STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION OF CELLCO PARTNERSHIP 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 ON THE ROOF OF THE BUILDING AT 278 OAKWOOD DRIVE, GLASTONBURY, CONNECTICUT	:	PETITION NO. ____
	:	MAY 26, 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 tower, attached to an existing industrial building at 278 Oakwood Drive in Glastonbury, Connecticut (the "Property"). The Property is owned by Baltic Complex, LLC ("Baltic" or the "Owner"). Cellco has designated this site as its Glastonbury SC3 Facility.

II. Factual Background

The Property is a 1.98-acre parcel in Glastonbury's Planned Commerce (PC) zone. The Property is surrounded by commercial and industrial uses along Oakwood Drive. *See*

Attachment 1 – Site Vicinity Map and Site Schematic (Aerial Photograph).

Cellco currently maintains four (4) existing cell sites within approximately two (2) miles of the Property, the closest of which is its Glastonbury 2 cell site, a roof-top facility at 628 Hebron Avenue. As depicted on coverage maps included in Attachment 2, Cellco maintains gaps in its 2100 MHz wireless service along portions of Route 2 and surrounding residential and commercial areas to the north, east and south of the Property. In addition, the Beta sector of Cellco's Glastonbury 2 cell site is currently operating at its existing capacity limits (a/k/a exhausting). The Oakwood Drive commercial/industrial area and Route 2 have been identified as data traffic concentration areas that contribute to this existing capacity problem. In an effort to resolve these coverage and capacity problems and provide customers with improved wireless service in the area, Cellco proposes to install a small cell facility at the Property.

III. Proposed "Small Cell" Facility

The proposed Glastonbury SC3 Facility would consist of a tower, attached to the easterly portion of the building at the Property. The tower would support a single canister-type antenna, and a Remote Radio Head ("RRH"). The tower would extend approximately 6.5' above the peak of the roof of the building (approximately 35.2 feet above grade). Equipment associated with the Glastonbury SC3 Facility will be located inside a cabinet, placed on an 8' x 8' concrete pad located on the north side of the building. The equipment cabinet will be surrounded by an 8' tall vinyl stockade fence. Power and telephone service to the Glastonbury SC3 Facility will extend from existing service inside the building. (*See* Cellco's Project Plans included in Attachment 3). Specifications for the "small cell" antenna (Commscope Model NH360QS-DG-F0M) and RRH (Model 2X60-AWS) are included in Attachment 4.

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[1] 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 tower attached to the building at the Property, supporting a single "small cell" canister-type antenna and RRH and the placement of an equipment cabinet on an 8' x 8' concrete pad along the north side of the building, will not involve a significant alteration in the physical and environmental characteristics of the Property or the surrounding industrial area. Ground disturbance associated with the equipment pad will occur in a previously disturbed area immediately adjacent to the building. No trees or significant vegetation will need to be removed to install the small cell improvements.

2. Visual Effects

The installation of a small tower, a single canister-type antenna and RRH attached to the existing building at the Property, would have minimal visual effects on the Property and its

[1] Tower is defined as a structure, whether free standing or attached to a building or another structure, that has a height greater than its diameter and that is high relative to its surroundings and used to support antennas for sending

surroundings. (*See* Limited Visual Assessment and Photo-Simulations ("Visual Report") included in Attachment 5). As concluded in the Visual Report, visibility of the small cell tower and installation would be limited to locations on the adjacent commercial properties. Overall, the installation at the Property would not be highly visible nor would it have a significant impact on aesthetics in the area.

3. FCC Compliance

Radio frequency ("RF") emissions from the proposed small cell installation will be far below the standard adopted by the Federal Communications Commission ("FCC"). Included in Attachment 6 is a worst-case General Power Density table demonstrating that Cellco's "small cell" facility will operate well within the FCC safety standard.

4. FAA Summary Report

Included in Attachment 7 is a Federal Airways & Airspace Summary Report verifying that the new tower mast and antenna installation attached to the building 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 the Town Manager, Property Owner and Abutting Landowners

On May 26, 2015, a copy of this Petition was sent to Glastonbury's Town Manager Richard J. Johnson, Baltic Complex, LLC, the Owner of the Property and to the owners of land that abuts the Property. Included in Attachment 8 is a copy of the letters sent to Mr. Johnson and the Owner. A sample abutter's letter, and the list of those abutting landowners who received a copy of the Petition is included in Attachment 9.

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or receiving radio signals. (*See* R.C.S.A. Section 16-50j-2a(23)).

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 tower, attached to the building, and supporting a small cell canister antenna and a RRH 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.

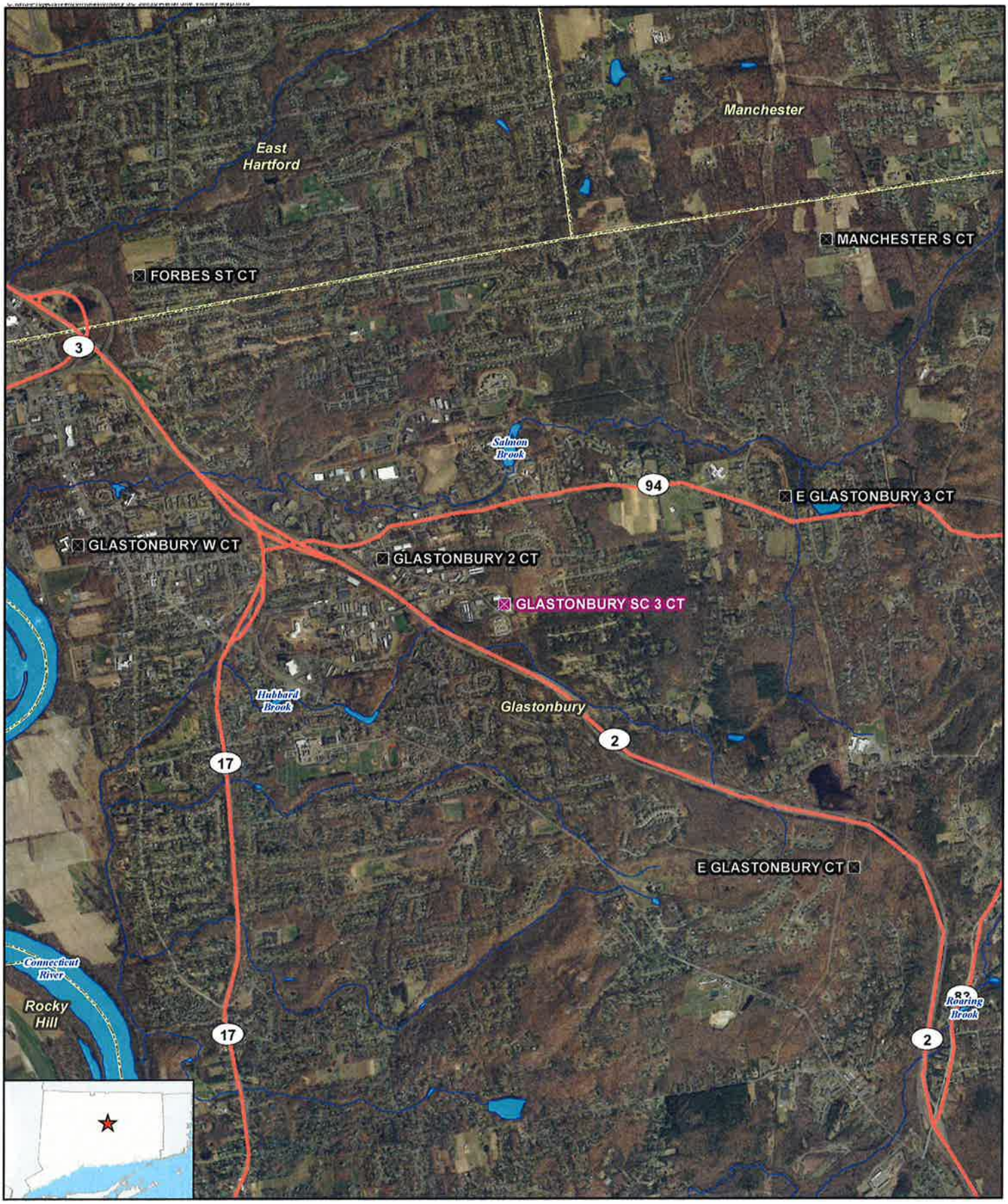
Respectfully submitted,

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 Small Cell Facility
- Surrounding Verizon Wireless Facilities
- Municipal Boundary
- Watercourse
- Waterbody
- Major Road

N
W E
S

3,000 1,500 0 3,000 Feet

Site Vicinity Map

Proposed Small Cell Installation
Glastonbury SC 3 CT
278 Oakwood Drive
Glastonbury, Connecticut

verizon wireless

ALL-POINTS

Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale:1 inch = 3,000 feet
Map Date: March 2015

Legend

- Subject Property
- Approximate Parcel Boundary (CTDEEP GIS)
- Proposed Facility Layout

Site Schematic

Proposed Small Cell Installation
Glastonbury SC 3 CT
278 Oakwood Drive
Glastonbury, Connecticut

verizonwireless

N
W E
S

100 50 0 100
Feet

ALL-POINTS

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 inch = 100 feet
Map Date: March 2015

ATTACHMENT 2

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

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

HARTFORD
EAST HARTFORD
MANCHESTER
BOLTON
GLASTONBURY
WETHERSFIELD
ROCKY HILL
NEWINGTON
HEBRON
MARLBOROUGH

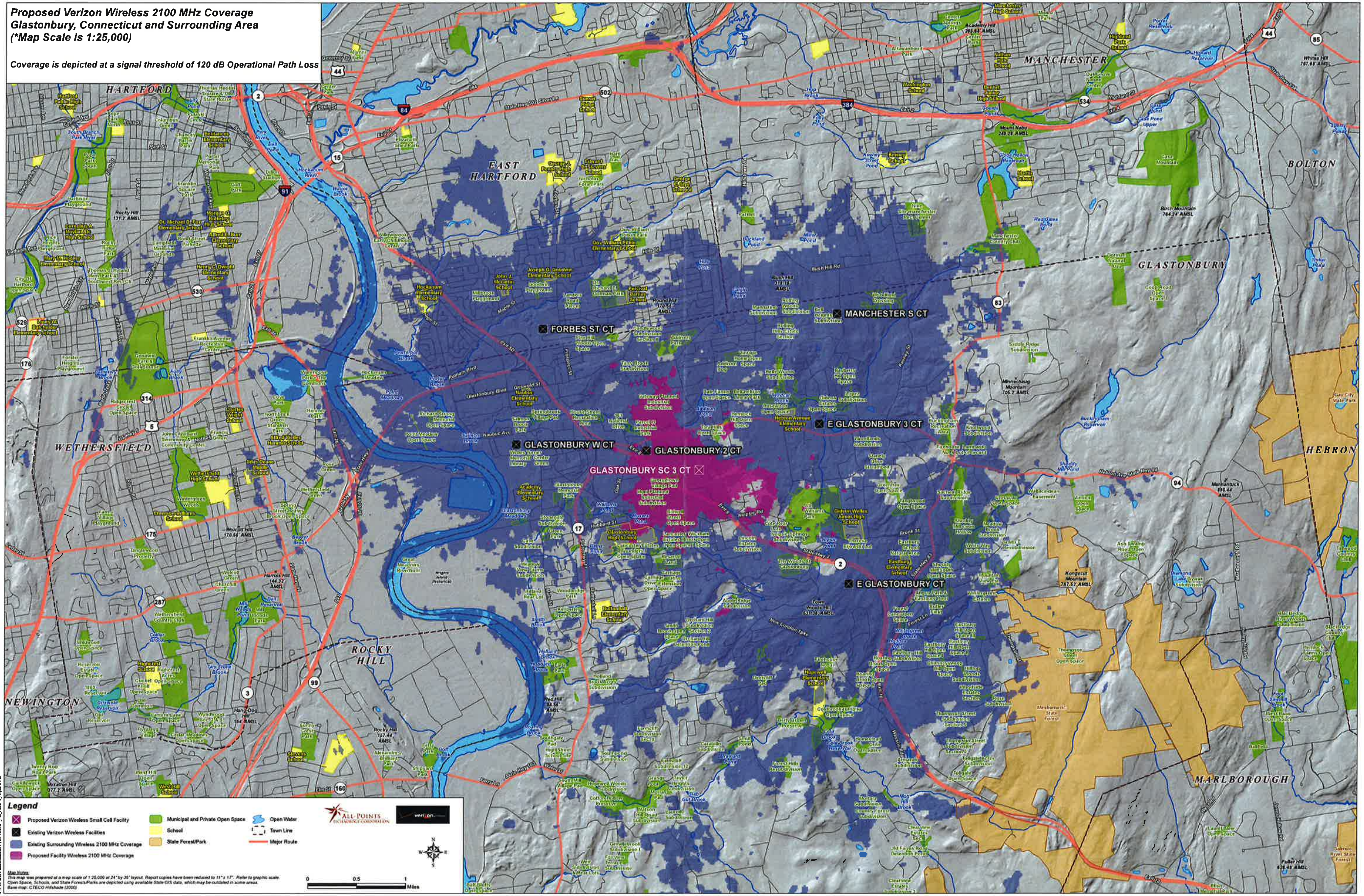
FORBES ST CT
MANCHESTER S CT
GLASTONBURY W CT
GLASTONBURY 2 CT
GLASTONBURY SC 3 CT
E GLASTONBURY 3 CT
E GLASTONBURY CT

Legend

- Proposed Verizon Wireless Small Cell Facility
- 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

<u>Map Notes:</u>
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 (2006)

0 0.5 1 Miles


Proposed Verizon Wireless 2100 MHz Coverage
Glastonbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)
Coverage is depicted at a signal threshold of 120 dB Operational Path Loss
HARTFORD
EAST HARTFORD
MANCHESTER
BOLTON
GLASTONBURY
WETHERSFIELD
HEBRON
ROCKY HILL
NEWINGTON
MARLBOROUGH
FORBES ST CT
MANCHESTER S CT
E GLASTONBURY 3 CT
GLASTONBURY W CT
GLASTONBURY 2 CT
GLASTONBURY SC 3 CT
E GLASTONBURY CT
Legend
Proposed Verizon Wireless Small Cell Facility
Existing Verizon Wireless Facilities
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
ALL-POINTS TECHNOLOGY CORPORATION
verizon
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)
0
0.5
1
Miles

ATTACHMENT 3

Cellco Partnership

d.b.a. verizon wireless

WIRELESS COMMUNICATIONS FACILITY

GLASTONBURY SC3

278 OAKWOOD DRIVE

GLASTONBURY, CT 06033

SITE DIRECTIONS

FROM: 99 EAST RIVER DRIVE
EAST HARTFORD, CONNECTICUT

TO: 278 OAKWOOD DRIVE
GLASTONBURY, CT 06033

1. Head east on E River Dr	253 ft
2. Turn left onto the CT-2 E ramp to Norwich	0.2 mi
3. Merge onto I-84 E	374 ft
4. Take exit 55 for CT-2 E toward Norwich/New London/I-84 E	0.4 mi
5. Continue onto CT-2 E	4.3 mi
6. Take exit 8 for Connecticut 94	0.2 mi
7. Turn left onto CT-94 E/Hebron Ave	0.6 mi
8. Turn right onto Oakwood Dr destination will be on the left	

GENERAL NOTES

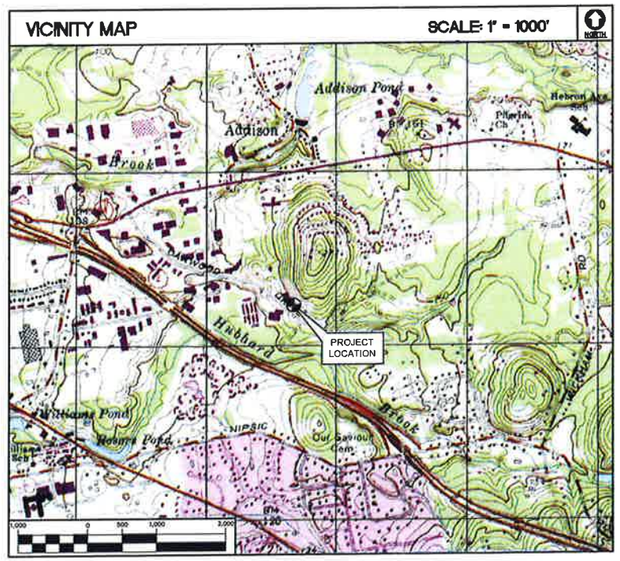
1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELLCO PARTNERSHIP.

PROJECT SCOPE

1. THE PROPOSED SCOPE OF WORK GENERALLY INCLUDES THE INSTALLATION OF A CELLCO PARTNERSHIP EQUIPMENT CABINET WITHIN 8'x8' LEASE AREA ON A CONCRETE PAD AT GRADE. A PROPOSED 8' TALL VINYL FENCE SHALL BE INSTALLED AT PERIMETER OF THE LEASE AREA.
2. A TOTAL OF ONE (1) OMNI DIRECTIONAL ANTENNA, ONE (1) REMOTE RADIO HEAD AND ASSOCIATED APPURTANCES ARE PROPOSED TO BE MOUNTED ON A PIPE MAST ATTACHED TO THE EXTERIOR WALL OF THE BUILDING WITH AN ANTENNA CENTERLINE ELEVATION AT ±34.0' A.G.L.
3. POWER AND TELCO SHALL BE ROUTED FROM EXISTING DEMARCS WITHIN OR ADJACENT TO THE EXISTING SUBJECT BUILDING. UTILITY ROUTING SHOWN HEREIN IS TENTATIVE. FINAL ROUTING TO BE DETERMINED DURING CONSTRUCTION PHASE OF THE PROJECT.
4. THERE WILL NOT BE ANY LIGHTING UNLESS REQUIRED BY THE FCC OR THE FAA.
5. THERE WILL NOT BE ANY SIGNS OR ADVERTISING ON THE ANTENNAS OR EQUIPMENT.

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

SITE NAME:	GLASTONBURY SC3
SITE ADDRESS:	278 OAKWOOD DRIVE GLASTONBURY, CT 06033
CELLCO PARTNERSHIP/TENANT:	CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	SHELBY DOCKER CELLCO PARTNERSHIP (203) 549-3739
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE (860) 257-8345
SITE COORDINATES:	LATITUDE: 41°-42'-38.017" N LONGITUDE: 72°-34'-37.008" W GROUND ELEVATION: ±142.2 A.M.S.L. COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED BY MARTINEZ COUCH AND ASSOCIATES, DATED MARCH 04, 2015

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	ABUTTERS MAP	0
C-2	PART ROOF / SITE PLAN, ELEVATION AND ANTENNA CONFIG.	0

PROFESSIONAL ENGINEER SEAL

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	04/20/15	DRA	DMD	ISSUED FOR CSC
0	04/02/15	DRA	DMD	ISSUED FOR CSC-CLIENT REVIEW

Cellco Partnership d.b.a. verizon wireless

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

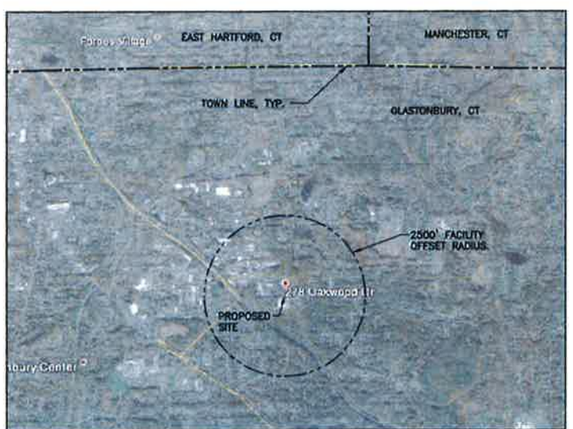
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
GLASTONBURY SC3
278 OAKWOOD DRIVE
GLASTONBURY, CT 06033

DATE: 03/24/15
SCALE: AS NOTED
JOB NO. 15025.000

TITLE SHEET

T-1

Sheet No. 1 of 3



MUNICIPALITY NOTIFICATION LIMIT MAP

1 / C-1 ABUTTERS MAP
SCALE: 1" = 60'

APPROXIMATE NORTH

GRAPHIC SCALE
60 0 30 60 120 180
(IN FEET)
1 inch = 60 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	04/20/15	DRA	DMD	ISSUED FOR CSC
0	04/02/15	DRA	DMD	ISSUED FOR CSC-CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

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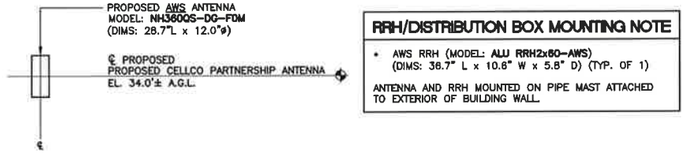
GLASTONBURY SC3
278 OAKWOOD DRIVE
GLASTONBURY, CT 06033

DATE: 03/24/15
SCALE: AS NOTED
JOB NO. 15025.000

ABUTTERS MAP

C-1

Sheet No. 2 of 3

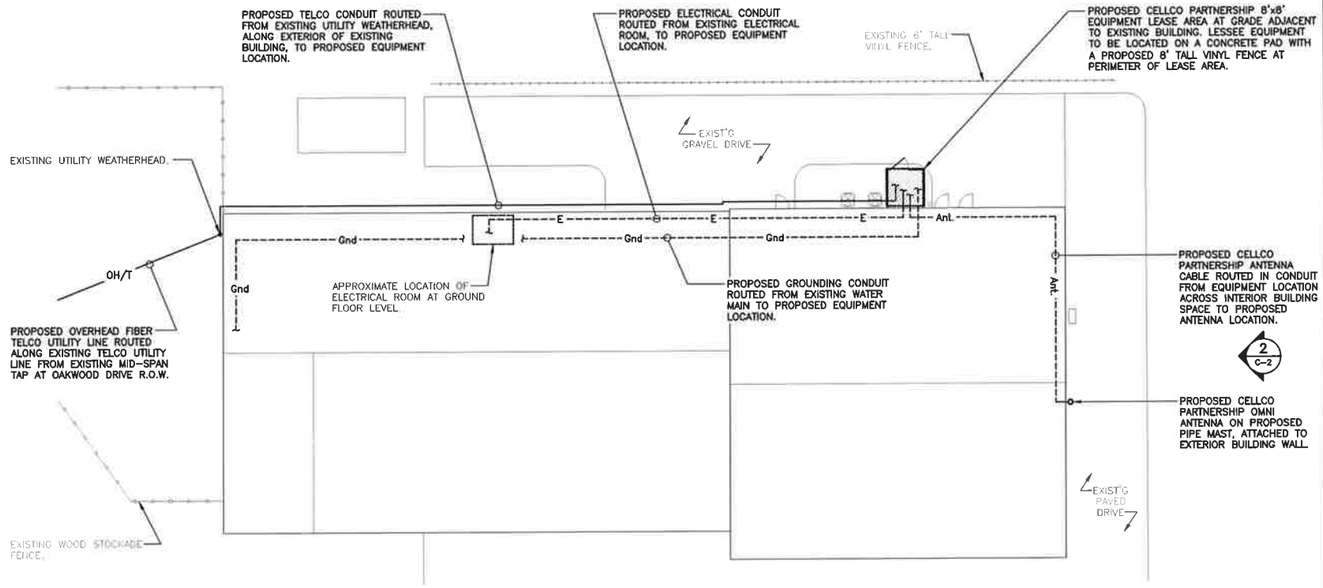


RRH/DISTRIBUTION BOX MOUNTING NOTE

- AWS RRH (MODEL: ALU RRH2x60-AWS) (DIMS: 38.7" L x 10.8" W x 5.8" D) (TYP. OF 1)

ANTENNA AND RRH MOUNTED ON PIPE MAST ATTACHED TO EXTERIOR OF BUILDING WALL.

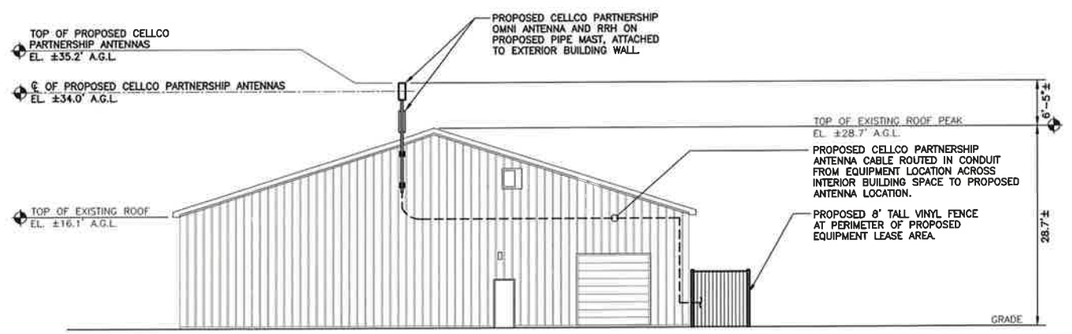
3 / C-2 **TYP. ANTENNA MOUNTING CONFIGURATION**
NOT TO SCALE



1 / C-2 **PARTIAL SITE/ROOF PLAN**
SCALE: 1" = 15'

APPROXIMATE NORTH

GRAPHIC SCALE
15 0 7.5 15 30 90
(IN FEET)
1 inch = 15 ft.



HEIGHTS SHOWN HEREIN ARE REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES L.L.C., DATED MARCH 04, 2015.

2 / C-2 **WEST ELEVATION**
SCALE: 1" = 10'

GRAPHIC SCALE
10 0 5 10 20 30
(IN FEET)
1 inch = 10 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	04/20/15	DRA	DMD	ISSUED FOR CSC
0	04/02/15	DRA	DMD	ISSUED FOR CSC-CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

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DATE:	03/24/15
SCALE:	AS NOTED
JOB NO.	15025.000

PART ROOF / SITE PLAN, ELEVATION & ANTENNA CONFIG.

C-2

Sheet No. 3 of 3

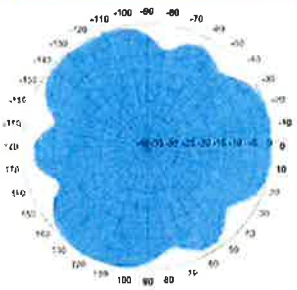
ATTACHMENT 4

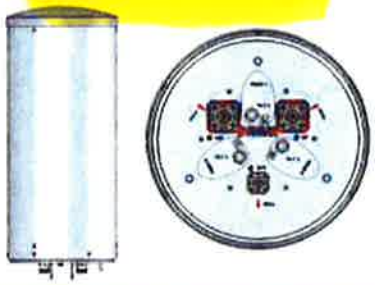
COMMSCOPE®

verizonwireless

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				
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										
Connnector Interface	7 - 16 DIN Female					7 - 16 DIN Female				
Connector Quantity, Location	2, Bottom					2, Bottom				
GPS Connnector 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 APPLICATIONS

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.

[illegible]

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.

[illegible]

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.

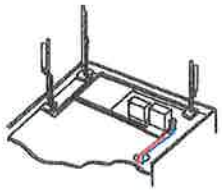
[illegible]

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.

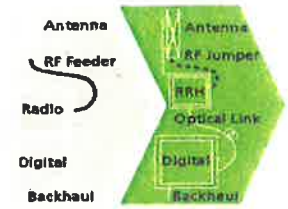
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

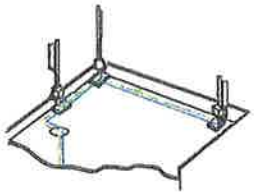
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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 daisychaining 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

Alcatel·Lucent

AT THE SPEED OF IDEAS™

ATTACHMENT 5

Limited Visual Assessment and Photo-Simulations

GLASTONBURY SC3
278 OAKWOOD DRIVE
GLASTONBURY, CT

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

Prepared for Verizon Wireless

ALL-POINTS
TECHNOLOGY CORPORATION

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 278 Oakwood Drive in Glastonbury, Connecticut (the "Property").

Project Setting

The Property is located in a mixed commercial and industrial area, west of Oakwood Drive, east of Route 2 and south of Hebron Avenue (Route 94). The Property is currently improved with a single-story garage structure. The proposed Facility would include the installation of a single canister antenna on a pipe mast mounted on the east face of the building and extending approximately 6.5 feet above the existing roof. A remote radio head ("RRH") would also be mounted to the lower portion of the mast. The mast, RRH and canister would be painted to match the color of the existing grey façade of the building. Associated equipment would be located at grade within an exterior, 8-foot by 8-foot vinyl fence-enclosed compound adjacent to the building's north wall.

Methodology

On March 19, 2015 APT personnel conducted a field reconnaissance to photo-document existing conditions. Three (3) nearby locations were selected to represent where the existing building is visible and depict proposed conditions with the proposed Facility 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 the lens set to 24 mm.

Focal lengths ranging from 24 mm to 50 mm approximate views similar to that achieved by the human eye. However, two key aspects of an image can be directly affected by the specific focal length that is selected: field of view and relation of sizes between objects in the frame. A 35 mm focal length provides a wider field of view, representative of the extent the human eyes may see (including some peripheral vision), but the relation of sizes between objects at the edges of the photos can become minimally skewed. A 50 mm focal length has a narrower field of view than the human eye but the relation of sizes between objects is represented similar to what the human eye might perceive.

> *"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.[1]"*

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

When taking photographs for these analyses, APT prefers a focal length of 50 mm; however there are times when wider views (requiring the use of alternate lens settings, as in this case) can better reflect "real world" viewing conditions by providing greater context to the scene. Regardless of the lens setting, the scale of the subject in the photograph and corresponding simulation remains proportional to its surroundings.

Photographic simulations were generated to portray scaled renderings of the proposed installation from representative locations where it would be visible. Using field data, site plan information, and 3D modeling software, the spatially referenced models of the project area, the existing structure and the proposed installation were generated and merged. The geographic coordinates obtained in the field for the photograph locations were incorporated into the model to produce virtual camera positions within the spatial 3D model. Photo simulations were then created using a combination of renderings generated in the 3D model and photo-rendering software programs, depicting the proposed installation 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 format2. A photolog map and copies of the existing conditions and photo-simulations are attached.

Conclusions

The visibility of the proposed small cell installation would be primarily limited to adjacent commercial properties to the north and south. Dense, undeveloped woodlands are located to the west of the Property. Commercial properties to the west, across Oakwood Drive will not have direct views of the installation based on its distance and intervening conifers. 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 or 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 locations simulated were chosen in the field because they presented unobstructed view lines towards the existing structure and proposed installations, to the greatest extent feasible. They are however static in nature and do not necessarily fairly characterize the prevailing views from all locations within a given area. The simulations provide a representation of the proposed installation under similar settings as those encountered during the field reconnaissance. Views of the installation can change substantially throughout the seasons as well as the time of day, and are dependent on weather and other atmospheric conditions including but not necessarily limited to haze, fog, and clouds; the location, angle and intensity of the sun; light conditions, 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.

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2 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.

ATTACHMENTS

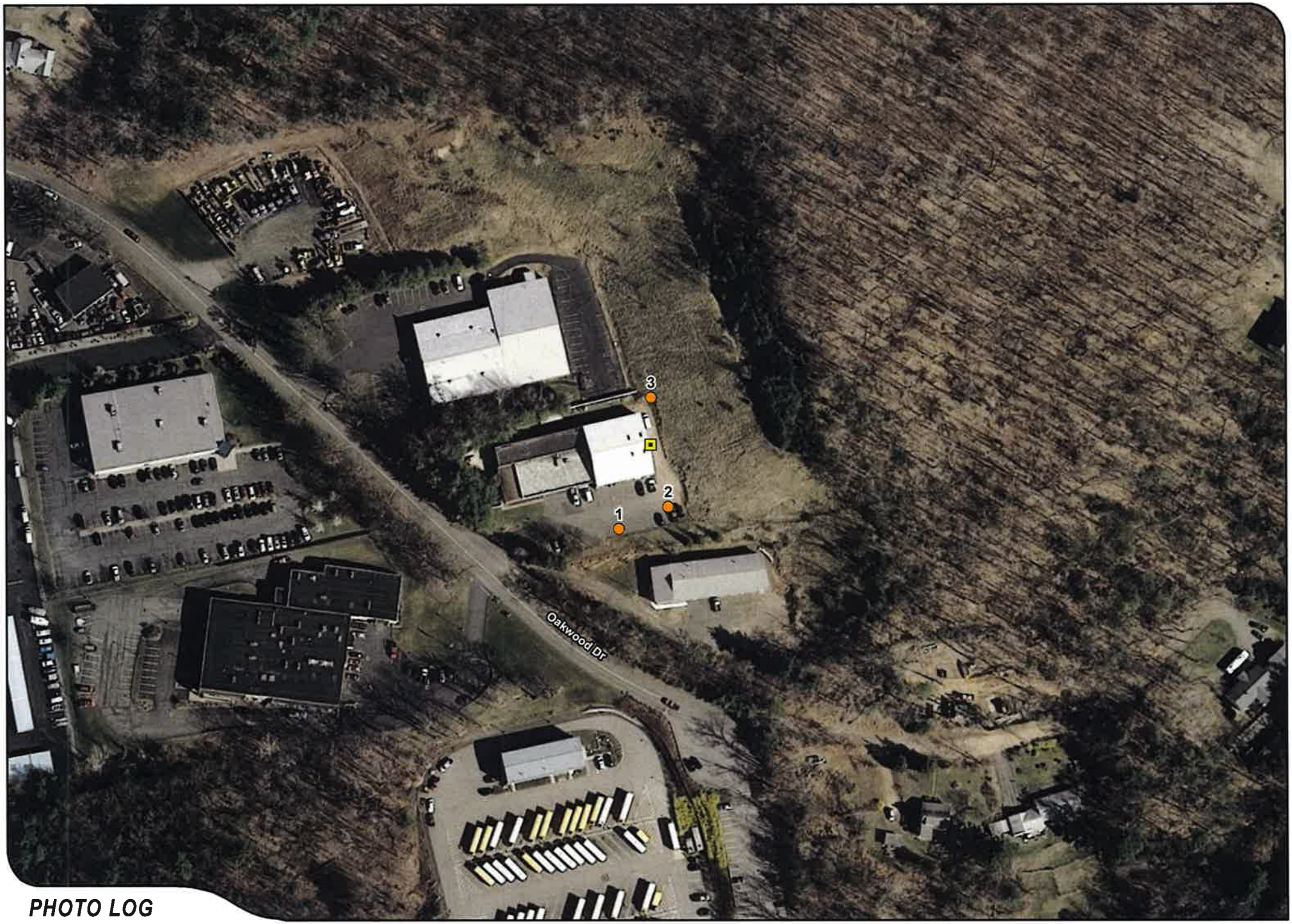


PHOTO LOG

Legend

Site Photo Location

N W E S

150 75 0 150 Feet

1 inch = 150 feet

ALL-POINTS

verizon

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	**HOST PROPERTY (24mm Focal Length)**	**NORTHEAST**	**+/- 105 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	**HOST PROPERTY (24mm Focal Length)**	**NORTHEAST**	**+/- 105 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	**HOST PROPERTY (24mm Focal Length)**	**NORTHEAST**	**+/- 105 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	**HOST PROPERTY (24mm Focal Length)**	**NORTHWEST**	**+/- 77 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	**HOST PROPERTY (24mm Focal Length)**	**NORTHWEST**	**+/- 77 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	**HOST PROPERTY (24mm Focal Length)**	**NORTHWEST**	**+/- 77 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3	**HOST PROPERTY (24mm Focal Length)**	**SOUTHWEST**	**+/- 58 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3	**HOST PROPERTY (24mm Focal Length)**	**SOUTHWEST**	**+/- 58 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3	**HOST PROPERTY (24mm Focal Length)**	**SOUTHWEST**	**+/- 58 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

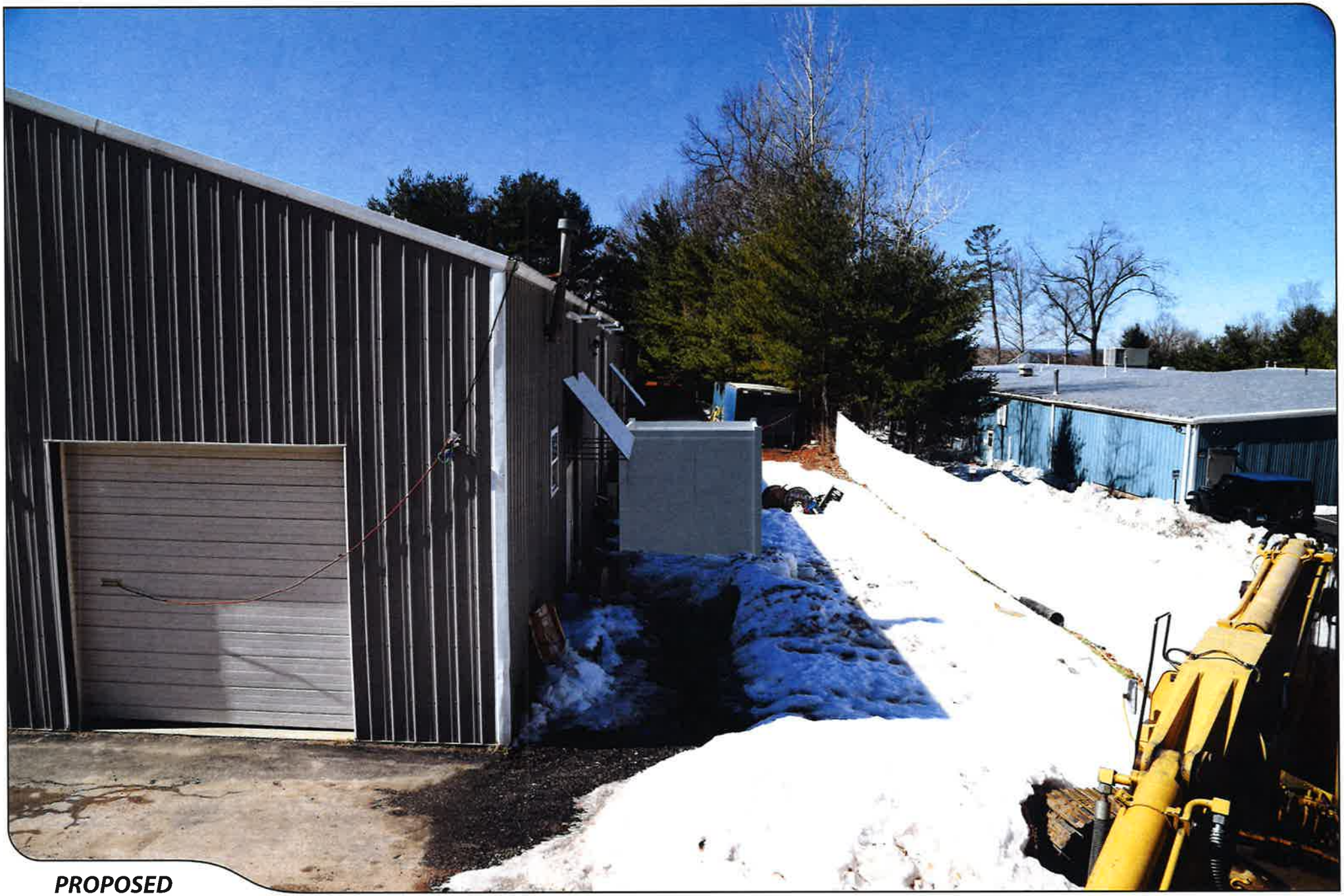
verizonwireless

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3A	**HOST PROPERTY (24mm Focal Length)**	**SOUTHWEST**	**+/- 39 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3A	**HOST PROPERTY (24mm Focal Length)**	**SOUTHWEST**	**+/- 39 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3A	**HOST PROPERTY (24mm Focal Length)**	**SOUTHWEST**	**+/- 39 FEET**

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

ATTACHMENT 6

Site Name: Glastonbury SC 3 CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW AWS	2145	1	320	320	34	0.0995	1.0	9.95%

Total Percentage of Maximum Permissible Exposure 9.95%

*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^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 7

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

**************************************************

                    Airspace User: Mark Brauer

                    File: GLASTONBURY_SC_3_CT

                    Location:  Hartford, CT

                    Latitude:  41°-42'-38.03"         Longitude:
72°-34'-36.96"

                    SITE ELEVATION AMSL.....181 ft.
                    STRUCTURE HEIGHT.........36 ft.
                    OVERALL HEIGHT AMSL.....217 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 9B8
       FAR 77.9(d): NNR (Off Airport Construction)

       NR  = Notice Required
       NNR = Notice Not Required
       PNR = Possible Notice Required (depends upon actual IFR procedure)
             For new construction review Air Navigation Facilities at
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: 21326.77 RE: 11
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: 9B8: SALMON RIVER AIRFIELD
Type: A RD: 56577.77 RE: 535.6
FAR 77.17(a)(1): DNE
FAR 77.17(a)(2): Does Not Apply.
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 2000 ft AMSL

PRIVATE LANDING FACILITIES

FACIL IDENT	TYP	NAME	BEARING To FACIL	RANGE IN NM	DELTA ARP ELEVATION	FAA IFR
CT38	HEL	CORPORATE CENTER	281.54	.5	+113	

Possible Impact to Private landing Facility
Exceeds Notice Standards by: 2 ft (N/A Private Heliport)

No Impact to Private Landing Facility
No violation of Helicopter Approach Surface.
Estimated safety margin is: 166 feet.

CT88	HEL	RENTSCHLER	318.02	3.45	+169	

No Impact to Private Landing Facility
Structure is beyond notice limit by 15963 feet.

5CT3	HEL	SOUTH GLASTONBURY	176.94	3.97	-333	

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

CT02 HEL CLARK HILL 171.52 4.14
-503
No Impact to Private Landing Facility
Structure 3 ft below heliport.

0CT9 HEL HARTFORD HOSPITAL 299.98 5.27 +6
No Impact to Private Landing Facility
Structure is beyond notice limit by 27021 feet.

CT92 HEL BEMER 191.4 5.37 +57
No Impact to Private Landing Facility
Structure is beyond notice limit by 27629 feet.

AIR NAVIGATION ELECTRONIC FACILITIES

FAC IDNT	TYPE	AT	FREQ	VECTOR	DIST (ft)	DELTA ELEVA	ST	LOCATION	GRND ANGLE	APCH BEAR
HFD	LOCALIZER	I	109.7	291.68	21878	+206	CT	RWY 02 HARTFORD-B	.54	2
HFD	ATCT	Y	A/G	293.6	22211	+142	CT	HARTFORD-BRAINARD	.37	
HFD	VOR/DME	R	114.9	162.34	26571	-632	CT	HARTFORD	-1.36	
BDL	RADAR	ON		340.94	87918	-19	CT	BRADLEY INTL	-.01	

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: 37 NM.
This location and height is within the Radar Line-Of-Sight.

MAD	VOR/DME	R	110.4	192.28	147964	-3	CT	MADISON	0.00
ORW	VOR/DME	I	110.0	109.78	167600	-93	CT	NORWICH	-.03
BAF	VORTAC	R	113.0	347.07	168792	-50	MA	BARNES	-.02
CEF	VORTAC	R	114.0	4.42	177985	-24	MA	WESTOVER	-.01
HVN	VOR/DME	R	109.8	207.24	183876	+211	CT	NEW HAVEN	.07
GON	VOR/DME	R	110.8	134.11	199643	+208	CT	GROTON	.06

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: WNEZ @ 7468 meters.

Airspace® Summary Version 15.1.384

03-06-2015
15:29:23

ATTACHMENT 8

Robinson + Cole

KENNETH C. BALDWIN

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

Also admitted in Massachusetts

May 26, 2015

Via Certified Mail, Return Receipt Requested

Richard J. Johnson, Town Manager
Town of Glastonbury
Town Hall
2155 Main Street
Glastonbury, CT 06033

Re: **Installation of a Small Cell Telecommunications Facility at 278 Oakwood Drive, Glastonbury, Connecticut**

Dear Mr. Johnson:

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 at 278 Oakwood Drive in Glastonbury (the "Property").

The proposed "small cell" would consist of a single canister-type antenna and a Remote Radio Head attached to a tower mast on the building. The new mast and antenna will extend approximately 6.5' above the peak of the roof and approximately 35.2 feet above grade. Equipment associated with the small cell facility will be located in a small cabinet, placed on an 8' x 8' concrete pad on the north side of the building.. The equipment cabinet will house all of Cellco's small cell radio equipment and a battery back-up power supply system.

A copy of Cellco's Petition is attached for your review. Landowners whose property abuts 278 Oakwood Drive were also sent a copy of the Petition.

Robinson + Cole

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

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Tim Parks

Robinson + Cole

KENNETH C. BALDWIN

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

Also admitted in Massachusetts

May 26, 2015

Via Certified Mail, Return Receipt Requested

Baltic Complex, LLC
278 Oakwood Drive
Glastonbury, CT 06033

Re: **Installation of a Small Cell Telecommunications Facility at 278 Oakwood Drive, Glastonbury, Connecticut**

Dear Sir or Madam:

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 at 278 Oakwood Drive in Glastonbury (the "Property").

The proposed "small cell" would consist of a single canister-type antenna and a Remote Radio Head attached to a tower mast on the building. The new mast and antenna will extend approximately 6.5' above the peak of the roof and approximately 35.2 feet above grade. Equipment associated with the small cell facility will be located in a small cabinet, placed on an 8' x 8' concrete pad on the north side of the building.. The equipment cabinet will house all of Cellco's small cell radio equipment and a battery back-up power supply system.

A copy of Cellco's Petition is attached for your review. Landowners whose property abuts 278 Oakwood Drive were also sent a copy of the Petition.

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

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Tim parks

ATTACHMENT 9

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

May 26, 2015

Via Certified Mail, Return Receipt Requested

«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 278 Oakwood Drive, Glastonbury, 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 new "small cell" telecommunications facility at 289 Oakwood Drive in Glastonbury (the "Property").

The proposed "small cell" would consist of a single canister-type antenna and a Remote Radio Head attached to a tower mast on the building. The new mast and antenna will extend approximately 6.5' above the peak of the roof and approximately 35.2 feet above grade. Equipment associated with the small cell facility will be located in a small cabinet, placed on an 8' x 8' concrete pad on the north side of the building.. The equipment cabinet will house all of Cellco's small cell radio equipment and a battery back-up power supply system. A copy of Cellco's 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.

Sincerely,

Kenneth C. Baldwin

Attachment
Copy to:
Tim Parks

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTERS LIST

278 OAKWOOD DRIVE
GLASTONBURY, CONNECTICUT

	Map/Block/Lot	Property Address	Owner and Mailing Address
1.	F6/4900/E14	286 Oakwood Drive	Stanislaw, Jan, Josef A.E. Baj 85 Pleasant Valley Road South Windsor, CT 06074
2.	F5/0960/N1	325 Cavan Lane	Julie C. and Sterling Tooker 325 Cavan Lane Glastonbury, CT 06033
3.	F6/4900/W4	Kelsey Lane	Kongscut Land Trust c/o James Wright P.O. Box 1231 Glastonbury, CT 06033
4.	F6/4900/E12	256 Oakwood Drive	LMH Holdings LLC 734 Hebron Avenue Glastonbury, CT 06033
5.	F6/4900/W10	293 Oakewood Drive	Oakwood Associates LLC 293 Oakwood Drive Glastonbury, CT 06033
6.	F6/4900/W9A	271 Oakwood Drive	Malin Realty GL1 LLC 301 Common Park S Unit 1202 Stamford, CT 06902-7093