

TECHNICAL EXHIBIT
CLASS A TV MINOR CHANGE APPLICATION
FOR CONSTRUCTION PERMIT
STATION WYCN-LP (FACILITY ID 9766)
NASHUA, NEW HAMPSHIRE

DECEMBER 17, 2003

CH 13(-) 0.115 KW-DA

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Table of Contents

	Technical Narrative
Figure 1	Sketch of Antenna
Figure 2	Antenna Patterns
Figure 3	Canada Allocation
Figure 4	Present & Proposed 68 dBu Contours

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Technical Narrative

This technical exhibit supports a Class A television (TV) minor change application for station WYCN-LP at Nashua, New Hampshire (Facility ID 9766).

Station WYCN-LP is currently licensed to operate on channel 13 with a minus (-) carrier offset and a directional antenna (DA) system (BLTVL-19950728IC). The maximum visual effective radiated power (ERP) is 0.04 kilowatt (kW). The antenna center of radiation is 39 meters above ground level (AGL), and 85 meters above mean sea level (AMSL). The transmitter site coordinates are 42-45-45, 71-27-49 (NAD-27).

Proposed Facilities

Station WYCN-LP proposes to relocate to a site 4.4 kilometers south of the present site. It is proposed to use a Scala model CL-713 composite directional antenna system consisting of 4 Scala CL-713 stacked antennas, each antenna skewed at a different angle. Figure 2 provides the directional antenna pattern (cardioid shaped). The major lobe of the antenna pattern will be oriented toward 340 degrees True. The proposed maximum visual ERP is 0.115 kW. The antenna system will be installed on an existing 48.8 meters (160 feet) structure. The structure is not registered with the FCC since the overall height is less than 61 meters (200 feet) AGL. The site coordinates for the tower are 42-43-23, 71-27-39 (NAD-27). The antenna center of radiation will be located 30.5 meters AGL, and 123.8 meters AMSL.

(see Figure 1). There is no proposed change in channel (13), offset (minus, -) or city of assignment (Nashua, NH).

The application is considered a minor change since the predicted 68 dBu contours for the present and proposed WYCN-LP operations overlap (see Figure 4).

Station W29AT on channel 28 at Manchester, New Hampshire is also authorized at the proposed site (BPTTL-20011009ACG, Facility ID 9765).

NTSC Allocation Considerations

A study has been conducted using the provisions of the FCC rules to assure that the proposal will not create prohibited interference with other authorized or pending analog (NTSC) full-power TV, LPTV and Class A TV stations. The proposed WYCN-LP operation complies with the FCC's allocation standards with respect to other analog assignments, except for stations WPRI-TV on channel 12 at Providence, Rhode Island (Facility ID 47404) and WGME-TV on channel 13 at Portland, Maine (Facility ID 25683).

With respect to WPRI-TV and WGME-TV, interference calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 1 kilometer grid. The proposed WYCN-LP operation complies with the FCC's 0.5% "de minimis" interference standard (ie, the proposal causes less than 0.5% new interference). A waiver of the FCC rules is respectfully requested based on use of the OET-69 method.

The proposed WYCN-LP site is 255 kilometers from the nearest point of the US/Canada border. There are no Canadian analog (NTSC) or digital television (DTV) allotments on channel 13 within 400 kilometers of the proposed WYCN-LP site. The predicted 11 dBu F(50,10) contour for the proposed WYCN-LP channel 13 operation does not extend into Canada (see Figure 3). Therefore, it is believed that coordination with Canada is not necessary.

The closest point of the Mexican border is more than 2700 kilometers to the south-southwest. The closest FCC monitoring station is at Belfast, Maine, approximately 270 kilometers to the northeast. The closest point of the National Radio Quiet Zone (VA/WV) is about 705 kilometers to the southwest. The Table Mountain Radio Quiet Zone is more than 2800 kilometers to the west. These separations are considered sufficient to not be a coordination concern.

DTV Allocation Considerations

Pertinent DTV allotments and assignments on channels 12 and 13 have been examined using the procedures outlined in the FCC's OET-69 Bulletin.¹ The proposed WYCN-LP operation complies with the FCC's "de minimis" (0.5%) interference policy.

The applicant understands that it must correct and/or eliminate prohibited interference that may result from its proposed operation. If necessary, a waiver of the FCC rules is respectfully requested based on use of the procedures outlined in the FCC's OET-69 Bulletin.

Radiofrequency Electromagnetic Field Exposure

The proposed WYCN-LP facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. A visual ERP of 0.115 kW with 10% aural power was assumed. A conservative relative field value of 1.0 was assumed for the proposed Scala CL-713 antenna's downward radiation (see Figure 2). The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0024 mW/cm². This is less than 2% of the FCC's recommended limit of 0.2 mW/cm² for channel

¹ The duTreil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 1 km was employed. A Sun based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

13 for an "uncontrolled" environment. It is less than 1% of the FCC's recommended limit for a "controlled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

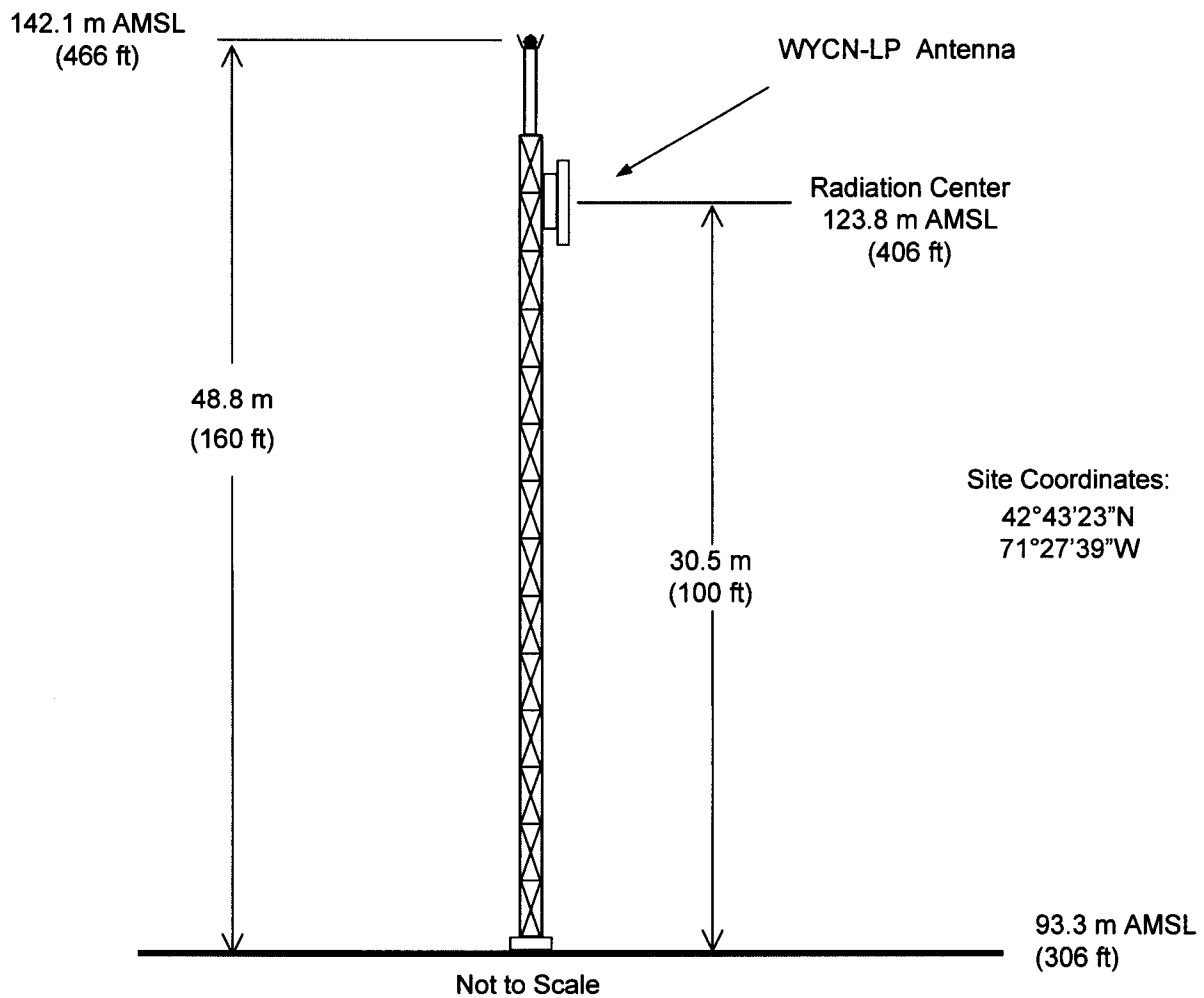
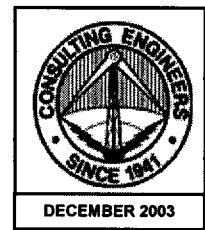
If there are questions concerning the technical portion of this application, please communicate with the office of the undersigned.

John A. Lundin

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Figure 1

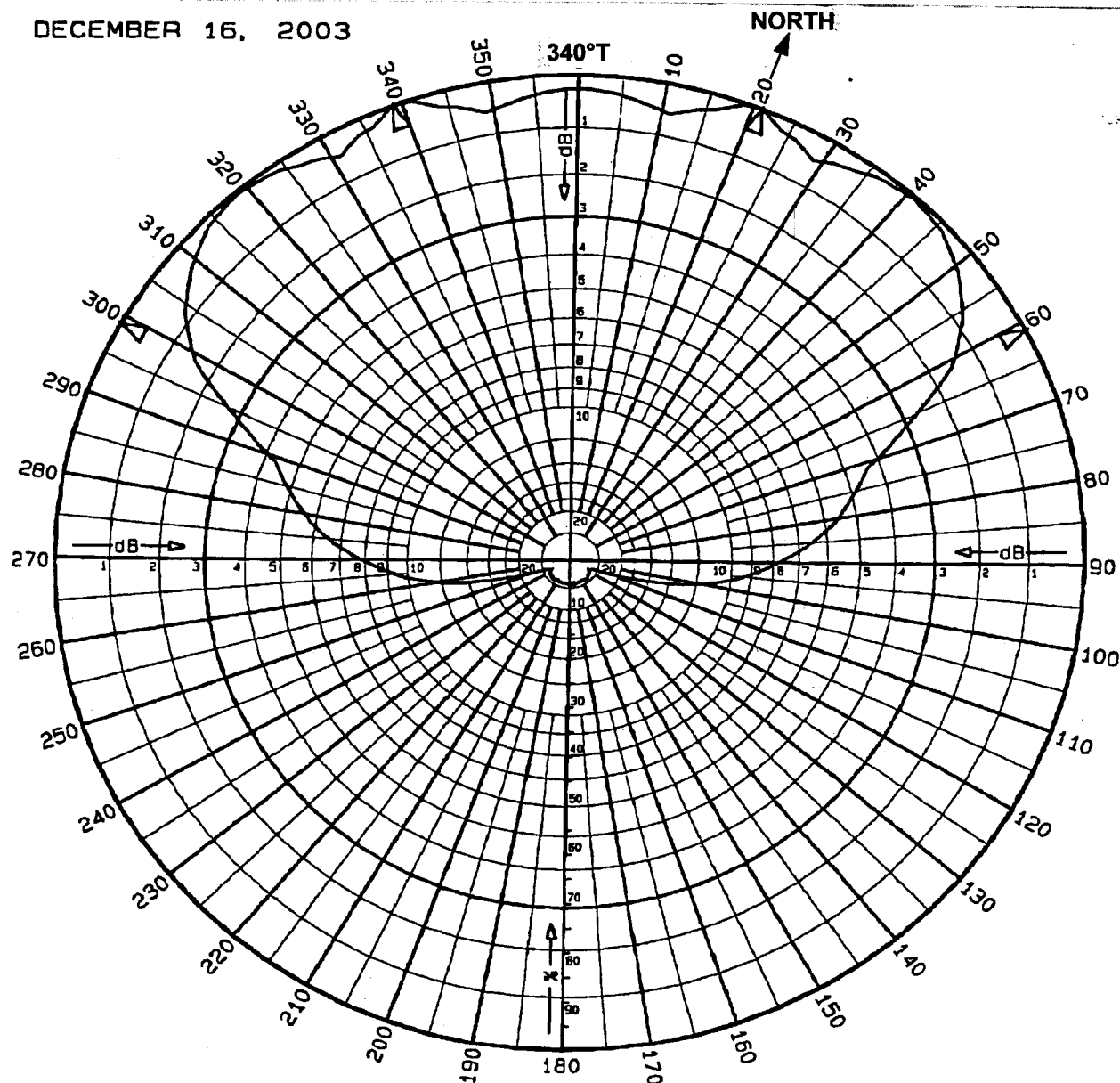


PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION WYCN-LP
NASHUA, NEW HAMPSHIRE
CH 13(-) 0.115 KW-DA

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

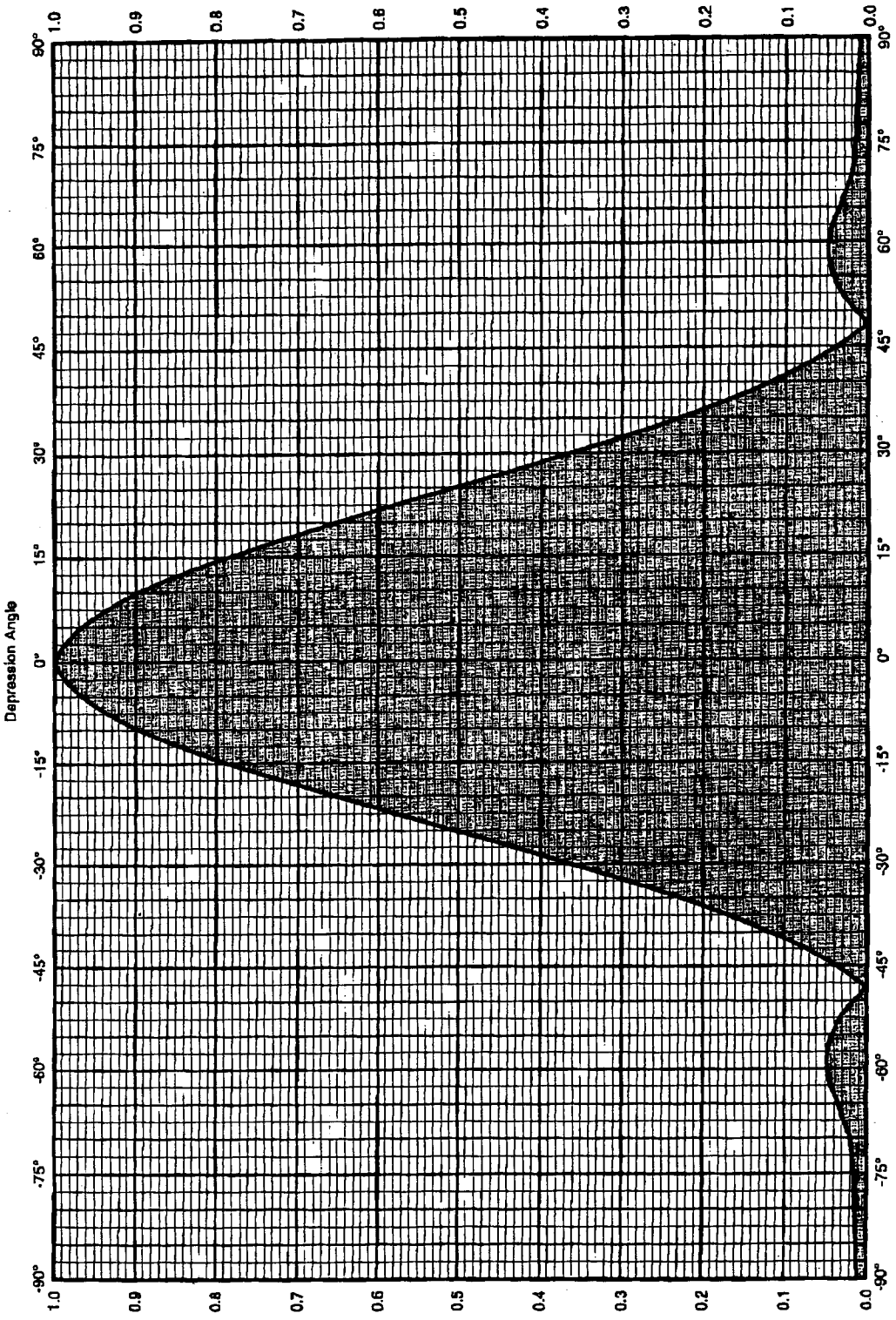
DECEMBER 16, 2003



FOUR CL-713 LOG-PERIODIC ANTENNAS
ORIENTED AT 21, 61, 299 & 339 DEGREES
CHANNEL - 13
MAXIMUM ARRAY GAIN: 6.2 dBd.
POWER GAIN: 4.2
HORIZONTAL POLARIZATION
VERTICAL STACK
HORIZONTAL PLANE PATTERN

KATHREIN
SCALA DIVISION

Post Office Box 4560 Phone: (541) 779-8500
Medford, OR 97501 (USA) Fax: (541) 779-3991
<http://www.kathrein.com>

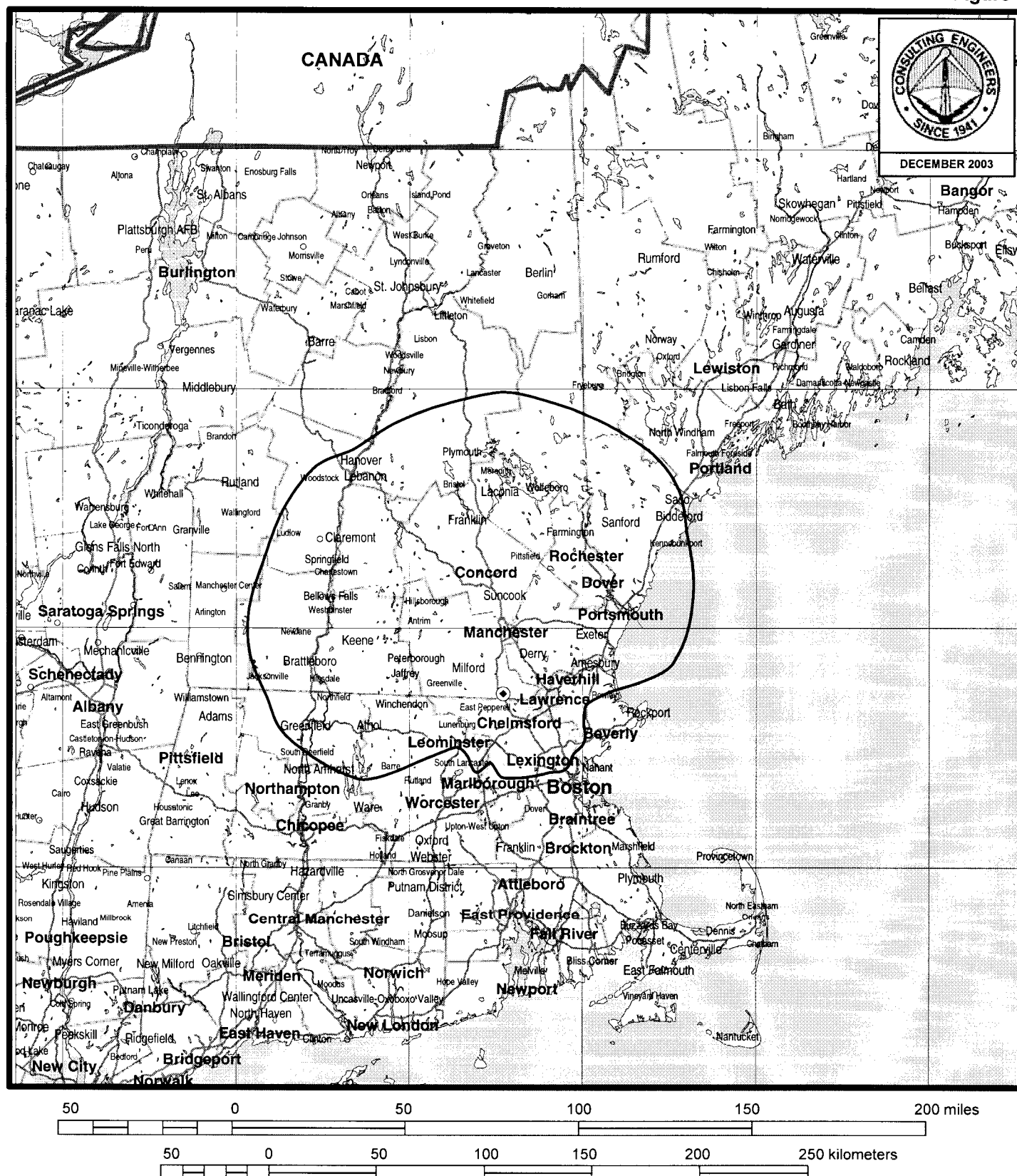


FOUR CL-713 LOG-PERIODIC ANTENNAS POWER GAIN: 4.2
ORIENTED AT 21,61,299 & 339 DEG. HORIZONTAL POLARIZATION
CHANNEL 13 VERTICAL STACK
MAXIMUM ARRAY GAIN: 6.2 dBd VERTICAL RADIATION PATTERN

KATHREIN
SCALA DIVISION

Post Office Box 4550 Phone: (641) 776-8500
Madison, OR 97301 (USA) Fax: (641) 775-3891
<http://www.kathrein-scala.com>

Figure 3

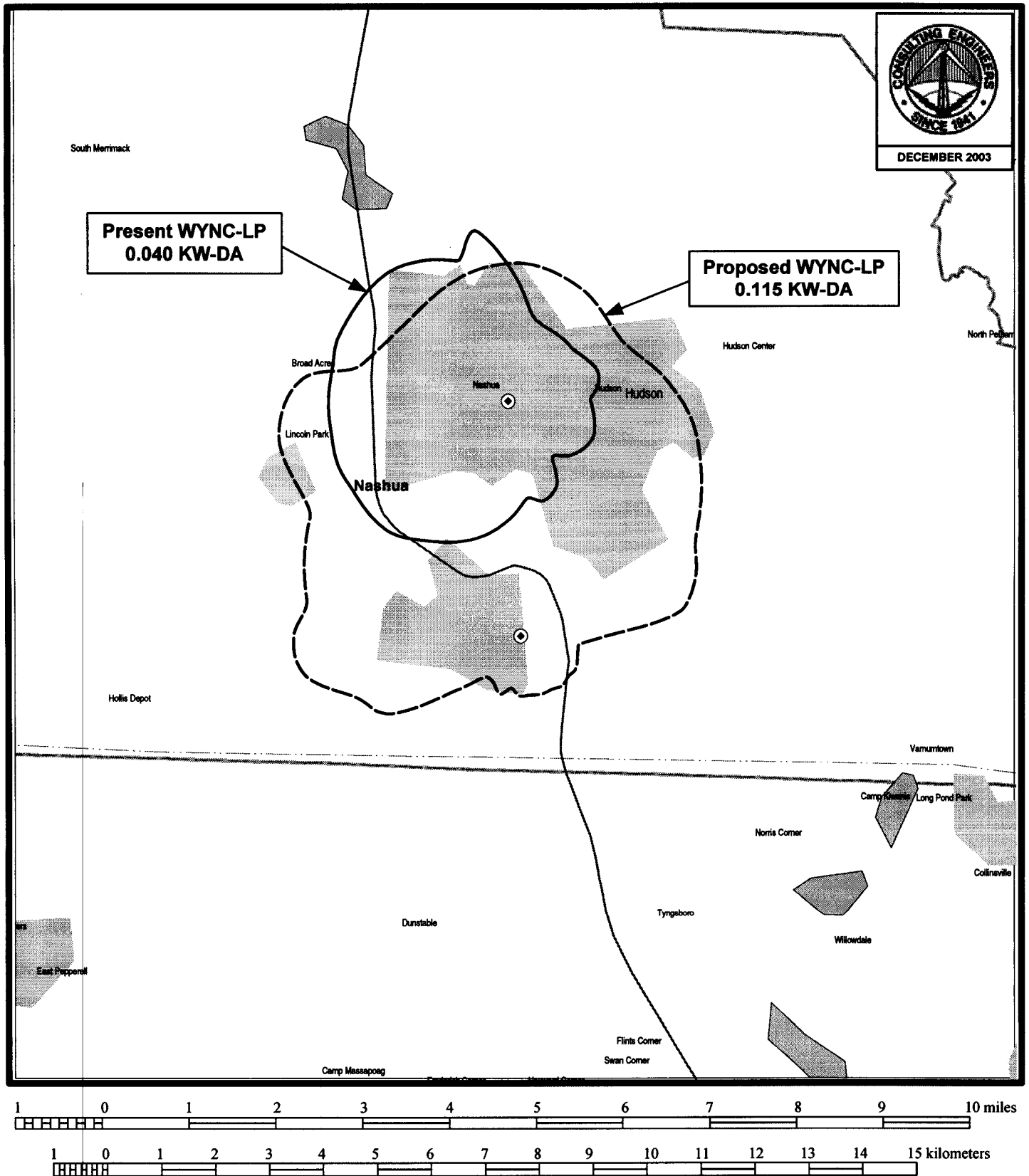


PREDICTED 11 dBu F(50,10) COVERAGE CONTOUR

STATION WYCN-LP
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Figure 4



PREDICTED 68 dBu F(50,50) COVERAGE CONTOURS

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