

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION OF CELLCO PARTNERSHIP	:	PETITION NO. _____
D/B/A VERIZON WIRELESS FOR A	:	
DECLARATORY RULING ON THE NEED TO	:	
OBTAIN A SITING COUNCIL CERTIFICATE	:	
FOR THE INSTALLATION OF A SMALL	:	
CELL TELECOMMUNICATIONS FACILITY	:	
AT 330 NEWINGTON ROAD, WEST	:	
HARTFORD, CONNECTICUT	:	JULY 7, 2015

PETITION FOR A DECLARATORY RULING:  
INSTALLATION HAVING NO  
SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies (“R.C.S.A.”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Petition”) that no Certificate of Environmental Compatibility and Public Need (“Certificate”) is required under Section 16-50k(a) of the Connecticut General Statutes (“C.G.S.”) to install a new “small cell” telecommunications facility at 330 Newington Road in West Hartford, Connecticut (the “Property”). The Property is owned by Peter M. Luzzi. Cellco has designated this site as its “West Hartford SC2 Facility”.

II. Factual Background

The Property is a 0.74-acre parcel in West Hartford’s I-E Industrial zone district and is surrounded by industrial uses to the north, east and south, and residential uses, along Newington Road to the west. (See Attachment 1 – Site Vicinity Map and Site Schematic (Aerial

Photograph)). Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in West Hartford and throughout the State of Connecticut. Initially, the proposed West Hartford SC2 Facility is proposed to provide wireless service in Cellco's 2100 MHz frequency range only.

Cellco currently maintains numerous wireless facilities in West Hartford and the adjacent Towns of Newington, New Britain and Wethersfield, which provide wireless service in the area around the Property. As depicted on the coverage maps included in Attachment 2, Cellco maintains a series of small gaps in its 2100 MHz wireless service in the area around the Property. The proposed West Hartford SC2 Facility will fill many of these gaps. In addition, the West Hartford SC2 Facility will provide additional capacity relief to Cellco's West Hartford (Gamma sector), Corbins Corner (Beta sector) and West Farms (Alpha sector) cell sites, which are currently operating at or near their respective capacity limits.

### III. Proposed "Small Cell" Facility

The proposed West Hartford SC2 Facility would be located in the easterly portion of the Property. At this location, Cellco proposes to install a single, canister-type "small cell" antenna at the top of an existing 54.2-foot abandoned utility pole adjacent to the building. The antenna will extend to an overall height of 58.4 feet above ground level. Cellco's radio equipment, remote radio head (RRH) and electric service equipment will be attached to the pole approximately 10 feet above grade. The base of the pole will be surrounded by an 8-foot tall chain link fence. Project Plans for the proposed facility are included in Attachment 3. Specifications for Cellco's "small cell" antenna and RRH are included in Attachment 4. A Structural Analysis Report confirming that the existing pole (tower) can support Cellco's antenna and equipment is included in Attachment 5.

#### IV. Discussion

##### A. The Proposed Facility Modifications Will Not Have A Substantial Adverse Environmental Effect

The Public Utility Environmental Standards Act (the “Act”), C.G.S. § 16-50g et seq., provides for the orderly and environmentally compatible development of telecommunications towers in the state to avoid “a significant impact on the environment and ecology of the State of Connecticut.” C.G.S. § 16-50g. To achieve these goals, the Act established the Council, and requires a Certificate of Environmental Compatibility and Public Need for the construction of cellular telecommunication towers “that may, as determined by the council, have a substantial adverse environmental effect”. C.G.S. § 16-50k(a).

##### 1. Physical Environmental Effects

Cellco respectfully submits that the installation of a “small cell” canister antenna, RRH, and radio and electronic equipment on an existing utility pole will not involve a significant alteration in the physical and environmental characteristics of the Property. With the exception of the security fence, none of Cellco’s improvements will result in any new ground disturbance at the Property. Antenna cables will be attached to the outside of the existing pole. Access to the “small cell” location and equipment would extend from Newington Road over an existing paved driveway and parking area on the Property.

##### 2. Visual Effects

The visibility of the proposed “small cell” installation would be limited primarily to locations within the industrial area surrounding the Property where the existing pole is visible today. Likewise, residences to the west that currently have views of the existing pole will also see the pole-top antenna. These views, however, include intervening structures and utility infrastructure. Overall, the proposed small cell facility will not be highly visible nor will it have

a significant impact on aesthetics in the area. *See* Limited Visual Assessment included in Attachment 6.

3. FCC Compliance

Radio frequency (“RF”) emissions from the proposed installation will be far below the standards adopted by the Federal Communications Commission (“FCC”). Included in Attachment 7 is a General Power Density table including a calculation that demonstrates that the proposed “small cell” facility will operate well within the RF emission standards accepted by the FCC.

4. FAA Summary Report

Included in Attachment 8 is a Federal Airways & Airspace Summary Report verifying that the small cell facility pole at the Property would not constitute an obstruction or hazard to air navigation and that notification to the FAA is not required.

B. Notice to Town, Property Owner and Abutting Landowners

On July 7, 2015, a copy of this Petition was sent to West Hartford’s Mayor Scott Slifka, Town Planner Todd Dumais, and to Peter M. Luzzi, owner of the Property. Because the Property is located within 2,500 feet of the Newington town line, a copy of this Petition was also sent to Newington’s Mayor Stephen Woods. Included in Attachment 9 are copies of the letters sent to Mayor Slifka, Mr. Dumais, Mayor Woods and Mr. Luzzi. A copy of this Petition was also sent to the owners of land that abuts the Property. A sample abutter’s letter and the list of those abutting landowners who were sent copies of the Petition are included in Attachment 10.

V. Conclusion

Based on the information provided above, Cellco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of a “small cell”

antenna at the top of an abandoned utility pole (tower) at the Property will not have a substantial adverse environmental effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

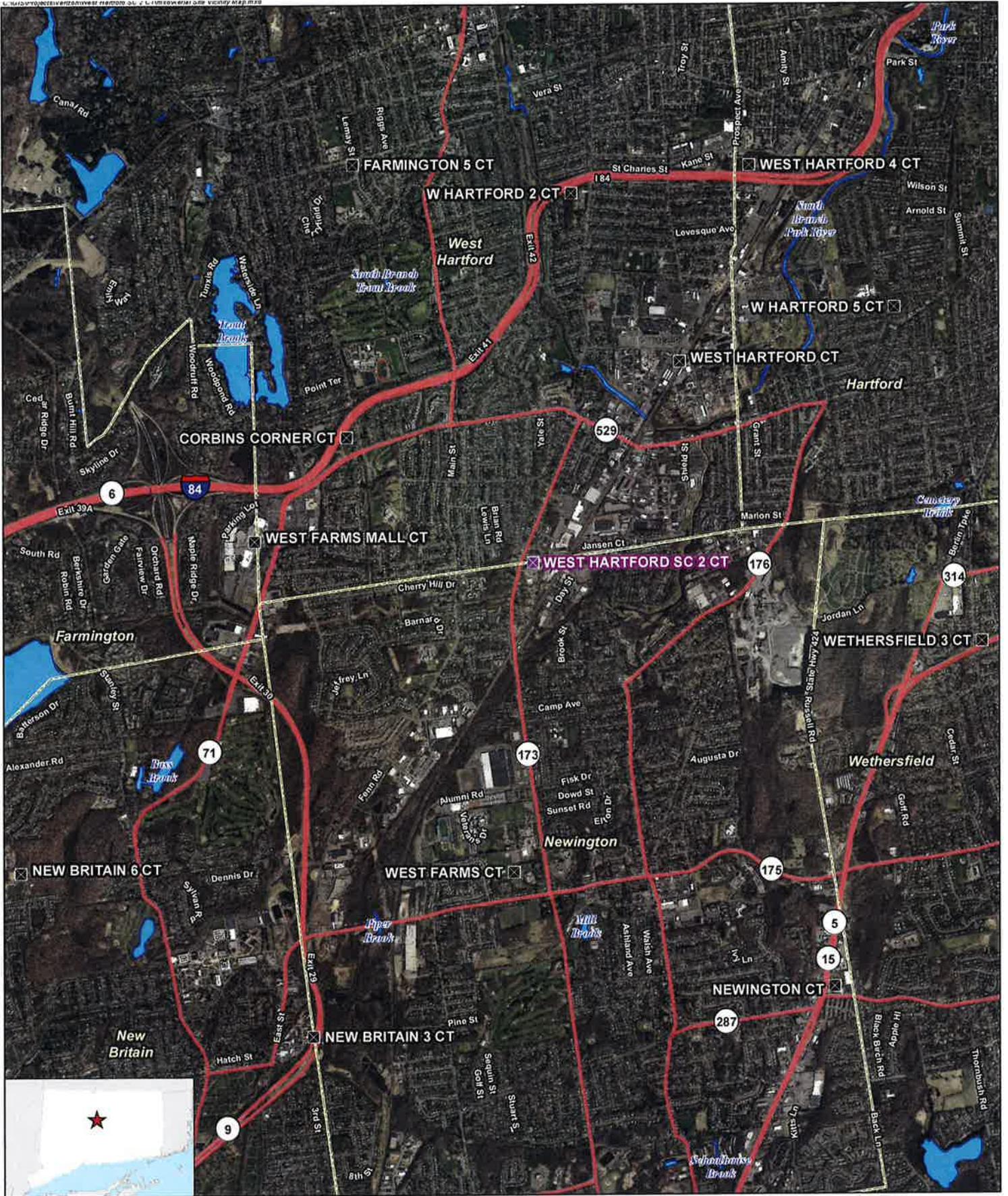
Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON  
WIRELESS

By  \_\_\_\_\_

Kenneth C. Baldwin, Esq.  
Robinson & Cole LLP  
280 Trumbull Street  
Hartford, CT 06103-3597  
(860) 275-8200  
Its Attorneys

# **ATTACHMENT 1**

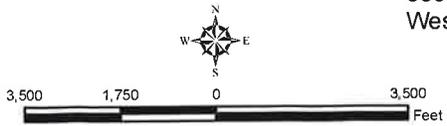


- Legend**
- ★ Proposed Verizon Wireless Small Cell Facility
  - Surrounding Verizon Wireless Facilities
  - Municipal Boundary
  - 🌊 Waterbody

**Site Vicinity Map**

Proposed Small Cell Installation  
 West Hartford SC 2 CT  
 330 Newington Road  
 West Hartford, Connecticut

Base Map Source: 2012 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 3,500 feet  
 Map Date: May 2015

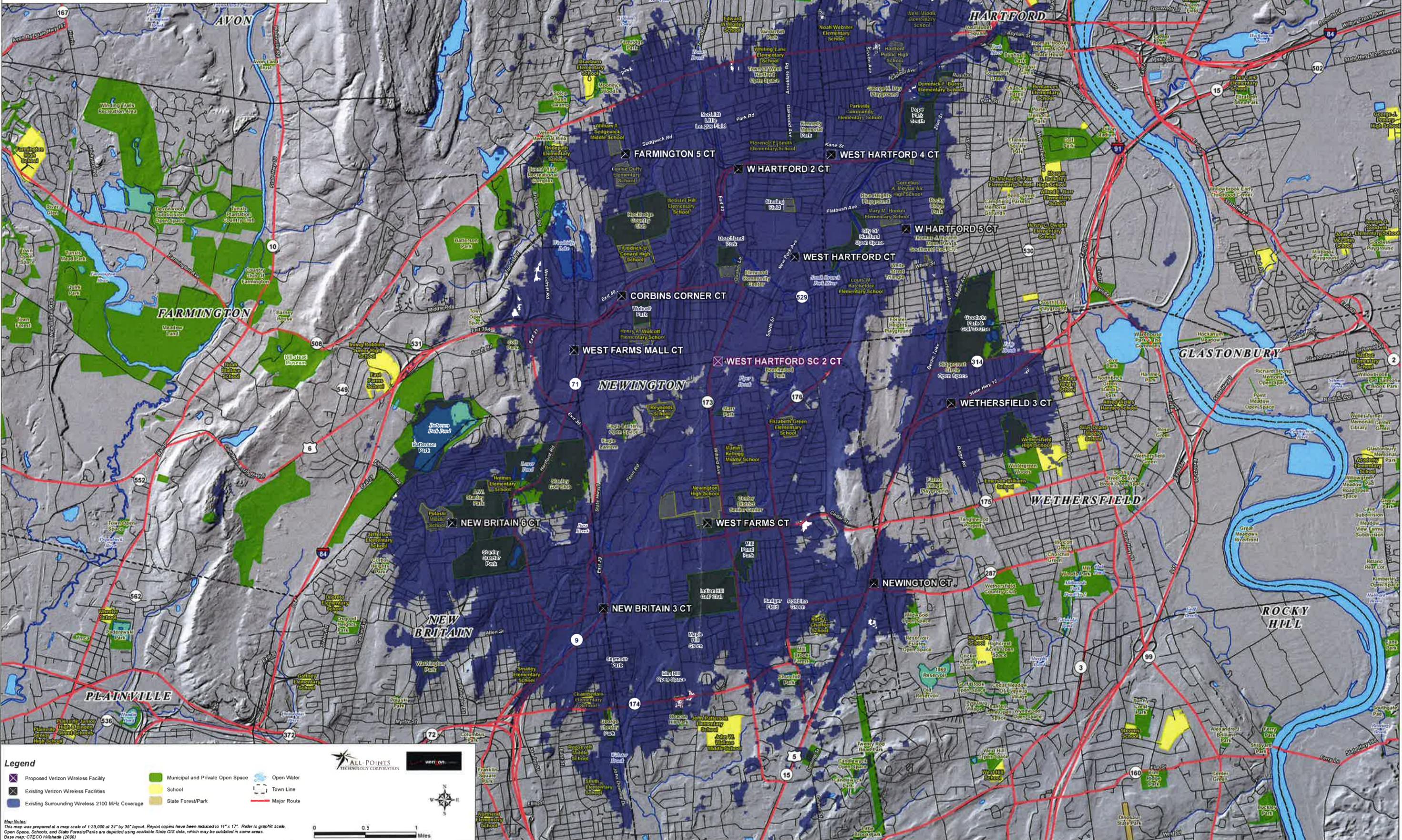




# **ATTACHMENT 2**

**Existing Verizon Wireless 2100 MHz Coverage**  
**West Hartford, Connecticut and Surrounding Area**  
 (\*Map Scale is 1:25,000)

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



**Legend**

- X Proposed Verizon Wireless Facility
- X Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 2100 MHz Coverage
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line
- Major Route

**Map Notes:**  
 This map was prepared at a map scale of 1:25,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale. Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas. Base map: CTECO Hillshade (2000)

**ALL POINTS TECHNOLOGY CORPORATION**

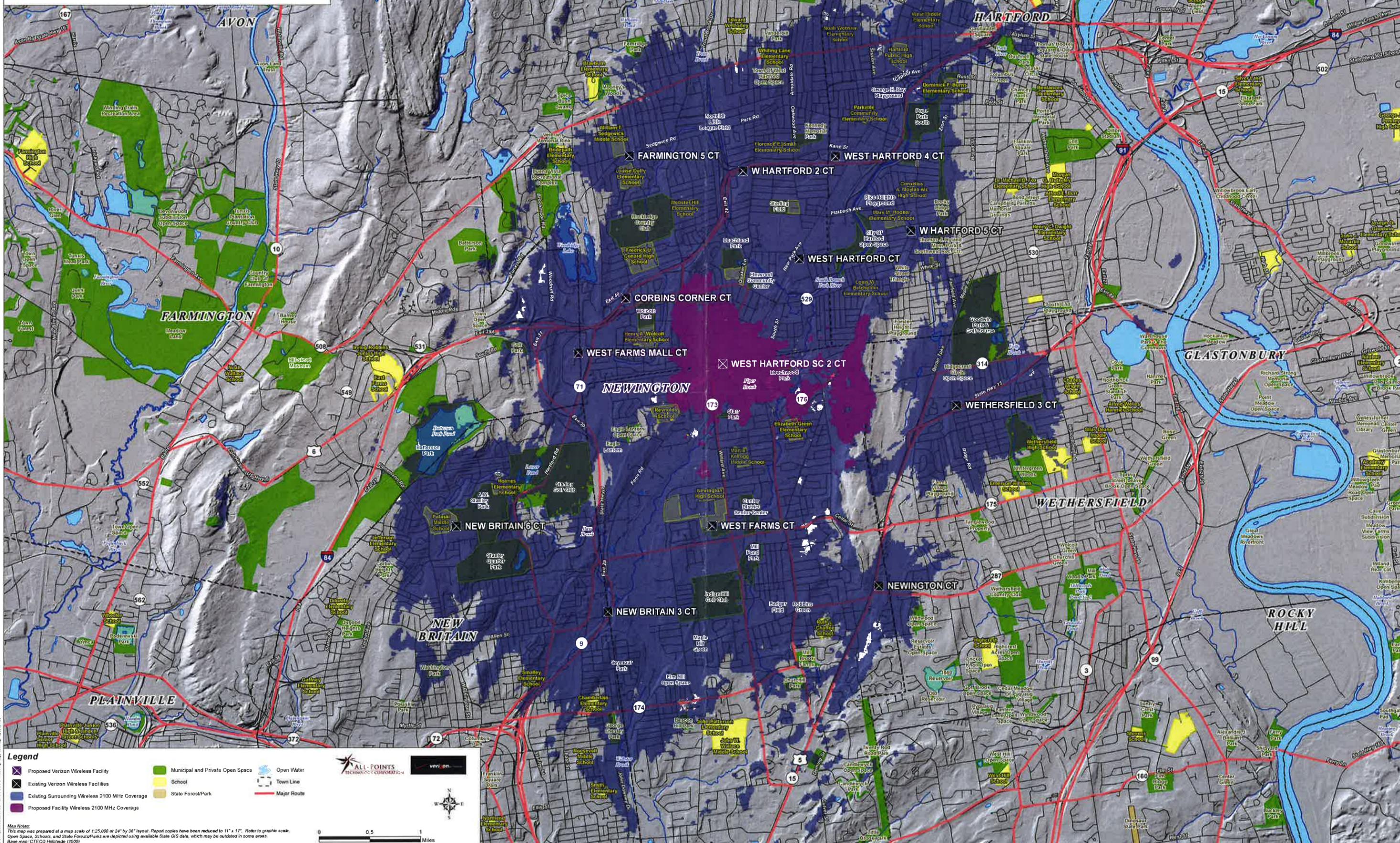
**verizon**

0 0.5 1 Miles

C:\GIS\arcgis\workspace\mapserver\2010\20100601\_010\_2100MHz\_Rpt.mxd  
 2/10/2010 10:00 AM

**Proposed Verizon Wireless 2100 MHz Coverage  
West Hartford, Connecticut and Surrounding Area  
(\*Map Scale is 1:25,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



**Legend**

- Proposed Verizon Wireless Facility
- Existing Surrounding Wireless 2100 MHz Coverage
- Proposed Facility Wireless 2100 MHz Coverage
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line
- Major Route

**Map Notes:**  
This map was prepared at a map scale of 1:25,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.  
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.  
Base map: CTECO Hillside (2000)

**ALL-POINTS TECHNOLOGY CORPORATION**

**verizon**

0 0.5 1 Miles

C:\GIS\Projects\Verizon\Map\_Series\_2100MHz\_Proposed.mxd

# **ATTACHMENT 3**

# Cellco Partnership

d.b.a. **verizon** wireless

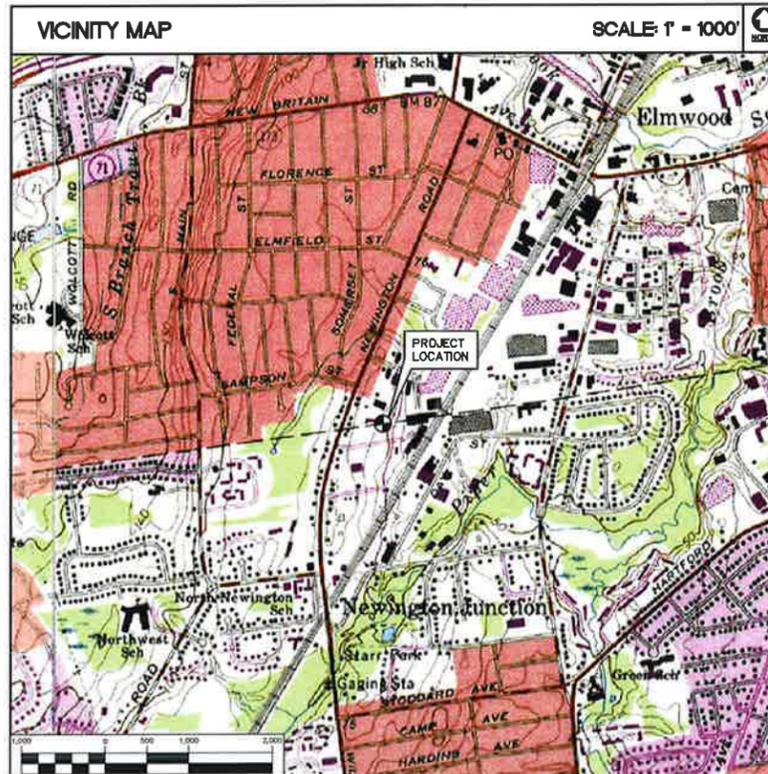
## WIRELESS COMMUNICATIONS FACILITY

WEST HARTFORD SC2  
330 NEWINGTON ROAD  
WEST HARTFORD, CT 06110

SITE DIRECTIONS		
FROM:		TO:
99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT		330 NEWINGTON ROAD WEST HARTFORD, CONNECTICUT
1. HEAD NORTHEAST ON E RIVER DR TOWARD DARLUN ST	0.3 MI.	
2. TURN LEFT TO STAY ON E RIVER DR	354 FT.	
3. TURN LEFT AT THE 1ST CROSS STREET ONTO CONNECTICUT BLVD	0.2 MI.	
4. TURN LEFT ONTO THE I-84 W RAMP TO HARTFORD/I-91	482 FT.	
5. MERGE ONTO I-84	4.9 MI.	
6. USE THE LEFT LANE TO TAKE EXIT 42 FOR TROUT BRK DR TOWARD ELMWOOD	0.3 MI.	
7. TURN RIGHT ONTO TROUT BROOK DR	0.4 MI.	
8. TURN RIGHT ONTO QUAKER LN S	0.3 MI.	
9. TURN LEFT ONTO NEW BRITAIN AVE	295 FT.	
10. TURN RIGHT ONTO NEWINGTON RD, AND THE DESTINATION WILL BE ON THE LEFT	0.8 MI.	

GENERAL NOTES
1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELCO PARTNERSHIP.

SITE INFORMATION
THE SCOPE OF WORK SHALL INCLUDE:
1. THE INSTALLATION OF A PROPOSED CELCO PARTNERSHIP ANTENNA, UTILITY/RADIO EQUIPMENT CABINETS AND ASSOCIATED CABLING MOUNTED TO AN EXISTING ABANDONED UTILITY POLE LOCATED WITHIN A PROPOSED ±5'x7' FENCED ENCLOSURE.
2. POWER AND TELCO UTILITIES SHALL BE ROUTED FROM DEMARCS LOCATED WITHIN OR ADJACENT TO THE EXISTING BUILDING TO THE PROPOSED CELCO PARTNERSHIP EQUIPMENT. ROUTING SHOWN HEREIN IS TENTATIVE. FINAL UTILITY DEMARC LOCATIONS AND ROUTING TO BE DETERMINED DURING CONSTRUCTION DOCUMENT PHASE OF THE PROJECT, AND WILL BE COORDINATED WITH BUILDING OWNER AND LOCAL UTILITY COMPANY REQUIREMENTS.
3. FINAL DESIGN OF ANTENNA MOUNTS SHALL BE INCLUDED IN THE CONSTRUCTION PLANS.
4. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.



PROJECT SUMMARY	
SITE NAME:	WEST HARTFORD SC2
SITE ADDRESS:	330 NEWINGTON ROAD WEST HARTFORD, CT 06110
PROPERTY OWNER:	PETER M LUZZI 15 SOMERSET DRIVE AVON, CT 06001
APPLICANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	STEVE SCHADLER CELCO PARTNERSHIP (508) 887-0357
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE (860) 257-8345
TOWER COORDINATES:	LATITUDE 41°-43'-17.572" LONGITUDE 72°-44'-05.268" GROUND ELEVATION: 72.9' ± A.M.S.L. COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED BY MARTINEZ COUCH AND ASSOCIATES L.L.C., DATED JUNE 9, 2015.

SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
C-1	ABUTTERS MAP	1
C-2	PARTIAL SITE PLAN, ELEVATION AND ANTENNA MOUNTING CONFIGURATION	1

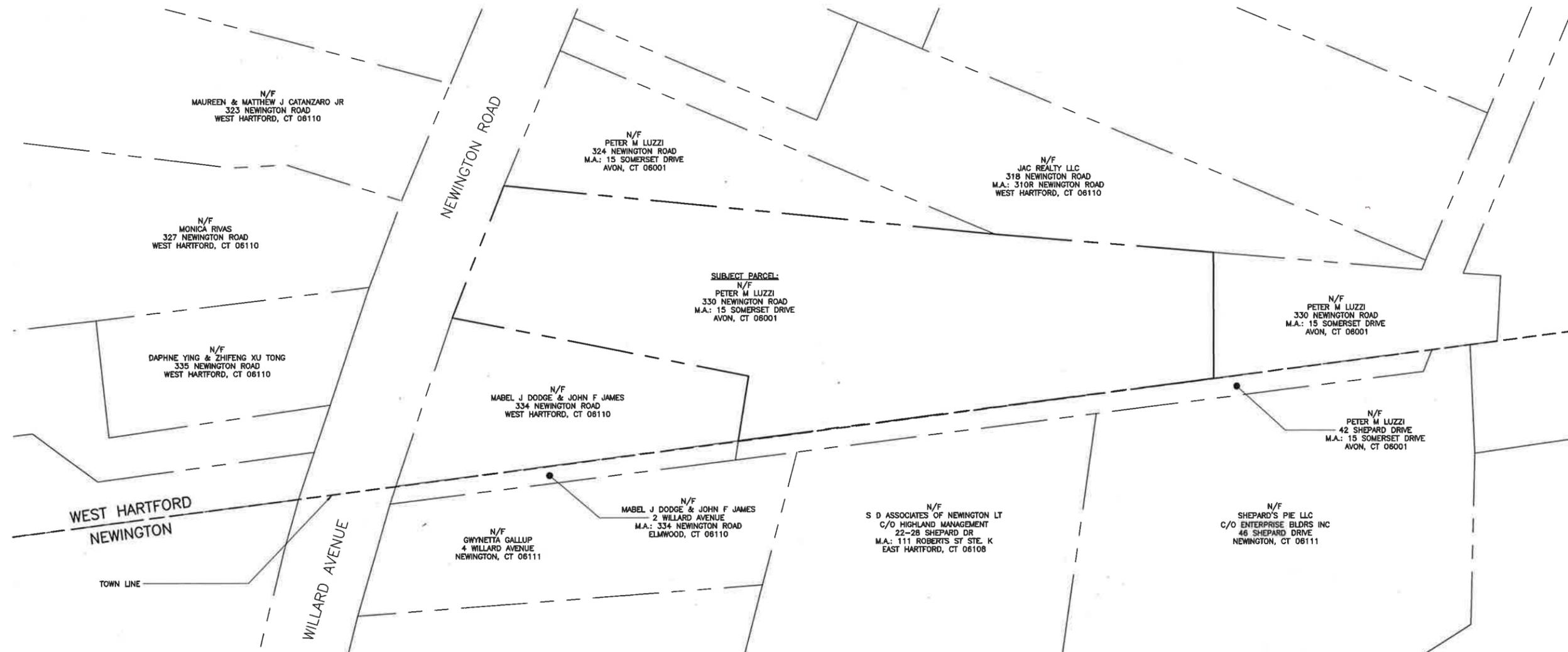
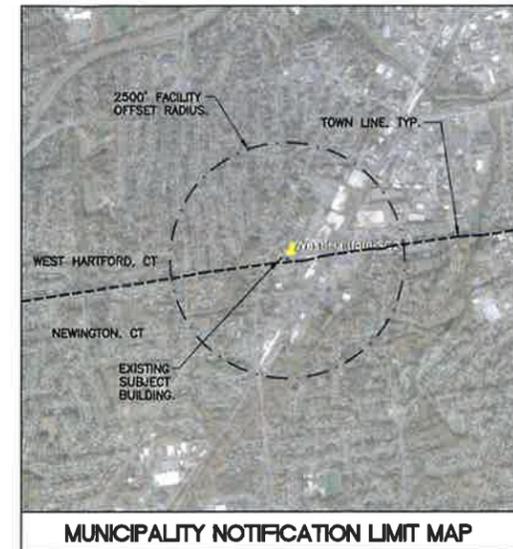
<b>WEST HARTFORD SC2</b> 330 NEWINGTON ROAD WEST HARTFORD, CT 06110	
DATE: 06/22/15 SCALE: AS NOTED JOB NO. 14238.000	
TITLE SHEET	
<b>T-1</b>	
Sheet No. 1 of 3	

REV.	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
1	07/06/15	HMR	DMD	ISSUED FOR CSC - CLIENT REVIEW
0	06/23/15	HMR	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership  
d.b.a. verizon wireless

**CENTEX** engineering  
Center on Solutions  
2031 4th Street  
432 North Main Street  
Branford, CT 06405  
www.CentexEng.com



REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	07/06/15	HMR	DMD	ISSUED FOR CSC
0	06/23/15	HMR	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER, SEA

Cellco Partnership  
d.b.a. Verizon Wireless

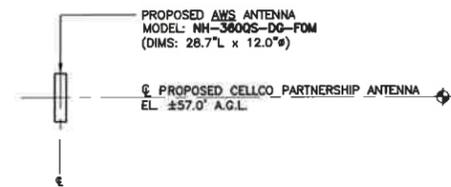
**CENEX-engineering**  
Center of Solutions  
203-484-0980  
203-484-0987 Fax  
1000 Main Road  
Branford, CT 06405  
www.CenExEng.com

Cellco Partnership d/b/a Verizon Wireless  
WIRELESS COMMUNICATIONS FACILITY  
**WEST HARTFORD SC2**  
330 NEWINGTON ROAD  
WEST HARTFORD, CT 06110

DATE: 06/22/15  
SCALE: AS NOTED  
JOB NO. 14238.000

ABUTTERS MAP

**C-1**  
Sheet No. 2 of 3

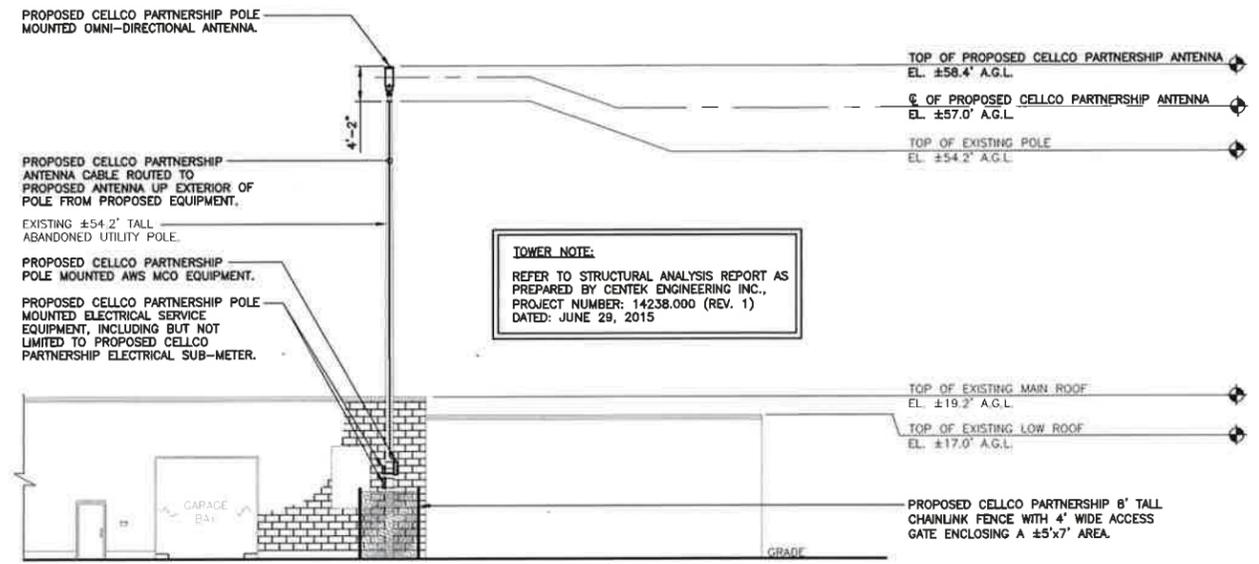


**EQUIPMENT MOUNTING NOTE**

- AWS MCO (MODEL: ALJ 9764 MCO 2x5W AWS) (DIMS: 15.8\"/>

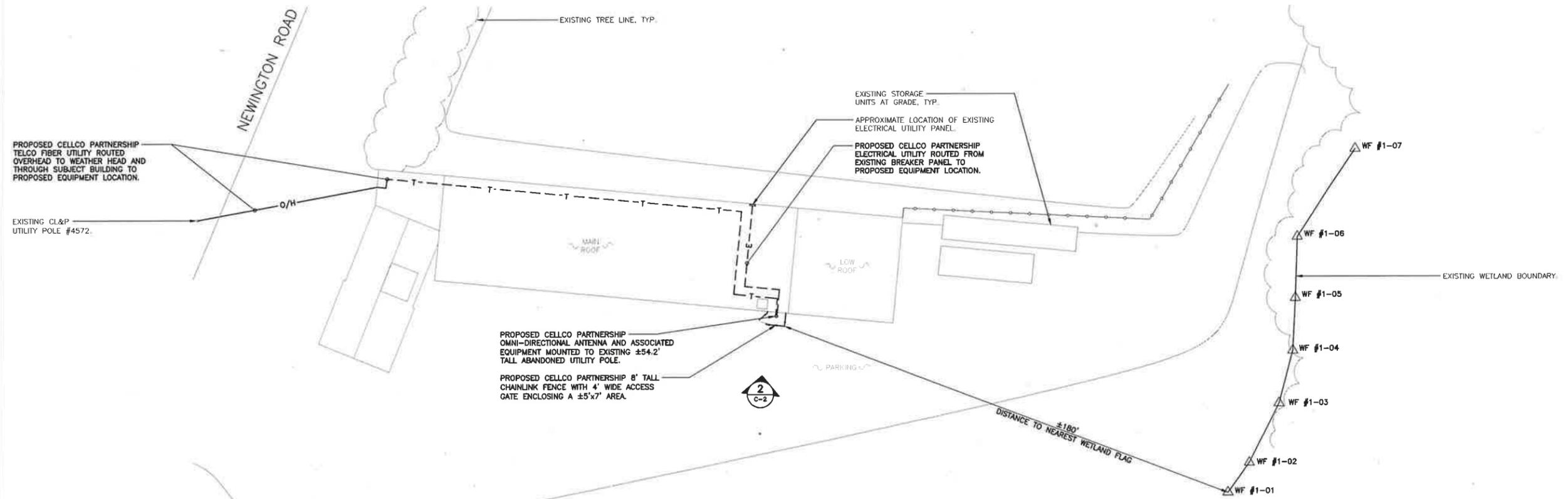
MOUNTED TO EXISTING UTILITY POLE.

**3 ANTENNA MOUNTING CONFIGURATION**  
C-2 SCALE: 1/4" = 1'



**2 PARTIAL SOUTH ELEVATION**  
C-2 SCALE: 1" = 10'

HEIGHTS SHOWN HEREIN ARE REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED BY MARTINEZ COUCH AND ASSOCIATES, L.L.C., DATED JUNE 9, 2015.



**1 PARTIAL SITE PLAN**  
C-2 SCALE: 1" = 20'

REV.	DATE	BY	CHK'D BY	DESCRIPTION
1	07/09/15	HAR	DMD	ISSUED FOR CSC - CLIENT REVIEW
0	06/23/15	HAR	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellico Partnership  
d.b.a. Verizon Wireless

**CEN TEK** engineering  
Centek on Solution  
(203) 498-1080  
(203) 498-6397 Fax  
65-2 North Branford Road  
Branford, CT 06405  
www.CentekEng.com

**Cellico Partnership d/b/a Verizon Wireless**  
WIRELESS COMMUNICATIONS FACILITY  
**WEST HARTFORD SC2**  
630 NEWINGTON ROAD  
WEST HARTFORD, CT 06110

DATE: 06/22/15  
SCALE: AS NOTED  
JOB NO. 14238.000  
PARTIAL SITE PLAN,  
ELEVATION  
AND ANTENNA  
MOUNTING CONFIG.

**C-2**  
Sheet No. 3 of 3

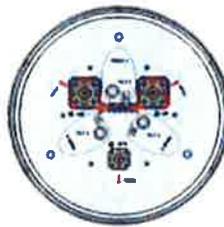
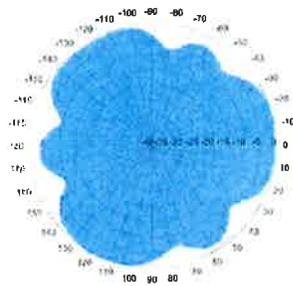
# **ATTACHMENT 4**

## Metro Cell Antennas with Internal Diplexer and GPS Antenna

### Dualband Quasi-Omni (360°), Metro Cell Antenna

NH360QS-DG-F0M

NH360QT-DG-F0



#### ELECTRICAL SPECIFICATIONS

Operating Frequency Range	698 - 896 and 1710 - 2170 MHz					698 - 896 and 1710 - 2170 MHz				
	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170
Frequency Bands, MHz	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170
Polarization	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°
Gain, dBi	4.3	5.3	8.0	8.1	8.5	1.3	2.3	4.0	4.2	4.5
Beamwidth, Horizontal, degrees	360	360	360	360	360	360	360	360	360	360
Beamwidth, Vertical, degrees	30.0	24.0	16.0	15.0	14.0	60.0	55.0	32.5	30.0	28.5
USLS, dB	12	12	14	13	13	-	-	14	12	11
Beam Tilt, degrees	0	0	0-16	0-16	0-16	0	0	0	0	0
Isolation, dB	25	25	25	25	25	25	25	25	25	25
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)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)
PIM, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150
Input Power per Port, maximum, watts	250	250	250	250	250	250	250	250	250	250

#### MECHANICAL SPECIFICATIONS

Connector Interface	7 - 16 DIN Female	7 - 16 DIN Female
Connector Quantity, Location	2, Bottom	2, Bottom
GPS Connector Interface	4.1/9.5 DIN Female	4.1/9.5 DIN Female
GPS Connector Quantity, Location	1, Bottom	1, Bottom
Length, mm (inch)	730 (28.7)	360 (14.2)
Outer Diameter, mm (inch)	305 (12.0)	305 (12.0)
Wind Speed, maximum, km/h (mph)	241.4 (150)	241.4 (150)
Net Weight, kg (lb)	20.0 (44.1)	12.0 (26.5)

#### AVAILABILITY

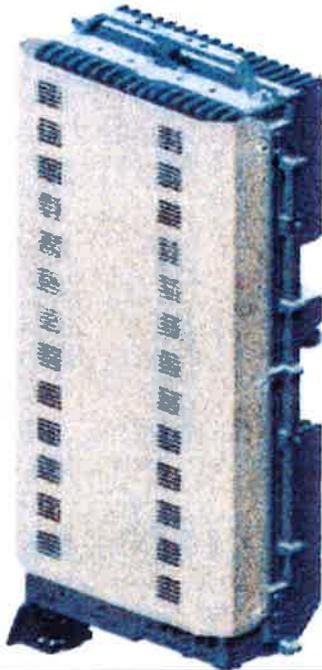
Expected Ready Date for Manufacturing

March 2014

June 2014

# ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET RRH2x60-AWS FOR BAND 4 APPLICATION

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.



A distributed Node B expands the deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals

along with operations, administration and maintenance (OA&M) information.

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

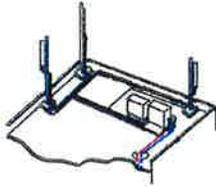
The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

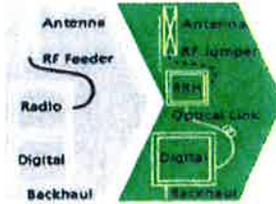
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

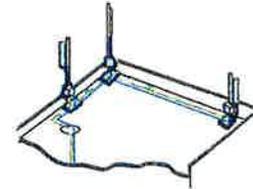
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and

- silent solutions, with minimum impact on the neighborhood, which ease the deployment
- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

#### Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

#### Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

#### RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

#### Connectivity

- Two CPRI optical ports for daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

#### Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

#### Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

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AT THE SPEED OF IDEAS™

Alcatel-Lucent 

# **ATTACHMENT 5**

**Structural Analysis Report**

*60-ft Wood Pole (54.2-ft AGL)*

*Proposed Antenna Installation*

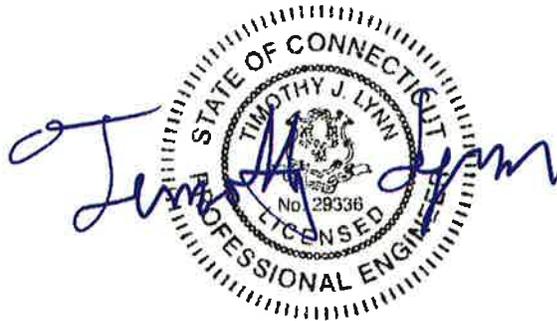
*Verizon Site Ref: West Hartford SC2*

*330 Newington Road  
West Hartford, CT*

*Centek Project No. 14238.000*

~~*Date: May 21, 2015*~~

*Rev 1: June 29, 2015*



**Prepared for:**  
Verizon Wireless  
99 East River Road, 9<sup>th</sup> Floor  
East Hartford, CT 06108

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- ANTENNA AND APPURTENANCE SUMMARY
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- TOWER CAPACITY
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## Introduction

The purpose of this report is to summarize the results of the structural analysis of the existing wood pole for the antenna installation by Verizon Wireless located in West Hartford, Connecticut.

The host tower is a 60-ft tall (54.2-ft AGL), Southern Yellow Pine class 4 wood pole. The width of the tower face is 6.68-in at the top and 12.4-in at the base.

Antenna and appurtenance information were obtained from information provided by Verizon Wireless.

Verizon Wireless proposes the installation of one (1) omni antenna mounted to the top of the pole and one (1) remote radio head and one (1) electrical box mounted to the face of the pole. Refer to the Antenna and Appurtenance Summary below for a detailed description of the proposed antenna and appurtenance configuration.

## Antenna and Appurtenance Summary

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

- **VERIZON (Proposed):**  
**Antenna: One (1) Commscope NH360QS-DG-F0M Omni antenna mounted to the top of the pole with an elevation of  $\pm 57$ -ft above grade.**  
**Cables: One (1) 1-5/8" dia. fiber cable running on the exterior of the pole.**
- **VERIZON (Proposed):**  
**Antenna: One (1) remote radio head mounted on a Site Pro Chain Mount p/n CHM3 with an elevation of  $\pm 10$ -ft above grade.**
- **VERIZON (Proposed):**  
**Antenna: One (1) electrical box mounted on a Site Pro Chain Mount p/n CHM3 with an elevation of  $\pm 8$ -ft above grade.**

### Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.

## A n a l y s i s

The forces in the tower were calculated using a comprehensive computer program entitled *tnxTower* based on the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination as per guidelines of TIA-222-G-2005 entitled “Structural Standard for Antenna Support Structures and Antennas”.

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix K of the CSBC<sup>1</sup> and the wind speed data available in the TIA-222-G-2005 Standard. The higher of the two wind speeds is utilized in preparation on the tower analysis.

## T o w e r L o a d i n g

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-G-2005, gravity loads of the tower structure and its components, and the application of 1.00 radial ice on the tower structure and its components.

Basic Wind Speed:	Hartford; $v = 90\text{-}105$ mph (fastest mile)	[Annex B of TIA-222-G-2005]
	West Hartford; $v = 95$ mph (3 second gust)	[Appendix K of the 2005 CT Building Code Supplement]
	<i>Appendix-K wind speed controls</i>	
Load Cases:	<u>Load Case 1</u> ; 95 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	[Annex B of TIA-222-G-2005]
	<u>Load Case 2</u> ; 50 mph wind speed w/ 1.00” radial ice plus gravity load – used in calculation of tower stresses.	[Annex B of TIA-222-G-2005]
	<u>Load Case 3</u> ; Seismic – not checked	[Section 1614.5 of State Bldg. Code 2005] does not control in the design of this structure type

---

<sup>1</sup> The 2005 Connecticut State Building Code as amended by the 2009 CT State Supplement. (CSBC)

## Tower Capacity

Tower stresses were calculated utilizing Mathcad. Design flexural strength was determined based on the North American Wood Pole Coalition Technical Bulletin "The Wood Pole 2005: Design Considerations, Service Benefits and Economic Reward".

- Calculated stresses were found to be within allowable limits. The tower was found to be at **44.8%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
SYP Class 4	0'-0"-52'-0"	44.8%	PASS

- The wood pole direct embedment was found to be within allowable limits.

Component	Embedment Provided	Stress Ratio (percentage of capacity)	Result
Direct Embedment	5.8-ft	97.6%	PASS

## Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed antenna configuration.

The analysis is based, in part, on the information provided to this office by Verizon Wireless. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE  
 Structural Engineer



Standard Conditions for Furnishing of  
Professional Engineering Services on  
Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an uncorroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

## GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly RISA Tower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

### tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

### DESIGNED APPURTENANCE LOADING

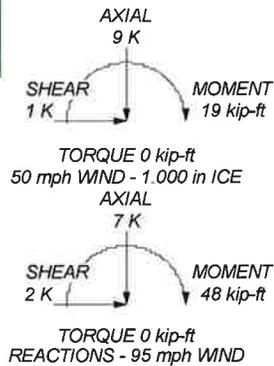
TYPE	ELEVATION	TYPE	ELEVATION
NH360QS-DG-F0M (Verizon Proposed)	57	Electrical Box (Verizon Proposed)	8
RRH2x60-AWS (Verizon Proposed)	10	Site Pro CHM3 Chain Mount (Verizon Proposed)	8
Site Pro CHM3 Chain Mount (Verizon Proposed)	10		

### TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 95 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.000 ft



ALL REACTIONS  
ARE FACTORED



<b>Centek Engineering Inc.</b>		Job: <b>14238.000 - West Hartford SC2</b>	
63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		Project: <b>60-ft Wood Pole - 330 Newington Rd., West Hartford,</b>	
Client: Verizon Wireless	Drawn by: T.JL	App'd:	
Code: TIA-222-G	Date: 06/29/15	Scale: NTS	
Path:		Dwg No. E-1	

**Wood Pole Analysis:**

Reactions:

Moment at Ground Line =  $M_g := 48 \text{ kip-ft}$  (User Input from trnTower)  
 Shear at Ground Line =  $V_g := 2 \text{ kips}$  (User Input from trnTower)

Pole Properties:

Species = Southern Yellow Pine (User Input)  
 Class = 4 (User Input)  
 Fiber Strength =  $F_b := 8000 \text{ psi}$  (User Input North American Wood Pole Coalition)  
 Pole Circumference at Top of Pole =  $C_t := 21 \text{ in}$  (User Input ANSI 05.1)  
 Pole Circumference at 6-ft from Butt =  $C_b := 39 \text{ in}$  (User Input ANSI 05.1)  
 Distance from Butt of Pole to Top of Pole =  $D_p := 60 \text{ ft}$  (User Input)  
 Distance from Butt of Pole to Classification Point =  $D_b := 6 \text{ ft}$  (User Input ANSI 05.1)  
 Distance from Butt of Pole to Ground Line =  $D_g := 5.8 \text{ ft}$  (User Input)  
 Pole Circumference at Ground Line =  $C_g := \frac{(D_p - D_g)(C_b - C_t)}{(D_p - D_b)} + C_t = 39.067 \text{ in}$   
 Calculation Constant =  $K_r := 0.000264 \cdot \frac{\text{ft}}{\text{in}}$  (User Input North American Wood Pole Coalition)  
 Strength Reduction Factor =  $\Phi := 0.85$  (User Input)  
 Ultimate Resisting Moment at Ground Line =  $M_r := K_r F_b C_g^3 = 125.925 \text{ ft-kips}$   
 Resisting Moment at Ground Line =  $M_r := M_r \Phi = 107.037 \text{ ft-kips}$   
 $\frac{M_g}{M_r} = 44.8\%$   
 Wood Pole = if  $\left( \frac{M_g}{M_r} \leq 1.00, \text{"OK"}, \text{"Overstressed"} \right)$

**Wood Pole = "OK"**

**Wood Pole Embedment Check:**

(Per RUS Bulletin 1724E-200)

Reactions:

Moment at Ground Line =  $M_g := 48 \text{ kip}\cdot\text{ft}$  (User Input from `tnxTower`)  
 Shear at Ground Line =  $V_g := 2 \text{ kips}$  (User Input from `tnxTower`)

Pole Properties:

Species = Southern Yellow Pine (User Input)  
 Class = 4 (User Input)  
 Total Pole Length =  $L := 60 \text{ ft}$  (User Input)  
 Embedment Depth of Pole =  $D_e := 5.8 \text{ ft}$  (User Input)  
 Soil Constant =  $S_e := 70$  (User Input - Average Soil)

Horizontal Force at 2ft From Pole Top Causing Overturning =  $P := \frac{S_e \cdot D_e^{3.75}}{L - 2 - 0.662 \cdot D_e} = 942 \text{ lbs}$  (Eq. 12-1)

Ultimate Resisting Moment at Ground Line =  $M_r := P \cdot (L - D_e - 2) \cdot \text{ft}\cdot\text{lb} = 49.197 \cdot \text{ft}\cdot\text{kips}$

$$\frac{M_g}{M_r} = 97.6\%$$

Pole Embedment =  $\text{Pole\_Embedment} := \text{if} \left( \frac{M_g}{M_r} \leq 1.00, \text{"OK"}, \text{"Overstressed"} \right)$

**Pole\_Embedment = "OK"**



## NH360QS-DG-FOM

**Andrew® Dualband Quasi Omni Metro Cell Antenna, 698-896 and 1710-2170 MHz with fixed tilt in the low band and manual tilt in the high band. Contains internal diplexer and active GPS L1 band antenna**

### Electrical Specifications

Frequency Band, MHz	698-806	806-896	1710-1880	1850-1990	1920-2170
Gain, dBi	4.2	5.0	8.0	8.1	8.0
Beamwidth, Horizontal, degrees	360	360	360	360	360
Beamwidth, Vertical, degrees	35.4	35.6	15.1	14.0	13.3
Beam Tilt, degrees	0	0	0-16	0-16	0-16
USLS, dB	13	13	10	13	10
Isolation, dB	25	25	25	25	25
VSWR   Return Loss, dB	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
Input Power per Port, maximum, watts	125	125	125	125	125
Polarization	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm				

### Electrical Specifications, BASTA\*

Frequency Band, MHz	698-806	806-896	1710-1880	1850-1990	1920-2170
Gain by all Beam Tilts, average, dBi	4.2	4.8	7.6	7.8	7.9
Gain by all Beam Tilts Tolerance, dB	±1	±0.7	±0.6	±0.7	±0.8
Gain by Beam Tilt, average, dBi			0°   7.9	0°   8.0	0°   8.3
			8°   7.7	8°   7.9	8°   8.0
			16°   7.2	16°   7.3	16°   7.5
Beamwidth, Vertical Tolerance, degrees	±4.2	±5.8	±1.3	±1	±1.2
USLS, dB	14	13	14	14	12

\* 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.](#)

### General Specifications

Antenna Brand	Andrew®
Antenna Type	Metro Cell
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1710 - 2170 MHz   698 - 896 MHz
Internal GPS frequency band	1575.42 MHz
Internal GPS VSWR	2.0
Performance Note	Outdoor usage

### Mechanical Specifications

# Product Specifications

COMMSCOPE®

NH360QS-DG-F0M

POWERED BY



Color	Light gray
GPS Connector Interface	4.1-9.5 DIN Female
GPS Connector Quantity	1
Lightning Protection	dc Ground
Radiator Material	Aluminum   Low loss circuit board
Radome Material	ASA
Reflector Material	Aluminum
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	2
Wind Loading, maximum	167.0 N @ 150 km/h 37.5 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h   149.8 mph

## Dimensions

Length	728.0 mm   28.7 in
Outer Diameter	305.0 mm   12.0 in
Net Weight	12.1 kg   26.7 lb

## Regulatory Compliance/Certifications

### Agency

RoHS 2011/65/EU  
China RoHS SJ/T 11364-2006  
ISO 9001:2008

### Classification

Compliant by Exemption  
Above Maximum Concentration Value (MCV)  
Designed, manufactured and/or distributed under this quality management system



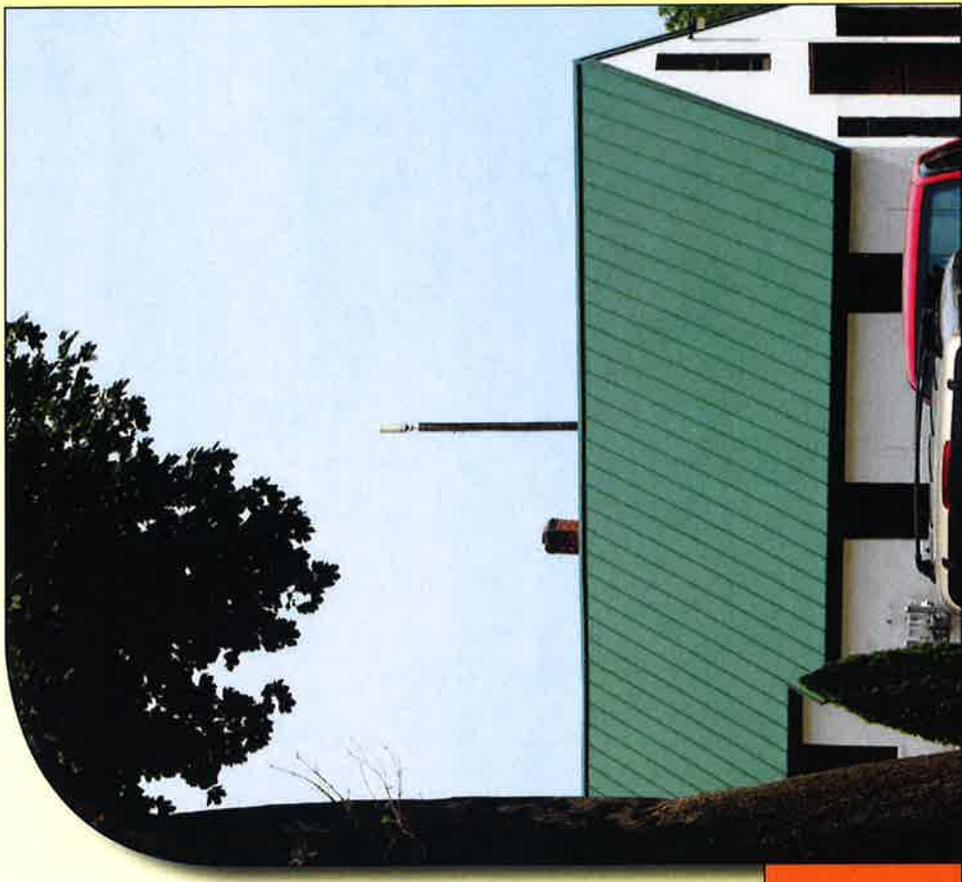
## \* Footnotes

Performance Note      Severe environmental conditions may degrade optimum performance

# **ATTACHMENT 6**

# Limited Visual Assessments and Photo-Simulations

W. HARTFORD SC 2 CT  
330 NEWINGTON ROAD  
WEST HARTFORD, CT



Prepared in June 2015 by:  
All-Points Technology Corporation, P.C.  
3 Saddlebrook Drive  
Killingworth, CT 06141

Prepared for Verizon Wireless



# LIMITED VISUAL ASSESSMENT & PHOTO-SIMULATIONS

At the request of Cellco partnership LLC d/b/a Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") completed a limited visual assessment and prepared computer-generated photo-simulations depicting the proposed installation of a small cell wireless telecommunications Facility at 330 Newington Road in West Hartford, Connecticut (the "Property").

## Project Setting

The Property is located northeast of the intersection of Newington Road (Route 173) and Shepard Drive in a mixed commercial/industrial and residential section of West Hartford. The Property is currently improved with a single-story concrete-block building. The proposed Facility would include the installation of a single canister, 4-foot tall omni-directional antenna mounted atop an approximately 52-foot tall wooden utility pole. Electrical and telco service cables would extend up the exterior side of the pole. The utility pole would be enclosed by an eight-foot tall chain-link fence.

## Methodology

On June 12, 2015, APT personnel conducted a field reconnaissance to photo-document existing conditions. Six (6) nearby locations were selected to represent where the existing utility pole is visible and depict proposed conditions with the proposed installation. At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens, with lens set to 50 mm.

*"The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm."<sup>1</sup>*

Three-dimensional computer models were developed for the building and proposed small cell components from AutoCAD information. Photographic simulations were then generated to portray scaled renderings of the proposed installation. Using field data, site plan information and image editing software, the proposed Facility was scaled to the correct location and height, relative to the existing structure and surrounding area. For presentation purposes in this report, all of the photographs were produced in an approximate 7-inch by 10.5-inch format<sup>2</sup>. A photolog map and copies of the existing conditions and photo-simulations are attached.

---

<sup>1</sup> Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

<sup>2</sup> When viewing in this format size, we believe it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph and depicting the subject in a way similar to what an observer might see, to the greatest extent possible.

## **Conclusions**

The visibility of the proposed installation would be limited primarily to locations within the industrial complex, where the 52-foot tall wooden pole is visible today. Residences to the west, across Newington Road, that currently have views of the upper portion of the utility pole would see the new antenna installation. However, as photographs 3 and 4 demonstrate, these views would include intervening structures and other utility infrastructure. Based on the results of this assessment, it is APT's opinion that the proposed installation of Verizon Wireless equipment at the Property would not be highly visible nor have a significant impact on aesthetics in the area.

## **Limitations**

This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen. The photo-simulations provide a representation of the Facility under similar settings as those encountered during the field reconnaissance. Views of the Facility can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location. Weather conditions on the day of the reconnaissance included mostly sunny skies and the photo-simulations presented in this report provide an accurate portrayal of the Facility during comparable conditions.

## ATTACHMENTS



# PHOTO LOG

- Legend**
- Site
  - Photo Location



verti on



**EXISTING**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	HOST PROPERTY	WEST	+/- 162 FEET



**PROPOSED**

PHOTO

1

LOCATION

**HOST PROPERTY**

ORIENTATION

**WEST**

DISTANCE TO SITE

**+/- 162 FEET**



**EXISTING**

PHOTO  
**2**

LOCATION  
**HOST PROPERTY**

ORIENTATION  
**NORTHEAST**

DISTANCE TO SITE  
**+/- 53 FEET**





**PROPOSED**

PHOTO

2

LOCATION

**HOST PROPERTY**

ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 53 FEET**





**EXISTING**

PHOTO

3

LOCATION

HOST PROPERTY

ORIENTATION

EAST

DISTANCE TO SITE

+/- 337 FEET



**PROPOSED**

PHOTO

3

LOCATION

**HOST PROPERTY**

ORIENTATION

**EAST**

DISTANCE TO SITE

**+/- 337 FEET**



**EXISTING**

PHOTO

4

LOCATION

**SHEPARD DRIVE**

ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 311 FEET**



**ALL-POINTS**  
TECHNOLOGY CORPORATION





**PROPOSED**

PHOTO

4

LOCATION

**SHEPARD DRIVE**

ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 311 FEET**



**EXISTING**

PHOTO

5

LOCATION

**SHEPARD DRIVE**

ORIENTATION

**NORTH**

DISTANCE TO SITE

**+/- 195 FEET**



**PROPOSED**

PHOTO

5

LOCATION

**SHEPARD DRIVE**

ORIENTATION

**NORTH**

DISTANCE TO SITE

**+/- 195 FEET**



**EXISTING**

PHOTO

6

LOCATION

**HOST PROPERTY**

ORIENTATION

**SOUTHWEST**

DISTANCE TO SITE

**+/- 206 FEET**



**PROPOSED**

PHOTO

6

LOCATION

**HOST PROPERTY**

ORIENTATION

**SOUTHWEST**

DISTANCE TO SITE

**+/- 206 FEET**

# **ATTACHMENT 7**

General Power Density

Site Name: West Hartford SC 2 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 <sup>2</sup> )	Maximum Permissible Exposure* (mW/cm <sup>2</sup> )	Fraction of MPE (%)
VZW AWS	2145	1	600	600	55	0.0713	1.0	7.13%

**Total Percentage of Maximum Permissible Exposure**

7.13%

\*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/cm<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

# **ATTACHMENT 8**

\*\*\*\*\*

\* Federal Airways & Airspace \*  
\* Summary Report: New Construction \*  
\* Antenna Structure \*

\*

\*\*\*\*\*

Airspace User: Mark Brauer

File: WEST\_HARTFORD\_SC\_2\_CT

Location: Hartford, CT

Latitude: 41°-43'-17.0" Longitude:  
72°-44'-6.7"

SITE ELEVATION AMSL.....90 ft.  
STRUCTURE HEIGHT.....57 ft.  
OVERALL HEIGHT AMSL.....147 ft.

NOTICE CRITERIA

- FAR 77.9(a): NNR (DNE 200 ft AGL)
- FAR 77.9(b): NNR (DNE Notice Slope)
- FAR 77.9(c): NNR (Not a Traverse Way)
- FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for HFD
- FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for 4B8
- FAR 77.9(d): NNR (Off Airport Construction)

- NR = Notice Required
- NNR = Notice Not Required
- PNR = Possible Notice Required (depends upon actual IFR procedure)

bottom of this report.

Notice to the FAA is not required at the analyzed location and height for slope, height or Straight-In procedures. Please review the 'Air Navigation' section for notice requirements for offset IFR procedures and EMI.

OBSTRUCTION STANDARDS

- FAR 77.17(a)(1): DNE 499 ft AGL
- FAR 77.17(a)(2): DNE - Airport Surface
- FAR 77.19(a): DNE - Horizontal Surface
- FAR 77.19(b): DNE - Conical Surface
- FAR 77.19(c): DNE - Primary Surface
- FAR 77.19(d): DNE - Approach Surface
- FAR 77.19(e): DNE - Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: HFD: HARTFORD-BRAINARD

Type: A RD: 21694.79 RE: 13.9

FAR 77.17(a)(1): DNE  
 FAR 77.17(a)(2): DNE - Height No Greater Than 200 feet AGL.  
 VFR Horizontal Surface: DNE  
 VFR Conical Surface: DNE  
 VFR Approach Slope: DNE  
 VFR Transitional Slope: DNE

VFR TRAFFIC PATTERN AIRSPACE FOR: 4B8: ROBERTSON FIELD

Type: A RD: 36545.02 RE: 201.6

FAR 77.17(a)(1): DNE  
 FAR 77.17(a)(2): DNE - Greater Than 5.99 NM.  
 VFR Horizontal Surface: DNE  
 VFR Conical Surface: DNE  
 VFR Approach Slope: DNE  
 VFR Transitional Slope: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)

FAR 77.17(a)(3) Departure Surface Criteria (40:1)  
 DNE Departure Surface

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)

FAR 77.17(a)(4) MOCA Altitude Enroute Criteria  
 The Maximum Height Permitted is 2945 ft AMSL

PRIVATE LANDING FACILITIES

FACIL	BEARING	RANGE	DELTA
ARP FAA	To FACIL	IN NM	
ELEVATION IFR			
OCT9 HEL HARTFORD HOSPITAL No Impact to Private Landing Facility Structure 0 ft below heliport.	52.03	3.22	-64
OCT5 HEL ST FRANCIS HOSPITAL No Impact to Private Landing Facility Structure 1 ft below heliport.	27.12	3.58	-37
CT88 HEL RENTSCHLER No Impact to Private Landing Facility Structure is beyond notice limit by 26413 feet.	68.21	5.17	+99
CT06 HEL DELTA ONE No Impact to Private Landing Facility Structure is beyond notice limit by 26960 feet.	39.6	5.26	
CT73 HEL SOUTH MEADOWS	271.06	5.61	-53

+126

No Impact to Private Landing Facility  
Structure 0 ft below heliport.

01CT HEL BERLIN FAIRGROUNDS 176.5 5.66 +87  
No Impact to Private Landing Facility  
Structure is beyond notice limit by 29391 feet.

AIR NAVIGATION ELECTRONIC FACILITIES

GRND	FAC	ST	DIST	DELTA					
ANGLE	IDNT	TYPE	AT	FREQ	VECTOR	(ft)	ELEVA	ST	LOCATION
	HFD	LOCALIZER	I	109.7	79.74	23239	+136	CT	RWY 02
HARTFORD-B	.34	2							
	HFD	ATCT	Y	A/G	77.77	23374	+72	CT	
HARTFORD-BRAINARD	.18								
	HFD	VOR/DME	R	114.9	119.76	59056	-702	CT	HARTFORD
-.68									
	BDL	RADAR	ON		10.27	80428	-89	CT	BRADLEY INTL
-.06									
	No Impact. This structure does not require Notice based upon EMI. The studied location is within 20 NM of a Radar facility. The calculated Radar Line-Of-Sight (LOS) distance is: 34 NM. This location and height is within the Radar Line-Of-Sight.								
	BDL	VORTAC	D	109.0	9.01	81028	-13	CT	BRADLEY
-.01									
	MAD	VOR/DME	R	110.4	175.48	148970	-73	CT	MADISON
-.03									
	BAF	VORTAC	R	113.0	1.84	160623	-120	MA	BARNES
-.04									
	HVN	VOR/DME	R	109.8	193.75	172250	+141	CT	NEW HAVEN
.05									
	CEF	VORTAC	R	114.0	18.06	182573	-94	MA	WESTOVER
-.03									
	ORW	VOR/DME	I	110.0	106.89	209945	-163	CT	NORWICH
-.04									

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station.

Movement Method Proof as specified in §73.151(c) is not required.  
Please review 'AM Station Report' for details.

Nearest AM Station: WPOP @ 3665 meters.

Airspace® Summary Version 15.5.391

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Airspace®  
Copyright © 1989 - 2015

05-28-2015  
10:27:55

# **ATTACHMENT 9**

July 7, 2015

*Via Certificate of Mailing*

Scott Slifka, Mayor  
Town of West Hartford  
50 South Main Street  
West Hartford, CT 06107

**Re: Installation of a Small Cell Telecommunications Facility at 330 Newington Road,  
West Hartford, Connecticut**

Dear Mr. Slifka:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 330 Newington Road in West Hartford (the “Property”).

The proposed “small cell” would be located in the easterly portion of the Property. Cellco would install a single canister-type antenna at the top of an abandoned utility pole. Radio equipment and a remote radio head would be attached to the pole approximately 10 feet above grade.

A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of the Petition.

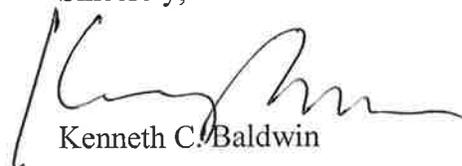
13894326-v1

# Robinson + Cole

Scott Slifka  
July 7, 2015  
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kenneth C. Baldwin', written in a cursive style.

Kenneth C. Baldwin

KCB/kmd  
Attachment

July 7, 2015

*Via Certificate of Mailing*

Todd Dumais, Town Planner  
Town of West Hartford  
50 South Main Street  
West Hartford, CT 06107

**Re: Installation of a Small Cell Telecommunications Facility at 330 Newington Road,  
West Hartford, Connecticut**

Dear Mr. Dumais:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 330 Newington Road in West Hartford (the “Property”).

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A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of the Petition.

# Robinson + Cole

Todd Dumais  
July 7, 2015  
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Attachment

July 7, 2015

*Via Certificate of Mailing*

Stephen Woods, Mayor  
Town of Newington  
131 Cedar Street  
Newington, CT 06111

Re: **Installation of a Small Cell Telecommunications Facility at 330 Newington Road,  
West Hartford, Connecticut**

Dear Mr. Woods:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 330 Newington Road in West Hartford (the “Property”).

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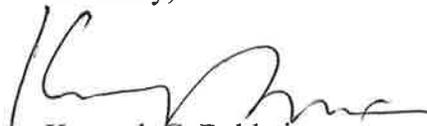
A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of the Petition.

# Robinson + Cole

Stephen Woods  
July 7, 2015  
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Attachment

July 7, 2015

*Via Certificate of Mailing*

Peter M. Luzzi  
15 Somerset Drive  
Avon, CT 06001

**Re: Installation of a Small Cell Telecommunications Facility at 330 Newington Road,  
West Hartford, Connecticut**

Dear Mr. Luzzi:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 330 Newington Road in West Hartford (the “Property”).

The proposed “small cell” would be located in the easterly portion of the Property. Cellco would install a single canister-type antenna at the top of an abandoned utility pole. Radio equipment and a remote radio head would be attached to the pole approximately 10 feet above grade.

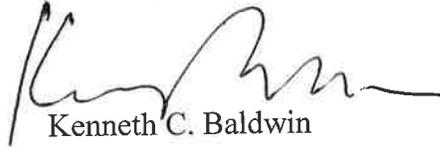
A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of the Petition.

# Robinson + Cole

Peter M. Luzzi  
July 7, 2015  
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Attachment

# **ATTACHMENT 10**

KENNETH C. BALDWIN

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

Also admitted in Massachusetts

July 7, 2015

*Via Certificate of Mailing*

«Name\_and\_Address»

**Re: Notice of Intent to File a Petition for Declaratory Ruling with the Connecticut Siting Council for the Installation of a “Small Cell” Telecommunications Facility at 330 Newington Road, West Hartford, Connecticut**

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 330 Newington Road in West Hartford (the “Property”).

The proposed “small cell” would be located in the easterly portion of the Property. Cellco would install a single canister-type antenna at the top of an abandoned utility pole. Radio equipment and a remote radio head would be attached to the pole approximately 10 feet above grade. A copy of the full Petition is attached for your review.

This notice is being sent to you because you are listed as an owner of land that abuts the Property. If you have any questions regarding the Petition, the Council’s process for reviewing the Petition or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

July 7, 2015  
Page 2

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment

**CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS**

**ABUTTERS LIST  
MAP G16/BLOCK 3801/LOT 330 and 330R**

**330 NEWINGTON ROAD  
WEST HARTFORD, CONNECTICUT**

WEST HARTFORD

	<u>Map/Block/Lot</u>	<u>Property Address</u>	<u>Owner and Mailing Address</u>
1.	G16/3801/318	318 Newington Road	JAC Realty LLC 310R Newington Road West Hartford, CT 06110
2.	G16/3801/324	324 Newington Road	Peter M. Luzzi 15 Somerset Drive Avon, CT 06001
3.	G16/3801/330R	330R Newington Road	Peter M. Luzzi 15 Somerset Drive Avon, CT 06001
4.	G16/3801/334	334 Newington Road	Mabel J. Dodge and John F. James 334 Newington Road West Hartford, CT 06110
5.	F16/3801/335	335 Newington Road	Daphne Ying Tong and Zhifeng Xu 335 Newington Road West Hartford, CT 06110
6.	F16/3801/327	327 Newington Road	Monica Rivas 327 Newington Road West Hartford, CT 06110
7.	F16/3801/323	323 Newington Road	Matthew J. and Maureen Catanzaro, Jr. 323 Newington Road West Hartford, CT 06110

NEWINGTON

	<u>Map/Block/Lot</u>	<u>Property Address</u>	<u>Owner and Mailing Address</u>
8.	03/124/000	42 Shepard Drive	Peter M. Luzzi 15 Somerset Drive Avon, CT 06001
9.	03/128/000	46 Shepard Drive	Shepards Pie LLC c/o Enterprise Builders Inc. 46 Shepard Drive Newington, CT 06111
10.	03/127/000	22-28 Shepard Drive	SD Associates of Newington c/o Highland Management 111 Roberts Street, Suite K East Hartford, CT 06108
11.	03/123/000	2 Willard Avenue	Mabel Dodge and John F. James 334 Newington Road Elmwood, CT 06110
12.	03/125/000	4 Willard Avenue	Gwynetta Gallup 4 Willard Avenue Newington, CT 06111