

January 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
720 Quinebaug Road, Thompson, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 115-foot level of an existing 125-foot monopole tower at 720 Quinebaug Road in Thompson, Connecticut (the “Property”). The tower and Property are owned by the Quinebaug Volunteer Fire Department (“QVFD”). Cellco’s use of the tower was approved by the Council in 2007. Cellco now intends to replace six (6) of its existing antennas with three (3) model JAHH-65B-R3B, 700/2100 MHz antennas and three (3) model JAHH-65B-R3B, 850/1900 MHz antennas, at the same level on the tower. Cellco also intends to install nine (9) remote radio heads (“RRHs”) 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 Kenneth Beausoleil, First Selectman for the Town of Thompson; Mary Ann Chinatti, Thompson’s Director of Planning and Development; and QVFD, the tower and 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 RRHs will be installed at the same 115-foot level of the 125-foot tower.

17461475-v1

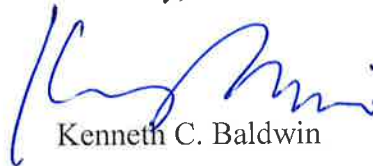
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2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels 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 (115-foot rad-center) 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:

Kenneth Beausoleil, Thompson First Selectman
Mary Ann Chinatti, Thompson's Director of Planning and Development
Quinebaug Volunteer Fire Department
Tim Parks

ATTACHMENT 1



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*

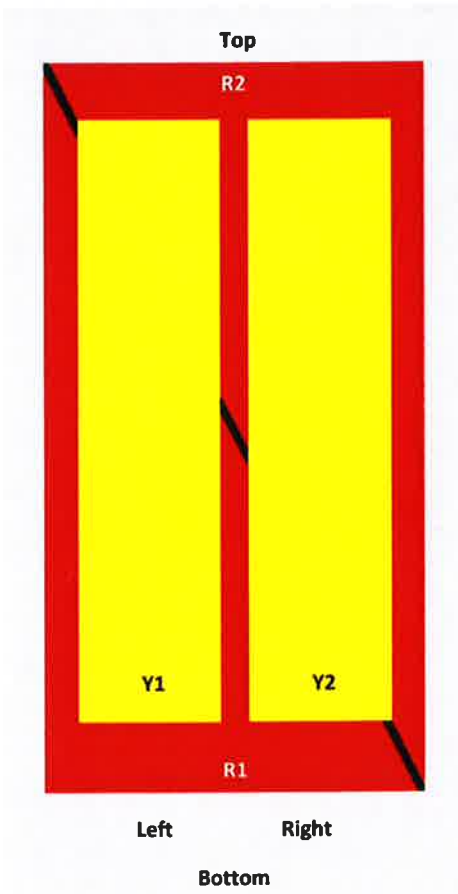
Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
Gain by Beam Tilt, average, dBi	2° 14.3	2° 15.0	0° 17.2	0° 17.6	0° 17.7	0° 17.9
	8° 14.3	8° 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.](#)

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	ANXXXXXXXXXXXXX1
R2	824-894	3-4	2	ANXXXXXXXXXXXXX2
Y1	1695-2360	5-6	3	ANXXXXXXXXXXXXX3
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

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



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.

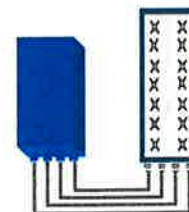


FEATURES

- 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

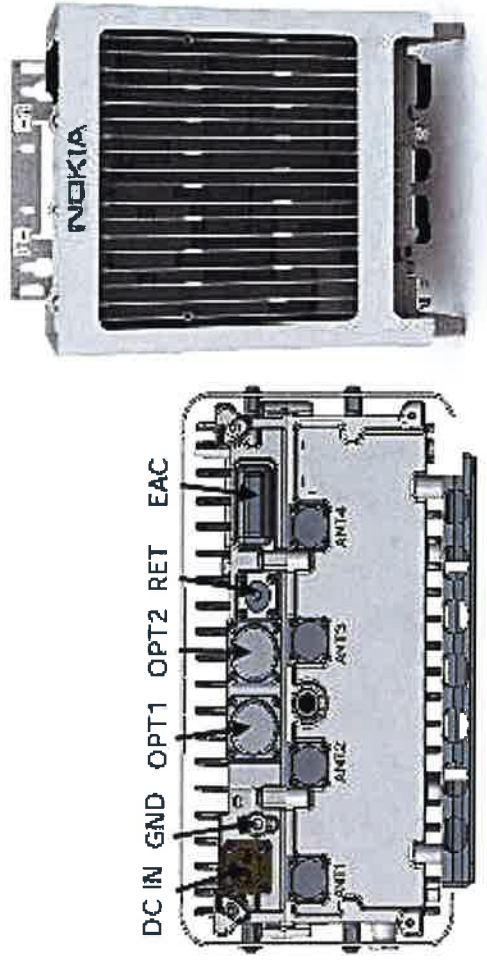
TECHNICAL SPECIFICATIONS

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.)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield)
Volume in L	38 (with solar shield)
Weight in kg (lb) (w/o mounting HW)	26 (57.2) (with solar shield)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	550W typical @100% RF load (in 2Tx or 4Tx mode)
Environmental conditions	-40°C (-40°F) /+55°C (+131°F) IP65
Wind load (Ø150km/h or 93mph)	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

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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-4.8V / -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 ANT 1, 2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other Interfaces	External Alarm MCR-26 Serial connector (4 inputs, 1 Output) DC Circular Power Connector



Operational Temperature Range	-40°C to 55°C (with solar cover)
Dimensions (mm)	337 x 295 x 165 (radio only)
Height x width x depth	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

B66a RRH4x45W

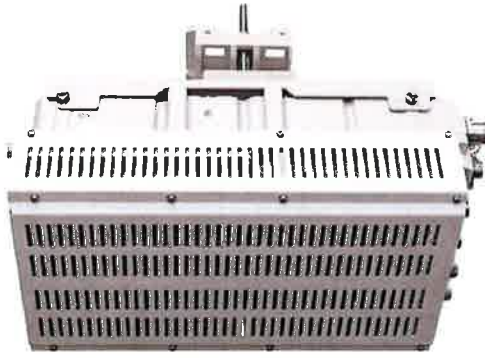
Datasheet

Radio Technology

FDD-LTE

Feature description:

- Remote Radio Head 4x4.5W or 2x90W Switchable via SW



Power Output 4 x 45 W or 2x90W (SW Switchable)
w/o fans

IBW 70MHz

OBW 60 MHz

RF Sharing LTE

Mass/Volume 25.8kg/56.9 lb Weight
655H x 299W x 182D mm
25.8"x11.8"x7.2"
29.7L / 35.5L

Antenna Conf. 4Tx/4Rx

Temperature -40 to 55 °C

IP class IP65

Input Power DC 48 V

Cooling Natural Convection

Mounting Wall, Pole mount

BBU connection 2x 9.8Gbps SFP(Rate 7 HW ready)

B66a RRH 4x45 – Interfaces

Power:

- Max power: 816W (add 58W for AISG)
- Breaker size: 25A
- Max distance with 6ga power feed and 5.5V drop: 284 feet

RF Interfaces:

- 4.3/10 Connectors
- No monitoring ports(Spectrum analyzer SW takes place of monitoring ports)

AISG:

- Two Smart Bias-T
- One AISG port

B66 Details

- Max power for a single carrier is:
 - 2x60W for 10,15,20 MHz carrier
 - 2x40W for 5 MHz carrier
- Multi- Carrier Support with AWS-1 carriers: 15.1
- Multi- Carrier Support with AWS-3 carriers: 16.2

Carrier power: Multi-carrier

- Assuming 2 Tx power can be assigned per carrier subject to 40W max for 5Mhz, 60W for larger in 2T, cut that power in half for 4T
- Example:B4 (20Mhz) and AWS3 (10MHz)
 - Power can be varied between those two carriers, can go 60W for 20 MHz carrier, 30W for 10 MHz carrier to use the 90W in 2T.
 - It could be 45/45 for 20Mhz/10Mhz if desired.



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.

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

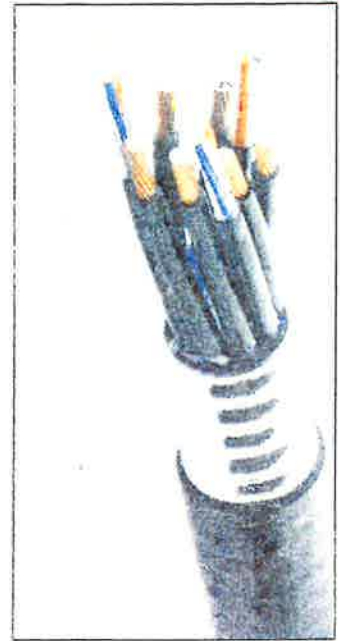


Figure 1: HYBRIFLEX Series

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)]	0.68 (0.205)
DC-Resistance Power Cable, 8.4mm ² (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 to 149)
Operation Temperature	[°C (°F)]	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

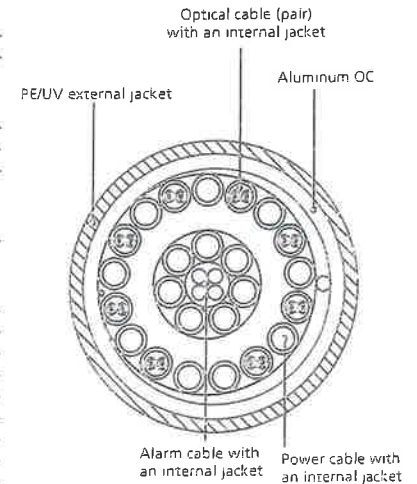


Figure 2: Construction Detail

All information contained in the present datasheet is subject to confirmation at time of ordering.

ATTACHMENT 2

Site Name: Quinebaug (Thompson) Tower Height: 125'		General		Power		Density					
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total			
*Quinebaug FD	1	100	133	155	0.0022	0.2000	0.11%				
*Quinebaug FD	1	100	90	465	0.0051	0.3100	0.16%				
*Quinebaug FD	1	100	70	33.9	0.0088	0.2000	0.44%				
*AT&T UMTS	2	565	130	880	0.0264	0.5867	0.45%				
*AT&T UMTS	2	875	130	1900	0.0409	1.0000	0.41%				
*AT&T GSM	1	283	130	880	0.0066	0.5867	0.11%				
*AT&T GSM	4	525	130	1900	0.0491	1.0000	0.49%				
*AT&T LTE	1	1771	130	734	0.0414	0.4893	0.85%				
Verizon PCS	0	0	115	0.0000	1970	1.0000	0.00%				
Verizon Cellular	9	503	115	0.1231	869	0.5793	21.25%				
Verizon 850 LTE	1	3710	115	0.1009	869	0.5793	17.41%				
Verizon AWS	1	7771	115	0.2113	2145	1.0000	21.13%				
Verizon 700	1	2063	115	0.0561	746	0.4973	11.28%				74.1%
* Source: Siting Council											

ATTACHMENT 3



**STRUCTURAL ANALYSIS REPORT
125' MONOPOLE TOWER
THOMPSON, CONNECTICUT**

Prepared for
Verizon Wireless

Verizon Site: 468550_Quinebaug

August 16, 2017



APT Project #CT1411102

**STRUCTURAL ANALYSIS REPORT
125' MONOPOLE TOWER
THOMPSON, CONNECTICUT
prepared for
Verizon Wireless**

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of this 125-foot monopole tower located at 720 Quinebaug Road in Thompson, Connecticut. The analysis was performed for Verizon Wireless's proposed replacement of six of their twelve panel antennas and installation of nine remote radio heads (RRHs) and two power/fiber distribution boxes (D-boxes). Two hybrid power/fiber lines are to be installed inside the pole.

Our analysis indicates the tower and foundation meet the requirements of TIA-222 and the Connecticut State Building Code with the proposed equipment changes.

INTRODUCTION:

A structural analysis of this communications tower was performed by APT for Verizon Wireless. The tower is located at the Quinebaug Fire Station in Thompson, Connecticut. APT previously visited the tower site on July 12, 2006 to perform a final inspection of the newly installed monopole tower. We revisited the site on July 26, 2017 to record the current inventory. This analysis also relied on information provided by others, which included design drawings and calculations by Valmont Communications, Project No. QU12139 dated December 22, 2005, and antenna loading proposed by Verizon Wireless.

The structure is a 125-foot, 16-sided, 3-section tapered steel monopole manufactured by Valmont Structures. According to Valmont design drawings, the tower is designed to support four 12-panel antenna arrays, one SD110 and two DB404 antennas.

The analysis was conducted using the following antenna inventory (proposed equipment changes shown in **bold** text):

Carrier	Antenna	Elev.	Mount	Feed Lines
Town	10' 8-bay dipole, 20' 4-bay dipole, 10' omni	123'	On platform below	(3) 7/8"
AT&T	(6) 800-10121, (1) AM-X-CD-17-65, (2) 800-10764 panels, (3) RRHs, (6) TMAs, (6) diplexers, (1) D-box	123'	13' low-profile platform	(12) 1-5/8", (2) power, (1) fiber
Verizon	(6) LPA-80080/6, (6) JAHH-65B-R3B panels, (9) RRHs, (2) D-boxes ¹	115'	13' low-profile platform	(12) 1-5/8", (2) hybrid

All-Points Technology Corporation

116 Grandview Road
Conway, NH 03818
(603) 496-5853

3 Saddlebrook Drive
Killingworth, CT 06419
(860) 663-1697

¹ Currently twelve panel antennas, six diplexers and twelve lines installed.

CONDITION ASSESSMENT:

- **General Observations:** The tower, a 16-sided tapered steel monopole, appeared to be in sound condition. No signs of movement or overstress of the tower were observed.
- **Antenna Connections:** Antenna mounting hardware was in good condition, with corrosion resistant hardware and galvanized members prevalent.
- **Base Plate:** Base plate and anchor bolts appeared to be in good condition. No loose or missing nuts were observed.
- **Foundation:** Visible concrete appeared to be in good condition.

STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with TIA-222-G (TIA), Structural Standard for Antenna Supporting Structures and Antennas and the Connecticut State Building Code.

The analysis was conducted using a 3-second gust wind speed of 100 miles per hour with no ice and 40-mph with 3/4" radial ice in accordance with the TIA-222-G standard. The following additional design criteria were used:

Structure Class: III (essential communications facility)
Exposure Category: B
Topographic Category: 1

Analysis Results:

Our analysis determined the tower will support the proposed antennas and associated equipment. The following table summarizes the capacity of the monopole based on combined axial and bending stresses:

Elevation	Capacity
86'-125'	57%
39'-86'	59%
0'-39'	66%
Base plate	60%

All-Points Technology Corporation

The base foundation was evaluated from original Valmont drawings. The foundation was determined to be adequately sized to support the proposed changes.

Factored base reactions imposed were calculated to be as follows:

Axial:	25.5 kips
Total Shear:	20.8 kips
Overturning Moment:	1852 ft-kips

CONCLUSIONS AND SUGGESTIONS:

As detailed above, our analysis indicates that the existing 125' monopole tower located at 720 Quinebaug Road in Thompson, Connecticut meets the requirements of TIA-222 and the Connecticut State Building Code with Verizon Wireless's proposed equipment changes.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in an undeteriorated condition.
3. Tower is in plumb condition.

All-Points Technology Corporation, P.C. (APT) is not responsible for any modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

1. Adding or relocating antennas.
2. Installing antenna mounts or waveguide cables.
3. Extending tower.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which conflicts with that which is contained herein, or you are aware of any defects arising from original design, material, fabrication, or erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

All-Points Technology Corporation

Appendix A

Tower Schematic

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
20' 4-Bay Dipole	123	13' low-profile platform	121
10' x 1" omni whip	123	(2) LPA-80080/6	115
20' x 2" omni whip	123	(2) LPA-80080/6	115
(2) 800-10121	123	(2) LPA-80080/6	115
(2) 800-10121	123	(2) JAHH-65B-R3B	115
(2) 800-10121	123	(2) JAHH-65B-R3B	115
AM-X-CD-17-65	123	(2) JAHH-65B-R3B	115
800-10764	123	ALU RRH2x60-700 w/bracket	115
800-10764	123	ALU RRH2x60-700 w/bracket	115
(2) LGP2140X TMA	123	ALU RRH2x60-700 w/bracket	115
(2) LGP2140X TMA	123	ALU RRH2x90-AWS w/bracket	115
(2) LGP2140X TMA	123	ALU RRH2x90-AWS w/bracket	115
(2) LGP2190X Diplexer	123	ALU RRH2x90-AWS w/bracket	115
(2) LGP2190X Diplexer	123	Nokia RRH4x40-850 w/bracket	115
(2) LGP2190X Diplexer	123	Nokia RRH4x40-850 w/bracket	115
Ericsson RRUS-11	123	Nokia RRH4x40-850 w/bracket	115
Ericsson RRUS-11	123	Raycap RDC-3315-PF-48 J-box	115
Ericsson RRUS-11	123	Raycap RDC-3315-PF-48 J-box	115
Raycap DC6-48-60-18-8F surge suppressor	123	13' low-profile platform	113

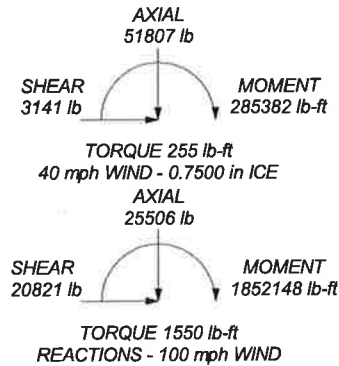
MATERIAL STRENGTH

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

Section	39.50	50.58	45.00	16	0.3125	37.6954	47.5932	6461.8	13682.5
Length (ft)	16	0.1875	4.50	21.0370	29.7250	2025.4			
Number of Sides									
Thickness (in)									
Socket Length (ft)									
Top Dia (in)									
Bot Dia (in)									
Grade									
Weight (lb)									



ALL REACTIONS ARE FACTORED



All-Points Technology Corporation
 116 Grandview Road
 Conway, NH 03818
 Phone: (603) 496-5853
 FAX: (603) 447-2124

Job: **125' Monopole Tower**
 Project: **CT1411102 Quinebaug**
 Client: Verizon Drawn by: Rob Adair App'd:
 Code: TIA-222-G Date: 08/16/17 Scale: N
 Path: Z:\Share\NH\Office\libs\2 Verizon\TFC\1411102 Quinebaug\CT1411102 Quinebaug.dwg Dwg No. |

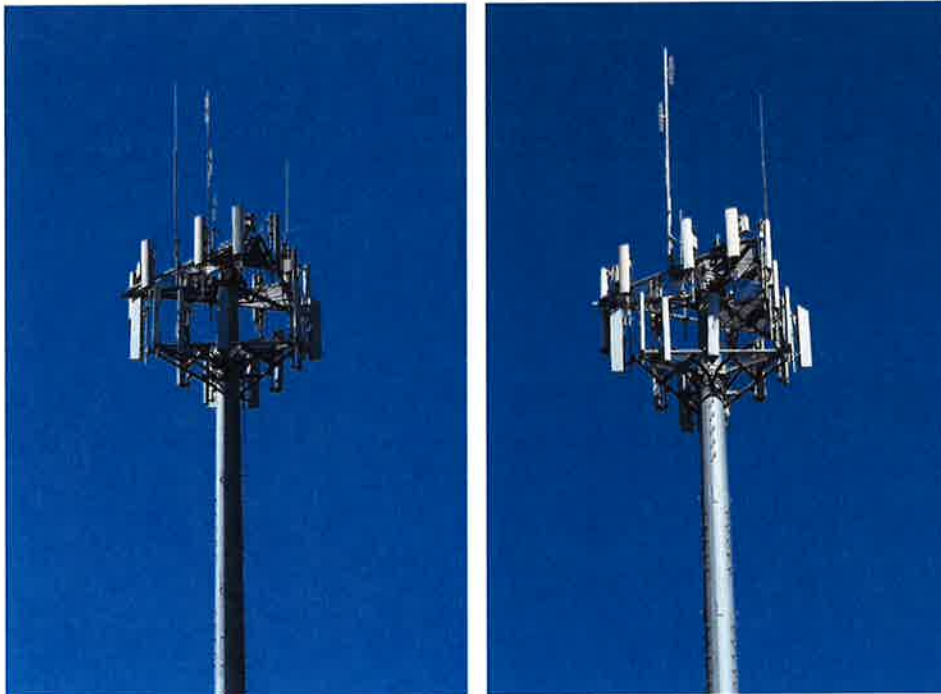
Appendix B

Photographs

VERIZON WIRELESS
125' MONOPOLE TOWER
THOMPSON, CONNECTICUT
VERIZON SITE: 468550 QUINEBAUG



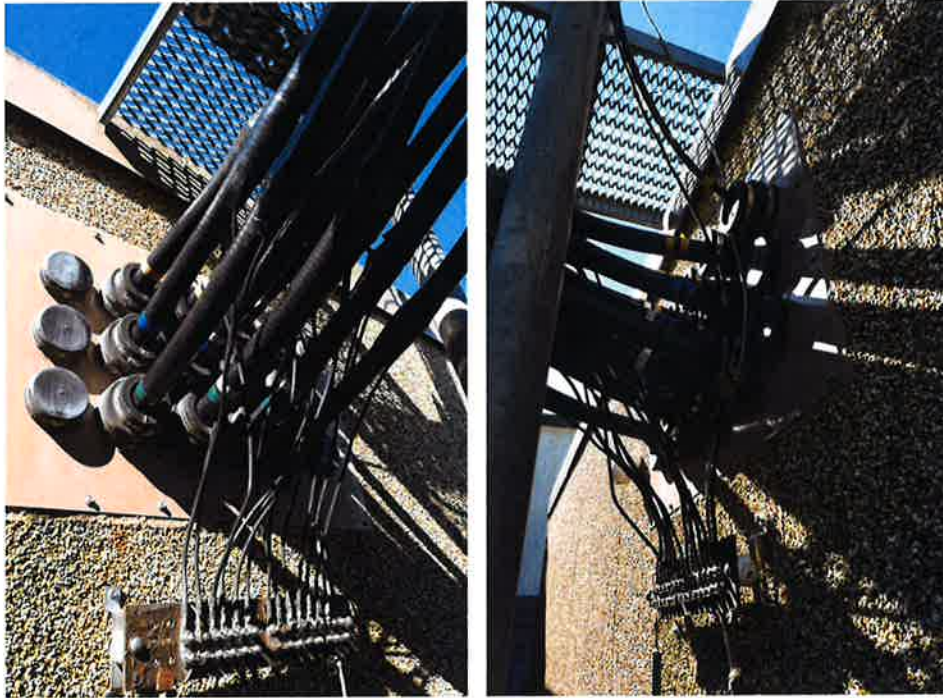
Overview photos of 125' monopole tower.



Photos of existing equipment on tower.

Photos taken by All-Points Technology Corporation, P.C. on July 26, 2017.

VERIZON WIRELESS
125' MONOPOLE TOWER
THOMPSON, CONNECTICUT
VERIZON SITE: 468550 QUINEBAUG



Photos of Verizon's existing feed lines at shelter.



Photo of Verizon's existing feed lines and ice bridge to tower.

Photos taken by All-Points Technology Corporation, P.C. on July 26, 2017.

VERIZON WIRELESS
125' MONOPOLE TOWER
THOMPSON, CONNECTICUT
VERIZON SITE: 468550 QUINEBAUG



Photo of tower base and base plate.



Photos taken by All-Points Technology Corporation, P.C. on July 26, 2017.

VERIZON WIRELESS
125' MONOPOLE TOWER
THOMPSON, CONNECTICUT
VERIZON SITE: 468550 QUINEBAUG

Photo of Verizon's typical existing antennas and mounts.



Photos of Verizon's typical existing antennas and mounts.

VERIZON WIRELESS
125' MONOPOLE TOWER
THOMPSON, CONNECTICUT
VERIZON SITE: 468550 QUINEBAUG



Appendix C

Calculations

tnxTower All-Points Technology Corporation 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job 125' Monopole Tower	Page 1 of 5
	Project CT1411102 Quinebaug	Date 15:55:42 08/16/17
	Client Verizon	Designed by Rob Adair

Tower Input Data

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

The following design criteria apply:

Basic wind speed of 100 mph.

Structure Class III.

Exposure Category B.

Topographic Category 1.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 40 mph is used in combination with ice.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

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	125.00-85.50	39.50	4.50	16	21.0370	29.7250	0.1875	0.7500	A572-65 (65 ksi)
L2	85.50-39.42	50.58	5.58	16	28.3602	39.4860	0.2813	1.1250	A572-65 (65 ksi)
L3	39.42-0.00	45.00		16	37.6954	47.5932	0.3125	1.2500	A572-65 (65 ksi)

Monopole Base Plate Data

Base Plate Data

Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	12
Embedment length	84.0000 in
f_c	4 ksi
Grout space	2.0000 in
Base plate grade	A572-60
Base plate thickness	2.2500 in
Bolt circle diameter	55.0000 in
Outer diameter	61.0000 in
Inner diameter	46.0000 in
Base plate type	Plain Plate

Feed Line/Linear Appurtenances

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C_{AA}		Weight plf
						ft^2/ft		
1 5/8	A	No	Inside Pole	123.00 - 6.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04

tnxTower All-Points Technology Corporation 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	125' Monopole Tower	Page	2 of 5
	Project	CT1411102 Quinebaug	Date	15:55:42 08/16/17
	Client	Verizon	Designed by	Rob Adair

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		CAA	Weight
							ft ² /ft	plf
5/16" Fiberoptic cable	A	No	Inside Pole	123.00 - 6.00	1	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
						1" Ice	0.00	0.25
5/8 power	A	No	Inside Pole	123.00 - 6.00	2	No Ice	0.00	0.40
						1/2" Ice	0.00	0.40
						1" Ice	0.00	0.40
1 5/8	A	No	Inside Pole	115.00 - 6.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
1-1/4" Hybrid fiber-power cable	A	No	Inside Pole	115.00 - 6.00	2	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
7/8	C	No	Inside Pole	123.00 - 6.00	3	No Ice	0.00	0.54
						1/2" Ice	0.00	0.54
						1" Ice	0.00	0.54
Safety Line 3/8	A	No	CaAa (Out Of Face)	125.00 - 12.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	CAA	CAA	Weight
			Horz	Lateral Vert			Front	Side	lb
			ft				ft ²	ft ²	
20' 4-Bay Dipole	C	From Face	4.00	0.0000	123.00	No Ice	4.00	4.00	55.00
			0.00			1/2" Ice	6.00	6.00	100.00
			10.00			1" Ice	8.00	8.00	145.00
10' x 1" omni whip	B	From Face	4.00	0.0000	123.00	No Ice	1.00	1.00	40.00
			0.00			1/2" Ice	2.02	2.02	49.26
			5.00			1" Ice	3.05	3.05	64.89
20' x 2" omni whip	A	From Face	4.00	0.0000	123.00	No Ice	4.00	4.00	45.00
			0.00			1/2" Ice	6.03	6.03	75.77
			10.00			1" Ice	8.07	8.07	119.12
(2) 800-10121	C	From Face	4.00	0.0000	123.00	No Ice	5.16	3.29	50.00
			0.00			1/2" Ice	5.51	3.64	82.91
			0.00			1" Ice	5.87	3.99	120.59
(2) 800-10121	B	From Face	4.00	0.0000	123.00	No Ice	5.16	3.29	50.00
			0.00			1/2" Ice	5.51	3.64	82.91
			0.00			1" Ice	5.87	3.99	120.59
(2) 800-10121	A	From Face	4.00	0.0000	123.00	No Ice	5.16	3.29	50.00
			0.00			1/2" Ice	5.51	3.64	82.91
			0.00			1" Ice	5.87	3.99	120.59
AM-X-CD-17-65	A	From Face	4.00	0.0000	123.00	No Ice	11.31	6.80	50.00
			0.00			1/2" Ice	11.93	7.38	111.39
			0.00			1" Ice	12.55	7.98	180.36
800-10764	B	From Face	4.00	0.0000	123.00	No Ice	5.87	3.39	45.00
			0.00			1/2" Ice	6.23	3.74	81.53
			0.00			1" Ice	6.60	4.10	123.00
800-10764	C	From Face	4.00	0.0000	123.00	No Ice	5.87	3.39	45.00
			0.00			1/2" Ice	6.23	3.74	81.53
			0.00			1" Ice	6.60	4.10	123.00
(2) LGP2140X TMA	A	From Face	3.50	0.0000	123.00	No Ice	1.08	0.36	20.00
			0.00			1/2" Ice	1.21	0.45	27.13
			0.00			1" Ice	1.35	0.56	36.14
(2) LGP2140X TMA	B	From Face	3.50	0.0000	123.00	No Ice	1.08	0.36	20.00
			0.00			1/2" Ice	1.21	0.45	27.13
			0.00			1" Ice	1.35	0.56	36.14

tnxTower All-Points Technology Corporation 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	125' Monopole Tower	Page	3 of 5
	Project	CT1411102 Quinebaug	Date	15:55:42 08/16/17
	Client	Verizon	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA}		Weight
			Horz Lateral	Vert			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	lb
(2) LGP2140X TMA	C	From Face	3.50	0.0000	123.00	No Ice	1.08	0.36	20.00
			0.00	0.00		1/2" Ice	1.21	0.45	27.13
			0.00	0.00		1" Ice	1.35	0.56	36.14
(2) LGP2190X Diplexer	A	From Face	3.50	0.0000	123.00	No Ice	0.23	0.11	6.00
			0.00	0.00		1/2" Ice	0.29	0.15	8.41
			0.00	0.00		1" Ice	0.36	0.21	11.91
(2) LGP2190X Diplexer	B	From Face	3.50	0.0000	123.00	No Ice	0.23	0.11	6.00
			0.00	0.00		1/2" Ice	0.29	0.15	8.41
			0.00	0.00		1" Ice	0.36	0.21	11.91
(2) LGP2190X Diplexer	C	From Face	3.50	0.0000	123.00	No Ice	0.23	0.11	6.00
			0.00	0.00		1/2" Ice	0.29	0.15	8.41
			0.00	0.00		1" Ice	0.36	0.21	11.91
Ericsson RRUS-11	A	From Face	3.50	0.0000	123.00	No Ice	2.79	1.02	55.00
			0.00	0.00		1/2" Ice	3.00	1.16	75.86
			0.00	0.00		1" Ice	3.21	1.30	99.77
Ericsson RRUS-11	B	From Face	3.50	0.0000	123.00	No Ice	2.79	1.02	55.00
			0.00	0.00		1/2" Ice	3.00	1.16	75.86
			0.00	0.00		1" Ice	3.21	1.30	99.77
Ericsson RRUS-11	C	From Face	3.50	0.0000	123.00	No Ice	2.79	1.02	55.00
			0.00	0.00		1/2" Ice	3.00	1.16	75.86
			0.00	0.00		1" Ice	3.21	1.30	99.77
Raycap DC6-48-60-18-8F surge suppressor	C	From Face	1.00	0.0000	123.00	No Ice	0.74	0.74	30.00
			0.00	0.00		1/2" Ice	1.20	1.20	44.34
			0.00	0.00		1" Ice	1.37	1.37	60.93
13' low-profile platform	C	None		0.0000	121.00	No Ice	7.80	6.75	1100.00
						1/2" Ice	8.70	7.54	1848.74
						1" Ice	9.61	8.33	2616.93
(2) LPA-80080/6	C	From Face	4.00	0.0000	115.00	No Ice	4.32	8.63	25.00
			0.00	0.00		1/2" Ice	4.76	9.08	73.26
			0.00	0.00		1" Ice	5.21	9.55	127.51
(2) LPA-80080/6	B	From Face	4.00	0.0000	115.00	No Ice	4.32	8.63	25.00
			0.00	0.00		1/2" Ice	4.76	9.08	73.26
			0.00	0.00		1" Ice	5.21	9.55	127.51
(2) LPA-80080/6	A	From Face	4.00	0.0000	115.00	No Ice	4.32	8.63	25.00
			0.00	0.00		1/2" Ice	4.76	9.08	73.26
			0.00	0.00		1" Ice	5.21	9.55	127.51
(2) JAHH-65B-R3B	A	From Face	4.00	0.0000	115.00	No Ice	9.11	5.98	65.00
			0.00	0.00		1/2" Ice	9.58	6.44	123.08
			0.00	0.00		1" Ice	10.05	6.91	187.45
(2) JAHH-65B-R3B	B	From Face	4.00	0.0000	115.00	No Ice	9.11	5.98	65.00
			0.00	0.00		1/2" Ice	9.58	6.44	123.08
			0.00	0.00		1" Ice	10.05	6.91	187.45
(2) JAHH-65B-R3B	C	From Face	4.00	0.0000	115.00	No Ice	9.11	5.98	65.00
			0.00	0.00		1/2" Ice	9.58	6.44	123.08
			0.00	0.00		1" Ice	10.05	6.91	187.45
ALU RRH2x60-700 w/bracket	A	From Face	3.50	0.0000	115.00	No Ice	3.35	2.02	60.00
			0.00	0.00		1/2" Ice	3.60	2.25	83.19
			0.00	0.00		1" Ice	3.87	2.49	110.02
ALU RRH2x60-700 w/bracket	B	From Face	3.50	0.0000	115.00	No Ice	3.35	2.02	60.00
			0.00	0.00		1/2" Ice	3.60	2.25	83.19
			0.00	0.00		1" Ice	3.87	2.49	110.02
ALU RRH2x60-700 w/bracket	C	From Face	3.50	0.0000	115.00	No Ice	3.35	2.02	60.00
			0.00	0.00		1/2" Ice	3.60	2.25	83.19
			0.00	0.00		1" Ice	3.87	2.49	110.02
ALU RRH2x90-AWS w/bracket	A	From Face	3.50	0.0000	115.00	No Ice	2.58	1.63	80.00
			0.00	0.00		1/2" Ice	2.79	1.81	100.47
			0.00	0.00		1" Ice	3.01	2.00	124.06
ALU RRH2x90-AWS w/bracket	B	From Face	3.50	0.0000	115.00	No Ice	2.58	1.63	80.00
			0.00	0.00		1/2" Ice	2.79	1.81	100.47

tnxTower All-Points Technology Corporation 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	125' Monopole Tower	Page	4 of 5
	Project	CT1411102 Quinebaug	Date	15:55:42 08/16/17
	Client	Verizon	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA}		Weight
			Horz Lateral	Vert			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	lb
			0.00				1" Ice 3.01	2.00	124.06
ALU RRH2x90-AWS w/bracket	C	From Face	3.50	0.0000	115.00	No Ice 2.58	1.63	80.00	
			0.00			1/2" Ice 2.79	1.81	100.47	
			0.00			1" Ice 3.01	2.00	124.06	
Nokia RRH4x40-850 w/bracket	A	From Face	3.50	0.0000	115.00	No Ice 1.28	0.72	40.00	
			0.00			1/2" Ice 1.43	0.83	51.28	
			0.00			1" Ice 1.58	0.95	64.79	
Nokia RRH4x40-850 w/bracket	B	From Face	3.50	0.0000	115.00	No Ice 1.28	0.72	40.00	
			0.00			1/2" Ice 1.43	0.83	51.28	
			0.00			1" Ice 1.58	0.95	64.79	
Nokia RRH4x40-850 w/bracket	C	From Face	3.50	0.0000	115.00	No Ice 1.28	0.72	40.00	
			0.00			1/2" Ice 1.43	0.83	51.28	
			0.00			1" Ice 1.58	0.95	64.79	
Raycap RDC-3315-PF-48 J-box	A	From Face	1.00	0.0000	115.00	No Ice 2.51	1.64	30.00	
			0.00			1/2" Ice 2.71	1.81	52.86	
			0.00			1" Ice 2.91	1.98	78.84	
Raycap RDC-3315-PF-48 J-box	C	From Face	1.00	0.0000	115.00	No Ice 2.51	1.64	30.00	
			0.00			1/2" Ice 2.71	1.81	52.86	
			0.00			1" Ice 2.91	1.98	78.84	
13' low-profile platform	C	None		0.0000	113.00	No Ice 7.80	6.75	1100.00	
						1/2" Ice 8.70	7.54	1848.74	
						1" Ice 9.61	8.33	2616.93	

Solution Summary

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 85.5	11.570	13	0.8072	0.0044
L2	90 - 39.4167	6.053	13	0.6370	0.0015
L3	45 - 0	1.506	13	0.3066	0.0004

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
123.00	20' 4-Bay Dipole	13	11.236	0.7987	0.0042	52384
121.00	13' low-profile platform	13	10.902	0.7901	0.0040	52384
115.00	(2) LPA-80080/6	13	9.908	0.7642	0.0034	26192
113.00	13' low-profile platform	13	9.579	0.7553	0.0033	21826

tnxTower All-Points Technology Corporation 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job 125' Monopole Tower	Page 5 of 5
	Project CT1411102 Quinebaug	Date 15:55:42 08/16/17
	Client Verizon	Designed by Rob Adair

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\emptyset P_{allow}$ lb	% Capacity	Pass Fail
L1	125 - 85.5	Pole	TP29.725x21.037x0.1875	1	-7469.89	177078.00	56.6	Pass
L2	85.5 - 39.4167	Pole	TP39.486x28.3602x0.2813	2	-15069.90	625305.00	59.0	Pass
L3	39.4167 - 0	Pole	TP47.5932x37.6954x0.3125	3	-25491.00	1318890.00	65.8	Pass
Summary								
Pole (L3)							65.8	Pass
Base Plate							59.5	Pass
RATING =							65.8	Pass

All-Points Technology Corp., P.C.

116 Grandview Road
Conway, NH 03818
(603) 496-5853

Client: **Verizon Wireless**
Job: **Quinebaug, CT**
Calculated By: **R. Adair**

Job No.: **CT1411102**
Date: **16-Aug-17**

Program assumes:

Mat is square in plan view.
Water table is **above top** of mat.
Unit weight of concrete = 150 pcf
Submerged unit weight of concrete = 87.6 pcf
Unit weight of soil = 100 pcf
Submerged unit weight of soil = 37.6 pcf

Information to be provided:

Pier is round or square in plan dimension ("R" or "S")	Shape =	R
OTM = Overturning Moment to be resisted	OTM =	1852 ft-kips
H = Height from ground surface to top of mat (if buried)	H =	4.5 ft.
w = depth to water table	OK w =	4.5 ft.
P = Projection of pier above mat	P =	5.0 ft.
y = Thickness of mat	y =	3.5 ft.
x = Width of mat	x =	20.0 ft.
d = Diameter of round pier	d =	7.0 ft.
Mass of tower and appurtenances (below)		

Results:

<u>Component</u>	<u>Mass</u>	<u>Moment Arm</u>	<u>Moment Resist.</u>
Pier	28.9 kips	10 ft.	288.6 ft-kips
Overburden	215.5 kips	10 ft.	2154.9 ft-kips
Mat	122.6 kips	10 ft.	1226.4 ft-kips

Overturning Moment Resistance = 3669.90 ft-kips
Factor of Safety = 1.98
Concrete Quantity = 65.4 c.y.

SATISFACTORY

ATTACHMENT 4



Property Information

Property ID 004936
Location 720 QUINEBAUG RD
Owner QUINEBAUG VOLUNTEER FIRE DEPT



**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

Town of Thompson, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated October 1, 2014
 Properties updated October 1, 2015

720 QUINEBAUG RD

Location 720 QUINEBAUG RD

Mblu 3/ 81/ 1/ /

Acct# 004936

Owner QUINEBAUG VOLUNTEER
FIRE DEPT

Assessment \$761,100

Appraisal \$1,087,200

PID 144

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$949,200	\$138,000	\$1,087,200
Assessment			
Valuation Year	Improvements	Land	Total
2015	\$664,500	\$96,600	\$761,100

Owner of Record

Owner	QUINEBAUG VOLUNTEER FIRE DEPT	Sale Price	\$0
Co-Owner		Certificate	
Address	P O BOX 144 QUINEBAUG, CT 06262	Book & Page	0368/0336
		Sale Date	12/19/1997

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
QUINEBAUG VOLUNTEER FIRE DEPT	\$0		0368/0336	12/19/1997

Building Information

Building 1 : Section 1

Year Built: 2005
Living Area: 4,500
Replacement Cost: \$815,062
Building Percent 87
Good:
Replacement Cost
Less Depreciation: \$709,100

Building Attributes	
Field	Description
STYLE	Fire Station
MODEL	Ind/Comm

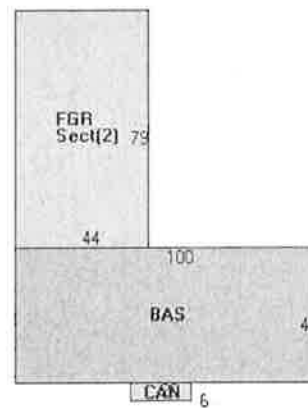
Grade	Good +10
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	
Roof Structure	Steel Frm/Trus
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Concr Abv Grad
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Hydro air
AC Type	Central
Bldg Use	MUN FIRE
Total Rooms	03
Total Bedrms	0
Total Baths	0
1st Floor Use:	
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	0

Building Photo



(<http://images.vgsi.com/photos/ThompsonCTPhotos//\00\00\45>)

Building Layout



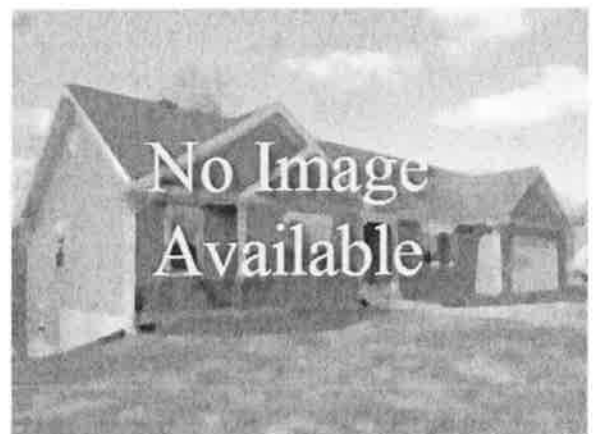
Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	4,500	4,500
CAN	Canopy	120	0
		4,620	4,500

Building 1 : Section 2

Year Built: 2005
Living Area: 0
Replacement Cost: \$255,156
Building Percent Good: 87
Replacement Cost Less Depreciation: \$222,000

Building Attributes : Section 2 of 2	
Field	Description
STYLE	Fire Station
MODEL	Ind/Comm
Grade	Good +10
Stories:	1
Occupancy	1

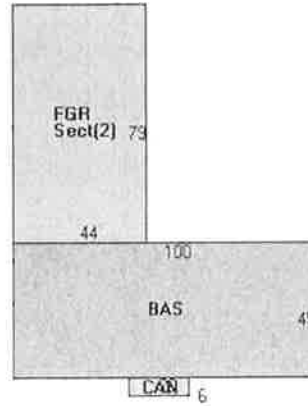
Building Photo



(<http://images.vgsi.com/photos/ThompsonCTPhotos//default.jp>)

Building Layout

Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	
Roof Structure	Steel Frm/Trus
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Concr Abv Grad
Interior Floor 2	Dirt/None
Heating Fuel	Oil
Heating Type	Hydro air
AC Type	Central
Bldg Use	MUN FIRE
Total Rooms	03
Total Bedrms	0
Total Baths	0
1st Floor Use:	
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	20
% Corn Wall	0



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
FGR	Garage	3,476	0
		3,476	0

Extra Features

Extra Features		Legend
No Data for Extra Features		

Land

Land Use

Use Code 9032
Description MUN FIRE
Zone R40
Neighborhood
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 2.4
Frontage 305
Depth 0
Assessed Value \$96,600
Appraised Value \$138,000

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	PAVING-ASPHALT			10000 S.F.	\$13,400	1
SHD1	SHED FRAME			392 S.F.	\$4,700	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$949,200	\$138,000	\$1,087,200
2014	\$949,200	\$138,000	\$1,087,200
2013	\$954,200	\$142,300	\$1,096,500

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$664,500	\$96,600	\$761,100
2014	\$664,500	\$96,600	\$761,100
2013	\$668,000	\$99,600	\$767,600

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ATTACHMENT 5



Certificate of Mailing — Firm

Name and Address of Sender

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

TOTAL NO.
of Pieces Listed by Sender

TOTAL NO.
of Pieces Received at Post Office™

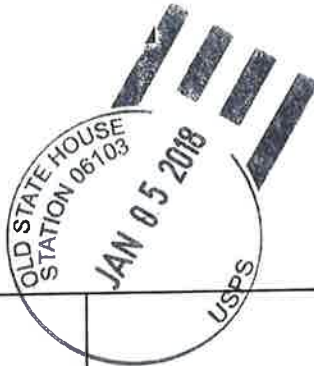
3

Postmaster, per (name of receiving employee)

R

Affix Stamp Here
 Postmark with Date of Receipt.

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 01/05/2018
US POSTAGE \$002.38
 ZIP 06103
 041112203380



USPS® Tracking Number
 Firm-specific Identifier

Parcel Airift

Special Handling

Fee

Postage

Address
 (Name, Street, City, State, and ZIP Code™)

1.

Kenneth Beausoleil, First Selectman
 Town of Thompson
 815 Riverside Drive
 North Grosvenordale, CT 06255

2.

Mary Ann Chinatti, Director of Planning and
 Development
 Town of Thompson
 815 Riverside Drive
 North Grosvenordale, CT 06255

3.

Quinebaug Volunteer Fire Department
 P.O. Box 144
 Quinebaug, CT 06262

4.

5.

6.