

March 31, 2015

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

**Re: Notice of Exempt Modification – Facility Modification
11 Filbert Street, Norwalk, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) wireless telecommunications antennas (six (6) at the 103-foot level and six (6) at the 111-foot level) on an existing 130-foot water tank at 11 Filbert Street in Norwalk (the “Property”). The water tank is owned by First Taxing District of the City of Norwalk. The Siting Council approved Cellco’s use of the water tank in 1993 and retains jurisdiction over this structure. Cellco now intends to modify its facility by replacing nine (9) of its existing antennas with three (3) model X7C-FRO-660-VR0, 700 MHz antennas; three (3) model HBXX-6517DS-VTM, 1900 MHz antennas; and three (3) model HBXX-6517DS-VTM, 2100 MHz antennas, all at the same level on the tank. Cellco also intends to install three (3) remote radio heads (“RRHs”) behind its 1900 MHz antennas and two (2) HYBRIFLEX™ 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 Harry Rilling, Mayor for the City of Norwalk. A copy of this letter is also being sent to First Taxing District, the owner of the water tank and the Property.

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

13532758-v1

Robinson+Cole

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1. The proposed modifications will not result in an increase in the height of the existing structure. Cellco's replacement antennas will be located at the 103-foot and 111-foot levels on the 130-foot water tank.
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 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 water tank and its foundation can support Cellco's proposed modifications. (See Structural Evaluation Letter included in Attachment 3).

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:

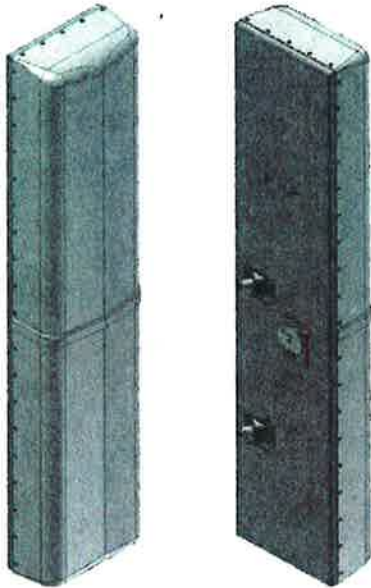
Harry Rilling, Norwalk Mayor
First Taxing District
Tim Parks

ATTACHMENT 1



X7C-FRO-660-V

X-Pol Antenna, 698-896MHz, Fast-Roll-Off 60° H-Beam
RET/MET



- Designed to improve SNR
- Greatly increases LTE data rates
- Broadband radiator
- Macro Cell, high gain antenna
- Suitable for LTE/CDMA/UMTS/GSM
- AISG 2.0 RET or manual MET tilt control

Electrical Specifications

Frequency Band, MHz	698-824	824-896
Horizontal Beamwidth, 3dB points	62	58
Gain, dBi	15.9	16.0
Vertical Beamwidth, 3dB points	12.0	10.5
Front-to-Back at 180°, dB	>28	
Upper Sidelobe Suppression, Typical, dB	<-18	
Polarization	+/-45°	
Electrical Downtilt	0-10° or 4-14°	
VSWR/Return Loss, dB, Maximum	1.5:1/14.0	
Isolation Between Ports, dB, Mimimum	-28	
Intermodulation (2x20w), IM3, dBc, Maximum	-150	
Impedance, ohms	50	
Maximum Power Per Connector, CW	500	

www.cssantenna.com

410-612-0080

customerservice@cssantenna.com

All Specifications are subject to change.

Refer to www.cssantenna.com for the most current information



X7C-FRO-660-V

X-Pol Antenna, 698-896MHz, Fast-Roll-Off 60° H-Beam
RET/MET

Mechanical Specifications

Dimensions, Length/Width/Depth	72.0/14.6/8.0 in (1829/372/204 mm)
Connector (Quantity) Type	(2) 7-16 DIN Female
Connector Torque	220-265 lbf-in (25-30 N-m)
Connector Location	Back
Antenna Weight	35.0 lbs
Bracket Weight	13.2 lbs (6.0 kg)
Standard Bracket Kit	CSS P/N 919011
Mechanical Downtilt Range	0-12°
Radome Material	Ultra High Strength Luran, UV Stabilized, ASTM D1925
Wind Survival	150 mph (241 km/h)
Front Wind Load	205.39 lbf (913.65 N) @100mph
Equivalent Flat Plate	4.09 sq-ft (c=2) @ 100mph

RET Information

Model	CSS-RET-200
Mounting Location	Rear of Antenna
Weight	1.2 lb (0.54 kg)
Communication Standard	AISG 2.0
Control System	CSS-PCU-220



Order Information

Model	Description
X7C-FRO-660-VR0	Antenna with manual RET adjust electrical downtilt 0-10°
X7C-FRO-660-VR4	Antenna with manual RET adjust electrical downtilt 4-14°
X7C-FRO-660-VM0	Antenna with remote MET adjust electrical downtilt 0-10°
X7C-FRO-660-VM4	Antenna with remote MET adjust electrical downtilt 4-14°

Optional Bracket Kit

919036	Bracket Kit, 2-Point, 12 deg D-tilt, For 4.5" OD Pole
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www.cssantenna.com

410-612-0080

All Specifications are subject to change.

Refer to www.cssantenna.com for the most current information

customerservice@cssantenna.com

Product Specifications

COMMSCOPE®

HBXX-6517DS-VTM

Andrew® Quad Port Teletilt® Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible



Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	18.5	18.6	18.8
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.3	±0.4
Gain by Beam Tilt, average, dBi	0° 18.4 3° 18.7 6° 18.4	0° 18.4 3° 18.7 6° 18.5	0° 18.7 3° 18.9 6° 18.6
Beamwidth, Horizontal, degrees	67	66	65
Beamwidth, Horizontal Tolerance, degrees	±2.4	±1.7	±2.9
Beamwidth, Vertical, degrees	5.0	4.7	4.4
Beamwidth, Vertical Tolerance, degrees	±0.3	±0.3	±0.3
Beam Tilt, degrees	0–6	0–6	0–6
USLS, dB	18	19	19
Front-to-Back Total Power at 180° ± 30°, dB	25	26	26
CPR at Boresight, dB	22	23	22
CPR at Sector, dB	10	10	9
Isolation, dB	30	30	30
VSWR Return Loss, dB	1.4 15.6	1.4 15.6	1.4 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°

*Values calculated using NGMN Alliance N-P-BASTA v9.6

Mechanical Specifications

Color Radome Material	Light gray PVC, UV resistant
Connector Interface Location Quantity	7-16 DIN Female Bottom 4
Wind Loading, maximum	668.0 N @ 150 km/h 150.2 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h 149.8 mph
Antenna Dimensions, L x W x D	1903.0 mm x 305.0 mm x 166.0 mm 74.9 in x 12.0 in x 6.5 in
Net Weight	19.5 kg 43.0 lb
Model with factory installed AISG 2.0 RET	HBXX-6517DS-A2M

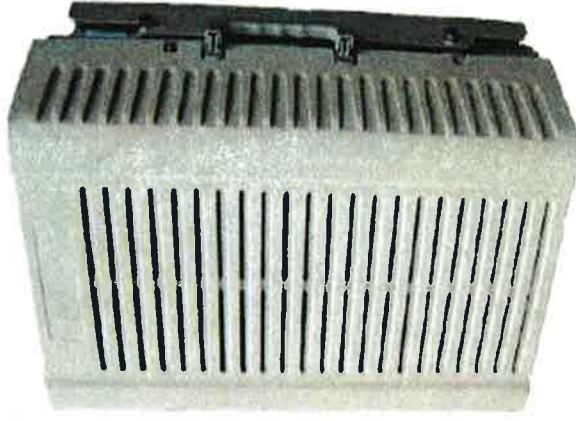


PCS RF MODULES

RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

RRH2X60	
RF Output Power	2X60W
Instantaneous Bandwidth	20MHz
Transmitter	2 TX
Receiver	1900 HW version 1900A HW version
Features	2 Branch RX – LA6.0.1 4 Branch RX – LR13.3 AISG 2.0 for RET/TMA
Power	Internal Smart Bias-T -48VDC
CPRI Ports	2 CPRI Rate 3 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (top mounted)



** Not a Verizon Wireless deployed product

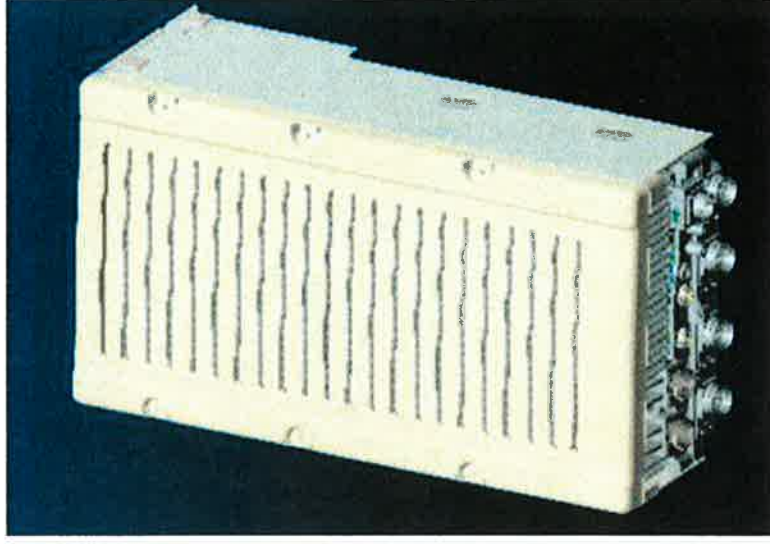
ALCATEL-LUCENT – CONFIDENTIAL – SOLELY FOR AUTHORIZED PERSONS HAVING A NEED TO KNOW – PROPRIETARY – USE PURSUANT TO COMPANY INSTRUCTION

NEW PCS RF MODULES FOR VZW

RRH2X60 - HW CHARACTERISTICS

LR14.3

	RRH2x60
RF Output Power	2x60W (4x30W HW Ready)
Instantaneous Bandwidth	60MHz
Target Reliability (Annual Return Rate)	<2%
Receiver	4 Branch Rx
Features	AISG 2.0 for RET/TMA
Power	-48VDC Internal Smart Bias-T
CPRI Ports	2 CPRI Rate 5 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX, RX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (downward facing)
Dimensions	22"(h) x 12"(w) x 9.4" (d)**
Weight	55lb**



** - Includes solar shield but not mounting brackets (8 lbs.)



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

Dimensions			
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
Mechanical Properties			
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)
Electrical Properties			
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)
Optical Properties			
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)			UL34-V0 UL1566 RoHS Compliant
DC Power Cable Properties			
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
Operating Limits			
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

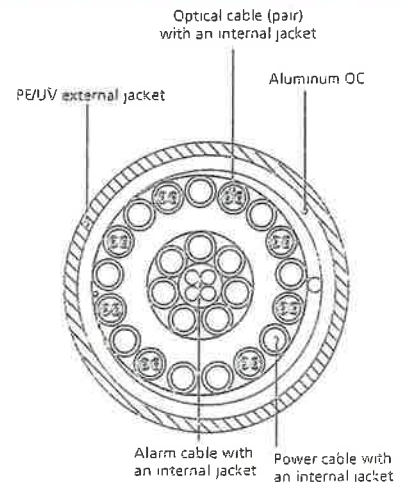


Figure 2: Construction Detail

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

ATTACHMENT 2

General Power Density

Site Name: EAST NORWALK, CT
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	1	1614	1614	103	0.0547	1.0	5.47%
VZW Cellular	869	9	409	3681	103	0.1248	0.579333333	21.54%
VZW AWS	2145	1	1750	1750	103	0.0593	1.0	5.93%
VZW 700	746	1	807	807	103	0.0274	0.497333333	5.50%
Total Percentage of Maximum Permissible Exposure								38.44%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 3

March 30, 2015

Mr. Steve Schadler
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

*Re: Structural Evaluation Letter ~ Antenna Upgrade
Verizon Wireless Site Ref ~ East Norwalk
Filbert Road
Norwalk, CT 06851*

Centek Project No. 14309.018 Revision 1

Dear Mr. Schadler,

Centek Engineering, Inc. has reviewed the proposed Verizon Wireless antenna upgrade at the above referenced site. The purpose of the review is to determine the structural adequacy of the existing 135-ft +/- tall water tank structure to support the proposed modified antenna configuration. The existing installation consists of two (2) antenna pipe mounts per sector (total of six) mounted to the legs of the existing water tank. The review considered the effects of wind load, dead load, ice load and seismic forces in accordance with the 2005 Connecticut State Building Code as amended by the 2009 Connecticut State Supplement.

The existing, proposed, and future Verizon Wireless loads considered in this analysis consist of the following:

- **Verizon (Existing to Remain – Alpha Sector):**
Antennas: One (1) Antel BXA-80063-6BF panel antenna, one (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head, one (1) Alcatel-Lucent RRH2x40-07-U Remote Radio Head and one (1) RFS DB-E1-3B-8AB-0Z sector distribution box pipe mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
Coax: Six (6) 1-5/8-in dia. coaxial cables and one (1) 1-1/4-in dia. Hybriflex Fiber jumper cable routed within existing cable tray system.
- **Verizon (Existing to Remove – Alpha Sector):**
Antennas: One (1) Antel BXA-171063-8BF panel antenna, one (1) Antel BXA-171063-12BF panel antenna and one (1) SwedCom SLCP 2x6015 panel antenna pipe mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
- **Verizon (Proposed - Alpha Sector):**
Antennas: One (1) JMA X7C-FRO-660 panel antenna, two (2) Andrew HBXX-6517DS panel antennas, one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Head and one (1) RFS DB-E1-2C-4AB-0Z sector distribution box to be mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
Cables: One (1) 1-1/4-in dia. Hybriflex Fiber jumper cable to be routed within existing cable tray system.

CENTEK engineering, INC.
Structural Evaluation Letter
Verizon Wireless ~ East Norwalk
Filbert Road
Norwalk, CT 06851

- **Verizon (Existing to Remain – Beta Sector):**
Antennas: One (1) Antel BXA-80063-6BF panel antenna, one (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head, one (1) Alcatel-Lucent RRH2x40-07-U Remote Radio Head and one (1) RFS DB-E1-3B-8AB-0Z sector distribution box pipe mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
Coax: Six (6) 1-5/8-in dia. coaxial cables and one (1) 1-1/4-in dia. Hybriflex Fiber jumper cable routed within existing cable tray system.
- **Verizon (Existing to Remove – Beta Sector):**
Antennas: Two (2) Antel BXA-171063-8BF panel antennas and one (1) SwedCom SLCP 2x6015 panel antenna pipe mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
- **Verizon (Proposed – Beta Sector):**
Antennas: One (1) JMA X7C-FRO-660 panel antenna, two (2) Andrew HBXX-6517DS panel antennas, one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Head and one (1) RFS DB-E1-2C-4AB-0Z sector distribution box to be mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
Cables: One (1) 1-1/4-in dia. Hybriflex Fiber jumper cable to be routed within existing cable tray system.
- **Verizon (Existing to Remain – Gamma Sector):**
Antennas: One (1) Antel BXA-80063-6BF panel antenna, one (1) Alcatel-Lucent RRH2x40-AWS Remote Radio Head, one (1) Alcatel-Lucent RRH2x40-07-U Remote Radio Head and one (1) RFS DB-E1-3B-8AB-0Z sector distribution box pipe mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
Coax: Six (6) 1-5/8-in dia. coaxial cables and one (1) 1-1/4-in dia. Hybriflex Fiber jumper cable routed within existing cable tray system.
- **Verizon (Existing to Remove – Gamma Sector):**
Antennas: Two (2) Antel BXA-171063-8BF panel antennas and one (1) Antel BXA-70063-6CF panel antenna pipe mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
- **Verizon (Proposed – Gamma Sector):**
Antennas: One (1) JMA X7C-FRO-660 panel antenna, two (2) Andrew HBXX-6517DS panel antennas, one (1) Alcatel-Lucent RRH2x60-PCS Remote Radio Head and one (1) RFS DB-E1-2C-4AB-0Z sector distribution box to be mounted to the legs of the water tank with RAD center elevations of 103-ft +/- AGL and 111-ft +/- AGL.
Cables: One (1) 1-1/4-in dia. Hybriflex Fiber jumper cable to be routed within existing cable tray system.

CENTEK engineering, INC.
Structural Evaluation Letter
Verizon Wireless ~ East Norwalk
Filbert Road
Norwalk, CT 06851

- **Verizon (Existing):**
Misc.: One (1) RFS DB-T1-6Z-8AB-0Z main distribution façade mounted to the existing Verizon Wireless equipment shelter.
Cables: One (1) 1-5/8-in dia. Hybriflex Fiber main cable routed from the existing Verizon Wireless Equipment shelter to the proposed main distribution box.
- **Verizon (Proposed):**
Misc.: One (1) RFS DB-T1-6Z-8AB-0Z main distribution to be façade mounted to the existing Verizon Wireless equipment shelter.
Cables: One (1) 1-5/8-in dia. Hybriflex Fiber main cable to be routed from the existing Verizon Wireless Equipment shelter to the proposed main distribution box.

The proposed antenna installation meets the requirements of the 2005 Connecticut State Building Code considering the basic wind speed (3-second gust) of 105 mph as required in Appendix K of the Connecticut supplement per Table 1609.3.1 considering Exposure Category C. Our findings are based on the assumption that the hosting structure, all structural members and appurtenances were properly designed, detailed, fabricated, installed and have been properly maintained since erection.

In conclusion, the proposed Verizon antenna upgrade will not negatively impact the structural integrity of the existing antenna support structure or host building. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:



Carlo F. Centore, PE
Principal ~ Structural Engineer

