

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 ROOF-TOP :  
WIRELESS TELECOMMUNICATIONS :  
FACILITY AT 99 HAMILTON AVENUE, :  
STAMFORD, CONNECTICUT : SEPTEMBER 20, 2016

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 telecommunications tower disguised as a chimney on the roof of the building at 99 Hamilton Avenue in Stamford, Connecticut (the “Property”). The Property is owned by CubeSmart LP. Cellco has designated this site as its “Stamford South 2 Facility”.

II. Factual Background

The Property, a 1.53-acre parcel in Stamford’s M-L Light Industrial zone, is currently occupied by the CubeSmart Self-Storage facility (“CubeSmart”). The Property is surrounded by other commercial and industrial land uses including AmeriCares, the WWE TV Production

facility, a CL&P switch yard and ABCO HVAC Supply. The proposed Stamford South 2 Facility will provide for enhanced wireless services in southeast Stamford. *See Attachment 1 – Site Vicinity and Site Schematic Maps (Aerial Photograph).*

### III. Proposed Stamford South 2 Facility

In the northeast corner of the roof of the CubeSmart building is an existing, non-functioning, brick chimney extending to a height of approximately 17 feet above the roof of the building. Cellco identified the Property and the chimney as a structure that might be used for a new wireless facility. Following a detailed engineering analysis, it was determined that the chimney was not structurally capable of supporting Cellco's antennas. It was also determined that the chimney could not be adequately reinforced to accommodate Cellco's antennas and equipment loading. In an effort to avoid further delays associated with the site search and leasing process, Cellco chose to pursue a more creative approach for this search area in Stamford.

The proposed Stamford South 2 Facility involves the removal of the existing chimney and the construction of a new "faux" chimney in the same location. The new faux chimney, however, has been designed to support Cellco's antennas and related equipment. Like the existing chimney, the new faux chimney will extend to a height of 17 feet above the roof of the building. The new faux chimney will match the color, texture and appearance of the existing chimney. Cellco will install four (4) antennas, Model HBXX-6513DS, and four (4) remote radio heads ("RRHs") ((2) Model RRH2x60-PCS and two (2) Model B66A RRH 4X45-AWS) on the outside of the new replacement chimney. No equipment will extend above the top of the faux chimney. The antennas, RRHs and cables will be painted to match the faux chimney. Equipment associated with the antennas will be located inside the CubeSmart building. Power and telephone service to the facility will extend from existing service on the Property. (*See*

Cellco's Project Plans included in Attachment 2). Specifications for the Stamford South 2 Facility antennas and RRHs are included in Attachment 3.

#### IV. Discussion

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

As described above, the faux chimney structure is a "tower" as defined in R.C.S.A. § 16-50j-2a(30) as a "structure ... attached to a building ... that has a height greater than its diameter and is high relative to its surroundings, or that is used to support antennas ...". 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 faux chimney supporting four (4) panel antennas and four (4) RRHs, will not involve a significant alteration in the physical and environmental characteristics of the Property.

##### 2. Visual Effects

The installation of a new faux chimney, antennas and RRHs on the roof of the building would have minimal visual effects on the Property and the surrounding area. (*See Visual Assessment and Photo-Simulations ("Visual Assessment")* included in Attachment 4). As concluded in the Visual Assessment, the visibility of the proposed roof-top chimney would not

change from existing conditions, which is limited to the immediate vicinity along Hamilton Avenue and, to a lesser extent, the adjoining property to the south.

3. FCC Compliance

Radio frequency (“RF”) emissions from the proposed installation will be well below the standards adopted by the Federal Communications Commission (“FCC”). Included in Attachment 5 is a Calculated Radio Frequency Report, which demonstrates that Celco’s Stamford South 2 Facility will operate well within the FCC safety standard (13.13% of the Standard).

4. FAA Summary Report

Included in Attachment 6 is a Federal Airways & Airspace Summary Report (the “FAA Report”) verifying that the faux chimney, antennas and RRHs would not constitute an obstruction or hazard to air navigation and that notification to the FAA is not required. FAA marking and/or lighting is, therefore, not required.

B. Notice to the Town, Property Owner and Abutting Landowners

On September 20, 2016, a copy of this Petition was sent to Stamford’s Mayor David Martin and to CubeSmart LP, the owner of the Property. Copies of the letters sent to the Mayor and the Property owner are included in Attachment 7. A copy of Celco’s 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 notice of the filing of the Petition is included in Attachment 8.

V. Conclusion

Based on the information provided above, Celco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of an approximately

17' tall faux chimney supporting four (4) panel antennas on the roof of the building 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.

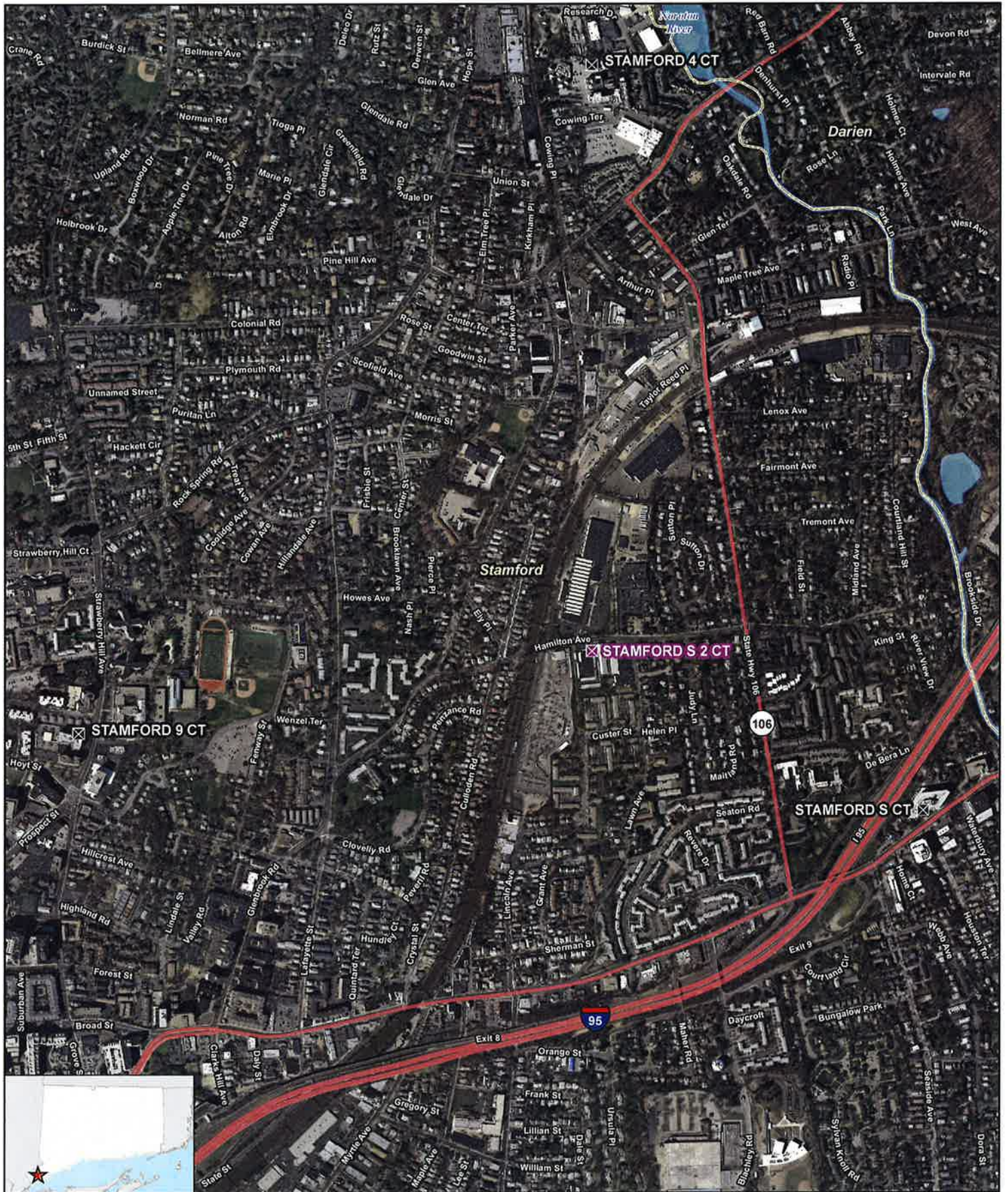
Respectfully submitted,

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 Facility
  - Surrounding Verizon Wireless Facilities
  - Municipal Boundary
  - Waterbody

Base Map Source: 2012 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 1,000 feet  
 Map Date: August 2016



**Site Vicinity Map**

Proposed Wireless  
 Telecommunications Facility  
 Stamford S 2 CT  
 99 Hamilton Avenue  
 Stamford, Connecticut





Proposed Verizon Wireless Power, Fiber, and Ground Conduits from Basement Electrical Room to Proposed Equipment

Proposed Verizon Wireless 6' x 6' x 18' - 5" Tall Faux Chimney (To Replace Existing Chimney) and Proposed Verizon Wireless Antennas Mounted to Pipe Mast within Faux Chimney

Proposed Verizon Wireless 10' x 20' Equipment Room

Approximate Location of Existing Electrical Room in Basement

Existing Building

**Legend**

- Proposed Verizon Wireless Faux Chimney and Antennas
- Proposed Verizon Wireless Equipment Room
- Proposed Verizon Wireless Conduit
- Existing Electrical Room
- Subject Property
- Approximate Parcel Boundary (CTDEEP GIS Parcels Last Updated 2010)

Map Notes:  
 Base Map Source: ESRI World Imagery  
 Map Scale: 1 inch = 100 feet  
 Map Date: August 2016



**Site Schematic**

Proposed Wireless Telecommunications Facility  
 Stamford S 2 CT  
 99 Hamilton Avenue  
 Stamford, Connecticut

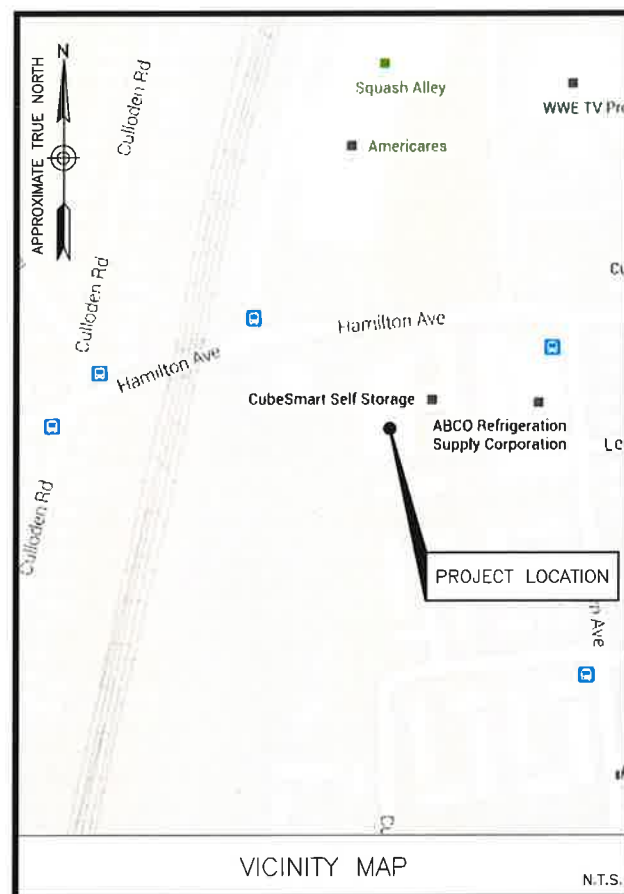




# **ATTACHMENT 2**

# CELLCO PARTNERSHIP d/b/a **Verizon** WIRELESS

## PROPOSED WIRELESS FACILITY SITE NAME: STAMFORD S 2 CT 99 HAMILTON AVENUE STAMFORD, CT 06902



DIRECTIONS FROM 99 EAST RIVER DRIVE, EAST HARTFORD, CT:

HEAD SOUTHWEST ON EAST RIVER DRIVE TOWARD PITKIN STREET. CONTINUE ONTO EAST RIVER DRIVE EXTENSION. TURN RIGHT TO MERGE ONTO CT-15 SOUTH/US-5 SOUTH TOWARD NEW HAVEN/INTERSTATE 91 SOUTH. MERGE ONTO CT-15 SOUTH/US-5 SOUTH. TAKE EXIT 86 TO MERGE ONTO I-91 SOUTH TOWARD NEW HAVEN/NEW YORK CITY. TAKE EXIT 17 TO MERGE ONTO CT-15 S/WILBUR CROSS PKWY. TAKE EXIT 52 FOR STATE ROUTE 108 S/STATE ROUTE B S TOWARD BRIDGEPORT. TAKE I-95 S EXIT TOWARDS N.Y CITY AND MERGE ONTO I-95 S. TAKE EXIT 9 FOR US-1 TOWARD CT-106/GLENBROOK. TURN RIGHT AT THE FIRST CROSS STREET ONTO COURTLAND AVE. TURN LEFT ONTO HAMILTON AVE. DESTINATION WILL BE ON THE LEFT.

**SITE COORDINATES:**  
LATITUDE: 41° 03' 48.315" N  
LONGITUDE: 73° 31' 09.270" W  
(BASED ON FAA 1A)

**ELEVATION DATA**  
GROUND ELEVATION = 62.2'± A.M.S.L.  
(BASED ON FAA 1A)

**ANTENNA ELEVATION (TOP OF ANTENNAS)**  
30.7'± A.G.L.

PROJECT INFORMATION

- SCOPE OF WORK SHALL INCLUDE:
1. THE INSTALLATION AND OPERATION OF (4) PANEL ANTENNAS WHICH SHALL BE MOUNTED ON A PROPOSED CHIMNEY.
  2. ASSOCIATED EQUIPMENT WHICH CONSISTS OF (4) RRH'S AND (1) OVP BOX SHALL BE MOUNTED ON PIPE MASTS BELOW PROPOSED ANTENNAS.
  3. (2) EQUIPMENT CABINETS, A 35 KW DIESEL GENERATOR, A POWER PANEL AND TELCO BOX SHALL BE INSTALLED IN A PROPOSED EQUIPMENT ROOM AT GRADE.
  4. PROPOSED CHIMNEY TO REPLACE EXISTING CHIMNEY.
  5. PROPOSED COAX & HYBRID CABLES SHALL BE ROUTED VERTICALLY FROM THE PROPOSED EQUIPMENT ROOM TO PROPOSED ANTENNAS. THIS SYSTEM WILL BOTH TRANSMIT AND RECEIVE RADIO SIGNALS.
- SCOPE OF WORK

**SITE NAME:**  
STAMFORD S 2 CT

**SITE ADDRESS:**  
99 HAMILTON AVENUE  
STAMFORD, CT 06902  
FAIRFIELD COUNTY

**PROPERTY OWNER:**  
CUBESMART L P  
PO BOX 320099  
ALEXANDRIA, VA 22320

**APPLICANT:**  
CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS  
99 EAST RIVER DRIVE  
EAST HARTFORD, CT 06108

**SITE ACQUISITION CONTACT:**  
CHRISTOPHER BISSON  
VITALSITE SERVICES, INC.  
(203) 632-1062

**LEGAL/REGULATORY COUNSEL:**  
KENNETH C. BALDWIN  
ROBINSON & COLE  
(860) 275-8345

PROJECT INFORMATION

SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
C-1	ABUTTERS MAP
C-2	SITE PLAN
C-3	HAMILTON AVENUE ELEVATION
C-4	ANTENNA PLAN & EQUIPMENT PLAN
SHEET INDEX	

CELLCO PARTNERSHIP  
d/b/a **Verizon** WIRELESS

STAMFORD S 2 CT

CSC DRAWINGS

REV	DATE	DESCRIPTION
D	09/12/16	ISSUED AS FINAL
C	09/01/16	FOR COMMENT
B	08/19/16	FOR COMMENT
A	08/18/16	FOR COMMENT

**Dewberry**  
Dewberry Engineers Inc.  
600 PARSIPPANY ROAD  
SUITE 301  
PARSIPPANY, NJ 07054  
PHONE: 973.739.9400  
FAX: 973.739.9710

JIANG YU, P.E.  
CONNECTICUT LICENSE NO. 0023222

DRAWN BY: JC

REVIEWED BY: BH

CHECKED BY: GHN

PROJECT NUMBER: 50067815

JOB NUMBER: 50072624

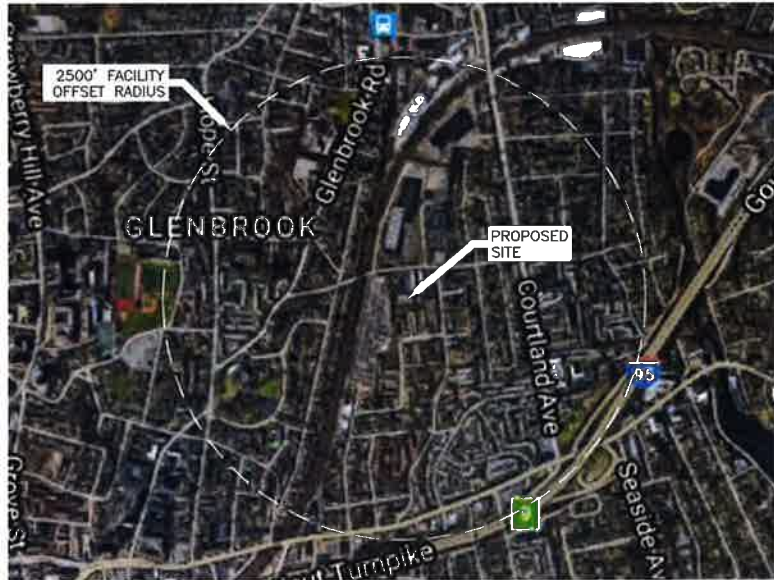
SITE ADDRESS

99 HAMILTON AVENUE  
STAMFORD, CT 06902

SHEET TITLE

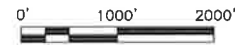
TITLE SHEET

SHEET NUMBER

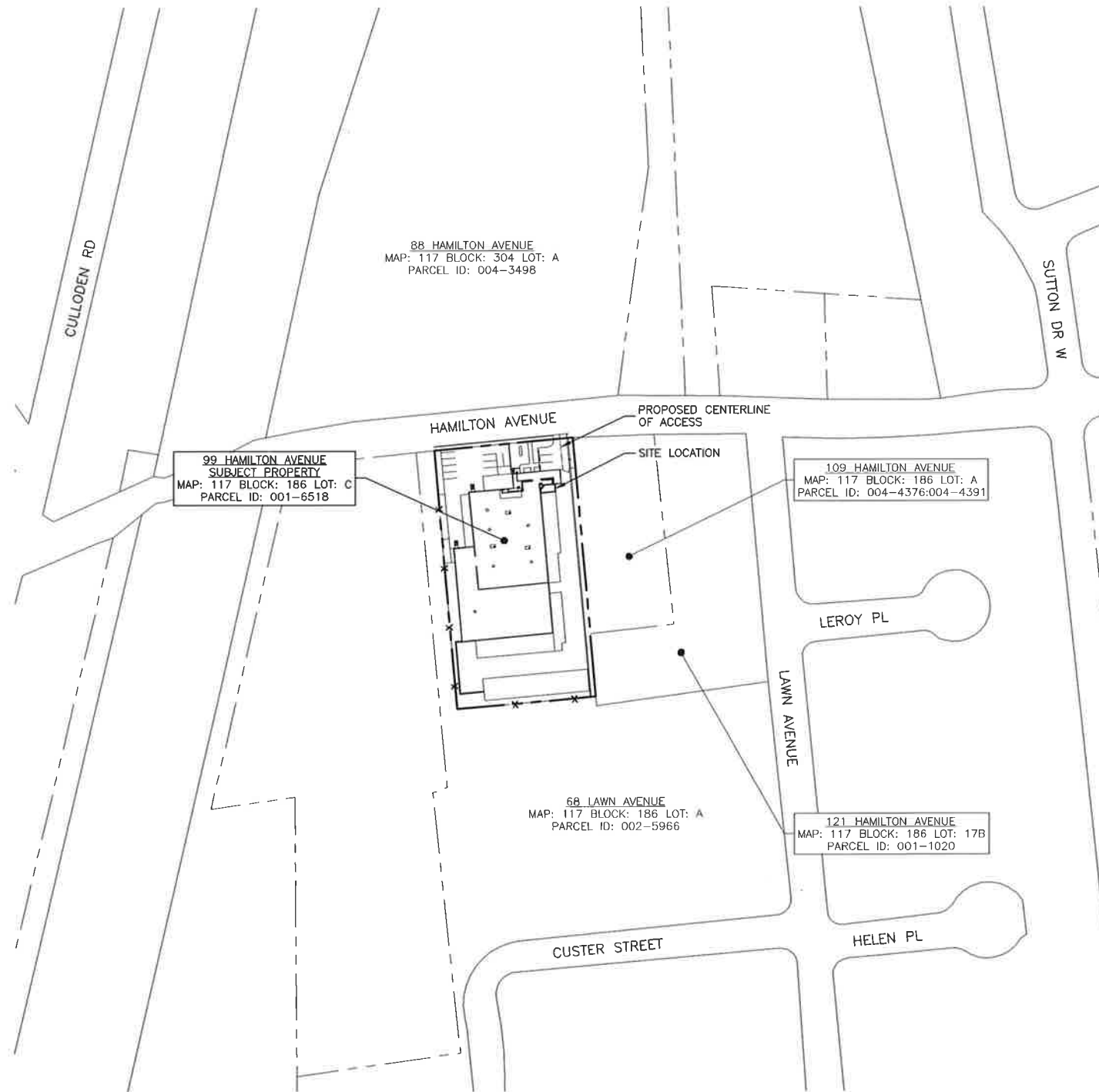


**MUNICIPALITY NOTIFICATION LIMIT MAP**

SCALE: 1"=2000' FOR 11"x17"  
1"=1000' FOR 22"x34"

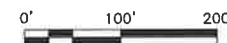


1



**ABUTTERS MAP**

SCALE: 1"=200' FOR 11"x17"  
1"=100' FOR 22"x34"



2

ABUTTERS			
MAP/BLOCK/LOT	PARCEL ID	PROPERTY ADDRESS	PROPERTY OWNER & MAILING ADDRESS
117/304/A	004-3498	88 HAMILTON AVENUE	88 HAMILTON AVE. ASSOCIATES LLC. 1 ATLANTIC STREET, 4TH FLOOR, STAMFORD, CT 06901
117/186/17-B	001-1020	121 HAMILTON AVENUE	HL, LLC. C/O PAUL GREENBERG P.O. BOX 466, SHELTON, CT 06484
117/186/A	002-5966	68 LAWN AVENUE	HOUSING AUTHORITY CITY OF STAMFORD d/b/a CHARTER OAK COMMUNITIES - 22 CLINTON AVENUE, STAMFORD, CT 06901
117/186/A	004-4376	109 HAMILTON AVENUE, UNIT #1	109 HAMILTON AVENUE #1 LLC. 109 HAMILTON AVENUE #1, STAMFORD, CT 06902
117/186/A	004-4377	109 HAMILTON AVENUE, UNIT #2	109 HAMILTON AVENUE #2 LLC. 109 HAMILTON AVENUE #2, STAMFORD, CT 06902
117/186/A	004-4378	109 HAMILTON AVENUE, UNIT #3	ROBERT BOUCHER 60 HERITAGE LANE, STAMFORD, CT 06903
117/186/A	004-4379	109 HAMILTON AVENUE, UNIT #4	COMPASS CORPORATE HOUSING LLC. 124 OLD COLONY AVE. QUINCY, MA 02107
117/186/A	004-4380	109 HAMILTON AVENUE, UNIT #5	COLLECTIBLE CARS LLC. 180 PEAR TREE POINT ROAD, DARIEN, CT 06820-5821
117/186/A	004-4381	109 HAMILTON AVENUE, UNIT #6	COLLECTIBLE CARS LLC. 180 PEAR TREE POINT ROAD, DARIEN, CT 06820-5821
117/186/A	004-4382	109 HAMILTON AVENUE, UNIT #7	COLLECTIBLE CARS LLC. 180 PEAR TREE POINT ROAD, DARIEN, CT 06820-5821
117/186/A	004-4383	109 HAMILTON AVENUE, UNIT #8	PHILLIP & DONNA FRANCHINA ET AL 95 INTERVALE ROAD #36, STAMFORD, CT 06905-1342
117/186/A	004-4384	109 HAMILTON AVENUE, UNIT #9	COMPLETE SOLUTIONS LLC. 109 HAMILTON AVENUE #9, STAMFORD, CT 06902
117/186/A	004-4385	109 HAMILTON AVENUE, UNIT #10	LOPIANO MANAGEMENT LLC. 109 HAMILTON AVENUE #10, STAMFORD, CT 06902
117/186/A	004-4386	109 HAMILTON AVENUE, UNIT #11	STEVEN BIGGICA LLC. ET AL, DEBRA BIGGICA LLC. 14 MERCEDES LANE, STAMFORD, CT 06905-2605
117/186/A	004-4387	109 HAMILTON AVENUE, UNIT #12	STEVEN BIGGICA LLC. ET AL, DEBRA BIGGICA LLC. 14 MERCEDES LANE, STAMFORD, CT 06905-2605
117/186/A	004-4388	109 HAMILTON AVENUE, UNIT #15	COMPASS CORPORATE HOUSING LLC. 127 GREYLOCK PLACE, STAMFORD, CT 06901
117/186/A	004-4389	109 HAMILTON AVENUE, UNIT #16	JENS JOHNSON REAL ESTATE LLC. 109 HAMILTON AVENUE #16, STAMFORD, CT 06902
117/186/A	004-4390	109 HAMILTON AVENUE, UNIT #17	UNIT 17 LLC 807 LAKE AVENUE, GREENWICH, CT 06831
117/186/A	004-4391	109 HAMILTON AVENUE, UNIT #18	UNIT 18 LLC 807 LAKE AVENUE, GREENWICH, CT 06831

**NOTE:**

1. ABUTTERS LIST CONSISTS OF PARCELS PHYSICALLY TOUCHING THE SUBJECT PARCEL OR ABUT ACROSS THE STREET FROM THE SUBJECT PARCEL.
2. ABUTTERS MAP BASED ON INFORMATION OBTAINED FROM THE CITY OF STAMFORD, CONNECTICUT ASSESSMENT PARCEL MAP. PARCEL DATA CURRENT AS OF OCTOBER 2014.

CELLCO  
PARTNERSHIP  
d/b/a **verizon**  
WIRELESS

**STAMFORD S 2 CT**

CSC DRAWINGS

REV	DATE	DESCRIPTION
D	09/12/16	ISSUED AS FINAL
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**Dewberry**  
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JIANG YU, P.E.  
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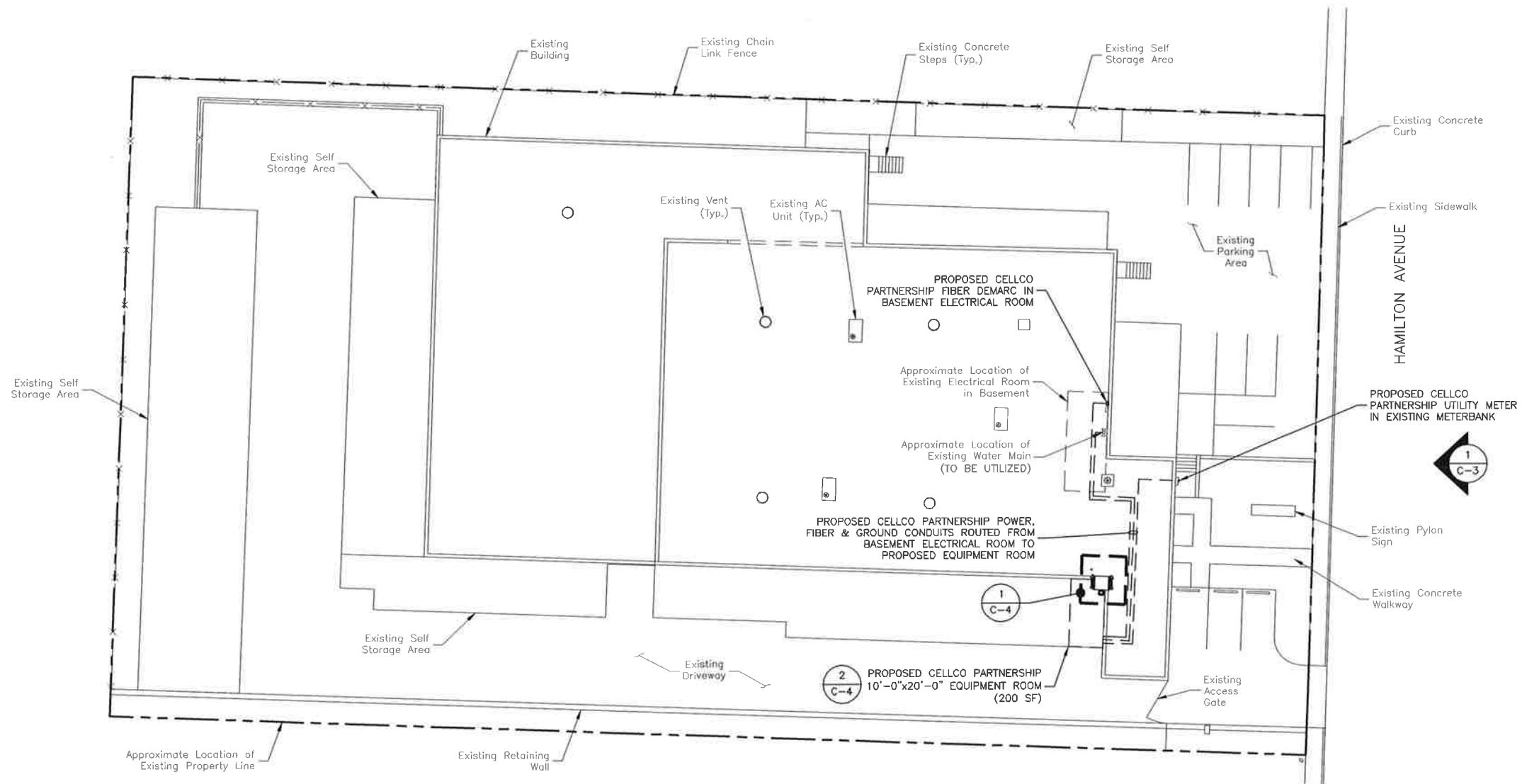
SITE ADDRESS

99 HAMILTON AVENUE  
STAMFORD, CT 06902

SHEET TITLE

ABUTTERS MAP

SHEET NUMBER



**SITE PLAN**

SCALE: 1"=40' FOR 11"x17"  
1"=20' FOR 22"x34"



**NOTES:**

1. NORTH SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. THESE DRAWINGS ARE PROVIDED FOR SITING COUNCIL REVIEW. CONSTRUCTION LEVEL DRAWINGS WILL BE DEVELOPED SUBSEQUENT TO THE APPROVAL OF THESE DRAWINGS.
4. SITE PLAN & ELEVATION BASED ON EXISTING SITE SURVEY BY AMERICAN NATIONAL LLC & SITE VISIT BY DEWBERRY ENGINEERS INC. ON 05/18/15.
5. ROUTING OF ALL CONDUITS AND CABLES ARE SHOWN AS CONCEPTUAL & ARE TBD.
6. PROPOSED CHIMNEY DESIGN IS SHOWN AS CONCEPTUAL. FINAL DESIGN IS TO BE DETERMINED PENDING A STRUCTURAL ANALYSIS.
7. LOCATION & ORIENTATION OF ALL ANTENNAS, COAX, RRH'S & OVP BOXES PENDING A STRUCTURAL ANALYSIS.
8. GROUND WILL BE TO EXISTING WATER METER IN BASEMENT.
9. FINAL ELECTRICAL DESIGN TBD.

CELLCO  
PARTNERSHIP  
d/b/a **verizon**  
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**STAMFORD S 2 CT**

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99 HAMILTON AVENUE  
STAMFORD, CT 06902

SHEET TITLE

SITE PLAN

SHEET NUMBER

C-2

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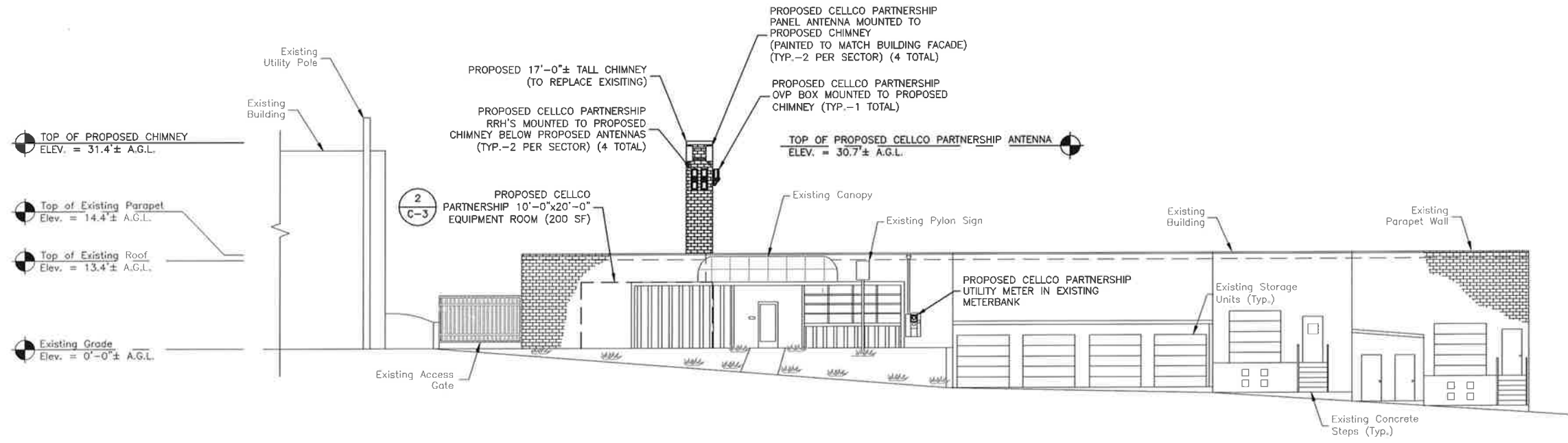
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99 HAMILTON AVENUE  
STAMFORD, CT 06902  
SHEET TITLE  
HAMILTON AVENUE  
ELEVATION  
SHEET NUMBER

C-3



**HAMILTON AVENUE ELEVATION** ①  
SCALE: 1"=20' FOR 11"x17"  
1"=10' FOR 22"x34"  
0' 10' 20'

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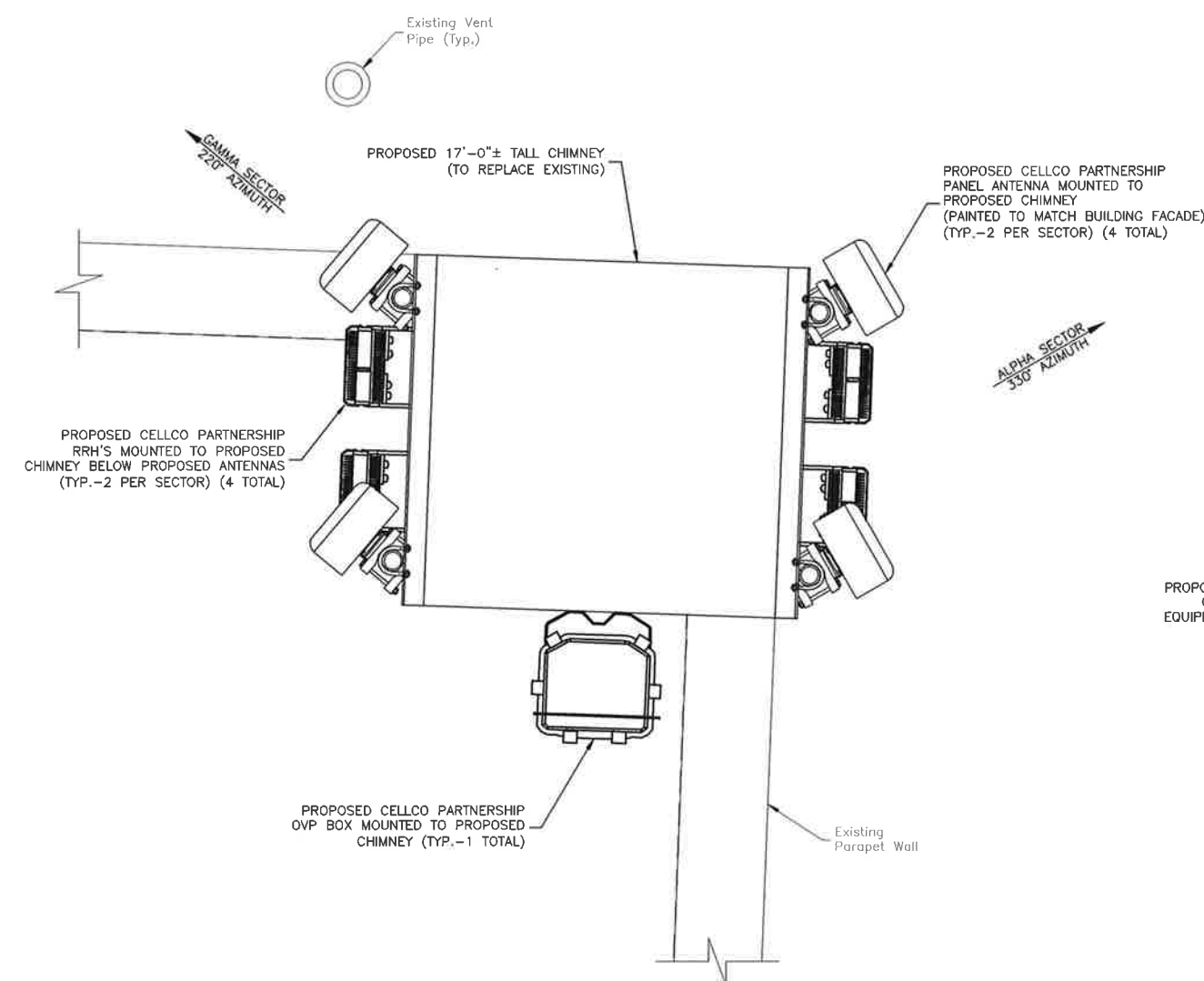
SITE ADDRESS

99 HAMILTON AVENUE  
STAMFORD, CT 06902

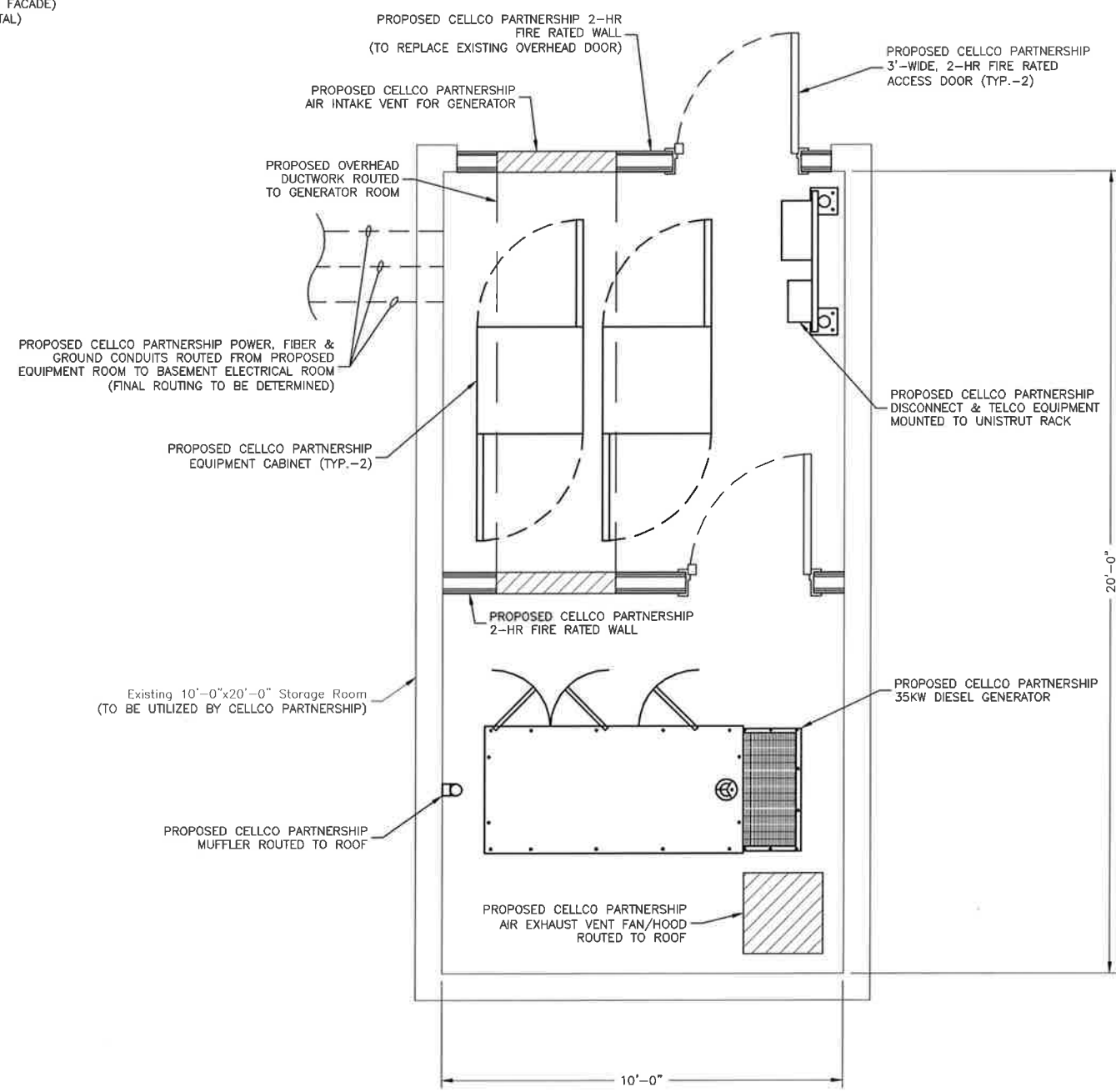
SHEET TITLE

ANTENNA PLAN &  
EQUIPMENT PLAN

SHEET NUMBER



**ANTENNA PLAN**  
SCALE: 1/2"=1' FOR 11"x17"  
1"=1' FOR 22"x34"  
0' 1' 2'



**EQUIPMENT PLAN**  
SCALE: 1/4"=1' FOR 11"x17"  
1/2"=1' FOR 22"x34"  
0' 1' 2' 4'

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  8. GROUND WILL BE TO EXISTING WATER METER IN BASEMENT.
  9. FINAL ELECTRICAL DESIGN TBD.

# **ATTACHMENT 3**



## HBX-6513DS-VTM

**Andrew® Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible**

- Rugged, reliable design with excellent passive intermodulation suppression

### Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain, dBi	15.0	15.0	15.5
Beamwidth, Horizontal, degrees	68	66	64
Beamwidth, Vertical, degrees	15.0	14.1	13.5
Beam Tilt, degrees	0–18	0–18	0–18
USLS, dB	16	16	16
Front-to-Back Ratio at 180°, dB	28	30	28
CPR at Boresight, dB	20	19	19
CPR at Sector, dB	7	8	8
Isolation, dB	30	30	30
VSWR   Return Loss, dB	1.4   15.6	1.4   15.6	1.4   15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm

### Electrical Specifications, BASTA\*

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	14.3	14.4	14.6
Gain by all Beam Tilts Tolerance, dB	±0.7	±0.7	±0.8
	0°   14.7	0°   14.8	0°   15.2
Gain by Beam Tilt, average, dBi	9°   14.4	9°   14.6	9°   14.6
	18°   13.5	18°   13.5	18°   13.7
Beamwidth, Horizontal Tolerance, degrees	±2.1	±1.4	±3.1
Beamwidth, Vertical Tolerance, degrees	±1.2	±0.7	±1
USLS, dB	17	17	18
Front-to-Back Total Power at 180° ± 30°, dB	24	24	23
CPR at Boresight, dB	20	18	18
CPR at Sector, dB	6	8	10

\* 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	Single band
Brand	DualPol®   Teletilt®
Operating Frequency Band	1710 – 2180 MHz



HBX-6513DS-VTM

POWERED BY



Performance Note

Outdoor usage

## Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Low loss circuit board
Radome Material	PVC, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	2
Wind Loading, maximum	119.0 N @ 150 km/h 26.8 lbf @ 150 km/h
Wind Speed, maximum	241.5 km/h   150.1 mph

## Dimensions

Depth	83.0 mm   3.3 in
Length	695.0 mm   27.4 in
Width	166.0 mm   6.5 in
Net Weight	2.8 kg   6.2 lb

## Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 2.0 Actuator	HBX-6513DS-A1M
RET System	Teletilt®

## 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



## Included Products

DB390 — Pipe Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Use for narrow panel antennas. Includes two pipe mounts.

DB5098 — Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members

### \* Footnotes

Performance Note      Severe environmental conditions may degrade optimum performance

# ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET RRH2X60-1900A-4R FOR BAND 2/25 APPLICATIONS

The Alcatel-Lucent RRH2x60-1900A-4R is a high power, small form factor Remote Radio Head operating in the PCS 1900MHz frequency band for WCDMA and LTE technologies. 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 RRH2x60-1900A-4R 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.

#### **SUPERIOR RF PERFORMANCE**

The Alcatel-Lucent RRH2x60-1900A-4R integrates all the latest technologies. This allows operators 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.

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

#### **OPTIMIZED TCO**

The Alcatel-Lucent RRH2x60-1900A-4R 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).

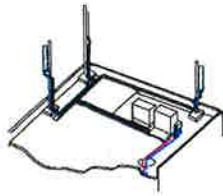
The Alcatel-Lucent RRH2x60-1900A-4R is a very cost-effective solution to deploy LTE MIMO.

#### **EASY INSTALLATION**

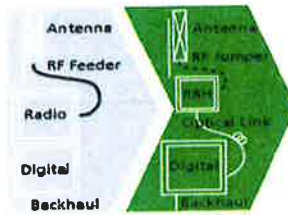
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-1900A-4R installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-1900A-4R is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

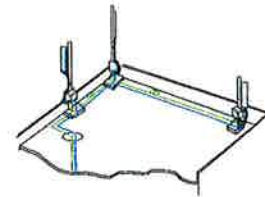
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-190A-4R is compact and weighs about 21 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

## FEATURES

- RRH2x60-1900A-4R integrates two power amplifiers of 60W rating (at each antenna connector)
- RRH2x60-1900A-4R can operate WCDMA only, LTE only or a mix of WCDMA and LTE
- RRH2x60-1900A-4R offers the possibility for WCDMA (non MIMO) to operate the two radio chains independently (2 blocks of 20 MHz anywhere in the band)

- RRH2x60-1900A-4R is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

## BENEFITS

- MIMO deployment and/or WCDMA and LTE simultaneous 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.

## TECHNICAL SPECIFICATIONS

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

### Dimensions and weights

- HxWxD : 500x285x208 mm (30l with solar shield)
- Weight : 21 kg (46 lbs) (with solar shield)

### Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption: 460W typ. @2x60W (100%RF)

### RF Characteristics

- Supported spectrum: DL 1930-1990 / UL 1850-1910
- Frequency band: 3GPP band 2/25
- Output power: 2x60W at antenna connectors
- Technology supported: W-CDMA and LTE
- Instantaneous bandwidth: 20 MHz (MIMO) or 2x20 MHz (non MIMO)
- Rx diversity: 2-way and 4-way uplink reception

- Typical sensitivity without Rx diversity: -124.8dBm for WCDMA and -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 15km 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: ETS300-019-1-4 class4.1E
- Ingress Protection: IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

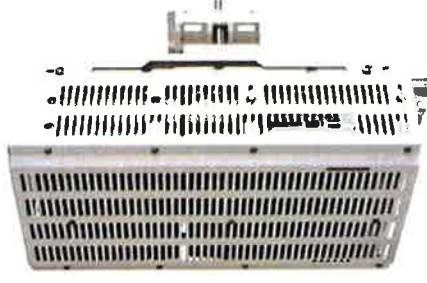
### Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089
- Safety : IEC60950-1, EN 60825-1
- Regulatory: CE Mark-European Directive 2002/95/EC (RoHS), 2002/96/EC (WEEE), 1999/5/EC (R&TTE)
- Health : EN 50385

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# B66A RRH 4X45 - PHYSICAL CHARACTERISTICS- TARGET 15.1



B4 RRH4x45-4R (AWS-Extension Band)	
Frequency Band	LR15.1 – B4 / LR16.1 B66 (AWS 1 and 3 only)
RF Output Power	2x90W/4x45W (SW configurable)
Operational range	2110-2180 MHz, DL/ 1710-1780 MHz UL
Instantaneous Bandwidth	70MHz
Configuration (HW readiness)	LTE: 2T2R, 2T4R, 4T4R
Carrier Bandwidths	5, 10, 15 and 20 MHz
Interfaces	2x CPRI Rate 7 Ports Antenna Connectors 4.3-10
AISG Support	AISG 2.0 for RET Internal Smart Bias T
Monitor Ports	NA (Spec An to replace ports)
Environmental	GR487 Compliance / GR3178 Compliance (with exceptions)
Mounting options	Pole/Wall
Connectors location	All bottom
External Alarms	4
Annual Return Rate (Target)	<2%
Operating Temperature	-40 C to +55 C (without solar load)

- Commercial Product Will include B66 support of AWS 1 and 3.
- Lower AWS 3 UL Not in 3GPP Band 66 Definition

Physical Dimensions – Not to Exceed		
	W/O Solar Shield	With Solar Shield
Dimensions HxWxD	H = 26in W = 11.4in D = 5.9in (H=660mm) (W=290mm) (D=150mm)	H = 26.6in W = 12in D = 6.8in (H=675mm) (W=304mm) (D=173mm)
Volume	29l	35.5l
Weight		64lbs / 29kg

# **ATTACHMENT 4**

# Visual Assessment & Photo-Simulations

STAMFORD S 2 CT  
99 HAMILTON AVENUE  
STAMFORD, CT 06902



Prepared in August 2016 by:  
All-Points Technology Corporation, P.C.  
3 Saddlebrook Drive  
Killingworth, CT 06141

Prepared for Verizon Wireless



# **VISUAL ASSESSMENT & PHOTO-SIMULATIONS**

At the request of Cellco partnership LLC d/b/a Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") completed this visual assessment and prepared computer-generated photo-simulations depicting the proposed installation of a wireless telecommunications Facility at 99 Hamilton Avenue in Stamford, Connecticut (the "Property").

## **Project Setting**

The Property is located on the east side of Hamilton Avenue, west of Lawn Avenue and east of the Metro North Railroad corridor Green Street, in the Glenbrook section of Stamford. The Property is currently developed with a self-storage facility. The proposed Facility design includes replacing a 17-foot tall chimney on the roof of a single-story office building and attaching antennas and remote radio heads on the south and north sides. In addition, an Over Voltage Protection box would be affixed to the east side of the chimney. The new chimney and Verizon Wireless appurtenances would be designed and painted to match the existing building façade. Associated equipment would be located within the building.

## **Methodology**

On August 16, 2016, APT personnel conducted field reconnaissance and photo-documented existing conditions. Four (4) nearby locations were selected to depict existing and proposed conditions and to provide an approximate extent of visibility associated with the new 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 50 mm to present a consistent field of view.

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. A photolog map and copies of the existing conditions and photo-simulations are attached.

The six (6) locations simulated were chosen in the field because they presented generally unobstructed view lines towards at least a portion of the building and represent the approximate limits of visibility associated with the

proposed installation. 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 Facility under similar settings as those encountered during the field reconnaissance. Views of the Facility 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.

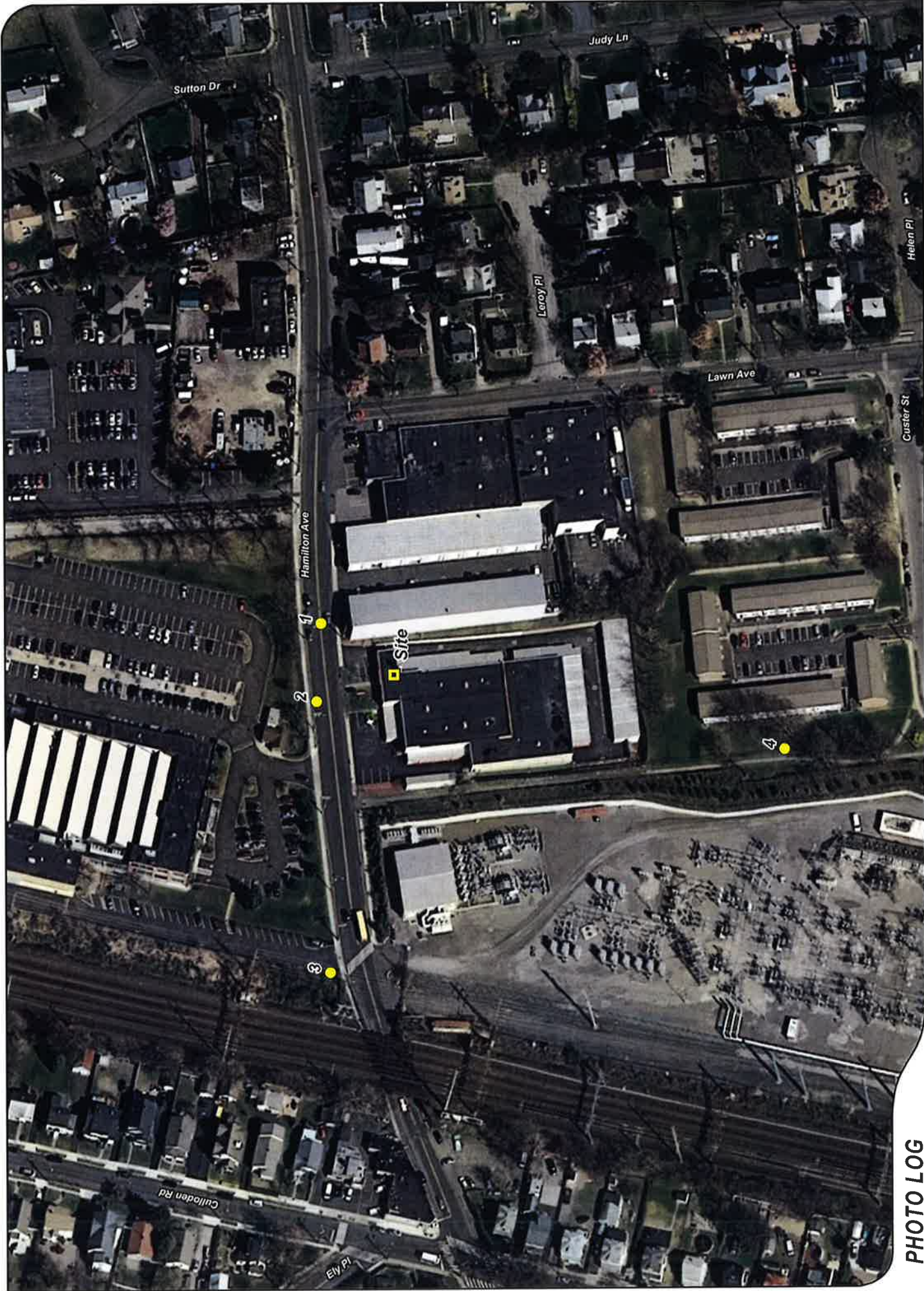
## Conclusions

The extent of visibility of the proposed new chimney would not change from existing conditions, which is limited to the immediate vicinity along Hamilton Avenue and, to a lesser degree, the adjoining property to the south (see photo 4). The flush-mount installation of antennas and appurtenances, combined with painting them with a similar color as the building and chimney façade, would minimize the horizontal profile of the Facility. No antennas or other external equipment would extend above the top of the chimney.

Based on the results of this assessment, it is our opinion that the proposed installation of the Verizon Wireless communications facility will not have an adverse visual impact on existing views of this building or the character of the community.



## **ATTACHMENTS**



# PHOTO LOG

- Legend
- Site
  - Year-Round Visibility





**EXISTING**

PHOTO

1

LOCATION

**HAMILTON AVENUE**

ORIENTATION

**SOUTHWEST**

DISTANCE TO SITE

**+/- 111 FEET**





**PROPOSED**

PHOTO

1

LOCATION

HAMILTON AVENUE

ORIENTATION

SOUTHWEST

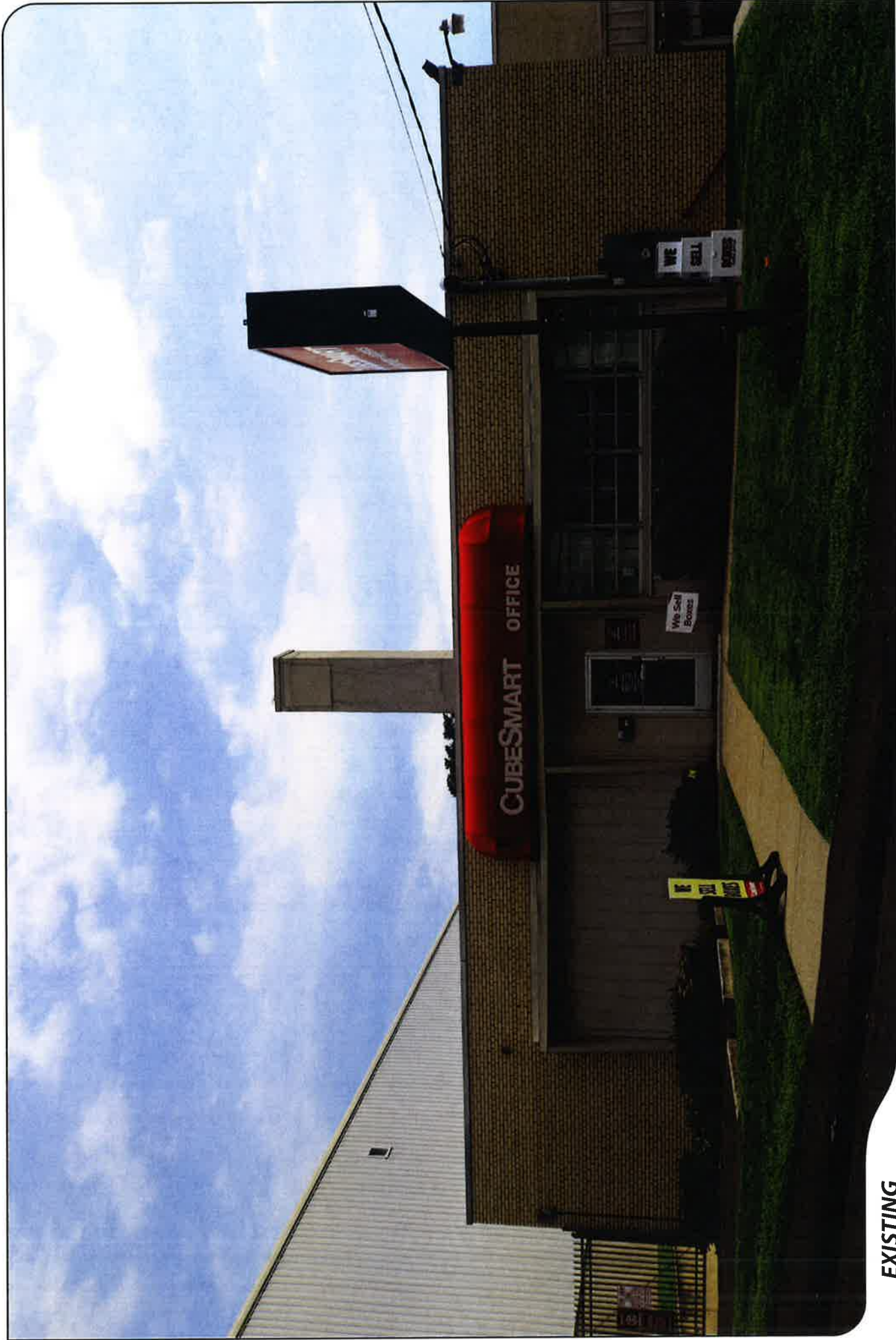
DISTANCE TO SITE

+/- 111 FEET



ALL-POINTS  
TECHNOLOGY CORPORATION

verizon



**EXISTING**

PHOTO

2

LOCATION

HAMILTON AVENUE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 102 FEET



ALL-POINTS  
TECHNOLOGY CORPORATION

verizon



**PROPOSED**

PHOTO

2

LOCATION

HAMILTON AVENUE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 102 FEET



ALL-POINTS  
TECHNOLOGY CORPORATION





**EXISTING**

PHOTO

3

LOCATION

**HAMILTON AVENUE**

ORIENTATION

**SOUTHEAST**

DISTANCE TO SITE

**+/- 369 FEET**



ALL-POINTS  
TECHNOLOGY CORPORATION





**PROPOSED**

PHOTO

3

LOCATION

**HAMILTON AVENUE**

ORIENTATION

**SOUTHEAST**

DISTANCE TO SITE

**+/- 369 FEET**



**ALL-POINTS**  
TECHNOLOGY CORPORATION







**EXISTING**

PHOTO

4

LOCATION

**LAWNHILL TERRACE**

ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 482 FEET**





**PROPOSED**

PHOTO

4

LOCATION

**LAWNHILL TERRACE**

ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 482 FEET**

# **ATTACHMENT 5**



C Squared Systems, LLC  
65 Dartmouth Drive  
Auburn, NH 03032  
(603) 644-2800  
support@csquaredsystems.com

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Calculated Radio Frequency Emissions Report



Stamford South 2 CT

99 Hamilton Avenue, Stamford, CT 06902

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August 12, 2016

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## 1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of Verizon Wireless antenna arrays on the rooftop of the building located at 99 Hamilton Avenue in Stamford, CT. The coordinates of the building are 41° 03' 48.32" N, 73° 31' 09.27" W.

Verizon Wireless is proposing to install the following:

- 1) Install two antennas for their 1900 MHz LTE network (one per sector);
- 2) Install two antennas for their 2100 MHz LTE network (one per sector);
- 3) Install four remote radio units (RRUs) for their 1900/2100 MHz LTE networks (two per sector).

This report uses the planned antenna configuration for Verizon Wireless to derive the resulting % MPE, once the proposed installation has been completed.

## 2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm<sup>2</sup>). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

### 3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left( \frac{EIRP}{\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

$$R = \text{Radial Distance} = \sqrt{(H^2 + V^2)}$$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 2.0

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final configuration.

The percent of MPE values presented in this report reflect levels that one may encounter from one sector of each carrier's antennas. Most carriers use 3 sectors per site with azimuths approximately 120 degrees apart, therefore one could not be standing in the main beam of all 3 sectors at the same time. Although carriers are free to orient their antennas in whichever direction necessary to support their network coverage objectives, this report assumes that all carriers are using the same azimuth for each sector. In cases where downtilt and antenna models are not uniform across all 3 sectors, the downtilt and antenna model with the highest gain was used for the calculations. This results in a conservative or "worst case" assumption for percent of MPE calculations.

#### 4. Antenna Inventory

Table 1 below outlines Verizon Wireless' proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachment C.

Operator	Sector	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha	1900	120	14.6	3460.8	HBXX-6513DS-A2M_4	66	0	2.3	31.6
		2100	180	14.9	5562.5	HBXX-6513DS-A2M_4	64	0	2.3	31.6
	Gamma	1900	120	14.6	3460.8	HBXX-6513DS-A2M_4	66	0	2.3	31.6
		2100	180	14.9	5562.5	HBXX-6513DS-A2M_4	64	0	2.3	31.6

**Table 1: Proposed Antenna Inventory<sup>1 2</sup>**

<sup>1</sup> Antenna heights are in reference to the Dewberry Engineers Inc., Lease Exhibit, dated June 13, 2016.

<sup>2</sup> Transmit power assumes 0 dB of cable loss.



## 5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 1,000 feet horizontal distance from the site. In addition to the other worst case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within  $\pm 3$  degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

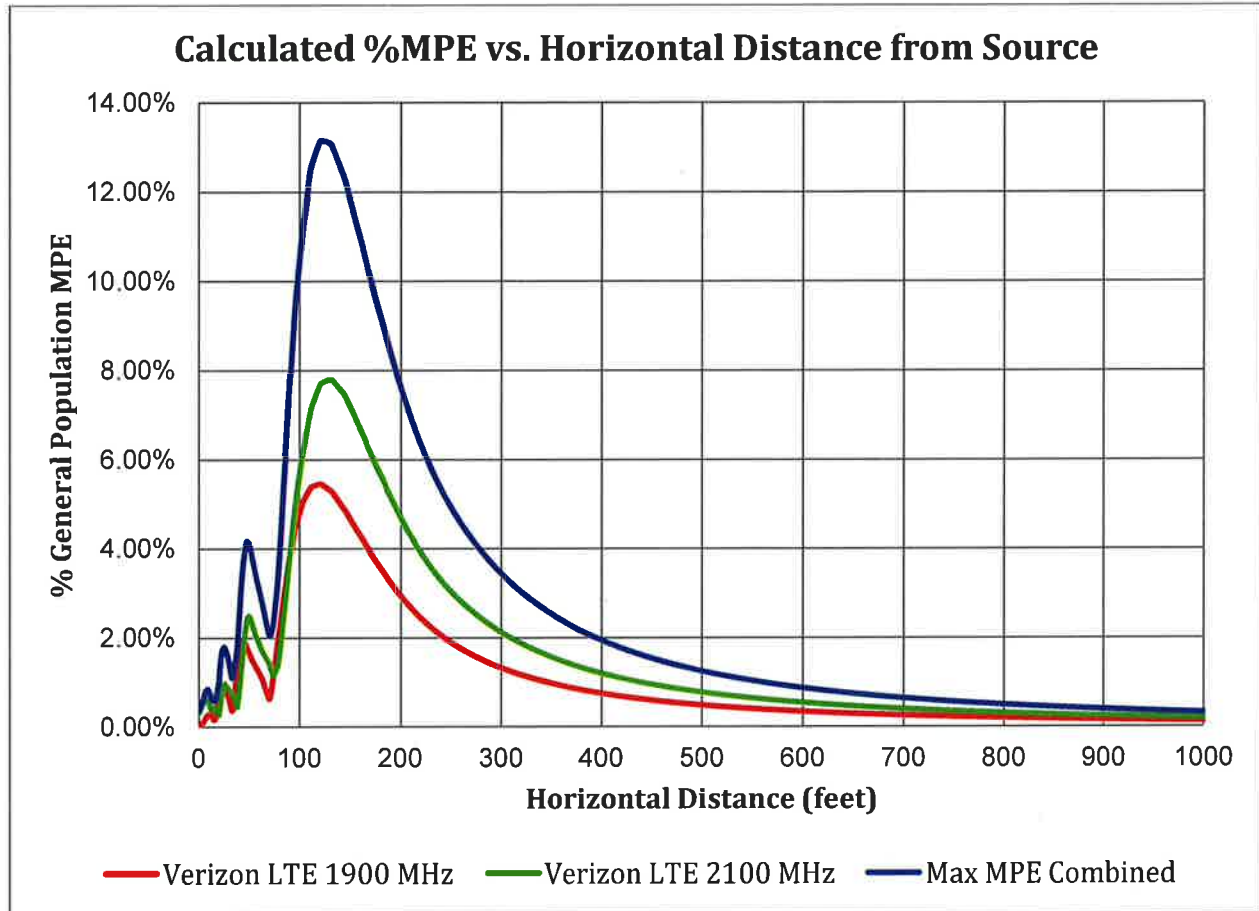


Figure 1: Graph of Percent of General Population MPE vs. Distance

The highest percent of MPE (13.13% of the General Population limit) was calculated to occur at a horizontal distance of 121 feet from the site. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antenna used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 150 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 121 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, 6 feet was subtracted from the height of the antennas for this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration.

Carrier	Number of Trans.	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	%MPE
Verizon LTE 1900 MHz	2	60.0	31.6	121	0.054407	1.000	5.44%
Verizon LTE 2100 MHz	4	45.0	31.6	121	0.076883	1.000	7.69%
<b>Total</b>							<b>13.13%</b>

**Table 2: Maximum Percent of General Population Exposure Values<sup>3 4 5</sup>**

<sup>3</sup> Transmit power assumes 0 dB of cable loss.

<sup>4</sup> Frequencies listed in Table 2 are representative of the operating band of Verizon Wireless and are not the carriers' specific operating frequency.

<sup>5</sup> The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

## 6. Conclusion

The above analysis verifies that RF exposure levels from the proposed Verizon Wireless antenna configuration will be well below the maximum levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum percent of MPE calculated at 6 feet above ground level is **13.13% of the FCC General Population limit**. This maximum percent of MPE value is calculated to occur 121 feet away from the site.

## 7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet  
C Squared Systems, LLC

August 12, 2016

Date

## **Attachment A: References**

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE Std C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

**Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)**

**(A) Limits for Occupational/Controlled Exposure<sup>6</sup>**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

**(B) Limits for General Population/Uncontrolled Exposure<sup>7</sup>**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz \* Plane-wave equivalent power density

**Table 3: FCC Limits for Maximum Permissible Exposure**

<sup>6</sup> Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

<sup>7</sup> General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

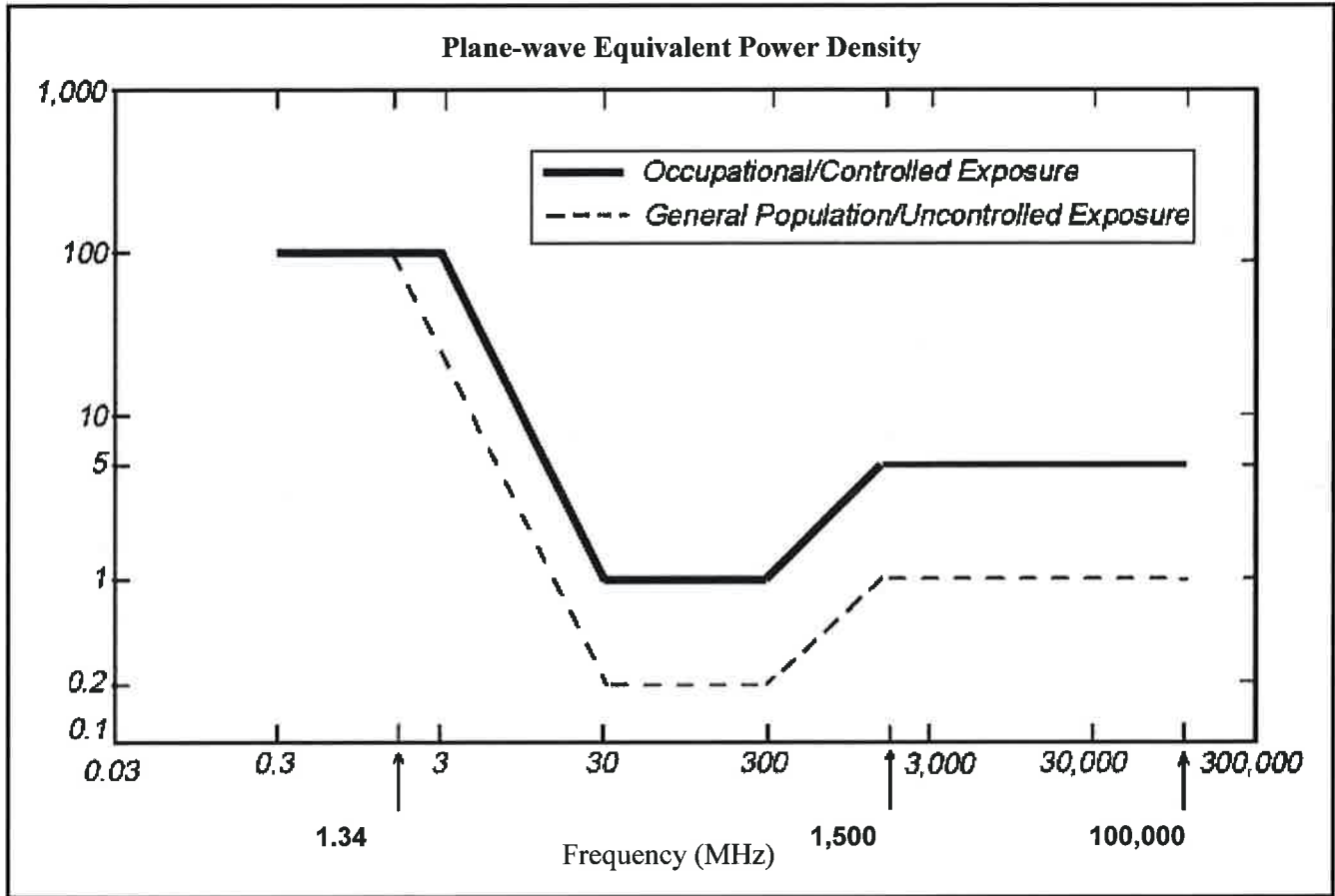
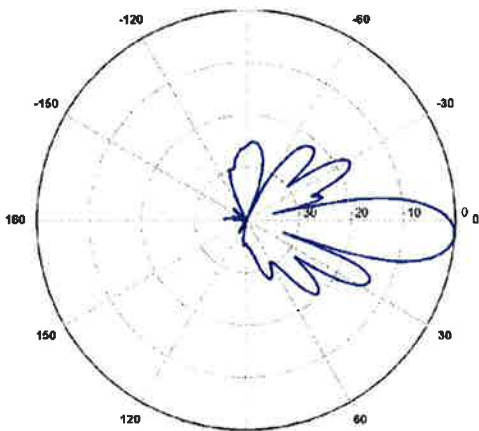
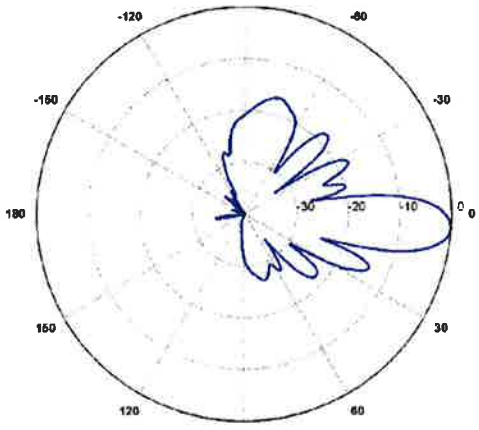


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

**Attachment C: Verizon Wireless' Antenna Model Data Sheets and Electrical Patterns**

<p><b>1900 MHz LTE</b></p> <p>Manufacturer: Commscope          Model #: HBXX-6513DS-A2M_4          Frequency Band: 1850-1990 MHz          Gain: 14.6 dBi          Vertical Beamwidth: 14.0°          Horizontal Beamwidth: 66°          Polarization: ± 45°          Size L x W x D: 27.4" x 12.0" x 6.5"</p>	
<p><b>2100 MHz LTE</b></p> <p>Manufacturer: Commscope          Model #: HBXX-6513DS-A2M_4          Frequency Band: 1920-2170 MHz          Gain: 14.9 dBi          Vertical Beamwidth: 13.4°          Horizontal Beamwidth: 64°          Polarization: ± 45°          Size L x W x D: 27.4" x 12.0" x 6.5"</p>	

# **ATTACHMENT 6**



STAMFORD\_S\_2\_CT\_Airspace\_Analysis.txt  
\*\*\*\*\*  
\* Federal Airways & Airspace \*  
\* Summary Report: Alteration Of Existing Structure \*  
\* Non-Antenna Structure \*  
\*\*\*\*\*

Airspace User: Your Name

File: STAMFORD\_S\_2\_CT

Location: Stamford, CT

Latitude: 41°-03'-48.32"

Longitude: 73°-31'-09.27"

SITE ELEVATION AMSL.....62.2 ft.

STRUCTURE HEIGHT.....31 ft.

OVERALL HEIGHT AMSL.....93 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 HPN
- FAR 77.9: NNR (No Expected TERPS® impact 7N3)
- 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.

If the proposed construction is an alteration to an existing structure, notice requirements may be superseded by the item exemptions listed below.

The location and analysis were based upon an existing structure. However, no existing aeronautical study number was identified. If the 'existing' structure penetrates an obstruction surface defined by CFR 77.17, 77.19, 77.21 or 77.23 (see below) it is strongly recommended the FAA be notified of the 'existing' structure to determine obstruction marking or lighting requirements. It is not uncommon for the FAA to issue a Determination of No Hazard (DNH) for an existing structure and modify the airspace to accommodate the structure, should that be required. If the FAA issues a DNH enter the aeronautical study number (ASN) in the space provided on the Airspace Analysis Window Form and re-run Airspace.

The FAA Co-Location policy does not apply unless the existing structure has been previously studied by the FAA and has a valid ASN with a DNH ruling. To take advantage of co-locating an antenna systems on an 'existing' structure it is recommended that 'only' notice on the existing structure be filed with the FAA. Once the DNH is received rerun Airspace and enter the ASN in the space provided.

The 'Airspace Analyst' has confirmed the proposed emitter frequencies are within the FAA approved Frequency Policy Bands but the co-location site has not been previously studied by the FAA and a Determination of No Hazard (DNH) is not on file with the FAA. Therefore, based upon the rules of the co-location policy it can not be applied to this site. Please refer to the published FAA Policy or on disk file 'CVCC\_FR\_2007.pdf'.

STAMFORD\_S\_2\_CT\_Airspace\_Analysis.txt

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: HPN: WESTCHESTER COUNTY

Type: A RD: 49849.39 RE: 387.7  
 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

VFR TRAFFIC PATTERN AIRSPACE FOR: 7N3: SANDS POINT

Type: S RD: 98914.13 RE: 6.6  
 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 700 ft AMSL

PRIVATE LANDING FACILITIES

FACIL	IDENT TYP NAME	BEARING To FACIL	RANGE IN NM	DELTA ARP ELEVATION	FAA IFR
5CT8	HEL CANAL STREET No Impact to Private Landing Facility Structure is beyond notice limit by 2899 feet.	205.71	1.3	+43	
CT56	HEL 50 WASHINGTON STREET No Impact to Private Landing Facility Structure 6 ft below heliport.	63.93	5.00	-50	
5CT4	HEL NORWALK HOSPITAL No Impact to Private Landing Facility Structure 0 ft below heliport.	57.11	5.27	-63	

AIR NAVIGATION ELECTRONIC FACILITIES

APCH BEAR	FAC	ST	DIST	DELTA	GRND	
	IDNT	TYPE	AT	FREQ VECTOR (ft)	ELEVA ST LOCATION	ANGLE
	HPN	RADAR	ON	2735. 273.66 54187	-417 NY WESTCHESTER COUNT	-.44

No Impact. Alteration 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: 39 NM.  
 This location and height is within the Radar Line-Of-Sight.

STAMFORD\_S\_2\_CT\_Airspace\_Analysis.txt

CMK	VOR/DME	I	116.6	347.81	80769	-601	NY CARMEL	-.43
BDR	VOR/DME	R	108.8	71.83	114411	+84	CT BRIDGEPORT	.04
DPK	VOR/DME	I	117.7	149.03	115537	-30	NY DEER PARK	-.01
LGA	VOR/DME	R	113.1	223.34	140383	+84	NY LA GUARDIA	.03
ISP	RADAR	ON	2735.	128.78	149909	-89	NY LONG ISLAND MacAR	-.03
JFK	RADAR	ON	2755.	203.81	168895	+6	NY JOHN F KENNEDY IN	0.00
TEB	VOR/DME	R	108.4	242.27	169161	+90	NJ TETERBORO	.03
JFK	VOR/DME	I	115.9	203.89	171671	+82	NY KENNEDY	.03
HVN	VOR/DME	R	109.8	67.25	189038	+87	CT NEW HAVEN	.03
CRI	VOR/DME	R	112.3	212.17	194351	+83	NY CANARSIE	.02
KOKX	RADAR WXL	Y		111.93	194828	-102	NY NEW YORK	-.03
JFK	RADAR WXL	Y	05647.	209.91	199711	-31	NY FLOYD BENNETT TDW	-.01
CCC	VOR/DME	R	117.2	104.01	204760	+8	NY CALVERTON	0.00
EWB	RADAR	Y		232.28	223597	-57	NJ NEWARK ASDE	-.01
SWF	RADAR	Y	2765.	314.19	224072	-628	NY STEWART INTERNATI	-.16
EWB	RADAR	ON	2715.	232.14	232797	-13	NY NEWARK INTERNATIO	0.00
QVH	RADAR ARSR	Y	1326.9	106.6	239417	-258	NY RIVERHEAD	-.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: WSTC @ 1919 meters.

Airspace® Summary Version 16.7.421

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08-23-2016  
11:24:01

# **ATTACHMENT 7**

September 20, 2016

*Via Certificate of Mailing*

David Martin, Mayor  
City of Stamford  
888 Washington Boulevard  
Stamford, CT 06901

Re: **Proposed Installation of a Roof-Top Wireless Telecommunications Facility at 99 Hamilton Avenue, Stamford, Connecticut**

Dear Mayor Martin:

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 telecommunications facility on the roof of the building at 99 Hamilton Avenue in Stamford (the “Property”). The facility will consist of a 17-foot replacement chimney supporting four (4) panel antennas and four (4) remote radio heads (RRHs). The chimney and antennas will extend to a height of 31 feet above ground level. Equipment associated with the facility will be located inside the existing building.

A copy of the Petition is attached for your review. Landowners whose parcels abut the Property were also sent notice of this filing along with a copy of the Petition.

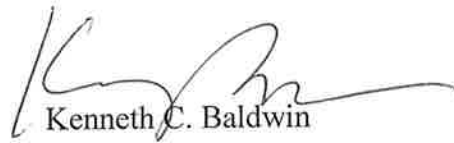
15158473-v1

# Robinson + Cole

David Martin  
September 20, 2016  
Page 2

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

Sincerely,



Kenneth C. Baldwin

Attachment

September 20, 2016

*Via Certificate of Mailing*

CubeSmart LP  
P.O. Box 320099  
Alexandria, VA 22320

Re: **Proposed Installation of a Roof-Top Wireless Telecommunications Facility at  
99 Hamilton Avenue, Stamford, 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 new telecommunications facility on the roof of the building at 99 Hamilton Avenue in Stamford (the “Property”). The facility will consist of a 17-foot replacement chimney supporting four (4) panel antennas and four (4) remote radio heads (RRHs). The chimney and antennas will extend to a height of 31 feet above ground level. Equipment associated with the facility will be located inside the existing building.

A copy of the Petition is attached for your review. Landowners whose parcels abut the Property were also sent notice of this filing along with a copy of the Petition.

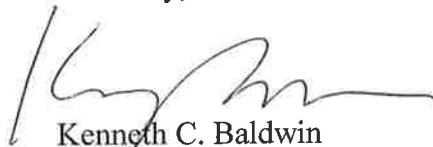
15158513-v1

# Robinson + Cole

CubeSmart LP  
September 20, 2016  
Page 2

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

Sincerely,



Kenneth C. Baldwin

Attachment



# **ATTACHMENT 8**

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

September 20, 2016

*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 Roof-Top Wireless Telecommunications Facility at 99 Hamilton Avenue, Stamford, 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 telecommunications facility on the roof of the building at 99 Hamilton Avenue in Stamford (the “Property”). The facility will consist of a 17-foot replacement chimney supporting four (4) panel antennas and four (4) remote radio heads (RRHs). The chimney and antennas will extend to a height of 31 feet above ground level. Equipment associated with the facility will be located inside the existing building. A copy of the Petition is attached for your review.

This notice is being sent to you because you are listed on the Town Assessor’s records 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.

September 20, 2016  
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 extending to the right.

Kenneth C. Baldwin

Attachment

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

**ABUTTING PROPERTY OWNERS**

**99 HAMILTON AVENUE  
STAMFORD, CONNECTICUT**

	<b>Property Address</b>	<b>Owner's and Mailing Address</b>
1.	88 Hamilton Avenue	88 Hamilton Avenue Associates LLC 1 Atlantic Street, 4 <sup>th</sup> Floor Stamford, CT 06901
2.	121 Hamilton Avenue	HL LLC c/o Paul Greenberg P.O. Box 466 Shelton, CT 06484
3.	68 Lawn Avenue	City of Stamford Housing Authority d/b/a Charter Oak Communities Attn: Christine Young 22 Clinton Avenue Stamford, CT 06901
4.	109 Hamilton Avenue, Unit #1	109 Hamilton Avenue #1 LLC 109 Hamilton Avenue #1 Stamford, CT 06902
5.	109 Hamilton Avenue, Unit #2	109 Hamilton Avenue #2 LLC 109 Hamilton Avenue #2 Stamford, CT 06902
6.	109 Hamilton Avenue, Unit #3	Robert Boucher 60 Heritage Lane Stamford, CT 06903
7.	109 Hamilton Avenue, Unit #4	Compass Corporate Housing LLC 124 Old Colony Avenue Quincy, MA 02107
8.	109 Hamilton Avenue, Unit #5	Collectible Cars LLC 180 Pear Tree Point Road Darien, CT 06820-5821

	<b>Property Address</b>	<b>Owner's and Mailing Address</b>
9.	109 Hamilton Avenue, Unit #6	Collectible Cars LLC 180 Pear Tree Point Road Darien, CT 06820-5821
10.	109 Hamilton Avenue, Unit #7	Collectible Cars LLC 180 Pear Tree Point Road Darien, CT 06820-5821
11.	109 Hamilton Avenue, Unit #8	Phillip and Donna Franchina, et al 95 Intervale Road #36 Stamford, CT 06905-1342
12.	109 Hamilton Avenue, Unit #9	Complete Solutions LLC 109 Hamilton Avenue #9 Stamford, CT 06902
13.	109 Hamilton Avenue, Unit #10	Lopiano Management LLC 109 Hamilton Avenue #10 Stamford, CT 06902
14.	109 Hamilton Avenue, Unit #11	Steven Biggica LLC, et al Debra Biggica LLC 14 Mercedes Lane Stamford, CT 06905-2605
15.	109 Hamilton Avenue, Unit #12	Steven Biggica LLC, et al Debra Biggica LLC 14 Mercedes Lane Stamford, CT 06905-2605
16.	109 Hamilton Avenue, Unit #15	Compass Corporate Housing LLC 127 Greylock Place Stamford, CT 06901
17.	109 Hamilton Avenue, Unit #16	Jens Johnson Real Estate LLC 109 Hamilton Avenue, Unit 16 Stamford, CT 06902
18.	109 Hamilton Avenue, Unit #17	Unit 17 LLC 807 Lake Avenue Greenwich, CT 06831
19.	109 Hamilton Avenue, Unit #18	Unit 18 LLC 807 Lake Avenue Greenwich, CT 06831