0.00	1.200	1.579	2.59	9.637	11.56	55.2	215.7	725.4
60.00		1.00	1.14	4.423	4.86	0.00	1.200	1.592	5.00	18.223	21.87	106.4	408.1	1369.4
65.00		1.00	1.16	4.498	4.95	0.00	1.200	1.605	5.00	17.717	21.26	105.2	399.2	1330.8
70.00		1.00	1.17	4.569	5.03	0.00	1.200	1.617	5.00	17.209	20.65	103.8	389.9	1291.7
75.00		1.00	1.19	4.635	5.10	0.00	1.200	1.628	5.00	16.701	20.04	102.2	380.2	1252.4
80.00		1.00	1.21	4.699	5.17	0.00	1.200	1.639	5.00	16.192	19.43	100.4	370.2	1212.6
85.00		1.00	1.22	4.759	5.24	0.00	1.200	1.649	5.00	15.683	18.82	98.5	359.9	1172.6
90.00		1.00	1.24	4.817	5.30	0.00	1.200	1.658	5.00	15.174	18.21	96.5	349.4	1132.4
94.50	Bot - Section 3	1.00	1.25	4.866	5.35	0.00	1.200	1.666	4.50	13.210	15.85	84.9	305.5	984.3
95.00		1.00	1.25	4.872	5.36	0.00	1.200	1.667	0.50	1.474	1.77	9.5	34.6	159.8
99.00	Top - Section 2	1.00	1.26	4.914	5.41	0.00	1.200	1.674	4.00	11.523	13.83	74.7	267.8	1243.8
100.00		1.00	1.27	4.925	5.42	0.00	1.200	1.676	1.00	2.841	3.41	18.5	66.8	164.0
105.00		1.00	1.28	4.976	5.47	0.00	1.200	1.684	5.00	13.854	16.63	91.0	321.6	794.3
108.00	Appurtenance(s)	1.00	1.29	5.005	5.51	0.00	1.200	1.689	3.00	8.067	9.68	53.3	188.9	463.0
110.00		1.00	1.29	5.025	5.53	0.00	1.200	1.692	2.00	5.275	6.33	35.0	124.1	302.9
115.00		1.00	1.30	5.072	5.58	0.00	1.200	1.699	5.00	12.832	15.40	85.9	298.7	731.7
118.00	Appurtenance(s)	1.00	1.31	5.099	5.61	0.00	1.200	1.704	3.00	7.453	8.94	50.2	175.0	425.3
120.00		1.00	1.32	5.117	5.63	0.00	1.200	1.707	2.00	4.866	5.84	32.9	114.8	277.7
125.00		1.00	1.33	5.162	5.68	0.00	1.200	1.714	5.00	11.809	14.17	80.5	275.0	668.5
127.00	Appurtenance(s)	1.00	1.33	5.179	5.70	0.00	1.200	1.716	2.00	4.580	5.50	31.3	108.1	259.9
130.00		1.00	1.34	5.204	5.72	0.00	1.200	1.720	3.00	6.716	8.06	46.1	157.8	379.6
135.00	Appurtenance(s)	1.00	1.35	5.246	5.77	0.00	1.200	1.727	5.00	10.785	12.94	74.7	250.8	604.7
136.00	Appurtenance(s)	1.00	1.35	5.254	5.78	0.00	1.200	1.728	1.00	2.095	2.51	14.5	49.7	118.1
137.00	Appurtenance(s)	1.00	1.35	5.262	5.79	0.00	1.200	1.729	1.00	2.075	2.49	14.4	49.2	116.8
138.00	Appurtenance(s)	1.00	1.35	5.270	5.80	0.00	1.200	1.731	1.00	2.054	2.47	14.3	48.7	115.5
139.00		1.00	1.36	5.278	5.81	0.00	1.200	1.732	1.00	2.034	2.44	14.2	48.2	114.2
								Totals:	**139.00**			**2,682.8**		**34,963.8**

Discrete Appurtenance Forces

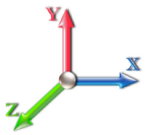
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	138.00	E14F05P59 Deplexer	3	5.270	5.797	0.54	0.80	1.93	88.62	0.000	0.000	11.20	0.00	0.00
2	137.00	LPA-80063/4CF ___	6	5.278	5.806	0.74	0.80	32.07	1358.71	0.000	2.000	186.20	0.00	372.39
3	136.00	Antel	3	5.262	5.788	0.67	0.80	15.52	289.26	0.000	1.000	89.85	0.00	89.85
4	136.00	NHH-85B-R2B	3	5.254	5.780	0.68	0.80	19.36	761.91	0.000	0.000	111.89	0.00	0.00
5	135.00	T-Arms w/ Ring Mount	3	5.221	5.743	0.56	0.75	31.45	2028.92	0.000	-3.000	180.60	0.00	-541.81
6	127.00	T-Arms	3	5.179	5.697	0.75	0.75	41.81	2023.88	0.000	0.000	238.18	0.00	0.00
7	127.00	Collar Mounts	3	5.179	5.697	0.75	0.75	13.28	-442.84	0.000	0.000	75.66	0.00	0.00
8	127.00	RFS APXVSPP18-C-A20	3	5.179	5.697	0.80	0.80	25.84	566.70	0.000	0.000	147.22	0.00	0.00
9	127.00	Alcatel Lucent 1900 MHz	3	5.179	5.697	0.80	0.80	12.40	386.89	0.000	0.000	70.65	0.00	0.00
10	127.00	Alcatel Lucent 800 MHz	3	5.179	5.697	0.80	0.80	8.68	345.72	0.000	0.000	49.42	0.00	0.00
11	127.00	Alcatel Lucent 800 MHz	3	5.179	5.697	0.80	0.80	9.86	412.17	0.000	0.000	56.15	0.00	0.00
12	127.00	RFS ACU-A20-N RETs	4	5.179	5.697	0.80	0.80	1.38	16.50	0.000	0.000	7.87	0.00	0.00
13	127.00	RFS APXVTM14-C-I20	3	5.179	5.697	0.80	0.80	17.84	673.31	0.000	0.000	101.64	0.00	0.00
14	127.00	Alcatel Lucent	3	5.179	5.697	0.80	0.80	11.64	576.79	0.000	0.000	66.29	0.00	0.00
15	118.00	Steel Brace	2	5.099	5.609	1.00	1.00	14.97	559.49	0.000	0.000	83.94	0.00	0.00
16	118.00	4426 B66	3	5.099	5.609	0.80	0.80	5.17	307.09	0.000	0.000	29.03	0.00	0.00
17	118.00	RRUS 32 B30	3	5.099	5.609	0.80	0.80	8.28	472.30	0.000	0.000	46.45	0.00	0.00
18	118.00	RRUS 4478 B5	3	5.099	5.609	0.80	0.80	5.70	323.71	0.000	0.000	31.98	0.00	0.00
19	118.00	RRUS 4478 B14	3	5.099	5.609	0.80	0.80	5.17	307.09	0.000	0.000	29.03	0.00	0.00
20	118.00	800 10764 K	1	5.099	5.609	0.80	0.80	6.38	136.95	0.000	0.000	35.77	0.00	0.00
21	118.00	SBNHH-1D65A	2	5.099	5.609	0.80	0.80	11.09	388.13	0.000	0.000	62.23	0.00	0.00
22	118.00	Ericsson RRU-11-RRU	3	5.099	5.609	0.80	0.80	7.57	442.36	0.000	0.000	42.47	0.00	0.00
23	118.00	T-Arms	3	5.099	5.609	0.75	0.75	33.33	1765.61	0.000	0.000	186.98	0.00	0.00
24	118.00	Powerwave 7770	3	5.099	5.609	0.80	0.80	15.69	519.77	0.000	0.000	88.02	0.00	0.00
25	118.00	KMW	1	5.099	5.609	0.80	0.80	8.60	170.13	0.000	0.000	48.23	0.00	0.00
26	118.00	LGP21401 TMA	18	5.099	5.609	0.80	0.80	30.32	616.11	0.000	0.000	170.10	0.00	0.00
27	118.00	Powerwave 7020.00 RET	6	5.099	5.609	0.80	0.80	4.19	58.40	0.000	0.000	23.49	0.00	0.00
28	118.00	HPA65R-BU6A	1	5.099	5.609	0.80	0.80	8.65	277.81	0.000	0.000	48.53	0.00	0.00
29	118.00	KMW	1	5.099	5.609	0.80	0.80	5.46	113.94	0.000	0.000	30.65	0.00	0.00
30	118.00	OPA65R-BU4B	2	5.099	5.609	0.80	0.80	11.11	445.10	0.000	0.000	62.34	0.00	0.00
31	118.00	OPA65R-BU6B	1	5.099	5.609	0.80	0.80	7.33	321.43	0.000	0.000	41.13	0.00	0.00
32	118.00	Ericsson RRU-12-RRU	3	5.099	5.609	0.80	0.80	8.03	365.18	0.000	0.000	45.02	0.00	0.00
33	118.00	Raycap DC6-48-60-18-8F	3	5.099	5.609	0.80	0.80	3.23	254.75	0.000	0.000	18.14	0.00	0.00
34	118.00	Powerwave LGP13519	18	5.099	5.609	0.80	0.80	11.28	232.78	0.000	0.000	63.27	0.00	0.00
35	108.00	Kathrein 782 11056-Bias-T	3	5.005	5.506	0.80	0.80	3.06	73.62	0.000	0.000	16.85	0.00	0.00
36	108.00	TMA	12	5.005	5.506	0.80	0.80	10.96	274.35	0.000	0.000	60.36	0.00	0.00
37	108.00	LNX-6515DS	3	5.005	5.506	0.80	0.80	35.08	644.58	0.000	0.000	193.13	0.00	0.00
38	108.00	APXV18-209014	3	5.005	5.506	0.80	0.80	10.75	322.13	0.000	0.000	59.18	0.00	0.00
39	108.00	APX16PV-16VL-E	3	5.005	5.506	0.80	0.80	16.98	514.44	0.000	0.000	93.46	0.00	0.00
40	108.00	Low Profile Platform	1	5.005	5.506	1.00	1.00	39.09	2766.61	0.000	0.000	215.22	0.00	0.00
							Totals:		**21,760.42**			**3,217.83**		

Total Applied Force Summary

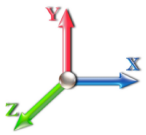
Structure:	CT46123-A-SBA		**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield		**Exposure:**	C	
Height:	139.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		101.75	2009.32	0.00	0.00
10.00		99.82	1999.87	0.00	0.00
15.00		97.76	1977.99	0.00	0.00
20.00		101.49	1950.61	0.00	0.00
25.00		103.98	1920.04	0.00	0.00
30.00		105.56	1887.35	0.00	0.00
35.00		106.44	1853.13	0.00	0.00
40.00		106.79	1817.75	0.00	0.00
45.00		106.71	1781.45	0.00	0.00
46.58		33.31	554.88	0.00	0.00
50.00		73.67	1891.83	0.00	0.00
52.41		51.57	1313.32	0.00	0.00
55.00		55.24	893.66	0.00	0.00
60.00		106.39	1694.22	0.00	0.00
65.00		105.19	1655.60	0.00	0.00
70.00		103.78	1616.58	0.00	0.00
75.00		102.19	1577.19	0.00	0.00
80.00		100.43	1537.48	0.00	0.00
85.00		98.52	1497.47	0.00	0.00
90.00		96.48	1457.21	0.00	0.00
94.50		84.86	1276.41	0.00	0.00
95.00		9.48	192.47	0.00	0.00
99.00		74.75	1503.47	0.00	0.00
100.00		18.47	229.21	0.00	0.00
105.00		90.99	1119.14	0.00	0.00
108.00	(25) attachments	691.50	5253.62	0.00	0.00
110.00		34.99	387.87	0.00	0.00
115.00		85.91	944.25	0.00	0.00
118.00	(80) attachments	1236.97	8630.96	0.00	0.00
120.00		32.87	313.98	0.00	0.00
125.00		80.46	759.20	0.00	0.00
127.00	(28) attachments	844.39	4855.33	0.00	0.00
130.00		46.14	424.53	0.00	0.00
135.00	(3) attachments	255.29	2708.46	0.00	-541.81
136.00	(6) attachments	216.27	1184.22	0.00	89.85
137.00	(6) attachments	200.61	1475.49	0.00	372.39
138.00	(3) attachments	25.49	204.12	0.00	0.00
139.00		14.17	114.21	0.00	0.00
	Totals:	**5,900.66**	**64,463.90**	**0.00**	**-79.58**

Calculated Forces

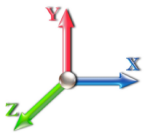
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-64.46	-5.92	0.00	-612.94	0.00	612.94	4169.21	2084.60	9065.11	4539.29	0.00	0.000	0.000	0.150
5.00	-62.45	-5.86	0.00	-583.33	0.00	583.33	4110.19	2055.10	8728.63	4370.80	0.02	-0.038	0.000	0.149
10.00	-60.44	-5.80	0.00	-554.02	0.00	554.02	4049.41	2024.70	8394.45	4203.46	0.08	-0.077	0.000	0.147
15.00	-58.46	-5.74	0.00	-525.01	0.00	525.01	3986.85	1993.43	8062.85	4037.42	0.18	-0.117	0.000	0.145
20.00	-56.51	-5.68	0.00	-496.30	0.00	496.30	3922.52	1961.26	7734.09	3872.79	0.33	-0.158	0.000	0.143
25.00	-54.58	-5.61	0.00	-467.93	0.00	467.93	3856.42	1928.21	7408.45	3709.73	0.52	-0.199	0.000	0.140
30.00	-52.69	-5.53	0.00	-439.90	0.00	439.90	3788.55	1894.27	7086.18	3548.36	0.75	-0.241	0.000	0.138
35.00	-50.84	-5.45	0.00	-412.25	0.00	412.25	3718.90	1859.45	6767.57	3388.81	1.02	-0.284	0.000	0.135
40.00	-49.02	-5.38	0.00	-384.97	0.00	384.97	3647.48	1823.74	6452.87	3231.23	1.34	-0.327	0.000	0.133
45.00	-47.23	-5.28	0.00	-358.10	0.00	358.10	3574.29	1787.15	6142.37	3075.75	1.71	-0.371	0.000	0.130
46.58	-46.68	-5.26	0.00	-349.77	0.00	349.77	3550.85	1775.42	6045.37	3027.18	1.83	-0.385	0.000	0.129
50.00	-44.78	-5.20	0.00	-331.75	0.00	331.75	3499.33	1749.66	5836.32	2922.50	2.12	-0.416	0.000	0.126
52.41	-43.47	-5.15	0.00	-319.22	0.00	319.22	3509.27	1754.63	5876.22	2942.48	2.34	-0.438	0.000	0.121
55.00	-42.57	-5.12	0.00	-305.88	0.00	305.88	3469.86	1734.93	5719.21	2863.86	2.58	-0.462	0.000	0.119
60.00	-40.87	-5.03	0.00	-280.30	0.00	280.30	3392.44	1696.22	5419.79	2713.92	3.09	-0.505	0.000	0.115
65.00	-39.22	-4.93	0.00	-255.17	0.00	255.17	3313.25	1656.62	5125.48	2566.55	3.64	-0.548	0.000	0.111
70.00	-37.60	-4.84	0.00	-230.50	0.00	230.50	3227.80	1613.90	4829.83	2418.50	4.24	-0.591	0.000	0.107
75.00	-36.02	-4.75	0.00	-206.28	0.00	206.28	3119.66	1559.83	4510.01	2258.36	4.88	-0.633	0.000	0.103
80.00	-34.48	-4.66	0.00	-182.53	0.00	182.53	3011.51	1505.75	4201.15	2103.70	5.56	-0.675	0.000	0.098
85.00	-32.98	-4.56	0.00	-159.25	0.00	159.25	2903.36	1451.68	3903.25	1954.53	6.29	-0.716	0.000	0.093
90.00	-31.52	-4.47	0.00	-136.43	0.00	136.43	2795.21	1397.61	3616.30	1810.84	7.07	-0.755	0.000	0.087
94.50	-30.24	-4.38	0.00	-116.33	0.00	116.33	2697.95	1348.98	3367.59	1686.30	7.79	-0.789	0.000	0.080
95.00	-30.05	-4.37	0.00	-114.13	0.00	114.13	2687.07	1343.53	3340.31	1672.64	7.88	-0.793	0.000	0.079
99.00	-28.55	-4.29	0.00	-96.65	0.00	96.65	1671.63	835.82	2062.09	1032.58	8.55	-0.822	0.000	0.111
100.00	-28.31	-4.28	0.00	-92.35	0.00	92.35	1662.31	831.15	2033.69	1018.35	8.73	-0.829	0.000	0.108
105.00	-27.19	-4.19	0.00	-70.97	0.00	70.97	1614.76	807.38	1893.73	948.27	9.62	-0.873	0.000	0.092
108.00	-21.95	-3.42	0.00	-58.41	0.00	58.41	1585.38	792.69	1811.10	906.90	10.18	-0.896	0.000	0.078
110.00	-21.56	-3.39	0.00	-51.57	0.00	51.57	1565.43	782.72	1756.61	879.61	10.55	-0.911	0.000	0.072
115.00	-20.62	-3.29	0.00	-34.64	0.00	34.64	1514.34	757.17	1622.58	812.50	11.53	-0.941	0.000	0.056
118.00	-12.01	-1.92	0.00	-24.76	0.00	24.76	1482.83	741.42	1543.76	773.03	12.12	-0.955	0.000	0.040
120.00	-11.70	-1.88	0.00	-20.92	0.00	20.92	1461.47	730.74	1491.92	747.07	12.52	-0.963	0.000	0.036
125.00	-10.94	-1.79	0.00	-11.52	0.00	11.52	1395.63	697.82	1354.03	678.02	13.54	-0.978	0.000	0.025
127.00	-6.10	-0.86	0.00	-7.94	0.00	7.94	1366.79	683.40	1298.36	650.14	13.95	-0.982	0.000	0.017
130.00	-5.67	-0.81	0.00	-5.35	0.00	5.35	1323.53	661.77	1217.05	609.43	14.57	-0.986	0.000	0.013
135.00	-2.97	-0.51	0.00	-1.30	0.00	1.30	1251.44	625.72	1087.38	544.50	15.60	-0.990	0.000	0.005
136.00	-1.79	-0.27	0.00	-0.70	0.00	0.70	1237.02	618.51	1062.32	531.95	15.81	-0.991	0.000	0.003
137.00	-0.32	-0.05	0.00	-0.06	0.00	0.06	1222.60	611.30	1037.55	519.55	16.02	-0.991	0.000	0.000
138.00	-0.11	-0.02	0.00	-0.02	0.00	0.02	1208.18	604.09	1013.08	507.29	16.23	-0.991	0.000	0.000
139.00	0.00	-0.01	0.00	0.00	0.00	0.00	1193.76	596.88	988.90	495.18	16.43	-0.991	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	21
Gust Response Factor	1.10				**Sds**	0.12		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.04		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.38		**SA**	0.02	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1058.3	0.00	0.03	0.02	15.45	
10.00		1033.5	0.01	0.05	0.03	20.70	
15.00		1008.8	0.02	0.07	0.04	22.65	
20.00		984.04	0.04	0.07	0.04	23.25	
25.00		959.27	0.06	0.07	0.04	23.35	
30.00		934.51	0.09	0.07	0.04	23.35	
35.00		909.74	0.12	0.07	0.03	23.36	
40.00		884.97	0.16	0.07	0.03	23.30	
45.00		860.21	0.20	0.06	0.02	22.92	
46.58	Bot - Section 2	266.12	0.21	0.06	0.02	7.08	
50.00		1149.0	0.24	0.06	0.02	30.02	
52.41	Top - Section 1	795.00	0.27	0.05	0.02	20.16	
55.00		424.71	0.30	0.05	0.01	10.19	
60.00		801.10	0.35	0.03	0.01	15.44	
65.00		776.33	0.41	0.01	0.01	8.69	
70.00		751.56	0.48	-0.01	0.01	0.06	
75.00		726.80	0.55	-0.03	0.01	-8.65	
80.00		702.03	0.63	-0.06	0.02	-15.33	
85.00		677.27	0.71	-0.09	0.03	-18.88	
90.00		652.50	0.79	-0.11	0.05	-19.32	
94.50	Bot - Section 3	565.66	0.87	-0.12	0.08	-15.67	
95.00		104.30	0.88	-0.12	0.08	-2.85	
99.00	Top - Section 2	813.34	0.96	-0.12	0.11	-18.46	
100.00		81.03	0.98	-0.11	0.12	-1.72	
105.00		393.90	1.08	-0.08	0.17	-4.51	
108.00	Appurtenance(s)	2207.8	1.14	-0.04	0.21	-8.58	
110.00		148.98	1.18	-0.01	0.24	0.28	
115.00		360.88	1.29	0.11	0.33	6.78	
118.00	Appurtenance(s)	3571.8	1.36	0.22	0.39	109.64	
120.00		135.77	1.41	0.30	0.44	5.35	
125.00		327.86	1.53	0.57	0.58	20.90	
127.00	Appurtenance(s)	2655.9	1.58	0.71	0.64	198.12	
130.00		184.83	1.65	0.95	0.74	17.01	
135.00	Appurtenance(s)	1494.8	1.78	1.46	0.95	185.82	
136.00	Appurtenance(s)	233.09	1.81	1.58	0.99	30.59	
137.00	Appurtenance(s)	176.33	1.84	1.71	1.04	24.40	
138.00	Appurtenance(s)	80.48	1.86	1.84	1.09	11.72	
139.00		55.01	1.89	1.98	1.14	8.42	
	Totals:	**29,947.8**				**795.0**	**Total Wind:** **27,142.2**

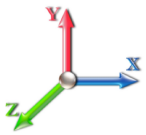
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.12	**Iterations**	21		
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.04	**Ss**	0.18		
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.38	**SA**	0.02	**S1**	0.07	**Seismic Importance Factor**	1.00

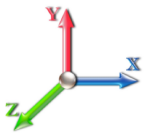
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.68	-0.91	0.00	-93.40	0.00	93.40	4169.21	2084.60	9065.11	4539.29		0.00	0.00	0.031
5.00	-42.08	-0.90	0.00	-88.85	0.00	88.85	4110.19	2055.10	8728.63	4370.80		0.00	-0.01	0.031
10.00	-40.52	-0.88	0.00	-84.35	0.00	84.35	4049.41	2024.70	8394.45	4203.46		0.01	-0.01	0.030
15.00	-38.98	-0.86	0.00	-79.94	0.00	79.94	3986.85	1993.43	8062.85	4037.42		0.03	-0.02	0.030
20.00	-37.48	-0.84	0.00	-75.62	0.00	75.62	3922.52	1961.26	7734.09	3872.79		0.05	-0.02	0.029
25.00	-36.00	-0.82	0.00	-71.40	0.00	71.40	3856.42	1928.21	7408.45	3709.73		0.08	-0.03	0.029
30.00	-34.55	-0.80	0.00	-67.28	0.00	67.28	3788.55	1894.27	7086.18	3548.36		0.11	-0.04	0.028
35.00	-33.14	-0.78	0.00	-63.27	0.00	63.27	3718.90	1859.45	6767.57	3388.81		0.16	-0.04	0.028
40.00	-31.75	-0.76	0.00	-59.35	0.00	59.35	3647.48	1823.74	6452.87	3231.23		0.20	-0.05	0.027
45.00	-30.39	-0.74	0.00	-55.54	0.00	55.54	3574.29	1787.15	6142.37	3075.75		0.26	-0.06	0.027
46.58	-29.97	-0.73	0.00	-54.37	0.00	54.37	3550.85	1775.42	6045.37	3027.18		0.28	-0.06	0.026
50.00	-28.37	-0.71	0.00	-51.86	0.00	51.86	3499.33	1749.66	5836.32	2922.50		0.32	-0.06	0.026
52.41	-27.26	-0.69	0.00	-50.16	0.00	50.16	3509.27	1754.63	5876.22	2942.48		0.36	-0.07	0.025
55.00	-26.58	-0.68	0.00	-48.38	0.00	48.38	3469.86	1734.93	5719.21	2863.86		0.39	-0.07	0.025
60.00	-25.29	-0.66	0.00	-45.00	0.00	45.00	3392.44	1696.22	5419.79	2713.92		0.47	-0.08	0.024
65.00	-24.04	-0.66	0.00	-41.68	0.00	41.68	3313.25	1656.62	5125.48	2566.55		0.56	-0.08	0.023
70.00	-22.81	-0.66	0.00	-38.41	0.00	38.41	3227.80	1613.90	4829.83	2418.50		0.65	-0.09	0.023
75.00	-21.61	-0.66	0.00	-35.13	0.00	35.13	3119.66	1559.83	4510.01	2258.36		0.75	-0.10	0.022
80.00	-20.45	-0.66	0.00	-31.84	0.00	31.84	3011.51	1505.75	4201.15	2103.70		0.86	-0.11	0.022
85.00	-19.31	-0.66	0.00	-28.55	0.00	28.55	2903.36	1451.68	3903.25	1954.53		0.97	-0.11	0.021
90.00	-18.20	-0.66	0.00	-25.26	0.00	25.26	2795.21	1397.61	3616.30	1810.84		1.10	-0.12	0.020
94.50	-17.23	-0.66	0.00	-22.31	0.00	22.31	2697.95	1348.98	3367.59	1686.30		1.21	-0.13	0.020
95.00	-17.07	-0.66	0.00	-21.98	0.00	21.98	2687.07	1343.53	3340.31	1672.64		1.23	-0.13	0.019
99.00	-15.84	-0.66	0.00	-19.35	0.00	19.35	1671.63	835.82	2062.09	1032.58		1.33	-0.13	0.028
100.00	-15.67	-0.66	0.00	-18.69	0.00	18.69	1662.31	831.15	2033.69	1018.35		1.36	-0.13	0.028
105.00	-14.88	-0.66	0.00	-15.41	0.00	15.41	1614.76	807.38	1893.73	948.27		1.51	-0.14	0.025
108.00	-12.03	-0.65	0.00	-13.44	0.00	13.44	1585.38	792.69	1811.10	906.90		1.60	-0.15	0.022
110.00	-11.77	-0.65	0.00	-12.14	0.00	12.14	1565.43	782.72	1756.61	879.61		1.66	-0.15	0.021
115.00	-11.12	-0.64	0.00	-8.89	0.00	8.89	1514.34	757.17	1622.58	812.50		1.83	-0.16	0.018
118.00	-6.71	-0.52	0.00	-6.96	0.00	6.96	1482.83	741.42	1543.76	773.03		1.93	-0.16	0.014
120.00	-6.51	-0.52	0.00	-5.92	0.00	5.92	1461.47	730.74	1491.92	747.07		2.00	-0.17	0.012
125.00	-6.03	-0.49	0.00	-3.34	0.00	3.34	1395.63	697.82	1354.03	678.02		2.18	-0.17	0.009
127.00	-2.80	-0.29	0.00	-2.35	0.00	2.35	1366.79	683.40	1298.36	650.14		2.25	-0.17	0.006
130.00	-2.54	-0.27	0.00	-1.49	0.00	1.49	1323.53	661.77	1217.05	609.43		2.36	-0.17	0.004
135.00	-0.67	-0.08	0.00	-0.15	0.00	0.15	1251.44	625.72	1087.38	544.50		2.54	-0.17	0.001
136.00	-0.37	-0.05	0.00	-0.07	0.00	0.07	1237.02	618.51	1062.32	531.95		2.57	-0.17	0.000
137.00	-0.16	-0.02	0.00	-0.03	0.00	0.03	1222.60	611.30	1037.55	519.55		2.61	-0.17	0.000
138.00	-0.07	-0.01	0.00	-0.01	0.00	0.01	1208.18	604.09	1013.08	507.29		2.65	-0.17	0.000
139.00	0.00	-0.01	0.00	0.00	0.00	0.00	1193.76	596.88	988.90	495.18		2.68	-0.17	0.000

Seismic Segment Forces (Factored)

Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.12	**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04	**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.38	**SA**	0.02	**S1**	0.07
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1058.3	0.00	0.03	0.02	15.45	
10.00		1033.5	0.01	0.05	0.03	20.70	
15.00		1008.8	0.02	0.07	0.04	22.65	
20.00		984.04	0.04	0.07	0.04	23.25	
25.00		959.27	0.06	0.07	0.04	23.35	
30.00		934.51	0.09	0.07	0.04	23.35	
35.00		909.74	0.12	0.07	0.03	23.36	
40.00		884.97	0.16	0.07	0.03	23.30	
45.00		860.21	0.20	0.06	0.02	22.92	
46.58	Bot - Section 2	266.12	0.21	0.06	0.02	7.08	
50.00		1149.0	0.24	0.06	0.02	30.02	
52.41	Top - Section 1	795.00	0.27	0.05	0.02	20.16	
55.00		424.71	0.30	0.05	0.01	10.19	
60.00		801.10	0.35	0.03	0.01	15.44	
65.00		776.33	0.41	0.01	0.01	8.69	
70.00		751.56	0.48	-0.01	0.01	0.06	
75.00		726.80	0.55	-0.03	0.01	-8.65	
80.00		702.03	0.63	-0.06	0.02	-15.33	
85.00		677.27	0.71	-0.09	0.03	-18.88	
90.00		652.50	0.79	-0.11	0.05	-19.32	
94.50	Bot - Section 3	565.66	0.87	-0.12	0.08	-15.67	
95.00		104.30	0.88	-0.12	0.08	-2.85	
99.00	Top - Section 2	813.34	0.96	-0.12	0.11	-18.46	
100.00		81.03	0.98	-0.11	0.12	-1.72	
105.00		393.90	1.08	-0.08	0.17	-4.51	
108.00	Appurtenance(s)	2207.8	1.14	-0.04	0.21	-8.58	
110.00		148.98	1.18	-0.01	0.24	0.28	
115.00		360.88	1.29	0.11	0.33	6.78	
118.00	Appurtenance(s)	3571.8	1.36	0.22	0.39	109.64	
120.00		135.77	1.41	0.30	0.44	5.35	
125.00		327.86	1.53	0.57	0.58	20.90	
127.00	Appurtenance(s)	2655.9	1.58	0.71	0.64	198.12	
130.00		184.83	1.65	0.95	0.74	17.01	
135.00	Appurtenance(s)	1494.8	1.78	1.46	0.95	185.82	
136.00	Appurtenance(s)	233.09	1.81	1.58	0.99	30.59	
137.00	Appurtenance(s)	176.33	1.84	1.71	1.04	24.40	
138.00	Appurtenance(s)	80.48	1.86	1.84	1.09	11.72	
139.00		55.01	1.89	1.98	1.14	8.42	
	Totals:	**29,947.8**				**795.0**	**Total Wind:** **27,142.2**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 24

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 21

Gust Response Factor	1.10			**Sds**	0.12			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.38	**SA**	0.02			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-32.76	-0.91	0.00	-92.46	0.00	92.46	4169.21	2084.60	9065.11	4539.29		0.00	0.00	0.028
5.00	-31.56	-0.90	0.00	-87.91	0.00	87.91	4110.19	2055.10	8728.63	4370.80		0.00	-0.01	0.028
10.00	-30.39	-0.88	0.00	-83.42	0.00	83.42	4049.41	2024.70	8394.45	4203.46		0.01	-0.01	0.027
15.00	-29.24	-0.86	0.00	-79.02	0.00	79.02	3986.85	1993.43	8062.85	4037.42		0.03	-0.02	0.027
20.00	-28.11	-0.84	0.00	-74.72	0.00	74.72	3922.52	1961.26	7734.09	3872.79		0.05	-0.02	0.026
25.00	-27.00	-0.82	0.00	-70.53	0.00	70.53	3856.42	1928.21	7408.45	3709.73		0.08	-0.03	0.026
30.00	-25.91	-0.80	0.00	-66.44	0.00	66.44	3788.55	1894.27	7086.18	3548.36		0.11	-0.04	0.026
35.00	-24.85	-0.78	0.00	-62.45	0.00	62.45	3718.90	1859.45	6767.57	3388.81		0.15	-0.04	0.025
40.00	-23.81	-0.75	0.00	-58.57	0.00	58.57	3647.48	1823.74	6452.87	3231.23		0.20	-0.05	0.025
45.00	-22.79	-0.73	0.00	-54.79	0.00	54.79	3574.29	1787.15	6142.37	3075.75		0.26	-0.06	0.024
46.58	-22.48	-0.73	0.00	-53.64	0.00	53.64	3550.85	1775.42	6045.37	3027.18		0.28	-0.06	0.024
50.00	-21.28	-0.70	0.00	-51.15	0.00	51.15	3499.33	1749.66	5836.32	2922.50		0.32	-0.06	0.024
52.41	-20.44	-0.68	0.00	-49.47	0.00	49.47	3509.27	1754.63	5876.22	2942.48		0.35	-0.07	0.023
55.00	-19.94	-0.67	0.00	-47.72	0.00	47.72	3469.86	1734.93	5719.21	2863.86		0.39	-0.07	0.022
60.00	-18.97	-0.65	0.00	-44.38	0.00	44.38	3392.44	1696.22	5419.79	2713.92		0.47	-0.08	0.022
65.00	-18.03	-0.65	0.00	-41.11	0.00	41.11	3313.25	1656.62	5125.48	2566.55		0.55	-0.08	0.021
70.00	-17.11	-0.65	0.00	-37.88	0.00	37.88	3227.80	1613.90	4829.83	2418.50		0.64	-0.09	0.021
75.00	-16.21	-0.65	0.00	-34.65	0.00	34.65	3119.66	1559.83	4510.01	2258.36		0.74	-0.10	0.021
80.00	-15.33	-0.65	0.00	-31.42	0.00	31.42	3011.51	1505.75	4201.15	2103.70		0.85	-0.10	0.020
85.00	-14.48	-0.65	0.00	-28.18	0.00	28.18	2903.36	1451.68	3903.25	1954.53		0.96	-0.11	0.019
90.00	-13.65	-0.65	0.00	-24.94	0.00	24.94	2795.21	1397.61	3616.30	1810.84		1.08	-0.12	0.019
94.50	-12.92	-0.65	0.00	-22.03	0.00	22.03	2697.95	1348.98	3367.59	1686.30		1.20	-0.13	0.018
95.00	-12.80	-0.65	0.00	-21.71	0.00	21.71	2687.07	1343.53	3340.31	1672.64		1.21	-0.13	0.018
99.00	-11.88	-0.65	0.00	-19.12	0.00	19.12	1671.63	835.82	2062.09	1032.58		1.32	-0.13	0.026
100.00	-11.76	-0.65	0.00	-18.47	0.00	18.47	1662.31	831.15	2033.69	1018.35		1.35	-0.13	0.025
105.00	-11.16	-0.65	0.00	-15.24	0.00	15.24	1614.76	807.38	1893.73	948.27		1.49	-0.14	0.023
108.00	-9.02	-0.64	0.00	-13.30	0.00	13.30	1585.38	792.69	1811.10	906.90		1.58	-0.15	0.020
110.00	-8.83	-0.64	0.00	-12.01	0.00	12.01	1565.43	782.72	1756.61	879.61		1.64	-0.15	0.019
115.00	-8.34	-0.63	0.00	-8.80	0.00	8.80	1514.34	757.17	1622.58	812.50		1.81	-0.16	0.016
118.00	-5.03	-0.52	0.00	-6.90	0.00	6.90	1482.83	741.42	1543.76	773.03		1.91	-0.16	0.012
120.00	-4.88	-0.51	0.00	-5.87	0.00	5.87	1461.47	730.74	1491.92	747.07		1.97	-0.16	0.011
125.00	-4.52	-0.49	0.00	-3.31	0.00	3.31	1395.63	697.82	1354.03	678.02		2.15	-0.17	0.008
127.00	-2.10	-0.28	0.00	-2.33	0.00	2.33	1366.79	683.40	1298.36	650.14		2.22	-0.17	0.005
130.00	-1.90	-0.27	0.00	-1.48	0.00	1.48	1323.53	661.77	1217.05	609.43		2.33	-0.17	0.004
135.00	-0.50	-0.08	0.00	-0.15	0.00	0.15	1251.44	625.72	1087.38	544.50		2.51	-0.17	0.001
136.00	-0.28	-0.05	0.00	-0.07	0.00	0.07	1237.02	618.51	1062.32	531.95		2.54	-0.17	0.000
137.00	-0.12	-0.02	0.00	-0.03	0.00	0.03	1222.60	611.30	1037.55	519.55		2.58	-0.17	0.000
138.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	1208.18	604.09	1013.08	507.29		2.61	-0.17	0.000
139.00	0.00	-0.01	0.00	0.00	0.00	0.00	1193.76	596.88	988.90	495.18		2.65	-0.17	0.000

Wind Loading - Shaft

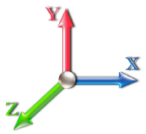
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	249.26	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	243.53	0.650	0.000	5.00	22.271	14.48	118.5	0.0	1058.3
10.00		1.00	0.85	7.442	8.19	237.81	0.650	0.000	5.00	21.754	14.14	115.8	0.0	1033.6
15.00		1.00	0.85	7.442	8.19	232.08	0.650	0.000	5.00	21.236	13.80	113.0	0.0	1008.8
20.00		1.00	0.90	7.896	8.69	233.16	0.650	0.000	5.00	20.719	13.47	117.0	0.0	984.0
25.00		1.00	0.95	8.276	9.10	232.67	0.650	0.000	5.00	20.201	13.13	119.5	0.0	959.3
30.00		1.00	0.98	8.600	9.46	231.02	0.650	0.000	5.00	19.684	12.79	121.0	0.0	934.5
35.00		1.00	1.01	8.883	9.77	228.55	0.650	0.000	5.00	19.166	12.46	121.7	0.0	909.7
40.00		1.00	1.04	9.137	10.05	225.44	0.650	0.000	5.00	18.649	12.12	121.8	0.0	885.0
45.00		1.00	1.07	9.366	10.30	221.83	0.650	0.000	5.00	18.131	11.79	121.4	0.0	860.2
46.58	Bot - Section 2	1.00	1.08	9.434	10.38	220.60	0.650	0.000	1.58	5.610	3.65	37.8	0.0	266.1
50.00		1.00	1.09	9.576	10.53	217.81	0.650	0.000	3.42	12.221	7.94	83.7	0.0	1149.1
52.41	Top - Section 1	1.00	1.10	9.672	10.64	215.75	0.650	0.000	2.41	8.458	5.50	58.5	0.0	795.0
55.00		1.00	1.12	9.770	10.75	217.47	0.650	0.000	2.59	8.956	5.82	62.6	0.0	424.7
60.00		1.00	1.14	9.951	10.95	212.85	0.650	0.000	5.00	16.896	10.98	120.2	0.0	801.1
65.00		1.00	1.16	10.120	11.13	207.97	0.650	0.000	5.00	16.379	10.65	118.5	0.0	776.3
70.00		1.00	1.17	10.279	11.31	202.87	0.650	0.000	5.00	15.861	10.31	116.6	0.0	751.6
75.00		1.00	1.19	10.430	11.47	197.58	0.650	0.000	5.00	15.344	9.97	114.4	0.0	726.8
80.00		1.00	1.21	10.572	11.63	192.10	0.650	0.000	5.00	14.827	9.64	112.1	0.0	702.0
85.00		1.00	1.22	10.708	11.78	186.46	0.650	0.000	5.00	14.309	9.30	109.6	0.0	677.3
90.00		1.00	1.24	10.838	11.92	180.68	0.650	0.000	5.00	13.792	8.96	106.9	0.0	652.5
94.50	Bot - Section 3	1.00	1.25	10.949	12.04	175.36	0.650	0.000	4.50	11.961	7.77	93.6	0.0	565.7
95.00		1.00	1.25	10.962	12.06	174.76	0.650	0.000	0.50	1.334	0.87	10.5	0.0	104.3
99.00	Top - Section 2	1.00	1.26	11.057	12.16	169.94	0.650	0.000	4.00	10.407	6.76	82.3	0.0	813.3
100.00		1.00	1.27	11.081	12.19	171.58	0.650	0.000	1.00	2.561	1.66	20.3	0.0	81.0
105.00		1.00	1.28	11.195	12.31	165.44	0.650	0.000	5.00	12.451	8.09	99.7	0.0	393.9
108.00	Appurtenance(s)	1.00	1.29	11.262	12.39	161.71	0.650	0.000	3.00	7.222	4.69	58.2	0.0	228.4
110.00		1.00	1.29	11.305	12.44	159.20	0.650	0.000	2.00	4.711	3.06	38.1	0.0	149.0
115.00		1.00	1.30	11.412	12.55	152.85	0.650	0.000	5.00	11.416	7.42	93.1	0.0	360.9
118.00	Appurtenance(s)	1.00	1.31	11.474	12.62	149.00	0.650	0.000	3.00	6.601	4.29	54.2	0.0	208.6
120.00		1.00	1.32	11.514	12.67	146.42	0.650	0.000	2.00	4.297	2.79	35.4	0.0	135.8
125.00		1.00	1.33	11.614	12.78	139.90	0.650	0.000	5.00	10.381	6.75	86.2	0.0	327.9
127.00	Appurtenance(s)	1.00	1.33	11.653	12.82	137.27	0.650	0.000	2.00	4.008	2.60	33.4	0.0	126.5
130.00		1.00	1.34	11.710	12.88	133.30	0.650	0.000	3.00	5.856	3.81	49.0	0.0	184.8
135.00	Appurtenance(s)	1.00	1.35	11.803	12.98	126.62	0.650	0.000	5.00	9.346	6.07	78.9	0.0	294.8
136.00	Appurtenance(s)	1.00	1.35	11.822	13.00	125.27	0.650	0.000	1.00	1.807	1.17	15.3	0.0	57.0
137.00	Appurtenance(s)	1.00	1.35	11.840	13.02	123.92	0.650	0.000	1.00	1.786	1.16	15.1	0.0	56.3
138.00	Appurtenance(s)	1.00	1.35	11.858	13.04	122.57	0.650	0.000	1.00	1.766	1.15	15.0	0.0	55.7
139.00		1.00	1.36	11.876	13.06	121.22	0.650	0.000	1.00	1.745	1.13	14.8	0.0	55.0
								Totals:	**139.00**			**3,003.5**		**20,554.8**

Discrete Appurtenance Forces

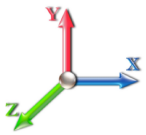
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	138.00	E14F05P59 Deplexer	3	11.858	13.044	0.54	0.80	1.16	24.81	0.000	0.000	15.10	0.00	0.00
2	137.00	LPA-80063/4CF ___	6	11.876	13.064	0.74	0.80	27.45	120.00	0.000	2.000	358.65	0.00	717.30
3	136.00	Antel	3	11.840	13.024	0.67	0.80	9.96	45.00	0.000	1.000	129.71	0.00	129.71
4	136.00	NHH-85B-R2B	3	11.822	13.004	0.68	0.80	16.67	131.10	0.000	0.000	216.73	0.00	0.00
5	135.00	T-Arms w/ Ring Mount	3	11.748	12.922	0.56	0.75	16.88	1200.00	0.000	-3.000	218.07	0.00	-654.20
6	127.00	T-Arms	3	11.653	12.818	0.56	0.75	16.88	1200.00	0.000	0.000	216.30	0.00	0.00
7	127.00	Collar Mounts	3	11.653	12.818	0.56	0.75	5.91	300.00	0.000	0.000	75.71	0.00	0.00
8	127.00	RFS APXVSPP18-C-A20	3	11.653	12.818	0.66	0.80	15.98	171.00	0.000	0.000	204.78	0.00	0.00
9	127.00	Alcatel Lucent 1900 MHz	3	11.653	12.818	0.54	0.80	6.11	132.00	0.000	0.000	78.32	0.00	0.00
10	127.00	Alcatel Lucent 800 MHz	3	11.653	12.818	0.54	0.80	4.00	159.00	0.000	0.000	51.32	0.00	0.00
11	127.00	Alcatel Lucent 800 MHz	3	11.653	12.818	0.54	0.80	4.68	185.40	0.000	0.000	59.98	0.00	0.00
12	127.00	RFS ACU-A20-N RETs	4	11.653	12.818	0.54	0.80	0.30	4.00	0.000	0.000	3.85	0.00	0.00
13	127.00	RFS APXVTM14-C-I20	3	11.653	12.818	0.63	0.80	12.02	168.00	0.000	0.000	154.08	0.00	0.00
14	127.00	Alcatel Lucent	3	11.653	12.818	0.54	0.80	6.51	210.00	0.000	0.000	83.47	0.00	0.00
15	118.00	Steel Brace	2	11.474	12.621	1.00	1.00	7.40	280.00	0.000	0.000	93.40	0.00	0.00
16	118.00	4426 B66	3	11.474	12.621	0.54	0.80	2.65	178.20	0.000	0.000	33.49	0.00	0.00
17	118.00	RRUS 32 B30	3	11.474	12.621	0.54	0.80	4.41	180.00	0.000	0.000	55.61	0.00	0.00
18	118.00	RRUS 4478 B5	3	11.474	12.621	0.54	0.80	2.96	179.70	0.000	0.000	37.34	0.00	0.00
19	118.00	RRUS 4478 B14	3	11.474	12.621	0.54	0.80	2.65	178.20	0.000	0.000	33.49	0.00	0.00
20	118.00	800 10764 K	1	11.474	12.621	0.60	0.80	3.53	40.80	0.000	0.000	44.53	0.00	0.00
21	118.00	SBNHH-1D65A	2	11.474	12.621	0.66	0.80	7.81	67.00	0.000	0.000	98.55	0.00	0.00
22	118.00	Ericsson RRU-11-RRU	3	11.474	12.621	0.54	0.80	4.05	152.10	0.000	0.000	51.14	0.00	0.00
23	118.00	T-Arms	3	11.474	12.621	0.56	0.75	13.50	1050.00	0.000	0.000	170.38	0.00	0.00
24	118.00	Powerwave 7770	3	11.474	12.621	0.58	0.80	9.64	105.00	0.000	0.000	121.62	0.00	0.00
25	118.00	KMW	1	11.474	12.621	0.60	0.80	4.81	48.50	0.000	0.000	60.73	0.00	0.00
26	118.00	LGP21401 TMA	18	11.474	12.621	0.54	0.80	12.45	253.80	0.000	0.000	157.08	0.00	0.00
27	118.00	Powerwave 7020.00 RET	6	11.474	12.621	0.54	0.80	1.29	13.20	0.000	0.000	16.24	0.00	0.00
28	118.00	HPA65R-BU6A	1	11.474	12.621	0.63	0.80	6.00	46.90	0.000	0.000	75.70	0.00	0.00
29	118.00	KMW	1	11.474	12.621	0.60	0.80	3.00	30.80	0.000	0.000	37.86	0.00	0.00
30	118.00	OPA65R-BU4B	2	11.474	12.621	0.63	0.80	7.51	114.00	0.000	0.000	94.76	0.00	0.00
31	118.00	OPA65R-BU6B	1	11.474	12.621	0.79	0.80	6.27	71.20	0.000	0.000	79.17	0.00	0.00
32	118.00	Ericsson RRU-12-RRU	3	11.474	12.621	0.54	0.80	4.34	180.00	0.000	0.000	54.80	0.00	0.00
33	118.00	Raycap DC6-48-60-18-8F	3	11.474	12.621	0.80	0.80	2.21	98.40	0.000	0.000	27.87	0.00	0.00
34	118.00	Powerwave LGP13519	18	11.474	12.621	0.54	0.80	3.28	95.40	0.000	0.000	41.40	0.00	0.00
35	108.00	Kathrein 782 11056-Bias-T	3	11.262	12.388	0.59	0.80	1.21	33.00	0.000	0.000	14.96	0.00	0.00
36	108.00	TMA	12	11.262	12.388	0.54	0.80	3.79	126.00	0.000	0.000	47.01	0.00	0.00
37	108.00	LNX-6515DS	3	11.262	12.388	0.64	0.80	22.02	145.50	0.000	0.000	272.81	0.00	0.00
38	108.00	APXV18-209014	3	11.262	12.388	0.59	0.80	6.36	56.10	0.000	0.000	78.76	0.00	0.00
39	108.00	APX16PV-16VL-E	3	11.262	12.388	0.54	0.80	9.70	118.80	0.000	0.000	120.12	0.00	0.00
40	108.00	Low Profile Platform	1	11.262	12.388	1.00	1.00	22.00	1500.00	0.000	0.000	272.53	0.00	0.00
							Totals:		**9,392.91**			**4,057.40**		

Total Applied Force Summary

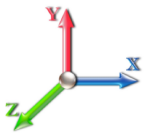
Structure:	CT46123-A-SBA		**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield		**Exposure:**	C	
Height:	139.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		118.50	1329.04	0.00	0.00
10.00		115.75	1304.27	0.00	0.00
15.00		113.00	1279.51	0.00	0.00
20.00		116.97	1254.74	0.00	0.00
25.00		119.54	1229.97	0.00	0.00
30.00		121.03	1205.21	0.00	0.00
35.00		121.74	1180.44	0.00	0.00
40.00		121.83	1155.67	0.00	0.00
45.00		121.42	1130.91	0.00	0.00
46.58		37.84	351.48	0.00	0.00
50.00		83.68	1334.39	0.00	0.00
52.41		58.49	925.47	0.00	0.00
55.00		62.56	564.93	0.00	0.00
60.00		120.22	1071.80	0.00	0.00
65.00		118.52	1047.03	0.00	0.00
70.00		116.58	1022.26	0.00	0.00
75.00		114.42	997.50	0.00	0.00
80.00		112.08	972.73	0.00	0.00
85.00		109.55	947.97	0.00	0.00
90.00		106.87	923.20	0.00	0.00
94.50		93.64	809.11	0.00	0.00
95.00		10.46	131.55	0.00	0.00
99.00		82.28	1029.72	0.00	0.00
100.00		20.29	135.35	0.00	0.00
105.00		99.66	664.60	0.00	0.00
108.00	(25) attachments	864.35	2370.24	0.00	0.00
110.00		38.08	219.82	0.00	0.00
115.00		93.15	537.98	0.00	0.00
118.00	(80) attachments	1439.29	3678.06	0.00	0.00
120.00		35.38	166.01	0.00	0.00
125.00		86.20	403.46	0.00	0.00
127.00	(28) attachments	961.19	2686.16	0.00	0.00
130.00		49.03	222.27	0.00	0.00
135.00	(3) attachments	296.94	1557.24	0.00	-654.20
136.00	(6) attachments	361.72	245.57	0.00	129.71
137.00	(6) attachments	373.77	176.33	0.00	717.30
138.00	(3) attachments	30.07	80.48	0.00	0.00
139.00		14.82	55.01	0.00	0.00
	Totals:	**7,060.92**	**36,397.47**	**0.00**	**192.80**

Calculated Forces

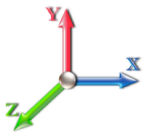
Structure:	CT46123-A-SBA	**Code:**	EIA/TIA-222-G	3/4/2021	
Site Name:	Litchfield	**Exposure:**	C		
Height:	139.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.39	-7.07	0.00	-721.05	0.00	721.05	4169.21	2084.60	9065.11	4539.29	0.00	0.000	0.000	0.168
5.00	-35.06	-6.98	0.00	-685.68	0.00	685.68	4110.19	2055.10	8728.63	4370.80	0.02	-0.045	0.000	0.165
10.00	-33.75	-6.89	0.00	-650.76	0.00	650.76	4049.41	2024.70	8394.45	4203.46	0.10	-0.091	0.000	0.163
15.00	-32.47	-6.80	0.00	-616.29	0.00	616.29	3986.85	1993.43	8062.85	4037.42	0.22	-0.138	0.000	0.161
20.00	-31.21	-6.71	0.00	-582.27	0.00	582.27	3922.52	1961.26	7734.09	3872.79	0.39	-0.185	0.000	0.158
25.00	-29.97	-6.61	0.00	-548.71	0.00	548.71	3856.42	1928.21	7408.45	3709.73	0.61	-0.234	0.000	0.156
30.00	-28.76	-6.51	0.00	-515.65	0.00	515.65	3788.55	1894.27	7086.18	3548.36	0.88	-0.283	0.000	0.153
35.00	-27.57	-6.41	0.00	-483.10	0.00	483.10	3718.90	1859.45	6767.57	3388.81	1.20	-0.333	0.000	0.150
40.00	-26.41	-6.30	0.00	-451.07	0.00	451.07	3647.48	1823.74	6452.87	3231.23	1.58	-0.384	0.000	0.147
45.00	-25.28	-6.19	0.00	-419.56	0.00	419.56	3574.29	1787.15	6142.37	3075.75	2.01	-0.435	0.000	0.143
46.58	-24.93	-6.16	0.00	-409.81	0.00	409.81	3550.85	1775.42	6045.37	3027.18	2.15	-0.452	0.000	0.142
50.00	-23.59	-6.08	0.00	-388.73	0.00	388.73	3499.33	1749.66	5836.32	2922.50	2.49	-0.488	0.000	0.140
52.41	-22.66	-6.02	0.00	-374.09	0.00	374.09	3509.27	1754.63	5876.22	2942.48	2.74	-0.514	0.000	0.134
55.00	-22.09	-5.97	0.00	-358.50	0.00	358.50	3469.86	1734.93	5719.21	2863.86	3.03	-0.542	0.000	0.132
60.00	-21.02	-5.85	0.00	-328.66	0.00	328.66	3392.44	1696.22	5419.79	2713.92	3.62	-0.592	0.000	0.127
65.00	-19.97	-5.74	0.00	-299.39	0.00	299.39	3313.25	1656.62	5125.48	2566.55	4.27	-0.642	0.000	0.123
70.00	-18.94	-5.63	0.00	-270.67	0.00	270.67	3227.80	1613.90	4829.83	2418.50	4.97	-0.693	0.000	0.118
75.00	-17.94	-5.52	0.00	-242.52	0.00	242.52	3119.66	1559.83	4510.01	2258.36	5.72	-0.743	0.000	0.113
80.00	-16.96	-5.41	0.00	-214.93	0.00	214.93	3011.51	1505.75	4201.15	2103.70	6.53	-0.792	0.000	0.108
85.00	-16.01	-5.30	0.00	-187.88	0.00	187.88	2903.36	1451.68	3903.25	1954.53	7.38	-0.840	0.000	0.102
90.00	-15.09	-5.19	0.00	-161.39	0.00	161.39	2795.21	1397.61	3616.30	1810.84	8.29	-0.887	0.000	0.095
94.50	-14.28	-5.09	0.00	-138.05	0.00	138.05	2697.95	1348.98	3367.59	1686.30	9.15	-0.927	0.000	0.087
95.00	-14.15	-5.08	0.00	-135.49	0.00	135.49	2687.07	1343.53	3340.31	1672.64	9.24	-0.932	0.000	0.086
99.00	-13.12	-4.99	0.00	-115.19	0.00	115.19	1671.63	835.82	2062.09	1032.58	10.04	-0.965	0.000	0.119
100.00	-12.98	-4.97	0.00	-110.18	0.00	110.18	1662.31	831.15	2033.69	1018.35	10.24	-0.974	0.000	0.116
105.00	-12.31	-4.87	0.00	-85.33	0.00	85.33	1614.76	807.38	1893.73	948.27	11.29	-1.026	0.000	0.098
108.00	-9.96	-3.96	0.00	-70.72	0.00	70.72	1585.38	792.69	1811.10	906.90	11.95	-1.055	0.000	0.084
110.00	-9.74	-3.93	0.00	-62.79	0.00	62.79	1565.43	782.72	1756.61	879.61	12.39	-1.072	0.000	0.078
115.00	-9.20	-3.83	0.00	-43.16	0.00	43.16	1514.34	757.17	1622.58	812.50	13.54	-1.109	0.000	0.059
118.00	-5.55	-2.32	0.00	-31.67	0.00	31.67	1482.83	741.42	1543.76	773.03	14.24	-1.127	0.000	0.045
120.00	-5.38	-2.28	0.00	-27.03	0.00	27.03	1461.47	730.74	1491.92	747.07	14.71	-1.137	0.000	0.040
125.00	-4.98	-2.19	0.00	-15.63	0.00	15.63	1395.63	697.82	1354.03	678.02	15.92	-1.157	0.000	0.027
127.00	-2.31	-1.17	0.00	-11.25	0.00	11.25	1366.79	683.40	1298.36	650.14	16.40	-1.163	0.000	0.019
130.00	-2.09	-1.12	0.00	-7.73	0.00	7.73	1323.53	661.77	1217.05	609.43	17.13	-1.169	0.000	0.014
135.00	-0.54	-0.79	0.00	-2.13	0.00	2.13	1251.44	625.72	1087.38	544.50	18.36	-1.175	0.000	0.004
136.00	-0.30	-0.42	0.00	-1.21	0.00	1.21	1237.02	618.51	1062.32	531.95	18.61	-1.176	0.000	0.003
137.00	-0.13	-0.05	0.00	-0.06	0.00	0.06	1222.60	611.30	1037.55	519.55	18.86	-1.176	0.000	0.000
138.00	-0.05	-0.02	0.00	-0.02	0.00	0.02	1208.18	604.09	1013.08	507.29	19.10	-1.176	0.000	0.000
139.00	0.00	-0.01	0.00	0.00	0.00	0.00	1193.76	596.88	988.90	495.18	19.35	-1.176	0.000	0.000

Final Analysis Summary

Structure:	CT46123-A-SBA		**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield		**Exposure:**	C	
Height:	139.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	27.2	0.00	43.63	0.00	0.00	2787.53
0.9D + 1.6W 93 mph Wind	27.2	0.00	32.72	0.00	0.00	2760.44
1.2D + 1.0Di + 1.0Wi 40 mph Wind	5.9	0.00	64.46	0.00	0.00	612.94
1.2D + 1.0E	0.9	0.00	43.68	0.00	0.00	93.40
0.9D + 1.0E	0.9	0.00	32.76	0.00	0.00	92.46
1.0D + 1.0W 60 mph Wind	7.1	0.00	36.39	0.00	0.00	721.05

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-43.63	-27.21	0.00	-2787.5	0.00	-2787.5	4169.21	2084.6	9065.11	4539.29	0.00	0.625
0.9D + 1.6W 93 mph Wind	-32.72	-27.19	0.00	-2760.4	0.00	-2760.4	4169.21	2084.6	9065.11	4539.29	0.00	0.616
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-64.46	-5.92	0.00	-612.94	0.00	-612.94	4169.21	2084.6	9065.11	4539.29	0.00	0.150
1.2D + 1.0E	-43.68	-0.91	0.00	-93.40	0.00	-93.40	4169.21	2084.6	9065.11	4539.29	0.00	0.031
0.9D + 1.0E	-32.76	-0.91	0.00	-92.46	0.00	-92.46	4169.21	2084.6	9065.11	4539.29	0.00	0.028
1.0D + 1.0W 60 mph Wind	-36.39	-7.07	0.00	-721.05	0.00	-721.05	4169.21	2084.6	9065.11	4539.29	0.00	0.168

Base Plate Summary

Structure:	CT46123-A-SB		**Code:**	EIA/TIA-222-G	3/4/2021
Site Name:	Litchfield		**Exposure:**	C	
Height:	139.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	3021.60
Axial (kip):	26.90
Shear (kip):	29.20

Analysis (1.2D + 1.6W)

Moment (kip-ft):	2787.53
Axial (kip):	43.63
Shear (kip):	27.21

Base Plate

Yield (ksi):	60.00
Width (in):	72.00
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	14.31
Moment (kip-in):	607.73
Allow Stress (ksi):	81.00
Applied Stress (ksi):	34.02
Stress Ratio:	0.42

Anchor Bolts

Bolt Circle:	62.00
Number Bolts:	16.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00

Compression

Force (kip):	138.91
Allowable (kip):	260.00
Ratio:	0.55

Tension

Force (kip):	130.85
Allowable (kip):	260.00
Ratio:	0.52

ProTerra
DESIGN GROUP, LLC

Date: 4/22/2020

verizon

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

Subject: **Mount Structural Analysis Report – Rev. 1**

Verizon Wireless Designation: **Site Name:** LITCHFIELD NE CT

Site Data: **383 Torrington Rd, Litchfield, CT 06759**
Latitude 41° 45' 58.62'', Longitude -73° 10' 42.70''

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 (44.2%)**
Note: See Analysis Criteria for loading configuration

The analysis has been performed in accordance with TIA-222-G Standard and the 2018 Connecticut 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:

4/22/2020

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

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	136’ & 137’ (138’ Record RFDS)
Structure Type	Monopole
Exposure Category	B
Wind Speed	120 mph *√0.6 = 93 mph
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
6	Antel LPA-80063/4CF - Antennas
3	Antel BXA-70063-6CF-2-750MHZ - Antennas
3	Amphenol BXA-171063-8BF-EDIN-2 - Antennas

Table 1.2 – Proposed and Final Appurtenance Configuration for Verizon

Qty	Model
6	Antel LPA-80063/4CF - Antennas
3	Amphenol BXA-171063-8BF-EDIN-2 - Antennas
3	Commscope NHH-85B-R2B - Antennas
3	E14F05P59 – Diplexer*

***To be mounted behind antennas**

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
RFDS	Verizon	04/03/2020
Construction Drawings	ProTerra Design Group, LLC	04/06/2020
Mount Photos	ProTerra Design Group, LLC	01/09/2020
Mount Details	ProTerra Design Group, LLC	06/25/2004

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 mount specifications 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.

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
Tube Arm	44.2	Pass
Tube Face Member	35.0	Pass
Antenna Mount Pipe	42.1	Pass

Sector Mounts: The existing sector mounts will have **adequate** capacity for the proposed changes by Verizon, once the mount is modified as per attached construction drawings prepared by Pro Terra Design Group, LLC, dated 04/06/2020. For the code specified load combinations and as a maximum, the mount members are stressed to **44.2%** of their structural capacity.

APPENDIX

INPUT LOADS
ANALYSIS OUTPUT
CONSTRUCTION DRAWINGS

CLIENT: Verizon

PROJECT: LITCHFIELD NE CT

SUBJECT: Antenna Loads -TIA 222 G Stanadard (chapter 16 revisions)

Tower Height	140.00	ft	Type of Mount Sector
Basic Wind Speed, V	93	mph (=Ultimate Speed*Sqrt(0.6))	
Basic Wind Speed with Ice, V_i	50	mph	
Maintanence Load Factor, L_{FM}	0.1041	Load Factor for Maint. Load Cases (Basic Wind Speed=30 mph)	
Design Ice Thickness, t_i	0.75	inches	

Table 2-3 Importance Factors

Structure Classification	Wind Load Without Ice	Wind Load With Ice	Ice Thickness	Earthquake
II	1	1	1	1

1

Table 2-4 Exposure Category Coefficients

Exposure Category	Zg	α	Kzmin	Ke	m
B	1200	7	0.7	0.9	0.55

Table 2-5 Topographic Categories

Kzt 1.000

Table 2-2 Wind Directionality Factor, Kd

Structure Type	Kd	
2 Monopole	0.95	DOES NOT CHANGE

Gust Effect Factor Gh

Structure Type	Gh	
2 Monopole	1.00	DOES NOT CHANGE

Shielding Factor, Ka

Structure Type	Ka	
Monopole	0.90	DOES NOT CHANGE

Seismic Factors

Ss	0.825	
S1	0.281	
Fa	1.17	
Fv	1.838	
R	1.5	Truss or Pole

CLIENT: Verizon

PROJECT: LITCHFIELD NE CT

SUBJECT: Antenna Loads -TIA 222 G Stanadard (chapter 16 revisions)

Rad Center 138.00 ft

Antenna AND Mount Without Ice

Mounting Pole	Height (ft)	Model Number	#	Weight (lbs)	H (in)	*W (in)	D (in)	Ka	**A_N (ft2)	***A_T (ft2)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K_z	q_z (psf)	Pounds: Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (Front)	Total Wind Load (Side)	Total Dead Load	Lateral Load (Seismic)	Vertical Load (Seismic)
Pos. 1	138.00	Antel LPA-80063/4CF	1	20.0	47.4	15.2	13.2	0.90	5.01	4.35	3.12	3.60	1.23	1.25	1.083	22.8	126.1	111.3	20	126	111	20	6	3
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
																				64	56	10	3	1
Pos.2	138.00	Commscope NHH-85B-R2B	1	43.7	72.9	11.9	7.1	0.90	6.02	3.59	6.13	10.27	1.36	1.51	1.083	22.8	168.2	111.2	43.7	168	117	52	15	7
	138.00	E14F05P59	1	8.4	7.8	N/A	4.1	0.90	-	0.22	-	1.91	-	1.20	1.083	22.8	0.0	5.5	8.4					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
																				85	59	27	7	3
Pos.3	138.00	BXA-171063-8BF-EDIN-2	1	10.5	48.5	6.1	4.1	0.90	2.05	1.38	7.95	11.83	1.43	1.56	1.083	22.8	60.3	44.2	10.5	60	44	11	3	1
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
																				31	23	6	1	1
Pos. 4	138.00	Antel LPA-80063/4CF	1	20.0	47.4	15.2	13.2	0.90	5.01	4.35	3.12	3.60	1.23	1.25	1.083	22.8	126.1	111.3	20	126	111	20	6	3
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
																				64	56	10	3	1

* Enter N/A in the W column for front sheilded apurtanances.

** A_N is the product of H and W

*** A_T is the product of H and D

DL 103

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	Weight (lb/ft)	*** Ca	K_z	q_z (psf)	Wind Load (PLF)	Lateral Load (Seismic)	Vertical Load (Seismic)
	138.00	3.0 STD Pipe	0.00	3.50	0.00		-	-	-	-	-	-
	138.00	(2.5 STD Pipe)	12.00	2.88	0.00		1.20	1.083	20.5	6	-	-
	138.00	2.0 STD Pipe	0.00	2.38	0.00		-	-	-	-	-	-
	138.00	L2x2x3	0.00	2.00	2.00		-	-	-	-	-	-
	138.00	L2.5x2.5x3	0.00	2.50	2.50		-	-	-	-	-	-
	138.00	Angle Diagonal	0.00	0.00	0.00		-	-	-	-	-	-
	138.00	(HSS 4x4x4)	12.00	4.00	4.00		2.00	1.083	20.5	14	-	-
	138.00	6" x 3/8" Plate	0.00	6.00	0.38		-	-	-	-	-	-
	138.00	Tube Radial (4x4)	0.00	4.00	4.00		-	-	-	-	-	-
	138.00	Double Angle (LL2.5x2.5x3x0)	0.00	5.00	2.50		-	-	-	-	-	-
	138.00	Double Angle (LL3x3x4x0)	0.00	3.00	3.00		-	-	-	-	-	-
	138.00	Channel (Weak Axis Bending)	0.00	0.00	0.00		-	-	-	-	-	-
	138.00	Invert U 5.375x3.625x.375	0.00	3.63	5.38		-	-	-	-	-	-

* The dimension L is the longest 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: Verizon

PROJECT: LITCHFIELD NE CT

SUBJECT: Antenna Loads -TIA 222 G Stanadard (chapter 16 revisions)

ti (in) 1.730724 Kiz 1.1538159 reduction 0.28905

Antenna AND Mount With Ice

Mounting Pole	Height (ft)	Model Number	#	H (in)	W (in)	D (in)	Ka	*A_N (ft2)	*A_T (ft2)	*Volume Ice (ft3)	*Weight Ice (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz	q_z (psf)	Pounds: Ice Wind Load (Front)	Ice Wind Load (Side)	Combined Wind Load (Front)	Combined Wind Load (Side)	Ice Dead Load	**Total Wind Load (Front)	**Total Wind Load (Side)	Total Ice Load
Pos. 1	**138.00**	Antel LPA-80063/4CF	1	47.4	15.2	13.2	0.90	1.59	1.54	3.65	204.36	0.71	0.71	1.083	6.6	6.6	6.5	43.1	38.7	204	43	39	204
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					22	**20**	**103**
Pos.2	**138.00**	Commscope NHH-85B-R2B	1	72.9	11.9	7.1	0.90	2.12	2.01	3.61	201.88	0.75	0.81	1.083	6.6	9.5	9.6	58.1	41.7	202	58	45	219
on standoff	**138.00**	E14F05P59	1	7.8	4.4	4.1	0.90	-	0.37	0.31	17.14	0.70	0.70	1.083	6.6	0.0	1.5	0.0	3.1	17			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					30	**23**	**110**
Pos.3	**138.00**	BXA-171063-8BF-EDIN-2	1	48.5	6.1	4.1	0.90	1.40	1.35	1.47	82.44	0.77	0.80	1.083	6.6	6.3	6.4	23.8	19.1	82	24	19	82
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					12	**10**	**42**
Pos.4	**138.00**	Antel LPA-80063/4CF	1	47.4	15.2	13.2	0.90	1.59	1.54	3.65	204.36	0.71	0.71	1.083	6.6	6.6	6.5	43.1	38.7	204	43	39	204
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					22	**20**	**103**

* A_N ,A_T, Volume Ice and Weight Ice are calculated per unit

** Ca will equal 1.2 for all ice load calculations

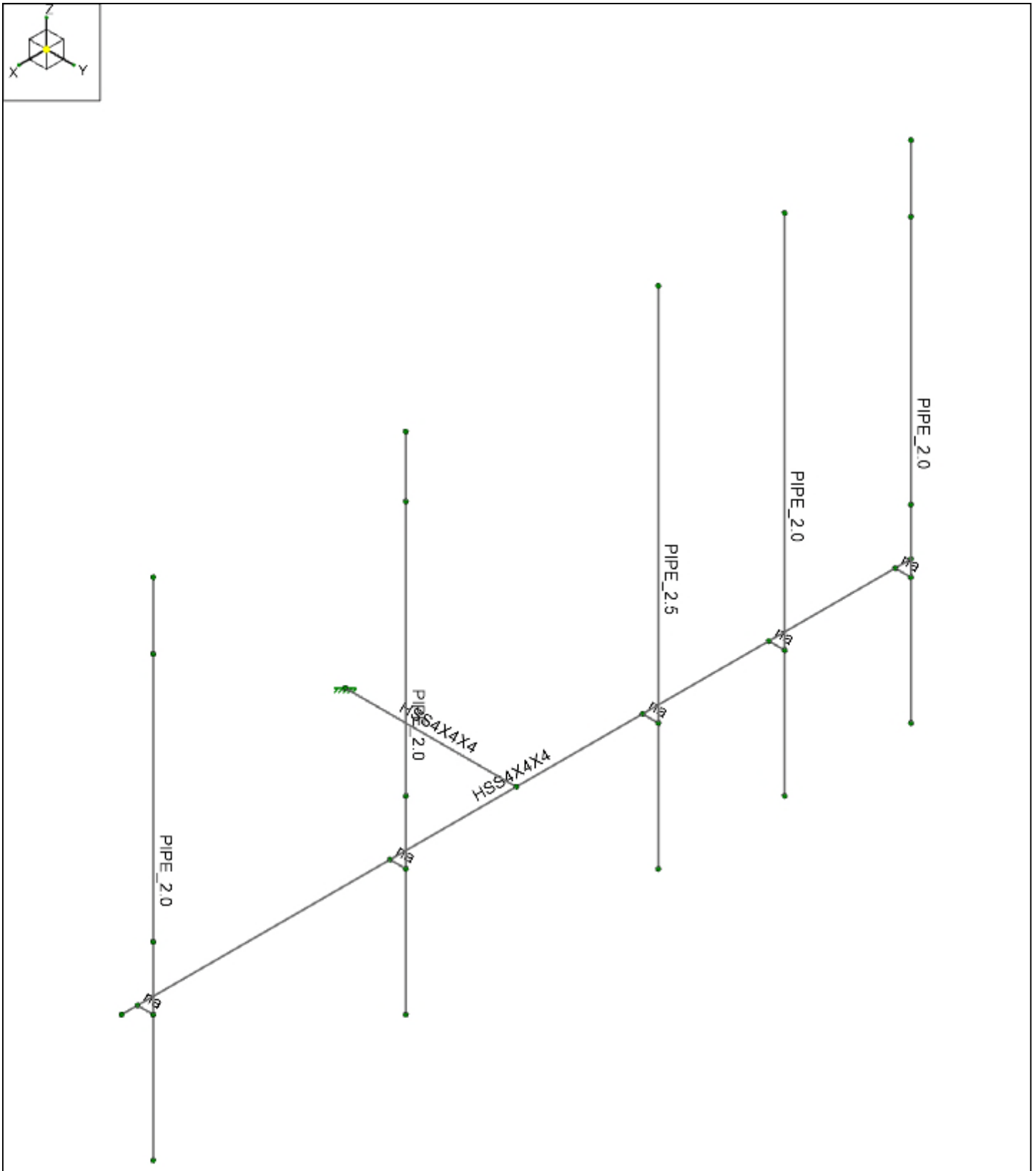
Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	***A_N (ft2)	Volume Ice (ft3)	Weight Ice (lbs)	****Ca (FRONT)	Kz	q_z (psf)	PLF: Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
	138.00	3.0 STD Pipe	0.00	3.50	0.00	-	-	-	-	-	-	-	-	-
	138.00	(2.5 STD Pipe)	12.00	2.88	0.00	0.44	0.17	9.75	1.20	1.083	5.9	3.1	4.8	10
	138.00	2.0 STD Pipe	0.00	2.38	0.00	-	-	-	-	-	-	-	-	-
	138.00	L2x2x3	0.00	2.00	2.00	-	-	-	-	-	-	-	-	-
	138.00	L2.5x2.5x3	0.00	2.50	2.50	-	-	-	-	-	-	-	-	-
	138.00	Angle Diagonal	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	138.00	(HSS 4x4x4)	12.00	4.00	4.00	0.47	0.39	21.67	1.20	1.083	5.9	3.3	7.3	22
	138.00	6" x 3/8" Plate	0.00	6.00	0.38	-	-	-	-	-	-	-	-	-
	138.00	Tube Radial (4x4)	0.00	4.00	4.00	-	-	-	-	-	-	-	-	-
	138.00	Double Angle (LL2.5x2.5x3x0)	0.00	5.00	2.50	-	-	-	-	-	-	-	-	-
	138.00	Double Angle (LL3x3x4x0)	0.00	3.00	3.00	-	-	-	-	-	-	-	-	-
	138.00	Channel (Weak Axis Bending)	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	138.00	Invert U 5.375x3.625x.375	0.00	3.63	5.38	-	-	-	-	-	-	-	-	-

* The dimension L is the longest dimension of the member

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

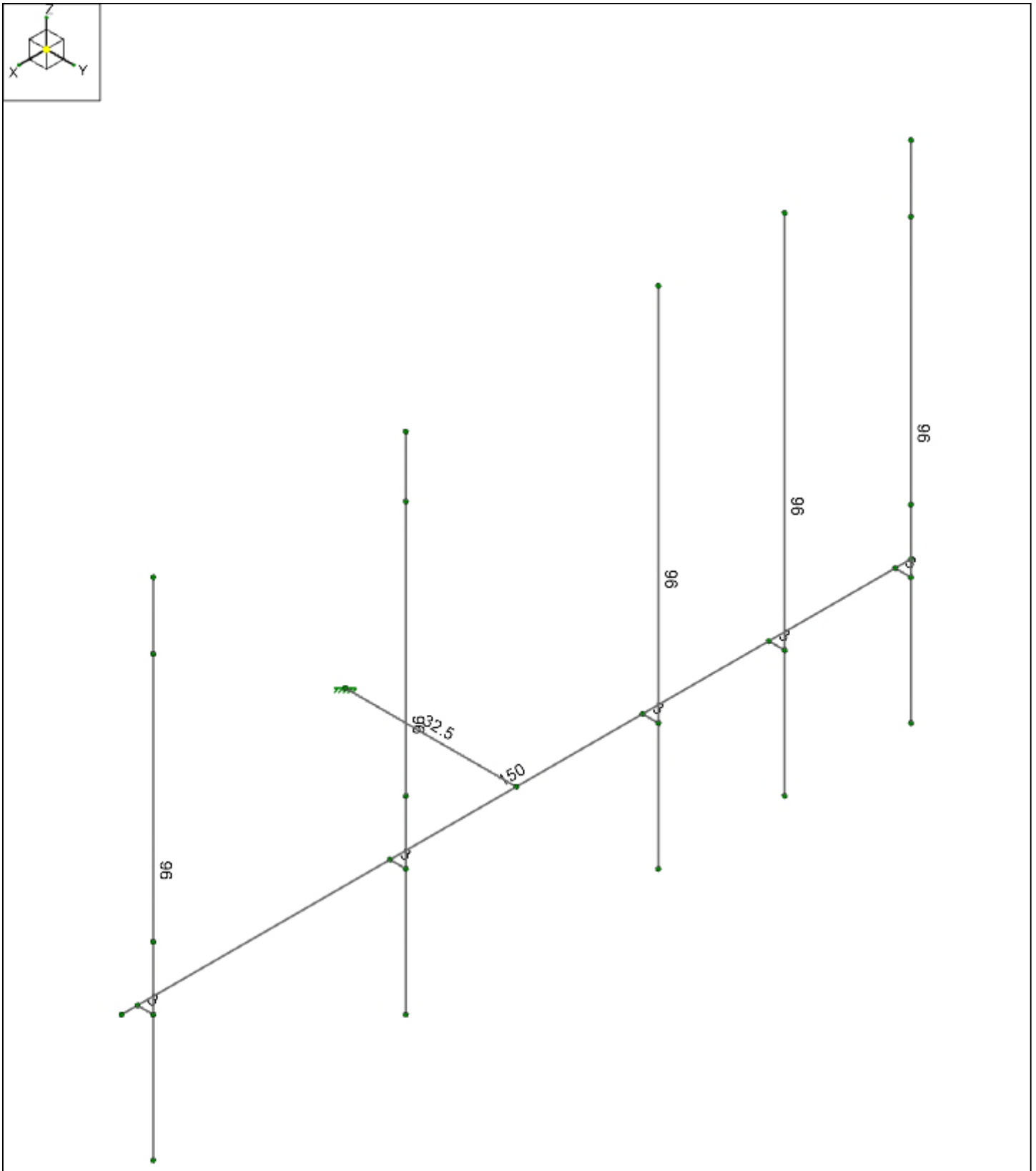
*** A_N is the area of ice built up on the LW plane

**** Ca will equal 1.2 for all ice load calculations



Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-1
		Apr 22, 2020
049.00066 - 2078001		T-Arm.r3d



Member Length (in) Displayed
Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-2
		Apr 22, 2020
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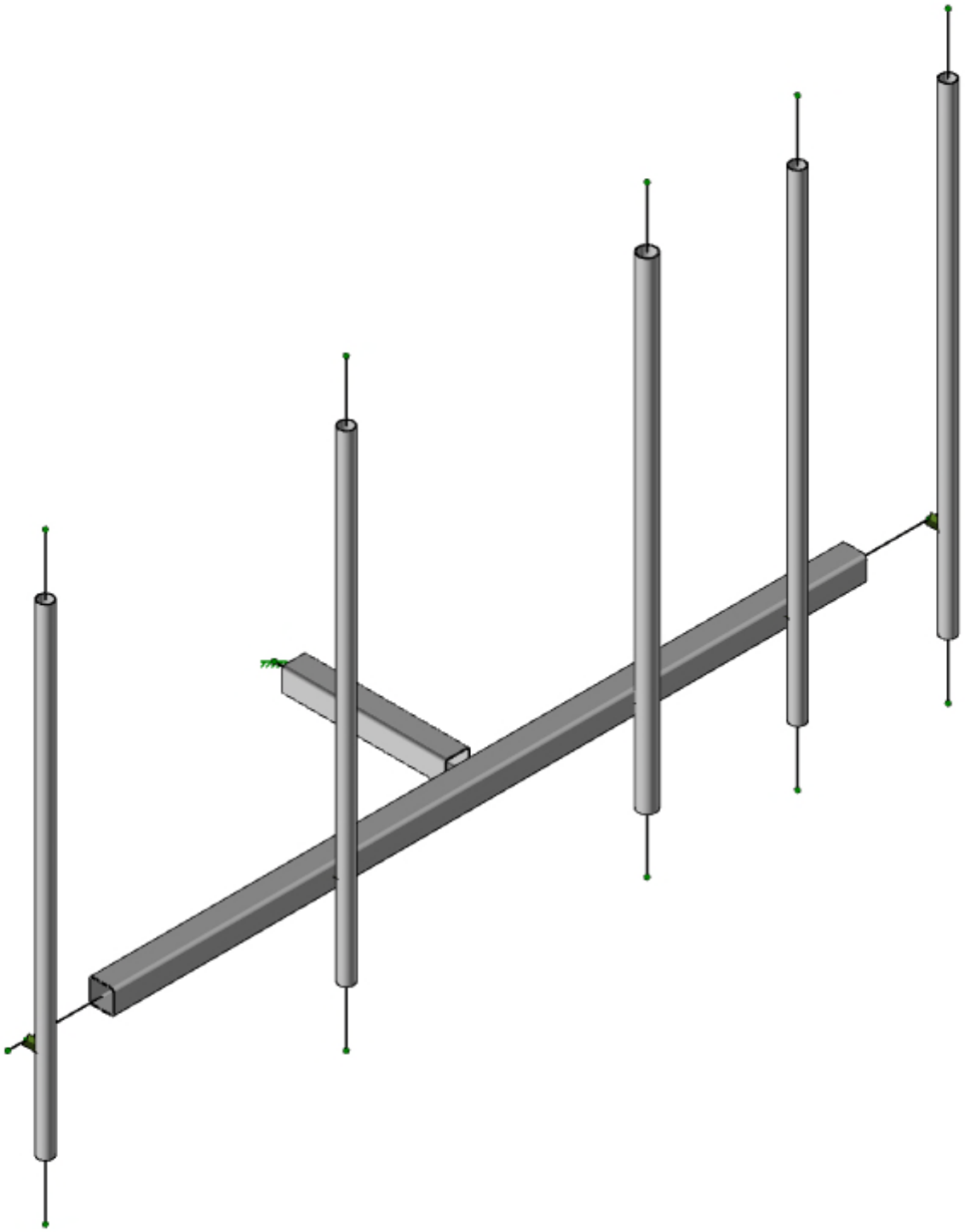

Member Length (in) Displayed
Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-3
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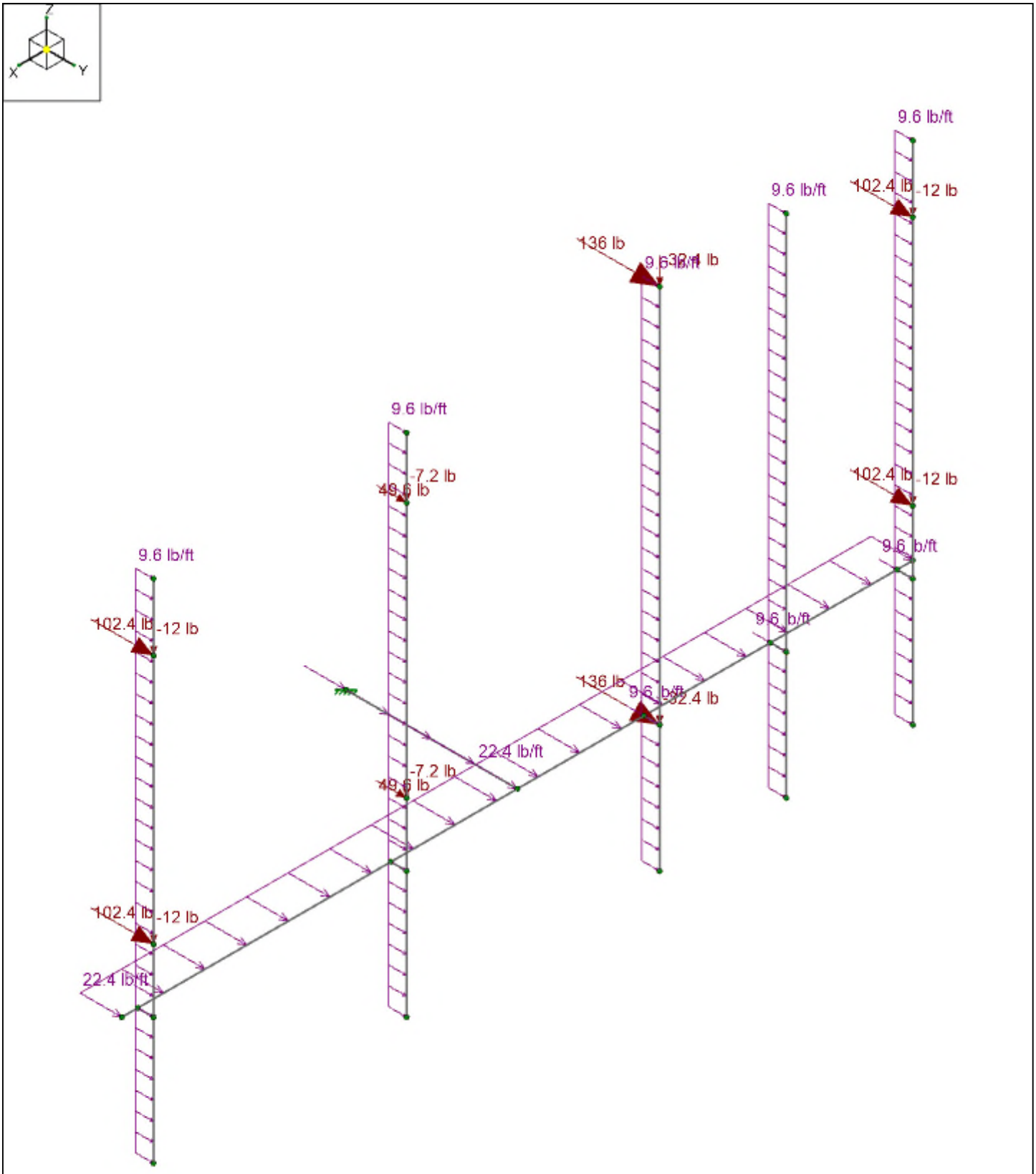
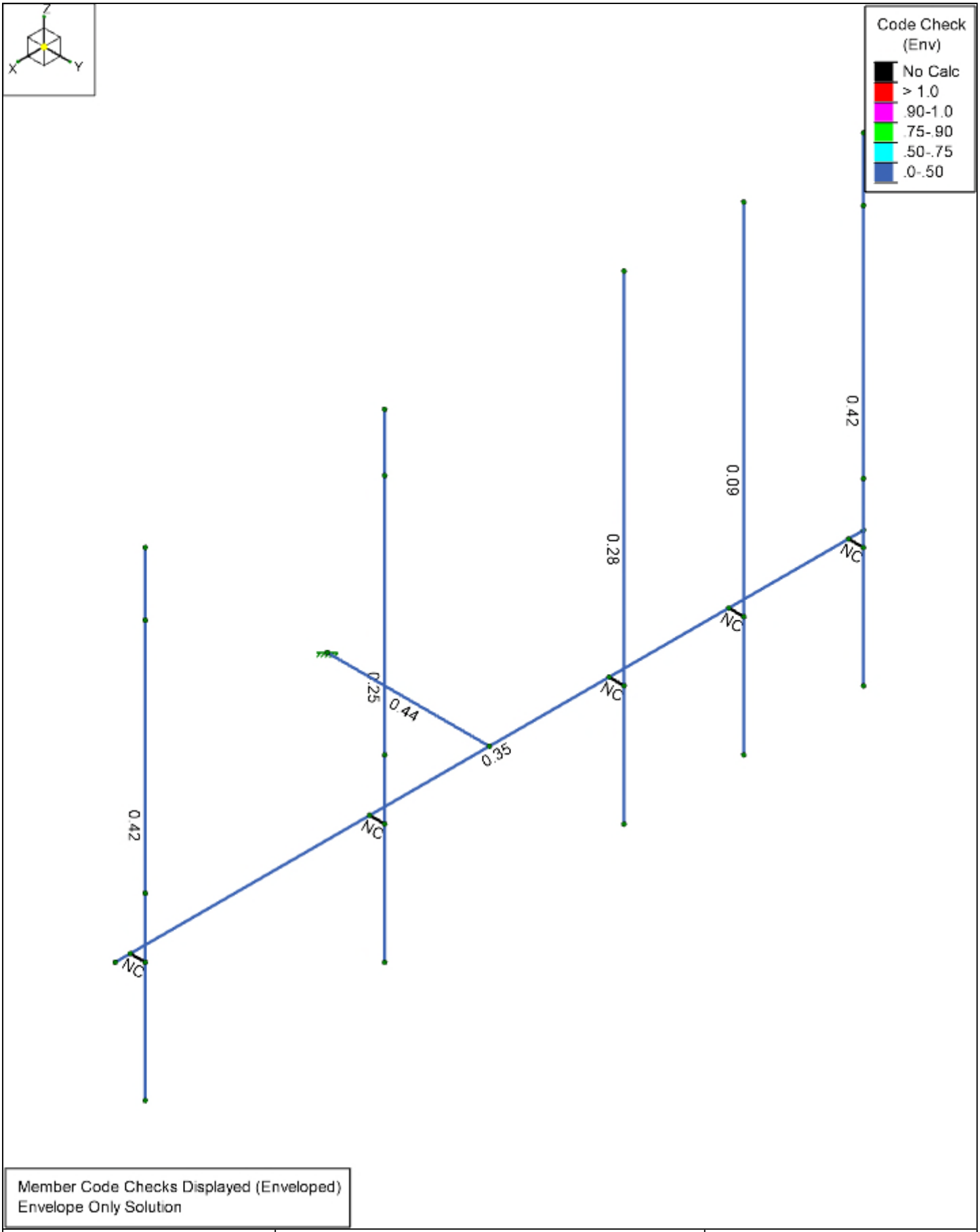


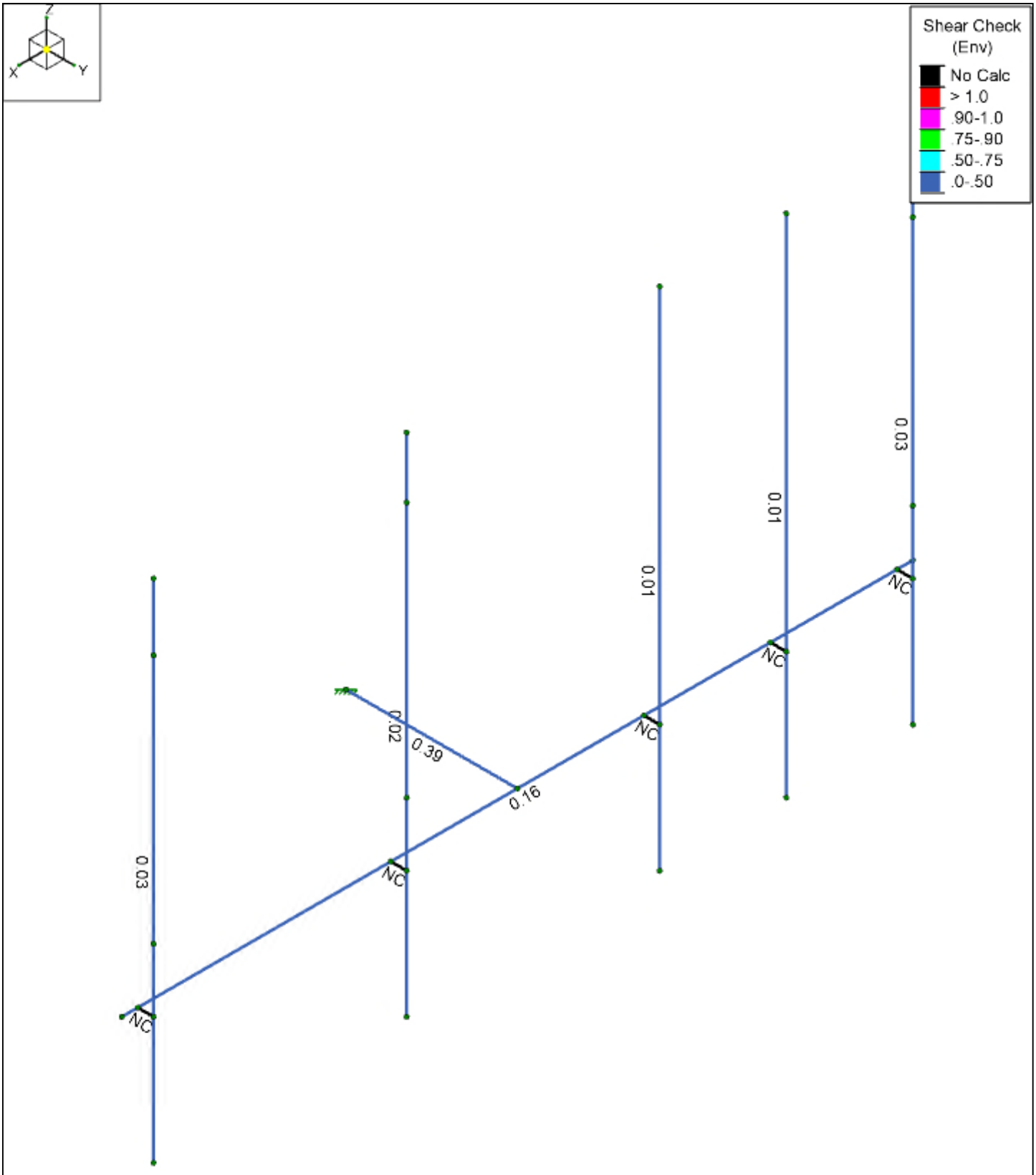
Loads: LC 1, DL + WL (NO ICE) 0 Degree
Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-4
		Apr 22, 2020
049.00066 - 2078001		T-Arm.r3d



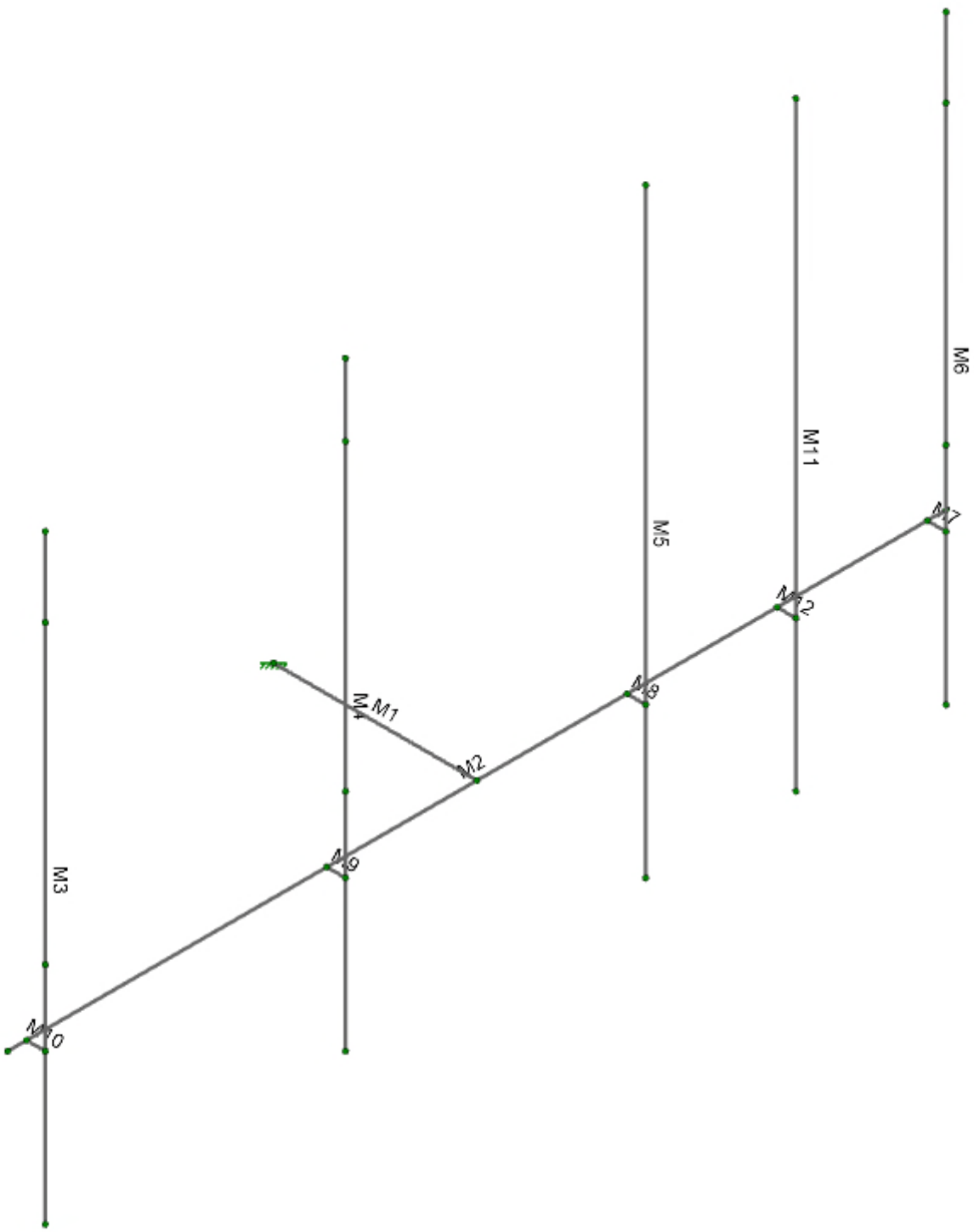
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-5
		Apr 22, 2020
049.00066 - 2078001		T-Arm.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-6
		Apr 22, 2020
049.00066 - 2078001		T-Arm.r3d



Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-7
		Apr 22, 2020
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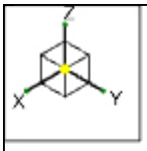
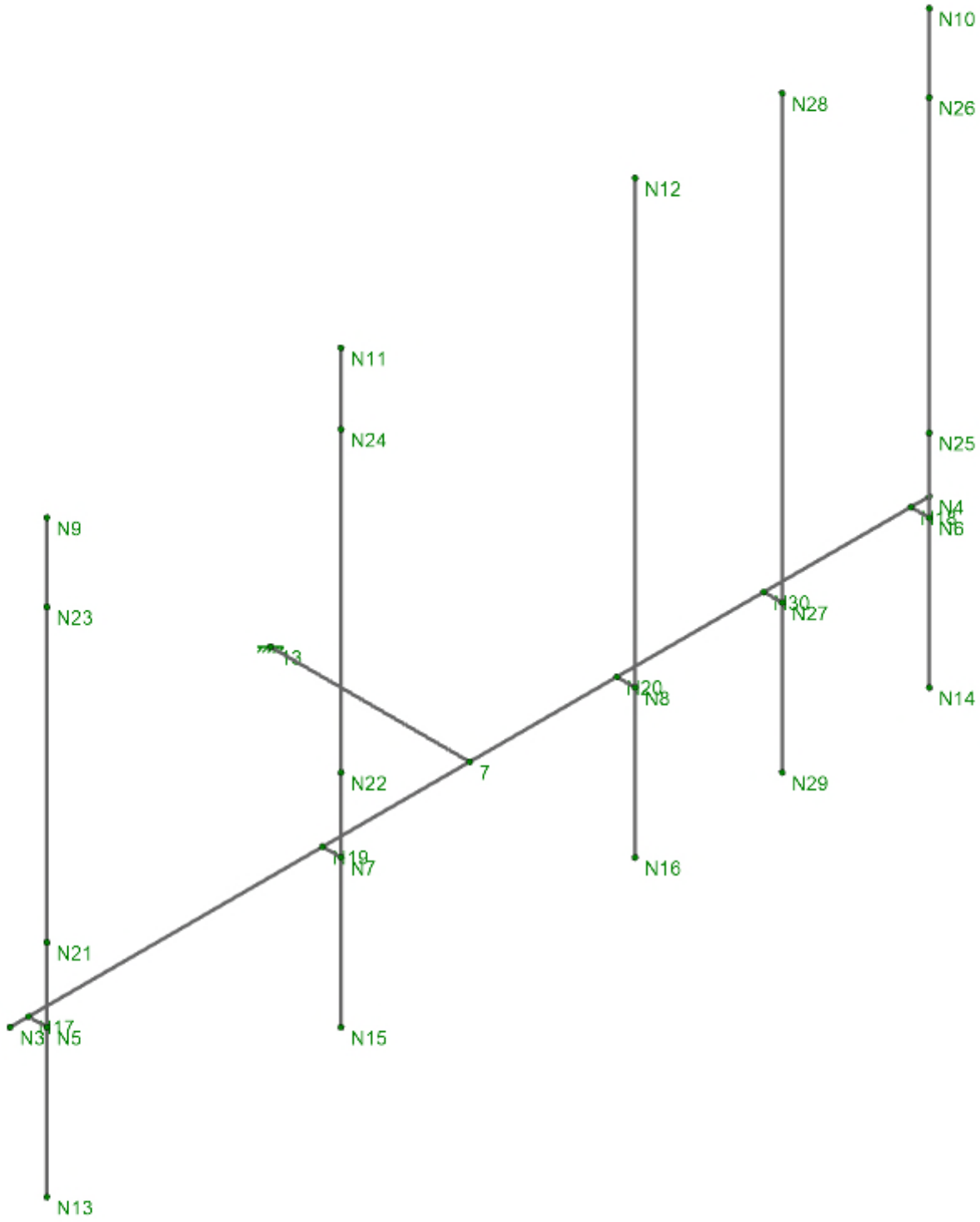




Envelope Only Solution

ProTerra Design Group, LLC	LITCHFIELD NE CT	SK-8
		Apr 22, 2020
049.00066 - 2078001		T-Arm.r3d

Model Settings

Number of Reported Sections	5
Number of Internal Sections	97
Member Area Load Mesh Size (in²)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes

Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	No
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3

Single	No
Multiple (Optimum)	Yes
Maximum	No

Global Axis corresponding to vertical direction	Z
Convert Existing Data	Yes

Default Global Plane for z-axis	XZ

Plate Local Axis Orientation	Nodal

Hot Rolled Steel	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 14th (360-10): LRFD
Cold Formed Steel	AISI NAS-01: ASD
Stiffness Adjustment	Yes (Iterative)
Wood	AF&PA NDS-05/08: ASD
Temperature	< 100F
Concrete	ACI 318-05
Masonry	ACI 530-05: ASD
Aluminum	AA ADM1-05: ASD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): ASD
Stiffness Adjustment	Yes (Iterative)

Analysis Methodology	Exact Integration Method
Parme Beta Factor	0.65
Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No
List forces which were ignored for design in the Detail Report	Yes

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No
Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Code	ASCE 7-05

Model Settings (Continued)

Risk Category	I
Drift Cat	Other
Base Elevation (ft)	-999999
Include the weight of the structure in base shear calcs	Yes

S_1(g)	1
SD_1(g)	1
SD_S(g)	1
T_L(sec)	-1

T (sec)	
T (sec)	
C_t	0.035
C_t	0.035
C_tExp.	0.75
C_tExp.	0.75
R	8.5
R	8.5
Ω_0	1
Ω_0	1
C_d	4
C_d	4
ρ	1
ρ	1

Line Project Grid

No Data to Print...

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. C...	Density [k...	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
4	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2
7	A529 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	HR1A	C15X50	Beam	Wide Flan...	A36 Gr.36	Typical	14.7	11	404	2.65

Primary Member Properties

	Label	I Node	J Node	K Node	Rotate(deg)	Section/S...	Type	Design List	Material	Design Rule
1	M1	7	13			HSS4X4X4	None	None	A500 Gr.46	Typical
2	M2	N3	N4			HSS4X4X4	Beam	Tube	A500 Gr.46	Typical
3	M3	N9	N13			PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
4	M4	N11	N15			PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
5	M5	N12	N16			PIPE_2.5	Beam	HSS Pipe	A53 Gr.B	Typical
6	M6	N10	N14			PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
7	M7	N18	N6			RIGID	None	None	LINK	Typical
8	M8	N20	N8			RIGID	None	None	LINK	Typical
9	M9	N19	N7			RIGID	None	None	LINK	Typical
10	M10	N17	N5			RIGID	None	None	LINK	Typical
11	M11	N28	N29			PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
12	M12	N30	N27			RIGID	None	None	LINK	Typical

Advanced Member Properties

	Label	I Release	J Release	I Offset [in]	J Offset [in]	T/C Only	Physical	Deflectio...	Analysis...	Activation	Seismic...
1	M1						Yes	** NA **			None
2	M2						Yes	Default			None
3	M3						Yes	Default			None
4	M4						Yes	Default			None
5	M5						Yes	Default			None
6	M6						Yes	Default			None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	M9						Yes	** NA **			None
10	M10						Yes	** NA **			None
11	M11						Yes	Default			None
12	M12						Yes	** NA **			None

Hot Rolled Member Properties

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp t...	Lcomp...	L-Torqu...	K y-y	K z-z	Cb	Function
1	M1	HSS4X...	32.5									Lateral
2	M2	HSS4X...	150			Lbyy						Lateral
3	M3	PIPE_2.0	96			Lbyy						Lateral
4	M4	PIPE_2.0	96			Lbyy						Lateral
5	M5	PIPE_2.5	96			Lbyy						Lateral
6	M6	PIPE_2.0	96			Lbyy						Lateral
7	M11	PIPE_2.0	96			Lbyy						Lateral

Nodes

	Label	X [in]	Y [in]	Z [in]	Temp [deg F]	Detach From Dia...
1	7	-0.005613	50.362923	0		
2	13	-0.005613	17.863209	0		
3	N3	74.994387	50.362923	0		
4	N4	-75.005613	50.362923	0		
5	N5	71.994387	53.362923	0		
6	N6	-72.005613	53.362923	0		
7	N7	23.994387	53.362923	0		
8	N8	-24.005613	53.362923	0		
9	N9	71.994387	53.362923	72		
10	N10	-72.005613	53.362923	72		
11	N11	23.994387	53.362923	72		
12	N12	-24.005613	53.362923	72		
13	N13	71.994387	53.362923	-24		
14	N14	-72.005613	53.362923	-24		
15	N15	23.994387	53.362923	-24		
16	N16	-24.005613	53.362923	-24		
17	N17	71.994387	50.362923	0		
18	N18	-72.005613	50.362923	0		
19	N19	23.994387	50.362923	0		
20	N20	-24.005613	50.362923	0		
21	N21	71.994387	53.362923	12		
22	N22	23.994387	53.362923	12		
23	N23	71.994387	53.362923	59.4		
24	N24	23.994387	53.362923	60.5		
25	N25	-72.005613	53.362923	12		
26	N26	-72.005613	53.362923	59.4		
27	N27	-48.005613	53.362923	0		
28	N28	-48.005613	53.362923	72		
29	N29	-48.005613	53.362923	-24		
30	N30	-48.005613	50.362923	0		

Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Basic Load Cases

	BLC Desc...	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Me...	Surface(P...
1	DEAD LO...	None			-1	8				
2	DEAD LO...	None				8		10		
3	WIND LO...	None				8		10		
4	WIND LO...	None				8		10		
5	WIND LO...	None				8		10		
6	WIND LO...	None				8		10		
7	LIVE LOA...	None				1	1			
8	LIVE LOA...	None				1				
9	LIVE LOA...	None								
10	MAINTEN...	None				1				
11	MAINTEN...	None				1				
12	MAINTEN...	None				1				
13	MAINTEN...	None				1				

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N8	L	Z	-27	Active
2	N12	L	Z	-27	Active
3	N22	L	Z	-6	Active
4	N24	L	Z	-6	Active

Node Loads and Enforced Displacements (BLC 1 : DEAD LOAD) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
5	N21	L	Z	-10	Active
6	N23	L	Z	-10	Active
7	N25	L	Z	-10	Active
8	N26	L	Z	-10	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N8	L	Z	-110	Active
2	N12	L	Z	-110	Active
3	N22	L	Z	-42	Active
4	N24	L	Z	-42	Active
5	N21	L	Z	-103	Active
6	N23	L	Z	-103	Active
7	N25	L	Z	-103	Active
8	N26	L	Z	-103	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N8	L	Y	85	Active
2	N12	L	Y	85	Active
3	N22	L	Y	31	Active
4	N24	L	Y	31	Active
5	N21	L	Y	64	Active
6	N23	L	Y	64	Active
7	N25	L	Y	64	Active
8	N26	L	Y	64	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N8	L	X	-59	Active
2	N12	L	X	-59	Active
3	N22	L	X	-23	Active
4	N24	L	X	-23	Active
5	N21	L	X	-56	Active
6	N23	L	X	-56	Active
7	N25	L	X	-56	Active
8	N26	L	X	-56	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N8	L	Y	30	Active
2	N12	L	Y	30	Active
3	N22	L	Y	12	Active
4	N24	L	Y	12	Active
5	N21	L	Y	22	Active
6	N23	L	Y	22	Active
7	N25	L	Y	22	Active
8	N26	L	Y	22	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N8	L	X	-23	Active
2	N12	L	X	-23	Active
3	N22	L	X	-10	Active
4	N24	L	X	-10	Active
5	N21	L	X	-20	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
6	N23	L	X	-20	Active
7	N25	L	X	-20	Active
8	N26	L	X	-20	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N3	L	Z	-250	Active

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

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N4	L	Z	-250	Active

Node Loads and Enforced Displacements (BLC 10 : MAINTENANCE LOAD 1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N14	L	Z	-500	Active

Node Loads and Enforced Displacements (BLC 11 : MAINTENANCE LOAD 2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N16	L	Z	-500	Active

Node Loads and Enforced Displacements (BLC 12 : MAINTENANCE LOAD 3)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N15	L	Z	-500	Active

Node Loads and Enforced Displacements (BLC 13 : MAINTENANCE LOAD 4)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft),...	Inactive [(lb, k-ft), (in,...
1	N13	L	Z	-500	Active

Member Point Loads (BLC 7 : LIVE LOAD1)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(in, %)]	Inactive [(lb, k-ft), (in,...
1	M1	Y	0	0	Active

Member Distributed Loads (BLC 2 : DEAD LOAD ICE)

	Member Label	Direction	Start Magnitud...	End Magnitude...	Start Location [...	End Location [(...	Inactive [(lb, k-...
1	M1	Z	-22	-22	0	%100	Active
2	M2	Z	-22	-22	0	%100	Active
3	M3	Z	-10	-10	0	%100	Active
4	M4	Z	-10	-10	0	%100	Active
5	M5	Z	-10	-10	0	%100	Active
6	M6	Z	-10	-10	0	%100	Active
7	M7	Z	-10	-10	0	%100	Active
8	M8	Z	-10	-10	0	%100	Active
9	M11	Z	-10	-10	0	%100	Active
10	M12	Z	-10	-10	0	%100	Active

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

	Member Label	Direction	Start Magnitud...	End Magnitude...	Start Location [...	End Location [(...	Inactive [(lb, k-...
1	M1	PY	14	14	0	%100	Active
2	M2	PY	14	14	0	%100	Active
3	M3	PY	6	6	0	%100	Active
4	M4	PY	6	6	0	%100	Active
5	M5	PY	6	6	0	%100	Active
6	M6	PY	6	6	0	%100	Active
7	M7	PY	6	6	0	%100	Active

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

	Member Label	Direction	Start Magnitud...	End Magnitude...	Start Location [...	End Location [(...	Inactive [(lb, k-...
8	M8	PY	6	6	0	%100	Active
9	M11	PY	6	6	0	%100	Active
10	M12	PY	6	6	0	%100	Active

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

	Member Label	Direction	Start Magnitud...	End Magnitude...	Start Location [...	End Location [(...	Inactive [(lb, k-...
1	M1	PX	-14	-14	0	%100	Active
2	M2	PX	-14	-14	0	%100	Active
3	M3	PX	-6	-6	0	%100	Active
4	M4	PX	-6	-6	0	%100	Active
5	M5	PX	-6	-6	0	%100	Active
6	M6	PX	-6	-6	0	%100	Active
7	M7	PX	-6	-6	0	%100	Active
8	M8	PX	-6	-6	0	%100	Active
9	M11	PX	-6	-6	0	%100	Active
10	M12	PX	-6	-6	0	%100	Active

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

	Member Label	Direction	Start Magnitud...	End Magnitude...	Start Location [...	End Location [(...	Inactive [(lb, k-...
1	M1	PY	7.3	7.3	0	%100	Active
2	M2	PY	7.3	7.3	0	%100	Active
3	M3	PY	4.8	4.8	0	%100	Active
4	M4	PY	4.8	4.8	0	%100	Active
5	M5	PY	4.8	4.8	0	%100	Active
6	M6	PY	4.8	4.8	0	%100	Active
7	M7	PY	4.8	4.8	0	%100	Active
8	M8	PY	4.8	4.8	0	%100	Active
9	M11	PY	4.8	4.8	0	%100	Active
10	M12	PY	4.8	4.8	0	%100	Active

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

	Member Label	Direction	Start Magnitud...	End Magnitude...	Start Location [...	End Location [(...	Inactive [(lb, k-...
1	M1	PX	-7.3	-7.3	0	%100	Active
2	M2	PX	-7.3	-7.3	0	%100	Active
3	M3	PX	-4.8	-4.8	0	%100	Active
4	M4	PX	-4.8	-4.8	0	%100	Active
5	M5	PX	-4.8	-4.8	0	%100	Active
6	M6	PX	-4.8	-4.8	0	%100	Active
7	M7	PX	-4.8	-4.8	0	%100	Active
8	M8	PX	-4.8	-4.8	0	%100	Active
9	M11	PX	-4.8	-4.8	0	%100	Active
10	M12	PX	-4.8	-4.8	0	%100	Active

Load Combinations

	De...	So...	PD...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
1	DL...	Yes	Y		1	1.2			3	1.6														
2	DL...	Yes	Y		1	1.2			3	1.3...	4	0.8												
3	DL...	Yes	Y		1	1.2			3	0.8	4	1.3...												
4	DL...	Yes	Y		1	1.2					4	1.6												
5	DL...	Yes	Y		1	1.2			3	-0.8	4	1.3...												
6	DL...	Yes	Y		1	1.2			3	-1....	4	0.8												
7	DL...	Yes	Y		1	1.2			3	-1.6														
8	DL...	Yes	Y		1	1.2			3	-1....	4	-0.8												
9	DL...	Yes	Y		1	1.2			3	-0.8	4	-1....												
10	DL...	Yes	Y		1	1.2					4	-1.6												
11	DL...	Yes	Y		1	1.2			3	0.8	4	-1....												

Load Combinations (Continued)

	De...	So...	PD...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
12	DL...	Yes	Y		1	1.2			3	1.3...	4	-0.8												
13	DL...	Yes	Y		1	1.2	2	1	5	1														
14	DL...	Yes	Y		1	1.2	2	1	5	0.8...	6	0.5												
15	DL...	Yes	Y		1	1.2	2	1	5	0.5	6	0.8...												
16	DL...	Yes	Y		1	1.2	2	1			6	1												
17	DL...	Yes	Y		1	1.2	2	1	5	-0.5	6	0.8...												
18	DL...	Yes	Y		1	1.2	2	1	5	-0....	6	0.5												
19	DL...	Yes	Y		1	1.2	2	1	5	-1														
20	DL...	Yes	Y		1	1.2	2	1	5	-0....	6	-0.5												
21	DL...	Yes	Y		1	1.2	2	1	5	-0.5	6	-0....												
22	DL...	Yes	Y		1	1.2	2	1			6	-1												
23	DL...	Yes	Y		1	1.2	2	1	5	0.5	6	-0....												
24	DL...	Yes	Y		1	1.2	2	1	5	0.8...	6	-0.5												
25	DE...	Yes	Y		1	1.2					7	1.5												
26	DE...	Yes	Y		1	1.2					8	1.5												
27	DE...	Yes	Y		1	1.2					9	1.5												
28	DL...	Yes	Y		1	1.2	10	1.5	3	0.1...														
29	DL...	Yes	Y		1	1.2	11	1.5	3	0.1...														
30	DL...	Yes	Y		1	1.2	12	1.5	3	0.1...														
31	DL...	Yes	Y		1	1.2	13	1.5	3	0.1...														
32	DL...	Yes	Y		1	1.2	10	1.5	4	0.1...														
33	DL...	Yes	Y		1	1.2	11	1.5	4	0.1...														
34	DL...	Yes	Y		1	1.2	12	1.5	4	0.1...														
35	DL...	Yes	Y		1	1.2	13	1.5	4	0.1...														
36	DL...	Yes	Y		1	1.2	10	1.5	3	-0....														
37	DL...	Yes	Y		1	1.2	11	1.5	3	-0....														
38	DL...	Yes	Y		1	1.2	12	1.5	3	-0....														
39	DL...	Yes	Y		1	1.2	13	1.5	3	-0....														
40	DL...	Yes	Y		1	1.2	10	1.5	4	-0....														
41	DL...	Yes	Y		1	1.2	11	1.5	4	-0....														
42	DL...	Yes	Y		1	1.2	12	1.5	4	-0....														
43	DL...	Yes	Y		1	1.2	13	1.5	4	-0....														

Node Reactions

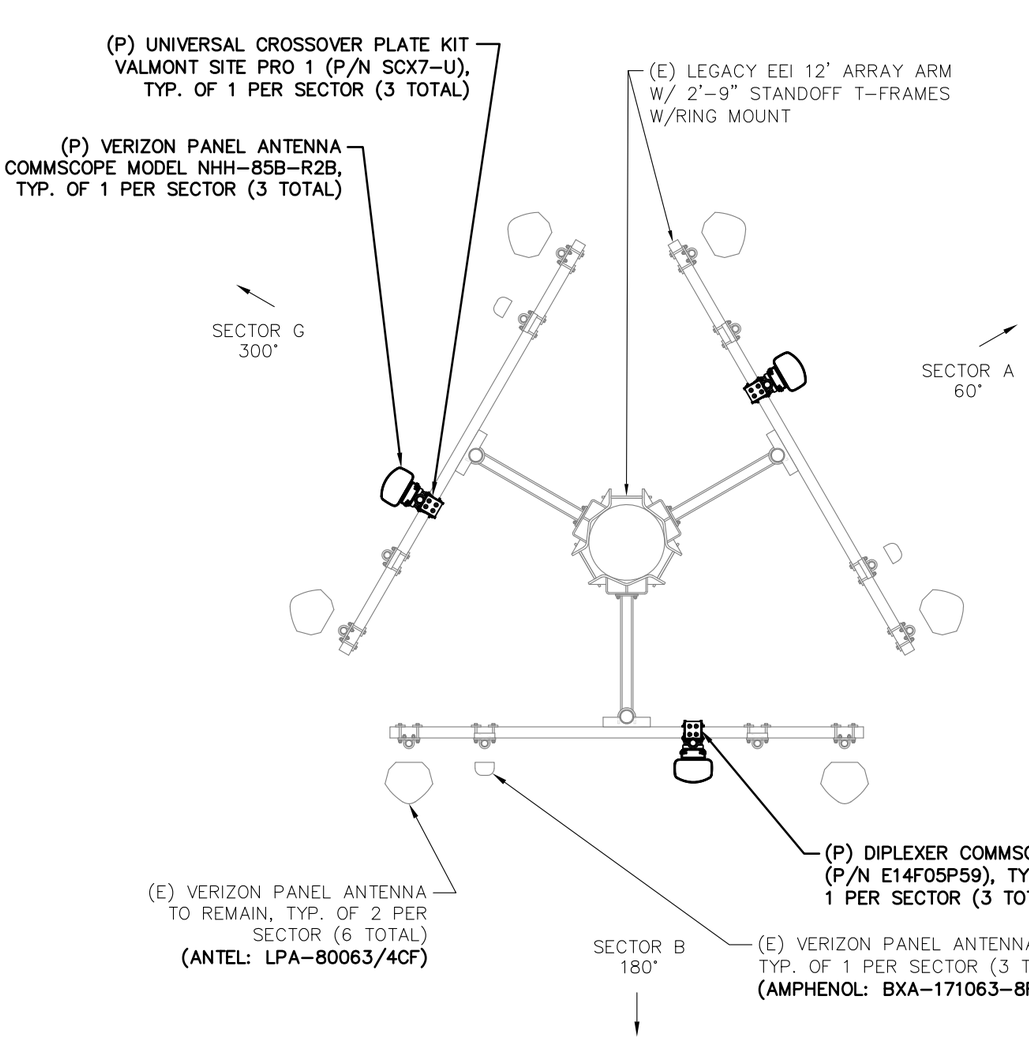
	Node...		X [lbs]	LC	Y [lbs]	LC	Z [lbs]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	13	max	1072.6...	4	1444.8...	7	1980.4...	21	6.53	13	4.918	32	3.077	10
2		min	-1072....	10	-1444....	1	522.347	3	-1.685	7	-4.373	43	-3.073	4
3	Totals:	max	1072.6...	4	1444.8...	7	1980.4...	21						
4		min	-1072....	10	-1444....	1	522.347	3						

Member Section Deflections Service

No Data to Print...

LRFD

	Member	Shape	Code...	Loc [in]	LC	Shear...	Loc [in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M...	Cb	Eqn
1	M1	HSS4...	0.442	32.5	24	0.393	32.5	z	32	13530...	139518	16.181	16.181	1.369	H1-1b
2	M2	HSS4...	0.350	75	36	0.164	75	y	1	72549...	139518	16.181	16.181	1.502	H1-1b
3	M3	PIPE...	0.421	72	1	0.027	72		1	14916...	32130	1.872	1.872	1.585	H1-1b
4	M4	PIPE...	0.255	72	1	0.016	72		1	14916...	32130	1.872	1.872	1.586	H1-1b
5	M5	PIPE...	0.278	72	1	0.013	72		1	30038...	50715	3.596	3.596	1.405	H1-1b
6	M6	PIPE...	0.422	72	1	0.027	72		1	14916...	32130	1.872	1.872	1.585	H1-1b
7	M11	PIPE...	0.094	72	2	0.006	72		2	14916...	32130	1.872	1.872	1.64	H1-1b



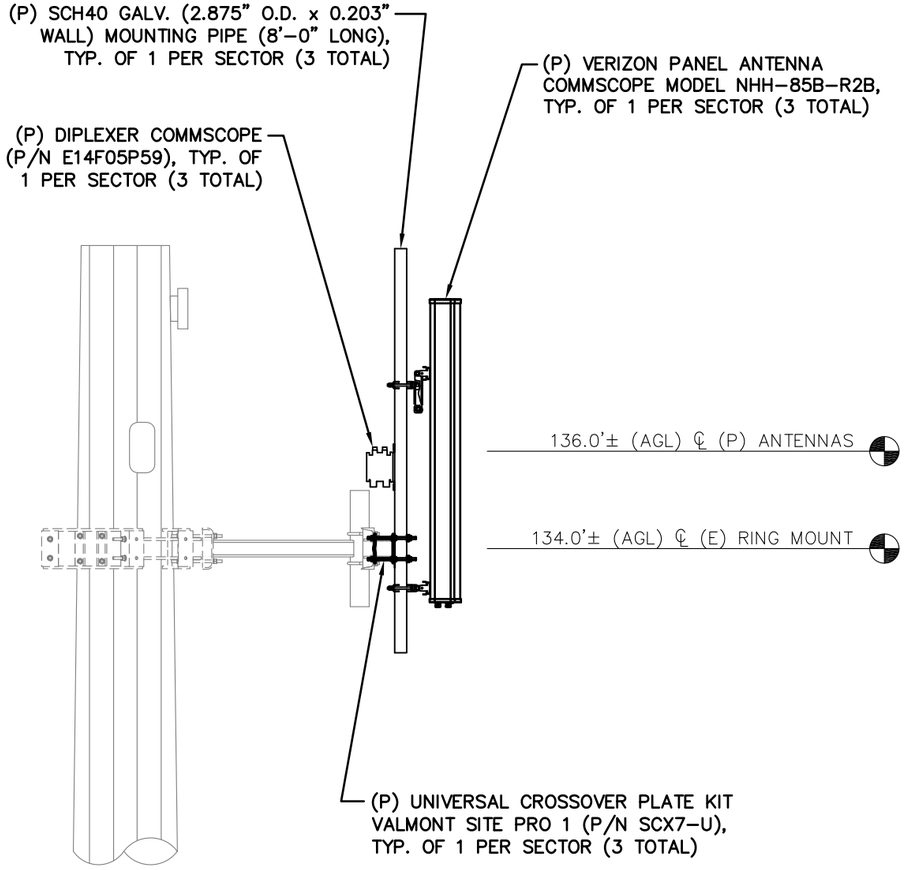
N

(P) ANTENNA PLAN

SCALE: 1"=4'

1 / SK-B

4 2 0 4



(P) ANTENNA ELEVATION

SCALE: NONE

2 / SK-B

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

verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

LITCHFIELD NE CT
2020 UPGRADE
LOCATION CODE 468271
SBA SITE I.D.#: CT46123
383 TORRINGTON ROAD
LITCHFIELD, CT 06759

REVISIONS		DESIGNED BY: JWG/JMM	JOB #: 17-017
B	PER RFDS REV3 DATED APRIL 3, 2020	DRAWN BY: TBD	REV. #: B
		DATE: 04/06/20	SK-B
		SHEET: 1 OF 1	

Attachment 5


19.31
#399
126-036-093
8.17
#393
338.94
6.27
100.05
507.29
350.00
126-036-091
6.7
#383
127-037-006
1.3
#392
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101.93
146.75
TORRINGTON RD
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#384
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576.21
118.5
200.83
322.13
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98.2
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127-037-001
43.16
#191
143.47
696.45

Town of Litchfield, CT

Property Listing Report

Map Block Lot	126-036-091	Building #	1	Section #	1	Account	002199

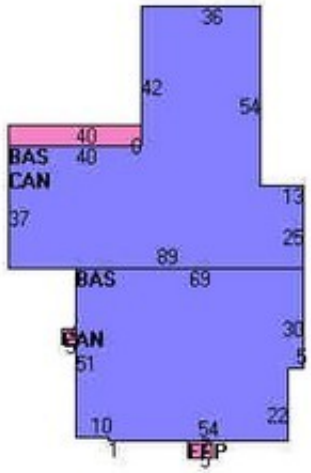
Property Information

Property Location	383 TORRINGTON RD
Owner	OLD TOLL GATE HILL LLC
Co-Owner	C/O WM PERSSONATTI
Mailing Address	PO BOX 265 LITCHFIELD CT 06759-0265
Land Use	201 Commercial
Land Class	C
Zoning Code	5
Census Tract	3

Street Index	225
Acreage	6.7
Utilities	UNKNOWN
Lot Setting/Desc	UNKNOWN UNKNOWN
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1919
Stories	1
Building Style	Multipurpose
Building Use	Comm/Ind
Building Condition	A
Interior Floors 1	Carpet
Interior Floors 2	Minimum
Total Rooms	0
Basement Garages	0
Occupancy	6.00
Building Grade	

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Bath Style	NA
Kitchen Style	NA
Roof Style	Flat
Roof Cover	Tar & Gravel
AC Type	None
Fireplaces	0

Exterior Walls	Concr/Cinder
Exterior Walls 2	Brick Veneer
Interior Walls	Typical
Interior Walls 2	NA
Heating Type	Forced Hot Air
Heating Fuel	Oil
Sq. Ft. Basement	
Fin BSMT Quality	
Extra Kitchens	

Report Created On 4/18/2021

Town of Litchfield, CT

Property Listing Report

Map Block Lot	126-036-091	Building #	1	Section #	1	Account	002199

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	387620	271340
Extras	0	0
Improvements		
Outbuildings	828600	580020
Land	323050	226140
Total	1539270	1077500

Outbuilding and Extra Features

Type	Description
Paving	16000 S.F.
Cell Tower	4 UNITS
Fence	200 L.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	8117	8117
Canopy	260	0
Finished Enclosed Porch	35	0
Total Area	8412	8117

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
BOLUS ANGELA M	0164/0267	1979-01-18	0
BOLUS,ANGELA M	0225/1159	1995-02-09	0
OLD TOLL GATE HILL LLC	0234/0333	1996-11-13	0

Report Created On 4/18/2021

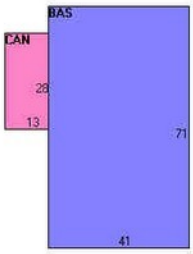
Town of Litchfield, CT

Property Listing Report

Map Block Lot	126-036-091	Building #	2	Section #	1	Account	002199

Photo

Sketch



Primary Construction Details

Year Built	1985	Bedrooms	0	Exterior Walls	Board & Batten
Stories	1	Full Bathrooms	0	Exterior Walls 2	Wood On Sheath
Building Style	Storage Building	Half Bathrooms	0	Interior Walls	Minimum
Building Use	Comm/Ind	Extra Fixtures	0	Interior Walls 2	NA
Building Condition	F	Bath Style	NA	Heating Type	None
Interior Floors 1	Concrete	Kitchen Style	NA	Heating Fuel	None
Interior Floors 2	NA	Roof Style	Gable	Sq. Ft. Basement	
Total Rooms	0	Roof Cover	Asphalt	Fin BSMT Quality	
Basement Garages	0	AC Type	None	Extra Kitchens	
Occupancy	1.00	Fireplaces	0		
Building Grade					

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	2911	2911
Canopy	364	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	3275	2911

Report Created On

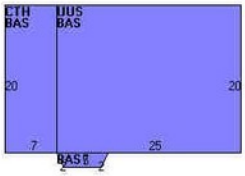
Town of Litchfield, CT

Property Listing Report

Map Block Lot	126-036-091	Building #	3	Section #	1	Account	002199

Photo

Sketch



Primary Construction Details

Year Built	1950	Bedrooms	0	Exterior Walls	Clapboard
Stories	2	Full Bathrooms	0	Exterior Walls 2	NA
Building Style	Store	Half Bathrooms	0	Interior Walls	Drywall
Building Use	Comm/Ind	Extra Fixtures	0	Interior Walls 2	NA
Building Condition	A	Bath Style	NA	Heating Type	Forced Hot Air
Interior Floors 1	Linoleum	Kitchen Style	NA	Heating Fuel	Propane
Interior Floors 2	NA	Roof Style	Gable	Sq. Ft. Basement	
Total Rooms	0	Roof Cover	Tar & Gravel	Fin BSMT Quality	
Basement Garages	0	AC Type	None	Extra Kitchens	
Occupancy	1.00	Fireplaces	0		
Building Grade					

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	652	652
Cathedral Ceiling	140	0
Unfinished Upper Story	500	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	1292	652

Report Created On

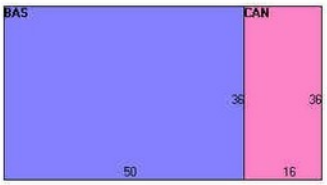
Town of Litchfield, CT

Property Listing Report

Map Block Lot	126-036-091	Building #	4	Section #	1	Account	002199

Photo

Sketch



Primary Construction Details

Year Built	1950	Bedrooms	0	Exterior Walls	Minimum
Stories	1	Full Bathrooms	0	Exterior Walls 2	Wood On Sheath
Building Style	Storage Building	Half Bathrooms	0	Interior Walls	Wall Board
Building Use	Comm/Ind	Extra Fixtures	0	Interior Walls 2	NA
Building Condition	A	Bath Style	NA	Heating Type	Forced Hot Air
Interior Floors 1	Concrete	Kitchen Style	NA	Heating Fuel	Oil
Interior Floors 2	NA	Roof Style	Gable	Sq. Ft. Basement	
Total Rooms	0	Roof Cover	Rolled	Fin BSMT Quality	
Basement Garages	0	AC Type	None	Extra Kitchens	
Occupancy	1.00	Fireplaces	0		
Building Grade					

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1800	1800
Canopy	576	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	2376	1800

Report Created On

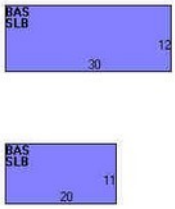
Town of Litchfield, CT

Property Listing Report

Map Block Lot	126-036-091	Building #	5	Section #	1	Account	002199

Photo

Sketch



Primary Construction Details

Year Built	2008	Bedrooms	0	Exterior Walls	Concr/Cinder
Stories	1	Full Bathrooms	0	Exterior Walls 2	NA
Building Style	Commercial	Half Bathrooms	0	Interior Walls	Minimum
Building Use	Comm/Ind	Extra Fixtures	0	Interior Walls 2	NA
Building Condition	A	Bath Style	NA	Heating Type	None
Interior Floors 1	Concrete	Kitchen Style	NA	Heating Fuel	None
Interior Floors 2	NA	Roof Style	Flat	Sq. Ft. Basement	
Total Rooms	0	Roof Cover	Tar & Gravel	Fin BSMT Quality	
Basement Garages	0	AC Type	None	Extra Kitchens	
Occupancy	0.00	Fireplaces	0		
Building Grade					

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	580	580
Slab	580	0

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	1160	580

Report Created On

Attachment 6

UNITED STATES POSTAL SERVICE ®

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 Robinson & Cole LLP 28 Trumbull Street Hartford, CT 06103-3597	3	3	neopost 04/20/2021 US POSTAGE $002.89⁰ ZIP 06103 041L12203937
	Postmaster, per *(name of receiving employee)* Y.P.		

USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Denise Rapp, First Selectman Town of Litchfield 74 West Street Litchfield, CT 06759				
2.	Dennis Tobin, Land Use Administrator Town of Litchfield 74 West Street Litchfield, CT 06759				
3.	Old Toll Gate Hill LLC c/o William Perssonatti P.O. Box 265 Litchfield, CT 06759-0265				
4.					
5.					
6.					

OLD STATE HOUSE STATION 06103
APR 20 2021
USPS

PS Form **3665**, January 2017 (Page ___ of ___) PSN 7530-17-000-5549

See Reverse for Instructions