STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
APPLICATION OF MESSAGE CENTER MANAGEMENT FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A TELECOMMUNICATIONS FACILITY OFF GREENSWOOD ROAD EAST (ROUTE 44), NORFOLK, CONNECTICUT	:	DOCKET NO. 320
	:	NOVEMBER 17, 2006

RESPONSES OF
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS TO
PRE-HEARING INTERROGATORIES FROM THE CONNECTICUT SITING COUNCIL

On November 6, 2006, the Connecticut Siting Council ("Council") issued Pre-Hearing Interrogatories to Cellco Partnership d/b/a Verizon Wireless ("Cellco") relating to the above-captioned Application. The proposed tower site has been designated Cellco's "Norfolk East" facility. Below are Cellco's responses.

Question No. 1

Discuss Verizon's need for the proposed facility including the specific roads/areas where coverage is inadequate. What are the existing signal levels in the areas requiring improved coverage?

Response

Cellco has only recently started activating PCS sites throughout Litchfield County. None of the activated sites are in the vicinity of the proposed MCM tower. Cellco therefore, has no coverage or signal strength in the area of the proposed Norfolk East facility. Cellco is, however,

developing its Litchfield County network in a manner consistent with its network elsewhere in Connecticut, and has established a signal level threshold of -85 dBm throughout the area.

Cellco plans to install its antennas at the 160-foot level on the proposed Message Center Management ("MCM") tower off Greenswood Road East (Route 44) in Norfolk. Cellco's Norfolk East facility would provide Cellco customers with coverage to an approximately 6.5 square mile area in the easterly portion of Norfolk and southwesterly portions of Colebrook, including an approximately 2.6 mile portion of Route 44. Coverage from the proposed Norfolk East facility would fill a significant portion of a gap in coverage between Cellco's recently approved "Colebrook SW" facility (a Sprint tower at 161 Pinney Street in Colebrook) and Cellco's planned "Norfolk W" facility (a Sprint tower at 10 Ashpohtag Road in Norfolk).

Question No. 2

Provide statistics, if available, on the number of dropped calls that presently exist within the target service area.

Response

Cellco has only recently started to activate PCS sites in this portion of Litchfield County, Connecticut. Cellco, therefore, does not yet have any data or statistics on dropped calls in the Norfolk or Colebrook areas.

Question No. 3

What is Verizon's operating frequency and the minimum signal level threshold for this area?

Response

Cellco PCS antennas will operate in the frequency band of 1970-1975 MHz. Cellco's design threshold for all of its wireless PCS facilities is -85 dBm.

Question No. 4

Provide antenna specifications, including type, make, size, model, number of channels, and maximum power output. Indicate the proposed antenna height, number of antennas and antenna mounting configuration planned for the site.

Response

Cellco intends to install twelve (12) Amphenol Antel, Inc. 185080/12CF panel type PCS antennas at the 160-foot level on the proposed MCM tower. Antenna specifications are included in Attachment 1. Cellco's maximum power output would be 1536 watts ERP.

Question No. 5

Provide a multi-signal level propagation plot at a scale of 1:40,000, depicting coverage from all existing and/or approved Verizon sites in the area. Provide a brief description of the existing sites including location, distance to the proposed facility, facility type, and antenna height. Depict and label major roads on the plot.

Response

The coverage plot requested is included in Attachment 2. On October 31, 2006, Cellco received Council approval to mount antennas at the 117-foot level on the existing 150-foot tall Sprint tower at 161 Pinney Street in Colebrook (EM-VER-029-061010). This facility, designated Cellco's "Colebrook SW" cell site is approximately two-miles southeast of the proposed MCM tower.

Cellco also intends to mount antennas at the 127-foot level on the existing 150-foot Sprint tower at 10 Ashpohtag Road in Norfolk. This facility, designated Cellco's "Norfolk West" cell site is approximately 3.7 miles northwest of the proposed MCM tower.

Question No. 6

Provide a multi-signal level propagation plot at a scale of 1:40,000, depicting coverage from existing sites and the proposed site. Depict and label major roads on the plot.

Response

The coverage plot requested for the Cellco antennas at 160 feet AGL on the proposed tower are included in Attachment 3.

Question No. 7

Provide a multi-signal level propagation plot at a scale of 1:40,000, depicting coverage from existing sites and the proposed site at a height of 150 feet.

Response

The coverage plot requested for the Cellco antennas at 150 feet AGL on the proposed MCM tower are included in Attachment 4. By reducing its antenna height from 160 feet to 150 feet on the MCM tower, Cellco's over coverage footprint from the Norfolk East facility shrinks from 6.5 square miles to 5.5 square miles and small coverage gaps begin to open along Route 44 to the southeast.

Question No. 8

Provide specifications of the equipment building or cabinets to be installed at the proposed site. What type of emergency power system will be used at the site?

Response

The equipment specifications requested are included in Attachment 5. Cellco intends to install its standard 12' x 30' equipment shelter within the cell site compound. A diesel-fueled back-up generator will be housed inside a segregated generator room within the equipment shelter. A 275 gallon "belly-tank" is included as an integral part of the generator unit. The fuel tank is double-walled and maintains leak detection alarms that are monitored around the clock.

Question No. 9

Did Verizon have a search ring in this area prior to the filing of this application? If so, describe the properties and/or structures identified for possible use. Provide a topographic map identifying the search ring, if applicable.

Response

Yes. Cellco's RF engineers had issued a search ring centered to the south of the MCM tower site (see Site Search Map in Attachment 6). Prior to commencing a formal site search, MCM made Cellco aware of its efforts to site a facility at the Town property off Greenwoods Road East.

Question No. 10

Provide a power density analysis according to the methodology prescribed in the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) assuming all Verizon antennas are directed at the base of the tower and all channels are operating simultaneously.

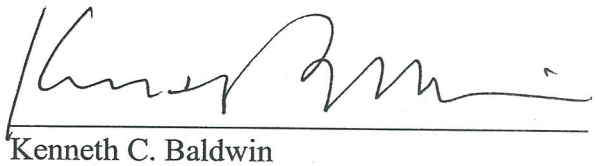
Response

Power density emissions from Cellco's operations at the Norfolk East facility would add approximately 2.16% of the applicable FCC maximum permissible exposure standards. (See Attachment 7). Based on the information contained in the MCM application, the cumulative power density emission levels for the Cellco (2.16%) and Cingular (4.8%) antennas at the proposed site would be approximately 6.96% of the FCC standard.

CERTIFICATE OF SERVICE

I hereby certify that on the 17th day of November 2006, a copy of the foregoing was mailed, postage prepaid, to:

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601



Kenneth C. Baldwin

Vertically Polarized, Log Periodic 80° / 17.5 dBi

LPA-185080/12CF ___

When ordering, replace "___" with connector type.

Mechanical specifications

	Length	1806 mm	71.1 in
	Width	104 mm	4.1 in
	Depth	150 mm	5.9 in
4)	Weight	4.8 kg	10.5 lbs
	Wind Area		
	Front	0.188 m^2	2.02 ft^2
	Side	0.271 m^2	2.92 ft^2
	Rated Wind Velocity (Safety factor 2.0)		
		>270 km/hr	>168 mph
	Wind load @ 100 mph (161 km/hr)		
	Front	325 N	73.1 lbs
	Side	440 N	98.9 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting & Downtilting:

Wall mounted or pole tower mount with mounting brackets.

Mounting bracket kit #26799997

Downtilt bracket kit #26799999
The downtilt bracket kit includes the mounting bracket kit.

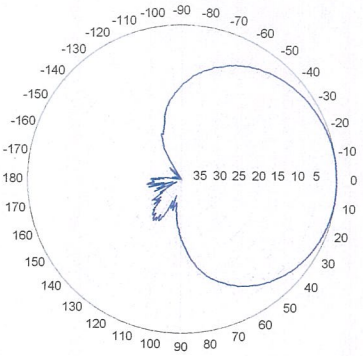
Electrical specifications

	Frequency Range	1850-1990 MHz
	Impedance	50Ω
3)	Connector	NE, E-DIN
1)	VSWR	≤1.4:1
	Polarization	Vertical
1)	Gain	17.5 dBi
2)	Power Rating	250 W
1)	Half Power Angle	
	H-Plane	80°
	E-Plane	5°
1)	Electrical Downtilt	0°
1)	Null Fill	10%
	Lightning Protection	Direct Ground

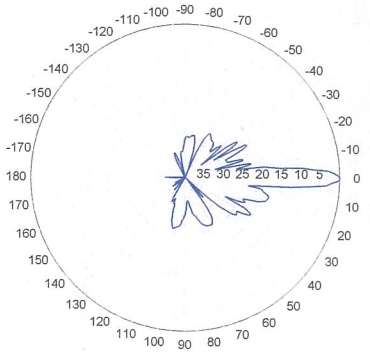
[1] Typical Values
[2] Power Rating limited by connector only.
[3] NE indicates an elongated N Connector.
E-DIN indicates an elongated DIN Connector.
[4] The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation-pattern[1)]



Horizontal



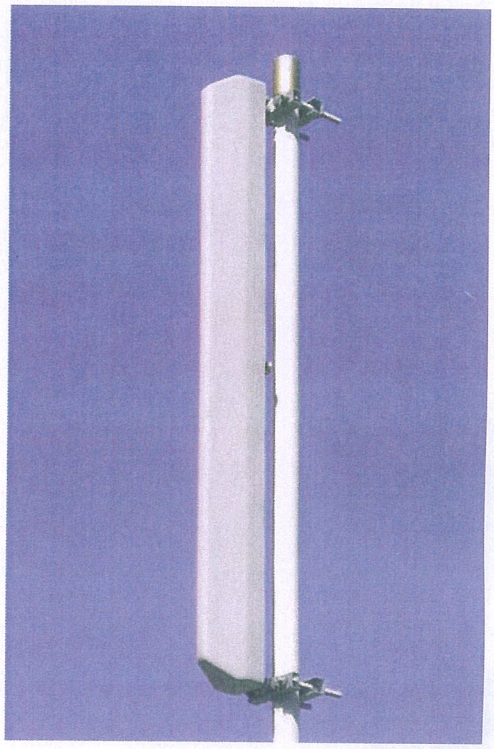
Vertical

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back Ratio.

CF Denotes a Center-Fed Connector.

1850-1990 MHz



Amphenol Antel's Exclusive 3T (True Transmission Line Technology) Antenna Design:

- True log-periodic design allows for superior front-to-side characteristics to minimize sector overlap.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

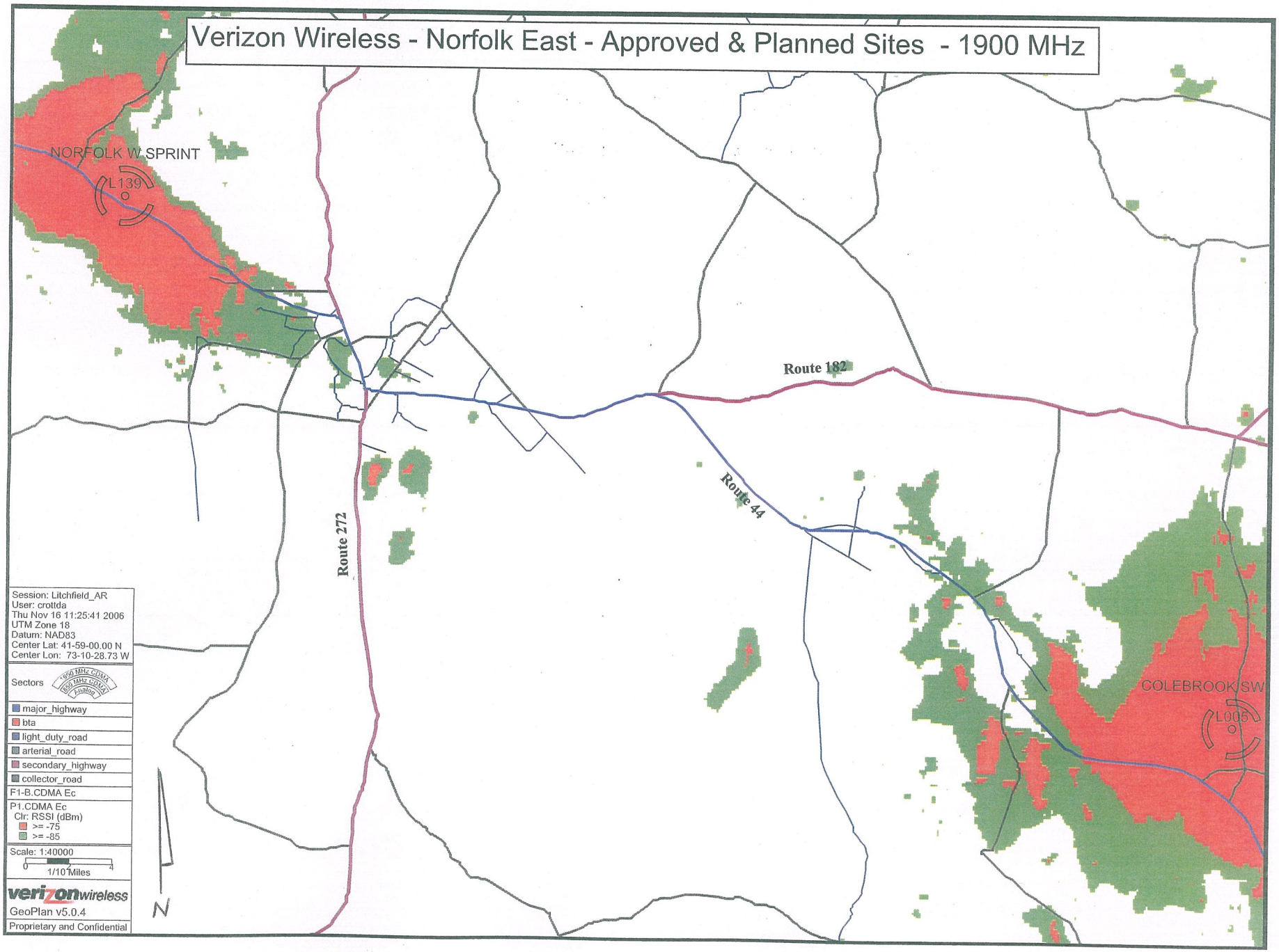
Every Amphenol Antel antenna is under a five-year limited warranty for repair or replacement.

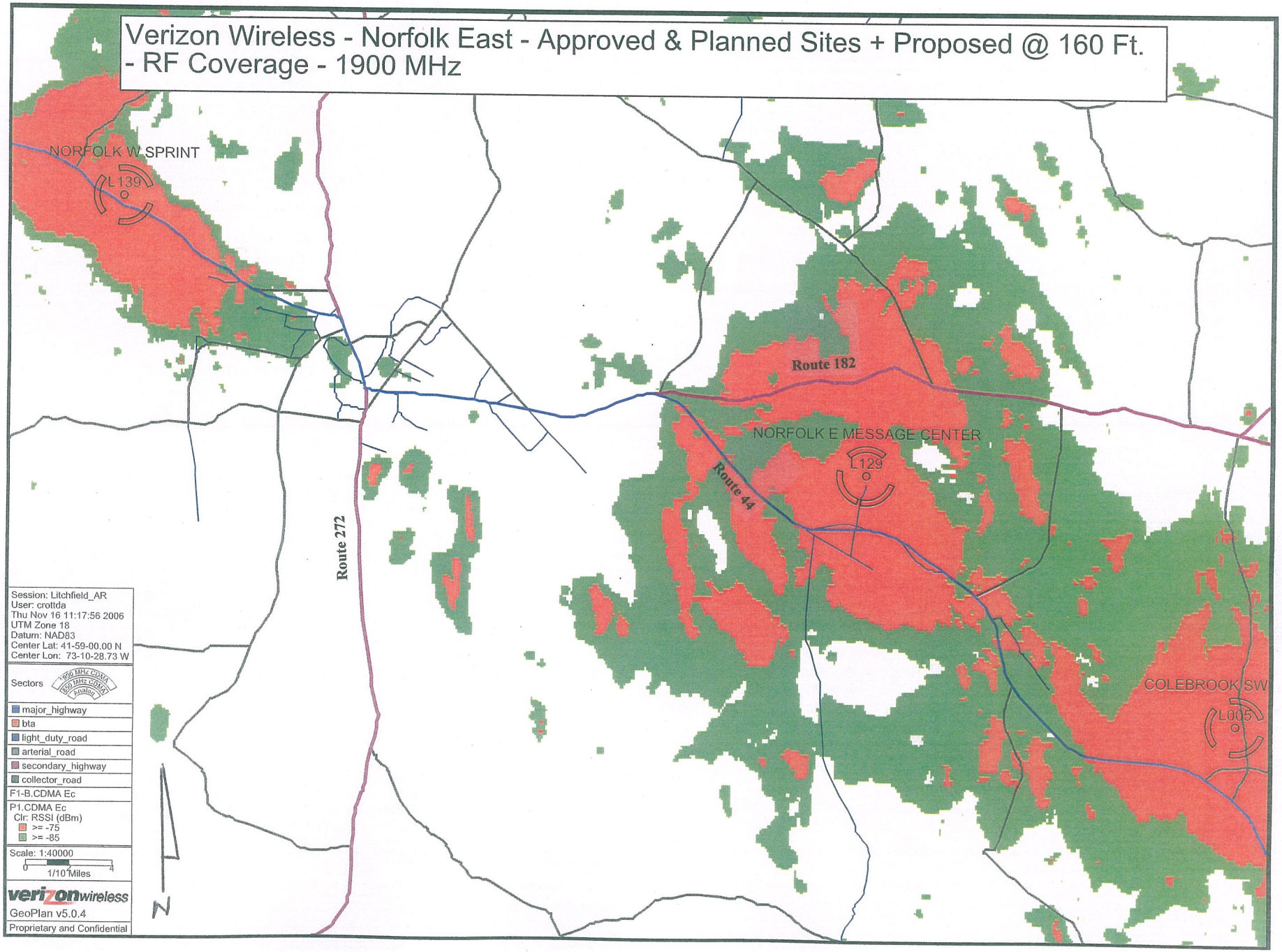
Antenna available with center-fed connector only.

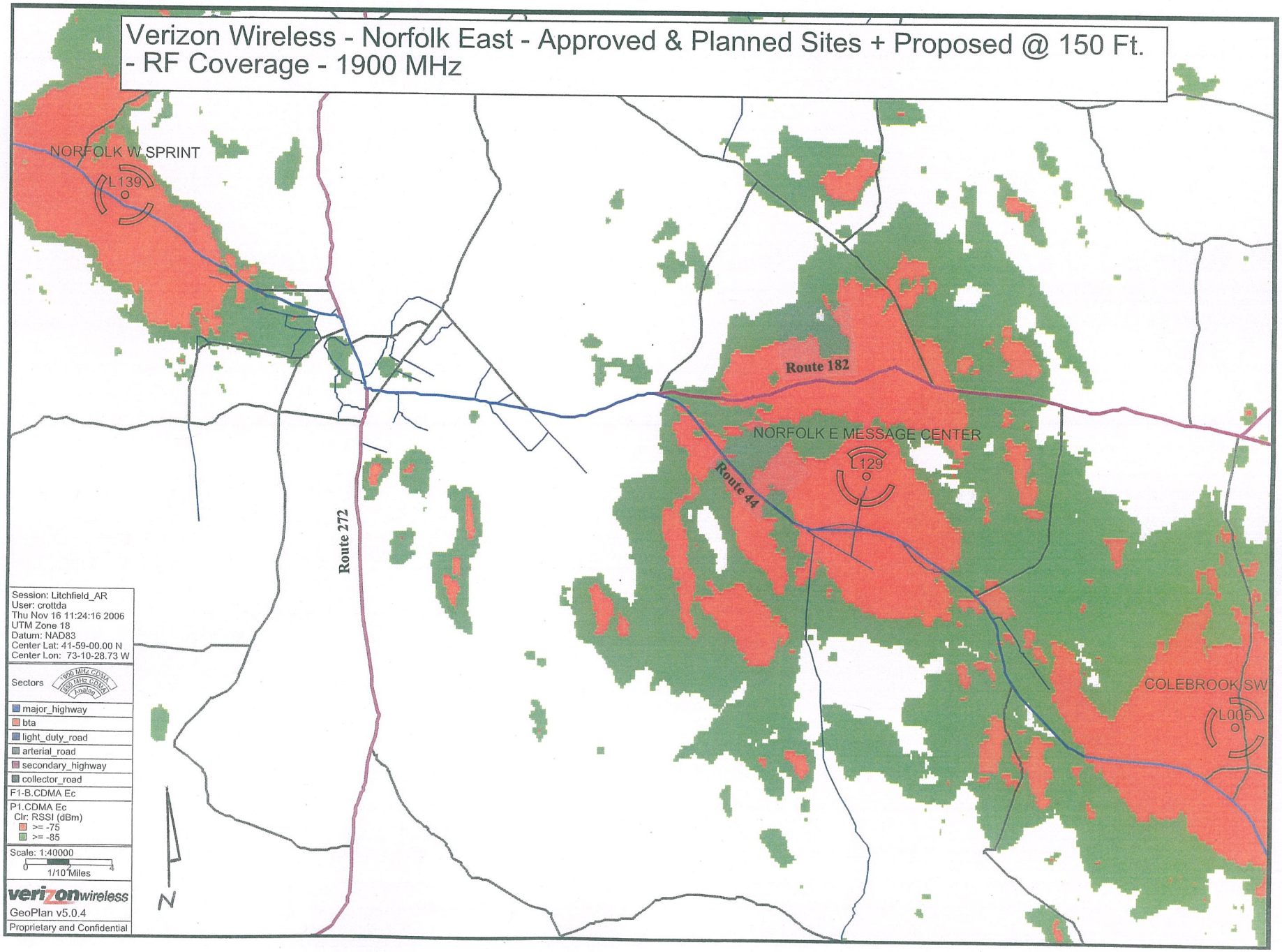
1300 Capital Drive Rockford, IL 61109 Toll-Free (888) 417-9562 Tel. (815) 399-0001
Fax. (815) 399-0156 Email: antel@antelinc.com www.antelinc.com

Amphenol Antel, Inc.
The Antenna Technology Company

Revision Date: 1/27/05


Verizon Wireless - Norfolk East - Approved & Planned Sites - 1900 MHz
NORFOLK W SPRINT
L139
Route 182
Route 44
Route 272
COLEBROOK SW
L005
Session: Litchfield_AR
User: crottda
Thu Nov 16 11:25:41 2006
UTM Zone 18
Datum: NAD83
Center Lat: 41-59-00.00 N
Center Lon: 73-10-28.73 W
Sectors
1900 MHz CDMA
850 MHz CDMA
Antenna
major_highway
bta
light_duty_road
arterial_road
secondary_highway
collector_road
F1-B.CDMA Ec
P1.CDMA Ec
Clr: RSSI (dBm)
>= -75
>= -85
Scale: 1:40000
0
4
1/10 Miles
verizonwireless
GeoPlan v5.0.4
Proprietary and Confidential
N


Verizon Wireless - Norfolk East - Approved & Planned Sites + Proposed @ 160 Ft.
- RF Coverage - 1900 MHz
NORFOLK W SPRINT
L139
Route 182
NORFOLK E MESSAGE CENTER
L129
Route 44
Route 272
COLEBROOK SW
L005
Session: Litchfield_AR
User: crottda
Thu Nov 16 11:17:56 2006
UTM Zone 18
Datum: NAD83
Center Lat: 41-59-00.00 N
Center Lon: 73-10-28.73 W
Sectors
1900 MHz CDMA
800 MHz CDMA
Analog
major_highway
bta
light_duty_road
arterial_road
secondary_highway
collector_road
F1-B.CDMA Ec
P1.CDMA Ec
Clr: RSSI (dBm)
>= -75
>= -85
Scale: 1:40000
0
4
1/10 Miles
verizonwireless
GeoPlan v5.0.4
Proprietary and Confidential
N


Verizon Wireless - Norfolk East - Approved & Planned Sites + Proposed @ 150 Ft.
- RF Coverage - 1900 MHz
NORFOLK W SPRINT
L139
Route 182
NORFOLK E MESSAGE CENTER
L129
Route 44
Route 272
COLEBROOK SW
L005
Session: Litchfield_AR
User: crottda
Thu Nov 16 11:24:16 2006
UTM Zone 18
Datum: NAD83
Center Lat: 41-59-00.00 N
Center Lon: 73-10-28.73 W
Sectors
1900 MHz CDMA
1900 MHz CDMA
Avalon
major_highway
bta
light_duty_road
arterial_road
secondary_highway
collector_road
F1-B.CDMA Ec
P1.CDMA Ec
Clr: RSSI (dBm)
>= -75
>= -85
Scale: 1:40000
0
1/10 Miles
4
verizonwireless
GeoPlan v5.0.4
Proprietary and Confidential
N

Flexent® Modular Cell 4.0

Description

The *Flexent*® Modular Cell 4.0 builds on our vast experience in spread spectrum to deliver the most flexible, future-focused base station on the market. This base station introduces the *Flexent*® *OneBTS*™ common platform digital shelf into CDMA networks. This shelf, with a field upgrade, will eventually support both CDMA and UMTS in the frame.

The *Flexent* Modular Cell 4.0 packs 6 carriers/3 sectors into an outdoor cabinet that is the same size as the *Flexent* Modular Cell 3.0. The smaller indoor cabinet will support 4 carriers/3 sectors. In addition to capacity gains, this digital shelf will support additional enhancements as we bring them to market.

Our Bell Labs developers are working on Intelligent Antennas, Transmit Diversity, and BLAST technologies. These technologies will enhance the capacities and capabilities of the *Flexent* Modular Cell 4.0. Each of the features can be added to the *Flexent* Modular Cell 4.0 in the field - in a single maintenance window. This means that you can deploy the *Flexent* Modular Cell 4.0 today and add capacity and capabilities whenever they are available and when you need them. It means that the future is available on your timetable, when your business plan calls for them, no matter what your business plan might be.

Value description

The *Flexent* Modular Cell 4.0, with its future-proof design, enables easy and cost-effective network upgrades to:

- Add additional capacity, when needed, to support network growth
- Support additional functionality and advanced capabilities

Features

Investment Protection

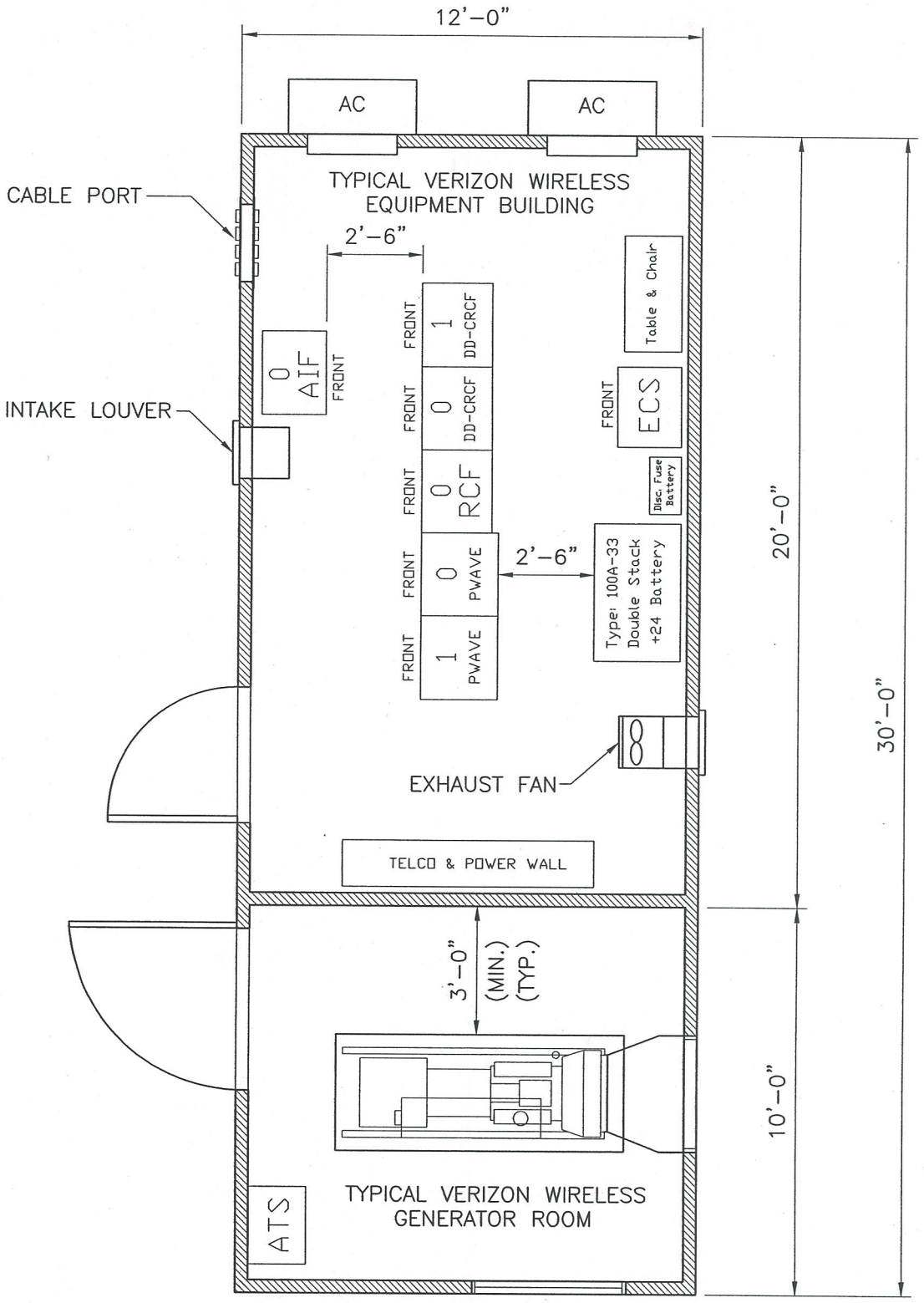
- Increase capacity, when you need it, to grow your network
- Add advanced features and capabilities, with quick and easy installation

Scalability

- Support up to 6 carriers/3 sectors in a single outdoor cabinet
- Support up to 4 carriers/3 sectors in the indoor cabinet

Reduced Footprint

- Provides additional capacity and functionality — in the same footprint as the *Flexent* Modular Cell 3.0



1 / SK-1 TYPICAL EQUIPMENT BUILDING FLOOR PLAN

SCALE: 1/4"=1'-0"

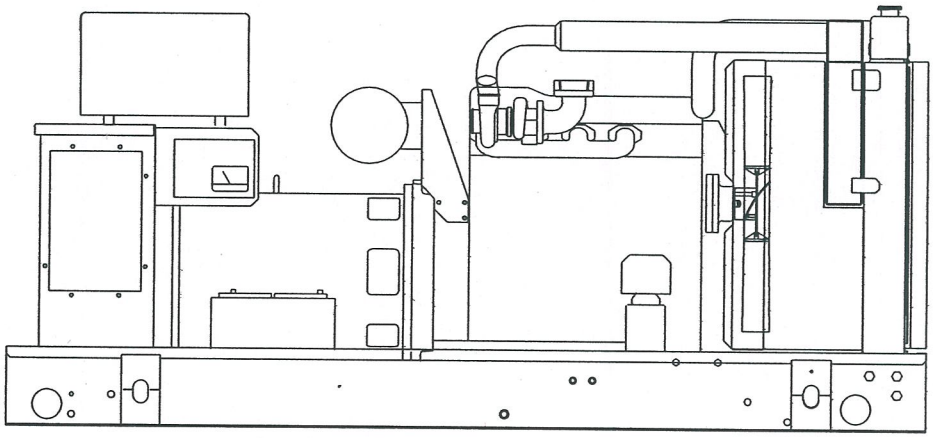
SITE ID NO:	URS CORPORATION AES	CELLCO PARTNERSHIP DBA VERIZON WIRELESS	Dwg. No. SK-1
Designed by:	795 BROOK STREET, BLDG 5	WIRELESS COMMUNICATIONS FACILITY	REV. / DATE: / DESCRIPTION
Drawn by: CRS	ROCKY HILL, CONNECTICUT		Scale: AS NOTED / Date: 12-03-02
Checked by:	1-(860)-529-8882		Job No. / File No. SK-1 / Dwg. 1 of 1
Approved by:			

SD060

Liquid Cooled Diesel Engine Generator Sets

Continuous Standby Power Rating
60KW 60 Hz / 60KVA 50 Hz

Prime Power Rating
48KW 60 Hz /48KVA 50 Hz



Power Matched
GENERAC 3.9DTA ENGINE
Turbocharged

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.

- **TEST CRITERIA:**
  - ✓ PROTOTYPE TESTED
  - ✓ SYSTEM TORSIONAL TESTED
  - ✓ ELECTRO-MAGNETIC INTERFERENCE
  - ✓ NEMA MG1-22 EVALUATION
  - ✓ MOTOR STARTING ABILITY
  - ✓ SHORT CIRCUIT TESTING
  - ✓ UL 2200 COMPLIANCE AVAILABLE

- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine.

- **SINGLE SOURCE SERVICE RESPONSE** from Generac's dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component. You are never on your own when you own an GENERAC POWER SYSTEM.

- **ECONOMICAL DIESEL POWER.** Low cost operation due to modern diesel engine technology. Better fuel utilization plus lower cost per gallon provide real savings.

- **LONGER ENGINE LIFE.** Generac heavy-duty diesels provide long and reliable operating life.

- **GENERAC TRANSFER SWITCHES, SWITCHGEAR AND ACCESSORIES.** Long life and reliability is synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems, accessories, switchgear and controls for total system compatibility.

GENERAC®
POWER SYSTEMS, INC.

APPLICATION & ENGINEERING DATA

SD060

GENERATOR SPECIFICATIONS

TYPE	Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TOTAL HARMONIC DISTORTION	<3%
TELEPHONE INTERFERENCE FACTOR (TIF)	<50
ALTERNATOR	Self-ventilated and drip-proof
BEARINGS (PRE-LUBED & SEALED)	1
COUPLING	Direct, Flexible Disc
LOAD CAPACITY (STANDBY)	100%
LOAD CAPACITY (PRIME)	110%

NOTE: Emergency loading in compliance with NFPA 99, NFPA 110, paragraph 5-13.2.6. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.

EXCITATION SYSTEM

❒ BRUSHLESS	Magnetically coupled DC current ✓
	Eight-pole exciter w/ battery-driven field boost ✓
	Mounted outboard of main bearing ✓
❒ PERMANENT MAGNET EXCITER	Eighteen pole exciter ✓
	Magnetically coupled DC current ✓
	Mounted outboard of main bearing ✓
REGULATION	Solid-state ✓
	±1% regulation ✓

GENERATOR FEATURES

- Four pole, revolving field generator is directly connected to the engine shaft through a heavy-duty, flexible disc for permanent alignment.
- Generator meets temperature rise standards for class "F" insulation as define by NEMA MG1-32.6 and NEMA1-1.65, while the insulation system meets the requirements for the higher class "H" rating.
- All models have passed a three-phase symmetrical short circuit test to assure system protection and reliability.
- Unit is tested with an oscillograph for motor-starting ability by measuring instantaneous voltage dip.
- All models utilize an advanced wire harness design for reliable interconnection within the circuitry.
- Magnetic circuit, including amortisseur windings, tooth and skewed stator design, provides a minimal level of waveform distortion and an electromagnetic interference level which meets accepted requirements for standard AM radio, TV, and marine radio telephone applications.
- Voltage waveform deviation, total harmonic content of the AC waveform, T.I.F. (Telephone Influence Factor) and non-linear loading have been evaluated to acceptable standards in accordance with NEMA MG1.
- Alternator is self-ventilated and drip-proof constructed.
- Fully life-tested protective systems, including "field circuit and thermal overload protection" and optional main-line circuit breakers are capable of handling full output capacity.
- System Torsional acceptability confirmed during Prototype Testing.

ENGINE SPECIFICATIONS

MAKE	GENERAC
MODEL	3.9DTA
CYLINDERS	4 in-line
DISPLACEMENT	3.9 Liter (238 cu.in.)
BORE	104 mm (4.09 in.)
STROKE	115 mm (4.52 in.)
COMPRESSION RATIO	16.5:1
INTAKE AIR	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS	5
CONNECTING RODS	4-Drop Forged Steel
CYLINDER HEAD	Cast Iron Overhead Valve
PISTONS	4- Aluminum Alloy
CRANKSHAFT	Hardened, Steel

VALVE TRAIN

LIFTER TYPE	Solid
INTAKE VALVE MATERIAL	Special Heat Resistant Steel
EXHAUST VALVE MATERIAL	Special Heat Resistant Steel
HARDENED VALVE SEATS	Replaceable

ENGINE GOVERNOR

❒ MECHANICAL (Gear Driven)	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD	5.0%
STEADY STATE REGULATION	±0.33%
❒ ELECTRONIC	Optional
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD	0.5%
STEADY STATE REGULATION	±0.25%

LUBRICATION SYSTEM

TYPE OF OIL PUMP	Gear
OIL FILTER	Full flow, Cartridge
CRANKCASE CAPACITY	18 Litres (19 qts.)
OIL COOLER	Oil to water

COOLING SYSTEM

TYPE OF SYSTEM	Pressurized, Closed Recovery
WATER PUMP	Pre-Lubed, Self-Sealing
TYPE OF FAN	Pusher
NUMBER OF FAN BLADES	7
DIAMETER OF FAN	457 mm (18 in.)
COOLANT HEATER	120V, 1800 W

FUEL SYSTEM

FUEL	#2D Fuel (Min Cetane #40) (Fuel should conform to ASTM Spec.)
FUEL FILTER	Single Cartridge
FUEL INJECTION PUMP	Stanadyne
FUEL PUMP	Mechanical
INJECTORS	Multi-Hole, Nozzle Type
ENGINE TYPE	Direct Injection
FUEL LINE (Supply)	7.94 mm (0.31 in.)
FUEL RETURN LINE	6.35 mm (0.25 in.)
STARTING AID	Glow Plugs

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	30 Amps at 24 V
STARTER MOTOR	24 V
RECOMMENDED BATTERY	(2)—12 Volt, 90 A.H., 4DLT
GROUND POLARITY	Negative

Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). Prime (Unlimited Running Time): Applicable for supplying electric power in lieu of commercially purchased power. Prime power is the maximum power available at variable load. A 10% overload capacity is available for 1 hour in 12 hours. (All ratings in accordance with BS5514, ISO3046, ISO8528 and DIN6271).

GENERAC®
POWER SYSTEMS, INC.

SD060

OPERATING DATA

		STANDBY		PRIME	
		SD060		SD060	
GENERATOR OUTPUT VOLTAGE/KW-60Hz			Rated AMP		Rated AMP
120/240V, 1-phase, 1.0 pf	NOTE: Consult your Generac dealer for additional voltages.	60	250	48	200
120/208V, 3-phase, 0.8 pf		60	208	48	166
120/240V, 3-phase, 0.8 pf		60	180	48	144
277/480V, 3-phase, 0.8 pf		60	90	48	72
600V, 3-phase, 0.8 pf		60	72	48	58
GENERATOR OUTPUT VOLTAGE/KVA-50Hz			Rated AMP		Rated AMP
110/220V, 1-phase, 1.0 pf		48	218	38	172
115/200V, 3-phase, 0.8 pf	NOTE: Consult your Generac dealer for additional voltage	60	173	48	138
100/200V, 3-phase, 0.8 pf		60	173	48	138
231/400V, 3-phase, 0.8 pf		60	87	48	69
480V, 3-phase, 0.8 pf		60	72	48	58
MOTOR STARTING KVA		120/208/240V	277/480V	120/208/240V	277/480V
Maximum at 35% instantaneous voltage dip					
with standard alternator; 50/60 Hz		100/120	117/141	100/120	117/141
with optional alternator; 50/60 Hz		234/281	276/331	234/281	276/331
FUEL					
Fuel consumption—60 Hz	Load	100%	80%	100%	80%
	gal./hr.	4.3	3.6	3.6	3.0
	liters/hr.	16.3	13.5	13.6	11.3
Fuel consumption—50 Hz	gal./hr.	3.6	3.0	3.0	2.5
	liters/hr.	13.5	11.2	11.3	9.3
Fuel pump lift					
COOLING					
Coolant capacity	System - lit. (US gal.)	15.9 (4.2)		15.9 (4.2)	
	Engine - lit. (US gal.)	6.4 (1.7)		6.4 (1.7)	
	Radiator - lit. (US gal.)	9.5 (2.5)		9.5 (2.5)	
Coolant flow/min.	60 Hz - lit. (US gal.)	128 (34)		128 (34)	
	50 Hz - lit. (US gal.)	107 (28)		107 (28)	
Heat rejection to coolant 60 Hz full load	BTU/hr.	170,900		136,700	
Heat rejection to coolant 50 Hz full load	BTU/hr.	142,400		113,900	
Inlet air to radiator	60 Hz - m³/min. (cfm)	204 (7,200)		204 (7,200)	
	50 Hz - m³/min. (cfm)	170 (6004)		170 (6004)	
Max. air temperature to radiator	°C (°F)	54.4 (130)		54.4 (130)	
Max. ambient temperature	°C (°F)	48.9 (120)		48.9 (120)	
COMBUSTION AIR REQUIREMENTS					
Flow at rated power	60 Hz - cfm	209		168	
	50 Hz - m³/min.	4.7		3.8	
EXHAUST					
Exhaust flow at rated output	60 Hz - m³/min. (cfm)	15.5 (549)		12.4 (439)	
	50 Hz - m³/min. (cfm)	12.3 (434)		10 (353)	
Max recommended back pressure	"Hg	1.5		1.5	
Exhaust temperature 60 Hz (full load)	°C (°F)	524 (975)		459 (858)	
Exhaust outlet size		3"		3"	
ENGINE					
Rated RPM	60 Hz	1800		1800	
	50 Hz	1500		1500	
HP at rated KW	60 Hz	92		74	
	50 Hz	73		59	
Piston speed	60 Hz - m/min. (ft./min.)	414 (1358)		414 (1358)	
	50 Hz - m/min. (ft./min.)	345 (1132)		345 (1132)	
BMEP	60 Hz - psi	170		138	
	50 Hz - psi	161		130	
DERATION FACTORS					
Temperature					
5% for every 10°C above - °C		25		25	
2.77% for every 10°F above - °F		77		77	
Altitude					
1.1% for every 100 m above - m		1829		1829	
3.5% for every 1000 ft. above - ft.		6000		6000	

STANDARD ENGINE & SAFETY FEATURES

SD060

- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Oil Drain Extension
- Radiator Drain Extension
- Factory-Installed Cool Flow Radiator
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Rubber-Booted Engine Electrical Connections
- Secondary Fuel Filter
- Fuel Lockoff Solenoid
- Stainless Steel Flexible Exhaust Connection
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- Vibration Isolation of Unit to Mounting Base
- 12 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Radiator Duct Adapter

OPTIONS

OPTIONAL COOLING SYSTEM ACCESSORIES
- O Coolant Heater 120V

OPTIONAL FUEL ACCESSORIES
- O Flexible Fuel Lines
- O UL Listed Fuel Tanks
- O Base Tank Low Fuel Alarm
- O Primary Fuel Filter
- O Primary Fuel Filter with Heater

OPTIONAL EXHAUST ACCESSORIES
- O Critical Exhaust Silencer

OPTIONAL ELECTRICAL ACCESSORIES
- O Battery, 12 Volt, 135 A.H., 4DLT
- O 2A Battery Charger
- O 10A Dual Rate Battery Charger
- O Battery Heater

OPTIONAL ALTERNATOR ACCESSORIES
- O Alternator Upsizing
- O Alternator Strip Heater
- O Alternator Tropicalization
- O Voltage Changeover Switch
- O Main Line Circuit Breaker

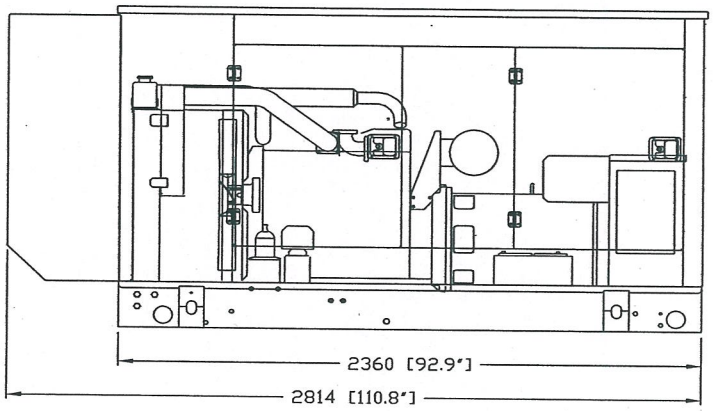
CONTROL CONSOLE OPTIONS
- O Analog Control "C" Panel (Bulletin 0151160SBY)
- O Analog/Digital Control "E" Panel (Bulletin 0161310SBY)

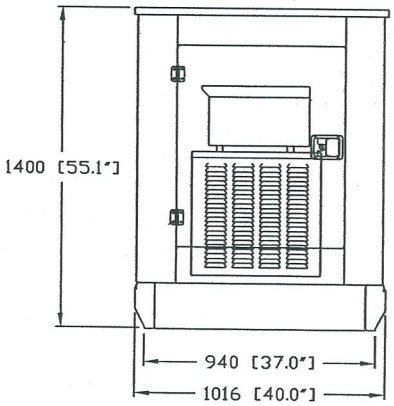
ADDITIONAL OPTIONAL EQUIPMENT
- O Automatic Transfer Switch
- O Isochronous Governor
- O 3 Light Remote Annunciator
- O 5 Light Remote Annunciator
- O 20 Light Remote Annunciator
- O Remote Relay Panels
- O Unit Vibration Isolators (Pad/Spring)
- O Oil Make-Up System
- O Oil Heater
- O 5 Year Warranties
- O Export Boxing
- O GenLink® Communications Software

OPTIONAL ENCLOSURE
- O Weather Protective
- O Sound Attenuated
- O Aluminum and Stainless Steel
- O Enclosed Muffler

Distributed by:

Design and specifications subject to change without notice. Dimensions shown are approximate. Contact your Generac dealer for certified drawings. DO NOT USE THESE DIMENSIONS FOR INSTALLATION PURPOSES.





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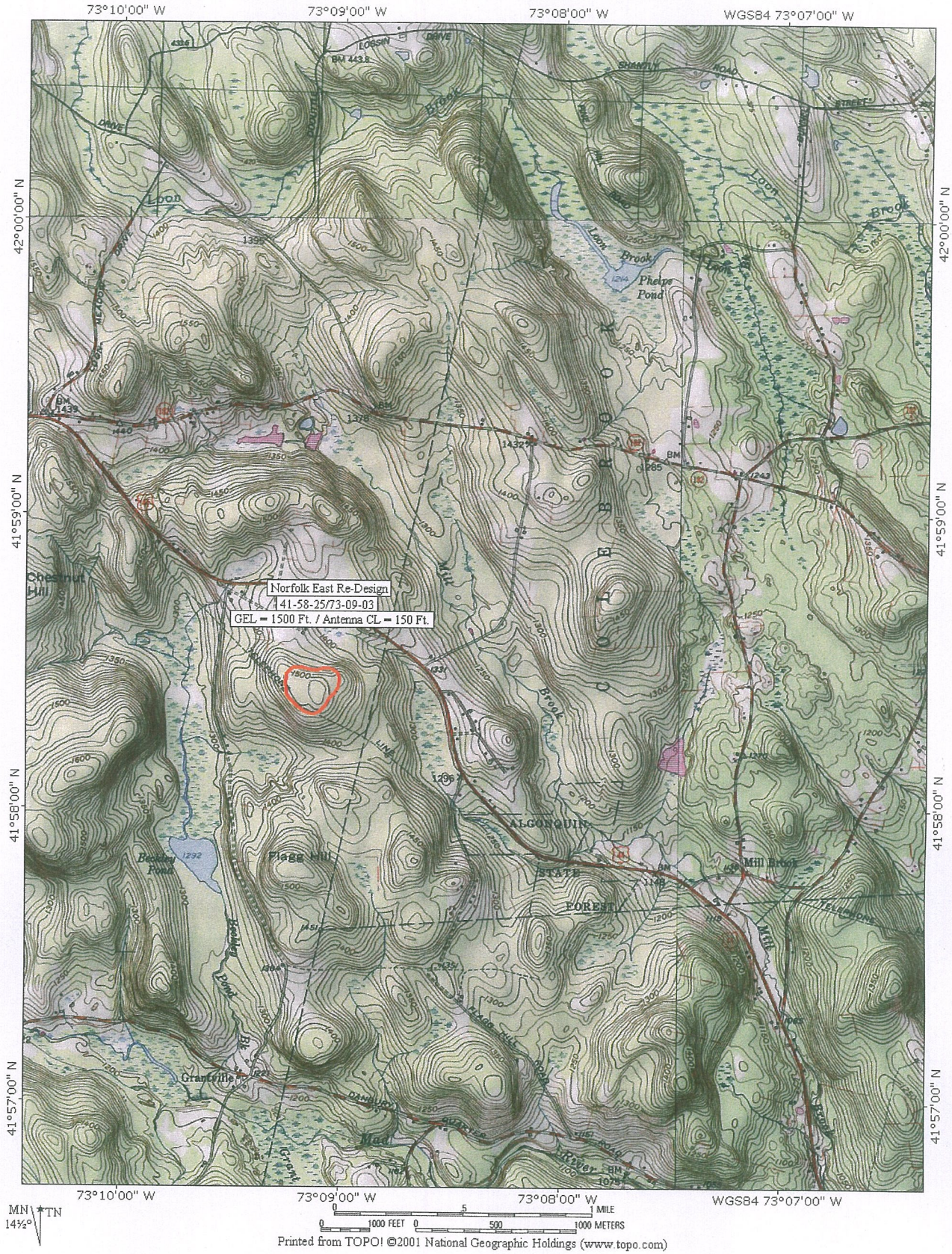

General Power Density

Site Name: Northfolk East
Tower Height: Verizon @ 160 Ft.

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	1900	6	256	1536	160	0.0216	1	2.16%
Total Percentage of Maximum Permissible Exposure								**2.16%**

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power