Robinson+Cole

KENNETH C. BALDWIN

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

Also admitted in Massachusetts

May 13, 2015

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

Re: **EM-VER-007-131122 – 1657 Wilbur Cross Parkway, Berlin, Connecticut**
EM-VER-064-131004 – 219 New Park Avenue, Hartford, Connecticut
TS-VER-115-131009 – 37 Peach Orchard Road, Prospect, Connecticut
EM-VER-118-131213 – 76 East Ridge Road, Ridgefield, Connecticut

Completion of Construction Activity

Dear Ms. Bachman:

The purpose of this letter is to notify the Siting Council that construction activity associated with the above-referenced Cellco Partnership d/b/a Verizon Wireless telecommunications facilities has been completed.

If you have any questions or need any additional information regarding these facilities please do not hesitate to contact me.

Sincerely,

Kenneth C. Baldwin

Copy to:
Tim Parks

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

November 5, 2013

Kenneth C. Baldwin
Robinson & Cole
280 Trumbull Street
Hartford, CT 06103-3597

RE: **TS-VER-115-131009** – Cellco Partnership d/b/a Verizon Wireless request for an order to approve the shared used of an existing telecommunications facility located at 37 Peach Orchard Road, Prospect, Connecticut.

Dear Attorney Baldwin:

At a public meeting held October 31, 2013, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

- Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
- Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
- Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated October 8, 2013, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Robert Stein VAB

Robert Stein
Chairman

RS/CDM/jb

c: The Honorable Robert J. Chatfield, Mayor, Town of Prospect
William J. Donovan, Zoning Enforcement Officer, Town of Prospect
Counterpoint Communications

CSC
CONNECTICUT SITING COUNCIL

ROBINSON & COLE LLP

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

ORIGINAL

October 11, 2013

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

Re: **TS-VER-115131009**
37 Peach Orchard Road, Prospect, Connecticut

Dear Ms. Bachman:

In the Cellco Partnership d/b/a Verizon Wireless ("Cellco") tower share filing of October 8, 2013, the name of the owner of the existing telecommunications tower at 37 Peach Orchard Road was incorrectly identified as Counterpart Communications, Inc. The owner's name should be listed as Counterpoint Communications, Inc. The same owner identification information should be corrected in the Noise Standards Compliance Review Form included behind Tab 4 of the filing. I apologize for any confusion this may have caused.

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Copy to:
Counterpoint Communications, Inc.
Mayor Robert J. Chatfield
Sandy M. Carter
Aleksey Tyurin

ROBINSON & COL

TS-VER-115-131009

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
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Direct (860) 275-8345

Also admitted in Massachusetts

ORIGINAL

October 8, 2013

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

Re: **Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of an Existing Tower at 37 Peach Orchard Road, Prospect, Connecticut**

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes §16-50aa, as amended, Cellco Partnership d/b/a Verizon Wireless ("Cellco") hereby requests an order from the Connecticut Siting Council ("Council") to approve the shared use by Cellco of an existing telecommunications tower, owned by Counterpart Communications, Inc. ("Counterpart") at 37 Peach Orchard Road in Prospect, Connecticut. Cellco requests that the Council find that the proposed shared use of the Counterpart tower satisfies the criteria of Connecticut General Statutes § 16-50aa and issue an order approving the proposed shared use. A copy of this letter is being sent to Prospect Mayor, Robert J. Chatfield and Counterpart, the owner of the property on which the tower is located.

Background

The existing Counterpart facility consists of a 200-foot guyed lattice tower adjacent to an existing two-story commercial building. According to the Council's radio frequency (RF) database, the tower is currently shared by an entity identified as ORTV, with dish antennas at the 200-foot level, Clearwire, with antennas at the 180-foot level and MetroPCS, with antennas at the 170-foot level.

Cellco is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. Cellco and

Counterpart have agreed to the proposed shared use of the tower pursuant to mutually acceptable terms and conditions, and Counterpart has authorized Cellco to apply for all necessary permits and approvals that may be required for the shared use of this tower. (*See* Owner's authorization letter attached behind Tab 1).

Cellco proposes to install twelve (12) panel-type antennas at the 155-foot level on the Counterpart tower. Cellco will also install three (3) remote radio heads (RRHs), one RRH (1) per sector, behind its AWS antennas and one (1) main distribution box on its antenna mounting structure. Equipment associated with Cellco's antennas and a propane-fueled back-up generator will be located inside a 12' x 30' shelter. Due to space constraints at this site, Cellco's shelter and a 1,000 gallon propane tank will be located adjacent to an existing paved and gravel parking area approximately 100 feet east of the tower. Cellco's antenna cables will run underground from the shelter to the tower. Included behind Tab 2 are Cellco's project plans showing the location of all site improvements as well as specifications for Cellco's antennas and RRHs.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use." Cellco respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing tower is structurally capable of supporting Cellco's antennas and associated equipment. The proposed shared use of this tower therefore is technically feasible. A Structural Analysis Report confirming that the existing tower can support all existing antennas and Cellco's proposed antennas and associated equipment is attached to this filing behind Tab 3.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the proposed shared use of an existing tower facility such as the Counterpart tower in Prospect. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. **Environmental Feasibility.** The proposed shared use of the Counterpart tower would have a minimal environmental effect, for the following reasons:

1. The proposed installations of twelve (12) additional antennas would have an insignificant incremental visual impact and would not cause any significant change or alteration in the physical or environmental characteristics of the site. The proposed installation of Cellco's shelter would require the clearing of a 34-foot by 38-foot area adjacent to an existing paved and gravel parking area to the east of the tower. All improvements will remain well within the limits of the Counterpart parcel and more than 100 feet from the closest adjacent property line.

2. Noise levels associated with the equipment shelter's air-conditioning units will comply with State and/or local noise standards. (*See* Noise Standards Compliance Report included behind Tab 4). Noise associated with Cellco's emergency back-up generator is exempt from State and local noise standards.

3. Operation of the existing antennas and Cellco's proposed antennas on the Counterpart tower would not exceed the RF emissions limits adopted by the Federal Communications Commission. The cumulative "worst-case" RF emissions for the operation of the existing ORTV, MetroPCS and Clearwire antennas and Cellco's proposed antennas would be 18.29% of the FCC standard. (*See* the General Power Density Table included behind Tab 5).

4. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or discharges to sanitary facilities on or off the Counterpart property. After construction is complete, the proposed Cellco installations would require only periodic (monthly) maintenance visits to the property.

The proposed use of this Counterpart tower would, therefore, have a minimal environmental effect, and is, therefore, environmentally feasible.

D. Economic Feasibility. As previously mentioned, Counterpart and Cellco have entered into a lease to share the existing tower on mutually agreeable terms. The proposed tower sharing is therefore economically feasible. (*See* Tab 1).

E. Public Safety Concerns. As stated above, the tower is structurally capable of supporting all existing antennas, as well as Cellco's proposed antennas and related equipment. Cellco is not aware of any public safety concerns relative to the proposed sharing of the existing Counterpart tower. In fact, the provision of new or improved wireless service through shared use of the Counterpart tower is expected to enhance the safety and welfare of the public in general and area residents in particular.

Conclusion

For the reasons discussed above, the proposed shared use of the existing Counterpart tower at 37 Peach Orchard Road in Prospect satisfies the criteria stated in C.G.S. § 16-50aa and advances the General Assembly's and the Siting Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, requests that the Council issue an order approving the proposed shared use of the Counterpart tower.

Thank you for your consideration of this matter.

Very truly yours,

Kenneth C. Baldwin

Enclosures
Copy to:
Mayor Robert J. Chatfield
Counterpart Communications, Inc.
Sandy M. Carter

Counterpoint Communications, Inc.

August 28, 2013

Sandy M. Carter
Regulatory Manager
Cellco Partnership d/b/a Verizon Wireless
99 East River Drive, 9th Floor
East Hartford, CT 06108

Re: **Cellco Partnership d/b/a Verizon Wireless**
37 Peach Orchard Road, Prospect, CT

Dear Ms. Carter:

Counterpoint Communications, Inc. ("Counterpoint"), the owner of the above-referenced property, agrees to the proposed shared use of the existing tower. Counterpoint also authorizes Cellco Partnership d/b/a Verizon Wireless and/or its agent to file for all necessary permits, applications, authorizations and approvals for the proposed shared use of its Peach Orchard Road facility.

Sincerely,

Counterpoint Communications, Inc.

By: Scott K. Parmelee
Its: Secretary and Treasurer

15 Peach Orchard Road • Prospect • Connecticut • 06712-1052 • (203) 758-6800 • Fax (203) 758-4330

Cellco Partnership

d.b.a. verizon wireless

WIRELESS COMMUNICATIONS FACILITY

NAUGATUCK RELO.
37 PEACH ORCHARD ROAD
PROSPECT, CT 06712

SITE DIRECTIONS

FROM: 99 EAST RIVER DRIVE, EAST HARTFORD, CONNECTICUT **TO:** 37 PEACH ORCHARD ROAD, PROSPECT, CONNECTICUT

1. Head east on E River Dr	0.3 mi
2. Turn left to stay on E River Dr	397 ft
3. Turn left onto Connecticut Blvd	0.2 mi
4. Turn left to merge onto I-84 W	28.8 mi
5. Take exit 23 for CT-69/Hamilton Ave	0.2 mi
6. Turn left onto CT-69 S/Hamilton Ave	0.8 mi
7. Turn right onto Hamilton Ave	0.4 mi
8. Take right onto Peach Orchard Rd	0.9 mi
9. Arrive at 37 Peach Orchard Rd	

GENERAL NOTES

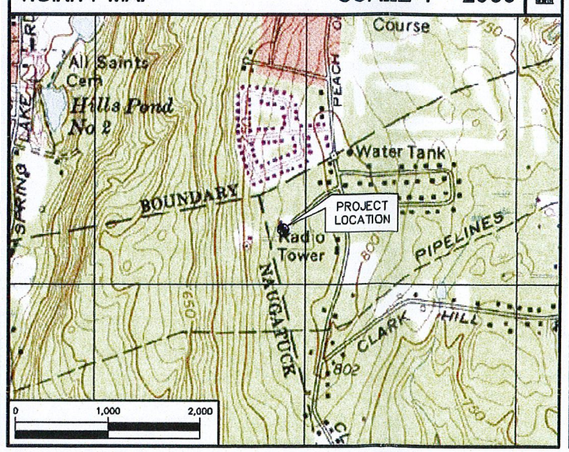
1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELLCO PARTNERSHIP.

PROJECT SCOPE

1. THE SCOPE OF WORK GENERALLY INCLUDES THE INSTALLATION OF (12) PANEL ANTENNAS TO THE EXISTING GUYED TOWER AND A EQUIPMENT SHELTER WITH DIESEL FUELED EMERGENCY POWER GENERATOR AT GRADE.

VICINITY MAP

SCALE: 1" = 2000'



PROJECT SUMMARY

SITE NAME:	NAUGATUCK RELO
SITE ADDRESS:	37 PEACH ORCHARD ROAD, PROSPECT, CT 06712
CELLCO PARTNERSHIP/TENANT:	CELLCO PARTNERSHIP d.b.a. CELLCO PARTNERSHIP WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
CONTACT PERSON:	SANDY CARTER CELLCO PARTNERSHIP (860) 803-8219
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD ROAD BRANFORD, CT 06405 (203) 488-0580
TOWER COORDINATES:	LATITUDE: 41°-31'-6.93" LONGITUDE: 73°-01'-0.59" (REFERENCED FROM CSC DATABASE)

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	SITE LOCATION PLAN	0
C-2	ELEVATION, PLAN AND ANTENNA CONFIG.	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/24/13	HMR	DMD	ISSUED FOR CSC - CLIENT REVIEW

Cellco Partnership d.b.a. verizon wireless

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

Cellco Partnership d/b/a Verizon Wireless

NAUGATUCK RELO.

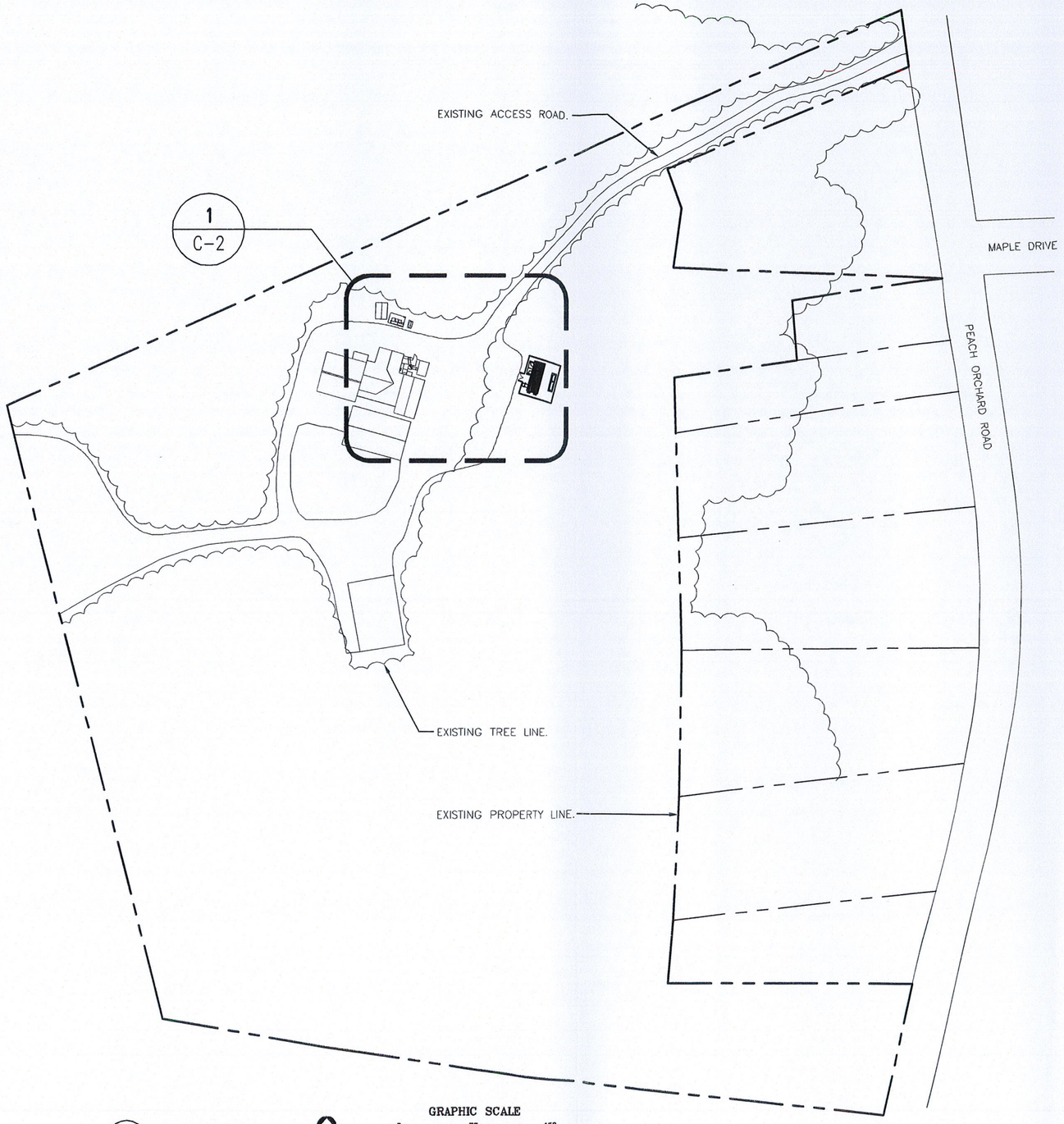
37 PEACH ORCHARD ROAD
PROSPECT, CT 06712

DATE: 04/19/13
SCALE: AS NOTED
JOB NO. 13038

TITLE SHEET

T-1

DWG. 1 OF 3



1 C-1 SITE LOCATION PLAN
SCALE: 1" = 150'-0"

TRUE NORTH

GRAPHIC SCALE
0 75 150
(IN FEET)
1 inch = 150 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/24/13	HMR	DMD	ISSUED FOR CSC - CLIENT REVIEW

Cellco Partnership d.b.a. verizon wireless

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Cellco Partnership d/b/a Verizon Wireless

NAUGATUCK RELO.

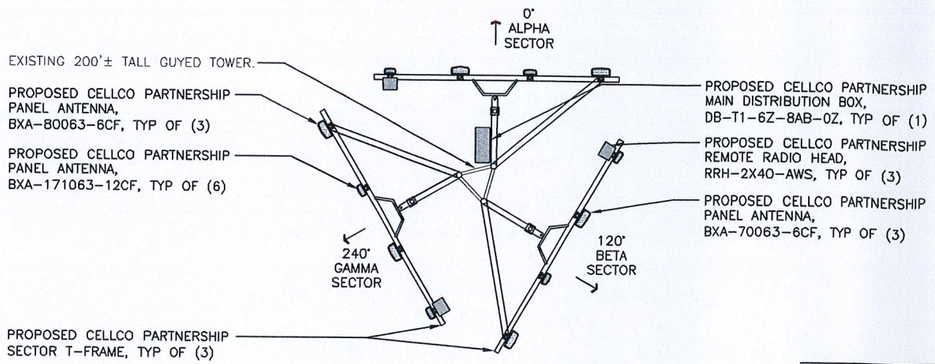
37 PEACH ORCHARD ROAD
PROSPECT, CT 06712

DATE: 04/19/13
SCALE: AS NOTED
JOB NO. 13038

SITE LOCATION PLAN

C-1

DWG. 2 OF 3

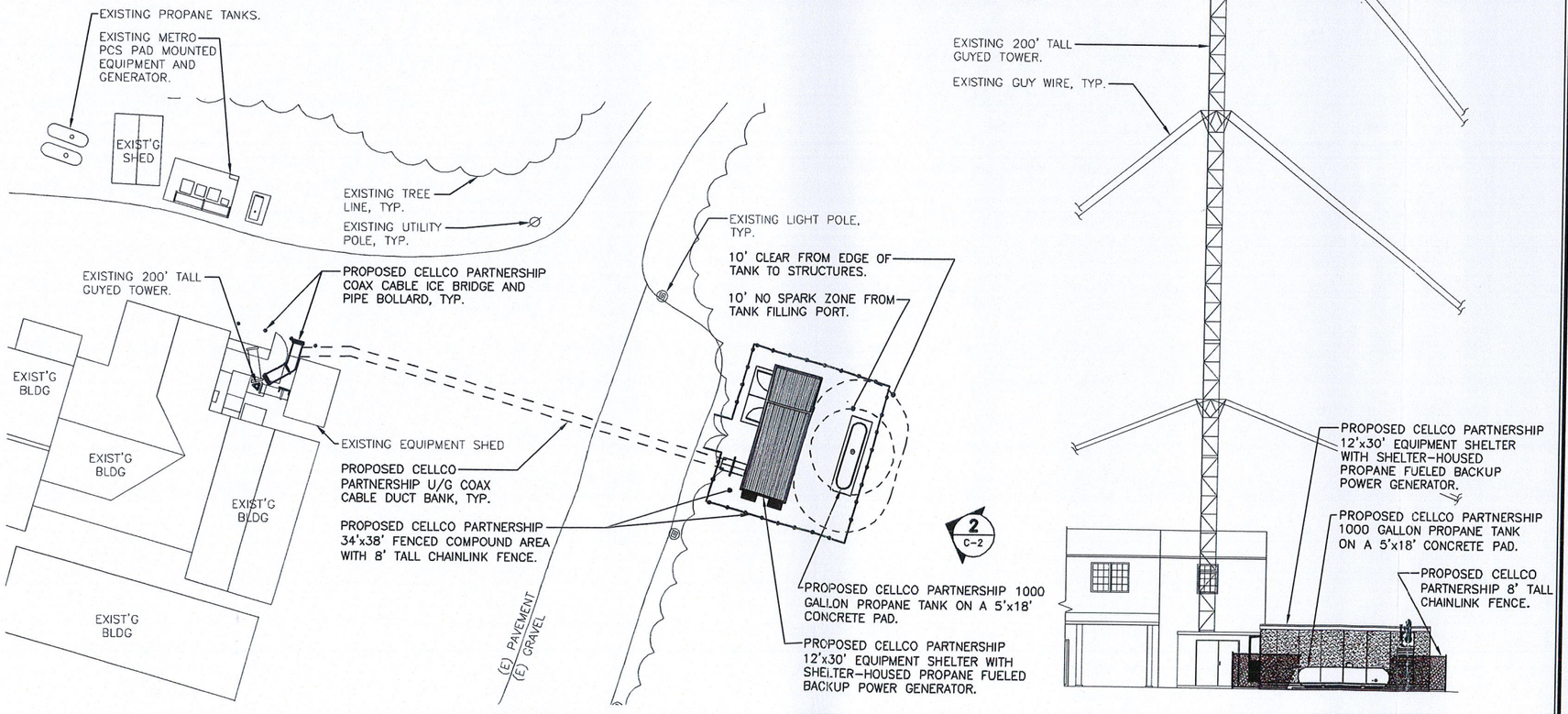


3 C-2 **ANTENNA CONFIGURATION - PLAN** (PROPOSED)
SCALE: 3/32" = 1'-0"

TRUE NORTH

TOWER STRUCTURAL NOTES:

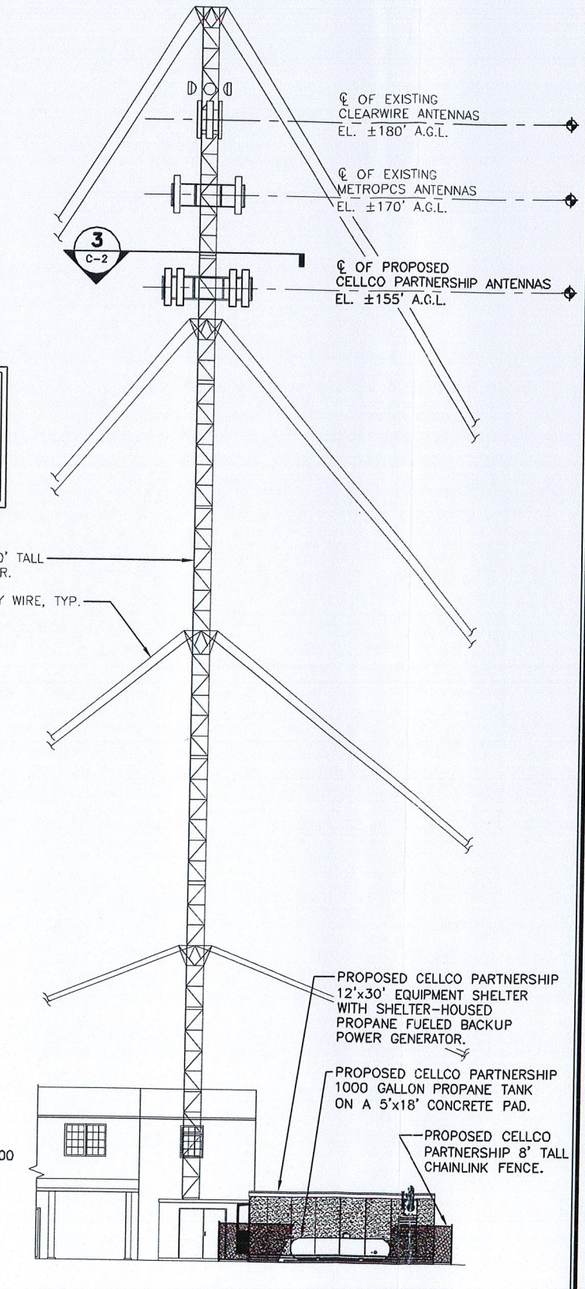
REFER TO STRUCTURAL ANALYSIS REPORT PREPARED FOR VERIZON WIRELESS BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. (APT), APT PROJECT NO. CT1414260, DATED DECEMBER 04, 2012 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



1 C-2 **COMPOUND PLAN - PROPOSED**
SCALE: 1" = 40'-0"

TRUE NORTH

GRAPHIC SCALE
0 20 40
(IN FEET)
1 inch = 40 ft.



2 C-2 **EAST ELEVATION - PROPOSED**
SCALE: 1" = 30'-0"

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

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/24/13	HMR	DMD	ISSUED FOR CSC - CLIENT REVIEW

Cellco Partnership d/b/a verizon wireless

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

Cellco Partnership d/b/a Verizon Wireless

NAUGATUCK RELO.

37 PEACH ORCHARD ROAD
PROSPECT, CT 06712

DATE: 04/19/13
SCALE: AS NOTED
JOB NO. 13038

ELEVATION, PLAN AND ANTENNA CONFIG.

C-2

DWG. 3 OF 3

Amphenol ANTENNA SOLUTIONS

BXA-80063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

Replace "X" with desired electrical downtilt

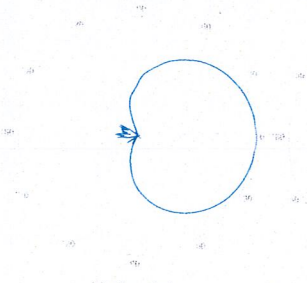
Antenna is also available with NE connector(s) Replace "EDIN" with "NE" in the model number when ordering

Electrical Characteristics	
Frequency bands	806-900 MHz*
*Optional frequency band for iDEN	806-941 MHz (specify when ordering)
Polarization	±45°
Horizontal beamwidth	63°
Vertical beamwidth	11°
Gain	14.5 dBd (16.6 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10
Impedance	50Ω
VSWR	≤1.4:1
Upper sidelobe suppression (0°)	-18.2 dB
Front-to-back ratio (+/-30°)	-36.3 dB
Null fill	5% (-26.02 dB)
Isolation between ports	< -25 dB
Input power with EDIN connectors	500 W
Input power with NE connectors	300 W
Lightning protection	Direct Ground
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)

Mechanical Characteristics		
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in
Depth with z-brackets	172 mm	6.8 in
Weight without mounting brackets	7.9 kg	17 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.51 m^2 Side: 0.24 m^2	Front: 5.5 ft^2 Side: 2.6 ft^2
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf

Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-80063-6CF-EDIN-X-FP		

BXA-80063-6CF-EDIN-X

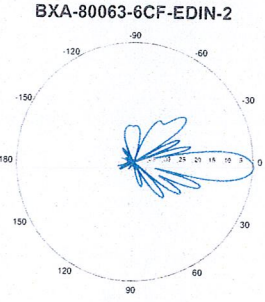


Horizontal

BXA-80063-6CF-EDIN-0

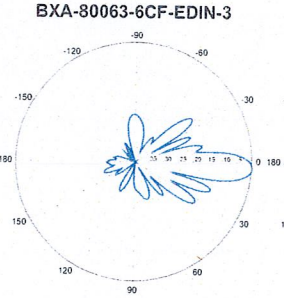
0° | Vertical

BXA-80063-6CF-EDIN-2



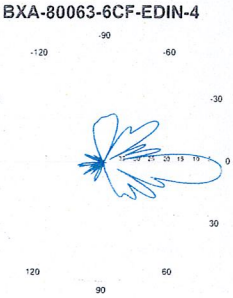
2° | Vertical

BXA-80063-6CF-EDIN-3



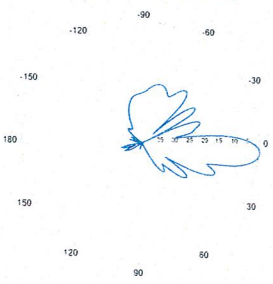
3° | Vertical

BXA-80063-6CF-EDIN-4



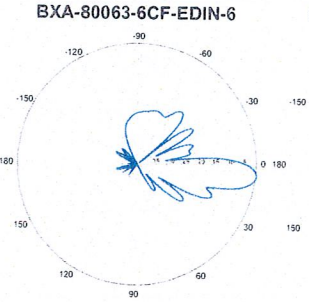
4° | Vertical

BXA-80063-6CF-EDIN-5



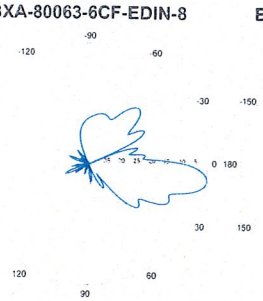
5° | Vertical

BXA-80063-6CF-EDIN-6



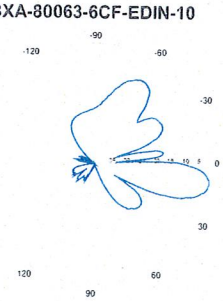
6° | Vertical

BXA-80063-6CF-EDIN-8



8° | Vertical

BXA-80063-6CF-EDIN-10



10° | Vertical

Amphenol ANTENNA SOLUTIONS

BXA-171063-12CF-EDIN-X

X-Pol | FET Panel | 63° | 19.0 dBi

Replace "X" with desired electrical downtilt.

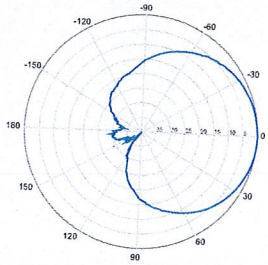
Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	4.5°	4.5°	4.5°
Gain	16.1 dBd / 18.2 dBi	16.5 dBd / 18.6 dBi	16.9 dBd / 19.0 dBi
Electrical downtilt (X)	0, 2, 5		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back ratio	> 30 dB		
In-band isolation	> 28 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)		
Operating temperature	-40° to +60° C / -40° to +140° F		

Mechanical Characteristics		
Dimensions Length x Width x Depth	1842 x 154 x 105 mm	72.5 x 6.1 x 4.1 in
Depth with z-brackets	133 mm	5.2 in
Weight without mounting brackets	5.8 kg	12.8 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.28 m² Side: 0.19 m²	Front: 3.1 ft² Side: 2.1 ft²
Wind load @ 161 km/hr (100 mph)	Front: 460 N Side: 304 N	Front: 103 lbf Side: 68 lbf

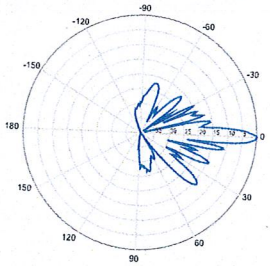
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171063-12CF-EDIN-X-FP		

BXA-171063-12CF-EDIN-X



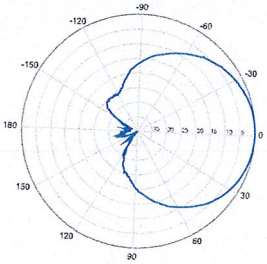
Horizontal | 1710-1880 MHz

BXA-171063-12CF-EDIN-0



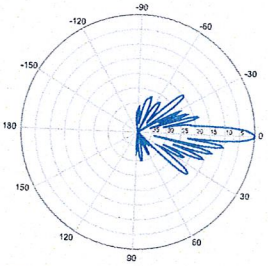
0° | Vertical | 1710-1880 MHz

BXA-171063-12CF-EDIN-X



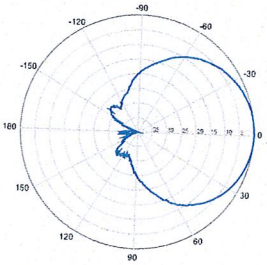
Horizontal | 1850-1990 MHz

BXA-171063-12CF-EDIN-0



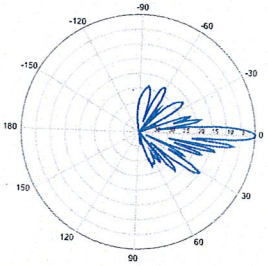
0° | Vertical | 1850-1990 MHz

BXA-171063-12CF-EDIN-X



Horizontal | 1920-2170 MHz

BXA-171063-12CF-EDIN-0

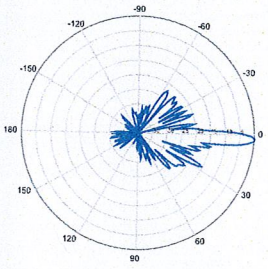


0° | Vertical | 1920-2170 MHz

BXA-171063-12CF-EDIN-X

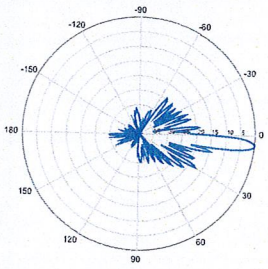
X-Pol | FET Panel | 63° | 19.0 dBi

BXA-171063-12CF-EDIN-2



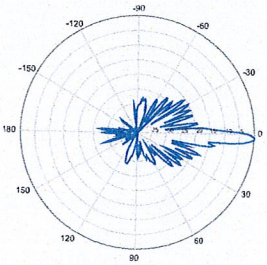
2° | Vertical | 1710-1880 MHz

BXA-171063-12CF-EDIN-5



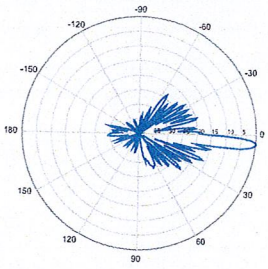
5° | Vertical | 1710-1880 MHz

BXA-171063-12CF-EDIN-2



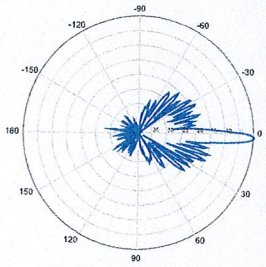
2° | Vertical | 1850-1990 MHz

BXA-171063-12CF-EDIN-5



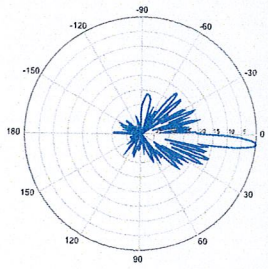
5° | Vertical | 1850-1990 MHz

BXA-171063-12CF-EDIN-2



2° | Vertical | 1920-2170 MHz

BXA-171063-12CF-EDIN-5



5° | Vertical | 1920-2170 MHz

BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

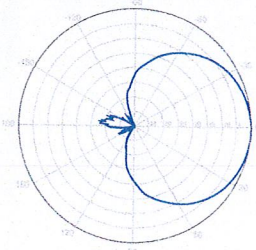
Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

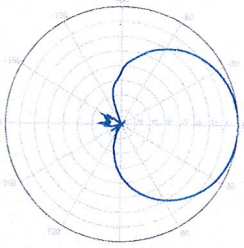
Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	13°	11°
Gain	14.0 dBd (16.1 dBi)	14.5 dBd (16.6 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-18.3 dB	-18.2 dB
Front-to-back ratio (+/-30°)	-33.4 dB	-36.3 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -25 dB	
Input power with EDIN connectors	500 W	
Input power with NE connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in
Depth with z-brackets	172 mm	6.8 in
Weight without mounting brackets	7.9 kg	17 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.51 m^2 Side: 0.24 m^2	Front: 5.5 ft^2 Side: 2.6 ft^2
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf

Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-6CF-EDIN-X-FP		

BXA-70063-6CF-EDIN-X

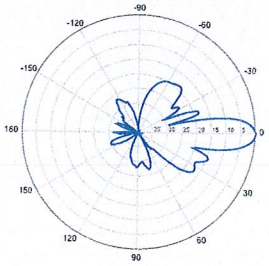


Horizontal | 750 MHz

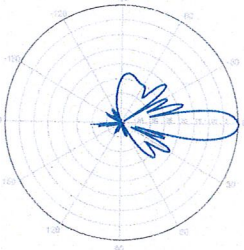


Horizontal | 850 MHz

BXA-70063-6CF-EDIN-0

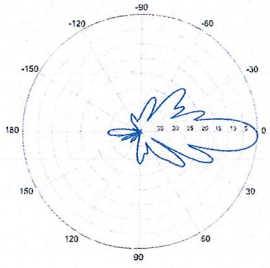


0° | Vertical | 750 MHz

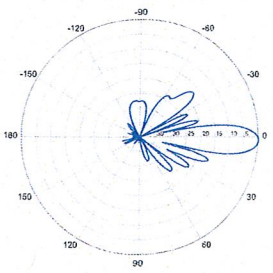


0° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-2



2° | Vertical | 750 MHz

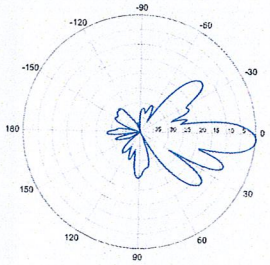


2° | Vertical | 850 MHz

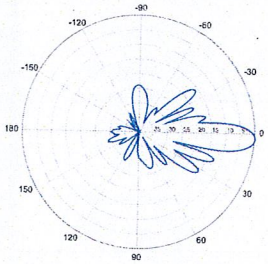
BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

BXA-70063-6CF-EDIN-3

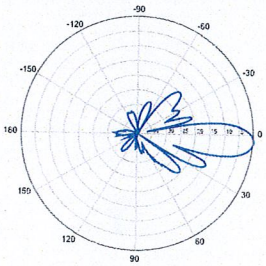


3° | Vertical | 750 MHz

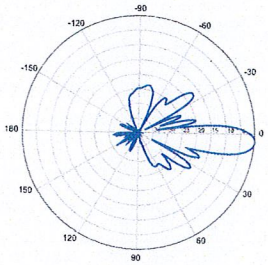


3° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-4

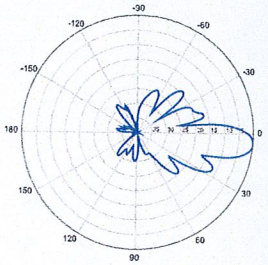


4° | Vertical | 750 MHz

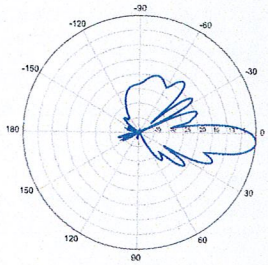


4° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-5

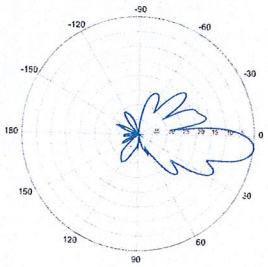


5° | Vertical | 750 MHz

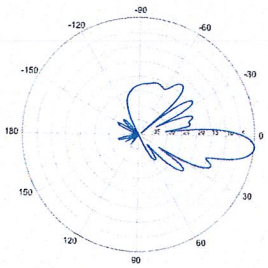


5° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-6

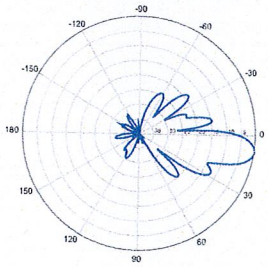


6° | Vertical | 750 MHz

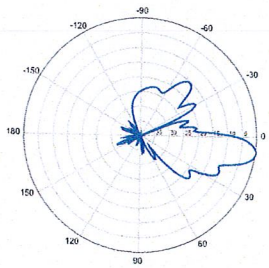


6° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-8

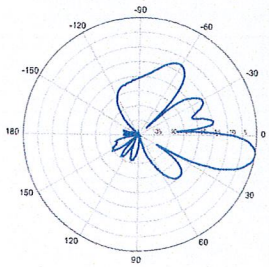


8° | Vertical | 750 MHz

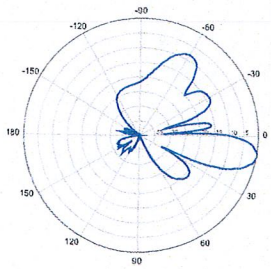


8° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-10



10° | Vertical | 750 MHz

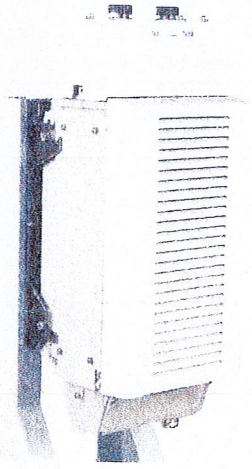


10° | Vertical | 850 MHz

Alcatel-Lucent RRH2x40-AWS

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-AWS is a high-power, small form-factor Remote Radio Head (RRH) operating in the AWS frequency band (1700/2100MHz - 3GPP Band 4). The Alcatel-Lucent RRH2x40-AWS is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands 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 an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-AWS has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to four-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 20 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-AWS is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-AWS is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-AWS is compact and weighs less than 20 kg (44 lb), 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 — a fraction of the time required for a traditional BTS.

Excellent RF performance

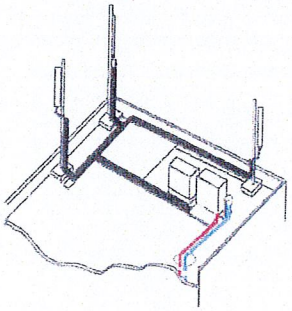
Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-AWS provides more RF power while at the same time consuming less electricity.

Features

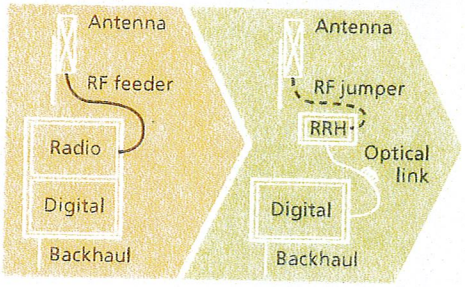
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

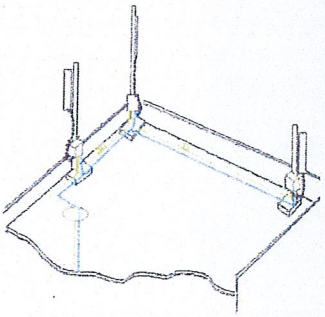
- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning



Macro



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

- Height: 620 mm (24.4 in.)
- Width: 270 mm (10.63 in.)
- Depth: 170m (6.7 in.)
- Weight (without mounting kit): less than 20 kg (44 lb)

Power

- Power supply: -48VDC

Operating environment

- Outdoor temperature range:
  - ¬ With solar load: -40°C to +50°C (-40°F to +122°F)
  - ¬ Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)
- Enclosure protection
  - ¬ IP65 (International Protection rating)

RF characteristics

- Frequency band: 1700/2100 MHz (AWS); 3GPP Band 4
- Bandwidth: up to 20 MHz
- RF output power at antenna port: 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way with optional Rx Diversity module
- Noise figure: below 2.0 dB typical
- Antenna Line Device features
  - ¬ TMA and Remote electrical tilt (RET) support via AISG v2.0

Optical characteristics

Type/number of fibers

- Single-mode variant
  - ¬ One Single Mode Single Fiber per RRH2x, carrying UL and DL using CWDM
  - ¬ Single mode dual fiber (SM/DF)
- Multi-mode variant
  - ¬ Two Multi-mode fibers per RRH2x: one carrying UL, the other carrying DL

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Digital Ports and Alarms

- Two optical ports to support daisy-chaining
- Six external alarms

CPG2809100912 (09)

Alcatel·Lucent

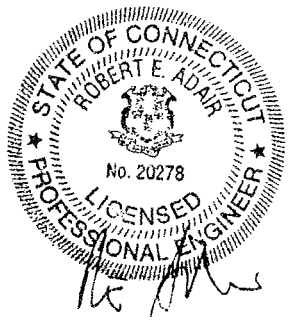
ALL-POINTS TECHNOLOGY CORPORATION, P.C.

STRUCTURAL ANALYSIS REPORT
200' GUYED TOWER
PROSPECT, CONNECTICUT

Prepared for
Verizon Wireless

Verizon Site: Naugatuck Relo

December 4, 2012



APT Project #CT1414260

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⊗ P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

STRUCTURAL ANALYSIS REPORT
200' GUYED TOWER
PROSPECT, CONNECTICUT
prepared for
Verizon Wireless

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of the 200-foot guyed tower located in Prospect, Connecticut. The analysis was performed for Verizon Wireless's proposed installation of twelve panel antennas, three remote radio heads (RRHs) and one surge suppressor on three 14' sector mounts at 155', fed by one 1-5/8" hybrid and eighteen 1-5/8" feed lines, assumed to be installed in a 6-wide by 3-deep stacked arrangement.

Our analysis indicates the tower meets the requirements of the Connecticut State Building Code and TIA-222 with Verizon Wireless's proposed equipment. Evaluation of the existing base foundation and guy anchors could not be performed, as information on their design or construction was not available to APT. Since the tower has additional available capacity the foundation and anchors are likely to be adequate.

INTRODUCTION:

A structural analysis was performed on the above-mentioned communications tower by APT for Verizon Wireless The tower is located at 37 Peach Orchard Road in Prospect, Connecticut. APT previously visited the tower site on October 11, 2011 and climbed the tower in its entirety to compile data necessary to perform the analysis. The structure is a 200-foot guyed tower of unknown manufacturer.

The analysis was performed in accordance with TIA-222 using the following equipment inventory (proposed equipment shown in **bold** text):

Antenna	Elev.	Mount	Coax.
Beacon, lightning rod	200'	Top plates	1" conduit
2' high performance dish	198'	6' x 2 ⅜" pipe	1/2"
Scala Paraflector grid	193'	Leg	1-¼"
(3) 2' high performance dishes, TMA	187'	On sector mounts below	(2) 2 ¼"
(3) LLPX310R panels, (3) Samsung DAP heads	182'	(3) 7' x 3 ½" pipes	(6) 1/2"
(6) HBX-6516DS panels, (6) RETs	170'	(3) 12' sector mounts	(12) 1-5/8", 3/8"
(3) BXA-80063/6, (3) BXA-70063/6, (6) BXA-171063/12 panels, (3) RRHs, (1) surge suppressor	**155'**	**(3) 14' sector mounts**	**(18) 1-5/8", (1) hybrid**
(2) obstruction lights	108'	Conduit across legs	1" conduit

STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with the Connecticut State Building Code and TIA/EIA-222, Revision F (TIA), Structural Standards for Steel Antenna Towers and Antenna Supporting Structures; and the American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, Ninth Edition.

The analysis was conducted using a fastest mile wind speed of 85-mph (equivalent to 100-mph 3-second gust) and ½" of radial ice over the structure and associated appurtenances. The TIA Standard requires a basic wind speed of 85-mph for New Haven County, Connecticut.

Two loading conditions were evaluated in accordance with TIA/EIA-222-F to determine tower capacity. The more demanding of the two cases is used to calculate tower capacity:

- Case 1 = Wind Load (without ice) + Tower Dead Load
- Case 2 = 0.75 Wind Load (with ice) + Ice Load + Tower Dead Load

The TIA/EIA standard permits a one-third increase in allowable stresses for towers less than 700-feet tall. Allowable stresses of tower members were increased by one-third when computing the tower capacity values shown below.

Analysis Results:

The following table summarizes the results of the analysis based on stresses of individual leg and bracing members:

Elevation	Leg Capacity	Bracing Capacity
180'-200'	57%	24%
160'-180'	58%	23%
140'-160'	44%	43%
120'-140'	43%	22%
100'-120'	88%	34%
80'-100'	89%	54%
60'-80'	63%	16%
40'-60'	62%	47%
20'-40'	65%	19%
0'-20'	65%	41%

Splice Bolts:

Connection bolts were evaluated under the proposed loading. All bolts were found to be adequately sized to support the proposed loads.

Base Reactions:

Base reactions imposed with the antenna changes were calculated as follows:

Location	Vertical	Horizontal
Base:	95.6 kips	0.7 kips
Guy Anchor:	-34.7 kips	-40.0 kips

CONCLUSIONS AND RECOMMENDATIONS:

Our structural analysis indicates the 200-foot guyed tower located at 37 Peach Orchard Road in Prospect, Connecticut meets the requirements of the Connecticut State Building Code and TIA-222 with Verizon Wireless's proposed equipment.

Evaluation of the existing base foundation and guy anchors could not be performed, as information on their design or construction was not available to APT. Since the tower has additional available capacity the foundation and anchors are likely to be adequate.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in an undeteriorated condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Tower is in plumb condition.
6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

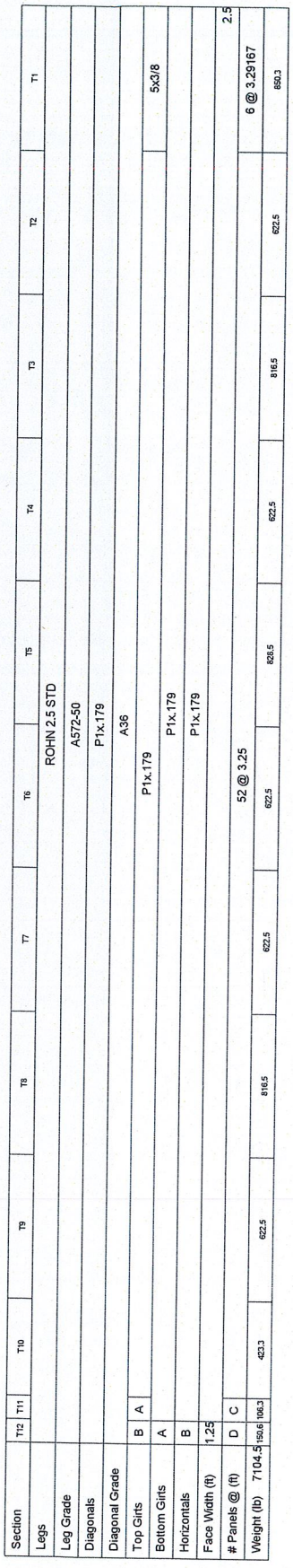
All-Points Technology Corporation, P.C. (APT) is not responsible for modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

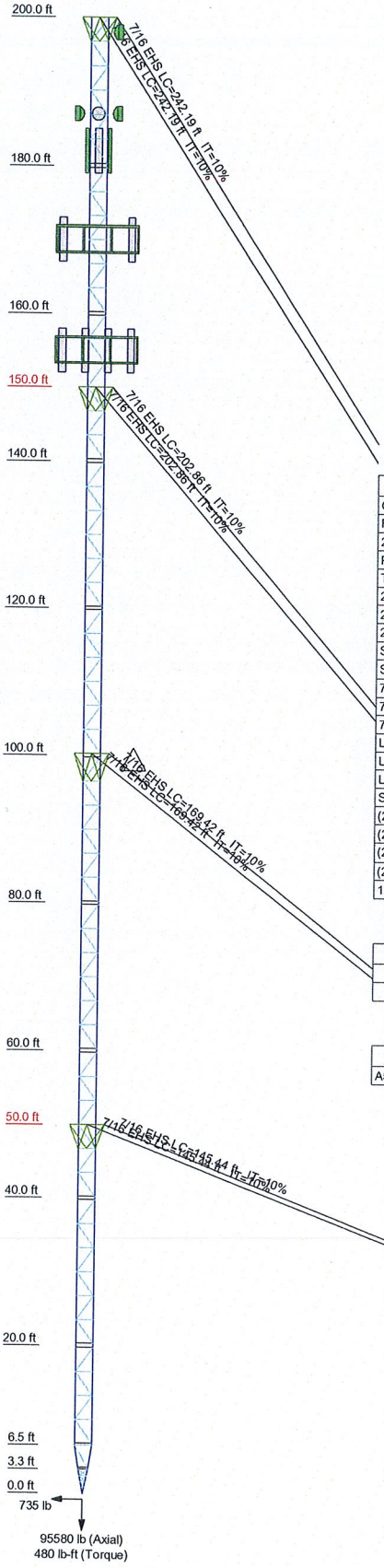
1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating stabilizers.
4. Installing antenna mounting gates or side arms.
5. Extending tower.

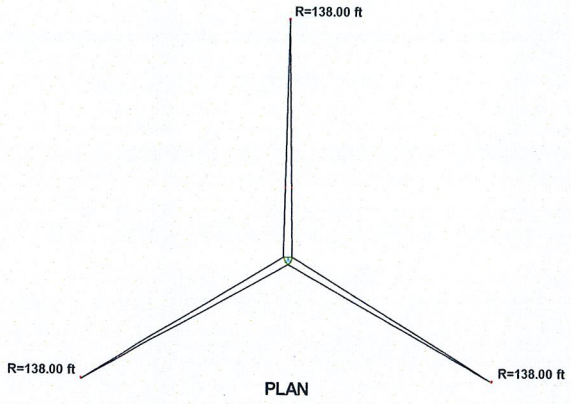
APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

Appendix A

Tower Schematic







DESIGNED APPURTENANCE LOADING

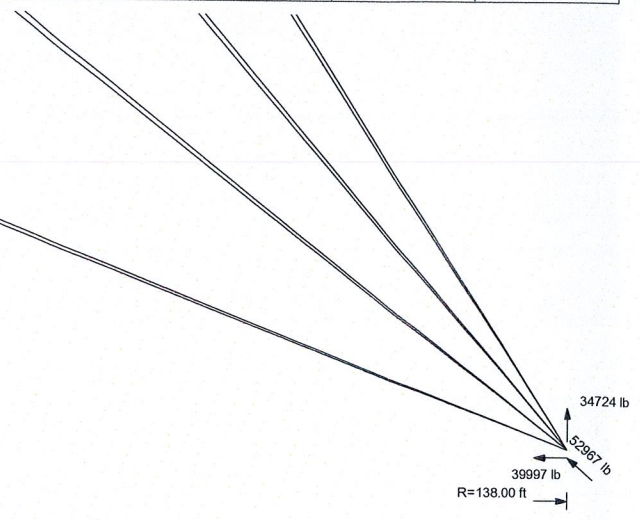
TYPE	ELEVATION	TYPE	ELEVATION
Generic Lightning Rod 4' copper	200	12' sector mount	170
Flash Beacon Lighting	200	12' sector mount	170
2' HP dish	198	(2) HBX-6516DS	170
PR-900	193	(2) HBX-6516DS	170
TMA 18" x 24"	191	(2) BXA-171063/12	155
2' HP dish	187	BXA-80063/6	155
2' HP dish	187	BXA-80063/6	155
2' HP dish	187	BXA-80063/6	155
Samsung U-RAS DAP unit	182	BXA-70063/6	155
Samsung U-RAS DAP unit	182	BXA-70063/6	155
7'x3 1/2" Pipe Mount	182	BXA-70063/6	155
7'x3 1/2" Pipe Mount	182	ALU RRH2x40-AWS	155
7'x3 1/2" Pipe Mount	182	ALU RRH2x40-AWS	155
LLPX310R panel	182	ALU RRH2x40-AWS	155
LLPX310R panel	182	Raycap RDC-4276-PF-48 J-box	155
LLPX310R panel	182	14' sector mount	155
Samsung U-RAS DAP unit	182	14' sector mount	155
(2) HBX-6516DS	170	14' sector mount	155
(2) ATM200-A20 RET	170	(2) BXA-171063/12	155
(2) ATM200-A20 RET	170	(2) BXA-171063/12	155
(2) ATM200-A20 RET	170	Obstruction light	108
12' sector mount	170	Obstruction light	108

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	N.A.	C	1 @ 3
B	4x3/8	D	4 @ 0.8125

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi



All-Points Technology Corporation
P.O. Box 504
Conway, NH 03818
Phone: (603) 496-5853
FAX: (603) 447-2124

Job: ***200' Guyed Tower***		
Project: ***CT1414260 Naugatuck***		
Client: Verizon Wireless	Drawn by: Rob Adair	App'd:
Code: TIA/EIA-222-F	Date: 12/04/12	Scale: NTS
Path: C:\Users\Rob Adair\Documents\Archive\CT\CT1414260 Prospect-Naugatuck\CT1414260 Naugatuck.eri		Dwg No. E-1

Appendix B

Calculations

tnxTower	Job	Page
	200' Guyed Tower	1 of 10
All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	**Project** CT1414260 Naugatuck	**Date** 15:10:46 12/04/12
	Client Verizon Wireless	**Designed by** Rob Adair

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 200.00 ft above the ground line.
The face width of the tower is 2.50 ft at the top and tapered at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Deflections calculated using a wind speed of 50 mph.
Pressures are calculated at each section.
Safety factor used in guy design is 2.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Tower Section Geometry

Tower Section	*Tower Elevation*	*Assembly Database*	*Description*	*Section Width*	*Number of Sections*	*Section Length*
	ft			*ft*		*ft*
T1	200.00-180.00			2.50	1	20.00
T2	180.00-160.00			2.50	1	20.00
T3	160.00-140.00			2.50	1	20.00
T4	140.00-120.00			2.50	1	20.00
T5	120.00-100.00			2.50	1	20.00
T6	100.00-80.00			2.50	1	20.00
T7	80.00-60.00			2.50	1	20.00
T8	60.00-40.00			2.50	1	20.00
T9	40.00-20.00			2.50	1	20.00
T10	20.00-6.50			2.50	1	13.50
T11	6.50-3.25			2.50	1	3.25
T12	3.25-0.00			1.25	1	3.25

Tower Section	*Tower Elevation*	*Diagonal Spacing*	*Bracing Type*	*Has K Brace End Panels*	*Has Horizontals*	*Top Girt Offset*	*Bottom Girt Offset*
	ft	*ft*				*in*	*in*
T1	200.00-180.00	3.29	K Brace Right	No	Yes+Steps	0.0000	3.0000
T2	180.00-160.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T3	160.00-140.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T4	140.00-120.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T5	120.00-100.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T6	100.00-80.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T7	80.00-60.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T8	60.00-40.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T9	40.00-20.00	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T10	20.00-6.50	3.25	K Brace Right	No	Yes+Steps	3.0000	3.0000
T11	6.50-3.25	3.00	K Brace Right	No	Yes	0.0000	3.0000
T12	3.25-0.00	0.81	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 200.00-180.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T2 180.00-160.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T3 160.00-140.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T4 140.00-120.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T5 120.00-100.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T6 100.00-80.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T7 80.00-60.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T8 60.00-40.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T9 40.00-20.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T10 20.00-6.50	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T11 6.50-3.25	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)
T12 3.25-0.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	P1x.179	A36 (36 ksi)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 200.00-180.00	Flat Bar	5x3/8	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T2 180.00-160.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T3 160.00-140.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T4 140.00-120.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T5 120.00-100.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T6 100.00-80.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T7 80.00-60.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T8 60.00-40.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T9 40.00-20.00	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T10 20.00-6.50	Pipe	P1x.179	A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T11 6.50-3.25	Pipe		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T12 3.25-0.00	Flat Bar	4x3/8	A36 (36 ksi)	Flat Bar	4x3/8	A36 (36 ksi)

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Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 200.00-180.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T2 180.00-160.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T3 160.00-140.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T4 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T5 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T6 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T7 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T8 60.00-40.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T9 40.00-20.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T10 20.00-6.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T11 6.50-3.25	None	Flat Bar		A36 (36 ksi)	Pipe	P1x.179	A36 (36 ksi)
T12 3.25-0.00	None	Flat Bar		A36 (36 ksi)	Flat Bar	4x3/8	A36 (36 ksi)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 200.00-180.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 180.00-160.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 160.00-140.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 140.00-120.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 120.00-100.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 100.00-80.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 80.00-60.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 60.00-40.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 40.00-20.00	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 20.00-6.50	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 6.50-3.25	Flange	0.7500 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T12 3.25-0.00	Flange	0.6250 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
200	EHS	A	7/16	2080.00	10%	21000	0.399	241.98	138.00	0.0000	0.00	100%
		B	7/16	2080.00	10%	21000	0.399	241.98	138.00	0.0000	0.00	100%
		C	7/16	2080.00	10%	21000	0.399	241.98	138.00	0.0000	0.00	100%
150	EHS	A	7/16	2080.00	10%	21000	0.399	202.69	138.00	0.0000	0.00	100%
		B	7/16	2080.00	10%	21000	0.399	202.69	138.00	0.0000	0.00	100%
		C	7/16	2080.00	10%	21000	0.399	202.69	138.00	0.0000	0.00	100%
100.25	EHS	A	7/16	2080.00	10%	21000	0.399	169.28	138.00	0.0000	0.00	100%
		B	7/16	2080.00	10%	21000	0.399	169.28	138.00	0.0000	0.00	100%
		C	7/16	2080.00	10%	21000	0.399	169.28	138.00	0.0000	0.00	100%
50	EHS	A	7/16	2080.00	10%	21000	0.399	145.32	138.00	0.0000	0.00	100%
		B	7/16	2080.00	10%	21000	0.399	145.32	138.00	0.0000	0.00	100%
		C	7/16	2080.00	10%	21000	0.399	145.32	138.00	0.0000	0.00	100%

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
200	Torque Arm	5.00	45.0000	Bat Ear	A36 (36 ksi)	Equal Angle	L3x3x1/4
150	Torque Arm	5.00	45.0000	Bat Ear	A36 (36 ksi)	Equal Angle	L3x3x1/4
100.25	Torque Arm	5.00	45.0000	Bat Ear	A36 (36 ksi)	Equal Angle	L3x3x1/4
50	Torque Arm	5.00	45.0000	Bat Ear	A36 (36 ksi)	Equal Angle	L3x3x1/4

Feed Line/Linear Appurtenances

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1" conduit	C	Yes	Ar (CfAe)	200.00 - 8.00	0.0000	0	1	1	1.0000	1.0000		0.50
1/2	B	Yes	Ar (CfAe)	182.00 - 8.00	0.0000	0.4	4	2	0.5800	0.5800		0.25
1/2	B	Yes	Ar (CfAe)	182.00 - 8.00	0.0000	-0.35	3	2	0.5800	0.5800		0.25
2" conduit	B	Yes	Ar (CfAe)	191.00 - 8.00	0.0000	0	2	2	0.5000	2.0000		2.00
1 1/4	B	Yes	Ar (CfAe)	193.00 - 8.00	0.0000	-0.5	1	1	0.0000	1.5500		0.66
1 5/8	C	Yes	Ar (CfAe)	170.00 - 8.00	0.0000	0.25	12	4	0.5000	1.9800		1.04
3/8	C	Yes	Ar (CfAe)	170.00 - 8.00	0.0000	0.29	1	1	0.4400	0.4400		0.08
1 5/8	A	Yes	Ar (CfAe)	155.00 - 8.00	3.0000	0.45	18	6	0.5000	1.9800		1.04
1.57" Hybrid fiber-power cable	A	No	Ar (CfAe)	155.00 - 8.00	0.0000	0.4	1	1	0.5000	1.5700		0.66

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Generic Lightning Rod 4' copper	A	None		0.0000	200.00	No Ice	0.50	0.50	0.00
						1/2" Ice	1.00	1.00	0.00
Flash Beacon Lighting	C	None		0.0000	200.00	No Ice	2.70	2.70	50.00
						1/2" Ice	3.10	3.10	70.00
PR-900	A	None		0.0000	193.00	No Ice	6.35	6.35	38.00
						1/2" Ice	11.43	11.43	49.40
TMA 18" x 24"	C	None		0.0000	191.00	No Ice	4.20	1.40	35.00
						1/2" Ice	4.48	1.60	58.75
LLPX310R panel	A	From Leg	0.50	0.0000	182.00	No Ice	4.84	1.96	28.60
			0.00			1/2" Ice	5.19	2.22	54.56
			0.00						
LLPX310R panel	B	From Leg	0.50	0.0000	182.00	No Ice	4.84	1.96	28.60
			0.00			1/2" Ice	5.19	2.22	54.56
			0.00						
LLPX310R panel	C	From Leg	0.50	0.0000	182.00	No Ice	4.84	1.96	28.60
			0.00			1/2" Ice	5.19	2.22	54.56
			0.00						
Samsung U-RAS DAP unit	A	From Leg	0.50	0.0000	182.00	No Ice	1.82	0.83	15.00
			0.00			1/2" Ice	2.01	0.97	26.95
			0.00						
Samsung U-RAS DAP unit	B	From Leg	0.50	0.0000	182.00	No Ice	1.82	0.83	15.00
			0.00			1/2" Ice	2.01	0.97	26.95
			0.00						
Samsung U-RAS DAP unit	C	From Leg	0.50	0.0000	182.00	No Ice	1.82	0.83	15.00
			0.00			1/2" Ice	2.01	0.97	26.95
			0.00						
7'x3 1/2" Pipe Mount	A	None		0.0000	182.00	No Ice	2.40	2.40	53.00
						1/2" Ice	2.83	2.83	70.62
7'x3 1/2" Pipe Mount	B	None		0.0000	182.00	No Ice	2.40	2.40	53.00
						1/2" Ice	2.83	2.83	70.62
7'x3 1/2" Pipe Mount	C	None		0.0000	182.00	No Ice	2.40	2.40	53.00
						1/2" Ice	2.83	2.83	70.62
Obstruction light	B	None		0.0000	108.00	No Ice	0.18	0.18	8.00
						1/2" Ice	0.25	0.25	10.47
Obstruction light	C	None		0.0000	108.00	No Ice	0.18	0.18	8.00
						1/2" Ice	0.25	0.25	10.47
(2) HBX-6516DS	A	From Leg	3.00	0.0000	170.00	No Ice	3.32	1.99	15.00
			0.00			1/2" Ice	3.65	2.30	34.04
			0.00						
(2) HBX-6516DS	B	From Leg	3.00	0.0000	170.00	No Ice	3.32	1.99	15.00
			0.00			1/2" Ice	3.65	2.30	34.04
			0.00						
(2) HBX-6516DS	C	From Leg	3.00	0.0000	170.00	No Ice	3.32	1.99	15.00
			0.00			1/2" Ice	3.65	2.30	34.04
			0.00						
(2) ATM200-A20 RET	A	From Leg	3.00	0.0000	170.00	No Ice	0.22	0.16	3.00
			0.00			1/2" Ice	0.29	0.23	4.91
			0.00						
(2) ATM200-A20 RET	B	From Leg	3.00	0.0000	170.00	No Ice	0.22	0.16	3.00
			0.00			1/2" Ice	0.29	0.23	4.91
			0.00						
(2) ATM200-A20 RET	C	From Leg	3.00	0.0000	170.00	No Ice	0.22	0.16	3.00
			0.00			1/2" Ice	0.29	0.23	4.91
			0.00						
12' sector mount	A	None		0.0000	170.00	No Ice	8.90	4.45	225.00
						1/2" Ice	13.80	6.90	320.00

tnxTower	Job: 200' Guyed Tower	Page: 6 of 10
All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Project: CT1414260 Naugatuck	Date: 15:10:46 12/04/12
	Client: Verizon Wireless	Designed by: Rob Adair

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
12' sector mount	B	None		0.0000	170.00	No Ice	8.90	4.45	225.00
						1/2" Ice	13.80	6.90	320.00
12' sector mount	C	None		0.0000	170.00	No Ice	8.90	4.45	225.00
						1/2" Ice	13.80	6.90	320.00
(2) BXA-171063/12	A	From Leg	3.00	0.0000	155.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00						
(2) BXA-171063/12	B	From Leg	3.00	0.0000	155.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00						
(2) BXA-171063/12	C	From Leg	3.00	0.0000	155.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00						
BXA-80063/6	A	From Leg	3.00	0.0000	155.00	No Ice	7.74	3.76	25.00
			0.00			1/2" Ice	8.28	4.20	65.65
			0.00						
BXA-80063/6	B	From Leg	3.00	0.0000	155.00	No Ice	7.74	3.76	25.00
			0.00			1/2" Ice	8.28	4.20	65.65
			0.00						
BXA-80063/6	C	From Leg	3.00	0.0000	155.00	No Ice	7.74	3.76	25.00
			0.00			1/2" Ice	8.28	4.20	65.65
			0.00						
BXA-70063/6	A	From Leg	3.00	0.0000	155.00	No Ice	7.73	3.76	25.00
			0.00			1/2" Ice	8.27	4.19	65.60
			0.00						
BXA-70063/6	B	From Leg	3.00	0.0000	155.00	No Ice	7.73	3.76	25.00
			0.00			1/2" Ice	8.27	4.19	65.60
			0.00						
BXA-70063/6	C	From Leg	3.00	0.0000	155.00	No Ice	7.73	3.76	25.00
			0.00			1/2" Ice	8.27	4.19	65.60
			0.00						
ALU RRH2x40-AWS	A	From Leg	3.00	0.0000	155.00	No Ice	2.52	1.59	45.00
			0.00			1/2" Ice	2.75	1.80	62.40
			0.00						
ALU RRH2x40-AWS	B	From Leg	3.00	0.0000	155.00	No Ice	2.52	1.59	45.00
			0.00			1/2" Ice	2.75	1.80	62.40
			0.00						
ALU RRH2x40-AWS	C	From Leg	3.00	0.0000	155.00	No Ice	2.52	1.59	45.00
			0.00			1/2" Ice	2.75	1.80	62.40
			0.00						
Raycap RDC-4276-PF-48 J-box	C	From Leg	3.00	0.0000	155.00	No Ice	6.69	2.70	35.00
			0.00			1/2" Ice	7.03	2.95	76.97
			0.00						
14' sector mount	A	None		0.0000	155.00	No Ice	7.73	7.73	475.00
						1/2" Ice	11.12	11.12	700.00
14' sector mount	B	None		0.0000	155.00	No Ice	7.73	7.73	475.00
						1/2" Ice	11.12	11.12	700.00
14' sector mount	C	None		0.0000	155.00	No Ice	7.73	7.73	475.00
						1/2" Ice	11.12	11.12	700.00

tnxTower	Job	Page
	200' Guyed Tower	7 of 10
All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	**Project** CT1414260 Naugatuck	**Date** 15:10:46 12/04/12
	Client Verizon Wireless	**Designed by** Rob Adair

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter		Aperture Area	Weight
				ft	°	°	ft	ft		ft^2	lb
2' HP dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		198.00	2.00	No Ice 1/2" Ice	3.14 3.41	50.00 67.50
2' HP dish	A	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		187.00	2.00	No Ice 1/2" Ice	3.14 3.41	50.00 67.50
2' HP dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		187.00	2.00	No Ice 1/2" Ice	3.14 3.41	50.00 67.50
2' HP dish	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		187.00	2.00	No Ice 1/2" Ice	3.14 3.41	50.00 67.50

Solution Summary

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	200 - 180	1.928	11	0.1359	0.0401
T2	180 - 160	2.317	11	0.0577	0.0366
T3	160 - 140	2.212	11	0.0778	0.0525
T4	140 - 120	1.789	11	0.1062	0.0598
T5	120 - 100	1.283	11	0.1278	0.0705
T6	100 - 80	0.780	11	0.0869	0.0485
T7	80 - 60	0.545	11	0.0442	0.0893
T8	60 - 40	0.379	11	0.0349	0.0801
T9	40 - 20	0.281	11	0.0153	0.0647
T10	20 - 6.5	0.192	11	0.0334	0.1024
T11	6.5 - 3.25	0.072	11	0.0481	0.0976
T12	3.25 - 0	0.038	11	0.0518	0.1119

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
200.00	Guy	11	1.928	0.1359	0.0401	28757
198.00	2' HP dish	11	1.977	0.1261	0.0380	28757
193.00	PR-900	11	2.098	0.1024	0.0329	20541
191.00	TMA 18" x 24"	11	2.142	0.0936	0.0309	15976
187.00	2' HP dish	11	2.222	0.0776	0.0271	11060
182.00	LLPX310R panel	11	2.297	0.0621	0.0335	8112
170.00	(2) HBX-6516DS	11	2.325	0.0511	0.0495	9807
155.00	(2) BXA-171063/12	11	2.124	0.0875	0.0485	19866
150.00	Guy	11	2.021	0.0943	0.0423	28007
108.00	Obstruction light	11	0.959	0.1086	0.0617	21690
100.25	Guy	11	0.784	0.0876	0.0491	12201

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
50.00	Guy	11	0.321	0.0236	0.0375	72493

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	200	Leg	A325N	0.7500	4	4948.27	19437.80	0.255 ✓	1.333	Bolt Tension
T2	180	Leg	A325N	0.7500	4	3699.75	19434.40	0.190 ✓	1.333	Bolt Tension
T3	160	Leg	A325N	0.7500	4	0.00	19438.30	0.000 ✓	1.333	Bolt Tension
T4	140	Leg	A325N	0.7500	4	0.00	19432.10	0.000 ✓	1.333	Bolt Tension
T5	120	Leg	A325N	0.7500	4	1253.37	19435.70	0.064 ✓	1.333	Bolt Tension
T6	100	Leg	A325N	0.7500	4	0.00	19437.00	0.000 ✓	1.333	Bolt Tension
T7	80	Leg	A325N	0.7500	4	0.00	19437.90	0.000 ✓	1.333	Bolt Tension
T8	60	Leg	A325N	0.7500	4	0.00	19435.40	0.000 ✓	1.333	Bolt Tension
T9	40	Leg	A325N	0.7500	4	0.00	19438.50	0.000 ✓	1.333	Bolt Tension
T10	20	Leg	A325N	0.7500	4	0.00	19401.30	0.000 ✓	1.333	Bolt Tension
T11	6.5	Leg	A325N	0.7500	4	0.00	19436.50	0.000 ✓	1.333	Bolt Tension

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	**200 - 180**	**Leg**	**ROHN 2.5 STD**	**3**	**-32892.10**	**57677.44**	**57.0**	**Pass**
		Diagonal	P1x.179	36	-3220.83	13337.73	24.1	Pass
		Horizontal	P1x.179	15	-569.71	15870.30	3.6	Pass
		Top Girt	5x3/8	6	-1762.23	12131.89	14.5	Pass
		Bottom Girt	P1x.179	9	450.80	18393.53	2.5	Pass
		Guy A@200	7/16	467	7868.28	10400.00	75.7	Pass
		Guy B@200	7/16	461	6601.83	10400.00	63.5	Pass
		Guy C@200	7/16	455	7545.52	10400.00	72.6	Pass
		Torque Arm Top@200	L3x3x1/4	462	5761.89	41461.63	13.9	Pass
		Torque Arm Bottom@200	L3x3x1/4	459	-9007.14	29523.82	30.5	Pass
T2	**180 - 160**	**Leg**	**ROHN 2.5 STD**	**45**	**-33691.90**	**57838.20**	**58.3**	**Pass**
		Diagonal	P1x.179	52	-3073.22	13395.05	22.9	Pass
		Horizontal	P1x.179	69	881.53	18393.53	4.8	Pass
		Top Girt	P1x.179	48	257.31	18393.53	1.4	Pass
		Bottom Girt	P1x.179	50	717.45	18393.53	3.9	Pass
T3	**160 - 140**	**Leg**	**ROHN 2.5 STD**	**87**	**-25276.40**	**57600.13**	**43.9**	**Pass**
		Diagonal	P1x.179	114	-5717.36	13395.05	42.7	Pass
		Horizontal	P1x.179	110	5064.29	18393.53	27.5	Pass
		Top Girt	P1x.179	89	810.67	18393.53	4.4	Pass
		Bottom Girt	P1x.179	93	359.53	18393.53	2.0	Pass
		Guy A@150	7/16	485	8790.92	10400.00	84.5	Pass
		Guy B@150	7/16	478	6775.15	10400.00	65.1	Pass
		Guy C@150	7/16	472	8372.09	10400.00	80.5	Pass
		Torque Arm Top@150	L3x3x1/4	475	7174.11	41461.63	17.3	Pass

tnxTower	Job	Page
	200' Guyed Tower	9 of 10
All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	**Project** CT1414260 Naugatuck	**Date** 15:10:46 12/04/12
	Client Verizon Wireless	**Designed by** Rob Adair

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
		Torque Arm Bottom@150	L3x3x1/4	476	-8552.46	29659.78	28.8	Pass
T4	**140 - 120**	**Leg**	**ROHN 2.5 STD**	**127**	**-24640.90**	**56836.59**	**43.4**	**Pass**
		Diagonal	P1x.179	137	-2904.38	13395.05	21.7	Pass
		Horizontal	P1x.179	141	670.65	18393.53	3.6	Pass
		Top Girt	P1x.179	130	292.33	18393.53	1.6	Pass
		Bottom Girt	P1x.179	134	798.51	18393.53	4.3	Pass
T5	**120 - 100**	**Leg**	**ROHN 2.5 STD**	**171**	**-50806.10**	**57472.56**	**88.4**	**Pass**
		Diagonal	P1x.179	186	-4490.91	13395.05	33.5	Pass
		Horizontal	P1x.179	188	-879.99	15870.30	5.5	Pass
		Top Girt	P1x.179	174	694.33	18393.53	3.8	Pass
		Bottom Girt	P1x.179	175	-2963.67	15870.30	18.7	Pass
		Guy A@100.25	7/16	503	6325.98	10400.00	60.8	Pass
		Guy B@100.25	7/16	496	4917.41	10400.00	47.3	Pass
		Guy C@100.25	7/16	490	6052.01	10400.00	58.2	Pass
		Torque Arm Top@100.25	L3x3x1/4	499	5928.06	41461.63	14.3	Pass
		Torque Arm Bottom@100.25	L3x3x1/4	507	-4260.56	27948.61	15.2	Pass
T6	**100 - 80**	**Leg**	**ROHN 2.5 STD**	**213**	**-50813.70**	**57419.90**	**88.5**	**Pass**
		Diagonal	P1x.179	251	-7160.39	13395.05	53.5	Pass
		Horizontal	P1x.179	247	2018.40	18393.53	11.0	Pass
		Top Girt	P1x.179	215	2458.85	18393.53	13.4	Pass
		Bottom Girt	P1x.179	218	544.97	18393.53	3.0	Pass
T7	**80 - 60**	**Leg**	**ROHN 2.5 STD**	**255**	**-35926.30**	**56684.76**	**63.4**	**Pass**
		Diagonal	P1x.179	293	-2101.13	13395.05	15.7	Pass
		Horizontal	P1x.179	277	764.13	18393.53	4.2	Pass
		Top Girt	P1x.179	257	573.86	18393.53	3.1	Pass
		Bottom Girt	P1x.179	259	440.42	18393.53	2.4	Pass
T8	**60 - 40**	**Leg**	**ROHN 2.5 STD**	**296**	**-35089.20**	**56629.03**	**62.0**	**Pass**
		Diagonal	P1x.179	318	-6266.96	13395.05	46.8	Pass
		Horizontal	P1x.179	320	3467.48	18393.53	18.9	Pass
		Top Girt	P1x.179	300	523.86	18393.53	2.8	Pass
		Bottom Girt	P1x.179	303	759.11	18393.53	4.1	Pass
		Guy A@50	7/16	521	4656.42	10400.00	44.8	Pass
		Guy B@50	7/16	514	3885.31	10400.00	37.4	Pass
		Guy C@50	7/16	508	4493.91	10400.00	43.2	Pass
		Torque Arm Top@50	L3x3x1/4	522	4360.19	41461.63	10.5	Pass
		Torque Arm Bottom@50	L3x3x1/4	519	-3350.42	29659.78	11.3	Pass
T9	**40 - 20**	**Leg**	**ROHN 2.5 STD**	**339**	**-36446.70**	**56338.58**	**64.7**	**Pass**
		Diagonal	P1x.179	372	-2502.53	13395.05	18.7	Pass
		Horizontal	P1x.179	363	865.50	18393.53	4.7	Pass
		Top Girt	P1x.179	341	585.81	18393.53	3.2	Pass
		Bottom Girt	P1x.179	343	461.77	18393.53	2.5	Pass
T10	**20 - 6.5**	**Leg**	**ROHN 2.5 STD**	**381**	**-36453.60**	**56338.44**	**64.7**	**Pass**
		Diagonal	P1x.179	402	-1926.11	13395.05	14.4	Pass
		Horizontal	P1x.179	399	814.14	18393.53	4.4	Pass
		Top Girt	P1x.179	384	341.36	18393.53	1.9	Pass
		Bottom Girt	P1x.179	387	1516.29	18393.53	8.2	Pass
T11	**6.5 - 3.25**	**Leg**	**ROHN 2.5 STD**	**411**	**-35574.20**	**56390.30**	**63.1**	**Pass**
		Diagonal	P1x.179	419	-1208.68	14436.66	8.4	Pass
		Horizontal	P1x.179	414	3309.38	18393.53	18.0	Pass
		Bottom Girt	P1x.179	416	788.08	18393.53	4.3	Pass
T12	**3.25 - 0**	**Leg**	**ROHN 2.5 STD**	**423**	**-34542.00**	**58132.66**	**59.4**	**Pass**
		Diagonal	P1x.179	435	-7420.45	18094.67	41.0	Pass
		Horizontal	4x3/8	436	5797.44	43189.20	13.4	Pass
		Top Girt	4x3/8	426	1963.30	43189.20	4.5	Pass
							Summary	
						Leg (T6)	88.5	Pass
						Diagonal	53.5	Pass

tnxTower	Job	Page
	200' Guyed Tower	10 of 10
All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	**Project** CT1414260 Naugatuck	**Date** 15:10:46 12/04/12
	Client Verizon Wireless	**Designed by** Rob Adair

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
						(T6) Horizontal (T3)	27.5	Pass
						Top Girt (T1)	14.5	Pass
						Bottom Girt (T5)	18.7	Pass
						Guy A (T3)	84.5	Pass
						Guy B (T3)	65.1	Pass
						Guy C (T3)	80.5	Pass
						Torque Arm Top (T3)	17.3	Pass
						Torque Arm Bottom (T1)	30.5	Pass
						Bolt Checks	19.1	Pass
						RATING =	**88.5**	**Pass**

HMB

HMB Acoustics LLC 3 Cherry Tree Lane, Avon, Ct. 06001 860-677-5955

October 1, 2013

Doug Drost
Project Engineer, Wireless
Centek Engineering, Inc.
63-2 North Branford Road
Branford, Ct. 06405

Subject: Naugatuck West

Dear Mr. Drost:

The noise levels for the V1,V2 wall mounted HVAC units, and the U1 and U2 units were calculated while they were operating simultaneously. The combined noise level was then projected to each property line. The resultant noise level was compared to the State of Ct. Noise Regulation. The Regulation allows a noise level of 55 dBA (daytime), and 45 dBA (nighttime) when measured at a Residential Receptor's property line. I found that the four (4) units met the conditions for compliance as set forth in the Regulation at all property lines.

Allan Smardin
HMB Acoustics LLC

PROJECT INFORMATION	
Applicant:	Verizon Wireless
Applicant Site ID:	Naugatuck Relo
Site Owner:	Channel 20 Ent. LP
Site Address:	37 Peach Orchard Road, Prospect, CT
Subject Zoning District:	Residential
Abutting Zoning District(s):	Residential to North, East and South. Planned Development to the West.
Centek Job #:	13038.000

APPLICANT EQUIPMENT

ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West
V-1	Wall Mounted HVAC	Bard / Model# W51A1-A05EPXXXJ	197	655	137	502
V-2	Wall Mounted HVAC	Bard / Model# W51A1-A05EPXXXJ	193	656	144	496

EXISTING COLOCATORS:

☐ AT&T ☐ Metro PCS ☒ Other: Unknown

☐ Sprint ☐ T Mobile ☐ Other:

☐ Nextel ☐ None ☐ Other:

EQUIPMENT OWNER #1

ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West
U-1	Wall Mounted AC	Friedrich/ Model unknown	125	670	245	405
U-2	Gnd Mntd HVAC	Carrier/ Model unknown	120	660	260	385

EQUIPMENT OWNER #2

ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

EQUIPMENT OWNER #3

ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

EQUIPMENT OWNER #4						
ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

EQUIPMENT OWNER #5						
ID	Noise Emitter	Make/Model	Prop. Line. Dist. (FT)			
			North	South	East	West

CONCLUSION			
Daytime Regulation:	Residential 55 dBA	**Nighttime Regulation:**	Residential 45 dBA
Compliance:	☒ Yes ☐ No	**Compliance:**	☒ Yes ☐ No

BASIS OF FINDINGS:

Combined noise level (V1,V2, U1, & U2 HVAC) @ North property line = 45 dBA

South property line = 29 dBA / East property line = 36 dBA / West property line =34

* This takes into account the acoustical shielding effect provided by the equipment s

Southerly direction, and other structures in the area.

Prepared By: Alan Smardin, HMB ACOUSTICS LLC Date: 10/1/13

1 C-1 SITE LOCATION PLAN
SCALE: 1" = 150'-0"

TRUE NORTH

GRAPHIC SCALE
0 75 150
(IN FEET)
1 inch = 150 ft.

0	10/04/13	DMD	CFC	NOISE EMMITER INFORMATION
REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION

Cellco Partnership
d.b.a.
verizon wireless

CENTEK engineering
Centered on Solutions
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63-2 North Branford Road, Branford, CT 06405

Cellco Partnership d/b/a Verizon Wireless
NAUGATUCK RELO.
37 PEACH ORCHARD ROAD
PROSPECT, CT 06712

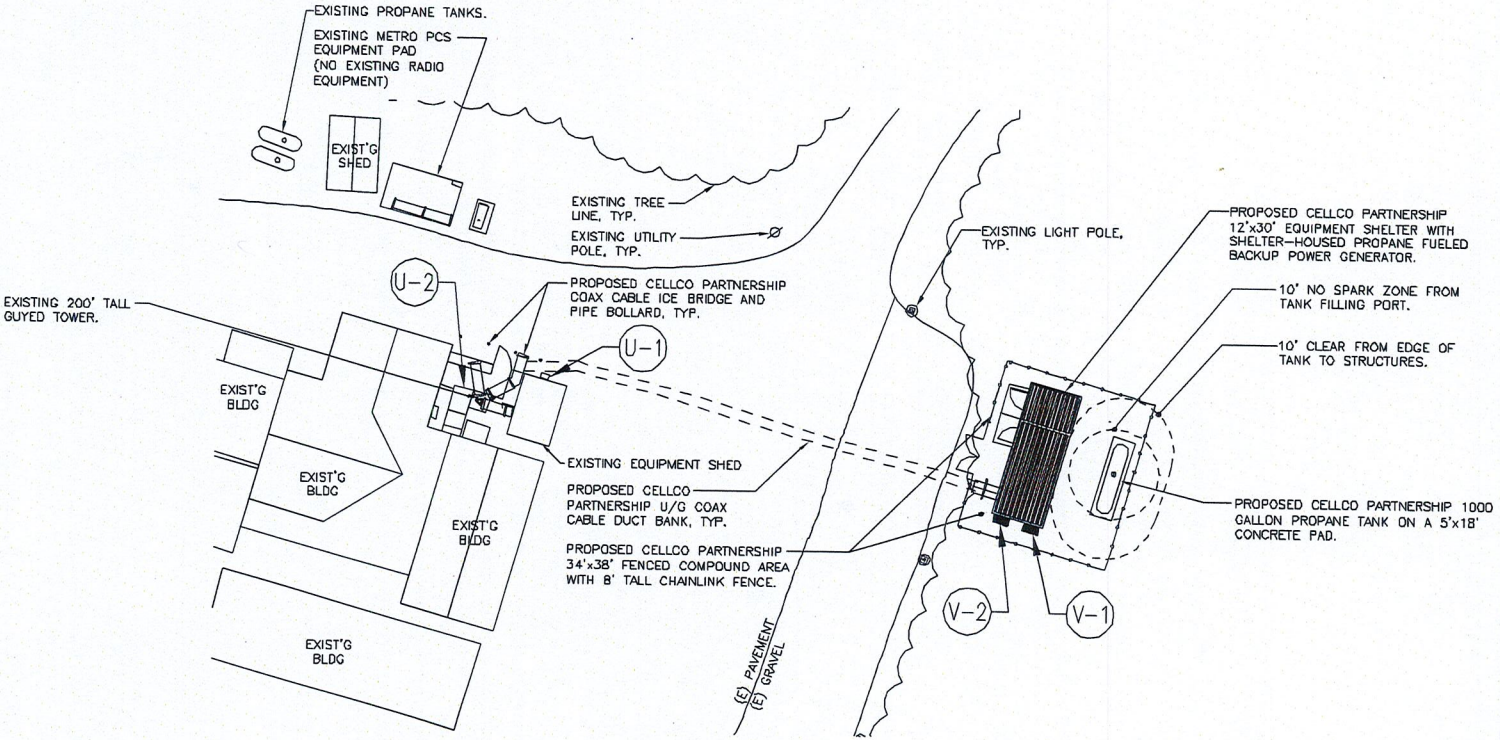
DATE: 10/04/13
SCALE: AS NOTED
JOB NO. 13038

SITE LOCATION PLAN

C-1
DWG. 1 OF 2

NOISE EMITTER INFORMATION

V-1	WALL MOUNTED HVAC UNIT,	MAKE: BARD,	MODEL: W61A1-A05EPXXXJ
V-2	WALL MOUNTED HVAC UNIT,	MAKE: BARD,	MODEL: W61A1-A05EPXXXJ
U-1	WALL MOUNTED HVAC UNIT,	MAKE: FRIEDRICH,	MODEL: UNKNOWN.
U-2	GROUND-MOUNTED HVAC UNIT,	MAKE: CARRIER,	MODEL: UNKNOWN.



1 / C-2 COMPOUND PLAN - PROPOSED
SCALE: 1" = 40'-0"

TRUE NORTH

GRAPHIC SCALE
0 20 40
(IN FEET)
1 inch = 40 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	10/04/13	DMD	CFC	NOISE EMMITER INFORMATION

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37 PEACH ORCHARD ROAD
PROSPECT, CT 06712

DATE: 10/04/13
SCALE: AS NOTED
JOB NO. 13038

COMPOUND PLAN

C-2

DWG. 2 OF 2

U-1


U-2

	General	Power	Density					
Site Name: Naugatuck Relo								
Tower Height: Verizon @ 155ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Clearwire	2	153	180	0.0034	2496	1.0000	0.34%	
*Clearwire	1	211	185	0.0022	11 GHz	1.0000	0.22%	
*MetroPCS	3	727	170	0.0271	2140	1.0000	2.71%	
*ORTV	1	100	200	0.0009	88.9	0.2000	0.45%	
*ORTV	1	250	200	0.0022	944.5	0.6297	0.36%	
Verizon PCS	**7**	**236**	**155**	**0.0247**	**1970**	**1.0000**	**2.47%**	
Verizon Cellular	**9**	**247**	**155**	**0.0333**	**869**	**0.5793**	**5.74%**	
Verizon AWS	**1**	**1750**	**155**	**0.0262**	**2145**	**1.0000**	**2.62%**	
Verizon 700	**1**	**1050**	**155**	**0.0157**	**698**	**0.4653**	**3.38%**	
* Source: Siting Council								**18.29%**