

November 2, 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  
623 Pine Street, Bridgeport, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains fifteen (15) telecommunications antennas at the 110-foot level on the existing 250-foot tower at 623 Pine Street in Bridgeport (the “Property”). Cellco’s equipment is located inside the building at the base of the tower. The tower and underlying property are owned Radio Communications Corp. Cellco’s use of the tower was approved by the Council in 2000. Cellco now intends to replace nine (9) of its existing antennas with three (3) model JAHH-65B-R3B, 700 MHz antennas; three (3) model JAHH-65B-R3B, 1900 MHz antennas; and three (3) model JAHH-65B-R3B, 2100 MHz antennas, all at the same level on the tower. Cellco also intends to replace six (6) existing remote radio heads (“RRHs”). Included in Attachment 1 are specifications for Cellco’s new antennas and RRHs.

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 notice is being sent to Bridgeport’s Mayor, Joseph P. Ganim; Dennis Buckley, Bridgeport’s Zoning Administrator; and Andrew and Lillian Knapp (Radio Communications Corp.), the owners of the Property and tower.

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

# Robinson+Cole

Melanie A. Bachman, Esq.  
November 2, 2018  
Page 2

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's antennas and RRHs will be installed at the 110-foot level on the existing 250-foot tower.

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

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

4. The operation of the replacement antennas and RRHs will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case General Power Density table for Cellco's modified facility is included in Attachment 2.

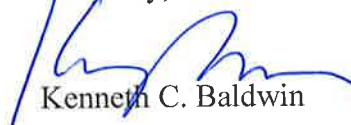
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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

A copy of the parcel map and property owner information 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:

Joseph P. Ganim, Bridgeport Mayor  
Dennis Buckley, Bridgeport Zoning Administrator  
Andrew and Lillian Knapp (Radio Communications Corp.)  
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 at 50°C, maximum, watts	200	200	300	300	300	250
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

### Electrical Specifications, BASTA\*

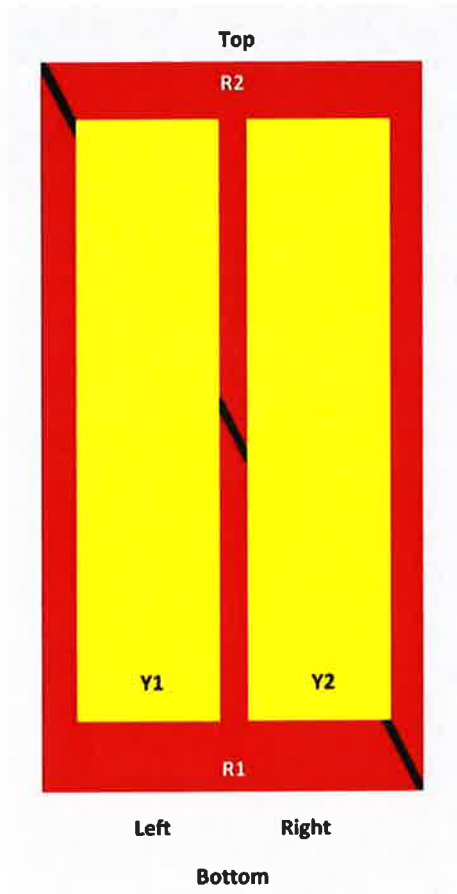
Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
Gain by Beam Tilt, average, dBi	2°   14.3	2°   15.0	0°   17.2	0°   17.6	0°   17.7	0°   17.9
	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	AXXXXXXXXXXXXX1
R2	824-894	3-4	2	AXXXXXXXXXXXXX2
Y1	1695-2360	5-6	3	AXXXXXXXXXXXXX3
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	301.0 N @ 150 km/h 67.7 lbf @ 150 km/h
Wind Loading, lateral	254.0 N @ 150 km/h 57.1 lbf @ 150 km/h
Wind Loading, maximum	638.0 N @ 150 km/h 143.4 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

<b>Agency</b>	<b>Classification</b>
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.

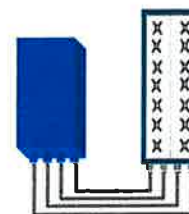


## FEATURES

- 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
Size (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)
Wind load (@150km/h or 93mph)	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

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein. Copyright © 2014 Alcatel-Lucent. All Rights Reserved

# B66a RRH4x45W

## Datasheet

Radio Technology

FDD-LTE

### Feature description:

- Remote Radio Head 4x45W 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

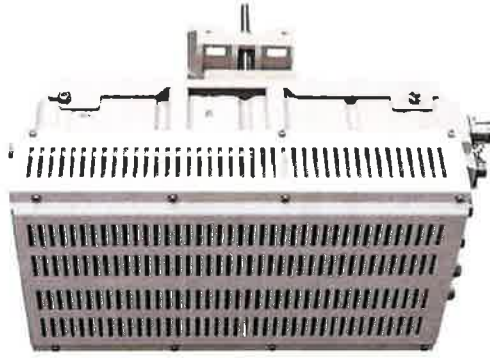
Natural Convection

Mounting

Wall, Pole mount

BBU connection

2 x 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.

# **ATTACHMENT 2**

Site Name: Bridgeport SW Tower Height: 250Ft.		General		Power		Density							
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total					
*Sprint	1	377	118	850	0.0108	0.5667	0.19%						
*Sprint	2	377	118	850	0.0216	0.5667	0.38%						
*Sprint	5	512	118	1900	0.0734	1.0000	0.73%						
*Sprint	2	1280	118	1900	0.0734	1.0000	0.73%						
*Sprint	8	640	118	2500	0.1468	1.0000	1.47%						
*Sprint	1	3428	118	11000	0.0983	1.0000	0.98%						
*T-Mobile	4	2334	180	2100	0.1109	1.0000	1.11%						
*T-Mobile	2	1167	180	2100	0.0277	1.0000	0.28%						
*T-Mobile	2	1167	180	1900	0.0277	1.0000	0.28%						
*T-Mobile	2	2204	180	1900	0.0524	1.0000	0.52%						
*T-Mobile	2	592	180	600	0.0141	0.4000	0.35%						
*T-Mobile	2	649	180	700	0.0154	0.4667	0.33%						
*Unknown	1	500	272	162	0.0025	0.2000	0.13%						
*Unknown	3	3500	267	930	0.0554	0.6200	0.89%						
*Unknown	6	500	260	450	0.0167	0.3000	0.56%						
*MetroPCS	7	734	126	2310	0.1283	1.0000	1.28%						
VZW PCS	1	5062	110	0.1504	1970	1.0	15.04%						
VZW Cellular	3	337	110	0.0300	869	0.579333	5.19%						
VZW AWS	1	8325	110	0.2474	2145	1.0	24.74%						
VZW 700	1	2062	110	0.0613	746	0.497333	12.32%						67.51%
* Source: Siting Council													

# **ATTACHMENT 3**

# STRUCTURAL ANALYSIS REPORT

for

**verizon**<sup>v</sup>

Verizon Wireless  
20 Alexander Drive  
Wallington, CT 06492

Bridgeport SW CT  
KM No. 180518.00

250' Self-Support Tower  
623 Pine Street  
Bridgeport, CT 06605

Prepared By:



**KM CONSULTING ENGINEERS, INC.**

262 Upper Ferry Road Ewing, NJ 08628  
Ph: (609) 538-0400      [www.kmengr.com](http://www.kmengr.com)

July 11, 2018

Prepared to ANSI/TIA-222-G-4 December 2014  
Structural Standards for Antenna Supporting  
Structures and Antennas



**Verizon Wireless  
Bridgeport SW CT**

**TABLE OF CONTENTS**

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
1.0 EXECUTIVE SUMMARY.....	3
2.0 TOWER INVENTORY .....	4
3.0 COMMENTARY .....	5
4.0 ANALYSIS PROCEDURE .....	6
5.0 TOWER ANALYSIS RESULTS .....	7
6.0 RECOMMENDATIONS .....	8
7.0 APPENDIX .....	9
Load Case No. 1: Existing tower superstructure with existing inventory and proposed Verizon Wireless installation.	

## **1.0 EXECUTIVE SUMMARY**

### **Structure**

Owner: Radio Communications Tower

Location: 623 Pine Street  
Bridgeport, CT 06605

Manufacturer: Rohn  
Eng. File No. 3767AE dated 3/25/99

### **Equipment**

Existing tower inventory plus the proposed installation are detailed in Section 2.0 "Tower Inventory."

### **Synopsis**

Load Case No. 1: The existing tower superstructure with the current inventory and proposed Verizon Wireless installation.

The existing tower superstructure and base foundation have sufficient capacity and therefore meet the current ANSI/TIA-222-G design standards. The tower superstructure is rated at 72.5% and the foundation is rated at 52.4%.

## 2.0 TOWER INVENTORY

### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
yaggi in radom	256	mounting frames w/stable bar (MetroPCS)	138
Beacon	256		
Omni antenna	256	VHLP1-23-2WH (Clearwire)	121
Omni antenna	256	VHLP1-23-2WH (Clearwire)	121
Omni antenna	256	VHLP2.5-11-4WH (Clearwire)	121
Omni antenna	256 - 239	Panel Antenna w/mount pipe (Clearwire)	118
Top Platform	256		
Omni antenna	248 - 238	Panel Antenna w/mount pipe (Clearwire)	118
mounting frames w/stable bar (T-Mobile)	180	Panel Antenna w/mount pipe (Clearwire)	118
mounting frames w/stable bar (T-Mobile)	180	(2) Distribution Box (Verizon)	110
mounting frames w/stable bar (T-Mobile)	180	GPS antenna (Verizon)	110
Ericsson AIR21 B2A/B4P (T-Mobile)	180	Distribution Box (Verizon)	110
Ericsson AIR21 B2A/B4P (T-Mobile)	180	(2) APL-866513-42T9 (Verizon)	110
Ericsson AIR21 B2A/B4P (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	Rohn 6'x15' Boom Gate (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	JAHH-65B-R3B (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	JAHH-65B-R3B (Verizon)	110
AIR 3246 B66 (T-Mobile)	180	JAHH-65B-R3B (Verizon)	110
APXVAARR24 43-U-NA20 (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
APXVAARR24 43-U-NA20 (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
APXVAARR24 43-U-NA20 (T-Mobile)	180	(2) JAHH-65B-R3B on mount (Verizon)	110
RRUS32 B2 (T-Mobile)	180	B25 RRH4x30 PCS (Verizon)	110
RRUS32 B2 (T-Mobile)	180	B25 RRH4x30 PCS (Verizon)	110
RRUS32 B2 (T-Mobile)	180	B25 RRH4x30 PCS (Verizon)	110
twin style 1BX TMA (T-Mobile)	180	B13 RRH4x30-R (Verizon)	110
twin style 1BX TMA (T-Mobile)	180	B13 RRH4x30-R (Verizon)	110
twin style 1BX TMA (T-Mobile)	180	B13 RRH4x30-R (Verizon)	110
Radio 4449 B12 B71 (T-Mobile)	180	B66 RRH 4x45 (Verizon)	110
Radio 4449 B12 B71 (T-Mobile)	180	B66 RRH 4x45 (Verizon)	110
Radio 4449 B12 B71 (T-Mobile)	180	B66 RRH 4x45 (Verizon)	110
(2) MetroPCS Antenna (MetroPCS)	138	(2) APL-866513-42T6 (Verizon)	110
(2) MetroPCS Antenna (MetroPCS)	138	(2) APL-866513-42T9 (Verizon)	110
(2) MetroPCS Antenna (MetroPCS)	138	Rohn 6'x15' Boom Gate (Verizon)	110
mounting frames w/stable bar (MetroPCS)	138	4' Side Arm	100
mounting frames w/stable bar (MetroPCS)	138	TV 65 antenna	100
mounting frames w/stable bar (MetroPCS)	138	TV 65 antenna	100

### Proposed Verizon Wireless Installation:

- \*(9) JAHH-65B-R3B panel antennas @ 110' AGL
- \*(3) B13 RRH4x30's @ 110' AGL
- \*(3) B66 RRH 4x45's @ 110' AGL
- \*(3) BSAMNT-SBS-2-2 antenna mounts @ 110' AGL
- \*Removal of (6) HBXX-6516DS-A2M panel antennas @ 110' AGL
- \*Removal of (3) Kathrein 800 10736V01 panel antennas @ 110' AGL
- \*Removal of (3) B13 RRH2x40's @ 110' AGL
- \*Removal of (3) B66 RRH2x40's @ 110' AGL

### **3.0 COMMENTARY**

Our scope of work is to determine if the existing structure is capable of withstanding the additional stresses/forces imposed by the installation of the proposed Verizon Wireless equipment noted in the tower inventory. The tower is a 250' tall Rohn self-support tower with a triangular platform located at the top.

Tower member sizes, layout and foundation information was taken from previous structural analysis by KM Consulting Engineers, Inc. (KMCE) dated 5/25/18. Existing antenna inventory and coax cable layout was also taken from the above mentioned analysis. Proposed equipment was obtained from a Verizon Wireless RFDS dated 2/28/18 from CD's by Dewberry Engineers Inc. dated 7/10/18.

The following report will provide analytical calculations and commentary regarding the capacity of the proposed tower and subsequent recommendations.

## **4.0 ANALYSIS PROCEDURE**

KM Consulting Engineers, Inc. carried out their structural analysis by correlating field inspection and tower member data into proprietary software designed specifically for communication tower analysis.

These programs run in conjunction with the guidelines set down in the ANSI/TIA-222-G Standard entitled "Structural Standards for Antenna Supporting Structures and Antennas."

The existing tower is analyzed by placing wind forces on the structure in 30° positional increments around the tower (i.e. wind pressure directly onto the tower corners, faces and parallel to the faces). This enables the user to "create" a three-dimensional representation, yielding results for worst case scenarios. In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of antennas in the scenarios stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

Should the client require to be furnished with a full copy of our analysis, we will gladly do so.

### **Codes and Standards**

ACI - American Concrete Institute - Building Code Requirements for Structural Concrete (ACI 318-11), 2011

AISC - American Institute of Steel Construction - Manual of Steel Construction, Allowable Stress Design, 14th edition, 2011

TIA - Telecommunications Industry Association – ANSI/TIA-222-G-4 Structural Standards for Antenna Supporting Structures and Antennas, 2014

CSBC - Connecticut State Building Code 2016

## **5.0 TOWER ANALYSIS RESULTS**

The tower was analyzed for the inventory detailed in Section 2.0 "Tower Inventory".

The basic wind speed of 97 MPH with no radial ice in accordance with ANSI/TIA-222-G is taken from Appendix N in the 2016 Connecticut State Building Code for the nominal design wind speed for the municipality of Bridgeport, CT. The basic wind speed of 50 MPH concurrent with ¾" design ice thickness is taken from the ANSI/TIA-222-G listing applicable for Fairfield County, CT. Additional criteria include Structure Class II, Exposure Category B, and Topographic Category 1.

**Load Case No. 1:** Existing inventory and the proposed Verizon Wireless installation of (9) JAHH-65B-R3B panel antennas, (3) B13 RRH4x30's, (3) B66 RRH 4x45's, and (3) BSAMNT-SBS-2-2 antenna mounts and the removal of (6) HBXX-6516DS-A2M panel antennas, (3) Kathrein 800 10736V01 panel antennas, (3) B13 RRH2x40's, and (3) B66 RRH2x40's.

The existing tower superstructure and base foundation have sufficient capacity and therefore meet the current ANSI/TIA-222-G design standards. The tower superstructure is rated at 72.5% and the foundation is rated at 52.4%.

**Table 1. Base Foundation Rating**

<b>Force</b>	<b>Actual (kip-ft)</b>	<b>Capacity (kip-ft)</b>	<b>% Capacity</b>
Overturning Moment	9,169	17,511	<b>52.4%</b>

**6.0 RECOMMENDATIONS**

Further to our calculations, we conclude that the tower superstructure and base foundation have adequate capacity and therefore meet the current ANSI/TIA-222-G design standards. The tower is acceptable to support the proposed Verizon Wireless installation.

Please do not hesitate to contact our office with any questions or concerns regarding this report.

Sincerely,  
**KM CONSULTING ENGINEERS, INC.**

Reviewed and Approved by:



Domenic Aversa, PE  
Project Manager



Michael L. Bohlinger, PE  
Principal  
CT License No. 20405

## **7.0 APPENDIX**



**LOAD CASE 1**





8' - 256'

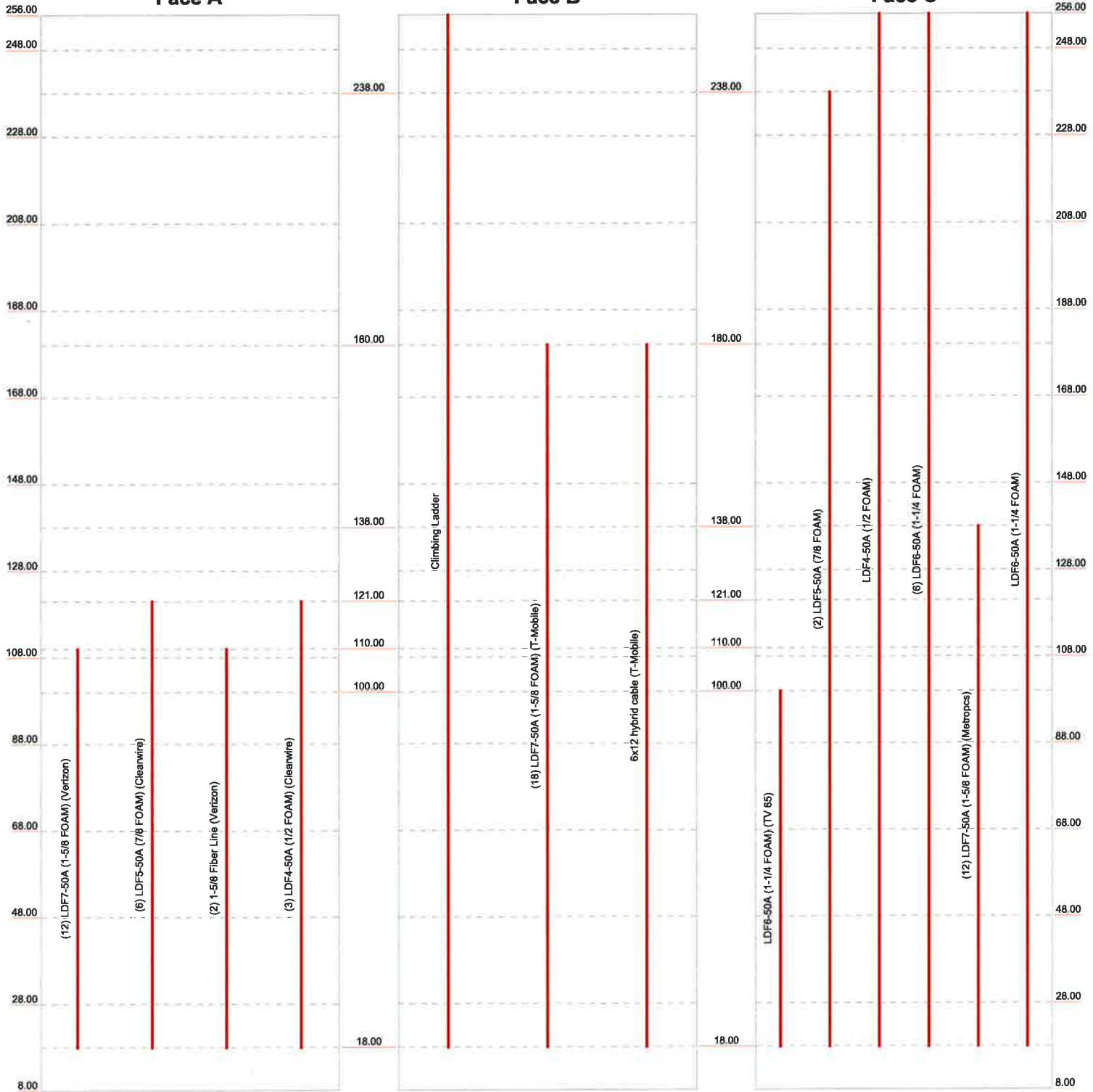
Round Flat App In Face App Out Face Truss Leg

Face A

Face B

Face C

Elevation (ft)



**KM Consulting Engineers, Inc.**

262 Upper Ferry Road

Ewing, NJ 08628

Phone: (609) 538-0400

FAX:

Job: **Bridgeport SW CT LC1**

Project: **250' Rohn Self Support Tower**

Client: Verizon Wireless

Drawn by: DCA

App'd:

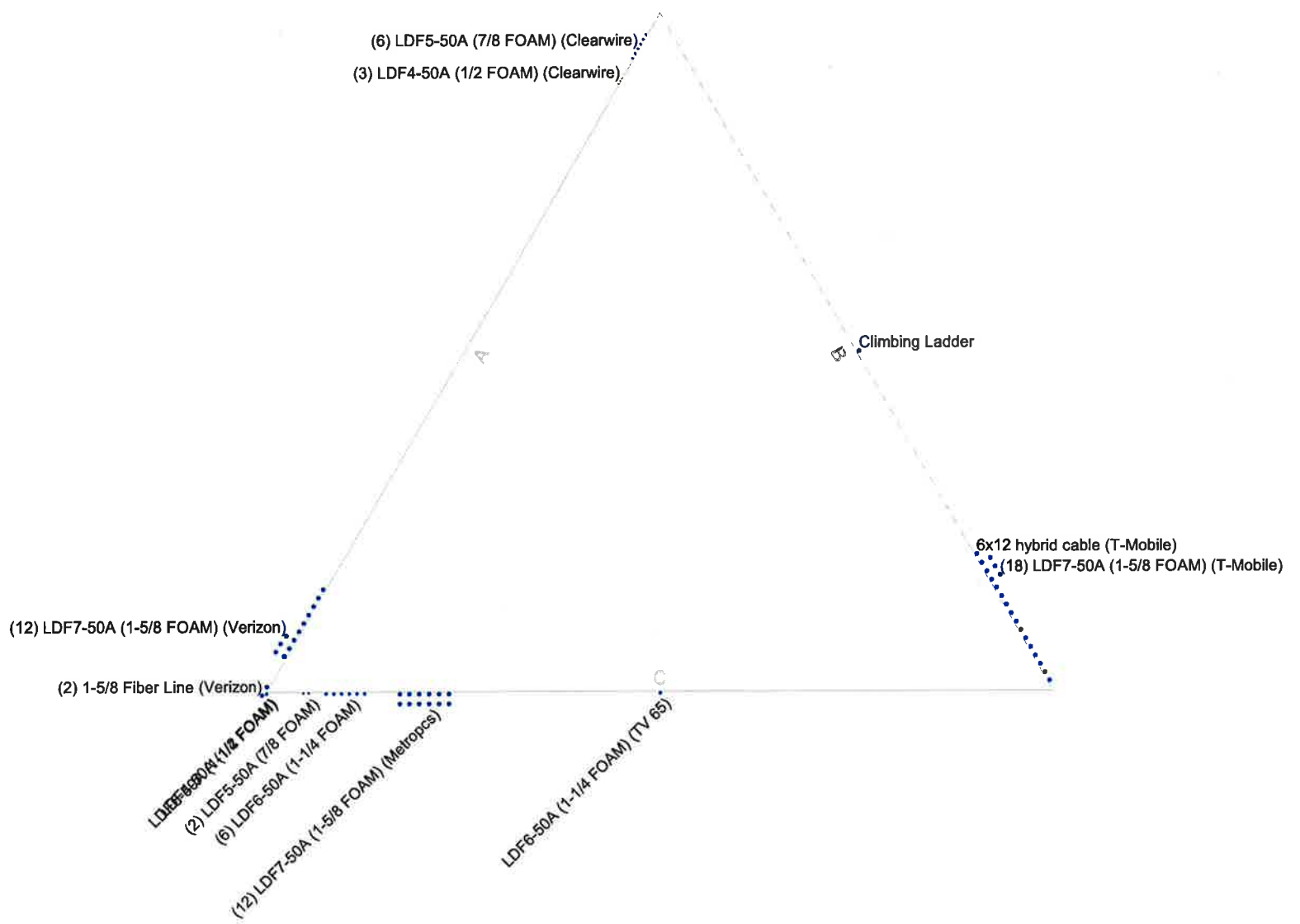
Code: TIA-222-G

Date: 07/11/18

Scale: N

Path: K:\SAI COMM\BridgportEngineering\Bridgport SW CT LC1.dwg

Dwg No.:



 <p><b>Consulting Engineers</b></p>	<b>KM Consulting Engineers, Inc.</b> 262 Upper Ferry Road Ewing, NJ 08628 Phone: (609) 538-0400 FAX:			Job: <b>Bridgeport SW CT LC1</b>		
	Project: <b>250' Rohn Self Support Tower</b>			Drawn by: <b>DCA</b> App'd:		
	Client: <b>Verizon Wireless</b>			Date: <b>07/11/18</b> Scale: <b>N</b>		
	Code: <b>TIA-222-G</b>			Dwg No.:		
	Path: <small>K:\SAI COMM\Bridgeport\Engineering\Bridgeport SW CT LC1.dwg</small>					

8' - 256'

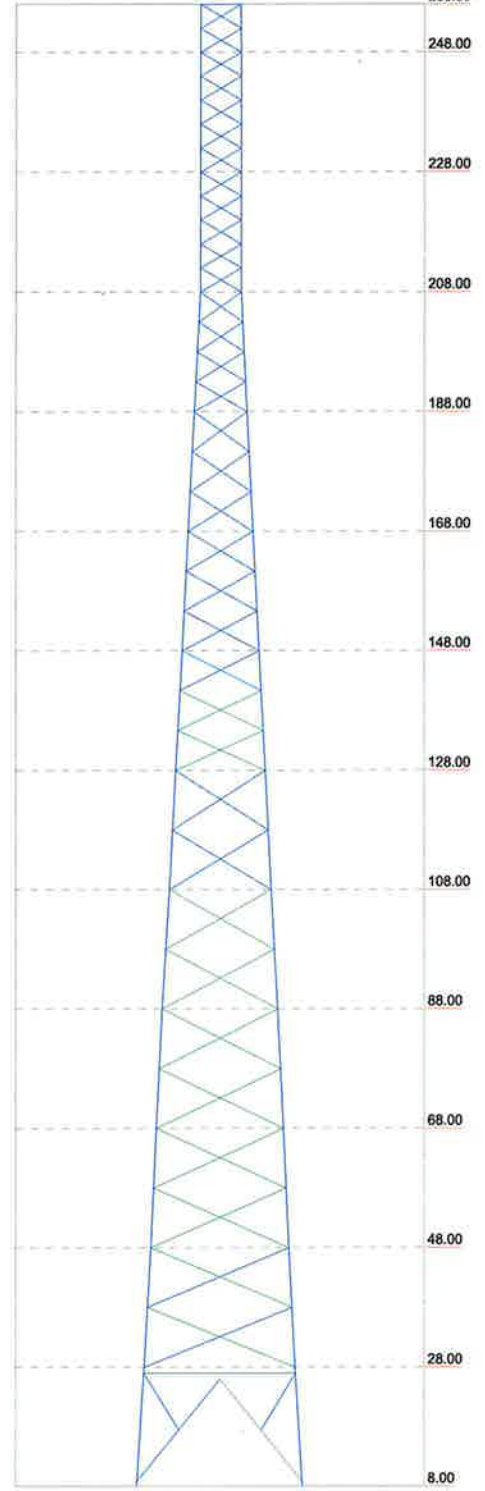
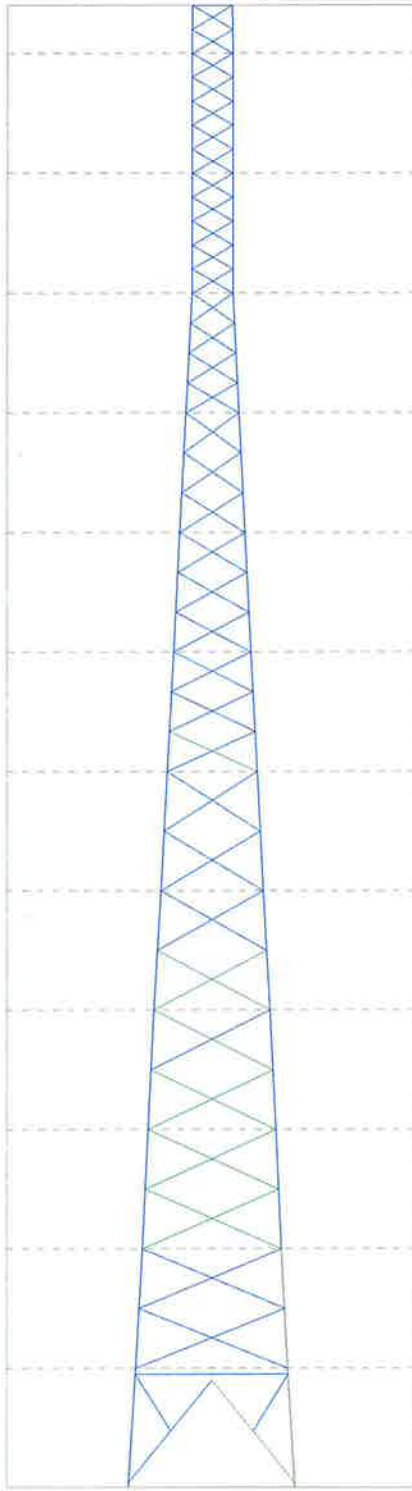
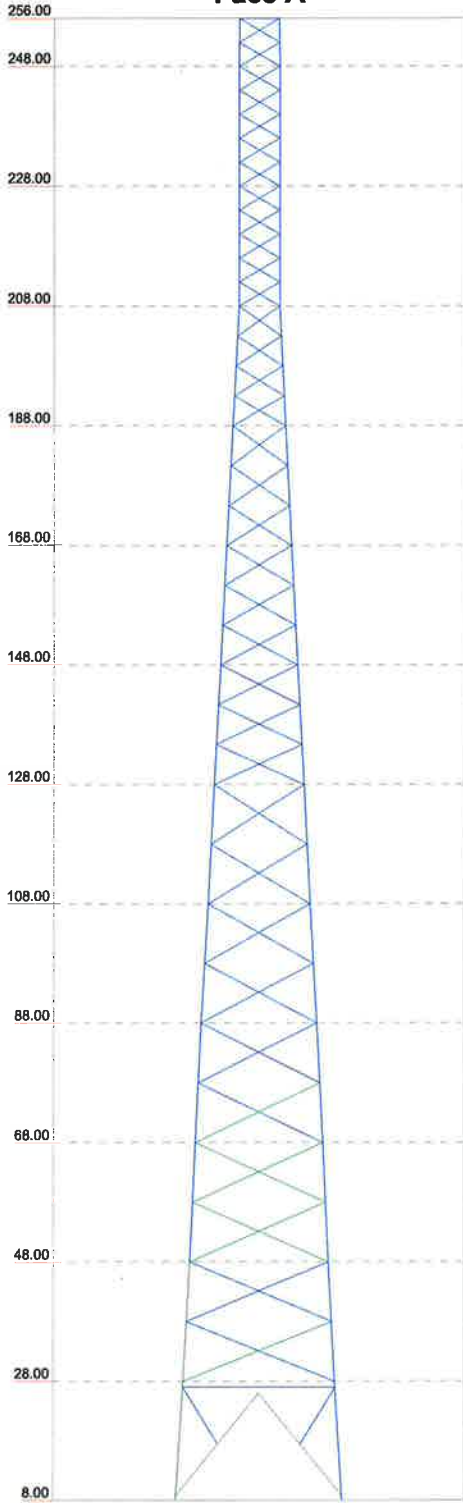
> 100% 90%-100% 75%-90% 50%-75% < 50% Overstress

Face A

Face B

Face C

Elevation (ft)



**KM Consulting Engineers, Inc.**

262 Upper Ferry Road

Ewing, NJ 08628

Phone: (609) 538-0400

FAX:

Job: **Bridgeport SW CT LC1**

Project: **250' Rohn Self Support Tower**

Client: **Verizon Wireless**

Drawn by: **DCA**

App'd:

Code: **TIA-222-G**

Date: **07/11/18**

Scale: **N**

Path: K:\SAI\COMM\Bridgport\Engineering\Bridgport SW CT LC1.dwg

Dwg No.:

<b>tnxTower</b>  <b>KM Consulting Engineers, Inc.</b> 262 Upper Ferry Road Ewing, NJ 08628 Phone: (609) 538-0400 FAX:	<b>Job</b> Bridgeport SW CT LC1	<b>Page</b> 42 of 43
	<b>Project</b> 250' Rohn Self Support Tower	<b>Date</b> 13:59:19 07/11/18
	<b>Client</b> Verizon Wireless	<b>Designed by</b> DCA

## Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\phi P_{allow}$ lb	% Capacity	Pass Fail	
T1	256 - 248	Leg	ROHN 3 STD	3	-4045.68	88543.60	4.6	Pass	
		Diagonal	L1 3/4x1 3/4x3/16	8	-1558.22	7836.45	19.9	Pass	
		Top Girt	L3x3x1/4	4	-569.30	19705.80	2.9	Pass	
T2	248 - 228	Leg	ROHN 3 EH	21	-23293.30	119117.00	19.6	Pass	
		Diagonal	L2x2x1/4	23	-2903.51	15423.50	18.8	Pass	
							24.7 (b)		
T3	228 - 208	Leg	ROHN 4 EH	54	-52532.10	183589.00	28.6	Pass	
		Diagonal	L2x2x1/4	59	-4213.78	16011.80	26.3	Pass	
							34.4 (b)		
T4	208 - 188	Leg	ROHN 5 EH	87	-72446.30	254372.00	28.5	Pass	
		Diagonal	L2x2x1/4	89	-2780.76	9442.17	29.5	Pass	
T5	188 - 168	Leg	ROHN 6 EH	114	-94748.80	343100.00	27.6	Pass	
		Diagonal	L2 1/2x2 1/2x1/4	116	-5177.48	11996.10	43.2	Pass	
T6	168 - 148	Leg	ROHN 6 EH	135	-122372.00	343100.00	35.7	Pass	
		Diagonal	L3x3x1/4	137	-6330.60	16173.10	39.1	Pass	
							44.2 (b)		
T7	148 - 128	Leg	ROHN 6 EH	156	-151950.00	343092.00	44.3	Pass	
		Diagonal	L3x3x1/4	158	-7727.20	12584.10	61.4	Pass	
T8	128 - 108	Leg	ROHN 8 EHS	177	-182945.00	386381.00	47.3	Pass	
		Diagonal	L4x4x3/8	179	-10749.40	30486.60	35.3	Pass	
							49.9 (b)		
T9	108 - 88	Leg	ROHN 8 EH	192	-222369.00	505517.00	44.0	Pass	
		Diagonal	L4x4x0.31	194	-13641.50	21205.70	64.3	Pass	
							65.5 (b)		
T10	88 - 68	Leg	P10x.5	207	-266245.00	668659.00	39.8	Pass	
		Diagonal	L5x5x3/8	209	-16333.60	43484.70	37.6	Pass	
							67.1 (b)		
T11	68 - 48	Leg	P10x.5	222	-312596.00	668663.00	46.7	Pass	
		Diagonal	L5x5x3/8	224	-18314.20	37294.00	49.1	Pass	
							72.5 (b)		
T12	48 - 28	Leg	P10x.5	237	-358676.00	668640.00	53.6	Pass	
		Diagonal	L5x5x3/8	239	-20003.40	31978.80	62.6	Pass	
T13	28 - 8	Leg	P10x.5	252	-374663.00	673820.00	55.6	Pass	
		Diagonal	ROHN 3 STD	258	-27634.80	38509.50	71.8	Pass	
		Top Girt	ROHN 3 STD	253	-17094.20	31030.70	55.1	Pass	
		Redund Diag 1	ROHN 3 STD	267	-5680.44	44234.90	12.8	Pass	
		Bracing							
		Redund Hip 1	ROHN 1.5 STD	272	-86.48	12002.20	0.7	Pass	
		Bracing							
		Redund Hip Diagonal 1	ROHN 1.5 STD	273	-54.55	2211.89	2.5	Pass	
		Bracing							
		Inner Bracing	ROHN 3 STD	274	-296.08	29213.70	14.1	Pass	
							Summary		
						Leg (T13)	55.6	Pass	
						Diagonal (T11)	72.5	Pass	
						Top Girt (T13)	55.1	Pass	
						Redund Diag 1	12.8	Pass	
						Bracing (T13)			
						Redund Hip 1 Bracing (T13)	0.7	Pass	
						Redund Hip Diagonal 1	2.5	Pass	

<b>tnxTower</b>  <b>KM Consulting Engineers, Inc.</b> 262 Upper Ferry Road Ewing, NJ 08628 Phone: (609) 538-0400 FAX:	<b>Job</b> Bridgeport SW CT LC1	<b>Page</b> 43 of 43
	<b>Project</b> 250' Rohn Self Support Tower	<b>Date</b> 13:59:19 07/11/18
	<b>Client</b> Verizon Wireless	<b>Designed by</b> DCA

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\emptyset P_{allow}$ lb	% Capacity	Pass Fail
						Bracing (T13)		
						Inner Bracing (T13)	14.1	Pass
						Bolt Checks	72.5	Pass
						<b>RATING =</b>	<b>72.5</b>	<b>Pass</b>

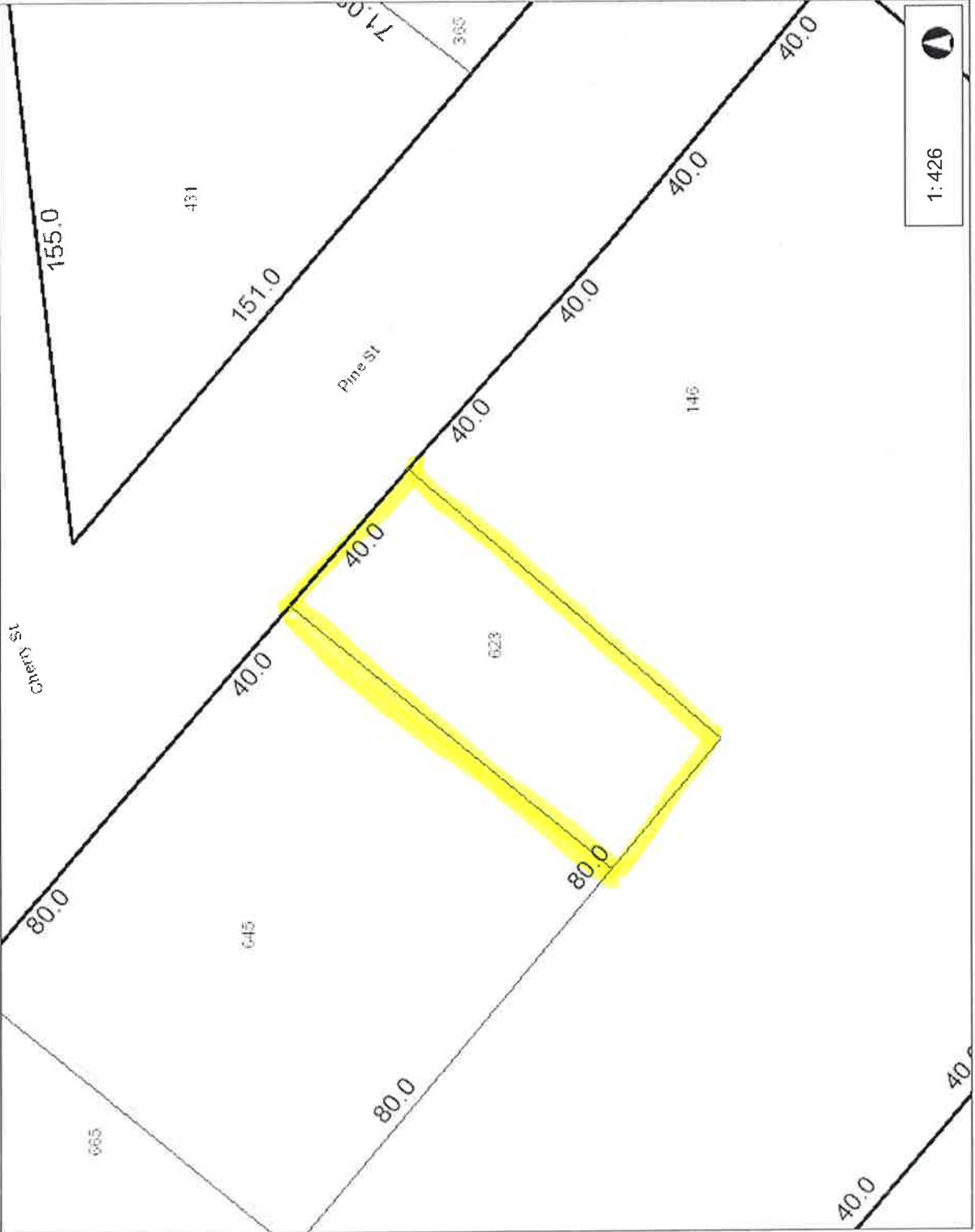


# **ATTACHMENT 4**



# City of Bridgeport

# My Map



### Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

1:426



This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.  
THIS MAP IS NOT TO BE USED FOR NAVIGATION



# 623 PINE ST

**Location** 623 PINE ST

**Mblu** 19/ 307/ 25/ /

**Acct#** RK-0259405

**Owner** KNAPP ANDREW & LILLIAN &

**Assessment** \$224,850

**Appraisal** \$321,210

**PID** 2504

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$251,840	\$69,370	\$321,210
Assessment			
Valuation Year	Improvements	Land	Total
2017	\$176,290	\$48,560	\$224,850

## Owner of Record

**Owner** KNAPP ANDREW & LILLIAN &  
**Co-Owner** ROBERT KNAPP (SURV OF THEM)  
**Address** 24 ROCKDALE RD  
 WEST HAVEN, CT 06516

**Sale Price** \$90,000  
**Certificate**  
**Book & Page** 2838/ 116  
**Sale Date** 09/24/1990  
**Instrument**

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
KNAPP ANDREW & LILLIAN &	\$90,000		2838/ 116		09/24/1990

## Building Information

### Building 1 : Section 1

**Year Built:** 1964  
**Living Area:** 2,625  
**Replacement Cost:** \$237,462  
**Building Percent** 85  
**Good:**  
**Replacement Cost**  
**Less Depreciation:** \$201,840

Building Attributes	
Field	Description

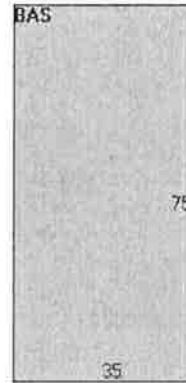
STYLE	Telephone Bldg
MODEL	Ind/Comm
Grade:	Above Ave
Stories:	1
Occupancy:	1
Exterior Wall 1:	Concr/CinderBl
Exterior Wall 2:	
Roof Struct:	Flat
Roof Cover:	T+G/Rubber
Interior Wall 1:	Minim/Masonry
Interior Wall 2:	
Interior Floor 1:	Concr-Finished
Interior Floor 2:	
Heating Fuel:	Gas
Heating Type:	Forced Air
AC Type:	Central
Bldg Use:	Industrial Mdl 96
Ttl Rooms:	
Ttl Bedrms:	00
Ttl Baths:	0
Ttl Half Baths:	0
Ttl Xtra Fix:	0
1st Floor Use:	
Heat/AC:	Heat/Ac Pkgs
Frame Type:	Masonry
Baths/Plumbing:	Average
Ceiling/Wall:	Ceil & Walls
Rooms/Prtns:	Average
Wall Height:	14
% Comn Wall:	

### Building Photo



(<http://images.vgsi.com/photos2/BridgeportCTPhotos//\00\08\9>)

### Building Layout



(<http://images.vgsi.com/photos2/BridgeportCTPhotos//Sketches>)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	2,625	2,625
		2,625	2,625

### Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

### Land

#### Land Use

Use Code 300

#### Land Line Valuation

Size (Acres) 0.09

**Description** Industrial Mdl 96  
**Zone** ILI  
**Neighborhood** IND  
**Alt Land Appr** No  
**Category**

**Frontage** 0  
**Depth** 0  
**Assessed Value** \$48,560  
**Appraised Value** \$69,370

**Outbuildings**

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
TWR	Tower			250 LF	\$50,000	1

**Valuation History**

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$251,840	\$69,370	\$321,210
2016	\$251,840	\$69,370	\$321,210
2015	\$251,840	\$69,370	\$321,210

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$176,290	\$48,560	\$224,850
2016	\$176,290	\$48,560	\$224,850
2015	\$176,290	\$48,560	\$224,850

(c) 2016 Vision Government Solutions, Inc. All rights reserved.

# **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

3

TOTAL NO.  
of Pieces Received at Post Office™

Postmaster, per (name of receiving employee)

*[Handwritten Signature]*

OLD STATE HOUSE  
STATION 06103  
NOV 02 2018  
USPS

Affix Stamp Here  
Postmark with Date of Receipt.

neopost  
11/02/2018  
**US POSTAGE \$002.38**  
ZIP 06103  
041L12203360

USPS® Tracking Number  
Firm-specific Identifier

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

Postage

Fee

Special Handling

Parcel Airlift

1.

Joseph P. Ganjm, Mayor  
City of Bridgeport  
Margaret E. Morton Government Center  
999 Broad Street  
Bridgeport, CT 06604

2.

Dennis Buckley, Zoning Administrator  
City of Bridgeport  
45 Lyon Terrace  
Bridgeport, CT 06604

3.

Andrew and Lillian Knapp  
Radio Communications Corp.  
24 Rockdale Road  
West Haven, CT 06516

4.

5.

6.