Robinson+Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

February 5, 2018

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**
41 Beckwith Road, Montville, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the 167-foot level of the existing 180-foot tower at 41 Beckwith Road in Montville, Connecticut (the "Property"). The tower is owned by Crown Atlantic Company LLC ("Crown"). The Council approved Cellco's use of this tower in 2002. Cellco now intends to replace six (6) of its existing antennas with three (3) model JAHH-65B-R3B, 700/850 MHz antennas and three (3) model JAHH-65B-R3B, 2100 MHz antennas, all at the same level on the tower. Cellco also intends to install nine (9) new remote radio heads ("RRHs") behind its replacement antennas and two (2) HYBRIFLEX™ fiber optic antenna cables. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cables.

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 Montville Mayor, Ronald K. McDaniel; Marcia Vlaun, Montville's Town Planner; Gladys J. Bond, Trustee, the owner of the Property; and Crown, the tower 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 remain at the 167-foot level of the 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 General Power Density table for Cellco's modified facility is included behind 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 parcel map and owner information for the Property is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 5.

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:
Ronald K. McDaniel, Mayor
Marcia Vlaun, Town Planner
Gladys J. Bond, Trustee
Crown
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

JAHH-65B-R3B

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

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

Electrical Specifications

Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.5	15.8	18.0	18.4	18.5	18.8
Beamwidth, Horizontal, degrees	67	65	63	63	65	68
Beamwidth, Vertical, degrees	12.4	10.5	5.7	5.2	4.9	4.4
Beam Tilt, degrees	2–14	2–14	0–10	0–10	0–10	0–10
USLS (First Lobe), dB	18	18	20	20	21	23
Front-to-Back Ratio at 180°, dB	32	34	31	35	36	38
Isolation, 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	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
	2 ° | 14.3	2 ° | 15.0	0 ° | 17.2	0 ° | 17.6	0 ° | 17.7	0 ° | 17.9
Gain by Beam Tilt, average, dBi	8 ° | 14.3	8 ° | 14.9	5 ° | 17.6	5 ° | 18.2	5 ° | 18.3	5 ° | 18.7
	14 ° | 14.3	14 ° | 15.4	10 ° | 17.6	10 ° | 18.2	10 ° | 18.3	10 ° | 18.7
Beamwidth, Horizontal Tolerance, degrees	±1.2	±1.4	±4	±2.4	±2.9	±2.7
Beamwidth, Vertical Tolerance, degrees	±0.9	±0.5	±0.3	±0.2	±0.3	±0.1
USLS, beampeak to 20° above beampeak, dB	18	17	17	18	19	18
Front-to-Back Total Power at 180° ± 30°, dB	25	24	26	29	27	29
CPR at Boresight, dB	22	23	20	21	21	24
CPR at Sector, dB	11	12	11	11	11	8

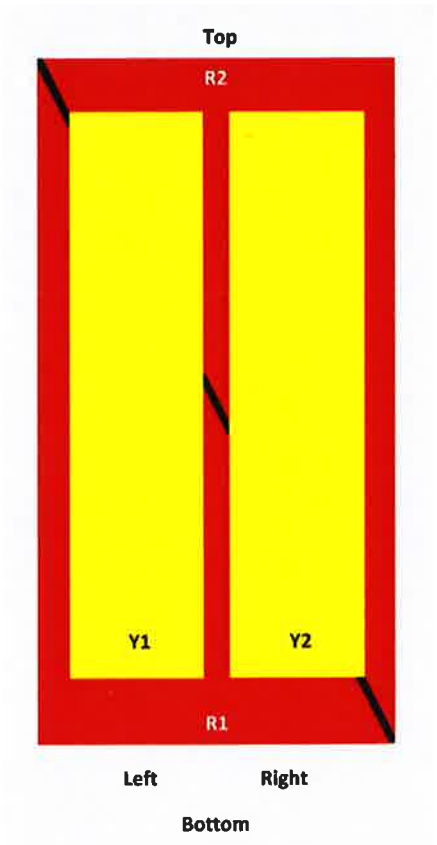
* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Product Specifications

JAHH-65B-R3B

Array Layout

JAHH-65A-R3B JAHH-65B-R3B JAHH-65C-R3B



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-798	1-2	1	ANxxxxxxxxxxxxxxx1
R2	824-894	3-4	2	ANxxxxxxxxxxxxxxx2
Y1	1695-2360	5-6	3	ANxxxxxxxxxxxxxxx3
Y2	1695-2360	7-8		

View from the front of the antenna

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

General Specifications

Operating Frequency Band	1695 – 2360 MHz | 698 – 787 MHz | 824 – 894 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	8
RF Connector Quantity, low band	4
RF Connector Quantity, high band	4
RF Connector Interface	4.3-10 Female

Product Specifications

JAHH-65B-R3B

Color	Light gray
Grounding Type	RF connector 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	746.0 N @ 150 km/h 167.7 lbf @ 150 km/h
Wind Loading, lateral	243.0 N @ 150 km/h 54.6 lbf @ 150 km/h
Wind Loading, rear	776.0 N @ 150 km/h 174.5 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1828.0 mm | 72.0 in
Width	350.0 mm | 13.8 in
Depth	208.0 mm | 8.2 in
Net Weight, without mounting kit	28.7 kg | 63.3 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 5
Internal RET	High band (1) | Low band (2)
Power Consumption, idle state, maximum	2 W
Power Consumption, normal conditions, maximum	13 W
Protocol	3GPP/AISG 2.0 (Single RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	2 female | 2 male

Packed Dimensions

Length	1975.0 mm | 77.8 in
Width	456.0 mm | 18.0 in
Depth	357.0 mm | 14.1 in
Shipping Weight	42.0 kg | 92.6 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

Product Specifications

JAHH-65B-R3B

Included Products

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.

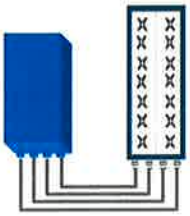
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

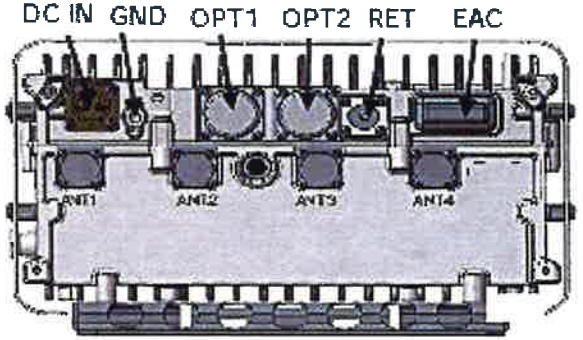
Can be switched between modes via SW w/o site visit

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

AHCA AirScale RRH 4T4R B5 160W

Supported Frequency bands	3GPP band 5
Frequencies	DL 869-894MHz, UL 824-849MHz
Number of TX/RX paths/pipes	4TX/4RX
Instantaneous Bandwidth IBW	25MHz (Full Band)
Occupied Bandwidth OBW	25MHz (Full Band)
Output Power	4T4R @ 40W / 2T4R @ 60W
RF Sharing	LTE, WCDMA, LTE + NB-IoT supported
256 QAM Back Off	No backoff at 40W and 0.8dB at 60W.
Supply Voltage / Voltage Range	DC-48V / -36V to -60V
Typical Power Consumption	365W [50% ETSI Busy Hour Load at 4TX @ 40W]
	529W [100% RF Load at 4 TX @ 40W]
	574W [100% RF Load at 4 TX @ 40W with SBT and AISG ON]
Antenna Ports	4 Ports, 4.3-10+
Optical Ports	2x CPRI 9.8 Gbps
ALD Control Interfaces	AISG3.0 from ANT1,2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other Interfaces	External Alarm MDR-26 Serial connector (4 inputs, 1 Output) DC Circular Power Connector



Operational Temperature Range	-40°C to 55°C (with solar cover)
Dimensions (mm) Height x width x depth	337 x 295 x 165 (radio only) 13.3" x 11.7" x 6.5" 428 x 324 x 208 (with bracket and enclosure) 16.9" x 12.8" x 8.2"
Volume (liters)	16.5
Weight (kg)	16/ 35.3 lb – w/o bracket
Ingress protection class	IP65
Installation options	Pole or Wall, Vertical or Horizontal Book Mount
Surge protection	Class II 5kA

NOKIA

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.

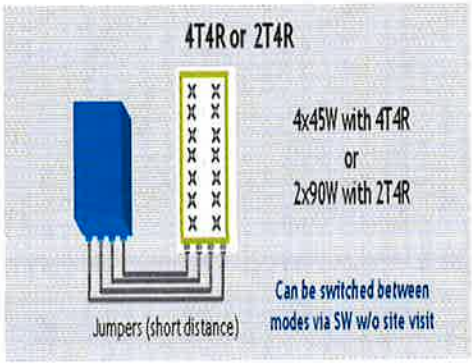
The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.

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

TECHNICAL SPECIFICATIONS

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)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (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)

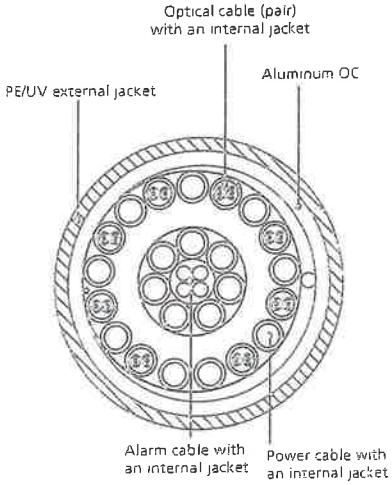


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Chesterfield (Montville)								
Tower Height: 180'								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*T-Mobile	2	1280	175	1950	0.0322	1.0000	0.32%	
*T-Mobile	2	2559	175	2100	0.0644	1.0000	0.64%	
*T-Mobile	1	865	175	700	0.0109	0.4667	0.23%	
*T-Mobile	1	10	175	5000	0.0001	1.0000	0.00%	
*Sprint	11	122	177	1962.5	0.0165	1.0000	0.17%	
Verizon PCS	**0**	**0**	**167**	**0.0000**	**1970**	**1.0000**	**0.00%**	
Verizon Cellular	**9**	**356**	**167**	**0.0413**	**876**	**0.5793**	**7.13%**	
Verizon Cellular	**1**	**3710**	**167**	**0.0478**	**869**	**0.5793**	**8.26%**	
Verizon AWS	**1**	**7771**	**167**	**0.1002**	**2145**	**1.0000**	**10.02%**	
Verizon 700	**1**	**2063**	**167**	**0.0266**	**746**	**0.4973**	**5.35%**	
								32.1%
* Source: Siting Council								

ATTACHMENT 3

Date: **July 07, 2017**

Marianne Dunst
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-9056

Subject: **Structural Analysis Report**

Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	117762
	Carrier Site Name:	Chesterfield CT
Crown Castle Designation:	**Crown Castle BU Number:**	876370
	Crown Castle Site Name:	MAYBROOK / BOND
	Crown Castle JDE Job Number:	445492
	Crown Castle Work Order Number:	1427117
	Crown Castle Application Number:	395019 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	1427117
Site Data:	**41 Beckwith Rd., MONTVILLE, New London County, CT** **Latitude *41° 26' 7.66"*, Longitude *-72° 13' 15.07"*** **180 Foot - Monopole Tower**	

Dear Marianne Dunst,

Crown Castle 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 1427117, in accordance with application 395019, revision 1.

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 I and Table II 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 135 mph converted to a nominal 3-second gust wind speed of 105 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 B and Risk Category II were used in this analysis.

All modifications and 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 *Crown Castle* 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.

Structural analysis prepared by: Bahareh Basirat/ AGH

Respectfully submitted by:

STATE OF CONNECTICUT
TERRY P. STYRAN
31522
LICENSED PROFESSIONAL ENGINEER

7/6/2017

Terry P. Styran, P. E.
Senior Project Engineer

tnxTower Report - version 7.0.5.1

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA
Table 1 - Proposed Antenna and Cable Information
Table 2 - Existing Antenna and Cable Information
Table 3 - Design Antenna and Cable Information

3) ANALYSIS PROCEDURE
Table 4 - Documents Provided
3.1) Analysis Method
3.2) Assumptions

4) ANALYSIS RESULTS
Table 5 - Section Capacity (Summary)
Table 6 – Tower Component Stresses vs. Capacity – LC5
4.1) Recommendations

5) APPENDIX A
tnxTower Output

6) APPENDIX B
Base Level Drawing

7) APPENDIX C
Additional Calculations

1) INTRODUCTION

This tower is a 180 ft. Monopole tower designed by ENGINEERED ENDEAVORS, INC. in September of 2000. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

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 105 mph with no ice, 50 mph with 0.75 inch ice thickness and 60 mph under service loads, exposure category B.

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
167.0	167.0	3	alcatel lucent	B66A RRH4X45-4R	2	1-5/8	-
		3	alcatel lucent	RRH2x60-700			
		6	commscope	JAHH-65B-R3B w/ Mount Pipe			
		3	nokia	B5 4T4R RRH4X40 AIRSCALE			
		2	raycap	RC3DC-3315-PF-48			

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
180.0	181.0	6	decibel	DB980H90E-M w/ Mount Pipe	6	1-5/8	1
	180.0	1	tower mounts	Platform Mount [LP 601-1]			
175.0	175.0	3	commscope	LNX-6515DS-A1M	1	1-5/8	1
		3	ericsson	RRUS 11 B12			
		6	ericsson	RRUS 11 B4			
		3	rfs celwave	APX16DWV-16DWV-S-E-A20			
		1	tower mounts	Platform Mount [LP 301-1]			
167.0	167.0	3	antel	BXA-171085-8BF-EDIN-2 w/ Mount Pipe	2	1-5/8	2
		3	antel	BXA-70063-6CF-2 w/ Mount Pipe			
		6	rfs celwave	FD9R6004/2C-3L			
		6	antel	LPA-80080/4CF w/ Mount Pipe	10	1-5/8	1
		1	tower mounts	Side Arm Mount [SO 202-3]			
		1	tower mounts	T-Arm Mount [TA 602-3]			
75.0	76.0	1	lucent	KS24019-L112A	1	1/2	1
	75.0	1	tower mounts	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) 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)
180	180	12	DAPA	48000	-	-
170	170	12	DAPA	48000	-	-
160	160	12	DAPA	48000	-	-
150	150	12	DAPA	48000	-	-
140	140	12	DAPA	48000	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	1532099	CCISITES

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.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle 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	180 - 133	Pole	TP27.51x15.5x0.25	1	-9.28	1527.84	66.7	Pass
L2	133 - 87.3333	Pole	TP38.56x25.9879x0.375	2	-17.70	3257.30	55.4	Pass
L3	87.3333 - 42.6667	Pole	TP49.1x36.46x0.4375	3	-30.30	4757.64	51.0	Pass
L4	42.6667 - 0	Pole	TP59x46.5397x0.4375	4	-48.38	5529.76	55.0	Pass
							Summary	
						Pole (L1)	66.7	Pass
						Rating =	66.7	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	51.0	Pass
1	Base Plate	0	70.3	Pass
1,2	Base Foundation (Compared w/ Design Loads)	0	61.9	Pass

Structure Rating (max from all components) =	70.3%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Foundation capacity determined by comparing analysis reactions to original design reactions.

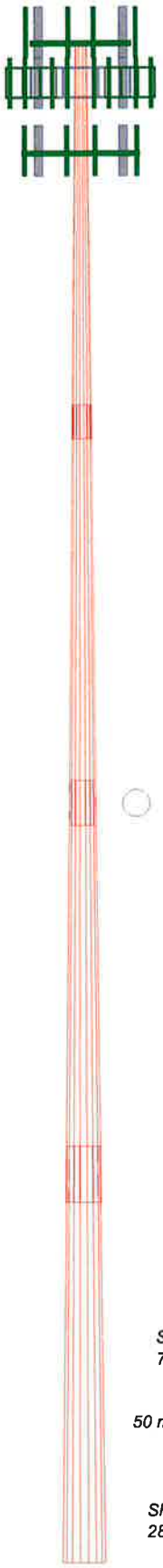
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4
Length (ft)	47'	49'8-1/32"	50'	49'3-31/32"
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3750	0.4375	0.4375
Socket Length (ft)	4'	5'3-31/32"	6'8-1/32"	
Top Dia (in)	15.5000	25.9879	36.4600	46.5397
Bot Dia (in)	27.5100	38.5600	49.1000	59.0000
Grade	A572-65			
Weight (K)	2.7	6.4	10.0	12.2



ALL REACTIONS ARE FACTORED

AXIAL 75 K

SHEAR 7 K *MOMENT 959 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 0.7500 in ICE

AXIAL 48 K

SHEAR 28 K *MOMENT 3605 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 105 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) DB980H90E-M w/ Mount Pipe	180	(2) LPA-80080/4CF w/ Mount Pipe	167
(2) DB980H90E-M w/ Mount Pipe	180	(2) JAHH-65B-R3B w/ Mount Pipe	167
(2) DB980H90E-M w/ Mount Pipe	180	(2) JAHH-65B-R3B w/ Mount Pipe	167
Platform Mount [LP 601-1]	180	(2) JAHH-65B-R3B w/ Mount Pipe	167
10' Climbing Ladder (Flat)	180	B5 4T4R RRH4X40 AIRSCALE	167
APX16DWV-16DWV-S-E-A20	175	B5 4T4R RRH4X40 AIRSCALE	167
APX16DWV-16DWV-S-E-A20	175	B5 4T4R RRH4X40 AIRSCALE	167
APX16DWV-16DWV-S-E-A20	175	B66A RRH4X45-4R	167
LNX-6515DS-A1M	175	B66A RRH4X45-4R	167
LNX-6515DS-A1M	175	B66A RRH4X45-4R	167
LNX-6515DS-A1M	175	RRH2x60-700	167
(2) RRUS 11 B4	175	RRH2x60-700	167
(2) RRUS 11 B4	175	RRH2x60-700	167
(2) RRUS 11 B4	175	RC3DC-3315-PF-48	167
RRUS 11 B12	175	RC3DC-3315-PF-48	167
RRUS 11 B12	175	Side Arm Mount [SO 202-3]	167
RRUS 11 B12	175	T-Arm Mount [TA 602-3]	167
Platform Mount [LP 301-1]	175	KS24019-L112A	75
(2) LPA-80080/4CF w/ Mount Pipe	167	Side Arm Mount [SO 701-1]	75
(2) LPA-80080/4CF w/ Mount Pipe	167		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0'
8. TOWER RATING: 66.7%

CROWN CASTLE
The Foundation for A Wireless World

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone: (724) 416-9056
FAX: (724) 416-2254

Job: *BU# 876370*			
Project: *WO 1427117*			
Client: Crown Castle	Drawn by: BBasirat	App'd:	
Code: TIA-222-G	Date: 07/07/17	Scale: N	
Path: R:\SA Models - Letters\Work Area\BBasirat\WIP\876370 WO1427117\876370.eri		Dwg No.	

Tower Input Data

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

3) Tower is located in New London County, Connecticut.
4) Basic wind speed of 105 mph.
5) Structure Class II.
6) Exposure Category B.
7) Topographic Category 1.
8) Crest Height 0'.
9) Nominal ice thickness of 0.7500 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drops of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) A non-linear (P-delta) analysis was used.
16) Pressures are calculated at each section.
17) Stress ratio used in pole design is 1.
18) 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	180'-133'	47'	4'	18	15.5000	27.5100	0.2500	1.0000	A572-65 (65 ksi)
L2	133'-87'3-31/32"	49'8-1/32"	5'3-31/32"	18	25.9879	38.5600	0.3750	1.5000	A572-65 (65 ksi)
L3	87'3-31/32"-42'8-1/32"	50'	6'8-1/32"	18	36.4600	49.1000	0.4375	1.7500	A572-65 (65 ksi)
L4	42'8-1/32"-0'	49'3-31/32"		18	46.5397	59.0000	0.4375	1.7500	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	15.7391	12.1009	355.5445	5.4138	7.8740	45.1542	711.5567	6.0516	2.2880	9.152
	27.9344	21.6308	2030.7756	9.6773	13.9751	145.3141	4064.2233	10.8175	4.4018	17.607
L2	27.4169	30.4857	2526.6814	9.0926	13.2018	191.3886	5056.6874	15.2458	3.9139	10.437
	39.1549	45.4497	8372.4782	13.5557	19.5885	427.4185	16755.973 1	22.7292	6.1266	16.337
L3	38.3915	50.0217	8200.5504	12.7880	18.5217	442.7545	16411.891 3	25.0156	5.6470	12.907
	49.8574	67.5740	20216.486 5	17.2752	24.9428	810.5139	40459.574 4	33.7934	7.8716	17.992
L4	48.9674	64.0186	17190.414 0	16.3663	23.6421	727.1088	34403.447 6	32.0154	7.4210	16.962
	59.9102	81.3214	35235.566 2	20.7897	29.9720	1175.6161	70517.496 3	40.6684	9.6140	21.975

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 180'-133'				1	1	1			
L2 133'-87'3-31/32"				1	1	1			
L3 87'3-31/32"-42'8-1/32"				1	1	1			
L4 42'8-1/32"-0'				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
***										

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 plf
LDF7-50A(1-5/8")	B	No	Inside Pole	180' - 0'	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
*								
LDF7-50A(1-5/8")	A	No	Inside Pole	167' - 0'	10	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
HB158-1-08U8-S8J18(1-5/8)	A	No	Inside Pole	167' - 0'	2	No Ice	0.00	1.30
						1/2" Ice	0.00	1.30
						1" Ice	0.00	1.30
*								
LDF4-50A(1/2")	A	No	Inside Pole	75' - 0'	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
*								
MLE Hybrid 9Power/18Fiber RL	B	No	Inside Pole	175' - 0'	1	No Ice	0.00	1.07
						1/2" Ice	0.00	1.07

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
2(1-5/8") ***						1" Ice	0.00	1.07

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	180'-133'	A	0.000	0.000	0.000	0.000	0.37
		B	0.000	0.000	0.000	0.000	0.28
		C	0.000	0.000	0.000	0.000	0.00
L2	133'-87'3-31/32"	A	0.000	0.000	0.000	0.000	0.49
		B	0.000	0.000	0.000	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
L3	87'3-31/32"-42'8-1/32"	A	0.000	0.000	0.000	0.000	0.49
		B	0.000	0.000	0.000	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
L4	42'8-1/32"-0'	A	0.000	0.000	0.000	0.000	0.47
		B	0.000	0.000	0.000	0.000	0.26
		C	0.000	0.000	0.000	0.000	0.00

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	180'-133'	A	1.750	0.000	0.000	0.000	0.000	0.37
		B		0.000	0.000	0.000	0.000	0.28
		C		0.000	0.000	0.000	0.000	0.00
L2	133'-87'3-31/32"	A	1.691	0.000	0.000	0.000	0.000	0.49
		B		0.000	0.000	0.000	0.000	0.27
		C		0.000	0.000	0.000	0.000	0.00
L3	87'3-31/32"-42'8-1/32"	A	1.604	0.000	0.000	0.000	0.000	0.49
		B		0.000	0.000	0.000	0.000	0.27
		C		0.000	0.000	0.000	0.000	0.00
L4	42'8-1/32"-0'	A	1.432	0.000	0.000	0.000	0.000	0.47
		B		0.000	0.000	0.000	0.000	0.26
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	180'-133'	0.0000	0.0000	0.0000	0.0000
L2	133'-87'3-31/32"	0.0000	0.0000	0.0000	0.0000
L3	87'3-31/32"-42'8-1/32"	0.0000	0.0000	0.0000	0.0000
L4	42'8-1/32"-0'	0.0000	0.0000	0.0000	0.0000

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) DB980H90E-M w/ Mount Pipe	A	From Leg	4.00 0' 1'	0.000	180'	No Ice 1/2" Ice 1" Ice	4.04 4.50 4.95	3.62 4.48 5.22	0.03 0.07 0.11
(2) DB980H90E-M w/ Mount Pipe	B	From Leg	4.00 0' 1'	0.000	180'	No Ice 1/2" Ice 1" Ice	4.04 4.50 4.95	3.62 4.48 5.22	0.03 0.07 0.11
(2) DB980H90E-M w/ Mount Pipe	C	From Leg	4.00 0' 1'	0.000	180'	No Ice 1/2" Ice 1" Ice	4.04 4.50 4.95	3.62 4.48 5.22	0.03 0.07 0.11
Platform Mount [LP 601-1]	C	None		0.000	180'	No Ice 1/2" Ice 1" Ice	28.47 33.59 38.71	28.47 33.59 38.71	1.12 1.51 1.91
10' Climbing Ladder (Flat)	B	From Leg	2.00 0' -5'	0.000	180'	No Ice 1/2" Ice 1" Ice	5.84 10.30 14.76	5.84 10.30 14.76	0.05 0.07 0.09
*									
APX16DWV-16DWV-S-E-A20	A	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	6.59 6.96 7.34	2.15 2.49 2.84	0.04 0.07 0.11
APX16DWV-16DWV-S-E-A20	B	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	6.59 6.96 7.34	2.15 2.49 2.84	0.04 0.07 0.11
APX16DWV-16DWV-S-E-A20	C	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	6.59 6.96 7.34	2.15 2.49 2.84	0.04 0.07 0.11
LNX-6515DS-A1M	A	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
LNX-6515DS-A1M	B	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
LNX-6515DS-A1M	C	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
(2) RRUS 11 B4	A	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	0.05 0.07 0.10
(2) RRUS 11 B4	B	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	0.05 0.07 0.10
(2) RRUS 11 B4	C	From Leg	4.00 0' 0'	0.000	175'	No Ice 1/2" Ice 1" Ice	2.83 3.04 3.26	1.18 1.33 1.48	0.05 0.07 0.10
RRUS 11 B12	A	From Leg	4.00	0.000	175'	No Ice	2.83	1.18	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0'			1/2"	3.04	1.33	0.07
			0'			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	B	From Leg	4.00	0.000	175'	No Ice	2.83	1.18	0.05
			0'			1/2"	3.04	1.33	0.07
			0'			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	C	From Leg	4.00	0.000	175'	No Ice	2.83	1.18	0.05
			0'			1/2"	3.04	1.33	0.07
			0'			Ice	3.26	1.48	0.10
						1" Ice			
Platform Mount [LP 301-1]	C	None		0.000	175'	No Ice	30.10	30.10	1.59
						1/2"	40.80	40.80	2.03
						Ice	51.50	51.50	2.47
						1" Ice			
(2) LPA-80080/4CF w/ Mount Pipe	A	From Leg	4.00	0.000	167'	No Ice	2.86	6.57	0.03
			0'			1/2"	3.22	7.19	0.08
			0'			Ice	3.59	7.84	0.13
						1" Ice			
(2) LPA-80080/4CF w/ Mount Pipe	B	From Leg	4.00	0.000	167'	No Ice	2.86	6.57	0.03
			0'			1/2"	3.22	7.19	0.08
			0'			Ice	3.59	7.84	0.13
						1" Ice			
(2) LPA-80080/4CF w/ Mount Pipe	C	From Leg	4.00	0.000	167'	No Ice	2.86	6.57	0.03
			0'			1/2"	3.22	7.19	0.08
			0'			Ice	3.59	7.84	0.13
						1" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.000	167'	No Ice	9.35	7.65	0.09
			0'			1/2"	9.92	8.83	0.16
			0'			Ice	10.46	9.73	0.25
						1" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.000	167'	No Ice	9.35	7.65	0.09
			0'			1/2"	9.92	8.83	0.16
			0'			Ice	10.46	9.73	0.25
						1" Ice			
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.000	167'	No Ice	9.35	7.65	0.09
			0'			1/2"	9.92	8.83	0.16
			0'			Ice	10.46	9.73	0.25
						1" Ice			
B5 4T4R RRH4X40 AIRSCALE	A	From Leg	4.00	0.000	167'	No Ice	1.32	0.75	0.05
			0'			1/2"	1.47	0.86	0.06
			0'			Ice	1.62	0.98	0.07
						1" Ice			
B5 4T4R RRH4X40 AIRSCALE	B	From Leg	4.00	0.000	167'	No Ice	1.32	0.75	0.05
			0'			1/2"	1.47	0.86	0.06
			0'			Ice	1.62	0.98	0.07
						1" Ice			
B5 4T4R RRH4X40 AIRSCALE	C	From Leg	4.00	0.000	167'	No Ice	1.32	0.75	0.05
			0'			1/2"	1.47	0.86	0.06
			0'			Ice	1.62	0.98	0.07
						1" Ice			
B66A RRH4X45-4R	A	From Leg	4.00	0.000	167'	No Ice	2.54	1.61	0.06
			0'			1/2"	2.75	1.79	0.08
			0'			Ice	2.97	1.98	0.10
						1" Ice			
B66A RRH4X45-4R	B	From Leg	4.00	0.000	167'	No Ice	2.54	1.61	0.06
			0'			1/2"	2.75	1.79	0.08
			0'			Ice	2.97	1.98	0.10
						1" Ice			
B66A RRH4X45-4R	C	From Leg	4.00	0.000	167'	No Ice	2.54	1.61	0.06
			0'			1/2"	2.75	1.79	0.08
			0'			Ice	2.97	1.98	0.10
						1" Ice			
RRH2x60-700	A	From Leg	4.00	0.000	167'	No Ice	3.50	1.82	0.06

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
			0'				1/2" Ice	3.76	2.05	0.08
			0'				1" Ice	4.03	2.29	0.11
RRH2x60-700	B	From Leg	4.00		0.000	167'	No Ice	3.50	1.82	0.06
			0'				1/2" Ice	3.76	2.05	0.08
			0'				1" Ice	4.03	2.29	0.11
RRH2x60-700	C	From Leg	4.00		0.000	167'	No Ice	3.50	1.82	0.06
			0'				1/2" Ice	3.76	2.05	0.08
			0'				1" Ice	4.03	2.29	0.11
RC3DC-3315-PF-48	A	From Leg	4.00		0.000	167'	No Ice	3.79	2.51	0.03
			0'				1/2" Ice	4.04	2.72	0.06
			0'				1" Ice	4.30	2.94	0.10
RC3DC-3315-PF-48	B	From Leg	4.00		0.000	167'	No Ice	3.79	2.51	0.03
			0'				1/2" Ice	4.04	2.72	0.06
			0'				1" Ice	4.30	2.94	0.10
Side Arm Mount [SO 202-3]	C	None			0.000	167'	No Ice	6.18	6.18	0.33
							1/2" Ice	8.56	8.56	0.40
							1" Ice	10.94	10.94	0.47
T-Arm Mount [TA 602-3]	C	None			0.000	167'	No Ice	11.59	11.59	0.77
							1/2" Ice	15.44	15.44	0.99
							1" Ice	19.29	19.29	1.21
*										
KS24019-L112A	A	From Leg	1.50		0.000	75'	No Ice	0.10	0.10	0.01
			0'				1/2" Ice	0.18	0.18	0.01
			1'				1" Ice	0.26	0.26	0.01
Side Arm Mount [SO 701-1]	A	From Leg	0.75		0.000	75'	No Ice	0.85	1.67	0.07
			0'				1/2" Ice	1.14	2.34	0.08
			0'				1" Ice	1.43	3.01	0.09
***										

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

Comb. No.	Description
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
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	180 - 133	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.08	-1.13	0.24
			Max. Mx	8	-9.28	-542.53	-0.74
			Max. My	2	-9.28	0.54	543.12
			Max. Vy	8	16.32	-542.53	-0.74
			Max. Vx	2	-16.35	0.54	543.12
			Max. Torque	14			1.19
L2	133 - 87.3333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.42	-1.13	0.24
			Max. Mx	8	-17.71	-1347.50	-1.87
			Max. My	2	-17.71	1.62	1349.36
			Max. Vy	8	20.07	-1347.50	-1.87
			Max. Vx	2	-20.10	1.62	1349.36
			Max. Torque	14			1.18
L3	87.3333 - 42.6667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.85	-1.13	0.58
			Max. Mx	8	-30.30	-2307.00	-2.75
			Max. My	2	-30.30	2.69	2309.40
			Max. Vy	8	24.15	-2307.00	-2.75
			Max. Vx	2	-24.14	2.69	2309.40
			Max. Torque	14			1.17
L4	42.6667 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.69	-1.13	0.58
			Max. Mx	8	-48.38	-3600.25	-3.96
			Max. My	2	-48.38	3.90	3602.30
			Max. Vy	8	28.22	-3600.25	-3.96

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-28.21	3.90	3602.30
			Max. Torque	14			1.17

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	74.69	-7.38	-0.00
	Max. H_x	20	48.39	28.19	0.02
	Max. H_z	2	48.39	0.02	28.18
	Max. M_x	2	3602.30	0.02	28.18
	Max. M_z	8	3600.25	-28.19	-0.02
	Max. Torsion	14	1.17	-0.02	-28.18
	Min. Vert	25	36.29	14.12	24.42
	Min. H_x	8	48.39	-28.19	-0.02
	Min. H_z	15	36.29	-0.02	-28.18
	Min. M_x	14	-3601.86	-0.02	-28.18
	Min. M_z	20	-3599.64	28.19	0.02
	Min. Torsion	2	-1.17	0.02	28.18

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	40.33	0.00	0.00	-0.18	-0.23	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	48.39	-0.02	-28.18	-3602.30	3.90	1.17
0.9 Dead+1.6 Wind 0 deg - No Ice	36.29	-0.02	-28.18	-3561.27	3.93	1.17
1.2 Dead+1.6 Wind 30 deg - No Ice	48.39	14.07	-24.39	-3117.66	-1796.64	1.00
0.9 Dead+1.6 Wind 30 deg - No Ice	36.29	14.07	-24.39	-3082.13	-1776.14	1.00
1.2 Dead+1.6 Wind 60 deg - No Ice	48.39	24.40	-14.07	-1797.67	-3115.88	0.57
0.9 Dead+1.6 Wind 60 deg - No Ice	36.29	24.40	-14.07	-1777.16	-3080.36	0.56
1.2 Dead+1.6 Wind 90 deg - No Ice	48.39	28.19	0.02	3.96	-3600.25	-0.02
0.9 Dead+1.6 Wind 90 deg - No Ice	36.29	28.19	0.02	3.97	-3559.24	-0.02
1.2 Dead+1.6 Wind 120 deg - No Ice	48.39	24.42	14.11	1804.45	-3120.04	-0.60
0.9 Dead+1.6 Wind 120 deg - No Ice	36.29	24.42	14.11	1783.97	-3084.48	-0.60
1.2 Dead+1.6 Wind 150 deg - No Ice	48.39	14.12	24.42	3121.37	-1803.90	-1.02
0.9 Dead+1.6 Wind 150 deg - No Ice	36.29	14.12	24.42	3085.90	-1783.30	-1.02
1.2 Dead+1.6 Wind 180 deg - No Ice	48.39	0.02	28.18	3601.86	-4.48	-1.17
0.9 Dead+1.6 Wind 180 deg - No Ice	36.29	0.02	28.18	3560.93	-4.35	-1.17
1.2 Dead+1.6 Wind 210 deg - No Ice	48.39	-14.07	24.39	3117.19	1796.06	-1.00
0.9 Dead+1.6 Wind 210 deg - No Ice	36.29	-14.07	24.39	3081.78	1775.71	-1.00
1.2 Dead+1.6 Wind 240 deg - No Ice	48.39	-24.40	14.07	1797.19	3115.27	-0.57

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
0.9 Dead+1.6 Wind 240 deg - No Ice	36.29	-24.40	14.07	1776.80	3079.92	-0.56
1.2 Dead+1.6 Wind 270 deg - No Ice	48.39	-28.19	-0.02	-4.43	3599.64	0.02
0.9 Dead+1.6 Wind 270 deg - No Ice	36.29	-28.19	-0.02	-4.31	3558.79	0.02
1.2 Dead+1.6 Wind 300 deg - No Ice	48.39	-24.42	-14.11	-1804.90	3119.44	0.60
0.9 Dead+1.6 Wind 300 deg - No Ice	36.29	-24.42	-14.11	-1784.30	3084.04	0.60
1.2 Dead+1.6 Wind 330 deg - No Ice	48.39	-14.12	-24.42	-3121.81	1803.30	1.02
0.9 Dead+1.6 Wind 330 deg - No Ice	36.29	-14.12	-24.42	-3086.23	1782.87	1.02
1.2 Dead+1.0 Ice+1.0 Temp	74.69	0.00	-0.00	-0.58	-1.13	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	74.69	-0.00	-7.37	-958.54	-0.57	0.48
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	74.69	3.69	-6.38	-829.87	-479.71	0.47
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	74.69	6.39	-3.68	-478.99	-830.65	0.34
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	74.69	7.38	0.00	0.05	-959.36	0.12
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	74.69	6.39	3.69	478.92	-831.34	-0.14
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	74.69	3.69	6.39	829.28	-480.91	-0.35
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	74.69	0.00	7.37	957.27	-1.96	-0.48
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	74.69	-3.69	6.38	828.59	477.18	-0.47
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	74.69	-6.39	3.68	477.71	828.11	-0.34
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	74.69	-7.38	-0.00	-1.33	956.82	-0.12
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	74.69	-6.39	-3.69	-480.19	828.81	0.14
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	74.69	-3.69	-6.39	-830.55	478.38	0.35
Dead+Wind 0 deg - Service	40.33	-0.00	-5.15	-654.22	0.51	0.22
Dead+Wind 30 deg - Service	40.33	2.57	-4.45	-566.22	-326.42	0.19
Dead+Wind 60 deg - Service	40.33	4.46	-2.57	-326.55	-565.95	0.11
Dead+Wind 90 deg - Service	40.33	5.15	0.00	0.57	-653.90	-0.00
Dead+Wind 120 deg - Service	40.33	4.46	2.58	327.49	-566.71	-0.11
Dead+Wind 150 deg - Service	40.33	2.58	4.46	566.60	-327.74	-0.19
Dead+Wind 180 deg - Service	40.33	0.00	5.15	653.84	-1.02	-0.22
Dead+Wind 210 deg - Service	40.33	-2.57	4.45	565.84	325.91	-0.19
Dead+Wind 240 deg - Service	40.33	-4.46	2.57	326.17	565.44	-0.11
Dead+Wind 270 deg - Service	40.33	-5.15	-0.00	-0.95	653.39	0.00
Dead+Wind 300 deg - Service	40.33	-4.46	-2.58	-327.87	566.20	0.11
Dead+Wind 330 deg - Service	40.33	-2.58	-4.46	-566.98	327.23	0.19

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-40.33	0.00	0.00	40.33	0.00	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
2	-0.02	-48.39	-28.18	0.02	48.39	28.18	0.000%
3	-0.02	-36.29	-28.18	0.02	36.29	28.18	0.000%
4	14.07	-48.39	-24.39	-14.07	48.39	24.39	0.000%
5	14.07	-36.29	-24.39	-14.07	36.29	24.39	0.000%
6	24.40	-48.39	-14.07	-24.40	48.39	14.07	0.000%
7	24.40	-36.29	-14.07	-24.40	36.29	14.07	0.000%
8	28.19	-48.39	0.02	-28.19	48.39	-0.02	0.000%
9	28.19	-36.29	0.02	-28.19	36.29	-0.02	0.000%
10	24.42	-48.39	14.11	-24.42	48.39	-14.11	0.000%
11	24.42	-36.29	14.11	-24.42	36.29	-14.11	0.000%
12	14.12	-48.39	24.42	-14.12	48.39	-24.42	0.000%
13	14.12	-36.29	24.42	-14.12	36.29	-24.42	0.000%
14	0.02	-48.39	28.18	-0.02	48.39	-28.18	0.000%
15	0.02	-36.29	28.18	-0.02	36.29	-28.18	0.000%
16	-14.07	-48.39	24.39	14.07	48.39	-24.39	0.000%
17	-14.07	-36.29	24.39	14.07	36.29	-24.39	0.000%
18	-24.40	-48.39	14.07	24.40	48.39	-14.07	0.000%
19	-24.40	-36.29	14.07	24.40	36.29	-14.07	0.000%
20	-28.19	-48.39	-0.02	28.19	48.39	0.02	0.000%
21	-28.19	-36.29	-0.02	28.19	36.29	0.02	0.000%
22	-24.42	-48.39	-14.11	24.42	48.39	14.11	0.000%
23	-24.42	-36.29	-14.11	24.42	36.29	14.11	0.000%
24	-14.12	-48.39	-24.42	14.12	48.39	24.42	0.000%
25	-14.12	-36.29	-24.42	14.12	36.29	24.42	0.000%
26	0.00	-74.69	0.00	-0.00	74.69	0.00	0.000%
27	-0.00	-74.69	-7.37	0.00	74.69	7.37	0.000%
28	3.69	-74.69	-6.38	-3.69	74.69	6.38	0.000%
29	6.39	-74.69	-3.68	-6.39	74.69	3.68	0.000%
30	7.38	-74.69	0.00	-7.38	74.69	-0.00	0.000%
31	6.39	-74.69	3.69	-6.39	74.69	-3.69	0.000%
32	3.69	-74.69	6.39	-3.69	74.69	-6.39	0.000%
33	0.00	-74.69	7.37	-0.00	74.69	-7.37	0.000%
34	-3.69	-74.69	6.38	3.69	74.69	-6.38	0.000%
35	-6.39	-74.69	3.68	6.39	74.69	-3.68	0.000%
36	-7.38	-74.69	-0.00	7.38	74.69	0.00	0.000%
37	-6.39	-74.69	-3.69	6.39	74.69	3.69	0.000%
38	-3.69	-74.69	-6.39	3.69	74.69	6.39	0.000%
39	-0.00	-40.33	-5.15	0.00	40.33	5.15	0.000%
40	2.57	-40.33	-4.45	-2.57	40.33	4.45	0.000%
41	4.46	-40.33	-2.57	-4.46	40.33	2.57	0.000%
42	5.15	-40.33	0.00	-5.15	40.33	-0.00	0.000%
43	4.46	-40.33	2.58	-4.46	40.33	-2.58	0.000%
44	2.58	-40.33	4.46	-2.58	40.33	-4.46	0.000%
45	0.00	-40.33	5.15	-0.00	40.33	-5.15	0.000%
46	-2.57	-40.33	4.45	2.57	40.33	-4.45	0.000%
47	-4.46	-40.33	2.57	4.46	40.33	-2.57	0.000%
48	-5.15	-40.33	-0.00	5.15	40.33	0.00	0.000%
49	-4.46	-40.33	-2.58	4.46	40.33	2.58	0.000%
50	-2.58	-40.33	-4.46	2.58	40.33	4.46	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00097668
3	Yes	4	0.00000001	0.00049224
4	Yes	6	0.00000001	0.00005939
5	Yes	5	0.00000001	0.00049740
6	Yes	6	0.00000001	0.00005732
7	Yes	5	0.00000001	0.00047987
8	Yes	4	0.00000001	0.00068682
9	Yes	4	0.00000001	0.00022309
10	Yes	6	0.00000001	0.00005776
11	Yes	5	0.00000001	0.00048355

12	Yes	6	0.00000001	0.00005947
13	Yes	5	0.00000001	0.00049799
14	Yes	5	0.00000001	0.00004607
15	Yes	4	0.00000001	0.00057596
16	Yes	6	0.00000001	0.00005689
17	Yes	5	0.00000001	0.00047627
18	Yes	6	0.00000001	0.00005887
19	Yes	5	0.00000001	0.00049302
20	Yes	4	0.00000001	0.00067022
21	Yes	4	0.00000001	0.00020321
22	Yes	6	0.00000001	0.00005885
23	Yes	5	0.00000001	0.00049284
24	Yes	6	0.00000001	0.00005724
25	Yes	5	0.00000001	0.00047919
26	Yes	4	0.00000001	0.00000825
27	Yes	5	0.00000001	0.00051241
28	Yes	5	0.00000001	0.00066838
29	Yes	5	0.00000001	0.00065665
30	Yes	5	0.00000001	0.00051220
31	Yes	5	0.00000001	0.00065973
32	Yes	5	0.00000001	0.00066575
33	Yes	5	0.00000001	0.00051138
34	Yes	5	0.00000001	0.00064901
35	Yes	5	0.00000001	0.00065936
36	Yes	5	0.00000001	0.00050820
37	Yes	5	0.00000001	0.00065833
38	Yes	5	0.00000001	0.00065352
39	Yes	4	0.00000001	0.00004658
40	Yes	4	0.00000001	0.00020868
41	Yes	4	0.00000001	0.00018539
42	Yes	4	0.00000001	0.00003421
43	Yes	4	0.00000001	0.00018888
44	Yes	4	0.00000001	0.00020814
45	Yes	4	0.00000001	0.00004730
46	Yes	4	0.00000001	0.00018060
47	Yes	4	0.00000001	0.00020155
48	Yes	4	0.00000001	0.00003400
49	Yes	4	0.00000001	0.00020033
50	Yes	4	0.00000001	0.00018337

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	180 - 133	24.458	44	1.456	0.005
L2	137 - 87.3333	12.771	44	1.019	0.001
L3	92.6667 - 42.6667	5.349	50	0.578	0.000
L4	49.3333 - 0	1.457	50	0.275	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180'	(2) DB980H90E-M w/ Mount Pipe	44	24.458	1.456	0.005	32066
175'	APX16DWV-16DWV-S-E-A20	44	22.985	1.405	0.004	32066
167'	(2) LPA-80080/4CF w/ Mount Pipe	44	20.652	1.325	0.003	12333
75'	KS24019-L112A	50	3.417	0.440	0.000	7931

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	180 - 133	134.459	2	8.010	0.026
L2	137 - 87.3333	70.316	12	5.616	0.006
L3	92.6667 - 42.6667	29.471	24	3.185	0.002
L4	49.3333 - 0	8.027	24	1.517	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180'	(2) DB980H90E-M w/ Mount Pipe	2	134.459	8.010	0.026	6027
175'	APX16DWV-16DWV-S-E-A20	2	126.377	7.736	0.023	6027
167'	(2) LPA-80080/4CF w/ Mount Pipe	2	113.573	7.296	0.019	2316
75'	KS24019-L112A	24	18.824	2.425	0.002	1443

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	180 - 133 (1)	TP27.51x15.5x0.25	47'	0'	0.0	20.8198	-9.28	1527.84	0.006
L2	133 - 87.3333 (2)	TP38.56x25.9879x0.375	49'8-1/32"	0'	0.0	43.8428	-17.70	3257.30	0.005
L3	87.3333 - 42.6667 (3)	TP49.1x36.46x0.4375	50'	0'	0.0	65.2337	-30.30	4757.64	0.006
L4	42.6667 - 0 (4)	TP59x46.5397x0.4375	49'3-31/32"	0'	0.0	81.3214	-48.38	5529.76	0.009

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	180 - 133 (1)	TP27.51x15.5x0.25	543.69	822.96	0.661	0.00	822.96	0.000
L2	133 - 87.3333 (2)	TP38.56x25.9879x0.375	1350.58	2461.57	0.549	0.00	2461.57	0.000
L3	87.3333 - 42.6667 (3)	TP49.1x36.46x0.4375	2311.18	4589.28	0.504	0.00	4589.28	0.000
L4	42.6667 - 0 (4)	TP59x46.5397x0.4375	3605.22	6661.72	0.541	0.00	6661.72	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	180 - 133 (1)	TP27.51x15.5x0.25	16.36	763.92	0.021	0.94	1647.94	0.001
L2	133 - 87.3333 (2)	TP38.56x25.9879x0.375	20.12	1628.65	0.012	0.93	4929.16	0.000
L3	87.3333 - 42.6667 (3)	TP49.1x36.46x0.4375	24.16	2378.82	0.010	1.02	9189.83	0.000
L4	42.6667 - 0 (4)	TP59x46.5397x0.4375	28.23	2764.88	0.010	1.02	13339.75	0.000

Pole Interaction Design Data

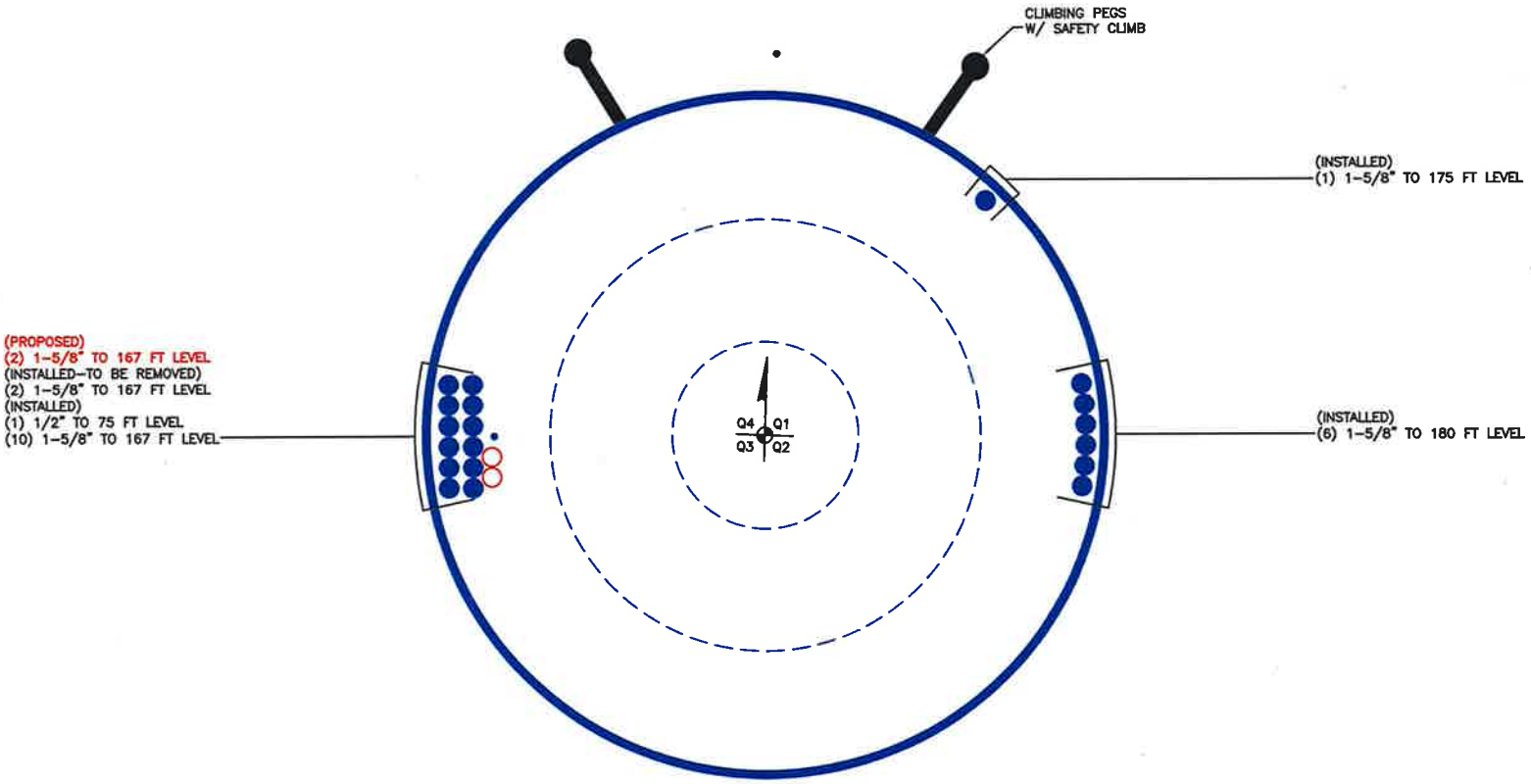
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	180 - 133 (1)	0.006	0.661	0.000	0.021	0.001	0.667	1.000	4.8.2
L2	133 - 87.3333 (2)	0.005	0.549	0.000	0.012	0.000	0.554	1.000	4.8.2
L3	87.3333 - 42.6667 (3)	0.006	0.504	0.000	0.010	0.000	0.510	1.000	4.8.2
L4	42.6667 - 0 (4)	0.009	0.541	0.000	0.010	0.000	0.550	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	180 - 133	Pole	TP27.51x15.5x0.25	1	-9.28	1527.84	66.7	Pass
L2	133 - 87.3333	Pole	TP38.56x25.9879x0.375	2	-17.70	3257.30	55.4	Pass
L3	87.3333 - 42.6667	Pole	TP49.1x36.46x0.4375	3	-30.30	4757.64	51.0	Pass
L4	42.6667 - 0	Pole	TP59x46.5397x0.4375	4	-48.38	5529.76	55.0	Pass
							Summary	
							Pole (L1) 66.7	Pass
							RATING = 66.7	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876370 TOWER ID: C_BASELEVEL

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#: *876370*
Site Name: *MAYBROOK / BOND*
App #: *395019 Rev. 1*

Pole Manufacturer:	*Other*

Reactions		
Mu:	3605	ft-kips
Axial, Pu:	48	kips
Shear, Vu:	28	kips
Eta Factor, η	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:	68	in

Anchor Rod Results

		Rigid
Max Rod (Cu+ Vu/ή):	132.5 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	φ*Tn
Anchor Rod Stress Ratio:	51.0% **Pass**	

Plate Data		
Diam:	74	in
Thick:	2	in
Grade:	60	ksi
Single-Rod B-eff:	9.36	in

Base Plate Results

	Flexural Check	Rigid
Base Plate Stress:	38.0 ksi	AISC LRFD
Allowable Plate Stress:	54.0 ksi	φ*Fy
Base Plate Stress Ratio:	70.3% **Pass**	Y.L. Length: 33.81

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

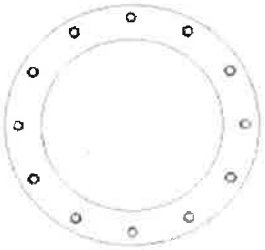
Stiffener Results

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:	59	in
Thick:	0.4375	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

FOUNDATION REACTION COMPARISON

BU# 876370
WO# 1427117

REACTIONS	DESIGN REACTIONS	*MODIFIED DESIGN REACTIONS	CURRENT REACTIONS	% CAPACITY
MOMENT (kip-ft)	4315.6	5826.1	3605.0	61.9%
SHEAR (kips)	33.3	45.0	28.0	62.3%

Design loads from: CCIsites Doc #1532099

* Design loads were multiplied by 1.35 for comparison as allowed by TIA-222-G, Section 15.5.

Although the shear capacity is at 62.3%, the moment reaction is the governing criteria for a monopole drilled pier foundation. Therefore, the overall capacity for this foundation is 61.9%.

USGS Design Maps Summary Report

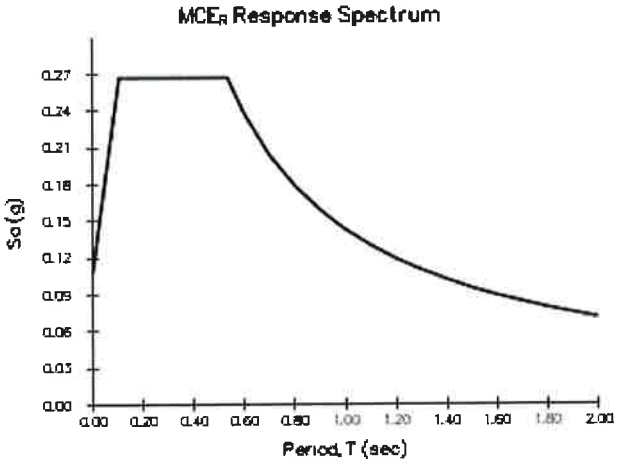
User–Specified Input

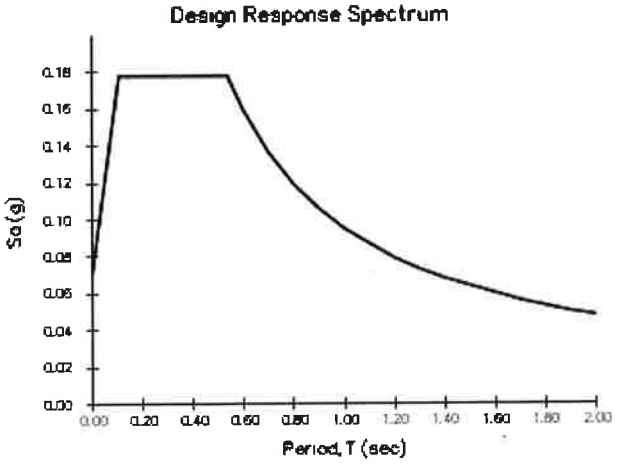
Report Title	876370 Fri July 7, 2017 17:20:25 UTC
Building Code Reference Document	2012/2015 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	41.43546°N, 72.22085°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

USGS–Provided Output

S_S =	0.167 g	S_{MS} =	0.267 g	S_{DS} =	0.178 g
S_1 =	0.060 g	S_{M1} =	0.143 g	S_{D1} =	0.095 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





CCISeismic - Design Category

Per *2012/2015 IBC*

Site BU: 876370
Work Order: 1427117
Application: 395019 Rev. 1

CROWN CASTLE

	Degrees	Minutes	Seconds		
Site Latitude =	41	26	7.65	41.4355	degrees
Site Longitude =	-72	13	15.07	-72.2209	degrees
Ground Supported Structure =	Yes				
Structure Class =	II			*(Table 2-1)*	
Site Class =	D - Stiff Soil			*(Table 2-11)*	

Spectral response acceleration short periods, S_S =	0.167	USGS Seismic Tool
Spectral response acceleration 1 s period, S_1 =	0.060	

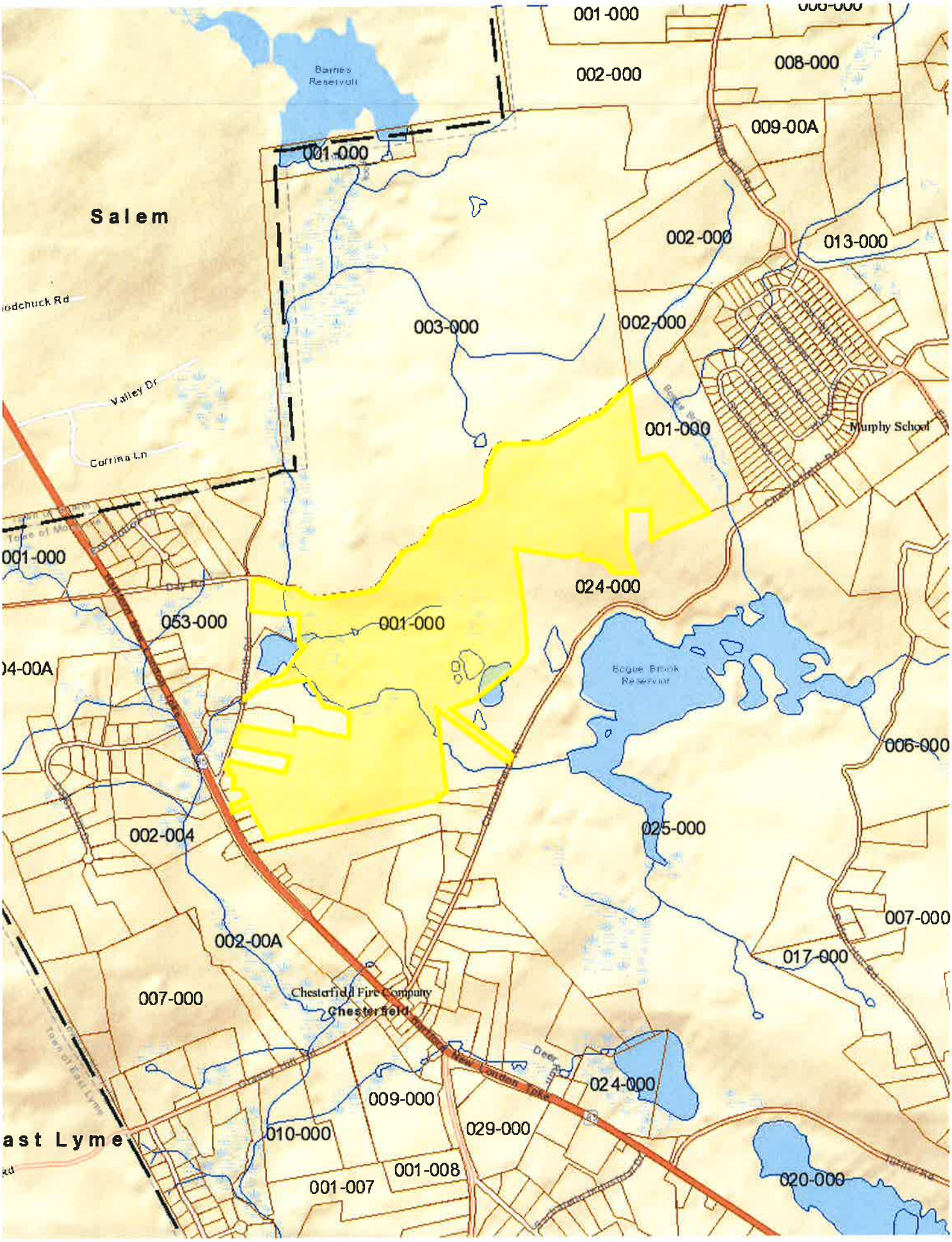
Importance Factor, I =	1.0	*(Table 2-3)*
Acceleration-based site coefficient, F_a =	1.6	*(Table 2-12)*
Velocity-based site coefficient, F_v =	2.4	*(Table 2-13)*

Design spectral response acceleration short period, S_{DS} =	0.178	*(2.7.6)*
Design spectral response acceleration 1 s period, S_{D1} =	0.096	*(2.7.6)*

Seismic Design Category - Short Period Response =	B	*ASCE 7-05 Table 11.6-1*
Seismic Design Category - 1s Period Response =	B	*ASCE 7-05 Table 11.6-2*

Worst Case Seismic Design Category =	B	*ASCE 7-05 Tables 11.6-1 and 6-2*

ATTACHMENT 4


001-000
002-000
008-000
009-00A
Barnes Reservoir
001-000
Salem
002-000
013-000
003-000
002-000
Valley Dr
Corrina Ln
001-000
Murphy School
001-000
024-000
053-000
001-000
Bogue Brook Reservoir
006-000
025-000
002-004
007-000
002-00A
017-000
Chesterfield Fire Company
Chesterfield
007-000
New London Tpke
024-000
009-000
029-000
010-000
001-008
001-007
020-000
East Lyme

Property Location 41 BECKWITH RD | Map ID 012/ 001/ 000/ / | Bldg Name SFR & TOWER SITE | State Use 1010
Vision ID 507 | Account # B0046400 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 9/11/2017 9:48:35 AM

CURRENT OWNER

BOND GLADYS J TRUSTEE

41 BECKWITH RD

OAKDALE CT 06370

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	7 Electric	1 Paved	S Murphy Schl
	Well		F Chesterfield
	Septic		

SUPPLEMENTAL DATA

Alt Parcel ID	012/001-000		
Census	695202		
Dev Lot			
Subdiv			
Map #		Callback	
Zoning Notes	WRP-160		
Gis ID	012/001-000	ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Res Land	1-1	60,800	42,560
Res Exces	1-2	155,830	109,080
Dwelling	1-3	172,740	120,920
Res OB	1-4	185,590	129,910
Util Land	4-1	185,400	129,780
Farm Land	6-1	22,500	880
Forest	6-2	377,500	25,370
	Total	1,160,360	558,500

6086

MONTVILLE, CT

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
BOND GLADYS J TRUSTEE	0606	806	06-29-2015	U	I	0	10
BOND LOUIS HEALY EST	0576	0614	10-10-2012	U	I	0	29
BOND LOUIS HEALY	0101	0472	08-01-1968		I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2016	1-1	42,560	2015	1-1	53,760	2014	1-1	53,760
	1-2	109,080		1-2	196,340		1-2	196,340
	1-3	120,920		1-3	108,340		1-3	108,340
	1-4	129,910		1-4	5,670		1-4	18,040
	Total	558,500		Total	508,200		Total	520,570

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Street Index Name	Tracing	Batch
0001				

NOTES

CELL SITE

$2000 MONTH X 12 = $24,000

15% EXP CAP 11% = $185,400

VC12: NEW FORESTRY REPORT, FOREST ACRES FROM 187 AC TO 151 AC. OVERALL ACREAGE CORRECTION FROM 237 AC. TO 226 AC.

V580 P1 1/29/13 EASEMENT SALE/ASSIGN OF LEASE V580 P1 10,000 EASEMENT W/20' ROW $405,000

VC15: SHEDS & BARNS REMOVED

2016 ADDED CELL TOWER FROM PID 101337

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	172,740
Appraised XF (B) Value (Bldg)	0
Appraised OB (B) Value (Bldg)	185,590
Appraised Land Value (Bldg)	802,030
Special Land Value	26,250
Total Appraised Parcel Value	1,160,360
Valuation Method	C
Adjustment	
Total Appraised Parcel Value	1,160,360

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
E2017-0036	02-28-2017	00		8,800		100	03-01-2017	CA-INSTALL NEW 2
B2017-0061	02-28-2017	79		15,000		100	05-17-2017	CA-VERIZON REPL
B2016-0468	11-30-2016	CM		43,500		100	05-17-2017	CA-CELL TOWER M
W/O	05-22-2015	79	Misc	0	08-20-2015	100		OUTBLDNGS REM
M2013-014	09-06-2013	13	AG tank New	500		100	09-09-2013	CA-TANK & LINES
E2013-0205	08-28-2013	00	Electrical	6,000		100	09-09-2013	CA-STANDBY GEN
E2002-260	09-12-2002	00	ELECTRICAL FOR	7,000		100		ELECTRICAL FOR

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result
08-20-2015			LB	06	Permit Inspection
04-13-2011			KN	00	Interior + Exterior Inspe

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Fronta	Depth	Units		Unit Price	I. Fact	S.A.	Ac Di	C. Fact	St. Idx	Adj	Notes	Special Pricing Spec Use	Special Pricing	Spec Calc		S Adj	Adj Unit Pric	Land Value
1	1010	Single Family	WRP				160,000	SF	0.38	1.000	5	1.000	1.00	016	1.00			0			1.000		60,800
1	1010	Single Family	WRP				62	AC	2,500.00	1.000	0	1.000	1.00	016	1.00			0			0.000		155,830
1	4340	Cell Tower	WRP				1	WF	185,400.0	1.000	0	1.000	1.00		1.00			0			0.000		185,400
1	605	Perm Pasture	WRP				9	AC	2,500.00	1.000	0	1.000	1.00	016	1.00		490	140			0.000		22,500
1	700	Forest	WRP				151	AC	2,500.00	1.000	0	1.000	1.00	016	1.00		490	240			0.000		377,500
						Total Card Land Units	226.003	AC	Parcel Total Land Area	226.0031										Total Land Value			802,030

Property Location 41 BECKWITH RD | Map ID 012/ 001/ 000/ / | Bldg Name SFR & TOWER SITE | State Use 1010
Vision ID 507 | Account # B0046400 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 9/11/2017 9:48:35 AM

CONSTRUCTION DETAIL

Element	Cd	Description
Style	02	Split Level
Model	01	Residential
Grade:	09	C+
Stories:	1	
Occupancy	1	
Exterior Wall A	26	Aluminum Sidng
Exterior Wall B		
Roof Structure:	03	Gable
Roof Cover	03	Asphalt
Interior Wall A	05	Drywall
Interior Wall B		
Interior Flr A	12	Hardwood
Interior Flr B		
Heat Fuel	02	Oil
Heat Type:	04	Forced Air
AC Type:	01	None
Total Bedrooms	03	3 Bedrooms
Total Bthrms:	2	
Total Half Baths	1	1
Total Xtra Fixtrs	0	
Total Rooms:	6	
Bath Style:	02	Average
Kitchen Style:	02	Average
Whirlpool Tub		
Fireplaces	2	
Fin Bsmnt	700	
Fin Bsmnt Qual	R	Rec Room 4
Attic Access	04	Scuttle
Basement Gara	0	
MH Basement		
MHP/Complex		

CONSTRUCTION DETAIL (CONTINUED)

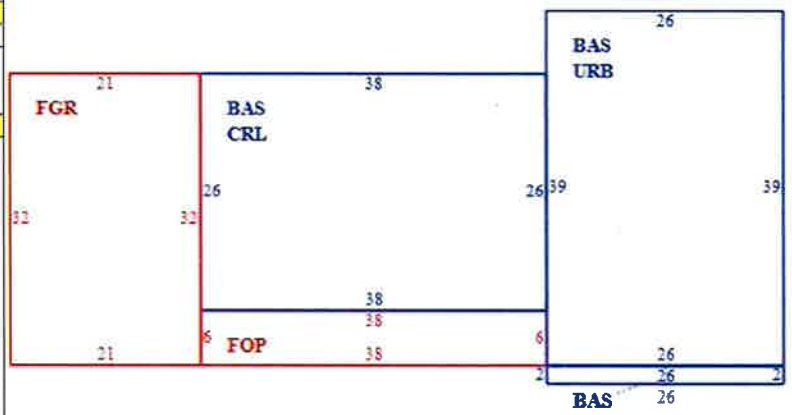
Element	Cd	Description

MIXED USE

Code	Description	Percentage
1010	Single Family	100
		0
		0

COST / MARKET VALUATION

Base Rate	100.00
RCN	
Net Other Adj	
Year Built	1963
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	36
Functional Obsol	
Economic Obsol	
Cost Trend Factor	1
Condition	
% Complete	
	64
RCNLD	172,740
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	Lan	Units	Unit Price	Year	Pct	Depre	Conditio	Qu		Apprais Va
SPL2	Pool- Ingroun			B	1,00	23.00	1963	30	0.00	F	A	1.00	6,900
PAT1	Patio-Ave			B	600	4.00	2011	30	0.00	F	08	1.00	720
SHD1	Shed			B	80	12.00	2011	50	0.00	AV	08	1.00	480
IMP	Implement S			B	2,40	6.00	1977	10	0.00	P	07	1.00	0
CELL	Cell Tower			L	1	163600.0		100	0.00	AV	08	0.00	163,600
CELS	Cell Shed			L	160	100.00		75	0.00	G	08	1.00	12,000
FN8	6' Top Rail F			L	360	7.00		75	0.00	G	08	1.00	1,890

BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Living	Gross	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	2,054	2,054		102.05	209,604
CRL	Crawl Space	0	988		0.00	0
FGR	Garage	0	672		30.67	20,613
FOP	Open Porch	0	228		15.22	3,470
URB	Raised Basement	0	1,014		35.73	36,227
	Ttl Gross Liv / Lease Area	2,054	4,956			

ATTACHMENT 5

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, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103		3	neopost 02/05/2013 US POSTAGE $002.38 ZIP 06103 041L12203880
	Postmaster, per *(name of receiving employee)*		OLD STATE HOUSE STATION 06103 FEB 05 2013 USPS

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Ronald K. McDaniel, Mayor Town of Montville 310 Norwich-New London Turnpike Montville, CT 06382				
2.	Marcia Vlaun, Town Planner Town of Montville 310 Norwich-New London Turnpike Montville, CT 06382				
3.	Gladys J. Bond, Trustee 41 Beckwith Road Oakdale, CT 06370				
4.					
5.					
6.					