

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A SUB-PETITION OF CELLCO	:	SUB-PETITION NO. 1133
PARTNERSHIP D/B/A VERIZON WIRELESS	:	168 CATOONA LANE
FOR THE SHARED USE OF AN EXISTING	:	STAMFORD, CT
WIRELESS TELECOMMUNICATIONS	:	
FACILITY AT 168 CATOONA LANE,	:	
STAMFORD, CONNECTICUT	:	AUGUST 4, 2016

SUB-PETITION FOR DECLARATORY RULING:
ELIGIBLE FACILITIES REQUEST FOR MODIFICATIONS
THAT WILL NOT SUBSTANTIALLY CHANGE THE
PHYSICAL DIMENSIONS OF AN EXISTING BASE STATION

I. Introduction

Pursuant to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, codified at 47 U.S.C. § 1455(a) (“Section 6409(a)”) and the October 21, 2014 Report and Order (FCC-14-153) issued by the Federal Communications Commission (“FCC”) (the “FCC Order”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Sub-Petition”) that the installation of a single canister antenna and related telecommunications equipment at the existing wireless telecommunications base station at 168 Catoona Lane in Stamford, Connecticut (the “Property”) constitutes an Eligible Facilities Request (“EFR”) under the FCC Order. Cellco has designated this site as its “Stamford West 3 Facility”.

II. Factual Background

The Property is a 3.64-acre parcel located in Stamford’s M-L (Light Industrial) zone district. The Property and the existing 300-foot lattice tower are owned by American Tower Corporation (“ATC”). The Property is surrounded by commercial and residential uses along

Catoona Lane, Myano Lane and Progress Drive. See Attachment 1 – Site Vicinity Map and Site Schematic (Aerial Photograph). According to information available at Stamford City Hall, ATC acquired this former American Telephone and Telegraph (AT&T) Corporation in 2000. There is no information available in City records that indicates when the tower ever received or was required to receive local zoning approval. Stamford Building Department records, however, indicate that the tower was built in 1968. (See Attachment 2). The tower is currently shared by T-Mobile, with antennas at the 265-foot level; AT&T, with antennas at the 238-foot level; Sprint, with antennas at the 222-foot and 150-foot levels; Clearwire, with antennas at the 171-foot level; and Metro PCS, with antennas at the 150-foot level. Equipment associated with the existing antennas and several other buildings are located near the base of the tower. The entire Property is surrounded by a security fence with access off Catoona Lane.

Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges in Stamford and throughout the State of Connecticut. Cellco's proposed Stamford West 3 Facility described in this filing will provide improved wireless coverage and, more importantly, significant capacity relief to Cellco's existing wireless network in Stamford.

III. Proposed Stamford West 3 Facility

Cellco intends to install a total of twelve (12) antennas and nine (9) remote radio heads ("RRHs") on the northwest, northeast and southeast corners of this square lattice tower at a height of 92 feet above ground level. Cellco will also install a 12' x 26' equipment platform and canopy structure near the base of the tower. The platform will support Cellco's equipment cabinets. Power and telephone service will extend from the existing service at the tower site. Project Plans for the Stamford West 3 Facility are included in Attachment 3. Specifications for

Cellco's antennas and equipment are included in Attachment 4. A Structural Analysis Report confirming that the tower can support Cellco's antenna and related equipment modifications is included in Attachment 5.

IV. Discussion

A. The Proposed Modification Will Not Cause a Substantial Change to the Physical Dimensions of the Existing Base Station

Section 6409(a) provides, in relevant part, that "a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station." Pursuant to the FCC Order, the proposed modification does not substantially change the physical dimensions of the base station if the following criteria are satisfied.

1. *The proposed modified facility will not increase the height of the tower by more than ten (10) percent of the height.* Cellco does not intend to increase the height of the existing tower. Cellco's antennas and RRHs will be located at the 92-foot level on the existing 300-foot tower.

2. *The proposed facility modification will not protrude from the edge of the structure more than six (6) feet.* Cellco's antennas and RRHs will not protrude more than six (6) feet from the face of the tower.

3. *The proposed facility does not involve installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets.* Cellco intends to install two equipment cabinets on a steel equipment platform.

4. *The proposed facility does not entail any excavation or deployment outside the current site of the base station.* Cellco's proposed modification will remain within the limits of the Property.

5. *The proposed facility does not defeat the existing concealment elements of the base station.* There are no concealment elements incorporated into the existing base station tower and none are proposed by Cellco.

6. *The proposed facility complies with conditions associated with the prior approval of construction or modification of the base station.* There is no information available in City of Stamford records that would indicate whether the existing tower has received or was required to receive any type of local zoning approval. Building Department records indicate the tower was originally constructed in 1968. (See Attachment 2).

B. FCC Compliance

Included in Attachment 6 is a cumulative worst case General Power Density table for Cellco's proposed antennas confirming that the facility will operate within the FCC safety standards for radio frequency emissions.

C. Notice to the City, Property Owner and Abutting Landowners

On August 4, 2016, a copy of this Sub-Petition was sent to Stamford's Mayor, David Martin; and ATC, the owner of the Property and the tower. A copy of the cover letter sent to Mr. Martin and ATC are included in Attachment 7. A copy of this Sub-Petition was also sent to the owners of land that abuts the Property. A sample abutter's cover letter and the list of those abutting landowners who were sent notice and a copy of this filing is included in Attachment 8.

V. Conclusion

Based on the information provided above, Cellco respectfully submits that the proposed modification of the existing base station at the Property constitutes an "eligible facilities request" under Section 6409(a) and the FCC Order.

Respectfully submitted,

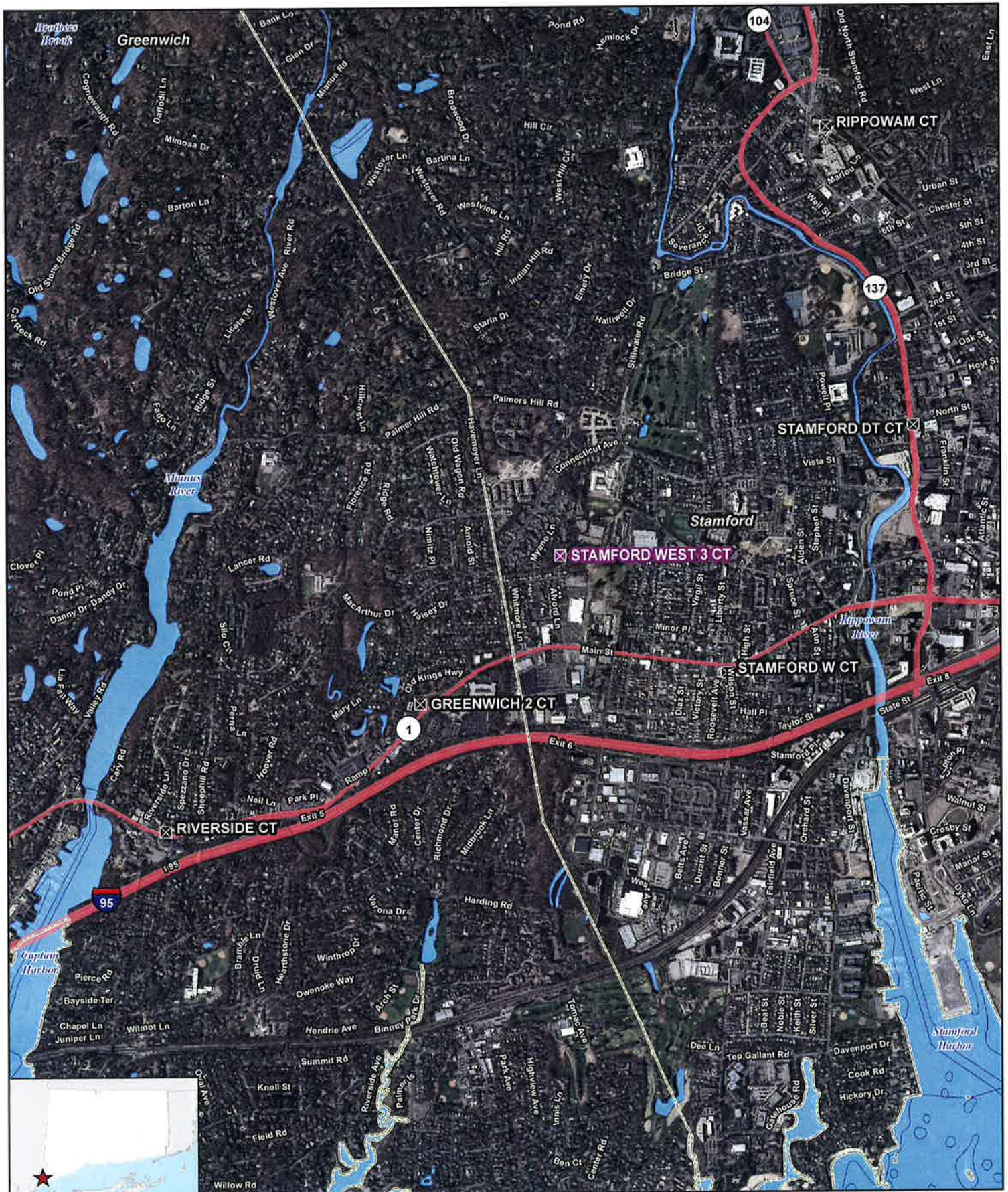
CELLCO PARTNERSHIP d/b/a VERIZON
WIRELESS

By

A handwritten signature in blue ink, appearing to read "K. Baldwin", is written over a horizontal line.

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

ATTACHMENT 1

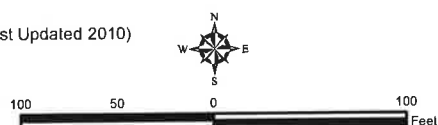




Legend

- Proposed Verizon Wireless Equipment Lease Areas
- Existing Self-Support Tower (By Others)
- Existing Compound Area (By Others)
- 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: June 2016



Site Schematic

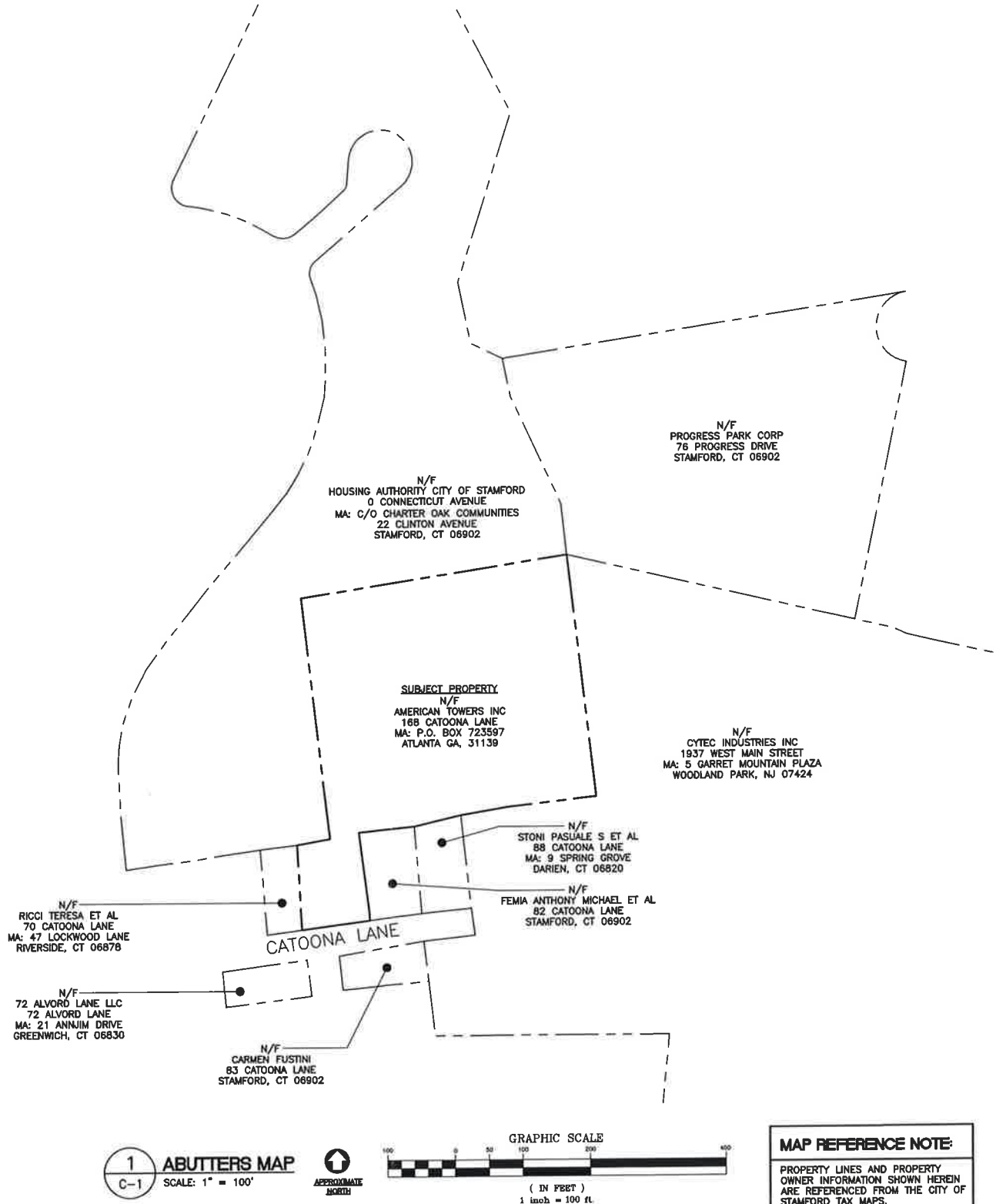
Proposed Wireless
Telecommunications Facility
Stamford West 3
168 Catoona Lane
Stamford, Connecticut

verizon

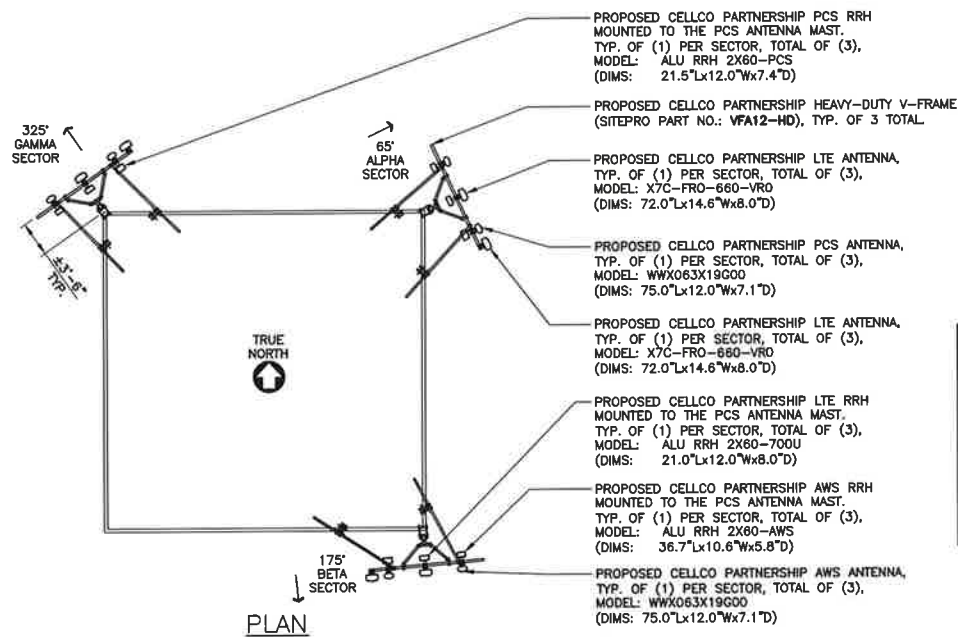


ATTACHMENT 2

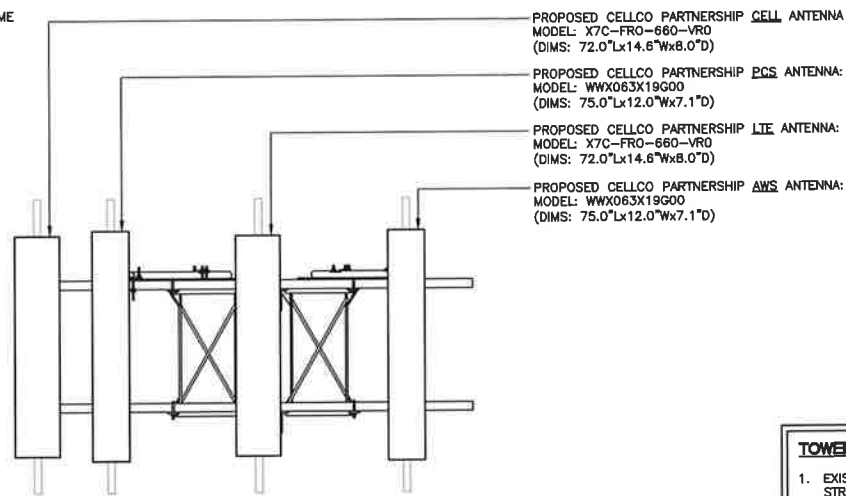
ATTACHMENT 3



CENTEK engineering Certified on Solutions		verizon	
Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY STAMFORD WEST 3 168 CATOONA LANE STAMFORD, CT 06902		DATE: 07/13/2016 SCALE: AS NOTED JOB NO. 14186.00	
ABUTTERS MAP		C-1	
Sheet No. 2 of 3		ISSUED FOR CT SITING COUNCIL ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW REV. DATE DRAWN BY CHK'D BY DESCRIPTION	



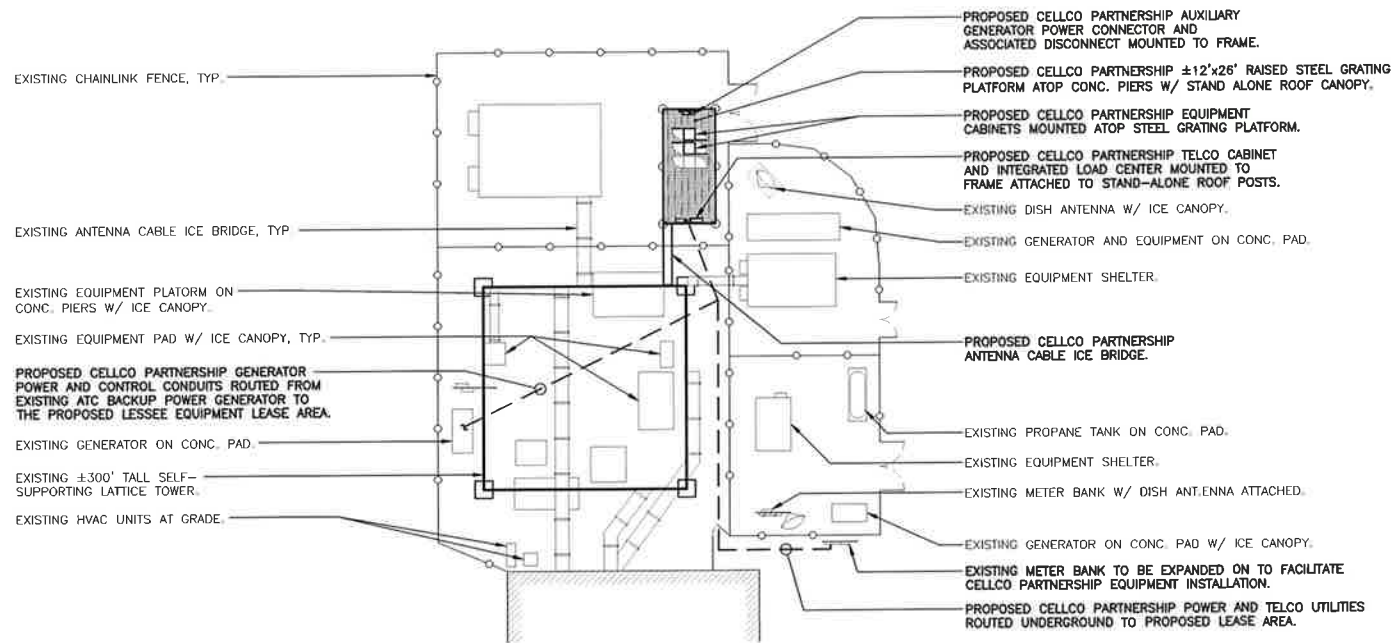
3 ANTENNA MOUNTING CONFIGURATION
C-2 NOT TO SCALE



TOWER NOTES:

- EXISTING ANTENNAS NOT SHOWN FOR CLARITY. REFER TO STRUCTURAL ANALYSIS FOR EXISTING ANTENNA INFORMATION.
- REFER TO TOWER STRUCTURAL ANALYSIS AND MODIFICATION DESIGN AS PREPARED BY AMERICAN TOWER CORPORATION (ATC), DATED SEPTEMBER 23, 2015. ATC SITE NUMBER: 283425, ATC ENGINEERING NUMBER: 63688023.

EXISTING ±300' TALL SELF-SUPPORTING LATTICE TOWER.



1 FACILITY PLAN
C-2 SCALE: 1" = 20'



☉ OF PROPOSED CELLCO PARTNERSHIP ANTENNAS
EL. ±92' A.G.L.

2 TOWER ELEVATION
C-2 SCALE: 1" = 20'

Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY STAMFORD WEST 3 168 CATOONA LANE STAMFORD, CT 06902		CENTEK engineering Continued On Solutions™ (203) 488-0590 (203) 488-8337 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com	PROFESSIONAL ENGINEER SEAL 	ISSUED FOR CT SITING COUNCIL ISSUED FOR CT SITING COUNCIL - CLIENT REVIEW DATE DRAWN BY CHECKED BY REV.
DATE: 07/13/2016 SCALE: AS NOTED JOB NO. 14186.00 COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIG.		C-2 Sheet No. 3 of 3		

ATTACHMENT 4

X7C-FRO-660

X-Pol Antenna, 698-896 MHz, (72.0", 60° H-Beam)

- Fast Roll Off (FRO)
- Designed to improve SNR
- Greatly increases LTE data rates
- Macro Cell High Gain Antenna
- Highly Reliable Fixed Tilt Design
- Suitable for LTE/CDMA/UMTS/GSM
- Mechanical Tilt Bracket Included

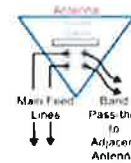


Available with Integrated Diplexers

Reduces mainline cables

Eliminates External Tower Devices

Supports high band TMAs



ELECTRICAL SPECIFICATIONS

Frequency Band, MHz	698-824	824-896
Horizontal Beam Width, 3dB points	58°	
Gain, dBi	16.5	17.2
Vertical Beam Width, 3dB points	11.0°	
Front-to-Back at 180°, dB	>30	
Upper Side Lobe Suppression, Typical, dB	<-18	
Polarization	+/-45°	
Electrical Down Tilt, Fixed	0, 2, 4, 6, 8, 10°	
VSWR/Return Loss, dB, Maximum (Non-IP)	1.4:1/-15.6	
VSWR/Return Loss, dB, Maximum (With-IP)	1.5:1/-14.0	
Return Loss, dB Maximum, Pass Thru	-17.7	
Isolation Between Ports, dB, Minimum	27	
Intermodulation (2x20w), IM3, dBc, Maximum	-150	
Impedance, ohms	50	
Maximum Power Per Connector, CW	500 @ 800 MHz	

MECHANICAL SPECIFICATIONS

Dimensions, Length/Width/Depth	72.0/14.6/8.0 in. (1829/372/203mm)
Connector (Quantity)	(2 or 4) 7-16 DIN Female
Connector Torque	220-265 lbf-in (23-30 N-m)
Connector Location	Back
Antenna Weight	32.2 lbs (14.6 kg) <i>Note: Weight varies slightly based on ordering options</i>
Bracket Weight	13.2 lb. (6.0 kg)
Standard Bracket Kit	CSS P/N 919011 (Included)
Mechanical Down Tilt Range	0-12°
Radome Material	High Strength Luran, UV Stabilized, ASTM D1925
Wind Survival	150 mph (241 km/h)
Front Wind Load	211.6 lbf (941.4 N) @100mph
Equivalent Flat Plate	4.22 sq-ft (c=2) @ 100mph

ORDER INFORMATION

MODEL	DESCRIPTION
X7C-FRO-660- x	X-Pol antenna with two back DIN connectors
X7C-FRO-660- x -IP	X-Pol antenna with four back DIN connectors with integrated pass thru diplexers
919036	Optional Bracket Kit, 2-Point, 12deg D-tilt, For 4.5" OD Pole

x defines the electrical tilt

X7C-FRO-640-V

X-Pol Antenna, 698-896MHz, 72", Fast Roll Off 40° Azimuth
 Variable E-Tilt, RET/MET

- Macro Cell, high gain antenna
- Fast Roll Off (FRO)
- Suitable for LTE/CDMA/UMTS/GSM
- AISG 2.0 RET or manual MET tilt control



ELECTRICAL SPECIFICATIONS

Frequency Band, MHz	698-824	824-896
Horizontal Beam width, 3dB points	46°	36°
Gain, dBi	17.3	18.5
Vertical Beam width, 3dB points	12.1°	10.2°
Front-to-Back at 180°, dB	24	
Upper Side Lobe Suppression, Typical, dB	18	
Polarization	Circular	
Electrical Down tilt	0-10° or 4-14°	
VSWR/Return Loss, dB, Maximum	1.5:1/-14.0	
Isolation Between Ports, dB, Minimum	28	
Intermodulation (2x20w), IM3, dBc	-150	
Impedance, ohms	50	
Maximum Power Per Connector, CW (w)	500	

MECHANICAL SPECIFICATIONS

Dimensions, Length/Width/Depth	72.0/18.8/9.1 in (1829/479/231 mm)
Connector (Quantity) Type	(2) 7-16 DIN Female
Connector Torque	220-265 lbf-in (23-30 N-m)
Connector Location	Back
Antenna Weight	42.4 Lbs (19.3 Kg)
Bracket Weight	13.4 lb (6.0 kg)
Standard Bracket Kit	P/N 919011 (Included)
Mechanical Downtilt Range	0-12°
Radome Material	High Strength Luran, UV Stabilized, ASTM D1925
Wind Survival	150 mph (241 km/h)
Front Wind Load	225.9 lbf (1005.1 N)
Equivalent Flat Plate	4.51 sq-ft (c=2)

RET INFORMATION

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

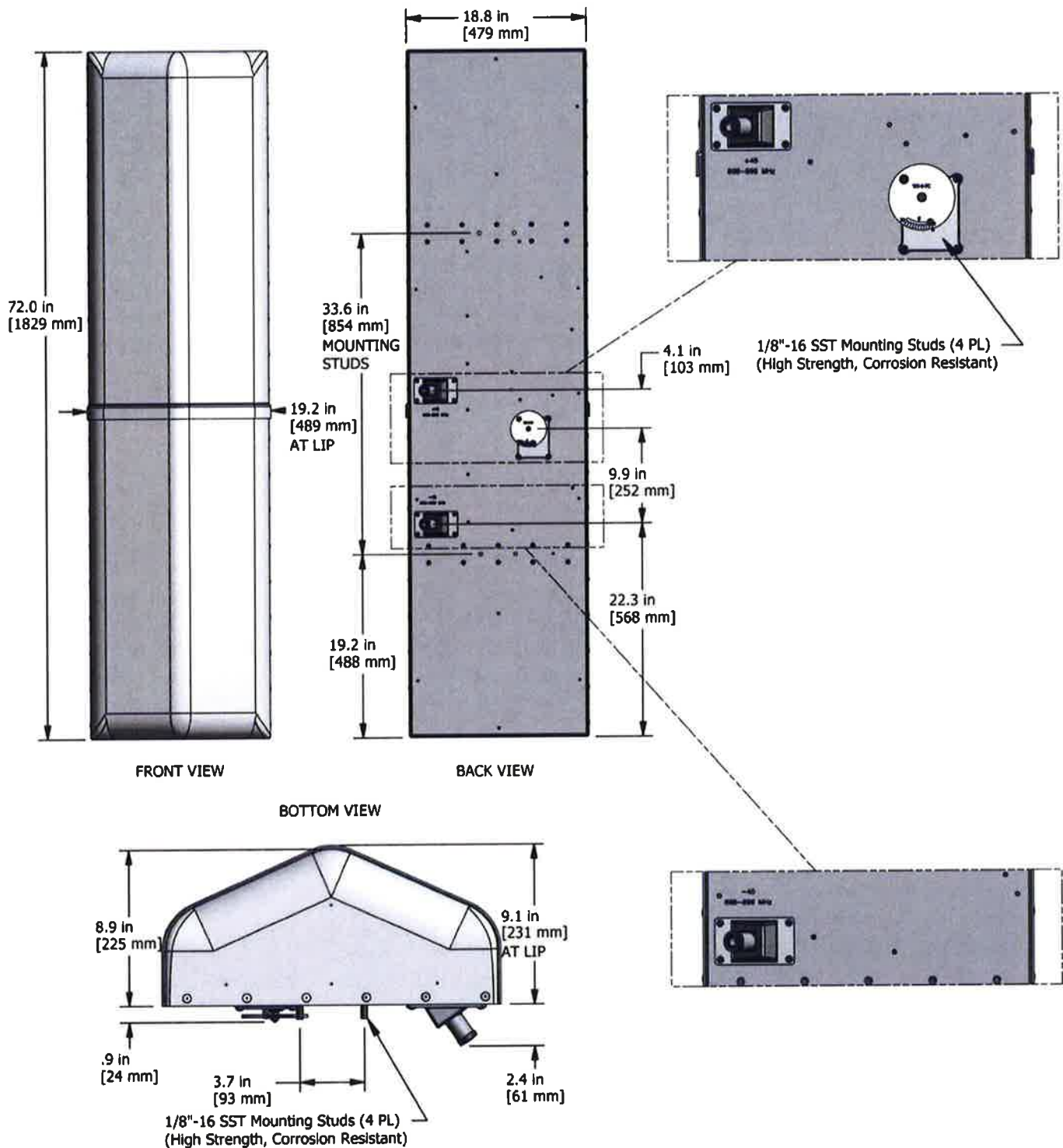


ORDER INFORMATION

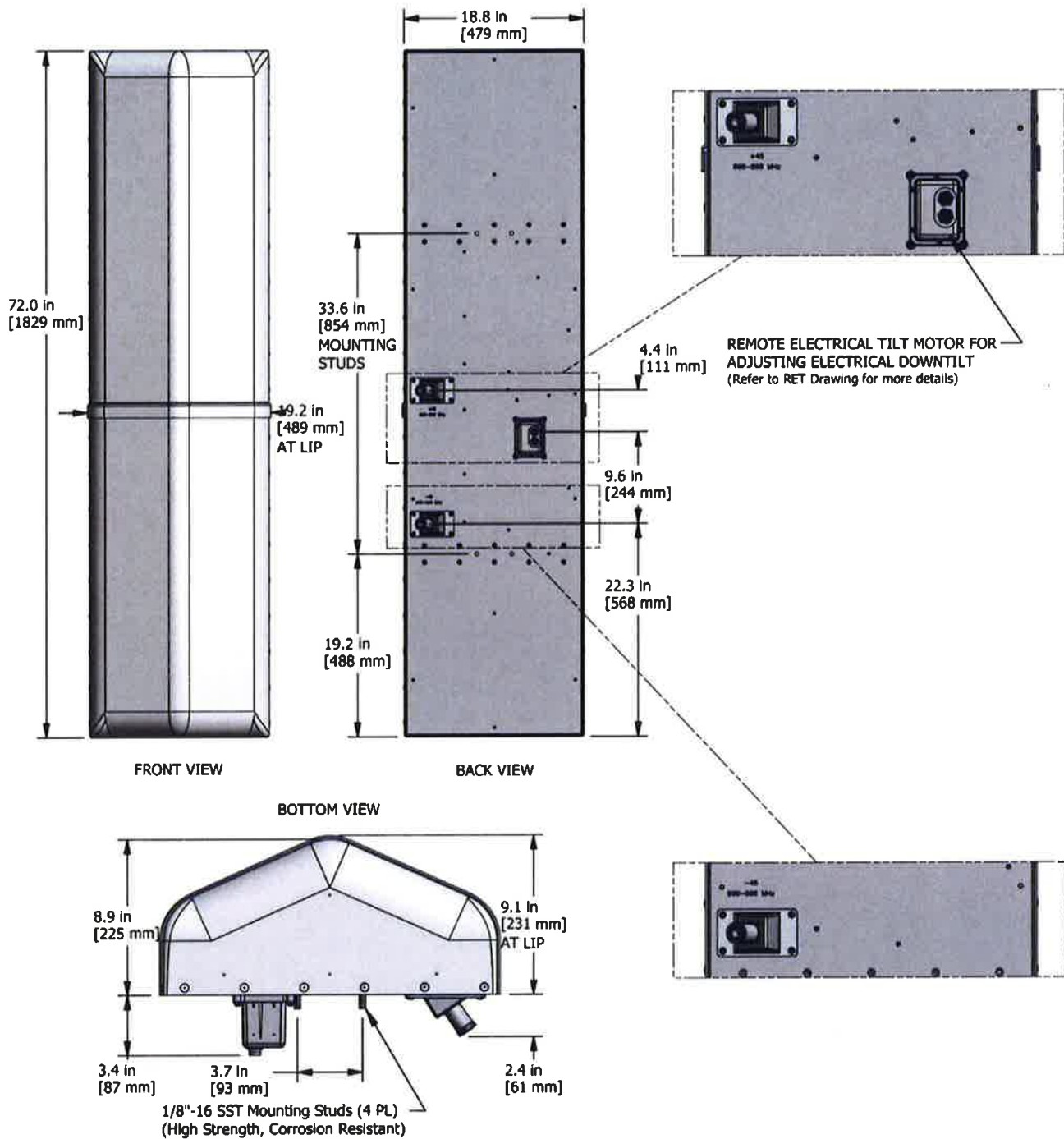
MODEL	DESCRIPTION
X7C-FRO-640-VM0	Antenna with manual MET adjust electrical downtilt 0-10°
X7C-FRO-640-VM4	Antenna with manual MET adjust electrical downtilt 4-14°
X7C-FRO-640-VR0	Antenna with remote RET adjust electrical downtilt 0-10°
X7C-FRO-640-VR4	Antenna with remote RET adjust electrical downtilt 4-14°
919036	Optional Bracket Kit, 2-Point, 12deg D-tilt, For 4.5" OD Pole

Mechanical Outline Drawing

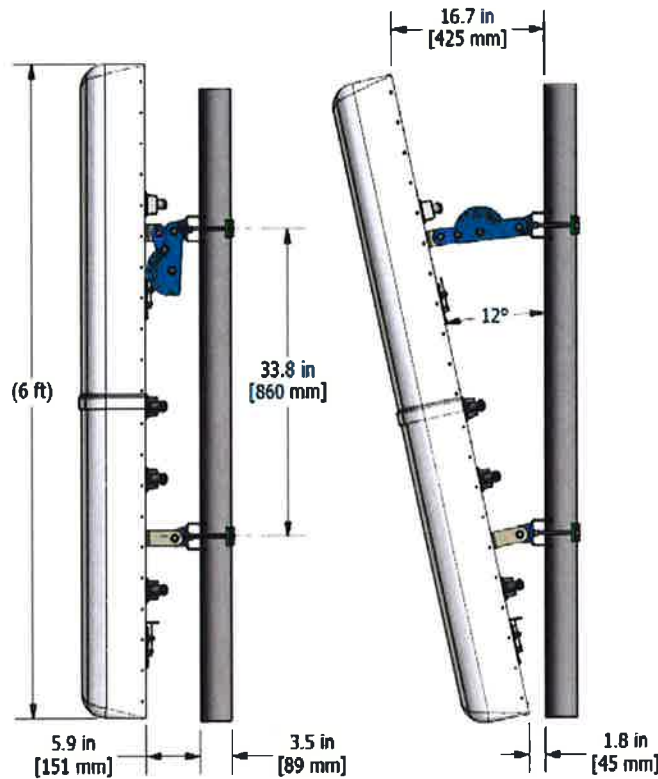
X7C-FRO-640-VM



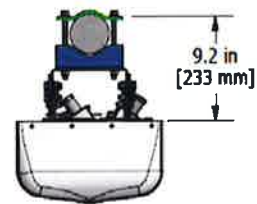
X7C-FRO-640-VR



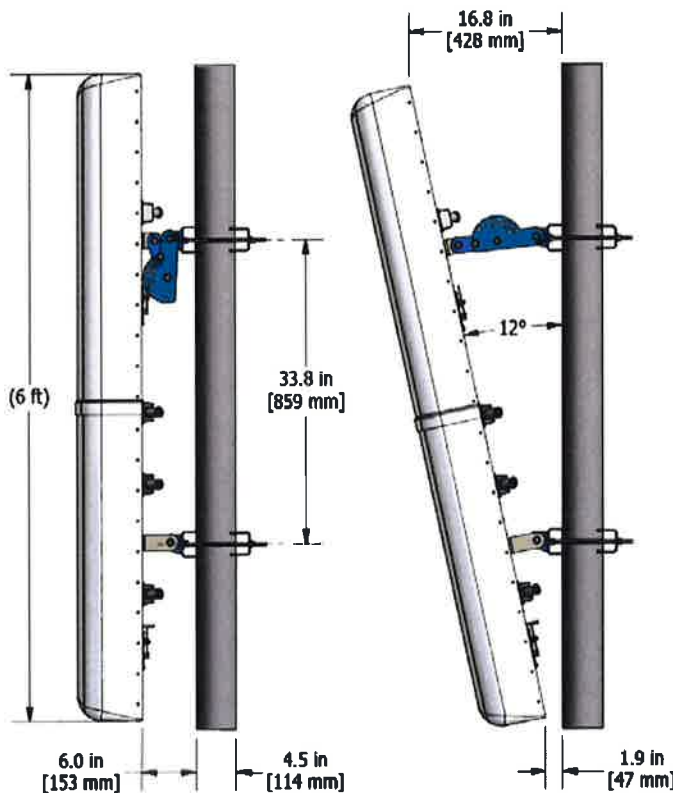
Standard Bracket Kit



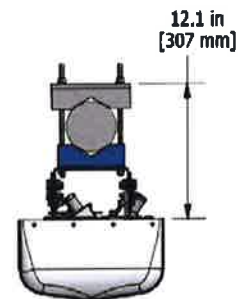
CSS P/N: 919011 BRACKET KIT
2 POINT, 12 DEGREE DOWN TILT
SHOWN MOUNTED ON 3.5" O.D. POLE
3.5" O.D. MAX POLE SIZE



Optional Bracket Kit



CSS P/N: 919036 BRACKET KIT
2 POINT, 12 DEGREE DOWN TILT
SHOWN MOUNTED ON 4.5" O.D. POLE
4.5" O.D. MAX POLE SIZE



WWX063X19x00

Twin Band | Panel Antenna | 2x X-Pol | 65° / 65° | 19.0 / 19.0 dBi | Variable Tilt

- Twin band, 2x X-Pol (Quad-Pol), variable tilt, panel antenna
- Part of Amphenol's UNIVERSAL series of antennas featuring consistent form factors for future-proofing
- Patented internal RET actuator adds no additional length to the antenna
- Can be used with our UNICELL 3-sector antenna enclosures
- Features an adjustable mounting bracket channel for custom mounting in any situation

Ordering Options		Model Number	
When ordering, replace "x" in the model number with one of the options listed below.			
Manual Electrical Tilt		WWX063X19M00	
Remote Electrical Tilt AISG v1.1		WWX063X19R00	
Remote Electrical Tilt AISG v2.0 / 3GPP		WWX063X19G00	
Mounting bracket kits and other accessories are ordered separately.			
Electrical Characteristics		2 x 1710-2170 MHz	
Frequency Bands		1710-1880 MHz	1850-1990 MHz 1900-2170 MHz
Polarization		2 x ±45° (Quad-Pol)	
Horizontal Beamwidth		70°	67° 66°
Vertical Beamwidth		5°	4.5° 4°
Gain		18.3 dBi	18.6 dBi 19.0 dBi
Electrical Downtilt		0-10°	
Impedance		50Ω	
VSWR		< 1.5:1	
Upper Sidelobe Suppression		< -17 dB Typical	
Front-to-Back Ratio		> 27 dB	
In-Band Isolation		> 30 dB	
Isolation Between Ports		> 30 dB	
IM3 (2x20W carrier)		< -153 dBc	
Input Power		250 W	
Total Number of Connectors		Antennas has 4 connectors located at the bottom	
Connectors Per Band, Type, Location	1710-2170 MHz	2 Connectors / 7/16-DIN Female / Bottom / Blue Rings	
	1710-2170 MHz	2 Connectors / 7/16-DIN Female / Bottom / White Rings	
Diplexed		No	
Lightning Protection		Direct Ground	
Operating Temperature		-40° to +60° C (-40° to +140° F)	
Mechanical Characteristics			
Dimensions (Length x Width x Depth)		1906 x 307.3 x 177.2 mm	75.0 x 12.1 x 7.0 in
Weight without Mounting Brackets: MET		14.5 kg	32.0 lbs
Weight without Mounting Brackets: RET		14.8 kg	32.7 lbs
Survival Wind Speed		241 km/hr	150 mph
Wind Loads (160 km/hr or 100 mph)	Front	707 N	159 lbf
	Side	419 N	94 lbf



Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

WWX063X19x00

Twin Band | Panel Antenna | 2x X-Pol | 65° / 65° | 19.0 / 19.0 dBi | Variable Tilt

Electrical Downtilt Control

Electrical downtilt for each band can be controlled separately. Tilt indicator(s) are covered by removable transparent cap(s).

Manual Electrical Tilt (MET) Control	A colored knob at the end of the tilt indicator allows change of the tilt without need of a tool. The knob color is identical to the corresponding connector ring color. To access the knob, remove the cap by turning it counter-clockwise. It is re-installed by opposite rotation. Do not remove the transparent cap(s) from the antenna.		
Remote Electrical Tilt (RET) Control	The remote control of the electrical tilt is managed by a module (MDCU) totally inserted at the bottom of the antenna. One single module controls individually the tilt of each band (no need of daisy chain cables between the bands). This module does not add any additional length at the bottom of the antenna. For RET control, the transparent cap must be in place and locked. The tilt angle indicator always remains visible and the antenna still has manual tilt control (manual override).		
RET Module	The RET module is factory installed and does not need to be ordered separately.		
	Part Number for AISG v1.1 protocol:	MDCU-A0000	One unit installed in WWX063X19R00
	Part Number for 3GPP/AISG v2.0 protocol:	MDCU-G0000	One unit installed in WWX063X19G00
Important Installation Instructions	 In order to operate RET control, the transparent caps covering the tilt adjustment indicators must be engaged and locked. Do not cut them from the antenna. Do not install the antenna with the connectors facing upward.		

Mounting Options	Part Number	Image	Fits Pipe Diameter	Weight
------------------	-------------	-------	--------------------	--------

All mounting bracket kits are ordered separately unless otherwise indicated. Select from the options listed below.

3-Point Mounting Bracket Kit	MKS09P02		50-115 mm 2.0-4.5 in	4.1 kg 9 lbs
3-Point Mounting & Downtilt Bracket Kit	MKS09T02		50-115 mm 2.0-4.5 in	6.4 kg 14 lbs

Configuration Options	Part Number	Image	Product Description
-----------------------	-------------	-------	---------------------

This antenna model can be used with Amphenol's UNICELL 3-sector antenna enclosures.

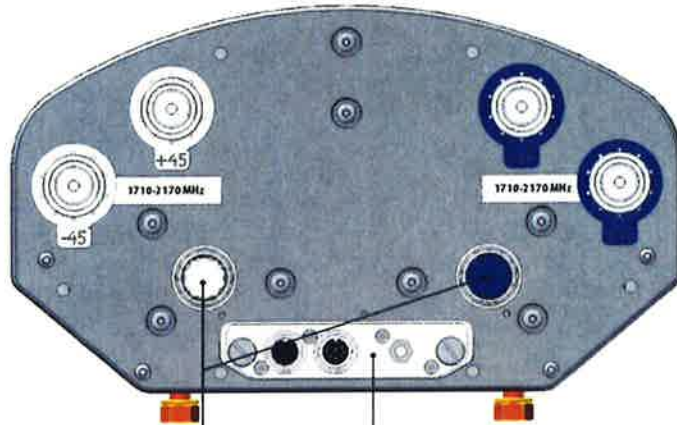
UNICELL 3-Sector Antenna Enclosure	UNX-20-xx		3-Sector, 511 mm (20 inch) diameter antenna enclosure
------------------------------------	-----------	---	---

Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

WWX063X19x00

Twin Band | Panel Antenna | 2x X-Pol | 65° / 65° | 19.0 / 19.0 dBi | Variable Tilt

Bottom View of Antenna



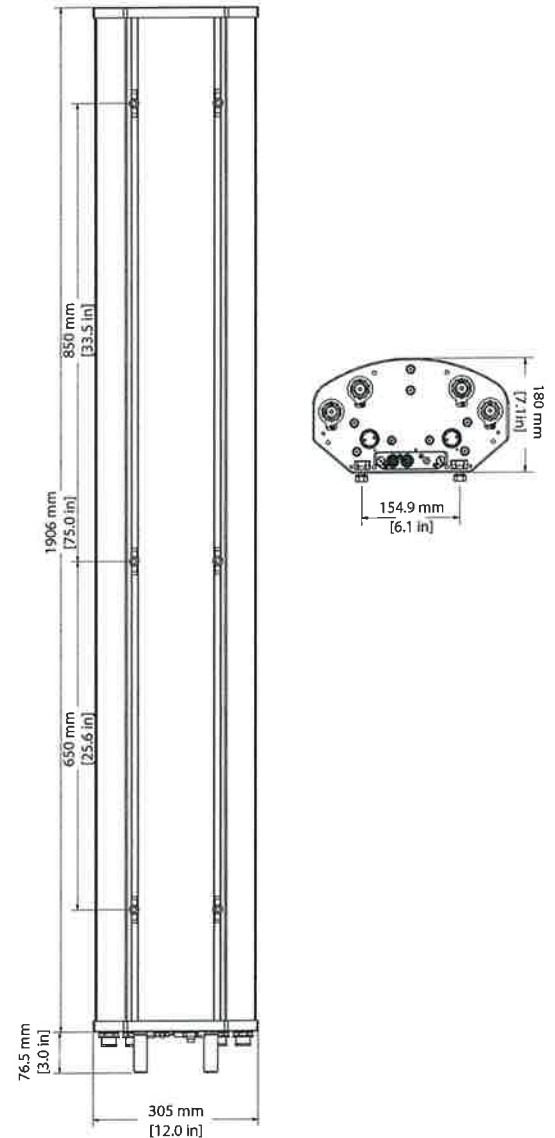
Location of the MDCU
for RET Control

Tilt indicators covered by transparent caps.
Manual adjustment is accessed by removing the caps.
Knob colors are the same as the connectors.



In order to operate RET control, the transparent caps covering the tilt adjustment indicators must be engaged and locked. Do not cut them from the antenna.

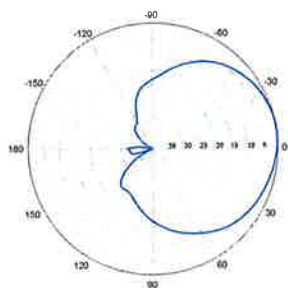
Dimensions



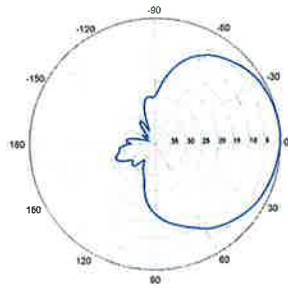
WWX063X19x00

Twin Band | Panel Antenna | 2x X-Pol | 65° / 65° | 19.0 / 19.0 dBi | Variable Tilt

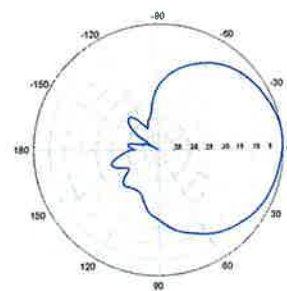
1710-2170 MHz



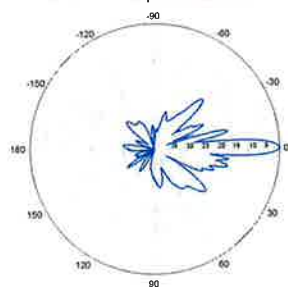
Horizontal | 1800 MHz



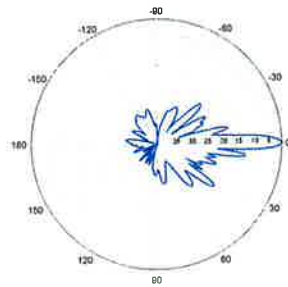
Horizontal | 1900 MHz



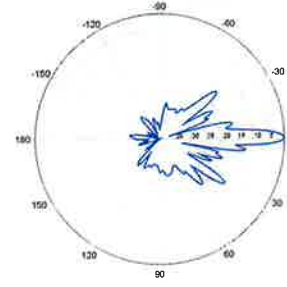
Horizontal | 2100 MHz



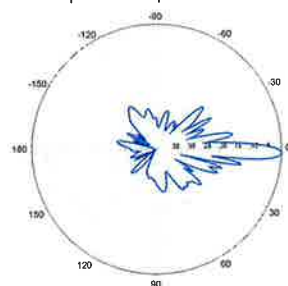
0° | Vertical | 1800 MHz



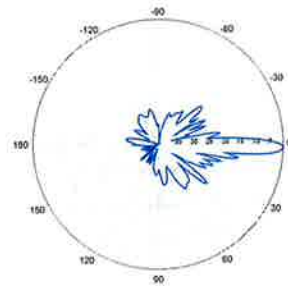
0° | Vertical | 1900 MHz



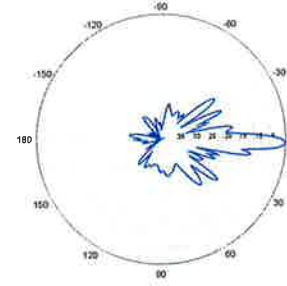
0° | Vertical | 2100 MHz



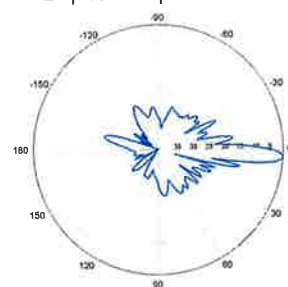
2° | Vertical | 1800 MHz



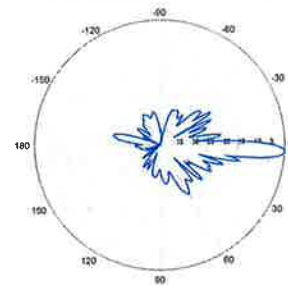
2° | Vertical | 1900 MHz



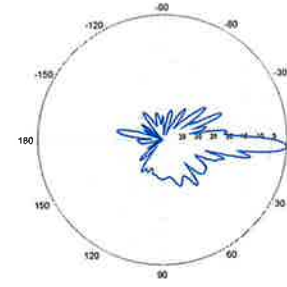
2° | Vertical | 2100 MHz



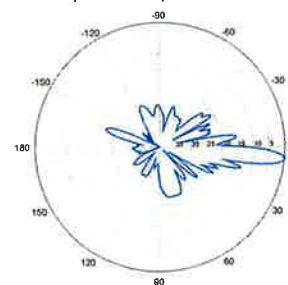
4° | Vertical | 1800 MHz



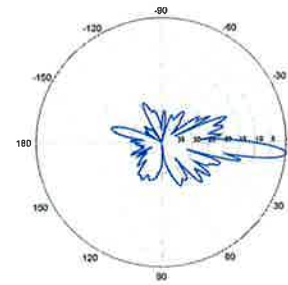
4° | Vertical | 1900 MHz



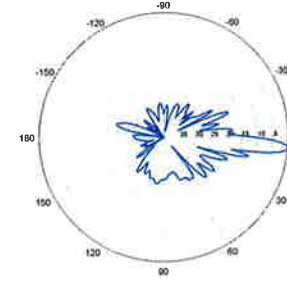
4° | Vertical | 2100 MHz



6° | Vertical | 1800 MHz



6° | Vertical | 1900 MHz

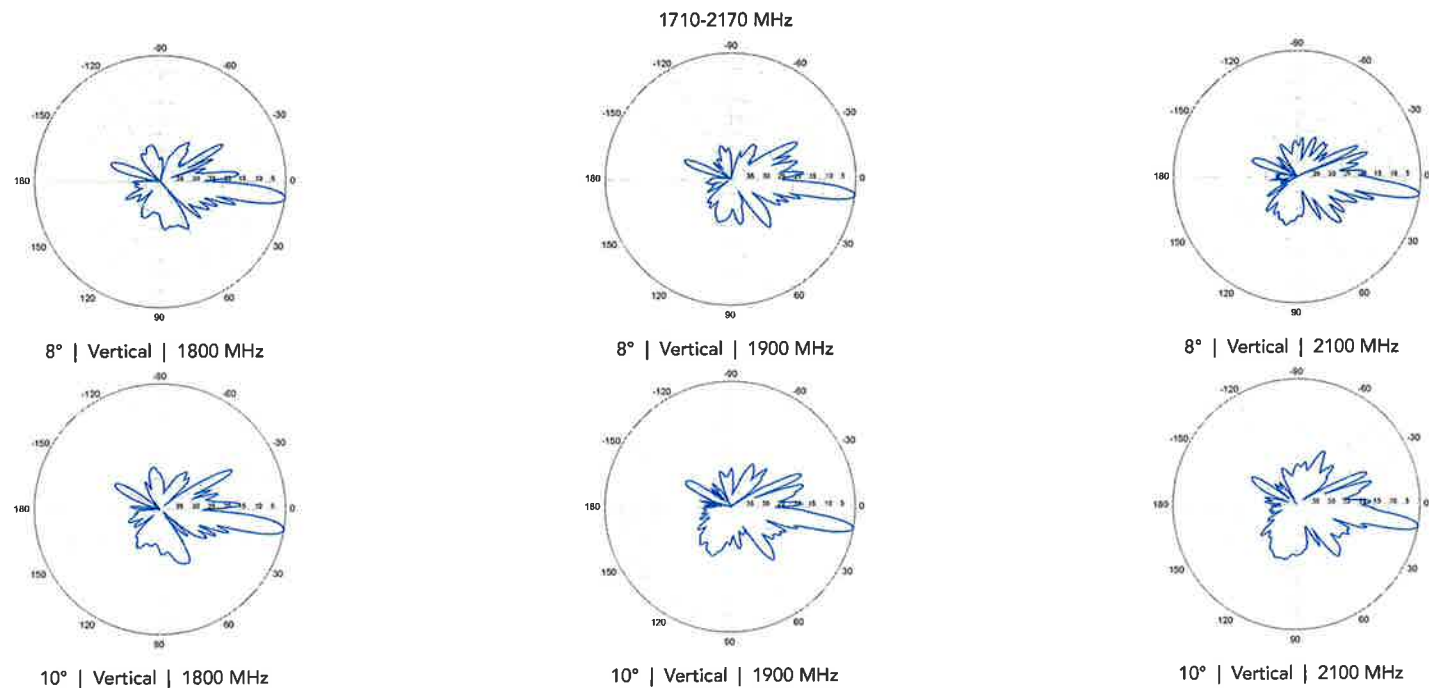


6° | Vertical | 2100 MHz

Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

WWX063X19x00

Twin Band | Panel Antenna | 2x X-Pol | 65° / 65° | 19.0 / 19.0 dBi | Variable Tilt



ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

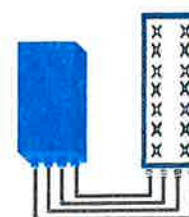


FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between
modes via SW w/o site
visit

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz - 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure - RX Diversity scheme	2 dB typ. (<2.5 dB max) - 2 or 4 way Rx diversity
Sizes (HxWxD) in mm (in.)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield)
Volume in L	38 (with solar shield)
Weight in kg (lb) (w/o mounting HW)	26 (57.2) (with solar shield)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	550W typical @100% RF load (in 2Tx or 4TX mode)
Environmental conditions	-40°C (-40°F) / +55°C (+131°F)
Wind load (@150km/h or 93mph)	IP65 Frontal: <200N / Lateral : <150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
AIISG interfaces	1 AIISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) - 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein.
Copyright © 2014 Alcatel-Lucent. All Rights Reserved

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).

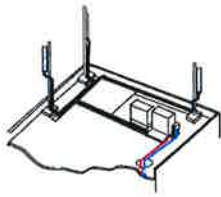
The Alcatel-Lucent RRH2x60-1900A-4R is a very cost-effective solution to deploy LTE MIMO.

EASY INSTALLATION

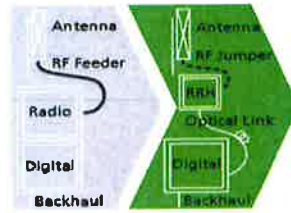
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-1900A-4R installation, providing more flexible site selection and improved network quality along with greatly reduced installation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

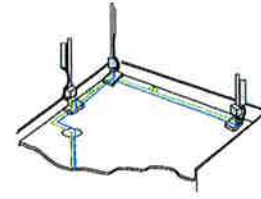
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-190A-4R is compact and weighs about 21 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



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

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein.

Copyright © 2014 Alcatel-Lucent. All rights reserved.

ALCATEL-LUCENT

WIRELESS PRODUCT DATASHEET

B4 RRH2X60-4R FOR AWS BAND APPLICATIONS

The Alcatel-Lucent B4 RRH2x60-4R 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 B4 RRH2x60-4R 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 B4 RRH2x60-4R 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.

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 B4 RRH2x60-4R 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 B4 RRH2x60-4R is a very cost-effective solution to deploy LTE MIMO.

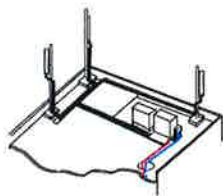
EASY INSTALLATION

The B4 RRH2x60-4R 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.

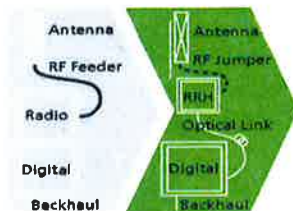
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent B4 RRH2x60-4R installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent B4 RRH2x60-4R is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

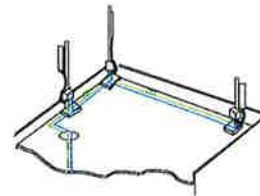
Installation can easily be done by a single person as the Alcatel-Lucent B4 RRH2x60-4R is compact and weighs about 25 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- B4 RRH2x60-4R integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- B4 RRH2x60-4R is optimized for LTE operation
- B4 RRH2x60-4R is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO 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 : 930x270x146 mm (with solar shield)
- Weight : 25 kg (55 lbs) (with solar shield)

Electrical Data

- Power Supply : -48V DC (-38 to -57V)
- Power Consumption: 346W typ. @2x30W (100%RF), 560W typ. @2x60W (100%RF)

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 (3-6) 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 300m using MM fiber, up to 15km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Four 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
- Health : EN 50385

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein.

Copyright © 2014 Alcatel-Lucent. All rights reserved.

ATTACHMENT 5



AMERICAN TOWER®
CORPORATION

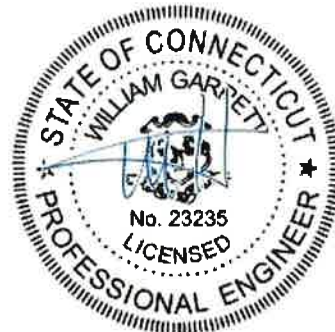
Structural Analysis Report

Structure : 300 ft Self Supported AT&T TAG Tower
ATC Site Name : Stamford (Katoona), CT
ATC Site Number : 88018
Engineering Number : 59720626
Proposed Carrier : Verizon
Carrier Site Name : Stamford West 3, CT
Carrier Site Number : NA
Site Location : Catoona Lane
Stamford, CT 06902-4573
41.052825,-73.563047
County : Fairfield
Date : December 18, 2015
Max Usage : 100%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer

Prepared By:
Andrew D. Vargo, E.I.

Andrew Vargo



Dec 18 2015 3:46 PM

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion	1
Existing and Reserved Equipment	2-3
Equipment to be Removed	3
Proposed Equipment	3
Structure Usages	4
Foundations	4
Standard Conditions	5
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft self supported tower to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Eng. #73123451, dated September 28, 2005
Foundation Drawing	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Geotechnical Report	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Modifications	ATC Eng. #42439132, dated September 26, 2008 ATC Eng. #44209632, dated December 2, 2009

Analysis

The tower was analyzed using Power Lines Systems tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

Basic Wind Speed:	85 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	74 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
300.0	306.0	1	3' HP Dish	Platform w/ Handrails	(1) 1/2" Coax	--
	300.0	3	Horizon Compact		(5) 7/8" Coax	Clearwire
		3	DragonWave A-ANT-18G-2-C			
	335.0	1	TX RX Systems 101-68-10-X-03N		(2) 1 1/4" Coax	Marcus Comm.
	317.0	1	16' Omni			
	311.0	1	Radio/ODU			
		1	4' Std. Dish			
	320.0	1	16' Omni		(1) 7/8" Coax	UNITed Wireless Holdings
270.0	276.0	1	Dielectric TLP-08M-2E	Side Arm	(1) 3 1/8" HL	Qualcomm
269.0	275.0	1	ADD090	Side Arm	(2) 7/8" Coax	US Dept Of Homeland Security
265.0	272.0	2	Til-Tek TA-2350-DAB	Side Arms	(1) EW20	Sirius XM Radio
	265.0	3	RFS ATMAA1412D-1A20	Sector Frames	(2) 7/8" Fiber (12) 1 5/8" Coax (1) 1 1/4" Fiber	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Andrew LNX-6515DS-VTM			
240.0	250.0	1	Sinclair SC281-L	Side Arms	(2) 7/8" Coax	US Dept Of Homeland Security
	245.0	1	Sinclair SC381-HL			
231.0	235.0	6	Powerwave TT19-08BP111-001	Sector Frames	(12) 1 5/8" Coax (2) 0.74" 8 AWG 7 (2) 0.39" Fiber Trunk (2) 0.74" 8 AWG 7	AT&T Mobility
		2	Raycap DC2-48-60-0-9E			
		6	Ericsson RRUS A2			
		3	Ericsson RRUS E2 B29			
		3	Ericsson RRUS-32			
		3	Ericsson RRUS-11			
		3	Powerwave 7770.00			
		3	Andrew SBNHH-1D65A			
		3	Ericsson RRUS-11 800MHz			
		6	Ericsson RRUS 12			
		3	KMW AM-X-CD-14-65-00T-RET			
		3	CCI OPA-65R-LCUU-H4			
224.0	222.0	12	Decibel DB844H90E-XY	Sector Frames	(15) 1 5/8" Coax	Sprint Nextel
200.0	201.0	2	TX RX Systems 101-68-10-X-03N	Side Arms	(2) 1 1/4" Coax	Marcus Comm.
	210.0	1	Sinclair SC281-L		(1) 7/8" Coax	US Dept Of Homeland Security
189.0	193.0	1	30" x 30" Reflector	Leg	-	Town Of Stanford
178.0	183.0	3	Antel BCD-87010	Side Arms	(3) 7/8" Coax	Spok Holdings
171.0	175.0	1	24" x 24" Junction Box	T-Arms	(2) 2" conduit	Clearwire
167.0	171.0	3	NextNet BTS-2500		(6) 5/16" (0.31") Coax	
		3	Argus LLPX310R		(1) 2" conduit	
160.0	161.0	6	Kathrein 800 10504	Leg	(12) 1 5/8" Coax	Metro PCS
	160.0	18	RCU		(2) 3/8" Coax	

Existing and Reserved Equipment Continued

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	3	Alcatel-Lucent ALU 800MHz External Notch Filter	Sector Frame	(4) 1 1/4" Hybriflex (1) 1/2" Coax	Sprint Nextel
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS IBC1900HB-2			
		3	Alcatel-Lucent 800MHz RRH			
		6	Alcatel-Lucent 1900MHz RRH			
		3	RFS APXV/TM14-C-I20			
		3	RFS APXVSP18-C-A20			
137.0	142.0	1	Antel BCD-87010 4°	Stand-Off	(1) 7/8" Coax	Sensus USA
120.0	120.0	1	Channel Master Type 120	Leg	(1) 1/2" Coax	Spok Holdings
100.0	100.0	1	TX RX Systems 101-68-10-X-03N	Side Arm	(1) 1 1/4" Coax	Marcus Comm.
24.0	22.0	1	Til-Tek TA-2324-LHCP	Leg	(1) 7/8" Coax	Sirius XM Radio
6.0	6.0	1	Trimble Acutime 2000	Leg	(1) 1/2" Coax	Spok Holdings
		1	Channel Master Type 120		(1) 1/4" Coax	

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
92.0	92.0	3	Alcatel-Lucent RRH2X60-1900A-4R	Sector Frame	(2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH2X60-AWS Band 4			
		2	RFS DB-T1-6Z-8AB-0Z			
		6	Antel WWX063X19G00			
		4	CSS X7C-FRO-660			
		2	CSS X7C-FRO-640-V			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax on the tower face with the least amount of existing coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	91%	Pass
Diagonals	98%	Pass
Truss Diagonals	100%	Pass
Horizontals	96%	Pass
Truss Horizontals	85%	Pass
Anchor Bolts	85%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	386.8	91%
Axial (Kips)	496.5	8%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

The foundation and anchorages for this tower have factors of safety exceeding 2.0 with respect to wind.



Standard Conditions

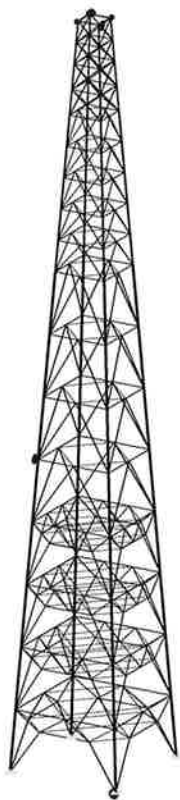
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Project Name : 88018 - Stanford (Katonah), CT
Project Notes : T-Mobile - 63541021
Project File : H:\L2 - ATC\88018\2015.12.18 - VZW (59720626) - TMO (63541023)\2015.12.18 - VZW (59720626) - TMO (63541023).tow
Date run : 10:57:43 AM Friday, December 16, 2015
by : Tower Version 12.30
Licensed to : American Tower Corp.
Successfully performed nonlinear analysis
Member check option: TIA/EIA 222-F
Connection rupture checks: Not Checked
Crossing diagonal checks: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: n112 - atc\88018\2015.12.18 - vzw (59720626) - tmo (63541023)\2015.12.18 - vzw (59720626) - tmo (63541023).ele

*** Analysis Results:

Maximum element usage is 99.81% for Angle "LD 9X" in load case "W -90"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	OP	-46.79	-21.38	-335.75	51.44	-5.82	-5.81	5.89	-2.42	0.00
W 0	OX	-44.03	22.12	-329.83	49.89	0.59	-0.48	5.52	-2.43	0.00
W 0	OXY	-37.07	-16.41	-226.04	40.84	0.55	-0.99	6.02	-2.22	0.00
W 0	OY	-36.62	15.48	-226.16	41.66	-0.32	-0.33	6.33	-2.19	0.00
W 180	OP	38.98	15.48	225.96	41.94	-0.32	0.33	6.38	-2.19	0.00
W 180	OX	37.09	-16.27	223.67	40.50	0.56	6.04	6.07	-2.22	0.00
W 180	OXY	44.03	22.02	-327.67	49.56	0.58	-0.44	5.57	-2.44	0.00
W 180	OY	46.48	-21.21	-333.24	51.09	-0.32	5.86	5.93	-2.44	0.00
W 45	OP	-50.60	-50.89	-496.52	71.76	4.13	-4.05	5.78	-0.18	0.00
W 45	OX	-21.24	-15.24	-419.92	26.14	5.31	-4.29	6.82	5.60	0.00
W 45	OXY	-44.08	-44.97	-384.80	63.68	5.00	-5.05	7.12	-0.02	0.00
W 45	OY	-14.95	-21.08	-449.44	25.84	4.26	-5.22	6.74	-3.61	0.00
W -45	OP	-22.54	15.88	-53.38	27.57	-5.52	-4.57	7.14	-3.45	0.00
W -45	OX	-49.27	51.22	-492.92	71.07	-4.34	-3.81	5.77	0.06	0.00
W -45	OXY	-13.60	20.68	-52.33	24.96	-4.10	-4.99	6.45	-3.62	0.00
W -45	OY	-46.20	44.48	-386.82	64.13	-4.06	-5.29	7.18	0.03	0.00
W 90	OP	-21.33	-44.94	-337.16	51.56	5.88	0.96	5.95	-2.29	0.00
W 90	OX	15.05	21.96	229.68	41.96	6.39	0.28	6.39	-2.18	0.00
W 90	OXY	-16.57	-37.03	226.51	40.57	5.97	-0.59	6.00	-2.22	0.00
W 90	OY	22.28	-44.77	-330.10	50.01	5.46	-0.55	5.49	-2.44	0.00
W -90	OP	15.33	39.01	228.06	41.98	-6.41	-1.29	6.42	-2.06	0.00
W -90	OX	-21.21	46.62	-335.54	51.40	-5.90	0.99	5.98	-2.44	0.00
W -90	OXY	22.24	44.83	-328.99	50.04	-5.50	-0.54	5.53	-2.45	0.00
W -90	OY	-16.51	37.09	225.59	40.80	-6.01	-0.59	6.04	-2.23	0.00
W 0 Ice	OP	-43.83	-21.11	-326.08	45.66	-1.07	-4.23	4.62	-2.22	0.00
W 0 Ice	OX	-41.89	21.84	-321.56	47.24	1.54	-3.90	4.19	-2.23	0.00
W 0 Ice	OXY	-33.54	-14.72	-190.52	36.63	1.65	-6.63	6.63	-2.05	0.00
W 0 Ice	OY	14.00	19.21	137.67	41.43	-1.10	-0.52	1.10	-0.52	0.00
W 180 Ice	OP	35.23	13.76	188.80	37.92	-1.43	7.01	7.16	-2.00	0.00
W 180 Ice	OX	33.57	-14.53	187.59	36.58	1.65	6.70	6.90	-2.06	0.00
W 180 Ice	OXY	41.92	21.70	-318.58	47.20	1.52	3.96	4.26	-2.24	0.00
W 180 Ice	OY	-14.83	-19.91	-137.78	45.32	-1.07	-4.29	4.68	-2.24	0.00
W 45 Ice	OP	-48.90	-49.16	-481.83	69.34	2.90	-3.82	4.04	-0.11	0.00
W 45 Ice	OX	-20.34	-33.05	-644.00	24.19	6.02	-2.91	6.88	3.42	0.00
W 45 Ice	OXY	-41.79	34.21	-319.19	59.17	5.90	0.32	6.12	-0.91	0.00
W 45 Ice	OY	-12.01	-20.21	-423.42	23.92	2.88	-5.94	6.60	-3.43	0.00
W -45 Ice	OP	-21.69	13.64	-68.44	25.62	-6.24	-3.14	6.99	-3.30	0.00
W -45 Ice	OX	-47.57	49.49	-476.70	68.65	-2.12	-2.59	4.05	0.00	0.00
W -45 Ice	OXY	-15.15	19.51	-65.18	23.03	-2.75	-5.71	6.54	-3.45	0.00
W -45 Ice	OY	-42.92	41.34	-343.38	59.59	-5.74	-6.13	6.40	0.03	0.00
W 90 Ice	OP	-21.08	-42.98	-339.24	46.77	4.28	1.91	4.69	-2.17	0.00
W 90 Ice	OX	15.36	35.25	152.60	37.92	-1.44	1.42	7.15	-1.68	0.00
W 90 Ice	OXY	-14.85	-33.49	190.83	36.63	6.61	-1.68	6.82	-1.06	0.00
W 90 Ice	OY	21.97	-41.82	-321.48	47.24	3.88	-1.50	4.16	-2.24	0.00
W -90 Ice	OP	13.77	35.27	190.50	37.86	-1.68	1.41	7.19	-1.92	0.00
W -90 Ice	OX	-20.80	-42.88	-339.78	46.59	-4.32	1.91	4.73	-2.17	0.00
W -90 Ice	OXY	21.89	41.88	-319.55	47.25	-3.94	-1.49	4.23	-2.24	0.00
W -90 Ice	OY	-14.74	33.55	188.80	36.65	-6.63	-1.68	6.88	-2.04	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support	Origin	Leg Force	Residual Shear	Residual Shear	Residual Shear	Residual Shear	Total	Total	Total
Joint	Member	Leg Dir.	Horizontal	Horizontal	Long.	Trans.	Force	Force	Force	Force
			(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)
W 0	OP	L 1 L	335.6655	26.082	0.677	-46.79	-21.38	-335.75		
W 0	OX	L 1 L	332.700	24.502	24.506	24.491	-1.782	-44.83	22.12	-329.83
W 0	OXY	L 1 L	-226.470	23.214	23.267	23.267	2.473	-37.07	-16.41	-226.04
W 0	OY	L 1 L	-230.937	24.225	24.186	24.186	-1.595	-38.62	15.48	-226.16
W 180	OP	L 1 L	335.6655	26.082	0.677	-46.79	-21.38	-335.75		
W 180	OX	L 1 L	332.700	24.502	24.506	24.491	-1.782	-44.83	22.12	-329.83
W 180	OXY	L 1 L	-226.470	23.214	23.267	23.267	2.473	-37.07	-16.41	-226.04
W 180	OY	L 1 L	-230.937	24.225	24.186	24.186	-1.595	-38.62	15.48	-226.16
W 45	OP	L 1 L	500.095	26.354	26.354	19.979	26.270	-50.89	-496.52	
W 45	OX	L 1 L	50.095	26.791	26.791	18.156	18.315	-21.24	-15.24	-419.92
W 45	OXY	L 1 L	-386.881	30.004	30.004	30.418	21.236	-45.09	-44.97	-384.80
W 45	OY	L 1 L	49.631	23.476	23.476	17.996	18.031	-14.95	-21.08	-449.44
W -45	OP	L 1 L	53.588	27.163	27.163	18.247	-19.169	22.54	15.88	-53.38
W -45	OX	L 1 L	498.458	26.065	26.171	18.921	-20.871	-49.27	51.22	-492.92
W -45	OXY	L 1 L	-339.455	24.283	24.283	17.627	17.450	-13.60	20.68	-52.33
W -45	OY	L 1 L	-396.927	30.411	30.411	20.344	-20.630	-46.20	44.48	-386.82
W 90	OP	L 1 L	340.080	26.107	26.107	0.539	26.153	-21.33	-46.94	-337.16
W 90	OX	L 1 L	-232.165	24.787	24.787	-1.183	24.795	15.05	-36.96	229.68
W 90	OXY	L 1 L	-228.845	23.154	23.154	-0.604	23.061	-16.57	-37.03	226.51
W 90	OY	L 1 L	332.974	24.440	24.440	-1.924	24.418	22.28	-44.77	-330.10
W -90	OP	L 1 L	-230.551	24.540	24.540	-1.148	-24.550	15.51	39.01	228.06
W -90	OX	L 1 L	339.455	26.078	26.078	0.621	-26.124	-21.21	46.62	-335.54
W -90	OXY	L 1 L	331.862	24.566	24.566	-1.949	-24.543	22.24	44.83	-328.99
W -90	OY	L 1 L	-227.830	23.281	23.281	1.408	-23.189	-16.51	37.09	225.59
W 0 Ice	OP	L 1 L	330.828	23.566	23.566	3.014	0.918	-43.83	-21.11	-326.08
W 0 Ice	OX	L 1 L	324.003	22.106	22.106	-2.064	-2.014	-41.89	21.84	-321.56
W 0 Ice	OXY	L 1 L	-192.763	21.936	21.936	21.789	2.872	-33.54	-14.72	-190.52
W 0 Ice	OY	L 1 L	194.141	23.167	23.167	-2.184	-2.184	-30.96	14.00	-137.67
W 180 Ice	OP	L 1 L	330.828	23.566	23.566	3.014	0.918	-43.83	-21.11	-326.08
W 180 Ice	OX	L 1 L	324.003	22.106	22.106	-2.064	-2.014	-41.89	21.84	-321.56
W 180 Ice	OXY	L 1 L	-189.836	22.247	22.247	21.789	2.872	-33.54	-14.72	-190.52
W 180 Ice	OY	L 1 L	194.141	23.167	23.167	-2.184	-2.184	-30.96	14.00	-137.67
W 45 Ice	OP	L 1 L	480.865	26.982	26.982	16.416	16.416	-20.34	-33.05	-644.00
W 45 Ice	OX	L 1 L	346.160	29.222	29.222	20.799	20.684	-41.91	-41.79	-342.31
W 45 Ice	OXY	L 1 L	65.632	23.347	23.347	19.720	18.296	-45.81	-49.16	-481.83
W 45 Ice	OY	L 1 L	65.671	24.981	24.981	17.470	-17.256	-21.69	13.64	-68.44
W -45 Ice	OP	L 1 L	480.865	26.982	26.982	16.416	16.416	-20.34	-33.05	-644.00
W -45 Ice	OX	L 1 L	346.160	29.222	29.222	20.799	20.684	-41.91	-41.79	-342.31
W -45 Ice	OXY	L 1 L	347.259	29.543	29.543	21.747	-20.461	-42.92	41.34	-343.38
W 90 Ice	OP	L 1 L	331.993	23.643	23.643	0.778	23.678	-21.08	-42.98	-339.24
W 90 Ice	OX	L 1 L	329.628	23.407	23.407	-2.082	23.346	13.98	-35.25	152.60
W 90 Ice	OXY	L 1 L	324.181	22.047	22.047	21.516	21.719	-14.85	-33.49	190.83
W 90 Ice	OY	L 1 L	324.181	22.047	22.047	21.516	21.719	-14.85	-33.49	190.83
W -90 Ice	OP	L 1 L	331.993	23.643	23.643	0.778	23.678	-21.08	-42.98	-339.24
W -90 Ice	OX	L 1 L	329.628	23.407	23.407	-2.082	23.346	13.98	-35.25	152.60
W -90 Ice	OXY	L 1 L	322.261	22.228	22.228	-2.184	-22.171	21.89	41.88	-319.55
W -90 Ice	OY	L 1 L	322.261	22.228	22.228	-2.184	-22.171	21.89	41.88	-319.55

Overtuning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Resultant Moment (ft-k)
W 0	804.189	25761.923	25762.048
W 180	804.189	25761.923	25762.048
W 45	20259.620	20281.417	28686.803
W -45	-20192.974	20241.207	28591.304
W 90	25839.372	89.414	25839.526
W -90	-25713.628	89.376	-25713.780
W 0 Ice	114.192	23741.515	23741.789
W 180 Ice	114.166	-23453.485	23453.762
W 45 Ice	18241.812	18366.646	26006.821
W -45 Ice	-18187.034	18366.634	26006.823
W 90 Ice	23759.533	129.598	23759.926
W -90 Ice	-23592.021	129.606	23592.377

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft²)	Face Adj Factor	Face Adj Factor	Dead Load Factor
291.4-300.0	300.000	291.420	8	20	9.00	10.05	81.76	1.1670	1.1670	1.401
285.8-291.4	291.420	285.840	8	16	10.05	11.22	85.84	1.2150	1.2150	1.595
282.7-285.8	285.840	282.670	8	16	11.22	12.37	119.43	1.1960	1.1960	1.436
275.5-282.7	282.670	275.500	12	24	12.37	13.63	132.19	1.2030	1.2030	1.744

250.0-262.5	262,500	250,000	16	24	13.63	15.17	179.85	1.2206	1.2010	1.441
237.5-250.0	250,000	237,500	16	24	15.17	16.71	193.27	1.2070	1.2070	1.449
225.0-237.5	237,500	225,000	16	24	16.71	18.25	216.49	1.2130	1.2130	1.456
212.5-225.0	225,000	212,500	16	24	18.25	19.79	239.76	1.2190	1.2190	1.463
200.0-212.5	212,500	200,000	16	24	19.79	21.33	263.03	1.2250	1.2250	1.470
187.5-200.0	200,000	187,500	16	24	21.33	22.87	286.30	1.2310	1.2310	1.477
175.0-187.5	187,500	175,000	16	24	22.87	24.41	309.57	1.2370	1.2370	1.484
162.5-175.0	175,000	162,500	16	24	24.41	25.95	332.84	1.2430	1.2430	1.491
150.0-162.5	162,500	150,000	16	24	25.95	27.49	356.11	1.2490	1.2490	1.498
137.5-150.0	150,000	137,500	16	24	27.49	30.03	379.38	1.2550	1.2550	1.505
125.0-137.5	137,500	125,000	16	24	30.03	32.57	402.65	1.2610	1.2610	1.512
112.5-125.0	125,000	112,500	16	24	32.57	35.11	425.92	1.2670	1.2670	1.519
100.0-112.5	112,500	100,000	16	24	35.11	37.65	449.19	1.2730	1.2730	1.526
87.5-100.0	100,000	87,500	16	24	37.65	40.19	472.46	1.2790	1.2790	1.533
75.0-87.5	87,500	75,000	16	24	40.19	42.73	495.73	1.2850	1.2850	1.540
62.5-75.0	75,000	62,500	16	24	42.73	45.27	519.00	1.2910	1.2910	1.547
50.0-62.5	62,500	50,000	16	24	45.27	47.81	542.27	1.2970	1.2970	1.554
37.5-50.0	50,000	37,500	16	24	47.81	50.35	565.54	1.3030	1.3030	1.561
25.0-37.5	37,500	25,000	16	24	50.35	52.89	588.81	1.3090	1.3090	1.568
12.5-25.0	25,000	12,500	16	24	52.89	55.43	612.08	1.3150	1.3150	1.575

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress
Printed capacities do not include CFA allowable stress increase for wind load cases.
Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage,
which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Angle	Group Desc.	Type	Angle Size	Steel Strength	Max Usage	Usage Control	Max Tension	Tension In Member	Force	Section Capacity	Net Tension	Tension Connect.	Shear	Capacity	Capacity	Capacity	Capacity	Length	No. of Bolts	No. of Holes	
					(ksi)	%				(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(kips)	(ft)			
Leg 61	L 8" x 8" x 1.125"	SAE	88X81.13	36.0	91.26	Comp	51.26	1.1P	-432.053	W 45	300.572	0.000	0.000	0.281	0.281	0.281	0.281	0.281	54.28	25.095	1	0
Leg 62	L 8" x 8" x 1.125"	SAE	88X81.13	36.0	86.20	Comp	86.20	1.2P	-363.991	W 45	300.572	0.000	0.000	0.281	0.281	0.281	0.281	0.281	54.28	25.095	1	0
Leg 63	L 8" x 8" x 1.125"	SAE	88X81.13	36.0	77.56	Comp	77.56	1.3P	-310.816	W 45	300.572	0.000	0.000	0.281	0.281	0.281	0.281	0.281	54.28	25.095	1	0
Leg 64	L 8" x 8" x 1.125"	SAE	88X81.13	36.0	71.14	Comp	71.14	1.4P	-255.616	W 45	269.490	0.000	0.000	0.281	0.281	0.281	0.281	0.281	54.28	25.095	1	0
Leg 65	L 8" x 8" x 0.875"	SAE	88X80.86	36.0	81.21	Comp	81.21	1.5P	-244.196	W 45	225.521	0.000	0.000	0.333	0.333	0.333	0.333	0.333	63.93	25.095	1	0
Leg 66	L 8" x 8" x 0.875"	SAE	88X80.86	36.0	65.76	Comp	65.76	1.6P	-197.779	W 45	225.521	0.000	0.000	0.333	0.333	0.333	0.333	0.333	63.93	25.095	1	0
Leg 67	L 8" x 8" x 0.75"	SAE	88X80.75	36.0	59.21	Comp	59.21	1.7P	-154.379	W 45	195.467	0.000	0.000	0.333	0.333	0.333	0.333	0.333	63.93	25.095	1	0
Leg 68	L 8" x 8" x 0.625"	SAE	88X80.63	36.0	52.25	Comp	52.25	1.8P	-114.397	W 45	161.199	0.000	0.000	0.333	0.333	0.333	0.333	0.333	63.93	25.095	1	0
Leg 69	L 6" x 6" x 0.75"	SAE	68X60.75	36.0	64.64	Comp	64.64	1.2P	-143.521	W 45	143.521	0.000	0.000	0.500	0.500	0.500	0.500	0.500	64.35	12.547	0	0
Leg 70	L 6" x 6" x 0.75"	SAE	68X60.75	36.0	39.77	Comp	39.77	1.10P	-76.987	W 45	143.521	0.000	0.000	0.500	0.500	0.500	0.500	0.500	64.35	12.547	0	0
Leg 71	L 6" x 6" x 0.5625"	SAE	68X60.56	36.0	40.21	Comp	40.21	1.11X	-58.812	W 45	109.689	0.000	0.000	0.500	0.500	0.500	0.500	0.500	63.80	12.547	0	0
Leg 72	L 6" x 6" x 0.5625"	SAE	68X60.56	36.0	29.71	Comp	29.71	1.12X	-45.449	W 45	109.689	0.000	0.000	0.500	0.500	0.500	0.500	0.500	63.80	12.547	0	0
Leg 73	L 6" x 6" x 0.5625"	SAE	68X60.56	36.0	23.05	Comp	23.05	1.13X	-39.147	W 45	109.689	0.000	0.000	0.500	0.500	0.500	0.500	0.500	63.80	12.547	0	0
Leg 74	L 6" x 6" x 0.4375"	SAE	68X60.44	36.0	23.09	Comp	23.09	1.14X	-22.166	W 45	111.884	0.000	0.000	0.500	0.500	0.500	0.500	0.500	63.80	12.547	0	0
Leg 75	L 6" x 6" x 0.4375"	SAE	68X60.44	36.0	14.84	Comp	14.84	1.15X	-14.250	W 45	111.884	0.000	0.000	0.500	0.500	0.500	0.500	0.500	63.80	12.547	0	0
Leg 76	L 6" x 6" x 0.3125"	SAE	68X60.31	36.0	10.26	Comp	10.26	1.16X	-8.526	W 45	111.884	0.000	0.000	0.500	0.500	0.500	0.500	0.500	63.80	12.547	0	0
Leg 77	L 6" x 6" x 0.3125"	SAE	68X60.31	36.0	4.51	Comp	4.51	1.17P	-3.309K	W 45	111.884	0.000	0.000	0.500	0.500	0.500	0.500	0.500	63.80	12.547	0	0
Diag 81	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	91.94	Comp	91.94	1.2P	-50.575	W 40	112.538	0.000	0.000	0.310	0.310	0.310	0.310	0.310	124.63	22.786	0	0
Diag 82	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	86.07	Comp	86.07	1.4P	-56.002	W 40	112.538	0.000	0.000	0.310	0.310	0.310	0.310	0.310	124.63	22.786	0	0
Diag 83	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	77.56	Comp	77.56	1.5P	-49.676	W 40	112.538	0.000	0.000	0.310	0.310	0.310	0.310	0.310	124.63	22.786	0	0
Diag 84	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	65.76	Comp	65.76	1.6P	-56.167	W 40	112.538	0.000	0.000	0.333	0.333	0.333	0.333	0.333	124.63	22.786	0	0
Diag 85	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	87.05	Comp	87.05	1.7P	-51.376	W 40	112.538	0.000	0.000	0.333	0.333	0.333	0.333	0.333	124.63	22.786	0	0
Diag 86	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	64.64	Comp	64.64	1.8P	-44.811	W 40	112.538	0.000	0.000	0.333	0.333	0.333	0.333	0.333	124.63	22.786	0	0
Diag 87	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	71.37	Comp	71.37	1.33P	-30.899	W 40	112.538	0.000	0.000	0.333	0.333	0.333	0.333	0.333	124.63	22.786	0	0
Diag 88	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	74.97	Comp	74.97	1.55P	-28.783	W 40	112.538	0.000	0.000	0.333	0.333	0.333	0.333	0.333	124.63	22.786	0	0
Diag 89	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	68.86	Comp	68.86	1.72P	-16.331	W 40	112.538	0.000	0.000	0.333	0.333	0.333	0.333	0.333	124.63	22.786	0	0
Diag 90	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	67.48	Comp	67.48	1.90P	-15.293	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	160.96	14.519	15.864	0
Diag 91	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	89.05	Comp	89.05	2.12P	-14.112	W 40	112.538	0.000	0.000	0.480	0.480	0.480	0.480	0.480	160.96	14.519	15.864	0
Diag 92	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	70.76	Comp	70.76	2.32P	-11.021	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	160.96	14.519	15.864	0
Diag 93	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	67.48	Comp	67.48	2.52P	-8.456	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	160.96	14.519	15.864	0
Diag 94	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	31.27	Comp	31.27	2.82P	-5.335	W 40	112.538	0.000	0.000	0.520	0.520	0.520	0.520	0.520	148.50	14.76	16.516	0
Diag 95	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	21.47	Comp	21.47	3.00P	-3.956	W 40	112.538	0.000	0.000	0.520	0.520	0.520	0.520	0.520	139.80	15.31	16.548	0
Diag 96	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	11.67	Comp	11.67	3.18P	-1.607	W 40	112.538	0.000	0.000	0.520	0.520	0.520	0.520	0.520	139.80	15.31	16.548	0
Diag 97	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	13.02	Comp	13.02	3.43P	-2.154	W 40	112.538	0.000	0.000	0.520	0.520	0.520	0.520	0.520	135.27	15.68	16.234	0
Horiz 1	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	95.93	Comp	95.93	1.1E	-41.291	W 40	112.538	0.000	0.000	0.480	0.480	0.480	0.480	0.480	135.27	15.68	16.234	0
Horiz 2	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	68.84	Comp	68.84	1.3P	-42.574	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 3	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	62.97	Comp	62.97	1.5P	-40.000	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 4	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	9.99	Comp	9.99	1.7P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 5	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	91.96	Comp	91.96	1.9P	-37.556	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 6	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	81.21	Comp	81.21	2.1P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 7	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	73.37	Comp	73.37	2.3P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 8	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	54.46	Comp	54.46	2.5P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 9	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	46.34	Comp	46.34	2.7P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 10	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	32.77	Comp	32.77	2.9P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 11	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	26.99	Comp	26.99	3.1P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 12	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	16.63	Comp	16.63	3.3P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 13	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	10.26	Comp	10.26	3.5P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 14	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	10.71	Comp	10.71	3.8P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 15	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	1.48	Comp	1.48	4.0P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 16	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	1.48	Comp	1.48	4.2P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
Horiz 17	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	1.48	Comp	1.48	4.4P	-37.163	W 40	112.538	0.000	0.000	0.500	0.500	0.500	0.500	0.500	135.27	15.68	16.234	0
LD 1	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	81.17	Comp	81.17	1.0X	-20.627	W 40	112.538	0.000	0.000	0.850	0.850	0.850	0.850	0.850	135.27	15.68	16.234	0
LD 2	B/E L3"x3"x0.25"	DAS	4X30.31	36.0	74.97	Comp	74.97	1.1X	-20.627	W 40	112.538											

LD 7	B/E 1.5"x3"x0.25"	DAL	3X3X0.25	36x0	76.67	Comp	36x88	LD 14Y	25.448	W -45	62.208	0.000	0.000	0.000	10.541	0.0.000	0
LD 8	B/E 1.5"x3"x0.25"	DAL	3X3X0.25	36x0	99.79	Comp	53x57	LD 15P	32.858	W -90	46.008	0.000	0.000	0.000	8.040	0.0.000	0
LD 9	B/E 1.5"x2"x0.25"	DAL	3X2X0.25	36x0	99.40	Comp	59.16	LD 17X	40.552	W -90	51.408	0.000	0.000	0.000	9.334	0.0.000	0
LD 10	B/E 1.5"x3"x0.25"	DAL	3X3X0.25	36x0	66.13	Comp	39.65	LD 20Y	25.425	W -45	62.208	0.000	0.000	0.000	10.386	0.0.000	0
LD 11	B/E 1.5"x3"x0.25"	DAL	3X3X0.25	36x0	96.39	Comp	53x55	LD 21P	32.541	W -90	46.008	0.000	0.000	0.000	7.905	0.0.000	0
LD 12	B/E 1.5"x3"x0.25"	DAL	3X3X0.25	36x0	93.40	Comp	39.70	LD 23X	39.676	W -90	74.952	0.000	0.000	0.000	5.005	0.0.000	0
LH 1	B/E 1.5"x3"x0.25"	DAS	3X2.5X0.25	36x0	17.27	Tens	17x27	LH 2X	13.076	90 Ice	56.808	0.000	0.000	0.000	21.456	0.0.000	0
LH 2	B/E 1.5"x3"x0.25"	DAS	3X2.5X0.25	36x0	67.83	Comp	37x36	LH 4Y	20.313	W -45	56.808	0.000	0.000	0.000	10.806	0.0.000	0
LH 3	B/E 1.5"x3"x0.25"	DAS	3X2.5X0.25	36x0	85.17	Comp	24x25	LH 6Y	27.523	W -45	82.844	0.000	0.000	0.000	10.003	0.0.000	0
LH 4	B/E 1.5"x3"x0.25"	DAS	3X3X0.25	36x0	75.72	Comp	27x23	LH 8Y	26.501	W -45	73.808	0.000	0.000	0.000	5.200	0.0.000	0
DUM 1	Dummy Fracing Member	DUM	0x1X0x1X1	36x0	0.00		0x00	BR 11X	1.108	W -45	0x216	0.000	0.000	0.000	19.445	0.0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Element Usage	Element Label	Element Type
N 0	96.55	LD 16P	Angle
N 180	86.54	LD 16Y	Angle
N 45	91.28	L 1P	Angle
N -45	94.55	H 2Y	Angle
N 90	99.45	LD 15X	Angle
N -90	95.41	LD 9X	Angle
W 0 Ice	92.71	LD 16P	Angle
W 180 Ice	93.27	LD 20Y	Angle
W 45 Ice	81.95	H 20Y	Angle
W -45 Ice	92.82	H 2Y	Angle
N 90 Ice	93.88	LD 9Y	Angle
N -90 Ice	94.61	LD 9X	Angle

*** Weight of structure (lbs):
 Weight of Angles/Section DLF: 149035.5
 Weight of Equipment: 3109.0
 Totals: 149744.5

*** End of Report

Site #: 88018
Name: Stamford (Katina), CT

Engineer: ADV
Date: 12/18/15

Windspeed: No Ice: 85 mph Ice: 74 mph
Carrier

Taper: -0.123333
FW @ Base: 46 ft

Taper Change: 300 ft
FW @ Top: 9 ft

Spreadsheet Version Last Updated: 11/12/2014																				
Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Sub-Brace (Y or Blank)	# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace	
0	XY-Symmetry	23	23	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed			7.030	25	1	0		46	3	
1	XY-Symmetry	21.45833333	21.45833333	25	Free	Free	Free	Free	Free	Free				7.030	25	2	25	42.91666667	3	
2	XY-Symmetry	19.91666667	19.91666667	50	Free	Free	Free	Free	Free	Free				7.030	25	3	50	39.83333333	3	
3	XY-Symmetry	18.375	18.375	75	Free	Free	Free	Free	Free	Free				7.030	25	2	4	75	36.75	3
4	XY-Symmetry	16.83333333	16.83333333	100	Free	Free	Free	Free	Free	Free					25	5	100	33.66666667	2	
5	XY-Symmetry	15.29166667	15.29166667	125	Free	Free	Free	Free	Free	Free					25	6	125	30.58333333	2	
6	XY-Symmetry	13.75	13.75	150	Free	Free	Free	Free	Free	Free					25	7	150	27.5	2	
7	XY-Symmetry	12.20833333	12.20833333	175	Free	Free	Free	Free	Free	Free					25	8	175	24.41666667	2	
8	XY-Symmetry	10.66666667	10.66666667	200	Free	Free	Free	Free	Free	Free					12.5	9	200	21.33333333	1	
9	XY-Symmetry	9.895833333	9.895833333	212.5	Free	Free	Free	Free	Free	Free					12.5	10	212.5	19.79166667	1	
10	XY-Symmetry	9.125	9.125	225	Free	Free	Free	Free	Free	Free					12.5	11	225	18.25	1	
11	XY-Symmetry	8.354166667	8.354166667	237.5	Free	Free	Free	Free	Free	Free					12.5	12	237.5	16.70833333	1	
12	XY-Symmetry	7.583333333	7.583333333	250	Free	Free	Free	Free	Free	Free					12.5	13	250	15.16666667	1	
13	XY-Symmetry	6.8125	6.8125	262.5	Free	Free	Free	Free	Free	Free					10.17	14	262.5	13.625	1	
14	XY-Symmetry	6.18535	6.18535	272.67	Free	Free	Free	Free	Free	Free					10.17	15	272.67	12.3707	1	
15	XY-Symmetry	5.582	5.582	282.84	Free	Free	Free	Free	Free	Free					8.58	16	282.84	11.1164	1	
16	XY-Symmetry	5.0291	5.0291	291.42	Free	Free	Free	Free	Free	Free					8.58	17	291.42	10.0582	1	
17	XY-Symmetry	4.5	4.5	300	Free	Free	Free	Free	Free	Free						18	300		9	
NOTES:																				
1. Built up Horiz. w/ A																				
2. Built up Horiz. w/ M																				
A: Typical A brace																				
X: Typical X brace																				
Drop: Use only for types 1 & 2																				
# Sections: 17																				

NOTES:
1: Built up Horiz. w/ A
2: Built up Horiz. w/ M
A: Typical A brace
X: Typical X brace
Drop: Use only for types 1 & 2
Sections: 17

Legs

Site No.:	88018
Engineer:	ADV
Date:	12/18/2015
Carrier:	0

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter or Length (in)	Thickness ^[2] (in)	F _y (ksi)
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1	36
5	100.0-125.0	L	8	0.875	36
6	125.0-150.0	L	8	0.875	36
7	150.0-175.0	L	8	0.75	36
8	175.0-200.0	L	8	0.625	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.75	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.5625	36
13	250.0-262.5	L	6	0.4375	36
14	262.5-272.7	L	5	0.4375	36
15	272.7-282.8	L	5	0.4375	36
16	282.8-291.4	L	5	0.3125	36
17	291.4-300.0	L	5	0.3125	36

Notes:

^[1] Type of Leg Shape: R = Round or P = Bent Plate or S = Schifferized Angle. L = Even Leg

^[2] For Solid Round Leg Shapes Thickness Equals Zero.

^[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88018
Engineer:	ADV
Date:	12/18/2015
Carrier:	0

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.3125	36	
2	25.00-50.00	2L		3	3.5	0.25	36	
3	50.00-75.00	2L		2.5	3.5	0.25	36	
4	75.00-100.0	2L		2.5	3.5	0.25	36	
5	100.0-125.0	2L		3	4	0.25	36	
6	125.0-150.0	2L		3	4	0.25	36	
7	150.0-175.0	2L		3	4	0.25	36	
8	175.0-200.0	2L		3.5	3.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-262.5	2L		2.5	2	0.25	36	
14	262.5-272.7	L		3.5	3.5	0.25	36	
15	272.7-282.8	L		3.5	3.5	0.25	36	
16	282.8-291.4	L		3	3	0.25	36	
17	291.4-300.0	L		3	3	0.25	36	

Notes:

^[1] Type of Diagonal Shape: R = Round, L = Single-Angle or 2L = Double-Angle.

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88018
Engineer:	ADV
Date:	12/18/2015
Carrier:	0

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	
1	0.000-25.00	2L		3.5	2.5	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3.5	2.5	0.25	36	
4	75.00-100.0	2L		3	2.5	0.25	36	
5	100.0-125.0	2L		3	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		2.5	2.5	0.25	36	
8	175.0-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-262.5	2L		2.5	2.5	0.25	36	
14	262.5-272.7	L		3	2.5	0.25	36	
15	272.7-282.8	2L		3	2.5	0.25	36	
16	282.8-291.4	L		3	2.5	0.25	36	
17	291.4-300.0	C		8	11.5		36	

Notes:

^[1] Type of Horizontal Shape: R = Round, L = Single-Angle, 2L = Double-Angle, C = Channel, W = W Shape

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88018
Engineer:	ADV
Date:	12/18/2015
Carrier:	0

When inputting thickness values, include all decimal places.

Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)
1	0.000-25.00	2L		3	2	0.25	36
2	0.000-25.00	2L		4	3	0.25	36
3	25.00-50.00	2L		2.5	2	0.25	36
4	25.00-50.00	2L		2.5	2	0.25	36
5	25.00-50.00	2L		3	3	0.25	36
6	50.00-75.00	2L		3	3	0.25	36
7	50.00-75.00	2L		2.5	2	0.25	36
8	50.00-75.00	2L		3	2	0.25	36
9	75.00-100.0	2L		3	3	0.25	36
10	75.00-100.0	2L		2.5	2	0.25	36
11	75.00-100.0	2L		2.5	2.5	0.375	36

Notes:

^[1] Type of Diagonal Shape: R = Round, L = Single-Angle or 2L = Double-Angle.

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88018
Engineer:	ADV
Date:	12/18/2015
Carrier:	0

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-25.00	2L		2.5	3	0.25	36	Y
2	25.00-50.00	2L		2.5	3	0.25	36	
3	50.00-75.00	2L		2.5	3	0.375	36	
4	75.00-100.0	2L		3.5	3.5	0.25	36	

Notes:

^[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Joint Orientation

0°

90°

X Y P

Site No.:	88018
Engineer:	ADV
Date:	12/18/15
Carrier:	0

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
LADDER	0	300	1	Flat	1.5	6.0	6	No	Yes
Short Ladder1	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	No
Short Ladder2	8.3333	33.3333	2	Flat	1.5	6.0	6	Yes	No
WG1	5	300	1	Flat	1.5	6.0	6	Yes	No
WG2	5	160	1	Flat	1.5	6.0	6	Yes	Yes
WG3	5	272	1	Flat	1.5	6.0	6	Yes	No
Clearwire1	5	300	5	Round	1.09	3.4	0.33	Yes	Yes
MC1	5	300	2	Round	1.55	4.9	0.63	No	Yes
UWH1	5	300	1	Round	1.09	3.4	0.33	No	Yes
UNK1	5	300	1	Round	0.63	2.0	0.15	No	Yes
QualComm1	5	270	1	Round	3.13	9.8	3.04	No	Yes
USDOHS1	5	269	2	Round	1.09	3.4	0.33	Yes	Yes
Sirus1	5	265	1	Round	5.02	15.8	1.85	Yes	No
Sirus2	5	265	1	Round	1.98	6.2	0.82	Yes	No
T-Mobile1	5	265	1	Flat	7.92	27.7	9.84	Yes	No
T-Mobile2	5	265	2	Round	0.88	2.8	0.7	Yes	No
T-Mobile3	5	265	1	Round	1.25	3.9	1.05	Yes	No
USDOHS2	5	240	2	Round	1.09	3.4	0.33	Yes	Yes
AT&T1	5	231	4	Round	0.74	2.3	0.49	Yes	No
AT&T2	5	231	2	Round	0.39	1.2	0.06	Yes	No
AT&T3	5	231	1	Flat	11.88	31.7	9.84	Yes	No
Sprint1	5	224	1	Flat	9.9	31.7	12.3	Yes	Yes
MC2	5	200	2	Round	1.55	4.9	0.63	No	Yes
USDOHS3	5	200	1	Round	1.09	3.4	0.33	Yes	Yes
Spok1	5	178	3	Round	1.09	3.4	0.33	No	Yes
Clearwire2	5	171	1	Flat	2.38	14.3	7.3	Yes	Yes
Clearwire3	5	167	6	Round	0.31	1.0	0.05	Yes	Yes
Clearwire4	5	167	1	Round	2.38	7.5	3.65	Yes	Yes
Metro1	5	160	1	Flat	11.88	31.7	9.84	Yes	No
Metro2	5	160	2	Round	0.44	1.4	0.08	Yes	No
Sprint2	5	150	4	Round	1.54	4.8	1	Yes	Yes
Sprint3	5	150	1	Round	0.63	2.0	0.15	Yes	Yes
Sensus1	5	137	1	Round	1.09	3.4	0.33	No	Yes
Spok2	5	120	1	Round	0.63	2.0	0.15	No	Yes
MC3	5	100	1	Round	1.55	4.9	0.63	No	Yes
Verizon1	5	92	2	Round	1.981	6.2	1.3	No	Yes
Spok3	5	6	1	Round	0.63	2.0	0.15	No	Yes
Spok4	5	6	1	Round	0.34	1.1	0.06	No	Yes

Description	From (ft)	To (ft)	Quantity	Face # (1-4, A-D)	Coax Width (in)	Considered Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone		Include In	
														(Yes/No)	(Yes/No)	WInd Load (Yes/No)	(Yes/No)
LADDER	0	300	1	B	1.5	Flat	100		Flat	1	1	6.0	6	No	No	No	No
Short Ladder1	8.3333	33.3333	2	1	1.5	Flat	100		Flat	2	1	6.0	6	Yes	No	No	Yes
Short Ladder2	8.3333	33.3333	2	3	1.5	Flat	100		Flat	2	1	6.0	6	Yes	No	No	Yes
							100							No	No	No	No
WG1	5	300	1	1	1.5	Flat	100		Flat	1	1	6.0	6	Yes	No	No	Yes
WG2	5	160	1	2	1.5	Flat	100		Flat	1	1	6.0	6	Yes	No	No	Yes
WG3	5	272	1	1	1.5	Flat	100		Flat	1	1	6.0	6	Yes	No	No	Yes
Clearwire1	5	300	5	2	1.09	Ind	100		Round	5	1	3.4	0.33	Yes	No	No	Yes
MC1	5	300	2	B	1.55	Ind	100		Round	2	1	4.9	0.63	No	No	No	Yes
UWH1	5	300	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	No	No	No	Yes
UNK1	5	300	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	No	No	No	Yes
QualComm1	5	270	1	B	3.13	Ind	100		Round	1	1	9.8	3.04	No	No	No	Yes
USDOHS1	5	269	2	2	1.09	Ind	100		Round	2	1	3.4	0.33	Yes	No	No	Yes
Sirus1	5	265	1	4	5.02	Ind	100		Round	1	1	15.8	1.85	Yes	No	No	Yes
Sirus2	5	265	1	4	1.98	Ind	100		Round	1	1	6.2	0.82	Yes	No	No	Yes
T-Mobile1	5	265	12	3	1.98	Block	33	0	Flat	4	3	27.7	9.84	Yes	No	No	Yes
T-Mobile2	5	265	2	4	0.88	Ind	100		Round	2	1	2.8	0.7	Yes	No	No	Yes
T-Mobile3	5	265	1	3	1.25	Ind	100		Round	1	1	3.9	1.05	Yes	No	No	Yes
USDOHS2	5	240	2	2	1.09	Ind	100		Round	2	1	3.4	0.33	Yes	No	No	Yes
AT&T1	5	231	4	1	0.74	Ind	100		Round	4	1	2.3	0.49	Yes	No	No	Yes
AT&T2	5	231	2	1	0.39	Ind	100		Round	2	1	1.2	0.06	Yes	No	No	Yes
AT&T3	5	231	12	1	1.98	Block	50	0	Flat	6	2	31.7	9.84	Yes	No	No	Yes
Sprint1	5	224	15	2	1.98	Block	33	0	Flat	5	3	31.7	12.3	Yes	No	No	Yes
MC2	5	200	2	B	1.55	Ind	100		Round	2	1	4.9	0.63	No	No	No	Yes
USDOHS3	5	200	1	2	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	No	No	Yes
Spok1	5	178	3	B	1.09	Ind	100		Round	3	1	3.4	0.33	No	No	No	Yes
Clearwire2	5	171	2	2	2.38	Block	50	0	Flat	1	2	14.3	7.3	Yes	No	No	Yes
Clearwire3	5	167	6	2	0.31	Ind	100		Round	6	1	1.0	0.05	Yes	No	No	Yes
Clearwire4	5	167	1	2	2.38	Ind	100		Round	1	1	7.5	3.65	Yes	No	No	Yes
Metro1	5	160	12	1	1.98	Block	50	0	Flat	6	2	31.7	9.84	Yes	No	No	Yes
Metro2	5	160	2	1	0.44	Ind	100		Round	2	1	1.4	0.08	Yes	No	No	Yes
Sprint2	5	150	4	2	1.54	Ind	100		Round	4	1	4.8	1	Yes	No	No	Yes
Sprint3	5	150	1	2	0.63	Ind	100		Round	1	1	2.0	0.15	Yes	No	No	Yes
Sensus1	5	137	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	No	No	No	Yes
Spok2	5	120	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	No	No	No	Yes
MC3	5	100	1	B	1.55	Ind	100		Round	1	1	4.9	0.63	No	No	No	Yes
Verizon1	5	92	2	B	1.98	Ind	100		Round	2	1	6.2	1.3	No	No	No	Yes
Spok3	5	6	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	No	No	No	Yes
Spok4	5	6	1	B	0.34	Ind	100		Round	1	1	1.1	0.06	No	No	No	Yes

Coax & Dishes

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation
300	2	0	H	Y
300	2	90	H	XY
300	2	180	H	X
300	4	270	S	P
300	3	0	H	XY
120	4	90	S	X
24	2	235	R	P
6	4	180	S	P

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)
2' HP 1 @ 300'	17Y	2 ft HP Dish	0
2' HP 2 @ 300'	17XY	2 ft HP Dish	90
2' HP 3 @ 300'	17X	2 ft HP Dish	180
4' STD 4 @ 300'	17P	4 ft STD Dish	270
3' HP 5 @ 300'	17XY	3 ft HP Dish	0
4' STD 6 @ 120'	5X	4 ft STD Dish	90
2' RAD 7 @ 24'	1P	2 ft RAD Dish	235
4' STD 8 @ 6'	0P	4 ft STD Dish	180

Joint Orientation	
XY	Y
90°	
X	P

Site #: 88018

Name:

0

Engineer:

ADV

Date:

12/18/15

Section Label	Section Color	Joint Defining Bottom Section	Dead Load Adj. Factor				Adj. Factor Flat	Adj. Factor Round	Area Multiplier	Weight Multiplier
0.00-25.00		0P	1.502697162				1.252247635	1.252247635	1	1.2
25.00-50.00		1P	1.48093403				1.234111691	1.234111691	1	1.2
50.00-75.00		2P	1.475299206				1.229416005	1.229416005	1	1.2
75.00-100.0		3P	1.468662391				1.223885326	1.223885326	1	1.2
100.0-125.0		4P	1.534826556				1.27902213	1.27902213	1	1.2
125.0-150.0		5P	1.518955429				1.265796191	1.265796191	1	1.2
150.0-175.0		6P	1.50866585				1.257221541	1.257221541	1	1.2
175.0-200.0		7P	1.478954774				1.232462312	1.232462312	1	1.2
200.0-212.5		8P	1.469986394				1.224988662	1.224988662	1	1.2
212.5-225.0		9P	1.462963002				1.219135835	1.219135835	1	1.2
225.0-237.5		10P	1.455806469				1.213172057	1.213172057	1	1.2
237.5-250.0		11P	1.44853386				1.20711155	1.20711155	1	1.2
250.0-262.5		12P	1.441165734				1.200971445	1.200971445	1	1.2
262.5-272.7		13P	1.443770575				1.203142146	1.203142146	1	1.2
272.7-282.8		14P	1.435797379				1.196497816	1.196497816	1	1.2
282.8-291.4		15P	1.457623525				1.214686271	1.214686271	1	1.2
291.4-300.0		16P	1.400830114				1.167358428	1.167358428	1	1.2

Site #:	88018
Name:	0

Engineer:	ADV
Date:	12/18/15

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	A 36	Beam	Leg	None
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	A 36	Beam	Leg	None
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	A 36	Beam	Leg	None
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	A 36	Beam	Leg	None
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	A 36	Beam	Other	None
Diag S2	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	A 36	Beam	Other	None
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S8	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 17	C8x11.5	CHN	C8x11.5	A 36	Beam	Other	None
LD 1	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	A 36	Beam	Other	None
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 6	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	A 36	Beam	Other	None
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	T-Only	Other	None
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	A 36	Beam	Other	None
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	A 36	Beam	Other	None
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	A 36	Beam	Fictitious	None

Site #:	88018
Name:	0

Engineer:	ADV
Date:	12/18/15

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
L 1	Leg S1		XY-Symmetry	0P	1P	1	4	0.2812	0.2812	0.2812
L 2	Leg S2		XY-Symmetry	1P	2P	1	4	0.2812	0.2812	0.2812
L 3	Leg S3		XY-Symmetry	2P	3P	1	4	0.2812	0.2812	0.2812
L 4	Leg S4		XY-Symmetry	3P	4P	1	4	0.2812	0.2812	0.2812
L 5	Leg S5		XY-Symmetry	4P	5P	1	4	0.33333333	0.33333333	0.33333333
L 6	Leg S6		XY-Symmetry	5P	6P	1	4	0.33333333	0.33333333	0.33333333
L 7	Leg S7		XY-Symmetry	6P	7P	1	4	0.33333333	0.33333333	0.33333333
L 8	Leg S8		XY-Symmetry	7P	8P	1	4	0.33333333	0.33333333	0.33333333
L 9	Leg S9		XY-Symmetry	8P	9P	1	4	0.5	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P	1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P	1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P	1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P	1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P	1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P	1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P	1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P	1	4	0.5	0.5	0.5
D 1	Diag S1		XY-Symmetry	0P	H2P	1	6	0.31	0.92	0.31
D 2	Diag S1		XY-Symmetry	0P	H1P	1	6	0.31	0.92	0.31
D 3	Diag S2		XY-Symmetry	1P	H6P	1	6	0.31	0.62	0.31
D 4	Diag S2		XY-Symmetry	1P	H5P	1	6	0.31	0.62	0.31
D 5	Diag S3		XY-Symmetry	2P	H10P	1	6	0.33333333	0.667	0.33333333
D 6	Diag S3		XY-Symmetry	2P	H9P	1	6	0.33333333	0.667	0.33333333
D 7	Diag S4		XY-Symmetry	3P	H14P	1	6	0.33333333	0.667	0.33333333
D 8	Diag S4		XY-Symmetry	3P	H13P	1	6	0.33333333	0.667	0.33333333
D 9	Diag S5		XY-Symmetry	4P	A9P	1	6	0.33333333	0.66666667	0.33333333
D 10	Diag S5		XY-Symmetry	4P	A10P	1	6	0.33333333	0.66666667	0.33333333
D 11	Diag S6		XY-Symmetry	5P	A11P	1	6	0.33333333	0.66666667	0.33333333
D 12	Diag S6		XY-Symmetry	5P	A12P	1	6	0.33333333	0.66666667	0.33333333
D 13	Diag S7		XY-Symmetry	6P	A13P	1	6	0.33333333	0.66666667	0.33333333
D 14	Diag S7		XY-Symmetry	6P	A14P	1	6	0.33333333	0.66666667	0.33333333
D 15	Diag S8		XY-Symmetry	7P	A15P	1	6	0.33333333	0.66666667	0.33333333
D 16	Diag S8		XY-Symmetry	7P	A16P	1	6	0.33333333	0.66666667	0.33333333
D 17	Diag S9		XY-Symmetry	8P	A17P	1	6	0.32	0.59	0.32
D 18	Diag S9		XY-Symmetry	8P	A18P	1	6	0.32	0.59	0.32
D 19	Diag S10		XY-Symmetry	9P	A19P	1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P	1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P	1	6	0.48	0.96	0.58
D 22	Diag S11		XY-Symmetry	10P	A22P	1	6	0.48	0.96	0.58
D 23	Diag S12		XY-Symmetry	11P	A23P	1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P	1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P	1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P	1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	14Y	2	5	0.52	0.75	0.52
D 28	Diag S14		XY-Symmetry	13P	14X	2	5	0.52	0.75	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y	2	5	0.52	0.75	0.52
D 30	Diag S15		XY-Symmetry	14P	15X	2	5	0.52	0.75	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y	2	5	0.52	0.75	0.52
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	0.52	0.75	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y	2	5	0.52	0.75	0.52
D 34	Diag S17		XY-Symmetry	16P	17X	2	5	0.52	0.75	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.48	0.48	0.48
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.48	0.48	0.48
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	0.47	0.94	0.47
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	0.47	0.94	0.47
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	
H 12	Horiz 6		XY-Symmetry	6P	A12P		1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P		1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P		1	6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P		1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P		1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P		1	6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P		1	6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P		1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P		1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P		1	6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P		1	6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P		1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P		1	6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P		1	6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P		1	6	1	1	1
H 27	Horiz 14		Y-Symmetry	14P	14X		3	5	0.5	1	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y		3	5	0.5	1	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X		1	6	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y		1	6	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X		3	5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y		3	5	0.5	1	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X		3	5	0.5	1	0.5
H 34	Horiz 17		X-Symmetry	17P	17Y		3	5	0.5	1	0.5
H 37	Horiz 2		Y-Symmetry	A3P	A3X		1	5	1	1	1
H 38	Horiz 2		X-Symmetry	A4P	A4Y		1	5	1	1	1
H 39	Horiz 3		Y-Symmetry	A5P	A5X		1	5	1	1	1
H 40	Horiz 3		X-Symmetry	A6P	A6Y		1	5	1	1	1
H 41	Horiz 4		Y-Symmetry	A7P	A7X		1	5	1	1	1
H 42	Horiz 4		X-Symmetry	A8P	A8Y		1	5	1	1	1
LH 1	LH 1		Y-Symmetry	H1P	H1X		1	6	50	100	50
LH 2	LH 1		X-Symmetry	H2P	H2Y		1	6	50	100	50
LH 3	LH 2		XY-Symmetry	H5P	H7P		1	6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P		1	6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P		1	6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P		1	6	1	2	1
LH 7	LH 4		XY-Symmetry	H13P	H15P		1	6	0.998	1.995	0.998
LH 8	LH 4		XY-Symmetry	H14P	H16P		1	6	0.998	1.995	0.998
LD 1	LD 1		XY-Symmetry	H1P	1P		1	6	0.85	0.85	0.85
LD 2	LD 1		XY-Symmetry	H2P	1P		1	6	0.85	0.85	0.85
LD 3	LD 2		XY-Symmetry	H1P	A1P		1	6	0.82	0.82	0.82
LD 4	LD 2		XY-Symmetry	H2P	A2P		1	6	0.82	0.82	0.82
LD 7	LD 4		XY-Symmetry	H5P	2P		1	6	0.87	0.87	0.87
LD 8	LD 4		XY-Symmetry	H6P	2P		1	6	0.87	0.87	0.87
LD 9	LD 5		XY-Symmetry	H5P	A3P		1	6	0.8	0.8	0.8
LD 10	LD 5		XY-Symmetry	H6P	A4P		1	6	0.8	0.8	0.8
LD 11	LD 6		XY-Symmetry	A3P	H7P		1	6	0.84	0.84	0.84
LD 12	LD 6		XY-Symmetry	A4P	H8P		1	6	0.84	0.84	0.84
LD 13	LD 7		XY-Symmetry	H9P	3P		1	6	0.865	0.865	0.865
LD 14	LD 7		XY-Symmetry	H10P	3P		1	6	0.865	0.865	0.865
LD 15	LD 8		XY-Symmetry	H9P	A5P		1	6	0.82	0.82	0.82
LD 16	LD 8		XY-Symmetry	H10P	A6P		1	6	0.82	0.82	0.82
LD 17	LD 9		XY-Symmetry	A5P	H11P		1	6	0.82	0.82	0.82
LD 18	LD 9		XY-Symmetry	A6P	H12P		1	6	0.82	0.82	0.82
LD 19	LD 10		XY-Symmetry	H13P	4P		1	6	0.86	0.86	0.86
LD 20	LD 10		XY-Symmetry	H14P	4P		1	6	0.86	0.86	0.86
LD 21	LD 11		XY-Symmetry	H13P	A7P		1	6	0.82	0.82	0.82
LD 22	LD 11		XY-Symmetry	H14P	A8P		1	6	0.82	0.82	0.82
LD 23	LD 12		XY-Symmetry	A7P	H15P		1	6	0.85	0.85	0.85
LD 24	LD 12		XY-Symmetry	A8P	H16P		1	6	0.85	0.85	0.85
BR 1	DUM 1		XY-Symmetry	A1P	A2P		1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P	1	4	1	1	1

Tower Height:	300	ft
Gh:	1.09	
Wind Speed:	85.00	
Wind Speed (feet):	73.95	
Radial Ice Diameter:	0.5	in

KS-15676 Horn Antennas: ~128 ft²

KS-15676 Horn Antennas: ~128 ft²

No.	Carrier	Elevation (ft)	Quantity	Number of Azimuths	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction Factor	C _u A _c (ft²/ea)	Weight (lb/ea)	H/W	C _u	q _z (psf)	q _z (lve) [psf]
1	Clearwire	300	1	1	-	0.01	0.01	0.01	0.01	R	0.001	55.00	4.00	1.00	0.80	34.75	26.30
2		283	1	4	-	0.01	0.01	0.01	0.01	R	0.001	40.00	2.75	1.00	0.80	34.18	25.87
3		212.5	1	3	-	0.01	0.01	0.01	0.01	R	0.001	50.00	3.00	1.00	0.80	31.49	23.83
4		100	1	3	-	0.01	0.01	0.01	0.01	R	0.001	50.00	3.00	1.00	0.80	25.39	19.22
5	Marcus Comm.	300	1	1	Horizon Compact Radio/ODU	4.7	9.3	9.3	10.6	R	1.000	1.87	0.03	0.51	0.80	34.75	26.30
6	United/Marcus	300	2	2	16' Omni	192	3	3	55	R	1.000	5.53	0.07	64.00	1.20	34.75	26.30
7	Marcus Comm.	300	1	1	101-68-10-X-03N	146.4	10.5	10.5	130	R	1.000	5.20	0.15	13.94	0.95	33.72	25.52
8	Qualcomm	270	1	1	TLP-08M-2E	78.7	31.5	31.5	88.2	F	1.000	0.00	0.00	2.50	1.40	33.68	25.50
9	US DOHS	269	1	1	ADD090	70	2.3	2.3	15	R	1.000	5.20	0.15	30.43	1.20	33.54	25.39
10	Sirius	265	2	2	TA-2350-DAB	12	10	4	13	F	0.500	3.25	0.05	1.20	1.40	33.54	25.39
11	T-Mobile	265	3	3	ATMAA1412D-1A20	56	12	8	83	F	0.690	6.58	0.08	4.67	1.40	33.54	25.39
12	T-Mobile	265	3	3	AIR 21, 1.3 M, B2A B4P	96.3	11.9	7.1	51.3	F	0.700	17.90	0.40	8.09	1.44	33.54	25.39
13	T-Mobile	265	3	3	AIR 21, 1.3M, B4A B2P	148.3	4.5	4.5	47	R	1.000	10.46	0.08	32.96	1.20	32.60	24.68
14	US DOHS	240	1	1	SC381-HL	0.01	0.01	0.01	0.01	R	0.001	5.20	0.15	1.00	0.80	32.60	24.68
15	US DOHS	240	2	2	Side Arm	55	11	5	35	F	0.900	14.40	0.40	5.00	1.40	32.25	24.41
16	AT&T Mobility	231	3	3	7770	55	11	5	35	F	0.640	14.40	0.40	5.00	1.40	32.25	24.41
17	AT&T Mobility	231	3	3	SBNHH-1D6SA	55	11.9	7.1	40.9	F	0.670	83.84	1.26	4.62	1.40	32.25	24.41
18	AT&T Mobility	231	1	3	32 BOB, TTA, RET	48	11.8	5.9	36.4	F	0.500	6.91	0.06	4.07	1.40	32.25	24.41
19	AT&T Mobility	231	3	3	AM-X-CD-14-65-001-RET	48	11.8	5.9	36.4	F	0.650	6.91	0.06	4.07	1.40	32.25	24.41
20	AT&T Mobility	224	3	3	OPA-6SR-LCUU-H4	48	6.5	8	14	F	0.640	6.91	0.06	7.38	1.41	31.97	24.20
21	Sprint Nextel	224	12	3	Decibel DB84H9QE.XY	48	6.5	8	14	F	0.730	17.90	0.40	7.38	1.41	31.97	24.20
22	Sprint Nextel	200	3	3	Sector Frame	251	5	5	79	R	0.670	17.90	0.40	50.20	1.20	30.95	23.43
23	US DOHS	200	1	1	Sinclair SC281-L	251	5	5	79	R	1.000	5.20	0.15	50.20	1.20	30.95	23.43
24	US DOHS	200	1	1	Side Arm	189.6	3.5	3.5	70	R	1.000	5.20	0.15	54.17	1.20	30.95	23.43
25	Marcus Comm.	200	2	2	TX RX 101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000	5.20	0.15	54.17	1.20	30.95	23.43
26	Marcus Comm.	189	2	2	Side Arm	0.01	0.01	0.01	0.01	R	0.001	8.75	0.03	1.00	0.80	30.45	23.05
27	Town of Stamford	178	1	1	30" x 30" Reflector	0.01	0.01	0.01	0.01	R	0.001	8.75	0.03	1.00	0.80	30.45	23.05
28	Spok Holdings	178	3	3	BCD-87010	134	2.6	2.6	26.5	R	1.000	5.20	0.15	51.54	1.20	29.94	22.66
29	Spok Holdings	171	3	3	Side Arm	24	24	8	20	F	0.670	5.20	0.15	1.00	1.40	29.59	22.40
30	Clearwire	171	1	1	24" x 24" Junction Box	24	24	8	20	F	0.670	5.20	0.15	1.00	1.40	29.59	22.40
31	Clearwire	167	3	3	BTS-2500	19.3	11.3	5.1	35	F	0.670	4.83	0.03	1.71	1.40	29.40	22.25
32	Clearwire	167	3	3	LLPX310R	19.3	11.3	5.1	35	F	0.620	4.83	0.03	1.71	1.40	29.40	22.25
33	Clearwire	167	1	1	T-Arm	0.01	0.01	0.01	0.01	R	0.001	5.20	0.15	1.00	0.80	29.40	22.25
34	Clearwire	167	3	3	RCU (Remote Control Unit)	8	2	2	1	R	0.670	5.20	0.15	4.00	0.80	29.04	21.98
35	Metro PCS	160	18	3	800 10504	8	2	2	1	R	0.500	3.35	0.02	4.00	0.80	29.04	21.98
36	Metro PCS	150	6	3	APXVTM14-C-120	56.3	12.6	6.3	52.9	F	0.670	3.35	0.02	4.47	1.40	28.51	21.58
37	Sprint Nextel	150	3	3	18 RRH	56.3	12.6	6.3	52.9	F	0.650	50.70	0.78	4.47	1.40	28.51	21.58
38	Sprint Nextel	150	1	3	APXVSP18-C-A20	72	11.8	7	57	F	0.500	50.70	0.78	4.47	1.40	28.51	21.58
39	Sprint Nextel	150	3	3	Sector Frame	72	11.8	7	57	F	0.680	17.90	0.40	6.10	1.40	28.51	21.58
40	Sprint Nextel	137	3	3	Sector Frame	134	2.6	2.6	26.5	R	0.670	17.90	0.40	51.54	1.20	27.78	21.03
41	Sprint Nextel	137	1	1	BCD-87010 4"	134	2.6	2.6	26.5	R	1.000	5.20	0.15	51.54	1.20	27.78	21.03
42	Senus	137	1	1	Side Arm	134	2.6	2.6	26.5	R	1.000	5.20	0.15	51.54	1.20	27.78	21.03

31	Marcus Comm. Marcus Comm.	100	1	1	101-68-10-X-03N Side Arm	189.6	3.5	3.5	70	R	1,000	54.17	1.20	25.99	19.22
32	Verizon	92	6	3	WWX063X19G00	75	12.1	7	32.7	F	0.680	6.20	1.40	24.79	18.76
33	Verizon	92	2	3	X7C-FRO-660 (35 lbs)	72	18.8	9.1	42.4	F	0.670	3.83	1.40	24.79	18.76
34	Verizon	92	1	3	X7C-FRO-640-V	0.01	0.01	0.01	0.01	R	0.500	-	-	-	-
35	Verizon	92	1	1	9 RET, 2 BOB	0.01	0.01	0.01	0.01	R	0.001	1.00	0.80	24.79	18.76
36	Verizon	92	1	3	Sector Frame	0.670	6.1	6.1	1.3	F	0.670	0.82	1.40	18.50	14.00
37	Spok Holdings	6	1	1	Acutime 2000	5	6.1	6.1	1.3	F	1,000	-	-	-	-
38			1	1							1,000	-	-	-	-
39															
40															
41															
42															
43															
44															
45															
46															
47															
48															
49															
50															

No.	Elevation (ft)	C _A A _c (ft²)	C _A A _c (Ice) (ft²)	Force (k)	Force (Ice) (k)	Weight (k)	Weight (Ice) (k)	Σ Force (k)	Σ Force (Ice) (k)	Σ Weight (k)	Σ Weight (Ice) (k)
1	300	0.00	0.00	0.000	0.000	0.000	0.000	2.08	2.12	4.00	5.20
2	283	55.00	74.25	2.079	2.124	4.000	5.200	1.49	1.52	2.75	3.58
3	212.5	0.00	0.00	0.000	0.000	0.000	0.000	1.71	1.75	3.00	3.90
4	100	50.00	67.50	1.713	1.750	3.000	3.900	1.38	1.41	3.00	3.90
5	300	0.24	0.33	0.009	0.009	0.011	0.017	0.04	0.05	0.04	0.06
6	300	9.60	12.87	0.363	0.368	0.110	0.198	0.57	0.58	0.18	0.29
7	270	10.19	11.23	0.374	0.312	0.130	0.239	0.56	0.51	0.28	0.43
8	269	5.20	7.02	0.191	0.195	0.150	0.195	0.88	0.70	0.09	0.29
9	265	2.68	3.91	0.098	0.108	0.090	0.056	0.44	0.46	0.33	0.45
10	265	1.75	2.09	0.064	0.058	0.039	0.062	0.24	0.24	0.19	0.26
11	265	13.52	14.91	0.493	0.412	0.249	0.375	0.99	0.92	0.49	0.69
12	265	24.01	26.29	0.876	0.726	0.154	0.351	2.19	2.07	1.35	1.91
13	260	35.98	48.57	1.313	1.341	1.200	1.560	0.57	0.56	0.13	0.20

[illegible]

Foundation

Design Loads (Unfactored)

Compression/Leg:	496.52	k
Uplift/Leg:	386.82	k

Face Width @ Top of Pier (d ₁):	4.00	ft
Face Width @ Bottom of Pier (d ₂):	8.00	ft
Total Length of Pier (l):	8.00	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	18.00	ft
Length of Pad (L):	18.00	ft
Thickness of Pad (t):	3.00	ft
Water Table Depth (w):	99	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	110.0	pcf
Unit Weight of Soil (Below Water Table):	55.0	pcf
Friction Angle of Uplift (A):	20	°
Allowable Compressive Bearing Pressure:	20000	psf

Volume Pier (Total):	298.67	ft ³
Volume Pad (Total):	972.00	ft ³
Volume Soil (Total):	2935.41	ft ³
Volume Pier (Buoyant):	0.00	ft ³
Volume Pad (Buoyant):	0.00	ft ³
Volume Soil (Buoyant):	0.00	ft ³
Weight Pier:	44.80	k
Weight Pad:	145.80	k
Weight Soil:	322.89	k

Uplift Check

TIA Case 1:	$\frac{\text{Wt. Soil} + \text{Wt. Concrete}}{1.5}$
TIA Case 2:	$\frac{\text{Wt. Soil} + \text{Wt. Concrete}}{2.0 \quad 1.25}$

	Allowable Uplift (k)	Ratio	Result
TIA Case 1:	451.68	0.86	OK
TIA Case 2:	423.28	0.91	OK

Axial Check

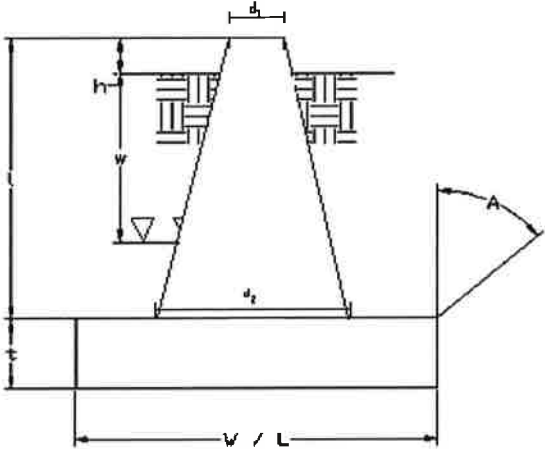
Allowable Axial:	$\text{Allowable Bearing Pressure} * W * L$
------------------	---

	Allowable Axial (k)	Ratio	Result
	6480.00	0.08	OK

Anchor Bolt Check

Bolt Description	Allowable Uplift (k)	Ratio	Result
(6) 2 1/4" A36	456.61	0.85	OK

Site No.:	88018
Engineer:	ADV
Date:	12/18/15
Carrier:	0



ATTACHMENT 6

ATTACHMENT 7

August 4, 2016

Via Certificate of Mailing

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

Re: **Proposed Modifications to a Telecommunications Facility at 168 Catoona Lane in Stamford, Connecticut**

Dear Mayor Martin:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Sub-Petition for Declaratory Ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") seeking approval to install antennas and related equipment on the existing 300-foot monopole tower at 168 Catoona Lane in Stamford, Connecticut (the "Property"). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 92-foot level on the tower. Equipment associated with Cellco's antennas and an emergency back-up generator will be installed on a new equipment platform with canopy structure.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

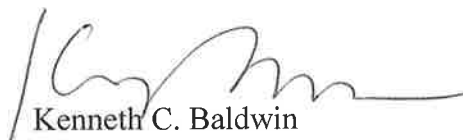
15052344-v1

David Martin
August 4, 2016
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

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

Sincerely,



Kenneth C. Baldwin

Attachment

August 4, 2016

Via Certificate of Mailing

Heather Douglas Wilkins
Territory Manager-Business Development
Northeast (New England/NY)
American Tower Corp.
10 Presidential Way
Woburn, MA 01801

Re: **Proposed Modifications to a Telecommunications Facility at 168 Catoona Lane in Stamford, Connecticut**

Dear Ms. Wilkins:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install antennas and related equipment on the existing 300-foot monopole tower at 168 Catoona Lane in Stamford, Connecticut (the “Property”). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 92-foot level on the tower. Equipment associated with Cellco’s antennas and an emergency back-up generator will be installed on a new equipment platform with canopy structure.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

15052378-v1

Robinson + Cole

Heather Douglas Wilkins
August 4, 2016
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

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

August 4, 2016

Via Certificate of Mailing

«Name_and_Address»

**Re: Proposed Telecommunications Facility at 168 Catoona Lane in Stamford,
Connecticut**

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install antennas and related equipment on the existing 300-foot monopole tower at 168 Catoona Lane in Stamford, Connecticut (the “Property”). Cellco intends to install twelve (12) antennas and nine (9) remote radio heads at the 92-foot level on the tower. Equipment associated with Cellco’s antennas and an emergency back-up generator will be installed on a new equipment platform with canopy structure.

As presented in the Sub-Petition, the proposed facility improvements at the Property constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review.

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the Sub-Petition.

August 4, 2016

Page 2

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 Sub-Petition, the Council's process for reviewing the Sub-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,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin", with a long horizontal flourish extending to the right.

Kenneth C. Baldwin

Attachment

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTING PROPERTY OWNERS

**168 CATOONA LANE
STAMFORD, CONNECTICUT**

	Property Address	Owner's and Mailing Address
1.	0 Connecticut Avenue	Housing Authority City of Stamford c/o Charter Oak Communities 22 Clinton Avenue Stamford, CT 06901
2.	76 Progress Drive	Progress Park Corp. 76 Progress Drive Stamford, CT 06902
3.	1937 West Main Street	Cytec Industries Inc. 5 Garret Mountain Plaza Woodland Park, NJ 07424
4.	88 Catoona Lane	Pasquale S. Stoni et al 9 Spring Grove Darien, CT 06820
5.	82 Catoona Lane	Anthony Michael Femia et al 82 Catoona Lane Stamford, CT 06902
6.	83 Catoona Lane	Carmen Fustini 83 Catoona Lane Stamford, CT 06902
7.	72 Alvord Lane	72 Alvord Lane LLC 21 Annjim Drive Greenwich, CT 06830-4826
8.	70 Catoona Lane	Teresa Ricci et al 47 Lockwood Lane Riverside, CT 06878-1713