Robinson+Cole

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March 27, 2017

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**
2715 Mountain Road, Suffield, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the 160-foot level of the existing 190.5 foot tower at 2715 Mountain Road in Suffield, Connecticut (the "Property"). The tower is owned by Crown Castle ("Crown"). The Council approved Cellco's use of this tower in 2008. Cellco now intends to replace six (6) of its existing antennas with three (3) model SBNHH-1D65B, 700 MHz antennas and three (3) model SBNHH-1D65B, 2100 MHz antennas, all at the same 160-foot level on the tower. Cellco also intends to install nine (9) remote radio heads ("RRHs") and one (1) HYBRIFLEX™ antenna cable. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cable.

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 Melissa Mack, First Selectman of the Town of Suffield; Bill Hawkins, Suffield's Town Planner; and Crown, the tower owner. The Town of Suffield is the Property owner.

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 RRH's will be located at the 160-foot level on the 190.5 tower.

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

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

4. The operation of the replacement 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 worst-case General Power Density table for Cellco's modified facility is included in Attachment 2.

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

6. The tower and its foundation can support Cellco's proposed modifications. (*See* Structural Analysis Report included in Attachment 3).

A copy of the Suffield parcel map and property owner information is included in Attachment 4

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:
Melissa Mack, Suffield First Selectman
Bill Hawkins, AICP, Suffield Town Planner
Crown
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

SBNHH-1D65B

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

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	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.6	0 ° | 14.5	0 ° | 17.4	0 ° | 17.8	0 ° | 18.1	0 ° | 18.2
	7 ° | 14.6	7 ° | 14.4	3 ° | 17.5	3 ° | 17.9	3 ° | 18.3	3 ° | 18.4
	14 ° | 14.2	14 ° | 13.6	7 ° | 17.4	7 ° | 17.9	7 ° | 18.2	7 ° | 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout

Product Specifications

SBNHH-1D65B

SBNHH 65

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

View from the front of the antenna

(Sizes of colored boxes are not true depictions of array sizes)

General Specifications

Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	6
RF Connector Quantity, low band	2
RF Connector Quantity, high band	4
RF Connector Interface	7-16 DIN Female
Color	Light gray

Product Specifications

SBNHH-1D65B

Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1851.0 mm | 72.9 in
Width	301.0 mm | 11.9 in
Depth	180.0 mm | 7.1 in
Net Weight, without mounting kit	18.4 kg | 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (1) | Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

Packed Dimensions

Length	2025.0 mm | 79.7 in
Width	390.0 mm | 15.4 in
Depth	296.0 mm | 11.7 in
Shipping Weight	31.0 kg | 68.3 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Included Products

Product Specifications

SBNHH-1D65B

BSAMNT-1 — 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

ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

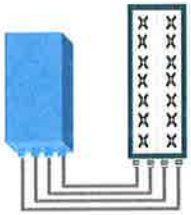
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

Alcatel·Lucent

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz – 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure – RX Diversity scheme	2 dB typ. (<2.5 dB max) – 2 or 4 way Rx diversity
Sizes (HxWxD) in mm (in.) Volume in L Weight in kg (lb) (w/o mounting HW)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield) 38 (with solar shield) 26 (57.2) (with solar shield)
DC voltage range DC power consumption	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 550W typical @100% RF load (in 2Tx or 4TX mode)
Environmental conditions Wind load (@150km/h or 93mph)	-40°C (-40°F) /+55°C (+131°F) IP65 Frontal: <200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
AISG interfaces	1 AISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) – 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

ALCATEL-LUCENT B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B25 RRH4x30 allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity, LTE carriers from 3 MHz up to 20 MHz and up to 65 MHz instantaneous bandwidth.

The Alcatel-Lucent B25 RRH4x30 is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

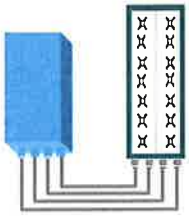
Its compactness and slim design makes the Alcatel-Lucent B25 RRH4x30 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- Ready for 3, 5, 10, 15 or 20MHz LTE carrier operation with 4Rx Diversity
- Ready to support up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- Convection-cooled (fan-less)
- Supports AISG 2.0 devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency and cell edge throughput through MIMO4
- Increases LTE coverage thanks to 4-way Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options (Pole or Wall)



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

Alcatel·Lucent

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (in 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2)	2.0 dB typ. (<2.5 dB max)
RX Diversity scheme	2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.)	538 x 304 x 182 (21.2" x 12.0" x 7.2")
Volume (w/ solar shield) in L	30
Weight (w/ solar shield) in kg (lb)	24 (53)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	580W typical @100% RF load
Environmental conditions	-40°C (-40°F) /+55°C (+131°F) IP65
Wind load (@150km/h or 93mph)	Frontal:<200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
AISG interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Misc. Interfaces	1 external alarms connector (4 alarms) 4 RF Tx & 4 RF Rx monitor ports 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

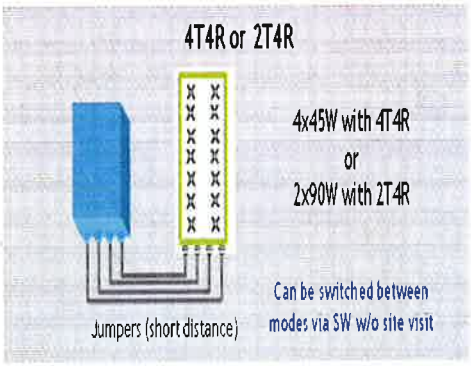
The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.

The Alcatel-Lucent B66a RRH4x45 is a compact (near zero-footprint) solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 2110 - 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports



BENEFITS

- Compact to reduce additional footprint when adding LTE in AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall

Features & Performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R selectable by SW)
Frequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz – 4 LTE MIMO carriers (in 70 MHz occupied bandwidth)
LTE carrier bandwidth	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure – RX Diversity scheme Receiver Sensivity (FRC A1-3)	2 dB typical (<2.5 dB max) – 2 or 4 way Rx diversity -104.5 dBm maximum
Sizes (HxWxD) in mm (in.) Volume in Liters Weight in kg (lb) (w/o mounting HW)	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield) 35.5 (with solar shield) 29.7 (without solar shield) 25.8kg (56.8lb) (with solar shield)
DC voltage range DC power consumption	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions Wind load (@150km/h or 93mph)	-40°C (-40°F) /+55°C (+131°F) UL50E Type 4 Enclosure 250N (56lb) Frontal/150N (34lb) Lateral
Antenna ports	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

Alcatel·Lucent

Product Data Sheet HB158-1-08U8-S8J18

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

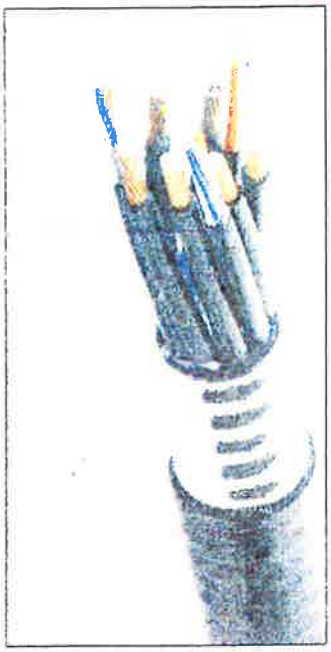


Figure 1: HYBRIFLEX Series

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics – minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding – Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket – Ensures long-lasting cable protection

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket:	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm²(8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

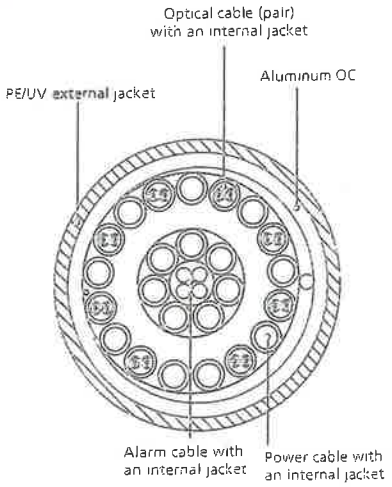


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Suffield W								
Tower Height: 190.5ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*AT&T	2	565	170	880	0.0151	0.5867	0.26%	
*AT&T	2	875	170	1900	0.0234	1.0000	0.23%	
*AT&T	1	283	170	880	0.0038	0.5867	0.06%	
*AT&T	4	525	170	1900	0.0281	1.0000	0.28%	
*AT&T	1	1615	170	734	0.0216	0.4893	0.44%	
*Nextel	9	100	192	851	0.0094	0.5673	0.16%	
*T-Mobile	6	1102	182	1900	0.0768	1.0000	0.77%	
*T-Mobile	1	865	182	700	0.0100	0.4667	0.22%	
Verizon PCS	**0**	**0**	**0**	**0.0000**	**1970**	**1.0000**	**0.00%**	
Verizon Cellular	**9**	**463**	**160**	**0.0585**	**869**	**0.5793**	**10.10%**	
Verizon AWS	**1**	**6907**	**160**	**0.0970**	**2145**	**1.0000**	**9.70%**	
Verizon 700	**1**	**1836**	**160**	**0.0258**	**746**	**0.4973**	**5.19%**	
								27.42%
* Source: Siting Council								

ATTACHMENT 3

December 16, 2016

Charles Trask
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(980) 209-8228

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	N/A
	Carrier Site Name:	N/A
Crown Castle Designation:	**Crown Castle BU Number:**	801485
	Crown Castle Site Name:	CT SUFFIELD 1 CAC 801485
	Crown Castle JDE Job Number:	412574
	Crown Castle Work Order Number:	1337605
	Crown Castle Application Number:	371646 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	84855.007.01
Site Data:	**2715 Mountain Rd., Suffield, Hartford County, CT** **Latitude *42° 0' 41.8"*, Longitude *-72° 43' 43.6"*** **190.5 Foot - Monopole**	

Dear Charles Trask,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 982178, in accordance with application 371646, revision 0.

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

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
B+T Engineering, Inc.

Zach Smith
Project Engineer

Scott S. Vance, P.E.
Engineer of Record
COA: PEC.0001564 Expires: 02/10/2017

STATE OF CONNECTICUT SCOTT S. VANCE 31627 LICENSED PROFESSIONAL ENGINEER

12/16/16

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 190.5 ft. Monopole tower designed by FWT Inc. in May of 2000. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F. The foundation has been modified by B+T Group in July of 2012 and those modifications were incorporated in this analysis.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 93 mph with no ice, 50 mph with 1 inch ice thickness and 60 mph under service loads, exposure category C with topographic category 1 and crest height of 0 feet.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
160.0	160.0	3	Alcatel Lucent	B13 RRH 4X30	1	1-5/8	--
		3	Alcatel Lucent	B66A RRH4X45			
		3	Alcatel Lucent	RRH2X60-PCS			
		6	Commscope	SBNHH-1D65B			
		1	RFS Celwave	DB-T1-6Z-8AB-0Z			

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
191.0	192.0	12	Decibel	DB844H90-XY	12	1-5/8	2
	191.0	1	--	Platform Mount [LP 712-1]			
180.0	182.0	3	Commscope	ATBT-BOTTOM-24V	12	1-5/8	1
		3	Commscope	LNX-6515DS-VTM			
		6	Decibel	PCS 1900 TMA DUAL DUP			
		3	Ems Wireless	RR90-17-02DP			
	180.0	1	--	T-Arm Mount [TA 701-3]			
168.0	171.0	3	Ericsson	RRUS-11	12 2 1	1-5/8 3/4 3/8	1
		2	Powerwave Tech.	LGP21401			
		1	Raycap	DC6-48-60-18-8F			
	170.0	1	Kmw Comm.	AM-X-CD-14-65-00T-RET			
		6	Powerwave Tech.	7770.00			
		4	Powerwave Tech.	LGP21401			
		6	Powerwave Tech.	LGP21901			
		2	Powerwave Tech.	P65-17-XLH-RR			
	168.0	1	--	Platform Mount [LP 303-1]			
160.0	160.0	**6**	**Antel**	**LPA-171080-12CF-EDIN-2**	**6**	**1-5/8**	**3**
		1	Antel	BXA-70063-6CF-2	13	1-5/8	1
		2	Antel	BXA-70063-6CF-EDIN-0			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		4	Antel	LPA-80063-6CF-EDIN			
		2	Antel	LPA-80063-6CF-EDIN-5			
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z			
		1	--	Platform Mount [LP 601-1]			

Notes:
1) Existing Equipment
2) Abandoned Equipment; Considered In This Analysis
3) **Equipment To Be Removed; Not Considered In This Analysis**

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
192	192	1	Generic	12' LPS Mount w/service grating	--	--
		12	Swedcom	ALP-9011-E-DIN		
182	182	1	Generic	12' LPS Mount w/service grating	--	--
		12	Swedcom	ALP-9212-N		
172	172	1	Generic	12' LPS Mount w/service grating	--	--
		12	Swedcom	ALP-9212-N		
162	162	1	Generic	12' LPS Mount w/service grating	--	--
		12	Swedcom	ALP-9212-N		
152	152	1	Generic	12' LPS Mount w/service grating	--	--
		12	Swedcom	ALP-9212-N		
142	142	1	Generic	12' LPS Mount w/service grating	--	--
		12	Swedcom	ALP-9212-N		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	Verizon Wireless Co-Locate, Revision # 0	371646	CCI Sites
Tower Manufacturer Drawing	FWT Inc., Job No. 21281000	942443	CCI Sites
Tower Modification Drawing	B+T Group, Project No. 84855.001	3268394	CCI Sites
Post Modification Inspection	TEP, Project No. 127143, Date: 03/29/2013	3770639	CCI Sites
Foundation Drawing	FWT Inc. Job No. 21281000	1118796	CCI Sites
Geotech Report	Clough, Harbour & Associates LLP, Project No. 8961.07.06	2240855	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 12/15/2016	CCI Sites

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Mount areas and weights are assumed based on photographs provided.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	190.5 - 143.17	Pole	TP27.778x14.75x0.25	1	-11.134	1540.760	70.5	Pass
L2	143.17 - 93.753	Pole	TP40.88x26.292x0.375	2	-22.280	3417.140	66.2	Pass
L3	93.753 - 46.083	Pole	TP53.251x38.663x0.375	3	-36.676	4102.080	74.8	Pass
L4	46.083 - 0	Pole	TP65.185x50.597x0.375	4	-57.187	4685.400	81.5	Pass
							Summary	
						Pole (L4)	81.5	Pass
						Rating =	81.5	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	66.9	Pass
1	Base Plate	Base	35.7	Pass
1	Base Foundation Structural	Base	64.2	Pass
1	Base Foundation Soil Interaction	Base	47.0	Pass

Structure Rating (max from all components) =	81.5%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

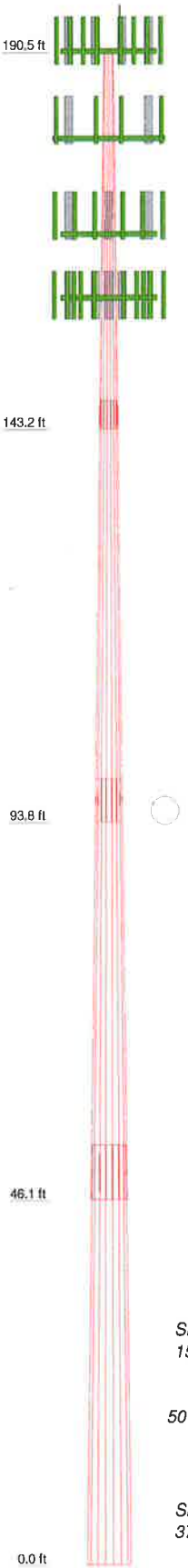
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	47.330	18	0.250	3.583	14.750	27.778	A572-65	2.7
2	53.000	18	0.375	5.330	26.292	40.880		7.1
3	53.000	18	0.375	6.917	38.663	53.251		9.8
4	53.000	18	0.375		50.597	65.185		12.3
								31.9



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8" x 6' (E)	193.5	(2) LGP21401 (E)	168
(4) DB844H90-XY w/ Mount Pipe (AB)	191	(2) LGP21901 (E)	168
(4) DB844H90-XY w/ Mount Pipe (AB)	191	(2) LGP21901 (E)	168
(4) DB844H90-XY w/ Mount Pipe (AB)	191	(2) LGP21901 (E)	168
Platform Mount [LP 712-1] (AB)	191	DC6-48-60-18-8F (E)	168
RR90-17-02DP w/ Mount Pipe (E)	180	Platform Mount [LP 303-1] (E)	168
RR90-17-02DP w/ Mount Pipe (E)	180	(2) LPA-80063-6CF-EDIN w/ Mount Pipe (E)	160
RR90-17-02DP w/ Mount Pipe (E)	180		
LNX-6515DS-VTM w/ Mount Pipe (E)	180	(2) LPA-80063-6CF-EDIN w/ Mount Pipe (E)	160
LNX-6515DS-VTM w/ Mount Pipe (E)	180		
LNX-6515DS-VTM w/ Mount Pipe (E)	180	(2) LPA-80063-6CF-EDIN-5 w/ Mount Pipe (E)	160
(2) PCS 1900 TMA DUAL DUP (E)	180	BXA-70063-6CF-EDIN-0 w/ Mount Pipe (E)	160
(2) PCS 1900 TMA DUAL DUP (E)	180		
(2) PCS 1900 TMA DUAL DUP (E)	180	BXA-70063-6CF-EDIN-0 w/ Mount Pipe (E)	160
ATBT-BOTTOM-24V (E)	180		
ATBT-BOTTOM-24V (E)	180	BXA-70063-6CF-2 w/ Mount Pipe (E)	160
ATBT-BOTTOM-24V (E)	180	DB-T1-6Z-8AB-0Z (E)	160
6' x 2" Mount Pipe (E)	180	(2) SBNHH-1D65B w/ Mount Pipe (P)	160
6' x 2" Mount Pipe (E)	180	(2) SBNHH-1D65B w/ Mount Pipe (P)	160
6' x 2" Mount Pipe (E)	180	(2) SBNHH-1D65B w/ Mount Pipe (P)	160
T-Arm Mount [TA 701-3] (E)	180	RRH2X60-PCS (P)	160
(2) 7770.00 w/ Mount Pipe (E)	168	RRH2X60-PCS (P)	160
(2) 7770.00 w/ Mount Pipe (E)	168	RRH2X60-PCS (P)	160
(2) 7770.00 w/ Mount Pipe (E)	168	B13 RRH 4X30 (P)	160
P65-17-XLH-RR w/ Mount Pipe (E)	168	B13 RRH 4X30 (P)	160
P65-17-XLH-RR w/ Mount Pipe (E)	168	B13 RRH 4X30 (P)	160
AM-X-CD-14-65-00T-RET w/ Mount Pipe (E)	168	B66A RRH4X45 (P)	160
		B66A RRH4X45 (P)	160
RRUS-11 (E)	168	B66A RRH4X45 (P)	160
RRUS-11 (E)	168	DB-T1-6Z-8AB-0Z (P)	160
RRUS-11 (E)	168	Platform Mount [LP 601-1] (E)	160
(2) LGP21401 (E)	168		
(2) LGP21401 (E)	168		

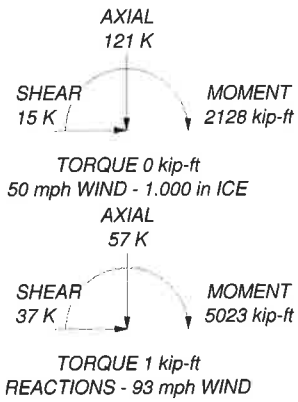
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 81.5%

ALL REACTIONS ARE FACTORED



TORQUE 0 kip-ft
50 mph WIND - 1.000 in ICE

TORQUE 1 kip-ft
REACTIONS - 93 mph WIND

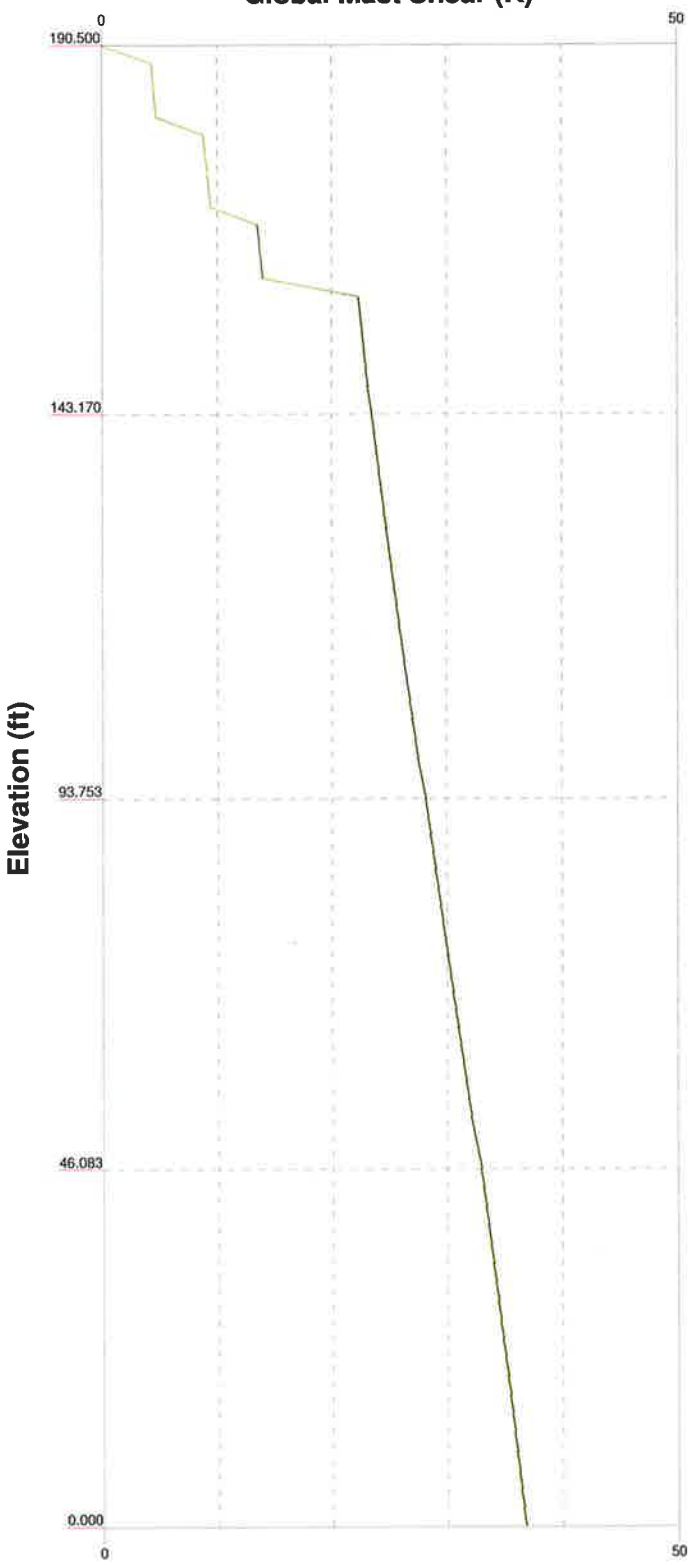
B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: ((918) 295-0265

Job: 84855.007.01 - CT SUFFIELD 1 CAC 801485, CT (BU# 8014			
Project:			
Client: Crown Castle	Drawn by: M.Nayak	App'd:	
Code: TIA-222-G	Date: 12/16/16	Scale: NTS	
Path:		Dwg No. E-1	

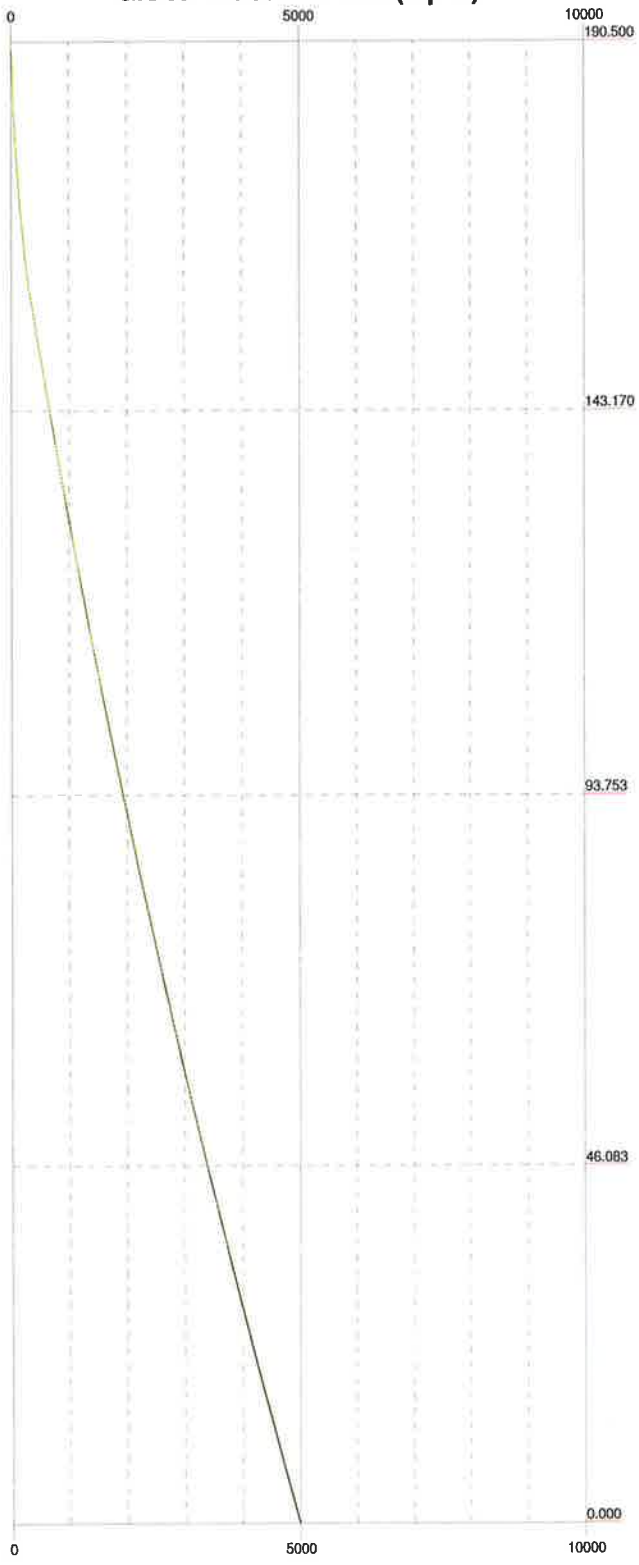
Vx Vz

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



B+T Group
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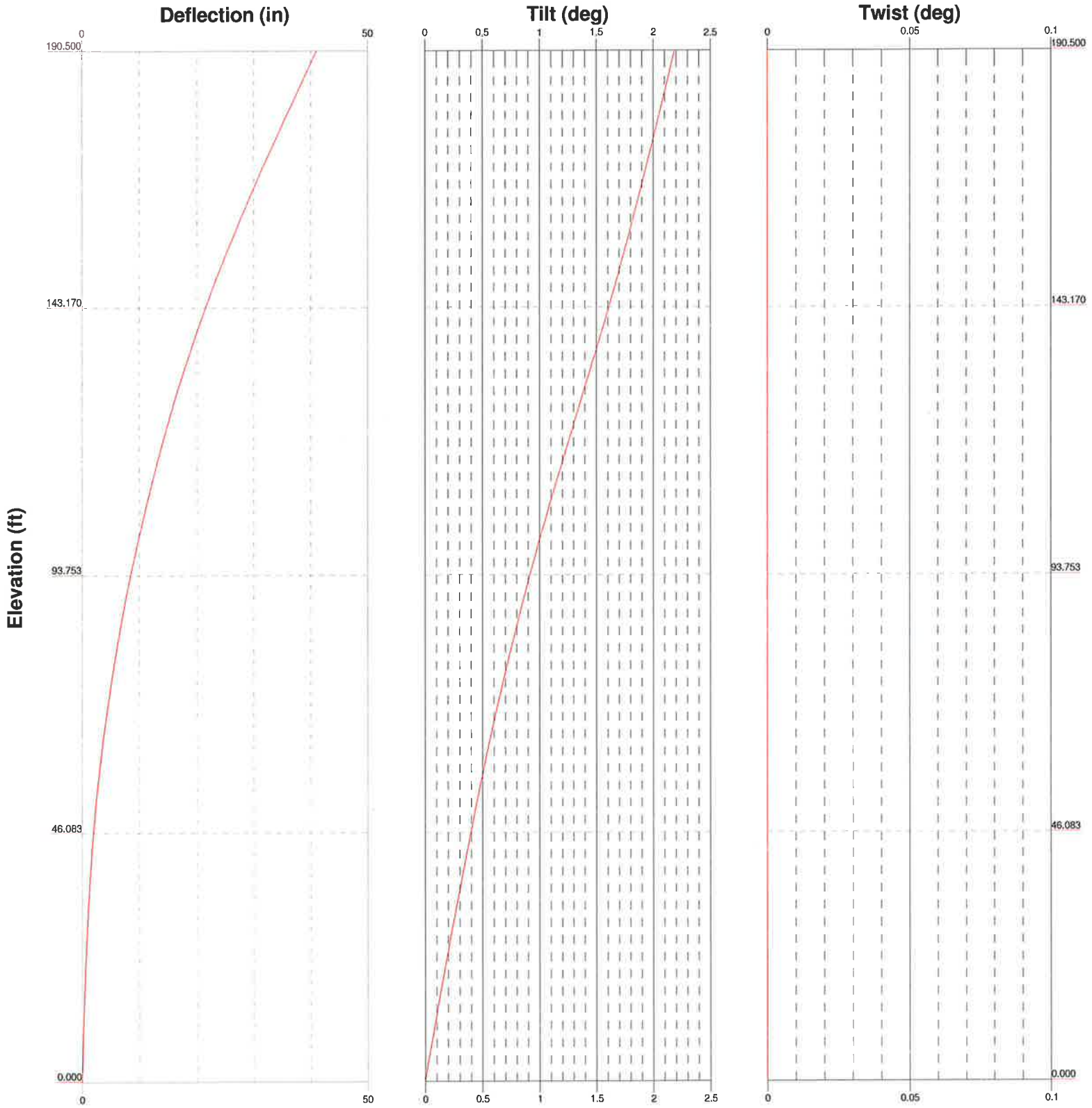
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: ((918) 295-0265

Job: 84855.007.01 - CT SUFFIELD 1 CAC 801485, CT (BU# 8014			
Project:			
Client: Crown Castle	Drawn by: M.Nayak	App'd:	
Code: TIA-222-G	Date: 12/16/16	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-G - Service - 60 mph

Maximum Values



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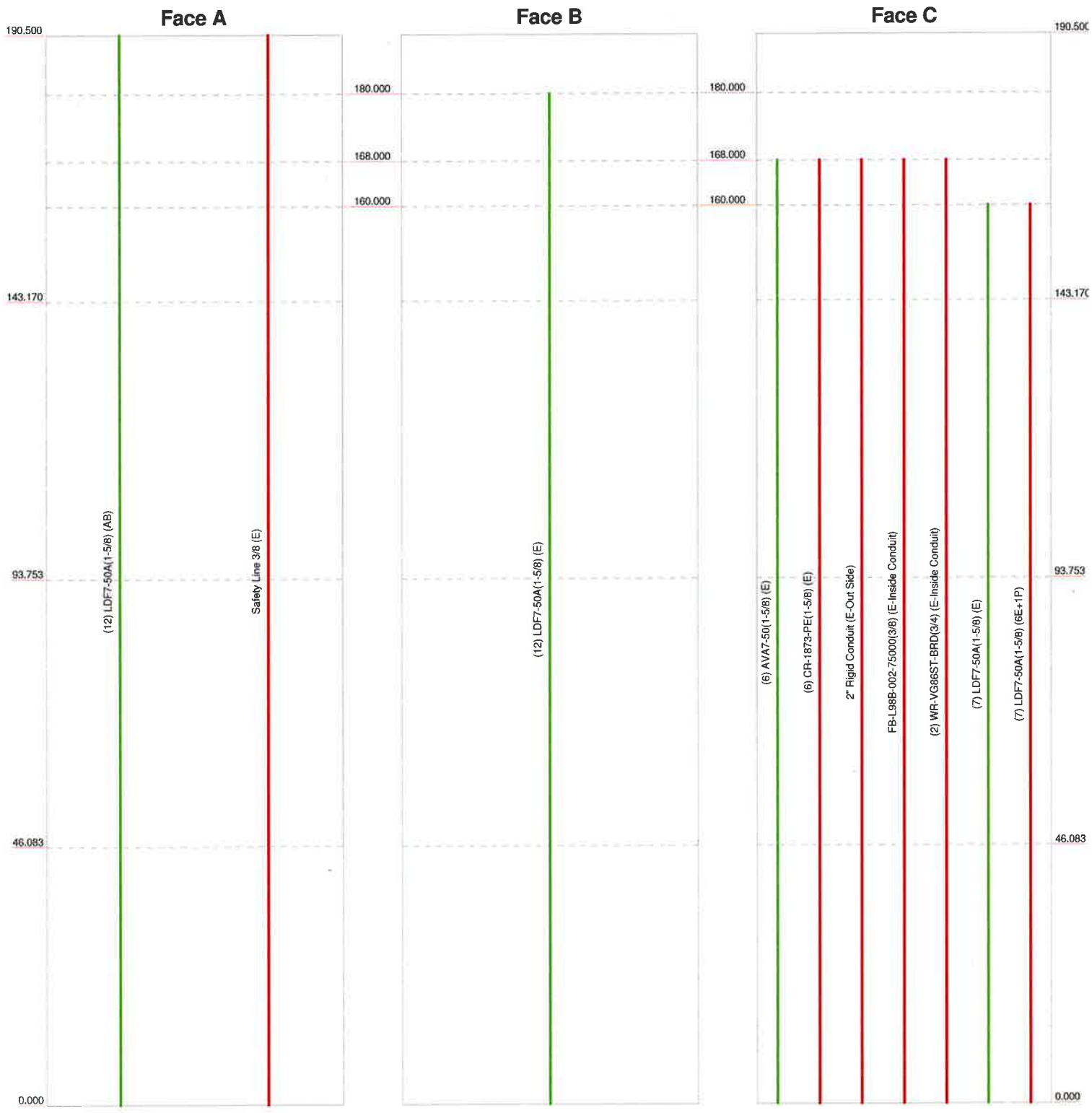
Job: 84855.007.01 - CT SUFFIELD 1 CAC 801485, CT (BU# 8014			
Project:			
Client: Crown Castle	Drawn by: M.Nayak	App'd:	
Code: TIA-222-G	Date: 12/16/16	Scale: NTS	
Path:		Dwg No. E-5	

0' - 190'6"

Round | Flat | App In Face | App Out Face | Truss Leg



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: ((918) 295-0265

Job: 84855.007.01 - CT SUFFIELD 1 CAC 801485, CT (BU# 8014			
Project:			
Client: Crown Castle	Drawn by: M.Nayak	App'd:	
Code: TIA-222-G	Date: 12/16/16	Scale: NTS	
Path:		Dwg No. E-7	

tnxTower	Job: 84855.007.01 - CT SUFFIELD 1 CAC 801485, CT (BU# 801485)	Page: 1 of 16
B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: ((918) 295-0265	Project:	Date: 13:12:16 12/16/16
	Client: Crown Castle	Designed by: M.Nayak

Tower Input Data

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

Tower is located in Hartford County, Connecticut.
Basic wind speed of 93 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	190.500-143.170	47.330	3.583	18	14.750	27.778	0.250	1.000	A572-65 (65 ksi)
L2	143.170-93.753	53.000	5.330	18	26.292	40.880	0.375	1.500	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	93.753-46.083	53.000	6.917	18	38.663	53.251	0.375	1.500	A572-65 (65 ksi)
L4	46.083-0.000	53.000		18	50.597	65.185	0.375	1.500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	14.978	11.506	305.625	5.148	7.493	40.788	611.651	5.754	2.156	8.624
	28.207	21.843	2091.262	9.772	14.111	148.198	4185.275	10.924	4.449	17.796
L2	27.699	30.847	2617.684	9.200	13.356	195.990	5238.812	15.427	3.967	10.58
	41.511	48.211	9993.130	14.379	20.767	481.201	19999.410	24.110	6.535	17.426
L3	40.749	45.572	8440.358	13.592	19.641	429.737	16891.822	22.790	6.145	16.386
	54.072	62.936	22230.612	18.771	27.052	821.788	44490.476	31.474	8.712	23.232
L4	53.311	59.777	19048.497	17.829	25.703	741.090	38122.058	29.894	8.245	21.987
	66.191	77.140	40935.651	23.008	33.114	1236.205	81925.167	38.577	10.813	28.833

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 190.500-143.170				1	1	1			
L2 143.170-93.753				1	1	1			
L3 93.753-46.083				1	1	1			
L4 46.083-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CR-1873-PE(1-5/8) (E)	C	Surface Ar (CaAa)	168.000 - 0.000	6	6	-0.450 -0.400	1.873		0.001
2" Rigid Conduit (E-Out Side)	C	Surface Ar (CaAa)	168.000 - 0.000	1	1	-0.450 -0.430	2.000		0.003
FB-L98B-002-75000(3/8) (E-Inside Conduit)	C	Surface Ar (CaAa)	168.000 - 0.000	1	1	-0.450 -0.430	0.000		0.000
WR-VG86ST-BRD(3/4) (E-Inside Conduit)	C	Surface Ar (CaAa)	168.000 - 0.000	2	2	-0.450 -0.430	0.000		0.001
LDF7-50A(1-5/8) (6E+1P) *_*	C	Surface Ar (CaAa)	160.000 - 0.000	7	7	0.400 0.470	1.980		0.001
Safety Line 3/8 (E)	A	Surface Ar (CaAa)	190.500 - 0.000	1	1	0.000 0.000	0.375		0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF7-50A(1-5/8) (AB)	A	No	Inside Pole	190.500 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
-								
LDF7-50A(1-5/8) (E)	B	No	Inside Pole	180.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
-								
AVA7-50(1-5/8) (E)	C	No	Inside Pole	168.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
-								
LDF7-50A(1-5/8) (E)	C	No	Inside Pole	160.000 - 0.000	7	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	190.500-143.170	A	0.000	0.000	1.775	0.000	0.476
		B	0.000	0.000	0.000	0.000	0.362
		C	0.000	0.000	56.196	0.000	0.526
L2	143.170-93.753	A	0.000	0.000	1.853	0.000	0.497
		B	0.000	0.000	0.000	0.000	0.486
		C	0.000	0.000	133.910	0.000	1.229
L3	93.753-46.083	A	0.000	0.000	1.788	0.000	0.480
		B	0.000	0.000	0.000	0.000	0.469
		C	0.000	0.000	129.176	0.000	1.185
L4	46.083-0.000	A	0.000	0.000	1.728	0.000	0.464
		B	0.000	0.000	0.000	0.000	0.453
		C	0.000	0.000	124.876	0.000	1.146

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	190.500-143.170	A	2.349	0.000	0.000	24.007	0.000	0.846
		B		0.000	0.000	0.000	0.000	0.362
		C		0.000	0.000	131.371	0.000	2.539
L2	143.170-93.753	A	2.270	0.000	0.000	25.066	0.000	0.883
		B		0.000	0.000	0.000	0.000	0.486
		C		0.000	0.000	298.390	0.000	5.811
L3	93.753-46.083	A	2.154	0.000	0.000	23.430	0.000	0.829
		B		0.000	0.000	0.000	0.000	0.469
		C		0.000	0.000	283.530	0.000	5.411
L4	46.083-0.000	A	1.931	0.000	0.000	21.579	0.000	0.770

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.000	0.000	0.453
		C		0.000	0.000	267.933	0.000	4.960

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	190.500-143.170	0.117	0.797	0.231	0.757
L2	143.170-93.753	-0.077	1.327	0.232	1.285
L3	93.753-46.083	-0.087	1.506	0.283	1.596
L4	46.083-0.000	-0.094	1.632	0.315	1.847

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	6	CR-1873-PE(1-5/8)	143.17 - 168.00	1.0000	1.0000
L1	7	2" Rigid Conduit	143.17 - 168.00	1.0000	1.0000
L1	8	FB-L98B-002-75000(3/8)	143.17 - 168.00	1.0000	1.0000
L1	9	WR-VG86ST-BRD(3/4)	143.17 - 168.00	1.0000	1.0000
L1	13	LDF7-50A(1-5/8)	143.17 - 160.00	1.0000	1.0000
L1	17	Safety Line 3/8	143.17 - 190.50	1.0000	1.0000
L2	6	CR-1873-PE(1-5/8)	93.75 - 143.17	1.0000	1.0000
L2	7	2" Rigid Conduit	93.75 - 143.17	1.0000	1.0000
L2	8	FB-L98B-002-75000(3/8)	93.75 - 143.17	1.0000	1.0000
L2	9	WR-VG86ST-BRD(3/4)	93.75 - 143.17	1.0000	1.0000
L2	13	LDF7-50A(1-5/8)	93.75 - 143.17	1.0000	1.0000
L2	17	Safety Line 3/8	93.75 - 143.17	1.0000	1.0000
L3	6	CR-1873-PE(1-5/8)	46.08 - 93.75	1.0000	1.0000
L3	7	2" Rigid Conduit	46.08 - 93.75	1.0000	1.0000
L3	8	FB-L98B-002-75000(3/8)	46.08 - 93.75	1.0000	1.0000
L3	9	WR-VG86ST-BRD(3/4)	46.08 - 93.75	1.0000	1.0000
L3	13	LDF7-50A(1-5/8)	46.08 - 93.75	1.0000	1.0000
L3	17	Safety Line 3/8	46.08 - 93.75	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 5/8" x 6'	B	From Leg	1.000	0.000	193.500	No Ice	0.375	0.375	0.033
(E)			0.000			1/2" Ice	0.989	0.989	0.037
			0.000			1" Ice	1.619	1.619	0.045
_									
(4) DB844H90-XY w/ Mount Pipe	A	From Leg	4.000	0.000	191.000	No Ice	3.104	4.984	0.028
			0.000			1/2" Ice	3.476	5.600	0.068
(AB)			1.000			1" Ice	3.848	6.227	0.113
(4) DB844H90-XY w/ Mount Pipe	B	From Leg	4.000	0.000	191.000	No Ice	3.104	4.984	0.028
			0.000			1/2" Ice	3.476	5.600	0.068
(AB)			1.000			1" Ice	3.848	6.227	0.113
(4) DB844H90-XY w/ Mount Pipe	C	From Leg	4.000	0.000	191.000	No Ice	3.104	4.984	0.028
			0.000			1/2" Ice	3.476	5.600	0.068
(AB)			1.000			1" Ice	3.848	6.227	0.113
Platform Mount [LP 712-1]	C	None		0.000	191.000	No Ice	24.530	24.530	1.335
(AB)						1/2" Ice	29.940	29.940	1.646
						1" Ice	35.350	35.350	1.956
_									
RR90-17-02DP w/ Mount Pipe	A	From Leg	4.000	0.000	180.000	No Ice	4.593	3.319	0.034
			0.000			1/2" Ice	5.018	4.089	0.072
(E)			2.000			1" Ice	5.436	4.784	0.115
RR90-17-02DP w/ Mount Pipe	B	From Leg	4.000	0.000	180.000	No Ice	4.593	3.319	0.034
			0.000			1/2" Ice	5.018	4.089	0.072
(E)			2.000			1" Ice	5.436	4.784	0.115
RR90-17-02DP w/ Mount Pipe	C	From Leg	4.000	0.000	180.000	No Ice	4.593	3.319	0.034
			0.000			1/2" Ice	5.018	4.089	0.072
(E)			2.000			1" Ice	5.436	4.784	0.115
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.000	0.000	180.000	No Ice	11.683	9.842	0.083
			0.000			1/2" Ice	12.404	11.366	0.173
(E)			2.000			1" Ice	13.135	12.914	0.273
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.000	0.000	180.000	No Ice	11.683	9.842	0.083
			0.000			1/2" Ice	12.404	11.366	0.173
(E)			2.000			1" Ice	13.135	12.914	0.273
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.000	0.000	180.000	No Ice	11.683	9.842	0.083
			0.000			1/2" Ice	12.404	11.366	0.173
(E)			2.000			1" Ice	13.135	12.914	0.273
(2) PCS 1900 TMA DUAL DUP	A	From Leg	4.000	0.000	180.000	No Ice	0.539	0.529	0.018
			0.000			1/2" Ice	0.638	0.628	0.023
(E)			2.000			1" Ice	0.745	0.734	0.031
(2) PCS 1900 TMA DUAL DUP	B	From Leg	4.000	0.000	180.000	No Ice	0.539	0.529	0.018
			0.000			1/2" Ice	0.638	0.628	0.023
(E)			2.000			1" Ice	0.745	0.734	0.031
(2) PCS 1900 TMA DUAL DUP	C	From Leg	4.000	0.000	180.000	No Ice	0.539	0.529	0.018
			0.000			1/2" Ice	0.638	0.628	0.023
(E)			2.000			1" Ice	0.745	0.734	0.031
ATBT-BOTTOM-24V	A	From Leg	4.000	0.000	180.000	No Ice	0.104	0.065	0.003
(E)			0.000			1/2" Ice	0.148	0.102	0.004
			2.000			1" Ice	0.199	0.147	0.006
ATBT-BOTTOM-24V	B	From Leg	4.000	0.000	180.000	No Ice	0.104	0.065	0.003
(E)			0.000			1/2" Ice	0.148	0.102	0.004
			2.000			1" Ice	0.199	0.147	0.006
ATBT-BOTTOM-24V	C	From Leg	4.000	0.000	180.000	No Ice	0.104	0.065	0.003
(E)			0.000			1/2" Ice	0.148	0.102	0.004
			2.000			1" Ice	0.199	0.147	0.006
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	180.000	No Ice	1.425	1.425	0.022

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	180.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	180.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
T-Arm Mount [TA 701-3]	C	None		0.000	180.000	No Ice	27.950	27.950	1.092
(E)						1/2" Ice	37.260	37.260	1.407
						1" Ice	46.570	46.570	1.722
-									
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	168.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	168.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	168.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
P65-17-XLH-RR w/ Mount Pipe	A	From Leg	4.000	0.000	168.000	No Ice	11.704	8.938	0.092
			0.000			1/2" Ice	12.424	10.450	0.178
(E)			2.000			1" Ice	13.153	11.986	0.273
P65-17-XLH-RR w/ Mount Pipe	B	From Leg	4.000	0.000	168.000	No Ice	11.704	8.938	0.092
			0.000			1/2" Ice	12.424	10.450	0.178
(E)			2.000			1" Ice	13.153	11.986	0.273
AM-X-CD-14-65-00T-RET w/ Mount Pipe	C	From Leg	4.000	0.000	168.000	No Ice	5.232	4.015	0.035
			0.000			1/2" Ice	5.618	4.633	0.080
(E)			2.000			1" Ice	6.012	5.257	0.131
RRUS-11	A	From Leg	4.000	0.000	168.000	No Ice	2.784	1.187	0.048
(E)			0.000			1/2" Ice	2.992	1.334	0.068
			3.000			1" Ice	3.207	1.490	0.092
RRUS-11	B	From Leg	4.000	0.000	168.000	No Ice	2.784	1.187	0.048
(E)			0.000			1/2" Ice	2.992	1.334	0.068
			3.000			1" Ice	3.207	1.490	0.092
RRUS-11	C	From Leg	4.000	0.000	168.000	No Ice	2.784	1.187	0.048
(E)			0.000			1/2" Ice	2.992	1.334	0.068
			3.000			1" Ice	3.207	1.490	0.092
(2) LGP21401	A	From Leg	4.000	0.000	168.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			2.000			1" Ice	1.381	0.348	0.030
(2) LGP21401	B	From Leg	4.000	0.000	168.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			3.000			1" Ice	1.381	0.348	0.030
(2) LGP21401	C	From Leg	4.000	0.000	168.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			2.000			1" Ice	1.381	0.348	0.030
(2) LGP21901	A	From Leg	4.000	0.000	168.000	No Ice	0.231	0.158	0.006
(E)			0.000			1/2" Ice	0.294	0.213	0.008
			2.000			1" Ice	0.365	0.276	0.011
(2) LGP21901	B	From Leg	4.000	0.000	168.000	No Ice	0.231	0.158	0.006
(E)			0.000			1/2" Ice	0.294	0.213	0.008
			2.000			1" Ice	0.365	0.276	0.011
(2) LGP21901	C	From Leg	4.000	0.000	168.000	No Ice	0.231	0.158	0.006
(E)			0.000			1/2" Ice	0.294	0.213	0.008
			2.000			1" Ice	0.365	0.276	0.011

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
DC6-48-60-18-8F	A	From Leg	4.000	0.000	168.000	No Ice	0.917	0.917	0.019
(E)			0.000			1/2" Ice	1.458	1.458	0.037
			3.000			1" Ice	1.643	1.643	0.057
Platform Mount [LP 303-1]	C	None		0.000	168.000	No Ice	14.660	14.660	1.250
(E)						1/2" Ice	18.870	18.870	1.481
						1" Ice	23.080	23.080	1.713
_									
(2) LPA-80063-6CF-EDIN	A	From Leg	4.000	0.000	160.000	No Ice	9.970	10.248	0.052
w/ Mount Pipe			0.000			1/2" Ice	10.541	11.422	0.145
(E)			0.000			1" Ice	11.077	12.309	0.247
(2) LPA-80063-6CF-EDIN	B	From Leg	4.000	0.000	160.000	No Ice	9.970	10.248	0.052
w/ Mount Pipe			0.000			1/2" Ice	10.541	11.422	0.145
(E)			0.000			1" Ice	11.077	12.309	0.247
(2) LPA-80063-6CF-EDIN-5	C	From Leg	4.000	0.000	160.000	No Ice	9.970	10.248	0.052
w/ Mount Pipe			0.000			1/2" Ice	10.541	11.422	0.145
(E)			0.000			1" Ice	11.077	12.309	0.247
BXA-70063-6CF-EDIN-0 w/	A	From Leg	4.000	0.000	160.000	No Ice	7.806	5.801	0.042
Mount Pipe			0.000			1/2" Ice	8.357	6.953	0.103
(E)			0.000			1" Ice	8.872	7.819	0.171
BXA-70063-6CF-EDIN-0 w/	B	From Leg	4.000	0.000	160.000	No Ice	7.806	5.801	0.042
Mount Pipe			0.000			1/2" Ice	8.357	6.953	0.103
(E)			0.000			1" Ice	8.872	7.819	0.171
BXA-70063-6CF-2 w/ Mount	C	From Leg	4.000	0.000	160.000	No Ice	7.806	5.801	0.042
Pipe			0.000			1/2" Ice	8.357	6.953	0.103
(E)			0.000			1" Ice	8.872	7.819	0.171
DB-T1-6Z-8AB-0Z	C	From Leg	4.000	0.000	160.000	No Ice	4.800	2.000	0.044
(E)			0.000			1/2" Ice	5.070	2.193	0.080
			0.000			1" Ice	5.348	2.393	0.120
(2) SBNHH-1D65B w/	A	From Leg	4.000	0.000	160.000	No Ice	8.397	7.071	0.066
Mount Pipe			0.000			1/2" Ice	8.960	8.260	0.135
(P)			0.000			1" Ice	9.490	9.170	0.212
(2) SBNHH-1D65B w/	B	From Leg	4.000	0.000	160.000	No Ice	8.397	7.071	0.066
Mount Pipe			0.000			1/2" Ice	8.960	8.260	0.135
(P)			0.000			1" Ice	9.490	9.170	0.212
(2) SBNHH-1D65B w/	C	From Leg	4.000	0.000	160.000	No Ice	8.397	7.071	0.066
Mount Pipe			0.000			1/2" Ice	8.960	8.260	0.135
(P)			0.000			1" Ice	9.490	9.170	0.212
RRH2X60-PCS	A	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(P)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
RRH2X60-PCS	B	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(P)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
RRH2X60-PCS	C	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(P)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
B13 RRH 4X30	A	From Leg	4.000	0.000	160.000	No Ice	2.055	1.320	0.056
(P)			0.000			1/2" Ice	2.241	1.475	0.073
			0.000			1" Ice	2.433	1.638	0.093
B13 RRH 4X30	B	From Leg	4.000	0.000	160.000	No Ice	2.055	1.320	0.056
(P)			0.000			1/2" Ice	2.241	1.475	0.073
			0.000			1" Ice	2.433	1.638	0.093
B13 RRH 4X30	C	From Leg	4.000	0.000	160.000	No Ice	2.055	1.320	0.056
(P)			0.000			1/2" Ice	2.241	1.475	0.073
			0.000			1" Ice	2.433	1.638	0.093
B66A RRH4X45	A	From Leg	4.000	0.000	160.000	No Ice	2.580	1.630	0.057
(P)			0.000			1/2" Ice	2.794	1.811	0.077

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	3.015	1.999	0.101
B66A RRH4X45 (P)	B	From Leg	4.000	0.000	160.000	No Ice	2.580	1.630	0.057
			0.000			1/2" Ice	2.794	1.811	0.077
			0.000			1" Ice	3.015	1.999	0.101
B66A RRH4X45 (P)	C	From Leg	4.000	0.000	160.000	No Ice	2.580	1.630	0.057
			0.000			1/2" Ice	2.794	1.811	0.077
			0.000			1" Ice	3.015	1.999	0.101
DB-T1-6Z-8AB-0Z (P)	B	From Leg	4.000	0.000	160.000	No Ice	4.800	2.000	0.044
			0.000			1/2" Ice	5.070	2.193	0.080
			0.000			1" Ice	5.348	2.393	0.120
Platform Mount [LP 601-1] (E)	C	None		0.000	160.000	No Ice	28.470	28.470	1.122
						1/2" Ice	33.590	33.590	1.514
						1" Ice	38.710	38.710	1.905
_									

Load Combinations

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

Comb. No.	Description
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	190.5 - 143.17	Pole	Max Tension	30	0.000	0.001	0.000
			Max. Compression	26	-43.641	-2.213	-1.939
			Max. Mx	8	-11.136	-584.353	-1.040
			Max. My	14	-11.154	-1.140	-583.261
			Max. Vy	8	23.197	-584.353	-1.040
			Max. Vx	14	23.111	-1.140	-583.261
			Max. Torque	24			-1.105
L2	143.17 - 93.753	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.685	-3.457	-7.319
			Max. Mx	8	-22.296	-1791.628	-3.258
			Max. My	14	-22.308	-2.852	-1786.920
			Max. Vy	8	27.561	-1791.628	-3.258
			Max. Vx	14	27.473	-2.852	-1786.920
			Max. Torque	24			-0.901
L3	93.753 - 46.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-88.161	-4.755	-13.731
			Max. Mx	8	-36.686	-3168.584	-5.670
			Max. My	14	-36.692	-4.534	-3160.577
			Max. Vy	8	32.152	-3168.584	-5.670
			Max. Vx	14	32.065	-4.534	-3160.577
			Max. Torque	24			-0.894
L4	46.083 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-120.928	-6.202	-21.641
			Max. Mx	8	-57.187	-5003.766	-8.660
			Max. My	14	-57.187	-6.468	-4992.277
			Max. Vy	8	36.806	-5003.766	-8.660
			Max. Vx	14	36.723	-6.468	-4992.277
			Max. Torque	24			-0.890

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	34	120.928	7.525	-13.011
	Max. H_x	21	42.911	36.764	0.028
	Max. H_z	3	42.911	0.028	36.680
	Max. M_x	2	4985.192	0.028	36.680
	Max. M_z	8	5003.766	-36.764	-0.028
	Max. Torsion	13	0.884	-18.406	-31.780
	Min. Vert	25	42.911	18.406	31.780
	Min. H_x	9	42.911	-36.764	-0.028
	Min. H_z	15	42.911	-0.028	-36.680
	Min. M_x	14	-4992.277	-0.028	-36.680
	Min. M_z	20	-5001.004	36.764	0.028
	Min. Torsion	24	-0.889	18.406	31.780

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	47.679	0.000	0.000	2.839	-1.094	-0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	57.215	-0.028	-36.680	-4985.192	3.717	0.879
0.9 Dead+1.6 Wind 0 deg - No Ice	42.911	-0.028	-36.680	-4919.789	4.004	0.878
1.2 Dead+1.6 Wind 30 deg - No Ice	57.215	18.483	-31.970	-4342.745	-2514.644	0.633
0.9 Dead+1.6 Wind 30 deg - No Ice	42.911	18.483	-31.970	-4285.964	-2480.918	0.632
1.2 Dead+1.6 Wind 60 deg - No Ice	57.215	31.824	-18.316	-2486.385	-4331.082	0.220
0.9 Dead+1.6 Wind 60 deg - No Ice	42.911	31.824	-18.316	-2454.218	-4273.170	0.218
1.2 Dead+1.6 Wind 90 deg - No Ice	57.215	36.764	0.028	8.660	-5003.766	-0.251
0.9 Dead+1.6 Wind 90 deg - No Ice	42.911	36.764	0.028	7.660	-4936.905	-0.252
1.2 Dead+1.6 Wind 120 deg - No Ice	57.215	31.852	18.365	2502.298	-4336.101	-0.654
0.9 Dead+1.6 Wind 120 deg - No Ice	42.911	31.852	18.365	2468.158	-4278.125	-0.655
1.2 Dead+1.6 Wind 150 deg - No Ice	57.215	18.406	31.780	4326.428	-2506.985	-0.884
0.9 Dead+1.6 Wind 150 deg - No Ice	42.911	18.406	31.780	4268.047	-2473.317	-0.884
1.2 Dead+1.6 Wind 180 deg - No Ice	57.215	0.028	36.680	4992.277	-6.468	-0.879
0.9 Dead+1.6 Wind 180 deg - No Ice	42.911	0.028	36.680	4925.040	-6.032	-0.878
1.2 Dead+1.6 Wind 210 deg - No Ice	57.215	-18.483	31.970	4349.837	2511.870	-0.638
0.9 Dead+1.6 Wind 210 deg - No Ice	42.911	-18.483	31.970	4291.219	2478.873	-0.636
1.2 Dead+1.6 Wind 240 deg - No Ice	57.215	-31.824	18.316	2493.502	4328.301	-0.224
0.9 Dead+1.6 Wind 240 deg -	42.911	-31.824	18.316	2459.490	4271.120	-0.223

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
No Ice 1.2 Dead+1.6 Wind 270 deg - No Ice	57.215	-36.764	-0.028	-1.525	5001.004	0.251
0.9 Dead+1.6 Wind 270 deg - No Ice	42.911	-36.764	-0.028	-2.375	4934.868	0.252
1.2 Dead+1.6 Wind 300 deg - No Ice	57.215	-31.852	-18.365	-2495.170	4333.363	0.659
0.9 Dead+1.6 Wind 300 deg - No Ice	42.911	-31.852	-18.365	-2462.877	4276.105	0.660
1.2 Dead+1.6 Wind 330 deg - No Ice	57.215	-18.406	-31.780	-4319.325	2504.253	0.889
0.9 Dead+1.6 Wind 330 deg - No Ice	42.911	-18.406	-31.780	-4262.784	2471.302	0.889
1.2 Dead+1.0 Ice+1.0 Temp	120.928	0.000	0.000	21.641	-6.202	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	120.928	0.001	-12.450	-1814.338	-6.420	0.301
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	120.928	7.525	-13.011	-1806.141	-1064.056	0.212
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	120.928	10.804	-6.226	-896.390	-1600.525	0.066
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	120.928	12.475	-0.001	21.667	-1847.050	-0.097
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	120.928	10.803	6.224	939.759	-1600.337	-0.235
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	120.928	6.236	10.781	1611.888	-926.497	-0.309
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	120.928	-0.001	12.450	1857.966	-6.082	-0.301
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	120.928	-7.525	13.011	1849.772	1051.536	-0.212
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	120.928	-10.804	6.226	940.052	1588.006	-0.067
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	120.928	-12.475	0.001	22.005	1834.551	0.097
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	120.928	-10.803	-6.224	-896.099	1587.857	0.235
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	120.928	-6.236	-10.781	-1568.251	914.015	0.309
Dead+Wind 0 deg - Service	47.679	-0.007	-8.538	-1151.061	0.025	0.210
Dead+Wind 30 deg - Service	47.679	4.302	-7.441	-1002.478	-582.545	0.152
Dead+Wind 60 deg - Service	47.679	7.407	-4.263	-573.036	-1002.717	0.053
Dead+Wind 90 deg - Service	47.679	8.557	0.007	4.128	-1158.338	-0.060
Dead+Wind 120 deg - Service	47.679	7.414	4.275	580.975	-1003.892	-0.157
Dead+Wind 150 deg - Service	47.679	4.284	7.397	1002.940	-580.765	-0.212
Dead+Wind 180 deg - Service	47.679	0.007	8.538	1156.960	-2.330	-0.210
Dead+Wind 210 deg - Service	47.679	-4.302	7.441	1008.376	580.238	-0.152
Dead+Wind 240 deg - Service	47.679	-7.407	4.263	578.935	1000.410	-0.053
Dead+Wind 270 deg - Service	47.679	-8.557	-0.007	1.773	1156.032	0.060
Dead+Wind 300 deg - Service	47.679	-7.414	-4.275	-575.074	1001.588	0.157
Dead+Wind 330 deg - Service	47.679	-4.284	-7.397	-997.041	578.460	0.212

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-47.679	0.000	0.000	47.679	0.000	0.000%
2	-0.028	-57.215	-36.680	0.028	57.215	36.680	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
3	-0.028	-42.911	-36.680	0.028	42.911	36.680	0.000%
4	18.483	-57.215	-31.970	-18.483	57.215	31.970	0.000%
5	18.483	-42.911	-31.970	-18.483	42.911	31.970	0.000%
6	31.824	-57.215	-18.316	-31.824	57.215	18.316	0.000%
7	31.824	-42.911	-18.316	-31.824	42.911	18.316	0.000%
8	36.764	-57.215	0.028	-36.764	57.215	-0.028	0.000%
9	36.764	-42.911	0.028	-36.764	42.911	-0.028	0.000%
10	31.852	-57.215	18.365	-31.852	57.215	-18.365	0.000%
11	31.852	-42.911	18.365	-31.852	42.911	-18.365	0.000%
12	18.406	-57.215	31.780	-18.406	57.215	-31.780	0.000%
13	18.406	-42.911	31.780	-18.406	42.911	-31.780	0.000%
14	0.028	-57.215	36.680	-0.028	57.215	-36.680	0.000%
15	0.028	-42.911	36.680	-0.028	42.911	-36.680	0.000%
16	-18.483	-57.215	31.970	18.483	57.215	-31.970	0.000%
17	-18.483	-42.911	31.970	18.483	42.911	-31.970	0.000%
18	-31.824	-57.215	18.316	31.824	57.215	-18.316	0.000%
19	-31.824	-42.911	18.316	31.824	42.911	-18.316	0.000%
20	-36.764	-57.215	-0.028	36.764	57.215	0.028	0.000%
21	-36.764	-42.911	-0.028	36.764	42.911	0.028	0.000%
22	-31.852	-57.215	-18.365	31.852	57.215	18.365	0.000%
23	-31.852	-42.911	-18.365	31.852	42.911	18.365	0.000%
24	-18.406	-57.215	-31.780	18.406	57.215	31.780	0.000%
25	-18.406	-42.911	-31.780	18.406	42.911	31.780	0.000%
26	0.000	-120.928	0.000	-0.000	120.928	-0.000	0.000%
27	0.001	-120.928	-12.450	-0.001	120.928	12.450	0.000%
28	7.524	-120.928	-13.010	-7.525	120.928	13.011	0.000%
29	10.803	-120.928	-6.226	-10.804	120.928	6.226	0.000%
30	12.474	-120.928	-0.001	-12.475	120.928	0.001	0.000%
31	10.803	-120.928	6.224	-10.803	120.928	-6.224	0.000%
32	6.236	-120.928	10.781	-6.236	120.928	-10.781	0.000%
33	-0.001	-120.928	12.450	0.001	120.928	-12.450	0.000%
34	-7.524	-120.928	13.010	7.525	120.928	-13.011	0.000%
35	-10.803	-120.928	6.226	10.804	120.928	-6.226	0.000%
36	-12.474	-120.928	0.001	12.475	120.928	-0.001	0.000%
37	-10.803	-120.928	-6.224	10.803	120.928	6.224	0.000%
38	-6.236	-120.928	-10.781	6.236	120.928	10.781	0.000%
39	-0.007	-47.679	-8.538	0.007	47.679	8.538	0.000%
40	4.302	-47.679	-7.441	-4.302	47.679	7.441	0.000%
41	7.407	-47.679	-4.263	-7.407	47.679	4.263	0.000%
42	8.557	-47.679	0.007	-8.557	47.679	-0.007	0.000%
43	7.414	-47.679	4.275	-7.414	47.679	-4.275	0.000%
44	4.284	-47.679	7.397	-4.284	47.679	-7.397	0.000%
45	0.007	-47.679	8.538	-0.007	47.679	-8.538	0.000%
46	-4.302	-47.679	7.441	4.302	47.679	-7.441	0.000%
47	-7.407	-47.679	4.263	7.407	47.679	-4.263	0.000%
48	-8.557	-47.679	-0.007	8.557	47.679	0.007	0.000%
49	-7.414	-47.679	-4.275	7.414	47.679	4.275	0.000%
50	-4.284	-47.679	-7.397	4.284	47.679	7.397	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00003473
3	Yes	4	0.00000001	0.00051080

4	Yes	6	0.00000001	0.00013351
5	Yes	5	0.00000001	0.00098052
6	Yes	6	0.00000001	0.00013140
7	Yes	5	0.00000001	0.00096525
8	Yes	5	0.00000001	0.00001511
9	Yes	4	0.00000001	0.00038894
10	Yes	6	0.00000001	0.00013124
11	Yes	5	0.00000001	0.00096356
12	Yes	6	0.00000001	0.00013368
13	Yes	5	0.00000001	0.00098211
14	Yes	5	0.00000001	0.00004798
15	Yes	4	0.00000001	0.00061592
16	Yes	6	0.00000001	0.00013162
17	Yes	5	0.00000001	0.00096619
18	Yes	6	0.00000001	0.00013220
19	Yes	5	0.00000001	0.00097101
20	Yes	5	0.00000001	0.00002045
21	Yes	4	0.00000001	0.00041969
22	Yes	6	0.00000001	0.00013307
23	Yes	5	0.00000001	0.00097784
24	Yes	6	0.00000001	0.00013060
25	Yes	5	0.00000001	0.00095942
26	Yes	4	0.00000001	0.00010822
27	Yes	6	0.00004731	0.00033773
28	Yes	6	0.00004583	0.00084870
29	Yes	6	0.00004662	0.00067220
30	Yes	6	0.00004725	0.00034354
31	Yes	6	0.00004653	0.00069657
32	Yes	6	0.00004652	0.00070111
33	Yes	6	0.00004722	0.00034482
34	Yes	6	0.00004577	0.00085215
35	Yes	6	0.00004654	0.00069110
36	Yes	6	0.00004726	0.00034025
37	Yes	6	0.00004663	0.00066672
38	Yes	6	0.00004664	0.00066139
39	Yes	4	0.00000001	0.00010292
40	Yes	4	0.00000001	0.00079563
41	Yes	4	0.00000001	0.00076390
42	Yes	4	0.00000001	0.00009430
43	Yes	4	0.00000001	0.00076735
44	Yes	4	0.00000001	0.00080380
45	Yes	4	0.00000001	0.00010532
46	Yes	4	0.00000001	0.00076718
47	Yes	4	0.00000001	0.00077804
48	Yes	4	0.00000001	0.00009425
49	Yes	4	0.00000001	0.00078653
50	Yes	4	0.00000001	0.00074929

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	190.5 - 143.17	41.037	46	2.188	0.003
L2	146.753 - 93.753	22.807	46	1.656	0.001
L3	99.083 - 46.083	9.608	46	0.983	0.000
L4	53 - 0	2.604	46	0.461	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
193.500	Lightning Rod 5/8" x 6'	46	41.037	2.188	0.003	26339
191.000	(4) DB844H90-XY w/ Mount Pipe	46	41.037	2.188	0.003	26339
180.000	RR90-17-02DP w/ Mount Pipe	46	36.375	2.067	0.002	12542
168.000	(2) 7770.00 w/ Mount Pipe	46	31.182	1.925	0.002	5852
160.000	(2) LPA-80063-6CF-EDIN w/ Mount Pipe	46	27.873	1.827	0.002	4316

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	190.5 - 143.17	176.663	16	9.437	0.011
L2	146.753 - 93.753	98.384	16	7.156	0.005
L3	99.083 - 46.083	41.494	16	4.251	0.002
L4	53 - 0	11.247	16	1.993	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
193.500	Lightning Rod 5/8" x 6'	16	176.663	9.437	0.011	6397
191.000	(4) DB844H90-XY w/ Mount Pipe	16	176.663	9.437	0.011	6397
180.000	RR90-17-02DP w/ Mount Pipe	16	156.655	8.919	0.009	3044
168.000	(2) 7770.00 w/ Mount Pipe	16	134.363	8.312	0.008	1417
160.000	(2) LPA-80063-6CF-EDIN w/ Mount Pipe	16	120.156	7.893	0.006	1042

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	190.5 - 143.17 (1)	TP27.778x14.75x0.25	47.330	0.000	0.0	21.061	-11.134	1540.760	0.007
L2	143.17 - 93.753 (2)	TP40.88x26.292x0.375	53.000	0.000	0.0	46.465	-22.280	3417.140	0.007
L3	93.753 -	TP53.251x38.663x0.375	53.000	0.000	0.0	60.670	-36.676	4102.080	0.009

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L4	46.083 (3) 46.083 - 0 (4)	TP65.185x50.597x0.375	53.000	0.000	0.0	77.140	-57.187	4685.400	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	190.5 - 143.17 (1)	TP27.778x14.75x0.25	584.831	839.625	0.697	0.000	839.625	0.000
L2	143.17 - 93.753 (2)	TP40.88x26.292x0.375	1793.117	2738.358	0.655	0.000	2738.358	0.000
L3	93.753 - 46.083 (3)	TP53.251x38.663x0.375	3178.275	4301.758	0.739	0.000	4301.758	0.000
L4	46.083 - 0 (4)	TP65.185x50.597x0.375	5023.008	6257.133	0.803	0.000	6257.133	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	190.5 - 143.17 (1)	TP27.778x14.75x0.25	23.202	770.382	0.030	0.664	1681.308	0.000
L2	143.17 - 93.753 (2)	TP40.88x26.292x0.375	27.705	1708.570	0.016	0.642	5483.417	0.000
L3	93.753 - 46.083 (3)	TP53.251x38.663x0.375	32.322	2051.040	0.016	0.639	8614.083	0.000
L4	46.083 - 0 (4)	TP65.185x50.597x0.375	36.971	2342.700	0.016	0.638	12529.583	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	190.5 - 143.17 (1)	0.007	0.697	0.000	0.030	0.000	0.705 ✔	1.000	4.8.2 ✔
L2	143.17 - 93.753 (2)	0.007	0.655	0.000	0.016	0.000	0.662 ✔	1.000	4.8.2 ✔
L3	93.753 - 46.083 (3)	0.009	0.739	0.000	0.016	0.000	0.748 ✔	1.000	4.8.2 ✔
L4	46.083 - 0 (4)	0.012	0.803	0.000	0.016	0.000	0.815 ✔	1.000	4.8.2 ✔

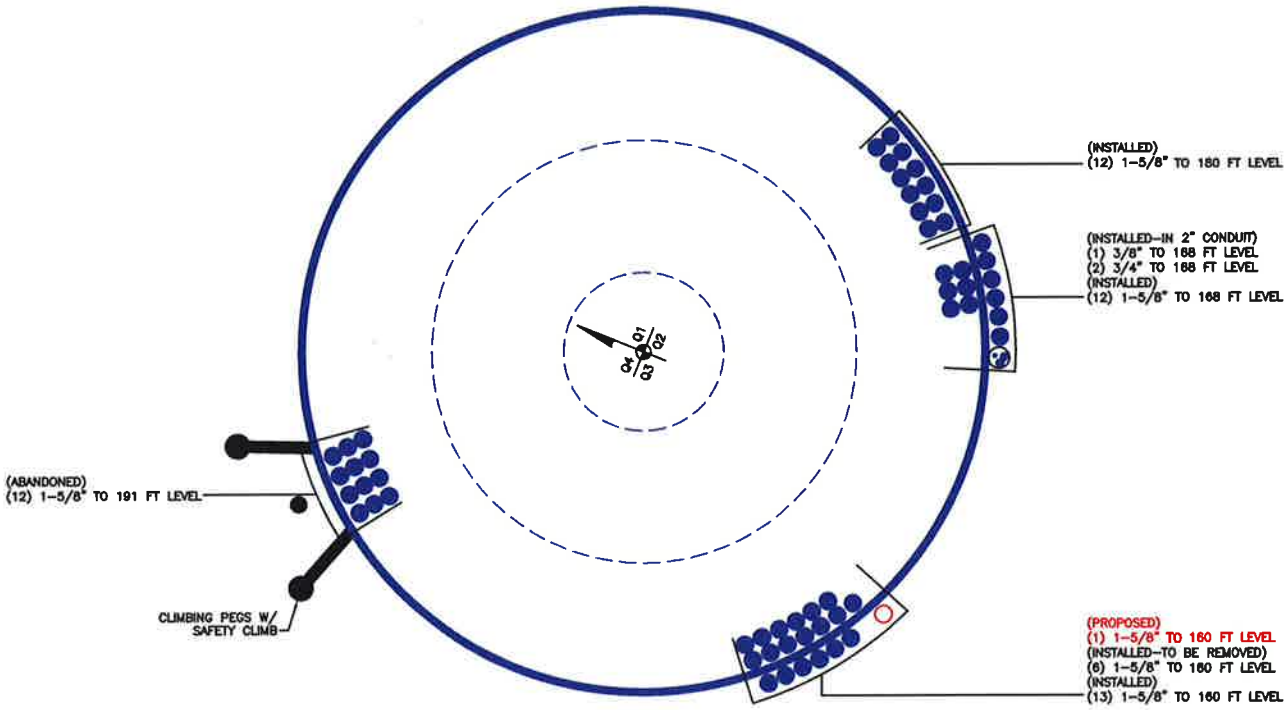
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	190.5 - 143.17	Pole	TP27.778x14.75x0.25	1	-11.134	1540.760	70.5	Pass
L2	143.17 - 93.753	Pole	TP40.88x26.292x0.375	2	-22.280	3417.140	66.2	Pass
L3	93.753 - 46.083	Pole	TP53.251x38.663x0.375	3	-36.676	4102.080	74.8	Pass
L4	46.083 - 0	Pole	TP65.185x50.597x0.375	4	-57.187	4685.400	81.5	Pass
							Summary	
						Pole (L4)	81.5	Pass
						RATING =	**81.5**	**Pass**

Program Version 7.0.5.1

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT : 801485

APPENDIX C

ADDITIONAL CALCULATIONS

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

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *801485*
Site Name: *CT SUFFIELD 1 CAC 801485, CT*
App #: *371646, Revision # 0*

Pole Manufacturer:	*Other*

Reactions		
Mu:	5023	ft-kips
Axial, Pu:	57	kips
Shear, Vu:	37	kips
Eta Factor, ή	0.5	TIA G (Fig. 4-4)

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

Anchor Rod Data		
Qty:	20	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	72	in

Anchor Rod Results

		Rigid
Max Rod (Cu+ Vu/ή):	174.0 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	φ*Tn
Anchor Rod Stress Ratio:	66.9% Pass	

Plate Data		
Diam:	78	in
Thick:	2.75	in
Grade:	60	ksi
Single-Rod B-eff:	10.34	in

Base Plate Results

	Flexural Check	Rigid
Base Plate Stress:	19.3 ksi	AISC LRFD
Allowable Plate Stress:	54.0 ksi	φ*Fy
Base Plate Stress Ratio:	35.7% Pass	Y.L. Length: 30.58

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

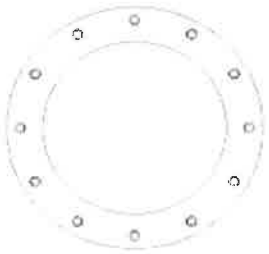
Stiffener Results

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

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Diam:	65.185	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None



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

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

PROJECT	**801485 - CT SUFFIELD 1 CAC 801485, CT**		
SUBJECT	**Foundation Analysis**		
DATE	**12/16/16**	PAGE 1	OF 1

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Monopole Pad & Pier Foundation Analysis

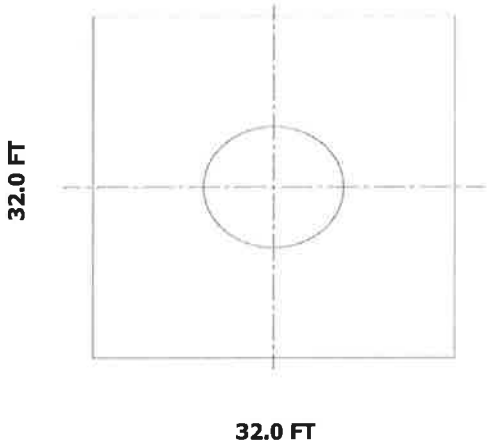
Rev. Type: G

Design Loads:

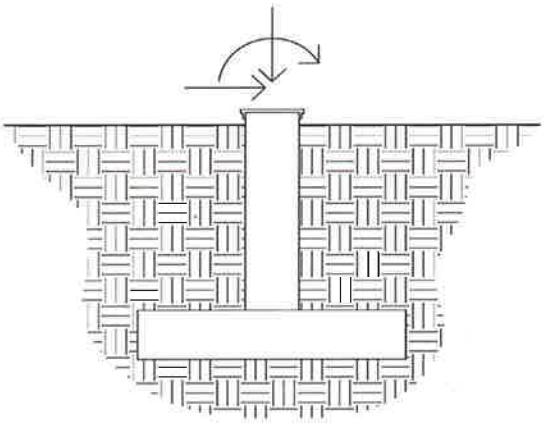
	Input factored loads	
Shear:	37.0	kips
Moment:	5,023.0	ft-kips
Tower Height:	190.5	ft
Tower Weight:	57.0	kips

Pad & Pier Dimensions / Properties:

Pole Diameter at Base:	65.18	in
Bearing Depth:	6.5	ft
Pad Width:	32.0	ft
Neglected Depth:	4.0	ft
Thickness:	5.0	ft
Pier Diameter:	8.0	ft
Pier Height Above Grade:	0.5	ft
BP Dist. Above Pier:	3.0	in
Clear Cover:	3.0	in
Pier Rebar Size:	9	
Pier Rebar Quanity:	43	
Pad Rebar Size:	9	
Pad Rebar Quanity:	34	
Pier Tie Size:	5	
Tie Quanity:	9	
Rebar Yield Strength:	60000	psi
Concrete Strength:	3000	psi
Concrete Unit Weight:	0.119401	kcf



Elevation Overview



Soil Data:

	Allowable Values	
Soil Unit Weight:	0.097	kcf
Ult. Bearing Capacity:	12.000	ksf
Angle of Friction:	30.000	deg
Cohesion:	0.000	ksf
Passive Pressure:	0.000	ksf
Base Friction:	0.300	

Summary of Results

Req'd Pier Diam.	OK
Overturning	47.0%
Shear Capacity	19.8%
Bearing	18.1%
Pad Shear - 1-way	20.6%
Pad Shear - 2-way	2.2%
Pad Moment Capacity	21.5%
Pier Moment Capacity	64.2%

** Notes:

ATC Applied Technology Council

WINDSPEED BY LOCATION

Search Results

Query Date: Fri Dec 16 2016
Latitude: 42.0116
Longitude: -72.7288

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

Risk Category I: 108
Risk Category II: 119
Risk Category III-IV: 128
MRI 10-Year:** 76
MRI 25-Year:** 86
MRI 50-Year:** 91
MRI 100-Year:** 97

ASCE 7-05 Windspeed:
95 (3-sec peak gust in mph)
ASCE 7-93 Windspeed:
78 (fastest mile in mph)

*Miles per hour
**Mean Recurrence Interval

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

Print your results

WINDSPEED WEBSITE DISCLAIMER

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AFFIDAVIT OF CONTINUING USE

STATE OF CONNECTICUT)
) ss. EAST HARTFORD
COUNTY OF HARTFORD)

ANTHONY BEFERA, being duly sworn, deposes and states that:

1. I am over the age of eighteen and understand the obligation of making a statement under oath.

2. I am a Regulatory Manager with Cellco Partnership d/b/a Verizon Wireless ("Cellco").

3. I am familiar with the Cellco telecommunications facilities at 700 Prospect Street, 129 Church Street and 83 Water Street in New Haven and was responsible for obtaining the appropriate land use permits and approvals for these facilities.

4. In accordance with Section 49(g) of the New Haven Zoning Regulations, this will certify that the Cellco telecommunications facilities at 700 Prospect Street, 129 Church Street and 83 Water Street in New Haven are currently active and operating in Cellco's wireless network.

5. Cellco anticipates that these three facilities will continue to operate throughout the 2017 calendar year.

Anthony Befera
Manager- Real Estate
Cellco Partnership d/b/a Verizon Wireless

Subscribed and sworn to before me
this 4 day of January, 2017

Commissioner of the Superior Court
Or
Notary Public
My Commission Expires:

ALEKSEY TYURIN
Notary Public-Connecticut
My Commission Expires
August 31, 2019

ATTACHMENT 4

Town of Suffield, Connecticut - Assessment Parcel Map

Parcel: 9-9-9 **Address: 2715 MOUNTAIN RD**

0 115 230 460 690 920 Feet

Scale 1:5,400

Map Produced: March 2016
Grand List: October 2015

Town of Suffield, CT

Property Listing Report

Map Block Lot 9-9-9 | Account 09002

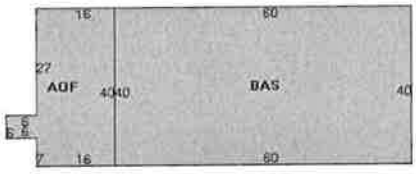
Property Information

Property Location	2715 MOUNTAIN RD
Owner	SUFFIELD TOWN OF
Co-Owner	TOWN HALL
Mailing Address	83 MOUNTAIN RD SUFFIELD CT 06078
Land Use	903I Municipal MDL-96
Land Class	E
Zoning Code	R90
Census Tract	4772

Neighborhood	A
Acreage	51.01
Utilities	
Lot Setting/Desc	
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	2006
Stories	1
Building Style	Outbuildings
Building Use	Residential
Building Condition	Average
Floors	Concrete
Total Rooms	

Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Gable
Roof Cover	Metal

Exterior Walls	WOOD FRAME
Interior Walls	Minimum
Heating Type	None
Heating Fuel	Coal or Wood
AC Type	None
Gross Bldg Area	3076
Total Living Area	3076

Report Created On 1/4/2017

Town of Suffield, CT

Property Listing Report | Map Block Lot 9-9-9 | Account 09002

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	105100	73570
Extras	0	0
Improvements	108300	75810
Outbuildings	3200	2240
Land	445100	311570
Total	553400	387380

Outbuilding and Extra Items

Type	Description
Shed	240 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	2400	2400
Office	676	676
Total Area	1152	0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
SUFFIELD TOWN OF	180/ 870	6/5/1985	0
KEMENT WILLIAM B & IRENE N	147/ 933	5/4/1977	0

Report Created On 1/4/2017

Town of Suffield, CT

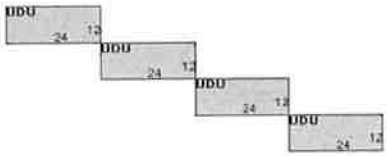
Property Listing Report

Map Block Lot 9-9-9

Account 09002

Photo

Sketch



Primary Construction Details

Year Built	2006
Stories	1
Building Style	Outbuildings
Building Use	Residential
Building Condition	Average
Floors	Concrete
Total Rooms	
Bedrooms	
Bathrooms	
Bath Style	n/a
Half Baths	

Kitchen Style	n/a
Roof Style	Flat
Roof Cover	Metal
Exterior Walls	Pre-finsh Metl
Interior Walls	Minimum
Heating Type	None
Heating Fuel	Coal or Wood
AC Type	None
Gross Bldg Area	
Total Living Area	

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Utility,	1152	0
Total Area		

Report Created On 1/4/2017