February 28, 2005

Filed Electronically

Ms. Diane Rhéaume
Secretary General
Canadian Radio-television and
Telecommunications Commission
Central Building
Les Terrasses de la Chaudière
1 Promenade du Portage
Gatineau, Quebec
K1A 0N2

Dear Ms. Rhéaume:

Re: Broadcasting Decision CRTC 2005-68: Adult Classic Hit FM radio station in Kincardine, with transmitters in Goderich and Port Elgin– Amendment to Application 2003-0464-2

In Broadcasting Decision CRTC 2005-68 dated February 17, 2005, the Commission approved in part the application by Brian Cooper and Danny McCarthy ("Cooper/McCarthy"), on behalf of a company to be incorporated, for a broadcasting licence to operate an English-language commercial FM radio programming undertaking in Kincardine, Ontario and for a transmitter of the Kincardine station in Goderich. The Commission denied the portion of the application to establish a second transmitter of the Kincardine station in Port Elgin (the "Port Elgin Transmitter") which proposed to use 97.9 MHz; a frequency which rendered the application technically mutually exclusive with an application by Bayshore Broadcasting Corporation ("Bayshore") for an English-language commercial FM undertaking in Port Elgin.

As prior to the public hearing Cooper/McCarthy indicated to the Commission that it had reached an agreement with Bayshore and intended to seek the use of an alternate frequency, in its decision, the Commission stated that it expected Cooper/McCarthy to submit an amendment to its application proposing an alternate frequency for the Port Elgin Transmitter, acceptable to both the Commission and Industry Canada, within three months of the Decision Date.

As per the Commission's decision, Cooper/McCarthy herein proposes to amend its original application and proposes to utilize the 90.9 MHz frequency to operate the Port Elgin Transmitter. A technical brief reflecting the new frequency and associated technical parameters has been filed with Industry Canada. We are enclosing for the Commission's review and information the engineering brief, site map and contour maps as filed with Industry Canada.

We trust the Commission will find this proposal satisfactory and respectfully request that this application be processed as soon as possible.

We would be happy to provide any further information that the Commission may require.

Yours very truly,

Brian Cooper
encl.

ENGINEERING BRIEF
FOR A
NEW FM BROADCASTING STATION
IN
PORT ELGIN, ONTARIO

Applicant: Brian Cooper and Danny McCarthy, OBCI

266 Erskine
Toronto, ON
M4P 1Z4
(416) 481-8665

Date: 25 February 2005

Frequency: 90.9 MHz (CH 215 A)

ERP Max: 1.6 kW

EHAAT: 57 m

Project: 5-135

Prepared by: Bogdanowicz Consulting Engineering Inc.
16 Shadberry Drive
Toronto, Ontario
M2H 3C8

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SUMMARY SHEET

APPLICANT:	Brian Cooper and Danny McCarthy, OBCI 266 Erskine Toronto, ON M4P 1Z4 (416) 481-8665
STATION LOCATION:	Port Elgin, Ontario
STATION CALL:	NEW-FM
LOCATION	44° 28' 08" N. LAT. 81° 22' 10" W. LNG.
TRANSMITTER POWER:	1.0 kW
FEED SYSTEM EFFICIENCY:	86 %
ANTENNA POWER GAIN:	1.845 (2.66 dBd) Omni-directional
EFFECTIVE RADIATED POWER:	1.6 kW 2.04 dBk
BEAM TILT:	not used
EHAAT:	57 m
CHANNEL:	215A
FREQUENCY:	90.9 MHz

ENGINEERING BRIEF

FOR A

NEW FM BROADCASTING STATION

IN

PORT ELGIN, ONTARIO

1.0 INTRODUCTION

In early 2003, Brian Cooper and Danny McCarthy, OBCI, (the Applicant) submitted an application for a license to establish a station to serve the community of Kincardine, Goderich and Port Elgin, the latter two being repeaters of Kincardine. In CRTC Decision 2005-68, the Commission approved the application in part, licensing Kincardine and Goderich but not Port Elgin, because channel 250, the frequency applied for, was mutually exclusive with another application using channel 250 for Port Elgin, which was licensed. In its decision, the CRTC stated that it expects the Applicant to file a revised application based on a frequency that is acceptable to the Commission and Industry Canada. Consequently, Bogdanowicz Consulting Engineering Inc. was retained to prepare this brief in response to the Commission's invitation to apply for Port Elgin on a different frequency.

The balance of this Section is taken almost verbatim from the previously filed channel 250 brief and is included here since the rationale for the approach taken to the provision of effective coverage, in this case, is still relevant.

The conventional approach to serving the intended market is to construct a single station of sufficient power and antenna height to provide a satisfactory signal level in all the communities of interest. While this approach is generally considered to be more spectrum-efficient, and is more straightforward from a marketing, audience familiarization point of view, there are a number of factors, which militate against taking this approach.

The market of interest stretches along the coastal area of Lake Huron from Goderich to the south, to Southampton to the north, and the many small communities that lie in between these extremes and the shore of Lake Huron to the west, and the range of hills to the east. This area is oblong, relatively flat, but not completely so, with some hilliness which becomes more pronounced as one travels east, and significantly, with a sharp drop-off in elevation in the near proximity of the shoreline, particularly in Kincardine, but generally along the entire length of the Lake Huron shore. The significant number of permanent residences and cottages that are located in this low-lying area along the shore are shadowed from FM radio signals that generally

come from an easterly direction. As an example of this signal attenuation, using the CRC propagation program to model the effect of this drop-off in Kincardine on the signal from CKNX-FM, Wingham, we found that there is a loss of about 14 dB from the value that exists on the lip of the ridge. The FM service available along the shoreline is often inadequate, and therefore, one of the aims of the transmission system design required for this application is to create a system configuration which remedies this service deficiency.

As mentioned above, the usual approach to serving this area might be to establish a central, high power transmitter site near Kincardine operating on a frequency which permits sufficient ERP toward Goderich to the south, and Port Elgin/Southampton to the north, and our initial approach was, indeed, along these lines. We believe that a field strength of 1 mV/m to 2 mV/m would be necessary at elevations of 3 m to 5 m to provide a competitive signal in the shops and homes and cottages in these areas. Using the CRC program to study expected signal levels at specific locations, we found that we would need near Class C1 parameters to have any hope of providing sufficient signal in these two towns at the two extremes of the market area, and given the reality of FM radio reception today, which is that virtually no one uses an outdoor antenna at any significant elevation. We have also found that there are terrain elevations south-southwest of Port Elgin of about 800 m ASL, while Port Elgin and Southampton are situated on terrain at about 600 m to 700 m ASL, and this would act to reduce the actual field strength in these towns significantly. Added to this is the fact that, unbelievable as it may sound, the spectrum is quite congested in terms of finding a frequency that would permit near Class C1 parameters both to the north and to the south from a central location near Kincardine; we were not able to find a sufficiently unencumbered frequency. This central site approach was further hindered by the need for a tower of at least 120 m in height sturdy enough to support a directional panel antenna, a very costly proposition.

Taking all these factors into account, it was decided that a more sensible approach would be to propose a network of three stations of modest Class A parameters, one located in each of the three major population centers and employing existing communications towers operated by Rogers Wireless Inc. This approach would cost roughly the same as a single, central, high power station, but have the distinct advantage of providing very strong signals in each of the major population centers with the added advantage that, being located within a few kilometres of the lakeshore, as one travels north or south from each of these transmitter sites, the signal tends to arrive along the length of the lakeshore, thus minimizing the shadow loss to those dwellings located in the low-lying shoreline areas. In the towns themselves, where the sites are located, though the signal arrives from an easterly direction, the field is expected to be sufficiently strong to more than compensate for the shadow loss toward the low-lying areas.

We are well aware of the Department's policy regarding the efficient use of the spectrum and this distributed approach, of course, raises this issue. We believe that this approach is spectrally efficient because there is no overlap of the 3 mV/m contours by the 0.5 mV/m contour of adjacent stations, the frequencies used are either new drop-ins (channel 259A in Goderich and channel 215A in Port Elgin), or propose a re-location and replacement (channel 238A from Wingham to Kincardine); we leave the CBC LRRP intact, and do not impact excessively on spectrum usage in the region as would be the case if it were proposed to use channels at much lower parameters than the channels were capable of. And most importantly, this distributed approach encloses about 50% more people in the combined 3 mV/m contours than would be case if a single, high-power transmitter were used.

2.0 DISCUSSION

This document describes a proposed FM broadcasting station in Port Elgin, Ontario, and demonstrates that the operation will meet the requirements of Industry Canada's rules and regulations.

With the channel 250 allotment in Port Elgin licensed to another broadcaster, it was necessary to find another channel suitable for this application. It was found that channel 215 can be operated at the same transmission parameters and location as previously applied for on channel 250. Accordingly, we request that the Department revise its FM allotment plan to include channel 215A in Port Elgin.

It is proposed to locate this facility on an existing Rogers Wireless Inc., cellular communications tower in the town of Port Elgin. Due to the relatively low elevation that is available, the antenna will be a special design, incorporating 0.75λ inter-bay spacing to minimize downward radiation.

3.0 ASSUMPTIONS AND SOURCES OF INFORMATION

This Brief was prepared in accordance with Industry Canada Broadcast Procedures and Rules, Parts I and III, and is based on information contained in the following:

1. IC Database for FM Allotments and Assignments, updated on 18 February 2005.
2. Elevation profiles were based on the CRC 500 metre topographic database
3. Population counts were based on 2001 Census data from Statistics Canada.

4.0 EQUIPMENT

Appendix 1 includes a list of major pieces of equipment proposed to be utilized for this new FM station. A functional diagram is given in Figure 8. To summarize, the station will use a circularly polarized, Shively Labs 6813-4R-SS(0.75), 4-bay, omni-directional antenna. The antenna will be fed with Andrew HJ5-50, 7/8", air-dielectric Heliax coaxial transmission line, with an SBS, 1 kW FM transmitter, which will operate at 1.0 kW.

All transmitting equipment will be Type-Approved where required.

The station will broadcast in the stereophonic mode and will be designed to comply with the standards for stereophonic broadcasting described in BETS-6.

5.0 DESCRIPTION OF ANTENNA SYSTEM

5.1 Antenna Site: 44° 28' 08" N. LAT.
81° 22' 10" W. LNG.

The site is shown in Figure 5.

5.2 Overall Height of Structure: 104 m AGL
304 m AMSL

Average Elevation of Terrain: 203 m AMSL

Elevation of Radiating Centre: 60 m AGL
260 m AMSL
57 m EHAAT

This information is illustrated in Figure 6.

5.3 The antenna system will utilize a Shively Labs 6813-4R-SS(0.75), 4-bay, omni-directional antenna with no beam tilt or null-fill. The vertical pattern is shown in Figure 7. The gain characteristics are as follows:

Horizontal Directivity:	Omni (0 dB)
Vertical Gain (CP):	1.845 (2.66 dBd)
Total Gain:	1.845(2.66 dBd)

5.4 The antenna will be fed by means of approximately 58 m of Andrew HJ5-50, 7/8" air-dielectric Heliax coaxial transmission line which has a loss of 1.15 dB per 100 metres at 90.9

MHz. The overall transmission line system efficiency is 86%.

6.0 INTERFERENCE ANALYSIS

An analysis of the potential for interference to other broadcasting operations and allotments from the proposed station is presented below.

6.1 Related-Channels

A Class A short-spacing analysis for related-channel FM stations was carried out and it was found that there are no short spaced allotments or assignments.

6.2 Second Harmonic Interference

The second harmonic of 90.9 MHz falls within the band of television channel 8. The nearest channel 8 operation is CKNX-TV, Wingham, ON at approximately 44 km distance. CKNX-TV is expected to have a field strength of about 78 dBu near the transmitter site. With this level of signal, and the thin population near the proposed transmitter site, interference is not expected. If, however, the second harmonic suppression inherent in the transmitter provides insufficient attenuation, and complaints to the reception of CKNX-FM are received, additional second harmonic filtering will be installed to mitigate the problem.

6.3 Ghost Type Interference

The proposed station will utilize an existing tower. Therefore, no new ghosting potential to other services is anticipated.

6.4 Location of High-Field Contours

In order to avoid the unnecessary construction of a new tower, it was decided to take advantage of an existing communications tower owned by Rogers Wireless Inc. The tower is located on the outskirts of Port Elgin, and the 115 dBu contour extends over a virtually unpopulated area. The predicted 115 dBu and 100 dBu contours are shown in Figure 5. The contour depicting the 115 dBu contour extends to a radius of about 0.4 km and encloses perhaps four dwellings. The 100 dBu contour envelops 241 dwellings. While the population within the 69.5 dBu and 54 dBu contours were obtained from Statistics Canada 2001 census, the populations within the high-field contours were estimated by counting houses where individually shown on the topographical map, and

estimating the number of houses along streets where individual houses are not shown. It was assumed that the number of people per household was 1.85, the ratio of total dwellings to total population within the 54 dBu contour of the proposed station. The population counts within the high-field contours and the two coverage contours were estimated as follows:

Population Estimates		
CONTOUR	**HOUSEHOLDS**	**POPULATION**
115 dBu	4	8
100 dBu	241	446
69.5 dBu	11,449	21,180
54 dBu	15,767	29,169

6.5 Isolation of Co-Located Services

There are no other broadcasting stations in operation on the proposed tower. Nonetheless, suitable filters will be installed if additional isolation between the proposed operation and the communications facilities, which presently exist at the site, is required.

6.6 Interference to TV Channel 6

Since the frequency of the proposed station is within the range of channel 201 and 220, protection of TV channel 6 stations is required. The nearest channel 6 TV station is CIII-TV, located in Paris, ON, at a distance of 146.7 km. Table C-3 of BPR-III, paragraph C-6.2.3 gives a permissible FM field strength of 82 dBu at the Grade B contour of a channel 6 station. In this case, the protected contour extends 104 km (well beyond the 89 km protected distance) and lies at a distance of 43 km from the proposed station. At the Class A maximum ERP of 6 kW and 100 m EHAAT toward CIII-TV, the F(50,10) interfering signal would be 54 dBu. Hence, no interference to the operation of CIII-TV is expected.

6.7 Interference to Low Power Stations

There are no domestic or international related-channel low power stations within the interference contours of the proposed station.

7.0 EXPOSURE TO RADIO FREQUENCY ENERGY

There is no other broadcast operation at the proposed site. The Safety Code 6 analysis is given in Table 2. The calculation is performed at 2 m above ground and done at a number of distances to demonstrate the location of the worst location.

TABLE 2

SAFETY CODE 6 ANALYSIS

STATION	DEP ANGLE	ANT HGT	DIST. FROM TOWER	MAX ERP	VRP FACTOR	POL / MOD	FREQ	Public SC6 LIMIT	POWER DENSITY	% of LIMIT
	(°)	(m)	(m)	(W)	(REL FLD)	FACTOR	(MHz)	(W/m²)	(W/m²)	Fi
NEW-FM	8	58	417	1600	0.80	2	90.9	2	0.0015	0.075
NEW-FM	10	58	330	1600	0.70	2	90.9	2	0.0018	0.091
NEW-FM	15	58	216	1600	0.31	2	90.9	2	0.0008	0.040
NEW-FM	30	58	112	1600	0.24	2	90.9	2	0.0015	0.076
NEW-FM	90	58	0	1600	0.1	2	90.9	2	0.0012	0.062

The levels are calculated using the formula $Fi = (1.64 \times ERP \times VRP^2 \times PMF)/(4\pi D^2 \times LIM)$, where Fi is the fractional contribution of the i^{th} facility, VRP is the assumed vertical radiation characteristic in relative field, PMF is the Polarization/Modulation factor, and LIM is the SC6 limit at the appropriate frequency.

It was stated earlier that a specially designed FM antenna will be used which minimizes downward radiation. The relative field of the antenna in the downward direction is shown to be zero; for purposes of this analysis, we have assumed a relative field of 0.1. The worst case area is about 330 m from the tower at a depression angle of 10° where the power density level is predicted to be 0.091% of the Safety Code 6 guideline for the general public and is 0.018% of the guideline for RF Workers. Though detailed information regarding the Cellular/PCS operations on this tower is not currently available, our experience from measurement and theoretical analysis of other Cellular/PCS installations is that this contribution would be below the contribution of the proposed station. Public exposure to RF energy is not expected to be of concern.

8.0 LOCATIONS OF SERVICE AREA CONTOURS

The locations of the 3 mV/m (69.5 dBu) and 0.5 mV/m (54 dBu) contours were established using the metric F(50,50) propagation curves except in those directions where the HAATs were below 30 m, where a modified methodology was used but which still relies on the F(50,50) curves. The coverage contours are shown in Figure 9. No interference zones to the proposed operation are predicted.

The transmitter power for an ERP of 1.6 kW was calculated as follows:

Transmitter Power = ERP / (Antenna Gain X Line Efficiency)

= 1.6 / (1.845 X 0.876)

= 1.0 kW

TABLE 3
SERVICE AREA CONTOURS

Radial (No)	Azimuth (°)	Avg. Terrain (m)	HAAT (m)	ERP (kW)	ERP (dBk)	Distance to Contour 3 mV/m (km)	Distance to Contour 0.5 mV/m (km)
1	0	178	82	1.6	2.04	10.9	26.2
2	45	223	37	1.6	2.04	7.3	17.9
3	90	229	31	1.6	2.04	6.8	16.7
4	135	232	28	1.6	2.04	6.4	15.7
5	180	223	37	1.6	2.04	7.3	17.9
6	225	187	73	1.6	2.04	10.3	24.9
7	270	177	83	1.6	2.04	10.9	26.2
8	315	177	83	1.6	2.04	10.9	26.2
	Average Terrain	203 m					
		EHAAT	57 m				

9.0 MONITORING

Frequency and modulation monitors are indicated in Appendix I. The station will meet the minimum requirements of BPR-I-5.3 for unattended operation.

10.0 FEED SOURCE

This station will be fed by means of an off-air link from the parent station in Kincardine.

11.0 EXPIRY DATE

In the event that this Engineering Brief is not submitted to Industry Canada for approval within two months of the date on the title page, it should be returned to Bogdanowicz Consulting Engineering Inc. for possible revision prior to submission.

12.0 ENGINEERING QUALIFICATIONS

The qualifications of the engineer responsible for the preparation of this engineering brief is on file with Industry Canada, Ottawa, Ontario.

E. A. Bogdanowicz, P. Eng.,
Bogdanowicz Consulting Engineering Inc.

APPENDIX 1

EQUIPMENT LIST

Item	Manufacturer and Model Number
Audio Processor	Orban, 2200 Optimod, digital audio processor with stereo encoder
FM Transmitter	SBS, 1 kW
RF Transmission Line	Andrew, HJ5-50B, 7/8" air Heliax
FM Transmission Antenna	Shively Labs, 6813-4R-SS(0.75), 4-bay, circularly polarized
Frequency and Modulation Monitors	TFT, 844A Baseband FM and Stereo

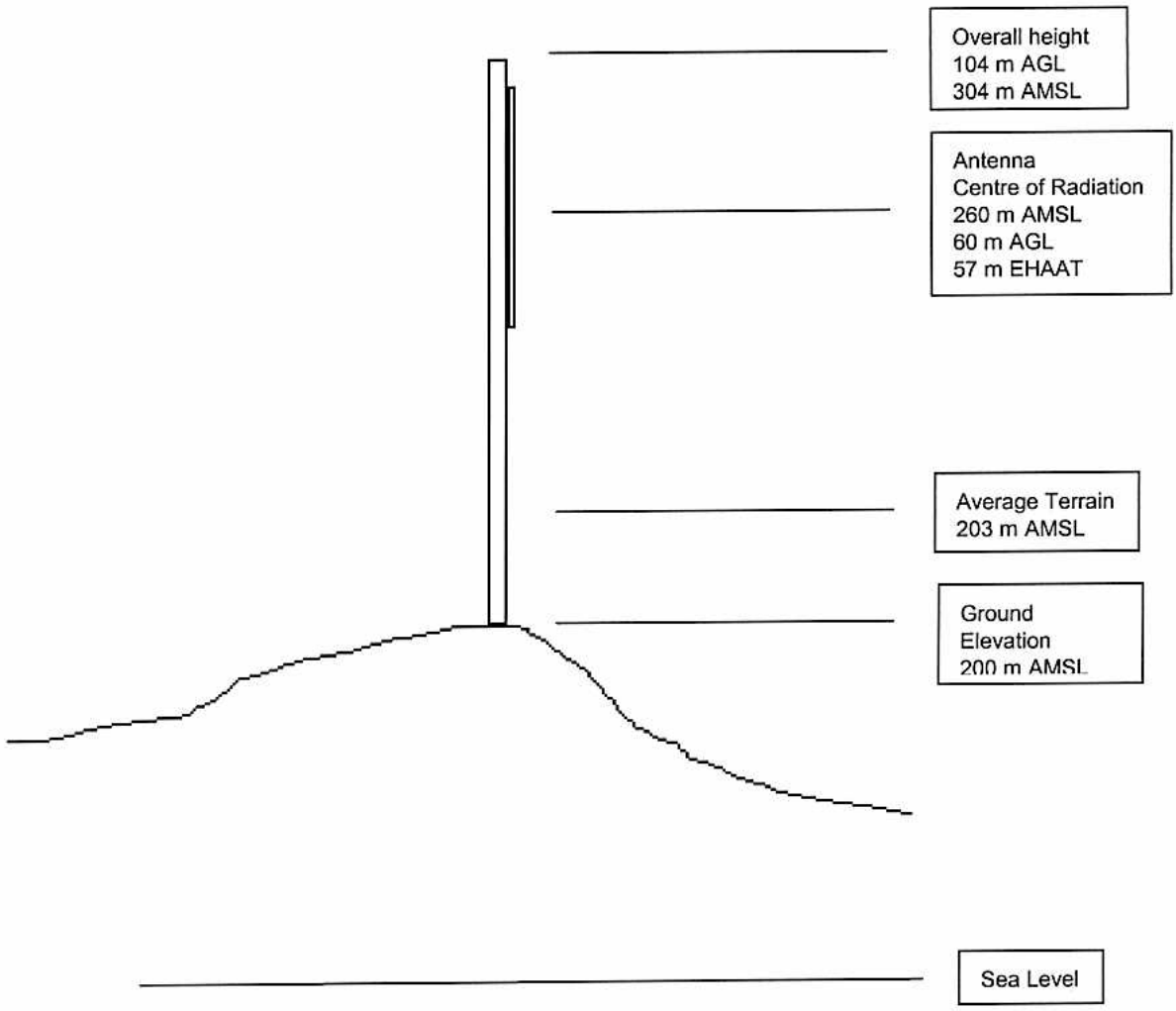


Figure 6
Antenna Elevation Diagram

NEW-FM		Port Elgin, ON
Channel: 215A	1.6 kW ERP	57 m EHAAT
Project: 5-135		February 2005
BCEI		Toronto, ON

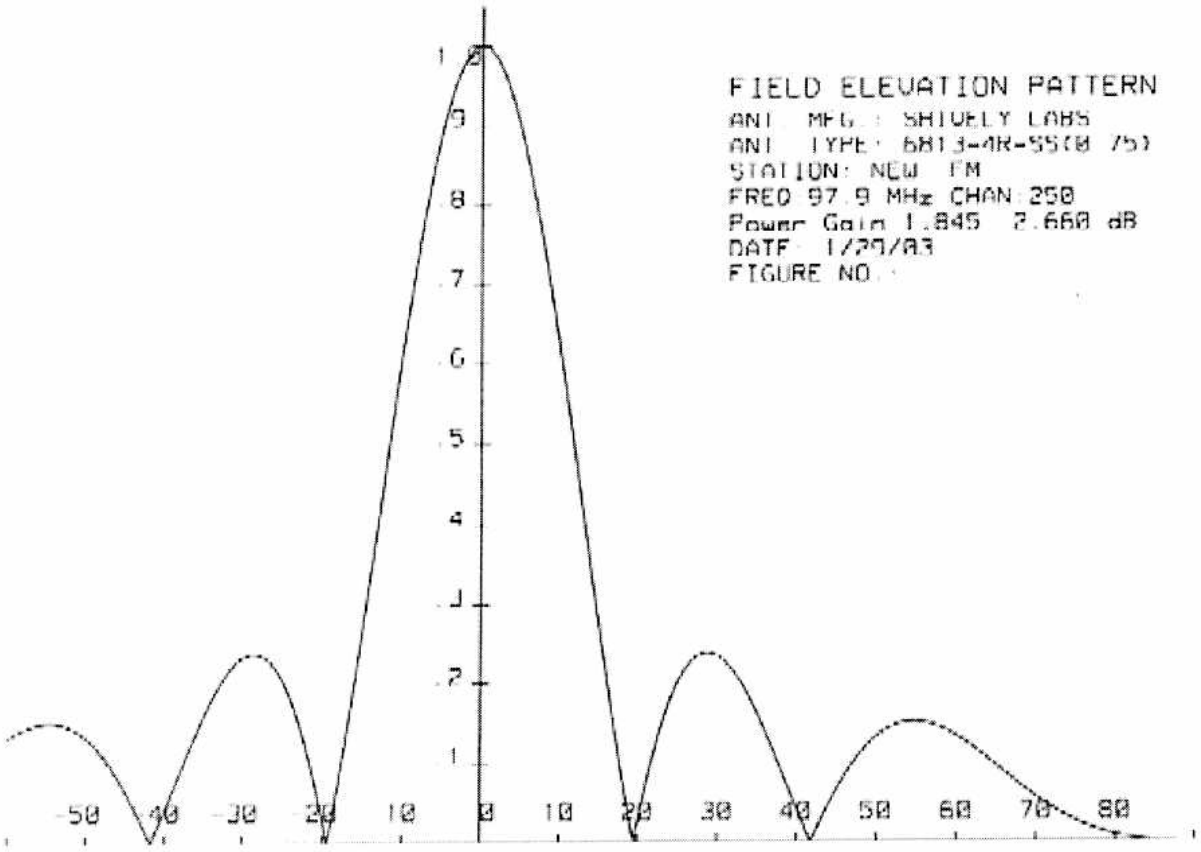


Figure 7
Vertical Antenna Pattern

NEW-FM		Port Elgin, ON
Channel: 215A	1.6 kW ERP	57 m EHAAT
Project: 5-135		February 2005
BCEI		Toronto, ON

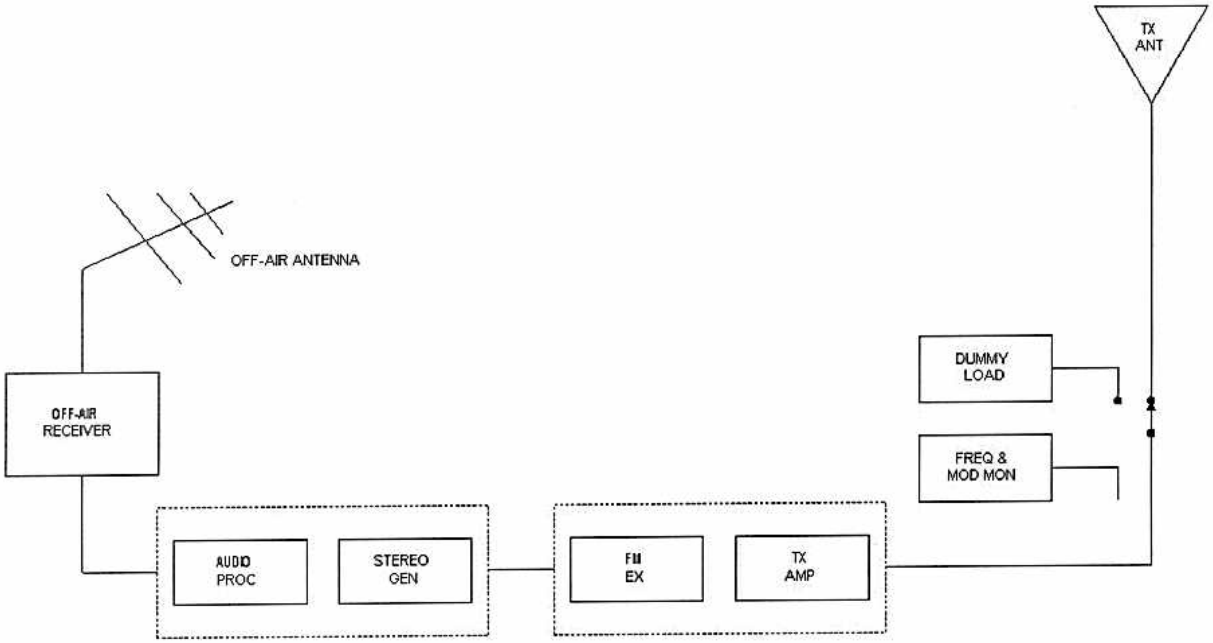


Figure 8
Equipment Functional

NEW-FM		Port Elgin, ON
Channel: 215A	1.6 kW ERP	57 m EHAAT
Project: 5-135		February 2005
BCEI		Toronto, ON

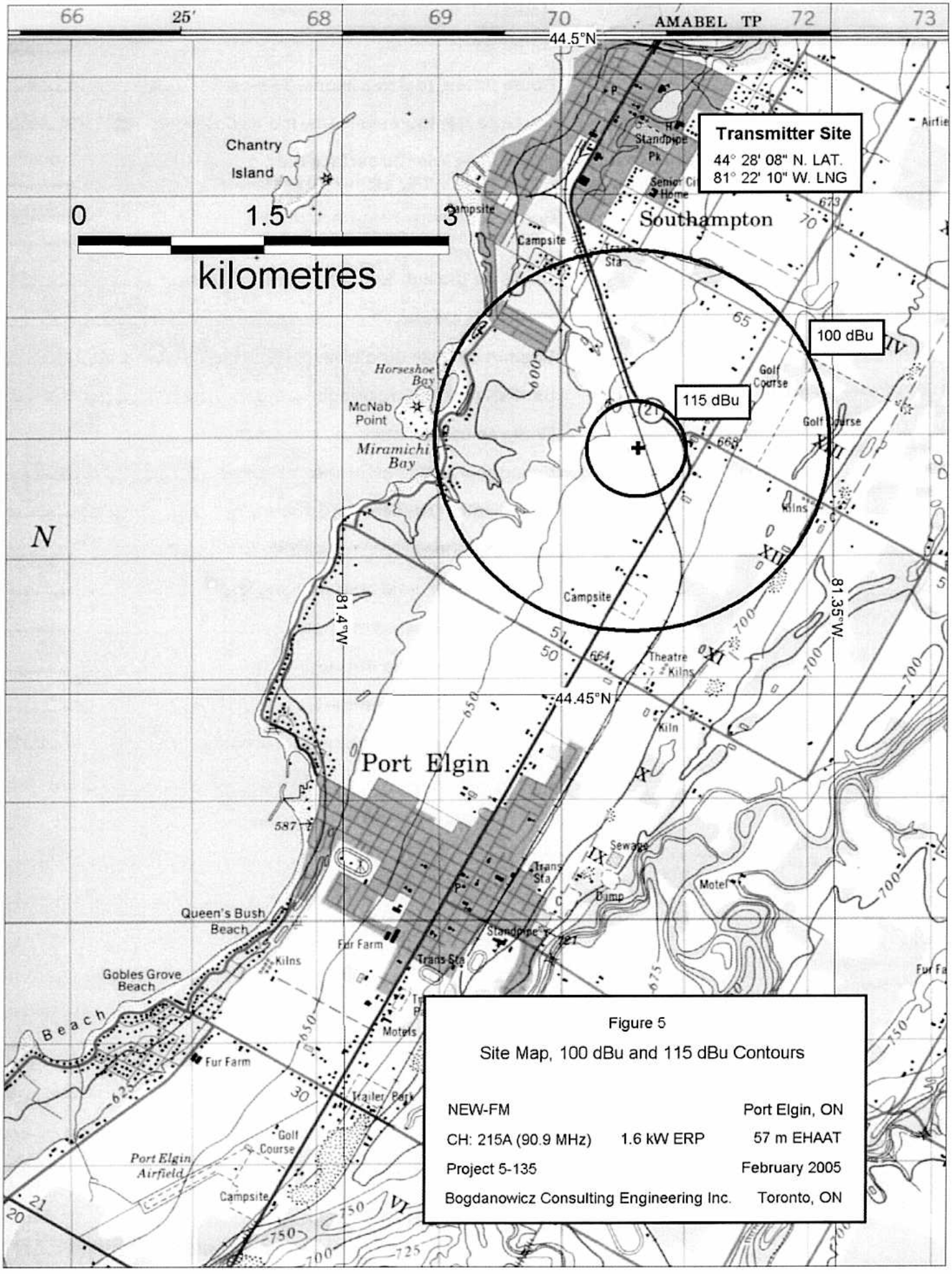
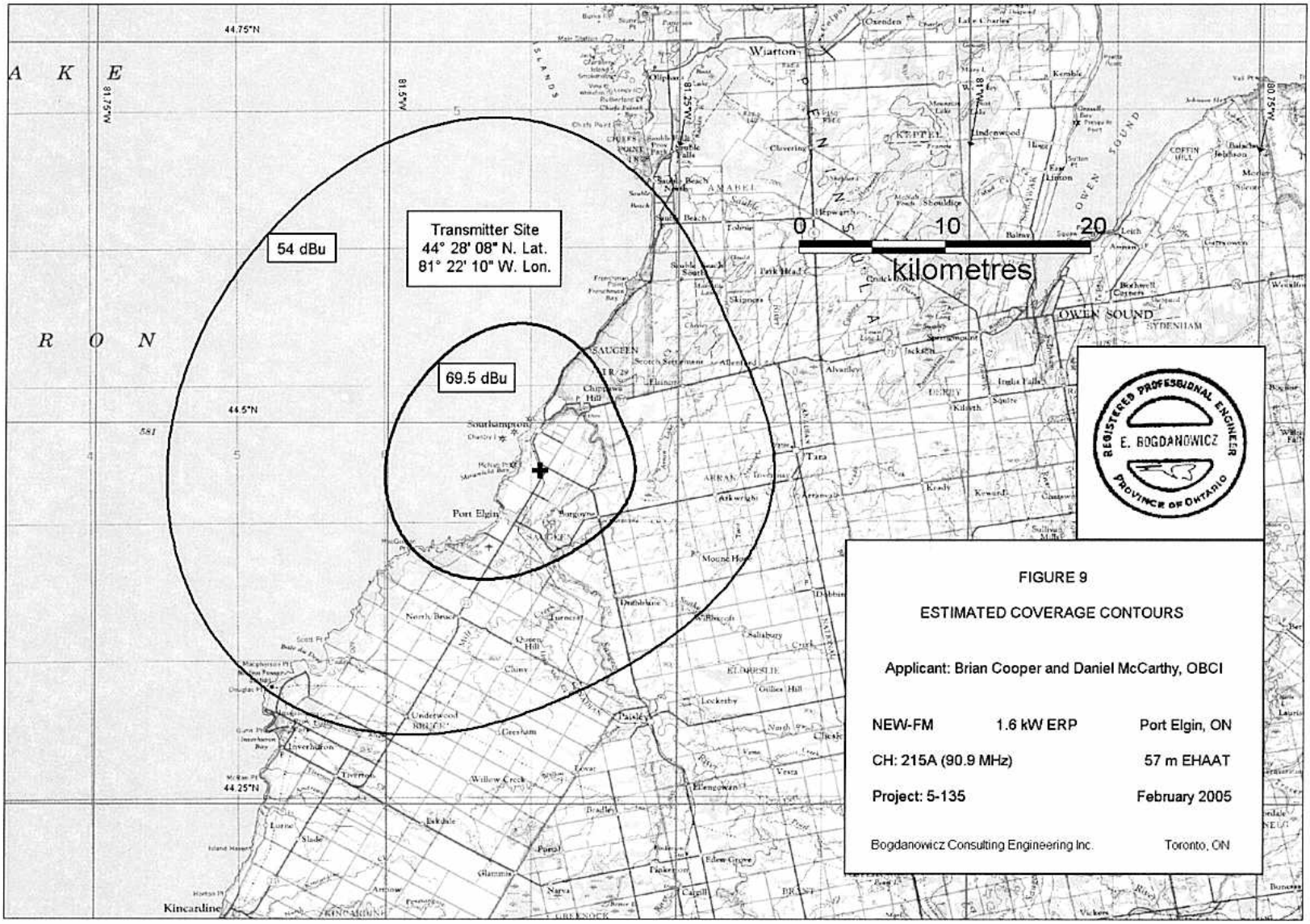


Figure 5

Site Map, 100 dBu and 115 dBu Contours

NEW-FM		Port Elgin, ON
CH: 215A (90.9 MHz)	1.6 kW ERP	57 m EHAAT
Project 5-135		February 2005
Bogdanowicz Consulting Engineering Inc.		Toronto, ON


54 dBu
69.5 dBu
Transmitter Site
44° 28' 08" N. Lat.
81° 22' 10" W. Lon.
0
10
20
kilometres
REGISTERED PROFESSIONAL ENGINEER
E. BOGDANOWICZ
PROVINCE OF ONTARIO
FIGURE 9
ESTIMATED COVERAGE CONTOURS
Applicant: Brian Cooper and Daniel McCarthy, OBCI
NEW-FM 1.6 kW ERP Port Elgin, ON
CH: 215A (90.9 MHz) 57 m EHAAT
Project: 5-135 February 2005
Bogdanowicz Consulting Engineering Inc. Toronto, ON