

September 1, 2015

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

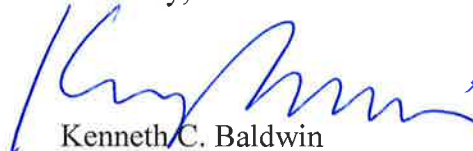
Re: **Petition No. 1182 – Petition for a Declaratory Ruling on the Need to Obtain a Siting Council Certificate for the Installation of a Roof-Top Telecommunications Facility on the Roof of the Building at 11 Windermere Avenue, Vernon, Connecticut**

Dear Ms. Bachman:

On August 25, 2015, Cellco Partnership d/b/a Verizon Wireless (“Cellco”) filed the above-referenced Petition for Declaratory Ruling for the establishment of a small cell telecommunications tower on the roof of the building at 11 Windermere Avenue in Vernon, CT. After the Petition was filed, Cellco’s radio frequency (RF) engineers determined that the installation of a remote radio head (“RRH”) would also be required at this facility. The RRH would be installed on the tower below the small cell canister antenna. Enclosed please find fifteen (15) copies of a revised Plan Sheet C-2 showing the antenna and tower elevation with the proposed RRH and the RRH2X60-AWS specification sheet.

If you have any questions or need any additional information regarding this minor modification to the submission please feel free to contact me.

Sincerely,



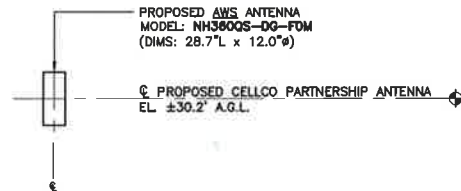
Kenneth C. Baldwin

KCB/kmd  
Enclosures  
Copy to:  
Mark Brauer

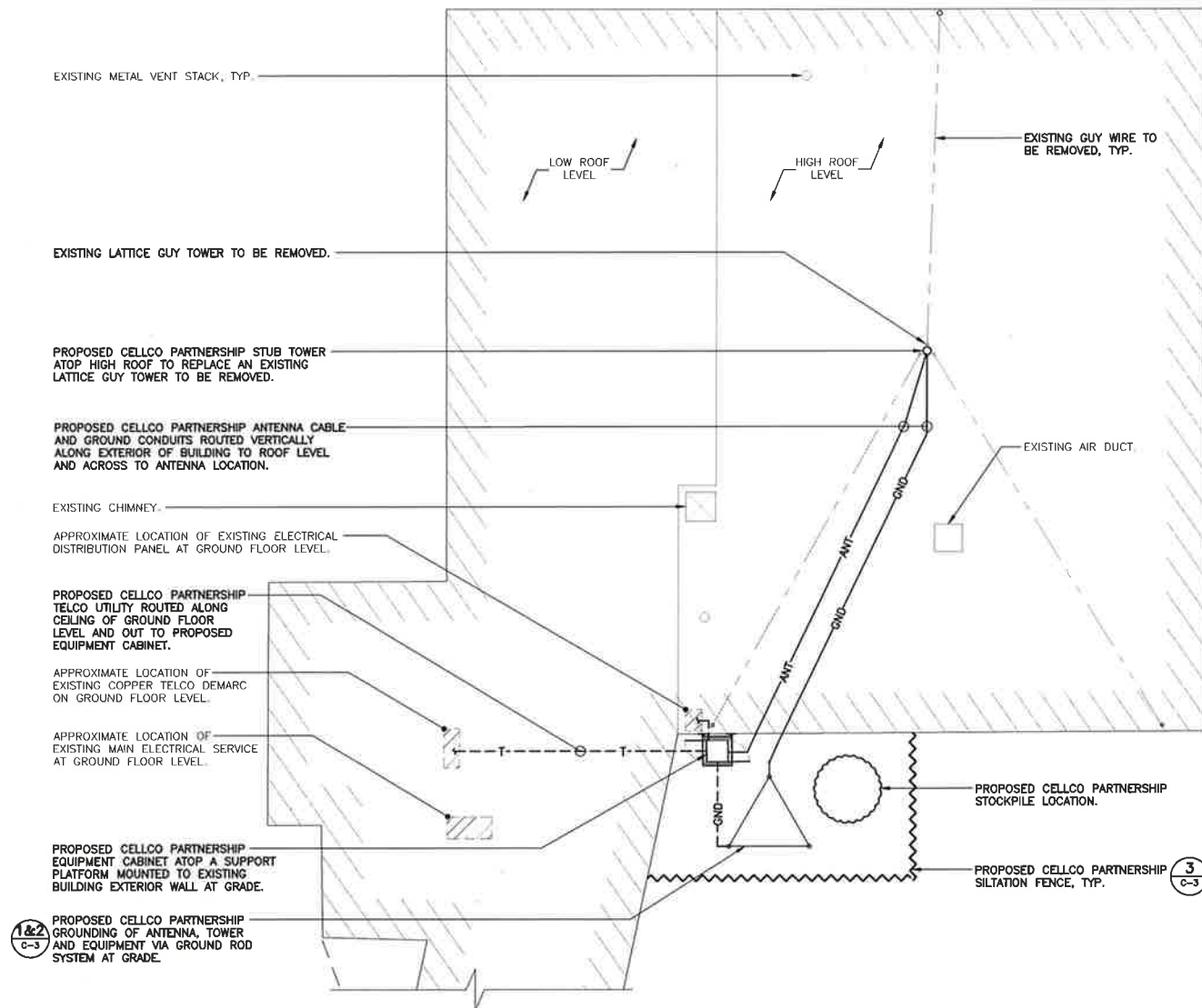
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**REMOTE RADIO HEAD MOUNTING NOTE**

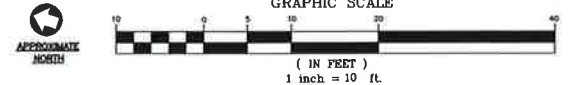
- AWS RRH (MODEL: ALJ RRH2x60-AWS)  
(DIMS: 36.7" L x 10.6" W x 5.8" D) (TYP. OF 1)  
MOUNTED TO PROPOSED STUB TOWER. SEE ELEVATION FOR LOCATIONS.



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

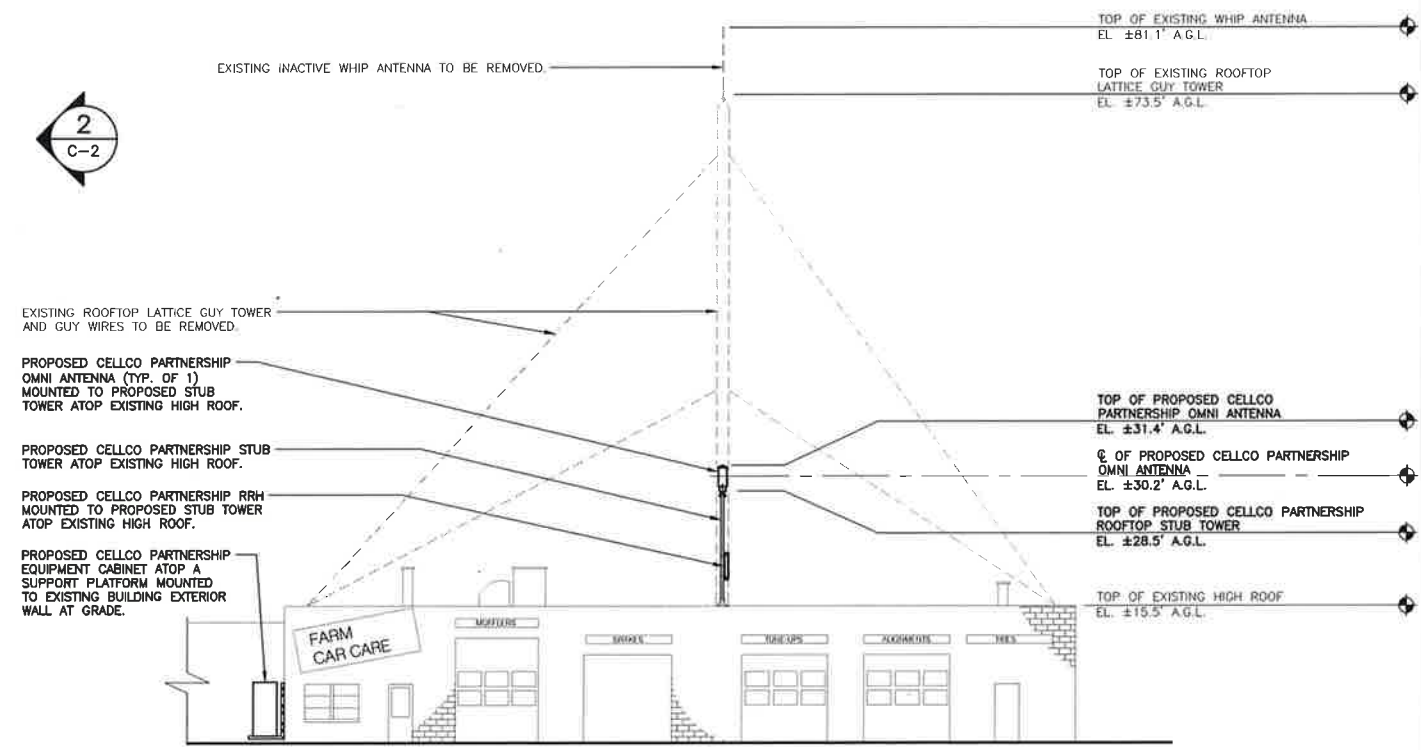


**1 PARTIAL ROOF/SITE PLAN**  
C-2 SCALE: 1" = 10'

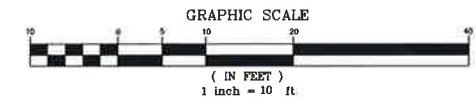


- TOWER STRUCTURAL NOTES:**
1. LOCATION OF PROPOSED CELCO PARTNERSHIP ANTENNA AND STUB TOWER ARE SUBJECT TO STRUCTURAL REVIEW OF HOST BUILDING CONSIDERING EXISTING AND PROPOSED LOADINGS.
  2. TOWER STRUCTURE TO COMPLY WITH LOADING AND DESIGN REQUIREMENTS PRESCRIBED BY THE 2003 INTERNATIONAL BUILDING CODE PORTION OF THE 2005 CONNECTICUT STATE BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.
  3. ALL ANTENNAS AND ANTENNA CABLES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL VERIZON WIRELESS RF DATA SHEET.

**2**  
C-2



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



REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
2	09/01/15	HMR	CFC	ISSUED FOR CSC - REVISED TO SHOW RRH ON PROPOSED STUB TOWER
1	12/02/14	DMD	CFC	ISSUED FOR CSC
0	11/19/14	HMR	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Celco Partnership  
d.b.a. Verizon Wireless

**CENITEK engineering**  
Centered on Solutions™  
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12031 484-0807 Fax  
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Branford, CT 06405  
www.CenitekEng.com

Celco Partnership d/b/a Verizon Wireless  
WIRELESS COMMUNICATIONS FACILITY  
**ROCKVILLE SC1**  
11 WINDERMERE AVE.  
VERNON, CT 06066

DATE: 11/16/14  
SCALE: AS NOTED  
JOB NO. 14222.000  
PARTIAL ROOF/SITE PLAN, ELEVATION AND ANTENNA MOUNTING CONFIG.

**C-2**  
Sheet No. 3 of 4

# 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.

### SUPERIOR RF PERFORMANCE

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.

### OPTIMIZED TCO

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.

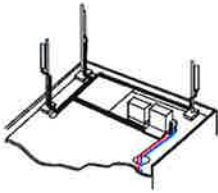
### EASY INSTALLATION

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.

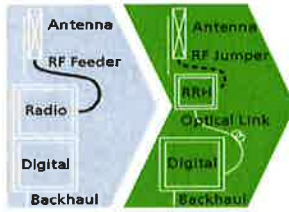
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

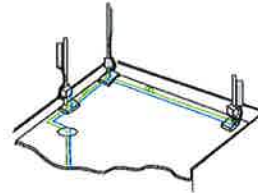
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

## FEATURES

- 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

## BENEFITS

- 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.

## TECHNICAL SPECIFICATIONS

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

### Dimensions and weights

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

### Electrical Data

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

### RF Characteristics

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

### Connectivity

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

### Environmental specifications

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

### Safety and Regulatory Data

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

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