### PULLMAN & COMLEY, LLC ATTORNEYS AT LAW

TS-POCKET-002-090727

CARRIE L. LARSON
90 State House Square
Hartford, CT 06103-3702
p (860) 424-4312
f (860) 424-4370

www.pullcom.com

July 24, 2009

Via Hand Delivery

S. Derek Phelps, Executive Director Connecticut Siting Council Ten Franklin Square New Britain, CT 06051 REGERVE ORIGINAL
JUL 27 2039

CONNECTICUT SITING COUNCIL

Re: Tower Sharing Application

Radio Communication Corp. Telecommunications Facility

21 Birchwood Drive, Ansonia, Connecticut

Dear Mr. Phelps:

Communications-Northeast, LLC, Youghiogheny doing business Pocket Communications ("Pocket"), intends to install antennas and appurtenant equipment at the existing 60 foot guyed tower facility owned by Radio Communication Corp. and located at 21 Birchwood Drive, Ansonia, Connecticut ("Facility"). Pocket Communications provides prepaid, flat rate wireless voice and data services to more than a quarter of a million subscribers. Pocket is licensed by the Federal Communications Commission (FCC) to provide PCS wireless telecommunications service in the State of Connecticut, which includes the area to be served by the proposed installation. This installation constitutes a request for tower sharing pursuant to the pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes Section 16-50g et. seq. (PUESA), and Section 16-50j-72(b)(2) of the Regulations of the Connecticut State Agencies adopted pursuant to PUESA. In accordance with R.C.S.A. Section 16-50j-73, a copy of this notice has been sent to James T. Dellavolpe, Mayor, Town of Ansonia.

The existing Facility consists of a 60-foot guyed tower capable of supporting multiple carriers within a fenced compound. The coordinates for the Facility are approximately Lat: 41°-19'-45" and Long: 73–03-24". The tower is located in the central portion of Ansonia, approximately 600 feet north of Pulaski Highway (Route 243), and roughly one mile east of Derby Avenue (Route 115) (see Site Map, attached as Exhibit A). The tower currently supports various public safety and communication whip and dish style antennas, detailed in both the radio frequency report and the structural analysis report (attached as Exhibits D and E, respectively). Pocket proposes to install three RFS APXV18-206517S-C flush mount antennas on the tower at the fifty-five foot six inch centerline (55'6") AGL, and a Nortel CDMA Micro BTS 3231 cabinet, mounted on an "H-Frame," contained within a six foot by six foot (6'-0" x 6'-0") lease area. A small GPS antenna will be mounted on an "H-Frame. Utilities will be run via a proposed underground conduit from existing utility sources located outside the fenced in area (See Design

=				

### PULLMAN & COMLEY, LLC ATTORNEYS AT LAW

Page 2

Drawings and Equipment Specifications, attached as Exhibits B and C respectively). To accommodate Pocket's equipment on a temporary basis, a mobile, EPA approved generator and small microwave dish antenna (approximately 14" by 14") may be used at the site to provide electricity until permanent power can be established by the utility provider. Pocket anticipates that the temporary generator will be in use for a maximum of eight weeks from the time of approval. The specifications on this proposed temporary generator and microwave dish are included in the Equipment Specifications, attached as Exhibit C. Due to the temporary use and low emissions from the generator, no permit is required from the Department of Environmental Protection. If used, Pocket would propose to refuel the generator every 48 hours.

For the following reasons, the proposed modifications to the Birchwood Drive Facility meet the exempt modification criteria set forth in R.C.S.A. Section 16-50j-72(b)(2):

- 1. The proposed tower sharing will not increase the height of the tower as Pocket's antennas will be installed at a center line height of approximately 55.6 feet.
- 2. The installation of Pocket's equipment and shelter will not require an extension of the site boundaries.
- 3. The proposed modifications will not increase the noise levels at the existing Facility by six decibels or more.
- 4. The operation of the additional antennas will not increase the total radio frequency (RF) power density, measured at the site boundary, to a level at or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. The worst-case RF power density calculations for the proposed Pocket antennas would be 58.97% of the FCC standard (see general power density calculations table, attached as Exhibit D).

Also attached, Exhibit E, is a structural analysis confirming that the tower can support the existing and proposed antennas and associated equipment.

For the foregoing reasons, Pocket respectfully submits that the proposed tower sharing request should be approved as the antenna installation and equipment at the Ansonia Facility meets the requirements under R.C.S.A. Section 16-50j-72(b)(2).

BRIDGEPORT GREENWICH HARTFORD STAMFORD WESTPORT WHITE PLAINS

		-

## PULLMAN & COMLEY, LLC ATTORNEYS AT LAW

Page 3

Respectfully Submitted,

Cer lan

Carrie L. Larson

cc: James T. Dellavolpe, Mayor, Town of Ansonia Beverly Knapp is the underlying owner

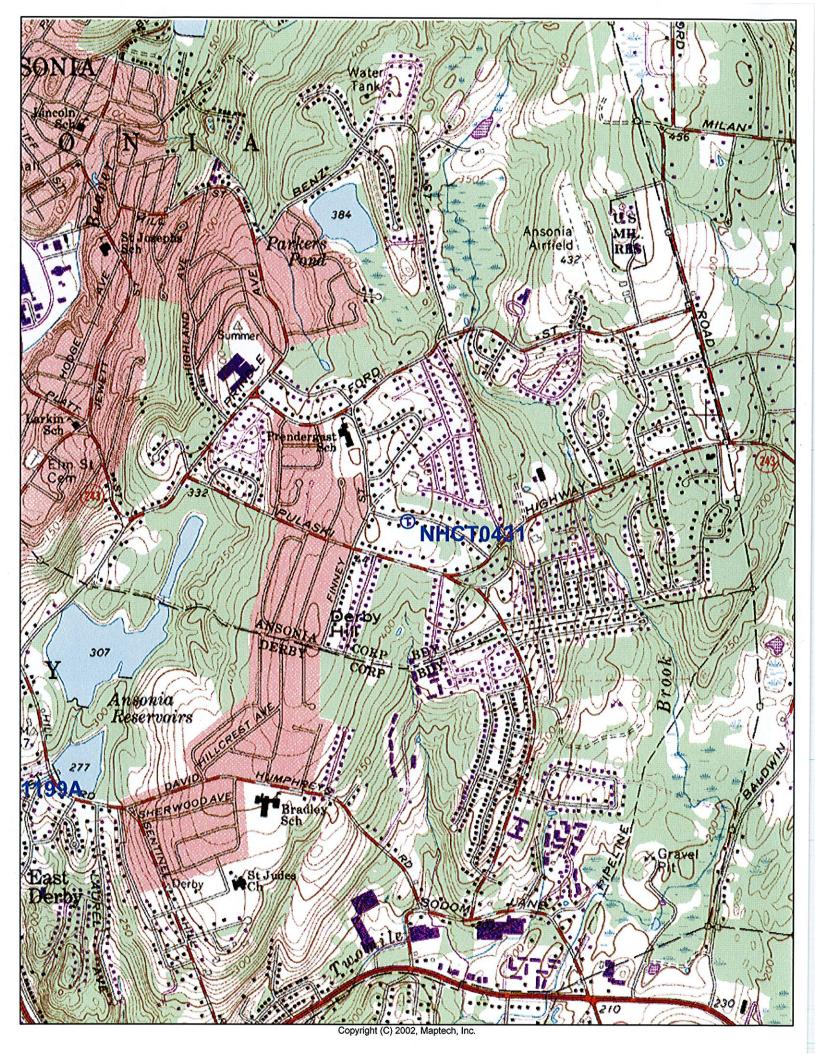
Hartford/72572.103/JTP/381375v1

-			
			÷

## Exhibit A

# Site Map Pocket Site NHCT0431B 21 Birchwood Drive Ansonia, Connecticut

	-

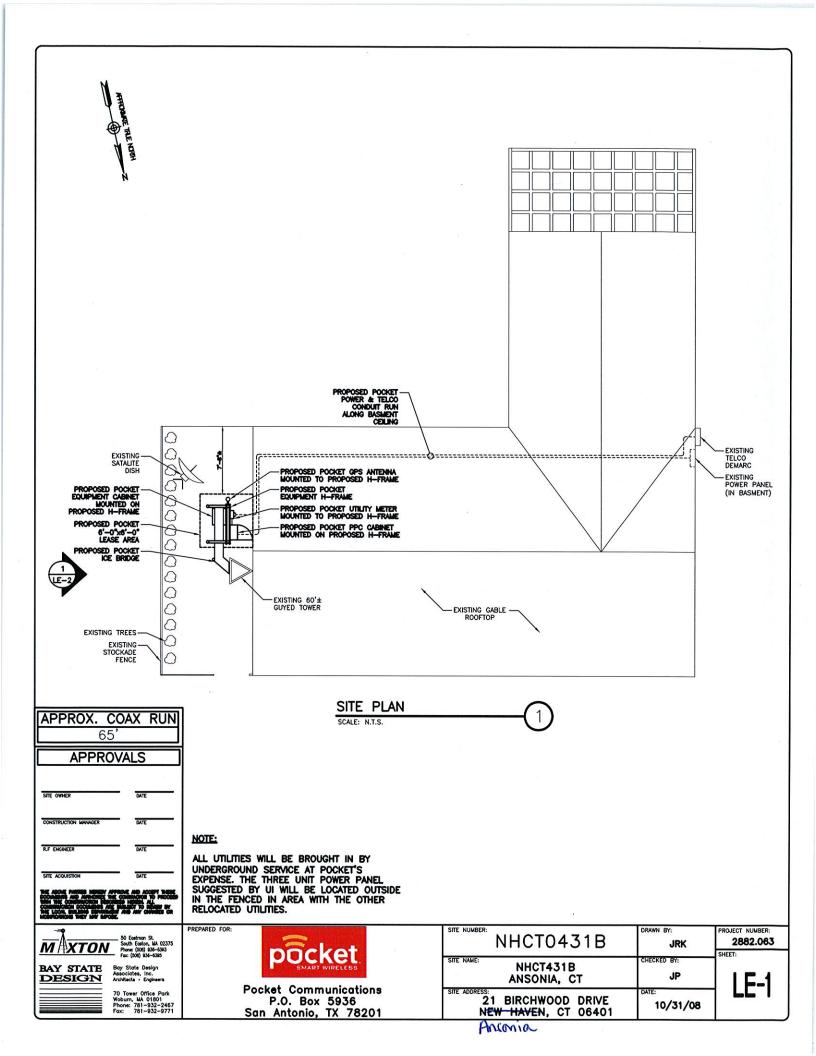


			·
:			
_			

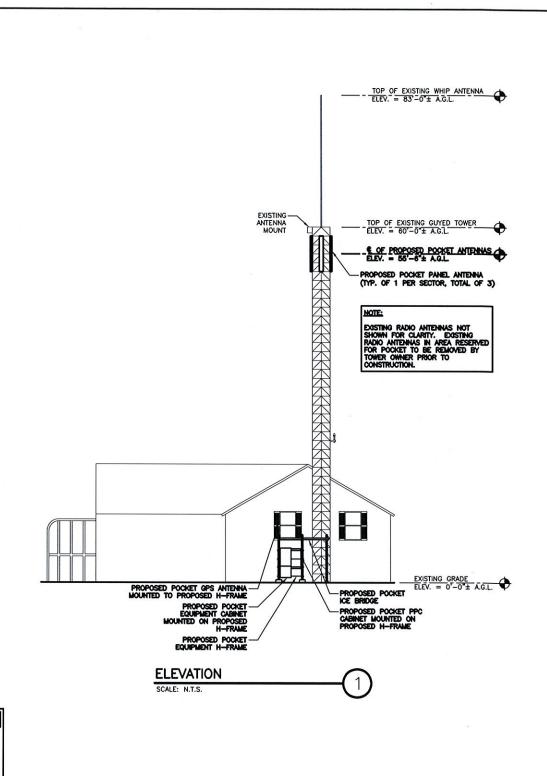
## Exhibit B

## Design Drawings Pocket Site NHCT0431B 21 Birchwood Drive Ansonia, Connecticut

			e.
•			
			-



			-



#### **APPROVALS**

CONSTRUCTION MANAGER

#### NOTE:

ALL UTILITIES WILL BE BROUGHT IN BY UNDERGROUND SERVICE AT POCKET'S EXPENSE. THE THREE UNIT POWER PANEL SUGGESTED BY UI WILL BE LOCATED OUTSIDE IN THE FENCED IN AREA WITH THE OTHER RELOCATED UTILITIES.



BAY STATE DESIGN

70 Tower Office Park Woburn, MA 01801 Phone: 781-932-2467 Fax: 781-932-9771

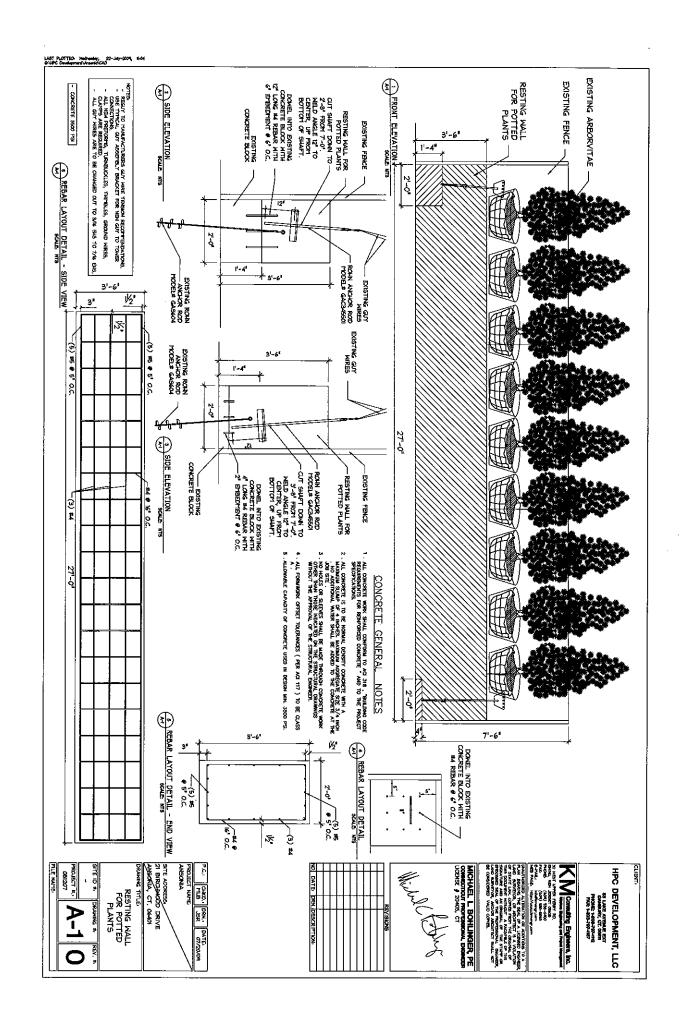


Pocket Communications P.O. Box 5936 San Antonio, TX 78201

NHCT0431B	DRAWN BY:  JRK	PROJECT NUMBER: 2882.063
NHCT431B ANSONIA, CT	CHECKED BY:	SHEET:
21 BIRCHWOOD DRIVE	DATE: 10/31/08	LE-2

Ansonia

		-
		-



		-
		-

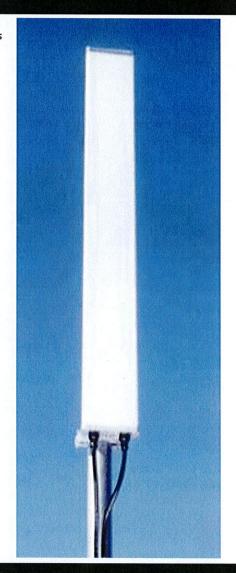
## Exhibit C

## Equipment Specifications Pocket Site NHCT0431B 21 Birchwood Drive Ansonia, Connecticut



#### **Product Description**

This variable tilt antenna provides exceptional suppression of all upper sidelobes at all downtilt angles. It also features null fill and a wide downtilt range with optional remote tilt.



#### Features/Benefits

- Variable electrical downtilt provides enhanced precision in controlling intercell interference. The tilt is infield adjustable 0-10 deg.
- High Suppression of all Upper Sidelobes (Typically <-20dB).
- Optional remote tilt can be retrofitted.
- Broadband design.
- Dual polarization.
- · Low profile for low visual impact.

recillical reactives	Technical	Feat	ures
----------------------	-----------	------	------

Frequency Band	3G/UMTS (Single, Broad, Dual and Triple-Band	
Horizontal Pattern	Directional	
Antenna Type	Panel Dual Polarized	
Electrical Down Tilt Option	Variable	

RFS The Clear Choice ™

APXV18-206517S-C

Print Date: 02.09.2008

			ē
			-
<del>-</del>			



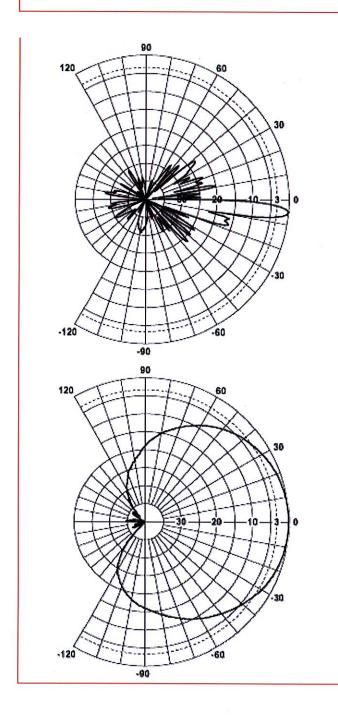
Gain, dBi (dBd)	18.8 (16.7) , 19.0 (16.9)
Frequency Range, MHz	1710-1900, 1900-2170
Connector Type	(2) 7-16 DIN Female
Connector Location	Bottom
Mount Type	Downtilt
Electrical Downtilt, deg	0-10
Horizontal Beamwidth, deg	67 , 63
Mounting Hardware	APM40-2
Rated Wind Speed, km/h (mph)	160 (100)
VSWR	< 1.5:1
Vertical Beamwidth, deg	5.0 , 4.6
Upper Sidelobe Suppression, dB	>17 , >18 all (Typically >20)
Polarization	Dual pol +/-45°
Front-To-Back Ratio, dB	>30
Maximum Power Input, W	300
Isolation between Ports, dB	>30
Lightning Protection	Direct Ground
3rd Order IMP @ 2 x 43 dBm, dBc	>150
7th Order IMP @ 2x46 dBm, dBc	>170
Impedance, Ohms	50
Overall Length, m (ft)	1.85 (6.06)
Mounting Hardware Weight, kg (lb)	3.4 (7.5)
Dimensions - HxWxD, mm (in)	1850 x 175 x 80 (72.0 x 6.8 x 3.15)
Weight w/o Mtg Hardware, kg (lb)	12 (26.4)
Weight w/ Mtg Hardware, kg (lb)	14.8 (32.5)
Radiating Element Material	Brass
Radome Color	Light Grey RAL7035
Radome Material	Fiberglass
Mounting Hardware Material	Diecasted Aluminum
Reflector Material	Aluminum
Max Wind Loading Area, m² (ft²)	0.31 (3.3)
Survival Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	558 (125)
Front Thrust @ Rated Wind, N (lbf)	558 (125)
Shipping Weight, kg (lb)	18.3 (39.8)
Packing Dimensions, HxWxD, mm (in)	2021 x 260 x 200 (79.5 x 10.2 x 7.8)
Packing Dimensions - HxWxD, m (ft)	2.0 x 0.26 x 0.2 (6.6 x 0.85 x 0.65)

N	0	t	9	S

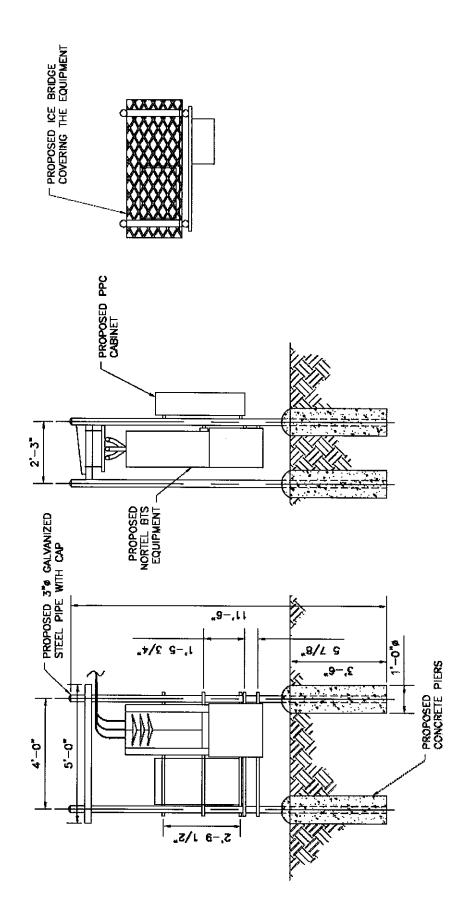
For additional mounting information please click "External Document Link" below.

-	-





		-



Pocket/Youghiogheny Communications – Northeast, LLC Rack Detail

		-



#### >BUSINESS MADE SIMPLE



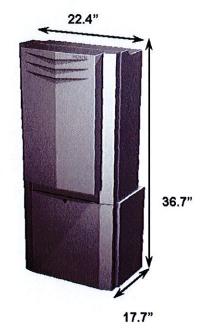
### CDMA BTS 3231 AWS 1.7/2.1 GHz (Outdoor/Indoor)

**CDMA BTS 3231** 

#### Industry's Highest Capacity AWS Micro BTS

The CDMA BTS 3231 is the latest extension to Nortel Networks BTS (Base Transceiver Station) portfolio providing the ideal solution for urban, sub-urban and rural deployments. The CDMA BTS 3231 is a 3-carrier, 3-sector outdoor/indoor BTS operating at the AWS band of 1.7/2.1 GHz supporting IS-95, 1XRTT and 1xEV-DO simultaneously. BTS 3231 provides flexible deployments solutions including floor, rack, and wall mount options. The power consumption of BTS3231 is industry leading consuming only 630W for 3C3S. The BTS 3231 is also very light at 240lbs making it easy

to transport to hard to reach locations such as the top of a high rise building.



		-
		ē
		-





#### **EMPOWERING REAL PEOPLE**

Home

**Products** 

**Support** 

Gov / Military

**Employment** 

**Contact Us** 

#### **Products**

- o Combination Units
- o Generators
- Lite
- Mobile
- Portable
- Light Towers
- o Pumps
- Water Trailers

#### Support

- Warranty
- Sales Literature
- o Manuals
- Troubleshooting
- Training
- o Ordering
- o Forms
- OEM Links

#### Gov / Military

- o GSA
- o Products
- o Pictures

#### News

- o 20th Anniversary
- o Trade Shows
- Newsletter
- Awards
- Press Releases
- o Promotions
- Special Events

#### Employment

- Current Openings
- Internships
- Contact Us
- GLOSSARY

## MLG15 Lite Generator Interim Tier IV EPA Approved Engine

Magnum recognizes environmental responsibility and continues to meet emission regulations with the addition of their Interim Tier IV Generator line. The MLG15 generator is powered by a Mitsubishi diesel engine. Proven power you can trust, while maximizing fuel efficiency and high performance.

Affordable, Reliable, Mobile

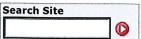


**More Information** 

#### Manuals

Operating & Parts

ALWAYS check for



		-
		÷
•		-
		- -

#### **Power**

The MLG15 diesel generator provides just the right combination of output, flexibility, ruggedness, efficiency and affordability for on-the-go, smaller-to-midsize, single phase power needs.

#### **Features**

#### Tough

- Full tubular steel frame, with lockable enclosure
- Durable, fade resistant, white baked on powder coat finish
- Stainless steel hinges, exterior hardware and pad lockable door latches

## updated parts information before placing a parts order.

#### Tech. Specs.

MLG15

WARRANTY

#### Literature / Sales

- Generator Lit.
- Service Kit Lit.
- Sales Support

Warranty Overview

Warranty Claim Policy

#### Reliable

- Key switch to preheat (glow plug), start & stop
- Automatic low oil level / high temp shutdown alerts
- 70A Start limit main breaker
- · 2 year 2,000 hour warranty
- . Marathon voltage regulation within +/- 1%

#### **Ease for Your Users**

- Self-priming 4 cylinder Mitsubishi engine
- · External convenience outlets with individual breaker switches
- · External emergency stop switch

#### **Specifications**

#### Output

3 Phase - Standby kW (kVA)	N/A
Amps <b>480V (208V)</b>	N/A
3 Phase - Prime kW (kVA)	N/A
Amps <b>480V (208V)</b>	N/A
1 Phase - Standby kW (kVA)	14.0 (14.0)
Amps <b>240V</b>	58
1 Phase - Prime kW (kVA)	13.0 (13.0)
Amps <b>240V</b>	54
AC Voltage 1-phase	120, 240
AC Voltage 3-phase	N/A
Frequency <b>Hz</b>	60
Power Factor	1.0 (1 Phase)
Generator - Brand / Type / Insulation	Marathon / Brushless / F
Sound (dB(A) 23 ft @ prime) Size and Weight	68
Skid Mounted - L x W x H in (m)	N/A
Dry Weight <b>lbs (kg)</b>	N/A
Operating Weight <b>lbs (kg)</b>	N/A
Trailer Mounted - L x W x H in (m)	105 x 67 x 56 (2.67 x 1.70 x 1.42)
Dry Weight <b>lbs (kg)</b>	1425 (646)

·		
		-
		-

Operating Weight Ibs (kg)	1823 (827)
Engine —	
Туре	Interim Tier IV
Brand	Mitsubishi
Aspiration	Natural
Power - Prime @ 1800 rpm hp (kWm)	22.3 (16.6)
Displacement cubic in (L)	107 (1.8)
Cylinders	4
Speed rpm	1800
Fuel Consumption - Prime gph (Lph)	1.30 (4.92)
Capacities	
Fuel Tank gal (L)	56 (212)
Approximate Run Time hrs	43
Coolant qt (L)  Electrical Distribution	11.6 (11.0)
Battery - 12V	1 - 12V 440 CCA Wet Cell
Main Circuit Breaker Size A	70
Voltage Selection	
Voltage Regulation	N/A
120V - 20A GFI Duplex Outlets - qty	+/-1%
240V - 30A Twist Lock Outlets - qty	2
• •	2
240V - 50A Twist Lock Outlets - qty  Trailer	2
Number of Axles	1
Capacity - Axle Rating <b>lbs (kg)</b>	2200 (998)
Tire Size <b>in</b>	15
Brakes	N/A
Hitch	2" Ball
Maximum Tire Pressure <b>psi</b>	50
Options	
Powertrain (Engine/Gen)	<ul> <li>60/40 Coolant</li> <li>Heated Fuel Filter</li> <li>Engine Heater - Lower Radiator Hose</li> <li>Oil Drain Valve Kit</li> </ul>
Controls	<ul> <li>Battery, 720 CCA Gel Cell</li> <li>Battery, 720 CCA Wet Cell</li> <li>Battery, 685 CCA Gel Cell</li> <li>No Battery</li> <li>Battery Disconnect, Lockable</li> <li>Battery Charger, 2 Amp</li> <li>Alternative Outlet Panel Options (Consult factory for details)</li> </ul>

Cabinet/Fuel Tank

Trailer

- Interior Cabinet Light
- Level Indicator
- 56 Gallon Fuel Tank
- Fuel Tank Cap Vent w/ Lanyard
- Spare Tire & Carrier
- Lift Structure
- Liquid Containment/Quiet Pack
- Tube & Sleeve Jack
- Combo Hitch 2.5" Ring/2" Ball
- 2.5" Ring
- 3" Ring
- 3" Ring (1.625 TH)
- Plug Adapter, 4 Flat to 6 Round
- Plug Adapter, 4 Flat to 7 Pin
- Plug Adapter, 4 Flat to 7 Round Spade
- Outrigger Package

### Product Images (click small image to pop-up larger version)

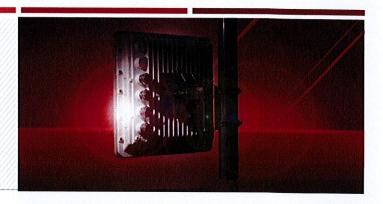


Copyright © 2003 - 2009 Magnum Products LLC

·			
: :			
1			



### EX-5r Series



All-Outdoor, Carrier-Class, Tri-Band 5 GHz TDD Radio System for Low, Medium and High Capacity Ethernet and TDM Applications

The EX-5r series of all-outdoor digital microwave radios is the first family of carrier-class, tri-band TDD radios available in the 5.2 – 5.8 GHz license-exempt bands. Radios in the EX-5r line support capacities ranging from 27 Mbps to an industry-leading 440 Mbps of aggregate user throughput, from zero to four T1/E1s and both 100BaseT and GbE interfaces. Featuring native TDM and native Ethernet transport and full software configurability and upgradeability, the EX-5r series was designed to meet demanding backhaul requirements of enterprise organizations and service providers seeking the performance benefits of an all-outdoor configuration.

Carrier-class TDD. The EX-5r series radios combine native TDM and native Ethernet transport with low, fixed latency to deliver guaranteed throughput and service quality. Capacity can be allocated variably between TDM and Ethernet via software, while the selectable throughput symmetry control feature enables radio capacity to efficiently match asymmetric traffic requirements.

Industry-leading Spectrum Management. The EX-5r radios include selectable channel bandwidth and 1 MHz tuning resolution,

yielding up to 54 non-overlapping frequency channels and up to 415 center frequencies of operation. These capabilities, combined with selectable modulation and superior system gain, provide unparalleled interference avoidance and transmission resiliency. A built-in spectrum analyzer is even included to accelerate deployment and simplify troubleshooting.

**ExaltSync Synchronization.** The ExaltSync technology embedded in the EX-5r series radios allows multiple radio systems to be collocated in close proximity without self-interference, minimizing antenna separation and ensuring reuse of scarce spectrum across all collocated systems.

Security, Management and Data Networking. The EX-5r radios deliver the highest data and management security available with optional 128- and 256-bit AES encryption and secure SNMP v3 management, together with enhanced fault management and diagnostic features. The 802.1Q VLAN option provides built-in network administration and security flexibility.

EX-5r series radios are available in both integrated antenna and external antenna (connectorized) versions.

Primary Specifications		EX-5r Lite / EX-5r-c Lite	EX-5r v3 / EX-5r-c v2	EX-5r GigE / EX-5r-c GigE			
Maximum Capacity <sup>1</sup>	TDM	4xT1/E1					
Capacity	Ethernet (Aggregate)	100 Mbps	200 Mbps	440 Mbps			
Frequency (	(GHz)	Tri-band: 5.250-5.350, 5.470-5.725, 5.725-5.850					
Range <sup>2</sup>	9	> 30 miles at 99.999% throughput availability					

Please refer to the Exalt Throughput and Range Specification document for detailed capacity information,

<sup>2</sup> Distance based upon FCC regulations, average climate and terrain, 6' dish antennas, 3 dB transmission system losses at each end, Longer or shorter distances will apply for alternative antennas, country regulations, transmission system losses, path topologies and radio configurations. See Exalt's link budget and path planning tool to model your scenario.

		-
		-

Specifications					EX-5r Series		
System					System (continued)		
Frequency Bands¹(GHz)	5.250-5.3	350, 5.470-5.7	25, 5.725-5.8	350	Link Security	96-bit proprietary encryption	
Tuning Resolution	1 MHz					128-bit and 256-bit AES encryption <sup>3</sup>	
Output Power (full power)					Spectrum Analyzer	Embedded	
5725-5850 MHz band	+24 dBm	QPSK;+21 dE	3m 16QAM		VLAN	802.1Q	
5250-5350 MHz band <sup>2</sup>	+13 dBm				QoS	802.1p (GigE)	
5470-5725 MHz band <sup>2</sup>	+13 dBm				Management	HTTP GUI	
Output Power (min power)	Full power	er minus 20 di	3	12.2.21.50		CLI/Telnet	
Power Control Step Size	0.5 dB					SNMP v1, 2c, v3	
Receiver Threshold (BER=10-6)	8 MHz	16 MHz	32 MHz	64 MHz	Compliance	FCC 15.247, FCC 15.407	
QPSK	-86	-83	-80	-77		EN 301-893, EN 302-502	
16QAM	-78	-75	-72	-69		EN 60-950, EN 301-489	
Non-overlapping Channels					-	IC RSS-210	
5.250-5.350 GHz	10	5	2	1			
5.470-5.725 GHz	29	14	7	3	System Components	10 (40)	
5.725-5.850 GHz	15	7	3	1	Complete Link	Two terminals, each with AC adapter &	
Maximum RSL	-25 dBm	error-free			and the second s	accessory kit	
	0 dBm no	damage			Single Terminal	One terminal with AC adapter & accessory ki	
Throughput Symmetry Control	5 modes				Accessory Kit	DC power connector, rack and grounding	
	20/80, 80	)/20, 35/65, 65	5/35, 50/50			hardware (spare)	
rror Floor	10-12				AC Adapter	AC adapter (spare)	
atency (T1/E1)	1ms, typi	cal			Mounting Kits	Available for each product (spare)	
Maximum Packet Size	All 1916	bytes except (	GigE 9728 by	tes	ExaltSync GPS Sync Kit	GPS receiver and mounting bracket (optional	

Specifications	EX-5r Lite	EX-5r-c Lite	EX-5r v3	EX-5r-c v2	EX-5r GigE	EX-5r-c GigE
Physical	174 B	<i>i</i> 2 53				
Physical Configuration			Outdoo	r Unit (ODU)		
Dimensions (H x W x D)	14 x 14 x 3.8 in	14 x 14 x 2.5 in	14 x 14 x 3.8 in	14 x 14 x 2.5 in	14 x 14 x 3.8 in	14 x 14 x 2.5 in
	35.6 x 35.6 x 9.7 cm	35.6 x 35.6 x 6.4 cm	35.6 x 35.6 x 9.7 cm	35.6 x 35.6 x 6.4 cm	35.6 x 35.6 x 9.7 cm	35.6 x 35.6 x 6.4 cm
Antenna	Integrated	2x Type-N (F) Connector	Integrated	2x Type-N (F) Connector	Integrated	2x Type-N (F) Connec
ntegrated Antenna						
Gain/3 dB Beamwidth	23 dBi / 9 degrees		23 dBi / 9 degrees	•	23 dBi / 9 degrees	
Operating Temperature				C; -40 to +149 °F		
Full Spec Temperature			-40 to +60 °C	C; -40 to +140 °F		
Weight	14 lbs/6.4 kg	12 lbs/5.5 kg	14 lbs/6.4 kg	12 lbs/5.5 kg	14 lbs/6.4 kg	12 lbs/5.5 kg
Environmental				1A 4/IP56		- Liberote ng
Altitude			15,00	) ft; 4.6 km		
Humidity			100%	condensing		
RF FDM T1/E1 Interfaces	-	2x N-type (F), 50 ohm	- RJ48C/I	2x N-type (F), 50 ohm RJ45 (F) (x4)	•	2x N-type (F), 50 ohm
RF	-	2x N-type (F), 50 ohm		2x N-type (F), 50 ohm		2x N-type (F) 50 ohm
T1 Impedance						
T1 Line Code				ns, balanced ectable per channel		
T1 Data Rate				44 Mbps		
T1 Compliance				14 морs U-T; G.823; GR-499-CORE		
E1 Impedance				0-1; G.823; GR-499-CORE		
E1 Line Code				HDB3		
E1 Data Rate				48 Mbps		
E1 Compliance				703; ITU-T-G.703		
Loopback Modes				mote External; Local Line		
Ethernet		RJ4		note External, Local Line	DIVE	emale (x2)
Interface Speed		10/100Bas			10/100/100/	BaseT (1xPOE)
Duplex		Half, Full, A				I, Auto-MDIX
Compliance		802				302.3
ExaltSync Synchronization		RJ4				emale (x2)
		Input: 1p				S); Output: Sync out
DC Power		48VDC				OC, <70W
AC Power Adapter	POWER THE PROPERTY OF	10100			4040	, -10 <b>11</b>
Input				100-240VAC, 1.5A		
Output		101/20 151 7011	(via power injector)	100-2404/10, 1.0/		DW (via power injector)

- Not all frequency bands are authorized or available for use in all countries.
   +24 dBm output power available in EX-5r v3 and EX-5r Lite. Consult Exalt for availability in other models.
   Software license key upgrade.
   © 2008 Exalt Communications, Inc. All rights reserved. The Exalt logo is a trademark of Exalt Communications, Inc. Specifications subject to change without notice.



World Headquarters Exalt Communications Inc. 580 Division Street Campbell, CA 95008 USA

Phone:+1 (408) 871-1804 Toll free: (888) 91EXALT sales@exaltcom.com

www.exaltcom.com

		,	
			-

## Exhibit D

# Power Density Calculations Pocket Site NHCT0431B 21 Birchwood Drive Ansonia, Connecticut

,				
			-	_



C Squared Systems, LLC 920 Candia Road Manchester, NH 03109 Phone: (603) 657 9702 E-mail: support@csquaredsystems.com

### Calculated Radio Frequency Emissions



NHCT0431
21 Birchwood Drive
Ansonia, CT

	•		
-			

### **Table of Contents**

1. Introduction	
2. FCC Guidelines for Evaluating RF Radiation Exposure Limits	2
3. RF Exposure Prediction Methods	2
4. Calculation Results	2 ર
5. Conclusion	3
6. Statement of Certification	
Attachment A: References	۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰
Attachment B: FCC Limits For Maximum Permissible Exposure (MPE)	د 6
List of Tables	
Table 1: Proposed Carrier Information	3

	-

### 1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed Pocket antennas to be installed on the existing tower at 21 Birchwood Drive, Ansonia, CT.

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are much more conservative (higher) than the actual signal levels will be from the finished installation.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (mW/cm²). The number of mW/cm² emitted is called the power density. The general population exposure limit for the cellular band is 0.567-0.593 mW/cm², and the general population exposure limit for the PCS/AWS band is 1.0 mW/cm². Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Higher exposure limits are permitted under the occupational / controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure (through training), and they must be able to exercise control over their exposure. General population / uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals."

The FCC describes exposure to radio frequency (RF) energy in terms of percentage of maximum permissible exposure (MPE) with 100% being the maximum allowed. Rather than the FCC presenting the user specification in terms of complex power density figures over a specified surface area, this MPE measure is particularly useful, and even more so when considering that power density limits actually vary by frequency because of the different absorptive properties of the human body at different frequencies.

MPE limits are specified as time-averaged exposure limits. This means that exposure can be averaged over 30 minutes for general population / uncontrolled exposure (or 6 minutes for occupational / controlled exposure). However, for the case of exposure of the general public, time averaging is usually not applied because of uncertainties over exact exposure conditions and difficulty in controlling time of exposure. Therefore, the typical conservative approach is to assume that any RF exposure to the general public will be continuous.

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

			-
			-

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

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

Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit. As shown in these excerpts, each frequency band has different exposure limits, requiring power density to be reported as a percent of Maximum Permissible Exposure (MPE) when dealing with carriers transmitting in different frequency bands.

### 3. RF Exposure Prediction Methods

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

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

Where:

EIRP = Effective Isotropic Radiated Power

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

H = Horizontal Distance from antenna

V = Vertical Distance from bottom of antenna

Off Beam Loss is determined by the selected antenna patterns

		-
		-

### 4. Calculation Results

Table 1 below outlines the power density information for the site. All information for carriers other than Pocket was obtained from the current landlord and the FCC's Universal Licensing System (ULS) database.

Carrier	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Antenna Height (Feet)	Operating Frequency (MHz)	Total ERP (Watts)	Power Density (mw/cm^2)	Limit	%МРЕ
Radio Comm. Corp.	1	200	75	461.650	200	0.0151	0.3078	4.91%
Paging Assoc. Inc.	1	500	64	454.075	500	0.0534	0.3027	17.65%
Paging	1	500	64	929.6625	500	0.0534	0.6198	8.62%
Paging	1	500	55	929.7625	500	0.0000	0.6198	0.00%
Pocket	3	631	55.5	2130-2133.75	1893	0.2778	1.0000	27.78%
		-			2		Total	58.97%

**Table 1: Proposed Carrier Information** 

### 5. Conclusion

The above analysis verifies that emissions from the proposed site will be well below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at the base of the tower is 58.97% of the FCC limit.

As noted in the introduction, obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished installation.

			,	
	·			
-				
-				

### 6. Statement of Certification

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

Daniel I. Goulet

C Squared Systems, LLC

January 16, 2009

Date

	·	
		-

### **Attachment A: References**

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

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

<u>IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave.</u> IEEE-SA Standards Board

-			
-			

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

### (A) Limits for Occupational/Controlled Exposure

-		<del></del>		.,	
	Frequency	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
	Range	Strength (E)	Strength (E)		$ E ^{2}$ , $ H ^{2}$ or S
	(MHz)	(V/m)	(A/m)	$(mW/cm^2)$	(minutes)
	0.3-3.0	614	1.63	(100)*	6
	3.0-30	1842/f	4.89/f	(900/f²)*	6
	30-300	61.4	0.163	1.0	6
	300-1500	_	-	f/300	6
	1500-100,000	-	-	5	6

### (B) Limits for General Population/Uncontrolled Exposure

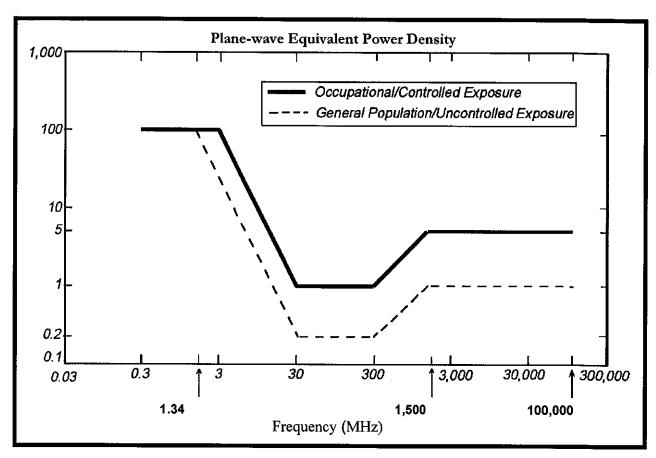
Frequency	Electric Field	Magnetic Field	Power Density	Averaging Time
Range	Strength (E)	Strength (E)	(S)	$ E ^2$ , $ H ^2$ or S
(MHz)	(V/m)	(A/m)	$(mW/cm^2)$	(minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	$(180/f^2)*$	30
30-300	27.5	0.073	0.2	30
300-1500	_	-	f/1500	30
1500-100,000	_	-	1.0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

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

NOTE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

			-
	·		
			-
			-



• FCC Limits for Maximum Permissible Exposure (MPE)

## Exhibit E

# Structural Analysis Pocket Site NHCT0431B 21 Birchwood Drive Ansonia, Connecticut

		•	
			-

### STRUCTURAL ANALYSIS AND REPORT

FOR

HPC DEVELOPMENT, LLC **POCKET COMMUNICATIONS ANSONIA TOWER** PROJECT NO. NHCT0431B

ANSONIA, CONNECTICUT

60 FT. GUYED TOWER

Prepared By:



# CONSULTING ENGINEERS, INC.

32 West Upper Ferry Road Ewing, New Jersey 08628-0829 Phone: (609) 538-0400 Fax (609) 538-8858

January 16, 2009

Prepared to EIA/TIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

Structural wind & ice: 85 MPH and 74 MPH with 1/2 radial ice

		·		
	•			
				-

# HPC DEVELOPMENT, LLC PROJECT: ANSONIA

### **TABLE OF CONTENTS**

SECTION	PAGE
1.0 EXECUTIVE SUMMARY	3
2.0 APPURTENANCE LISTING	4
3.0 COMMENTARY	5
4.0 ANALYSIS PROCEDURE	6
5.0 WIND AND ICE LOADING	7
6.0 EQUIPMENT AND LOADING	8
7.0 TOWER ANALYSIS AND RESULTS	9
8.0 RECOMMENDATIONS	10
9.0 APPENDIX	
Load Case 1 - PROPOSED LOAD CONDITION	

·		-
		-

### **1.0 EXECUTIVE SUMMARY**

### Structure

- 60 ft. Guy Communications Tower
- Owner RCI
- Location -Ansonia, CT

### **Equipment**

Proposed at 55'-6" AGL elev - installation of proposed (3) RFS-APXV18-206517S-C and (6) 1 5/8" coax.

### **Synopsis**

The tower as it exists and with the proposed equipment installation does meet the EIA/TIA-F standards. The maximum tower utilization with proposed antenna is 227.2% (guy wires).

Information on the existing foundations has been reviewed. Utilizing the proposed loading reactions of the tower, a foundations analysis indicates that the existing and proposed capacity of the foundation does not meet the EIA/TIA-222 F and IBC standards.

- End of Executive Summary -

·			
			-
			-
			=

### **2.0 APPURTENANCE LISTING**

### **DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION		
20' Colinear Antenna UHF	60	APXV18-206517S-C w/Mount	55.5		
12' Whip	57	Pipe (Pocket)			
12' Whip	57	APXV18-206517S-C w/Mount	55.5 37		
12' Whip	57	Pipe (Pocket)			
APXV18-206517S-C w/Mount	55.5	12' Whip			
Pipe (Pocket)					

<sup>\*</sup> Proposed Pocket Communications antenna with mounting frames at 55'-6" AGL.

			-
			_
			ē

### 3.0 COMMENTARY

The structure is a Rohn guy tower located at 21 Birchwood Drive, Ansonia, CT.

The tower is a 60 ft. structure with a triangular platform located at the top of the tower. Our scope of work is to determine if the existing structure is capable of withstanding additional stresses/forces imposed by the addition of (3) RFS-APXV18-206517S-C at 55'-6" AGL.

The following report will provide analytical calculations and commentary regarding the capacity of the existing tower and subsequent recommendations.

		-
	·	
		-

## **4.0 ANALYSIS PROCEDURE**

KM Consulting Engineers, Inc. carried out their structural analysis by correlating an inventory/field inspection and processing the retrieved data into RISATower analytical program.

This program runs in conjunction with the guidelines set down in the EIA/TIA-222-F June 1996 Standard "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures."

The existing Tower is analyzed by placing wind forces on the structure in 30° positional increments around the tower (ie. forces directly onto the tower corners, faces and parallel to the faces). This enables the user to "create" a three-dimensional representation, yielding results for maximum worst case scenarios.

In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of a microwave antenna in the scenario previously stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

# **5.0 WIND AND ICE LOADING**

The existing 60 ft. guy tower is located at 21 Birchwood Drive, Ansonia, CT.

Structural wind speed has been taken as 85 MPH (concurrent with listings applicable for New Haven County, CT) for EIA/TIA-222-F.

Additionally, the tower has been analyzed for ½" radial ice loading with a reduced wind speed of 74 MPH, for EIA/TIA-222-F.

	-

HPC DEVELOPMENT, LLC January 16, 2009 Ansonia

## **6.0 EQUIPMENT LOADING**

The preceding analytical data has been formulated for the following:

Load Case #1:

Existing 60 ft. guy tower with existing and proposed inventory of 3 each RFS-APXV18-2065175-C antenna, and 6 each 1 5/8" coax cable. Antenna are mounted to existing mounting frames at elev. 55.5'.

		-
		-

## **7.0 TOWER ANALYSIS AND RESULTS**

The tower was analyzed for the existing inventory plus the proposed loading condition.

For Load Case 1: The existing tower does not meet the standards of EIA/TIA 222 F. The guy wires at elev. 53.5' are at 227.2% and the wires at elev. 37.9' are at 222.3%

The tower foundation does not have adequate capacity to meet the EIA/TIA-222-F and IBC standards. The IBC requires that the foundation resist two time the wind load.

The two helical screw anchors have an ultimate capacity of 6 kips while the reaction is 9 kips.

-			
=			
-			

## **8.0 RECOMMENDATIONS**

Further to our calculations, we conclude that the tower structure and foundation does not meet the standards of EIA/TIA 222 F and the IBC.

We recommend the following:

- 1. Change out both elevation of guy wires to larger diameters/capacity guy wires.
- 2. Reinforce existing helical type anchors or install new larger capacity helical anchors.

Prepared By:

Michael, L. Bohlinger, PE

Principal

CT License No. 20405

			·
		-	
			-
,			
			F

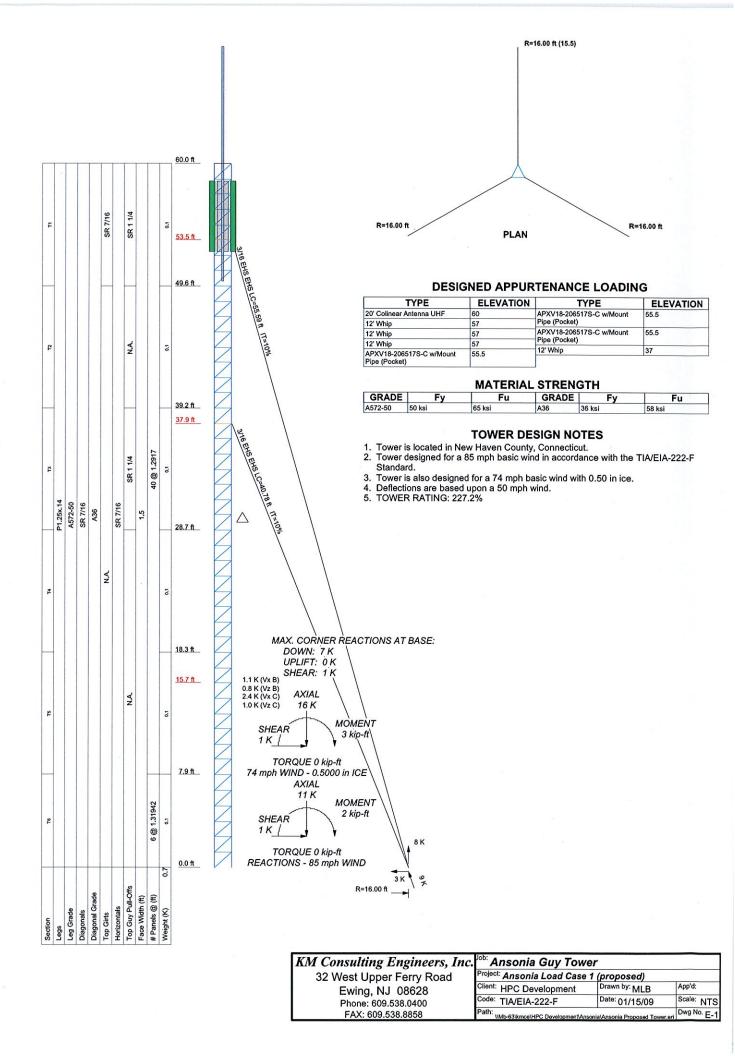
# **APPENDIX**

		-
		-

# LOAD CASE #1

PROPOSED LOAD CONDITION

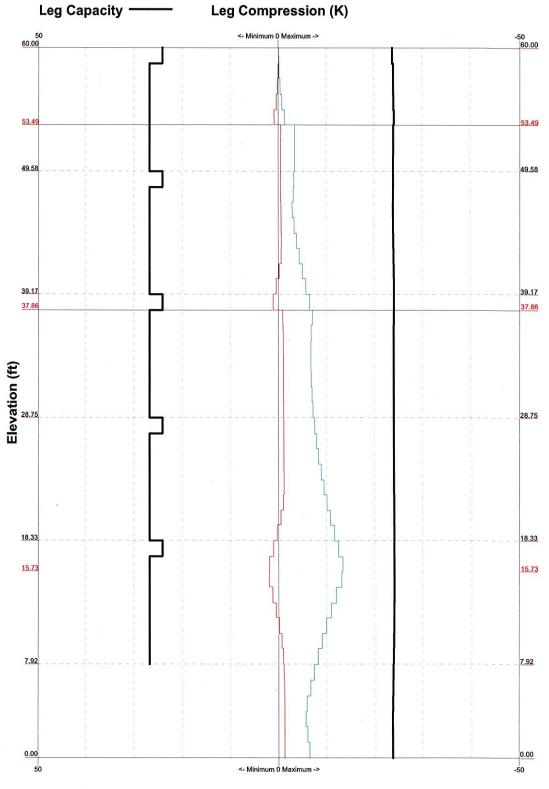
-		



		-
		F

TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

Leg Compression (K)



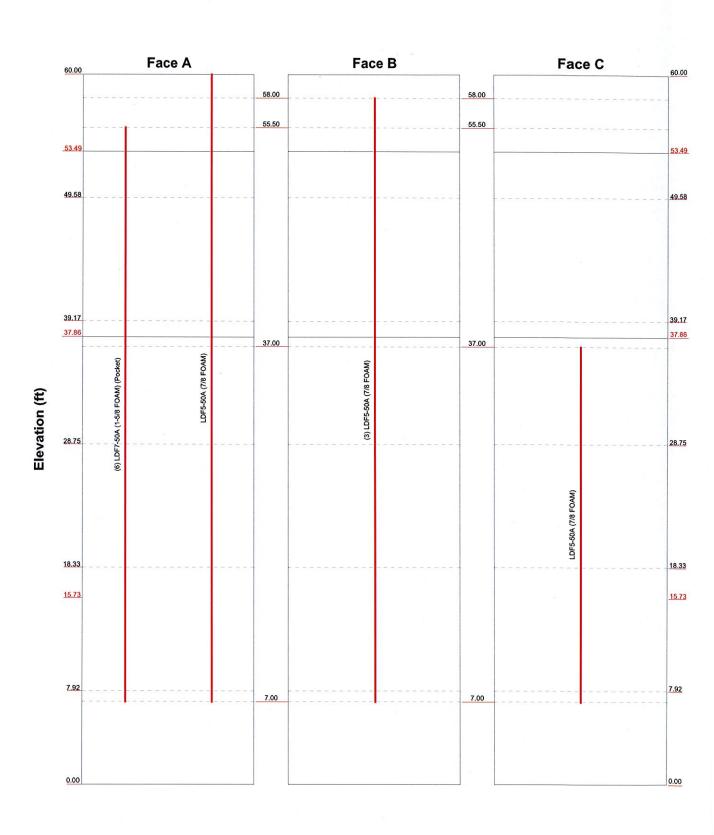
KM Consulting Engineer	s, Inc. Job: Ansonia Guy Tower
32 West Upper Ferry Ro	ad Project: Ansonia Load Case 1 (p
Ewing, NJ 08628	Client: HPC Development D
Phone: 609.538.0400	Code: TIA/EIA-222-F
FAX: 609.538.8858	Path: \\Mb-63\kmce\HPC Develorment\Ansonia\A

<sup>b:</sup> Ansonia Guy Tower			
<sup>roject:</sup> Ansonia Load Case 1	(proposed)		
Client: HPC Development	Drawn by: MLB	App'd:	
Code: TIA/EIA-222-F		Scale: NTS	
ath: \\Mb-63\kmce\HPC Development\Anso	Dwg No. E-3		

		,
		-
		-

# Feedline Distribution Chart

**0' - 60'**\_\_\_\_\_ App In Face \_\_\_\_\_ App Out Face \_\_\_\_\_ Truss Leg

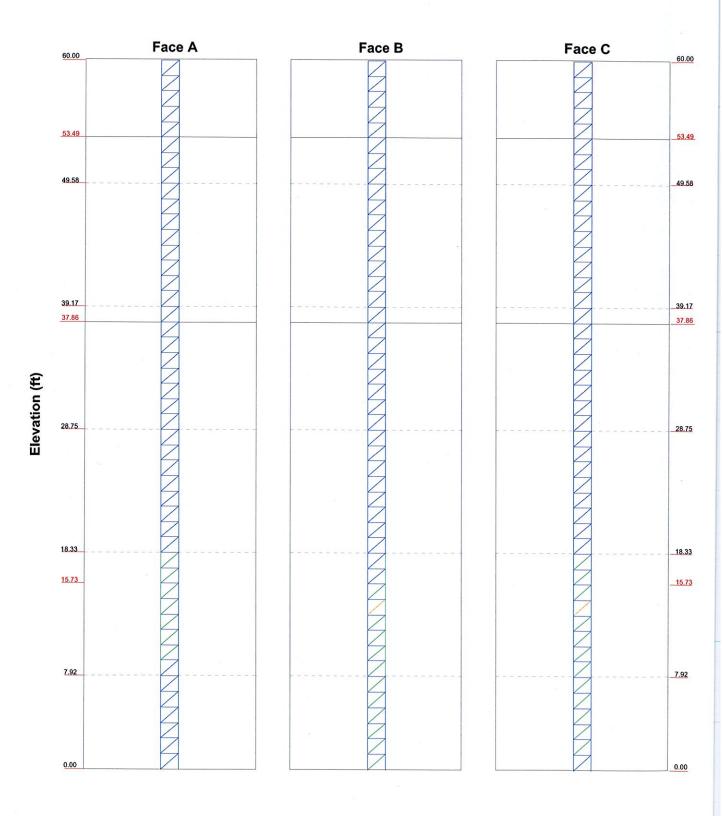


KM Consulting Engineers, Inc.	Job: Ansonia Guy Tower	P	
32 West Upper Ferry Road	Project: Ansonia Load Case 1	(proposed)	
Ewing, NJ 08628	Client: HPC Development	Drawn by: MLB	App'd:
Phone: 609.538.0400	Code: TIA/EIA-222-F	Date: 01/15/09	Scale: NTS
FAX: 609.538.8858	Path: \\Mb-63\kmce\HPC Development\Ansonia	a\Ansonia Proposed Tower.eri	Dwg No. E-7

			-
			-

# Stress Distribution Chart 0' - 60'





KM Consulting Engineers, Inc.			
32 West Upper Ferry Road	Project: Ansonia Load Case 1 (p.	roposed)	
Ewing, NJ 08628	Client: HPC Development Dr	rawn by: MLB	App'd:
Phone: 609.538.0400	Code: TIA/EIA-222-F	ate: 01/15/09	Scale: NTS
FAX: 609.538.8858	Path: \\Mb-63\kmce\HPC Development\Ansonia\Ar	nsonia Proposed Tower.eri	Dwg No. E-8

			·	
<u>.</u>				
-				

# **RISATower**

KM Consulting Engineers, Inc. 32 West Upper Ferry Road

Ewing, NJ 08628 Phone: 609.538.0400 FAX: 609.538.8858

Job		Page
	Ansonia Guy Tower	27 of 28
Project		Date
	Ansonia Load Case 1 (proposed)	09:44:32 01/15/09
Client	LIDO D	Designed by
	HPC Development	MLB

Section No.	Elevation	Size	L	$L_u$	Kl/r	$F_a$	A	Actual P	Allow.	Ratio P
	ft		ft	ft		ksi	in <sup>2</sup>	K	K	$P_a$
Т6	7.9165 - 0	7/16	1.50	1.36	149.4	21.600	0.1503	0.72	3.25	0.221

<sup>\*</sup> DL controls

	Top Girt Design Data (Tension)									
Section No.	Elevation	Size	L	$L_{u}$	Kl/r	$F_a$	À	Actual P	Allow.	Ratio P
27522224732	ft	3 5	ft	ft		ksi	in <sup>2</sup>	K	K	$\overline{P_a}$
T1	60 - 49.5833	7/16	1.50	1.36	149.4	21.600	0.1503	0.02	3.25	0.005

Section	Elevation	Top Guy	L	$L_{u}$	Kl/r	$F_a$	A	Actual	Allow.	Ratio
No.		274,774	111 4776			- 4	A.R.	P	$P_a$	P
	ft		ft	ft		ksi	in <sup>2</sup>	K	K	$\overline{P_a}$
T1	60 - 49.5833	1 1/4	1.50	1.36	52.3	30.000	1.2272	0.71	36.82	0.019
T3	39.1666 - 28.7499	1 1/4	1.50	1.36	52.3	30.000	1.2272	0.99	36.82	0.027

# **Section Capacity Table**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow} \ K$	% Capacity	Pass Fail	
T1	60 - 49.5833	Leg	P1.25x.14	1	-3.32	23.96	13.9	Pass	
		Diagonal	7/16	25	-0.51	1.56	32.6	Pass	
		Horizontal	7/16	29	-0.33	2.48	13.4	Pass	
		Top Girt	7/16	5	-0.02	2.48	0.7	Pass	
		Guy A@53.4896	3/16 EHS	297	3.52	2.00	176.2	Fail 👗	
			Guy B@53.4896	3/16 EHS	296	4.53	2.00	227.2	Fail 🔪
		Guy C@53.4896	3/16 EHS	295	4.52	2.00	226.6	Fail 🔪	
		Top Guy Pull- Off@53.4896	1 1/4	23	0.71	49.08	1.4	Pass	
T2	49.5833 - 39.1666	Leg	P1.25x.14	52	-5.63	24.06	23.4	Pass	
		Diagonal	7/16	58	-0.71	1.56	45.4	Pass	
		Horizontal	7/16	61	-0.48	2.48	19.3	Pass	
T3 39.1666 - 28.7499		Leg	P1.25x.14	105	-7.12	23.99	29.7	Pass	
		Diagonal	7/16	151	-0.71	1.56	45.4	Pass	
		Horizontal	7/16	106	-0.50	2.48	20.1	Pass	

			÷
			· -

# **RISATower**

KM Consulting Engineers, Inc. 32 West Upper Ferry Road

Ewing, NJ 08628 Phone: 609.538.0400 FAX: 609.538.8858

Job		Page
	Ansonia Guy Tower	28 of 28
Project		Date
	Ansonia Load Case 1 (proposed)	09:44:32 01/15/09
Client	HPC Development	Designed by MLB

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
		Guy A@37.8645	3/16 EHS	300	3.29	2.00	164.9	Fail X
		Guy B@37.8645	3/16 EHS	299	4.42	2.00	221.5	Fail X
		Guy C@37.8645	3/16 EHS	298	4.44	2.00	222.3	Fail X
		Top Guy Pull- Off@37.8645	1 1/4	150	0.99	49.08	2.0	Pass
T4	28.7499 - 18.3332	Leg	P1.25x.14	156	-11.52	24.08	47.9	Pass
		Diagonal	7/16	162	-0.74	1.56	47.4	Pass
		Horizontal	7/16	164	-0.50	2.48	20.3	Pass
T5	18.3332 - 7.9165	Leg	P1.25x.14	207	-13.26	24.10	55.0	Pass
		Diagonal	7/16	236	-1.21	1.56	77.7	Pass
		Horizontal	7/16	244	1.42	3.25	43.6	Pass
T6	7.9165 - 0	Leg	P1.25x.14	258	-7.27	23.87	30.4	Pass
		Diagonal	7/16	293	-0.95	1.54	61.4	Pass
		Horizontal	7/16	260	0.72	4.33	16.6	Pass
							Summary	
						Leg (T5)	55.0	Pass
						Diagonal (T5)	77.7	Pass
						Horizontal (T5)	43.6	Pass
						Top Girt (T1)	0.7	Pass
						Guy A (T1)	176.2	Fail X
						Guy B (T1)	227.2	Fail X
						Guy C (T1)	226.6	Fail X
						Top Guy Pull-Off (T3)	2.0	Pass
						Bolt Checks RATING =	51.5 <b>227.2</b>	Pass Fail

Program Version 5.1.1.4 - 2/24/2008 File://Mb-63/kmce/HPC Development/Ansonia/Ansonia Proposed Tower.eri

		·
		-