



# **OWL ENGINEERING & EMC TEST LABS, INC.**

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**CONSULTING COMMUNICATIONS ENGINEERS • EMC TEST LABORATORIES**

**5844 Hamline Avenue North, Shoreview, MN 55126  
651-784-7445 • Fax 651-784-7541**

**ENGINEERING EXHIBIT FOR AN  
APPLICATION FOR A CONSTRUCTION PERMIT  
COOK COUNTY COMMUNITY RADIO  
GRAND PORTAGE, MINNESOTA**

**CHANNEL 202      1 KW (H&V) 70 METERS HAAT**

**OCTOBER 12, 2007**

**ENGINEERING EXHIBIT FOR AN APPLICATION  
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**ENGINEERING STATEMENT**

This firm has been retained to prepare this engineering statement in support of an application for a construction permit for a new FM station for Grand Portage, Minnesota. This engineering exhibit, of which this Statement is a part, was prepared in accordance with the Rules and Regulations of the Federal Communications Commission and pursuant to the provisions of Section VII of FCC Form 340 on behalf of Cook County Community Radio (hereafter "**CCCR**") in support of an application for authority to construct a new FM broadcast facility operating on channel 202 (88.3 MHz) at Grand Portage, Minnesota. This proposal would provide first aural non-commercial service to the area. The effective radiated power proposed is 1KW, both in the horizontal and vertical plane, and the antenna center of radiation is 70 meters above the average terrain. This power/height combination is an allowable Class A facility permitted under the current rules and regulations.

**CCCR** proposes to operate from a site uniquely described by the geographic coordinates:

**(NAD 27)**

47° 58' 40" North Latitude  
89° 41' 05" West Longitude

**(NAD 83)**

47° 58' 39.6" North Latitude  
89° 41' 5.3" West Longitude

Engineering Figure 1 is a portion of the Grand Portage, Minnesota-ON 7.5 minute U.S.G.S. topographic quadrangle map showing the proposed transmitter site. Figure 2 is an aerial view of the proposed tower site. A search was performed for the presence of any other FM or AM communications facilities located nearby and none were found. The proposal intends to utilize an existing tower facility. The FCC program TOWAIR shows that no notification to the FAA is required.

Because the area is rural, there is not expected to be any problem with blanketing interference. The applicant is aware of the provisions of §73.318 of the FCC's Rules and the requirement for satisfying all complaints of blanketing interference that are received within a one-year period.

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**ALLOCATION CONSIDERATIONS**

A review of allotments and assignments on channel 202, on the three immediately upper adjacent, the three immediately lower adjacent channels and channels 255 & 256 (53 and 54 channels removed) shows that the site proposed would have no predicted short-spaced or interference conditions. The results of the allocation study are shown in Figure 3. The transmitter site is located within 320 km of the common border between the United States and Canada. Full protection is afforded to all Canadian concerns and is fully compliant with the Rules and the Agreement with Canada.

**COVERAGE CONTOURS**

The three-to-sixteen-kilometer average terrain elevations were derived from the Defense Mapping Agency 3-second topography database. However, the site elevation was determined from the U.S.G.S. 7.5 minute Grand Portage topography quadrangle map.

The effective antenna radiation center height for each of the eight standard 45-degree spaced radials was used in conjunction with the F(50,50) metric curves of Figure 1 of §73.333 of the Rules to determine the distances to the 70 dBu and 60 dBu coverage contours.

**DISTANCE TO CONTOURS**

DISTANCES TO CONTOURS (Kilometers):

Antenna COR elevation (AMSL): 357 meters      Average HAAT: 70 meters

Frequency: 88.3000 MHz

Coordinates: N 47 58 40.00 W 89 41 5

F(50,50) Curves      Number of Contours: 2

AZ (degs)	HAAT (m)	ERPd (kW)	CONTOUR LEVELS (dBu):	
			70.0	60.0
0.0	-4	1.0000	5.7	10.1
45.0	35	1.0000	6.1	10.8
90.0	173	1.0000	13.7	24.4
135.0	174	1.0000	13.7	24.5
180.0	174	1.0000	13.7	24.5
225.0	99	1.0000	10.3	18.3
270.0	-99	1.0000	5.7	10.1
315.0	11	1.0000	5.7	10.1

The contours drawn from the data are depicted on the maps included as Engineering Figure 4 and it is readily evident that all of Grand Portage, Minnesota is included within the proposed 60 dBu coverage contour as required by §73.515 of the Rules.

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Figure 5 shows the radial between the proposed transmitter location and the city of license and that there is no intervening terrain to block the signal to the proposed city of license.

### **INTERFERENCE STUDIES**

The instant proposal meets all requirements for contour protection requirements towards other facilities. Tabulations of the proposed protections to each of the relevant stations is found in Figures 6. It is believed that the instant proposal provides sufficient clearance to all stations as required by §73.507 and §73.509 of the Rules.

The proposed transmitter site is within the specified affected radius of two (2) Channel 6 television stations, WLUC(TV), Marquette, MI and KBJR(TV), Superior, WI. Figures 6.2 and 6.3 clearly demonstrate the instant proposal is in full compliance with §73.525 of the Rules.

### **ANSI POWER DENSITY CALCULATIONS**

The power density at the base of the tower was calculated using the following formula from OST Bulletin Number 65, August, 1997:

$$S = ((0.64)(1.64)(ERP)(1000)(\text{milliwatts/watt}))/(\pi(R)^2)$$

where: S = power density in milliwatts per square centimeter

ERP = effective radiated power in watts

R = distance to radiation source in centimeters

$\pi = 3.14$

Using this formula and the values shown below, a power density of 0.057 mW/cm<sup>2</sup> is found to exist at the base of the tower.

ERP = 2,000 watts

R = 3,400 cm.

The ANSI limit for public exposure is 0.2 mW/cm<sup>2</sup> in this frequency range. The predicted radiation level is 28.9% of the limit which is well below the ANSI limit for exposure.

Access to RF circuitry is restricted. Signs are posted warning of the potential danger. When persons require access to the site, tower or antenna for maintenance purposes, the transmitter power will be reduced or completely eliminated to comply with ANSI guidelines. Hence, the conditions of Section 1.1306(b)(3) would not be involved.

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**ENVIRONMENTAL IMPACT STATEMENT**

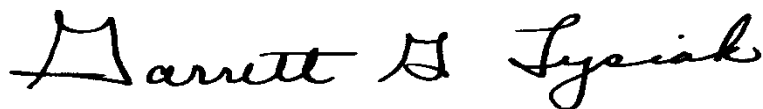
The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

- 1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.
- 2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting do not apply since this tower is not required to have this type of lighting system.
- 3) Compliance to Section 1.1306(b)(3) regarding human exposure to RF radiation was examined and a search was made about the proposed site coordinates to locate any additional sources of RF radiation and none were found.

**CONCLUSIONS**

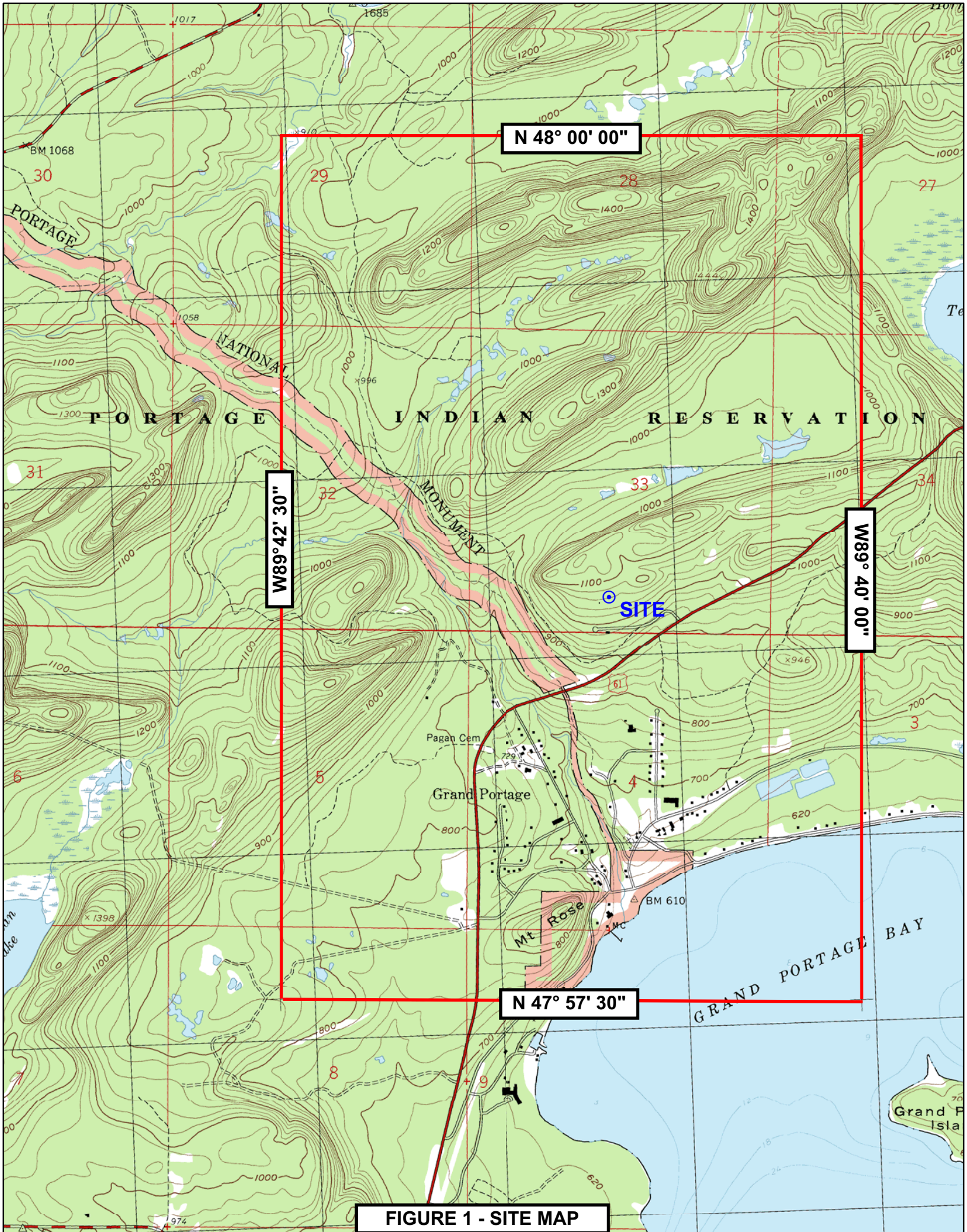
Based on the engineering studies provided, the following conclusions can be obtained:

- 1) Implementation of the instant proposal will provide Grand Portage, Minnesota with a new full time aural broadcast service.
- 2) All of Grand Portage would be served with a signal of 60 dBu or greater from the proposed construction site.
- 3) The proposal is in complete conformance with all technical rules of the Federal Communications Commission.



Garrett G. Lysiak, P.E.  
October 12, 2007









**FIGURE 2 - AERIAL VIEW**



Cook County Community Radio Corporation

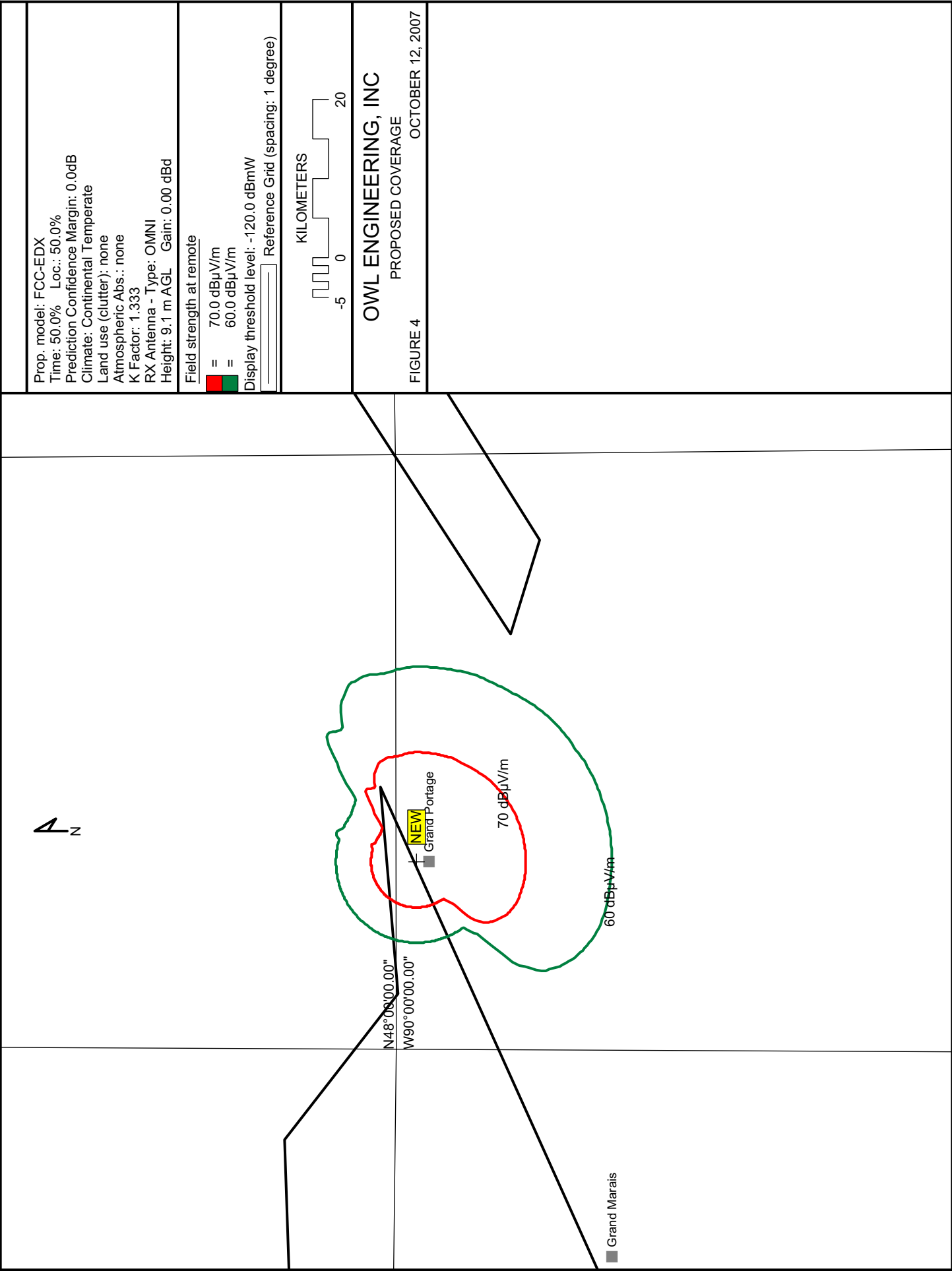
REFERENCE  
47 58 40.0 N.  
89 41 05.0 W.

CH# 202A - 88.3 MHz, Pwr= 1 kw, HAAT= 70.0 M, COR= 357 M  
Average Protected F(50-50)= 15.22 km

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap	*OUT* in km)
204C3 Grand Marais	WMLS	LIC _CX MN		244.9 64.4	54.73 BLED20020411AAK	47 46 04.0 90 20 47.0	6.000 194	3.1 537	32.3 Minnesota	41.49 Public Radio	20.87
202C3 Ironwood	WLVM	CP _VX MI		192.8 12.4	175.08 BPED19981203MI	46 26 28.0 90 11 26.0	10.000 157	111.5 600	44.4 Educational Media Foundati	39.51	58.63
06-2C Marquette	WLUCTV	LI _HN MI		142.1 323.4	229.54 BLCT2255	46 20 11.0 87 50 55.0	100.000 296	740	101.5 Barrington Marquette Licen	144.4R	85.2M
06+2C Superior	KBJRTV	LI _HY WI		235.0 53.3	226.09 BLCT20000517AEX	46 47 21.0 92 06 51.0	100.000 302	604	109.3 Kbjr License, Inc.	126.9R	99.2M

Terrain database is NED 03 SEC  
ERP and HAAT are on direct line to and from reference station.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

**FIGURE 3 - ALLOCATION  
STUDY**



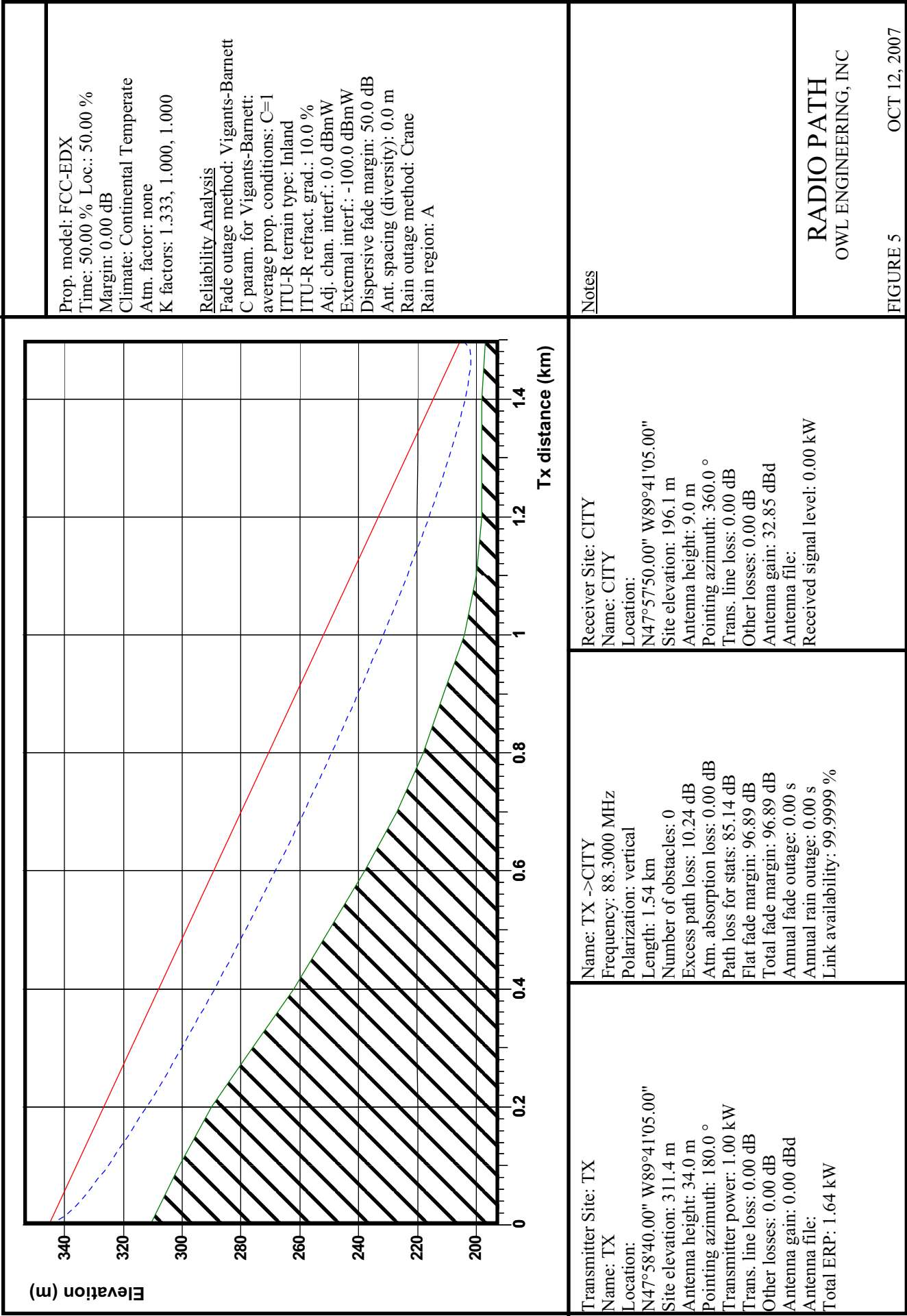


FIGURE 5

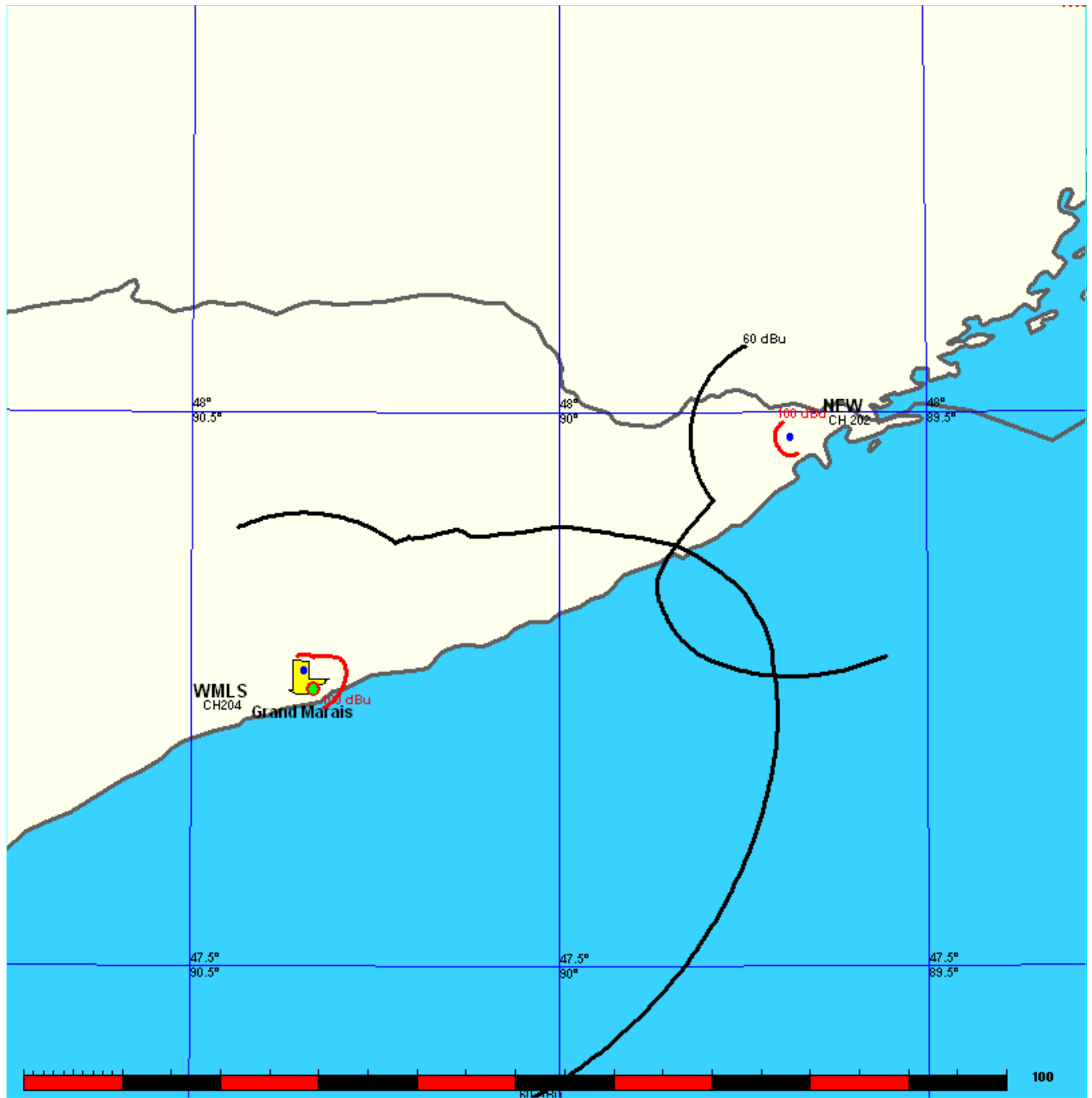
OCT 12, 2007



**FIGURE 6.1 INTERFERENCE STUDY WMLS**

NEW CH 202 A  
1.0 kW 355.9 M COR  
Prot. = 60 dBu  
Intef. = 100 dBu

WMLS CH 204 C3 BLED20020411AAK  
6.0 kW, 537 M COR  
Prot. = 60 dBu  
Intef. = 100 dBu





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## Figure 6.1 Interference Study WMLS (Continued)

NEW  
Channel = 202A  
Max ERP = 1 kW  
RCAMSL = 355.85 M  
N. Lat. 47 58 40.0  
W. Lng. 89 41 05.0  
Protected  
60 dBu

WMLS BLED20020411AAK  
Channel = 204C3  
Max ERP = 6 kW  
RCAMSL = 537 M  
N. Lat. 47 46 04.0  
W. Lng. 90 20 47.0  
Interfering  
100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
185.0	001.0000	0172.4	024.1	090.5	006.0000	0338.2	047.5	62.82
186.0	001.0000	0172.3	024.1	090.5	006.0000	0338.1	047.1	62.98
187.0	001.0000	0172.2	024.1	090.4	006.0000	0338.0	046.7	63.15
188.0	001.0000	0172.2	024.1	090.4	006.0000	0337.9	046.3	63.31
189.0	001.0000	0172.0	024.0	090.3	006.0000	0337.7	045.8	63.47
190.0	001.0000	0171.9	024.0	090.2	006.0000	0337.6	045.4	63.63
191.0	001.0000	0171.8	024.0	090.1	006.0000	0337.4	045.0	63.80
192.0	001.0000	0171.6	024.0	090.0	006.0000	0337.2	044.6	63.96
193.0	001.0000	0171.5	024.0	089.8	006.0000	0337.0	044.2	64.12
194.0	001.0000	0171.3	024.0	089.7	006.0000	0336.7	043.8	64.28
195.0	001.0000	0171.1	024.0	089.5	006.0000	0336.4	043.4	64.44
196.0	001.0000	0170.9	024.0	089.4	006.0000	0336.1	043.0	64.60
197.0	001.0000	0170.8	024.0	089.2	006.0000	0335.8	042.6	64.76
198.0	001.0000	0170.5	024.0	089.0	006.0000	0335.5	042.2	64.92
199.0	001.0000	0170.2	023.9	088.8	006.0000	0335.2	041.8	65.08
200.0	001.0000	0169.8	023.9	088.6	006.0000	0334.9	041.4	65.24
201.0	001.0000	0169.1	023.9	088.3	006.0000	0334.6	041.1	65.39
202.0	001.0000	0168.0	023.8	088.0	006.0000	0334.2	040.7	65.54
203.0	001.0000	0166.9	023.7	087.6	006.0000	0333.8	040.4	65.68
204.0	001.0000	0166.0	023.7	087.3	006.0000	0333.2	040.0	65.82
205.0	001.0000	0164.9	023.6	087.0	006.0000	0332.7	039.7	65.95
206.0	001.0000	0163.4	023.5	086.5	006.0000	0332.0	039.4	66.07
207.0	001.0000	0161.4	023.4	086.1	006.0000	0330.9	039.1	66.17
208.0	001.0000	0159.5	023.2	085.6	006.0000	0329.8	038.8	66.27
209.0	001.0000	0157.7	023.1	085.1	006.0000	0327.9	038.5	66.34
210.0	001.0000	0155.7	023.0	084.6	006.0000	0325.2	038.2	66.38
211.0	001.0000	0153.6	022.8	084.1	006.0000	0322.2	038.0	66.40
212.0	001.0000	0151.0	022.7	083.5	006.0000	0318.2	037.8	66.38
213.0	001.0000	0148.0	022.5	082.9	006.0000	0313.3	037.6	66.31
214.0	001.0000	0145.3	022.3	082.3	006.0000	0310.0	037.5	66.29
215.0	001.0000	0142.2	022.0	081.6	006.0000	0306.9	037.3	66.27
216.0	001.0000	0139.1	021.8	081.0	006.0000	0303.4	037.2	66.23
217.0	001.0000	0136.3	021.6	080.3	006.0000	0299.8	037.1	66.18
218.0	001.0000	0134.1	021.5	079.7	006.0000	0295.4	036.9	66.11



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**Figure 6.1 Interference Study WMLS (Continued)**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
219.0	001.0000	0130.9	021.2	079.1	006.0000	0289.6	036.9	65.96
220.0	001.0000	0127.1	020.9	078.3	006.0000	0282.9	036.8	65.77
221.0	001.0000	0123.0	020.6	077.6	006.0000	0274.1	036.9	65.48
222.0	001.0000	0118.1	020.3	076.8	006.0000	0264.8	037.0	65.14
223.0	001.0000	0112.6	019.8	076.0	006.0000	0255.9	037.1	64.77
224.0	001.0000	0105.2	019.1	075.0	006.0000	0246.4	037.5	64.26
225.0	001.0000	0096.7	018.3	073.9	006.0000	0235.7	038.1	63.61
226.0	001.0000	0088.0	017.3	072.8	006.0000	0224.3	038.8	62.82
227.0	001.0000	0072.7	015.5	071.3	006.0000	0205.9	040.3	61.30
228.0	001.0000	0059.6	014.1	070.2	006.0000	0189.0	041.4	59.96
229.0	001.0000	0046.8	012.5	069.1	006.0000	0175.7	042.8	58.71
230.0	001.0000	0035.8	011.0	068.1	006.0000	0166.1	044.2	57.64
231.0	001.0000	0028.3	010.2	067.6	006.0000	0160.6	045.0	57.05
232.0	001.0000	0024.1	010.2	067.4	006.0000	0158.3	044.9	56.96
233.0	001.0000	0017.1	010.2	067.1	006.0000	0156.0	044.9	56.86
234.0	001.0000	0013.3	010.2	066.9	006.0000	0154.0	044.8	56.77
235.0	001.0000	0004.8	010.2	066.7	006.0000	0152.1	044.8	56.69
236.0	001.0000	-0001.0	010.2	066.5	006.0000	0150.5	044.7	56.63
237.0	001.0000	-0002.6	010.2	066.2	006.0000	0148.9	044.7	56.56
238.0	001.0000	-0007.3	010.2	066.0	006.0000	0147.3	044.7	56.48
239.0	001.0000	-0018.0	010.2	065.8	006.0000	0145.4	044.7	56.40
240.0	001.0000	-0026.0	010.2	065.6	006.0000	0143.4	044.6	56.30
241.0	001.0000	-0030.6	010.2	065.3	006.0000	0141.4	044.6	56.20
242.0	001.0000	-0038.0	010.2	065.1	006.0000	0139.5	044.6	56.11
243.0	001.0000	-0046.6	010.2	064.9	006.0000	0137.6	044.6	56.01
244.0	001.0000	-0053.3	010.2	064.7	006.0000	0135.8	044.6	55.91
245.0	001.0000	-0060.7	010.2	064.4	006.0000	0134.0	044.6	55.81
246.0	001.0000	-0065.4	010.2	064.2	006.0000	0132.2	044.6	55.72
247.0	001.0000	-0068.4	010.2	064.0	006.0000	0130.6	044.6	55.63
248.0	001.0000	-0073.9	010.2	063.7	006.0000	0129.0	044.6	55.54
249.0	001.0000	-0079.0	010.2	063.5	006.0000	0127.7	044.6	55.46
250.0	001.0000	-0078.3	010.2	063.3	006.0000	0126.6	044.6	55.40
251.0	001.0000	-0081.4	010.2	063.1	006.0000	0125.6	044.7	55.33
252.0	001.0000	-0084.3	010.2	062.8	006.0000	0124.5	044.7	55.26
253.0	001.0000	-0088.3	010.2	062.6	006.0000	0123.2	044.7	55.18
254.0	001.0000	-0094.0	010.2	062.4	006.0000	0121.7	044.7	55.08
255.0	001.0000	-0098.6	010.2	062.2	006.0000	0119.9	044.8	54.97
256.0	001.0000	-0101.9	010.2	061.9	006.0000	0118.1	044.8	54.84
257.0	001.0000	-0104.4	010.2	061.7	006.0000	0116.1	044.9	54.70
258.0	001.0000	-0108.7	010.2	061.5	006.0000	0114.1	044.9	54.56
259.0	001.0000	-0108.5	010.2	061.3	006.0000	0112.2	045.0	54.41
260.0	001.0000	-0104.7	010.2	061.1	006.0000	0110.3	045.0	54.26
261.0	001.0000	-0104.1	010.2	060.9	006.0000	0108.3	045.1	54.10





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**Figure 6.1 Interference Study WMLS (Continued)**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
262.0	001.0000	-0104.6	010.2	060.7	006.0000	0106.2	045.1	53.92
263.0	001.0000	-0106.0	010.2	060.4	006.0000	0104.2	045.2	53.75
264.0	001.0000	-0109.7	010.2	060.2	006.0000	0102.2	045.3	53.57
265.0	001.0000	-0111.1	010.2	060.0	006.0000	0100.3	045.3	53.39
266.0	001.0000	-0109.4	010.2	059.8	006.0000	0098.4	045.4	53.21
267.0	001.0000	-0107.0	010.2	059.6	006.0000	0096.4	045.5	53.02
268.0	001.0000	-0104.4	010.2	059.4	006.0000	0094.4	045.6	52.82
269.0	001.0000	-0100.9	010.2	059.2	006.0000	0092.6	045.7	52.63
270.0	001.0000	-0096.1	010.2	059.0	006.0000	0090.9	045.7	52.45
271.0	001.0000	-0087.5	010.2	058.8	006.0000	0089.3	045.8	52.28
272.0	001.0000	-0071.0	010.2	058.7	006.0000	0087.9	045.9	52.12
273.0	001.0000	-0061.1	010.2	058.5	006.0000	0086.5	046.0	51.95
274.0	001.0000	-0061.2	010.2	058.3	006.0000	0085.1	046.1	51.79
275.0	001.0000	-0060.6	010.2	058.1	006.0000	0083.9	046.2	51.64
276.0	001.0000	-0061.2	010.2	057.9	006.0000	0082.7	046.3	51.49
277.0	001.0000	-0059.5	010.2	057.8	006.0000	0081.6	046.5	51.35
278.0	001.0000	-0050.2	010.2	057.6	006.0000	0080.6	046.6	51.21
279.0	001.0000	-0043.4	010.2	057.4	006.0000	0079.7	046.7	51.08
280.0	001.0000	-0040.8	010.2	057.3	006.0000	0078.8	046.8	50.95
281.0	001.0000	-0039.3	010.2	057.1	006.0000	0077.9	046.9	50.83
282.0	001.0000	-0036.0	010.2	057.0	006.0000	0077.2	047.0	50.71
283.0	001.0000	-0036.9	010.2	056.8	006.0000	0076.4	047.2	50.60
284.0	001.0000	-0037.6	010.2	056.7	006.0000	0075.7	047.3	50.49
285.0	001.0000	-0041.5	010.2	056.5	006.0000	0074.9	047.4	50.37
286.0	001.0000	-0045.5	010.2	056.4	006.0000	0074.2	047.6	50.25
287.0	001.0000	-0047.2	010.2	056.2	006.0000	0073.5	047.7	50.13
288.0	001.0000	-0044.1	010.2	056.1	006.0000	0072.7	047.8	50.01
289.0	001.0000	-0039.9	010.2	056.0	006.0000	0071.9	048.0	49.89
290.0	001.0000	-0040.8	010.2	055.8	006.0000	0071.3	048.1	49.77
291.0	001.0000	-0041.2	010.2	055.7	006.0000	0070.6	048.3	49.66
292.0	001.0000	-0038.8	010.2	055.6	006.0000	0070.0	048.4	49.55
293.0	001.0000	-0033.7	010.2	055.5	006.0000	0069.4	048.5	49.45
294.0	001.0000	-0031.5	010.2	055.4	006.0000	0068.9	048.7	49.34
295.0	001.0000	-0034.1	010.2	055.3	006.0000	0068.3	048.8	49.24
296.0	001.0000	-0041.2	010.2	055.1	006.0000	0067.9	049.0	49.15
297.0	001.0000	-0050.1	010.2	055.0	006.0000	0067.4	049.2	49.05
298.0	001.0000	-0055.5	010.2	054.9	006.0000	0067.0	049.3	48.96
299.0	001.0000	-0052.0	010.2	054.9	006.0000	0066.5	049.5	48.86
300.0	001.0000	-0039.3	010.2	054.8	006.0000	0066.1	049.6	48.77
301.0	001.0000	-0029.0	010.2	054.7	006.0000	0065.7	049.8	48.67
302.0	001.0000	-0021.5	010.2	054.6	006.0000	0065.2	050.0	48.58
303.0	001.0000	-0018.9	010.2	054.5	006.0000	0064.8	050.1	48.48
304.0	001.0000	-0015.7	010.2	054.4	006.0000	0064.5	050.3	48.39
305.0	001.0000	-0010.7	010.2	054.4	006.0000	0064.1	050.4	48.31



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**Figure 6.1 Interference Study WMLS (Continued)**

WMLS            BLED20020411AAK				NEW				
Channel = 204C3				Channel = 202A				
Max ERP = 6 kW				Max ERP = 1 kW				
RCAMSL = 537 M				RCAMSL = 355.85 M				
N. Lat. 47 46 04.0				N. Lat. 47 58 40.0				
W. Lng. 90 20 47.0				W. Lng. 89 41 05.0				
Protected				Interfering				
60 dBu				100 dBu				
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
004.0	006.0000	-0003.9	015.8	261.2	001.0000	-0104.1	048.9	36.17
005.0	006.0000	-0003.5	015.8	261.2	001.0000	-0104.1	048.7	36.23
006.0	006.0000	-0003.6	015.8	261.1	001.0000	-0104.1	048.4	36.29
007.0	006.0000	-0001.2	015.8	261.0	001.0000	-0104.1	048.1	36.34
008.0	006.0000	0000.7	015.8	260.9	001.0000	-0104.2	047.9	36.40
009.0	006.0000	0000.7	015.8	260.8	001.0000	-0104.2	047.6	36.46
010.0	006.0000	0003.1	015.8	260.7	001.0000	-0104.2	047.4	36.52
011.0	006.0000	0004.5	015.8	260.6	001.0000	-0104.2	047.1	36.58
012.0	006.0000	0008.5	015.8	260.4	001.0000	-0104.3	046.8	36.64
013.0	006.0000	0011.5	015.8	260.3	001.0000	-0104.4	046.6	36.70
014.0	006.0000	0012.4	015.8	260.2	001.0000	-0104.5	046.3	36.76
015.0	006.0000	0014.7	015.8	260.0	001.0000	-0104.7	046.1	36.82
016.0	006.0000	0016.3	015.8	259.9	001.0000	-0105.0	045.8	36.88
017.0	006.0000	0018.4	015.8	259.7	001.0000	-0105.6	045.6	36.94
018.0	006.0000	0018.9	015.8	259.6	001.0000	-0106.2	045.3	37.00
019.0	006.0000	0018.6	015.8	259.4	001.0000	-0106.9	045.1	37.06
020.0	006.0000	0017.6	015.8	259.2	001.0000	-0107.7	044.9	37.13
021.0	006.0000	0018.2	015.8	259.0	001.0000	-0108.5	044.6	37.19
022.0	006.0000	0021.2	015.8	258.8	001.0000	-0109.1	044.4	37.25
023.0	006.0000	0022.4	015.8	258.6	001.0000	-0109.4	044.2	37.31
024.0	006.0000	0023.7	015.8	258.4	001.0000	-0109.5	044.0	37.37
025.0	006.0000	0025.7	015.8	258.2	001.0000	-0109.2	043.7	37.43
026.0	006.0000	0027.4	015.8	258.0	001.0000	-0108.7	043.5	37.49
027.0	006.0000	0028.2	015.8	257.8	001.0000	-0107.5	043.3	37.55
028.0	006.0000	0025.6	015.8	257.5	001.0000	-0106.2	043.1	37.61
029.0	006.0000	0024.9	015.8	257.3	001.0000	-0105.1	042.9	37.67
030.0	006.0000	0025.8	015.8	257.0	001.0000	-0104.4	042.7	37.72
031.0	006.0000	0027.8	015.8	256.8	001.0000	-0103.8	042.5	37.78
032.0	006.0000	0029.7	015.8	256.5	001.0000	-0103.1	042.3	37.84
033.0	006.0000	0029.0	015.8	256.2	001.0000	-0102.4	042.1	37.89
034.0	006.0000	0027.3	015.8	255.9	001.0000	-0101.8	041.9	37.95
035.0	006.0000	0026.9	015.8	255.7	001.0000	-0101.3	041.7	38.00
036.0	006.0000	0029.7	015.8	255.4	001.0000	-0100.0	041.6	38.05
037.0	006.0000	0031.7	016.2	255.4	001.0000	-0100.3	041.1	38.20



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**Figure 6.1 Interference Study WMLS (Continued)**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
038.0	006.0000	0033.5	016.7	255.5	001.0000	-0100.7	040.5	38.37
039.0	006.0000	0035.3	017.1	255.6	001.0000	-0100.9	040.0	38.54
040.0	006.0000	0035.2	017.1	255.2	001.0000	-0099.3	039.8	38.59
041.0	006.0000	0036.7	017.5	255.2	001.0000	-0099.1	039.3	38.75
042.0	006.0000	0038.4	017.9	255.1	001.0000	-0099.0	038.8	38.92
043.0	006.0000	0040.0	018.3	255.0	001.0000	-0098.7	038.3	39.08
044.0	006.0000	0041.5	018.6	254.9	001.0000	-0098.3	037.8	39.24
045.0	006.0000	0044.4	019.3	255.0	001.0000	-0098.6	037.1	39.50
046.0	006.0000	0047.0	019.9	255.0	001.0000	-0098.5	036.4	39.74
047.0	006.0000	0049.2	020.4	254.9	001.0000	-0098.1	035.8	39.96
048.0	006.0000	0052.1	021.0	254.8	001.0000	-0097.9	035.1	40.21
049.0	006.0000	0053.2	021.2	254.4	001.0000	-0096.5	034.7	40.34
050.0	006.0000	0053.7	021.3	253.9	001.0000	-0093.3	034.5	40.43
051.0	006.0000	0054.4	021.5	253.4	001.0000	-0090.7	034.2	40.52
052.0	006.0000	0055.7	021.7	253.0	001.0000	-0087.9	033.8	40.66
053.0	006.0000	0058.6	022.2	252.6	001.0000	-0086.4	033.2	40.89
054.0	006.0000	0062.3	022.8	252.3	001.0000	-0085.0	032.5	41.15
055.0	006.0000	0067.2	023.6	252.0	001.0000	-0084.3	031.7	41.48
056.0	006.0000	0072.1	024.3	251.7	001.0000	-0084.0	030.9	41.84
057.0	006.0000	0077.4	025.1	251.3	001.0000	-0082.8	030.0	42.25
058.0	006.0000	0083.1	025.9	250.8	001.0000	-0080.3	029.1	42.71
059.0	006.0000	0090.6	027.0	250.3	001.0000	-0078.8	027.9	43.34
060.0	006.0000	0100.1	028.3	249.8	001.0000	-0078.3	026.6	44.15
061.0	006.0000	0109.6	029.5	249.1	001.0000	-0078.9	025.3	44.97
062.0	006.0000	0118.6	030.6	248.2	001.0000	-0075.1	024.2	45.72
063.0	006.0000	0125.3	031.3	247.1	001.0000	-0068.7	023.4	46.26
064.0	006.0000	0130.7	031.9	245.8	001.0000	-0064.3	022.8	46.71
065.0	006.0000	0138.6	032.8	244.3	001.0000	-0055.6	021.9	47.38
066.0	006.0000	0147.1	033.8	242.7	001.0000	-0043.6	020.9	48.11
067.0	006.0000	0154.7	034.6	240.8	001.0000	-0029.6	020.1	48.74
068.0	006.0000	0165.0	035.7	238.6	001.0000	-0013.2	019.1	49.57
069.0	006.0000	0174.9	036.7	236.1	001.0000	-0001.1	018.3	50.26
070.0	006.0000	0186.8	037.8	233.2	001.0000	0016.6	017.4	50.96
071.0	006.0000	0201.7	039.0	229.7	001.0000	0038.6	016.5	53.84
072.0	006.0000	0215.3	040.0	226.1	001.0000	0087.5	015.9	61.60
073.0	006.0000	0226.5	040.8	222.4	001.0000	0116.2	015.5	64.42
074.0	006.0000	0237.0	041.5	218.7	001.0000	0132.0	015.3	65.65
075.0	006.0000	0246.8	042.1	215.1	001.0000	0141.8	015.2	66.35
076.0	006.0000	0256.2	042.7	211.6	001.0000	0152.2	015.3	66.98
077.0	006.0000	0267.0	043.4	207.8	001.0000	0159.9	015.4	67.39
078.0	006.0000	0278.8	044.1	203.9	001.0000	0166.1	015.5	67.63
079.0	006.0000	0289.0	044.8	200.3	001.0000	0169.6	015.8	67.58
080.0	006.0000	0297.4	045.3	197.3	001.0000	0170.7	016.2	67.28
081.0	006.0000	0303.5	045.7	195.0	001.0000	0171.1	016.8	66.84
082.0	006.0000	0308.8	046.0	193.0	001.0000	0171.5	017.4	66.35





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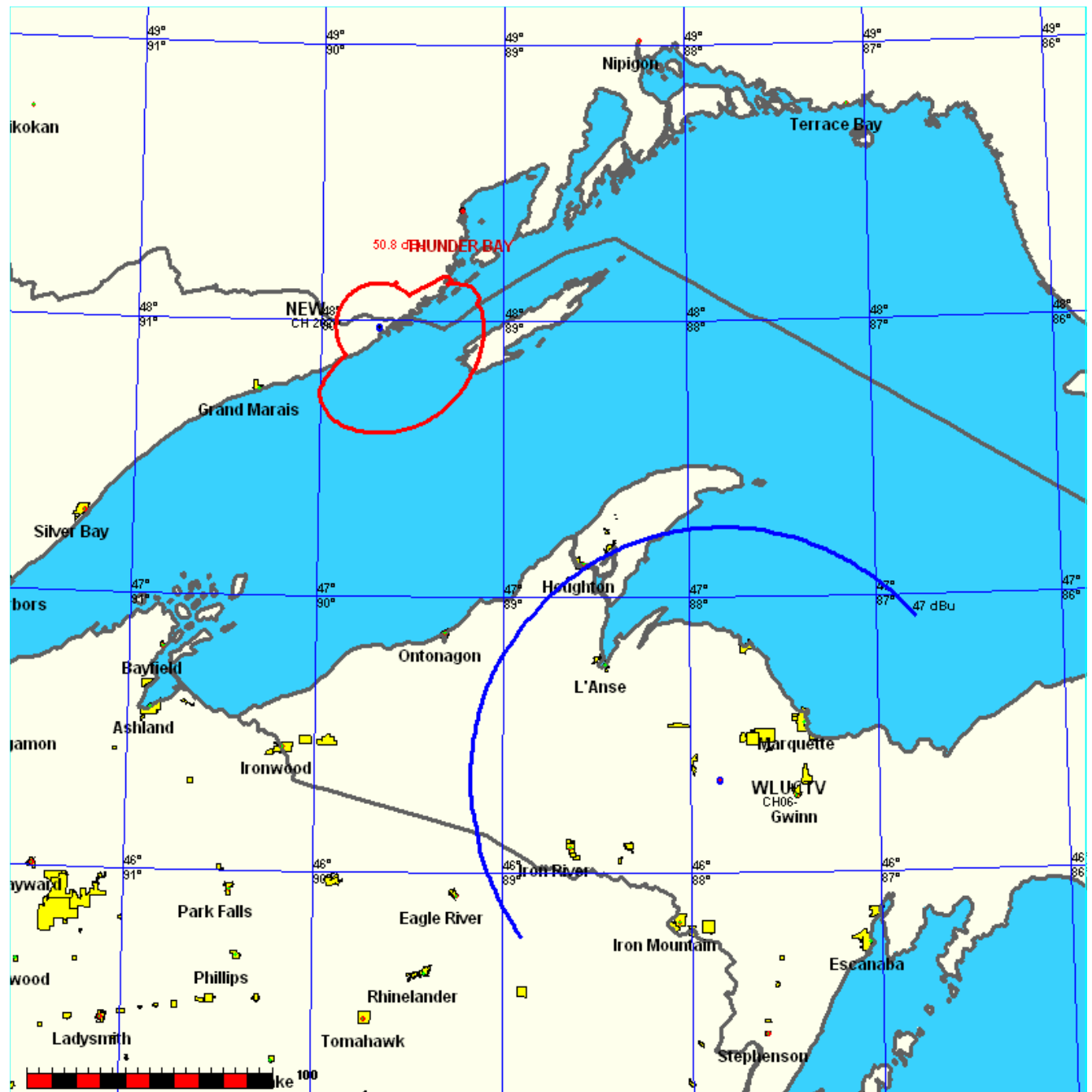
**Figure 6.1 Interference Study WMLS (Continued)**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
083.0	006.0000	0314.0	046.3	191.1	001.0000	0171.8	018.0	65.83
084.0	006.0000	0321.6	046.8	189.0	001.0000	0172.0	018.7	65.32
085.0	006.0000	0327.3	047.2	187.4	001.0000	0172.2	019.4	64.75
086.0	006.0000	0330.7	047.4	186.3	001.0000	0172.3	020.2	64.15
087.0	006.0000	0332.8	047.5	185.6	001.0000	0172.3	021.0	63.52
088.0	006.0000	0334.3	047.6	185.1	001.0000	0172.4	021.8	62.90
089.0	006.0000	0335.4	047.7	184.6	001.0000	0172.4	022.6	62.27
090.0	006.0000	0337.3	047.8	184.2	001.0000	0172.4	023.4	61.66
091.0	006.0000	0339.2	047.9	183.8	001.0000	0172.4	024.2	61.06
092.0	006.0000	0341.1	048.0	183.4	001.0000	0172.4	025.1	60.46
093.0	006.0000	0342.9	048.1	183.2	001.0000	0172.4	025.9	59.87
094.0	006.0000	0344.5	048.2	183.0	001.0000	0172.5	026.8	59.30
095.0	006.0000	0346.2	048.4	182.8	001.0000	0172.5	027.6	58.74
096.0	006.0000	0347.6	048.4	182.7	001.0000	0172.5	028.4	58.19
097.0	006.0000	0348.7	048.5	182.7	001.0000	0172.5	029.3	57.66
098.0	006.0000	0349.6	048.6	182.7	001.0000	0172.5	030.1	57.15
099.0	006.0000	0350.2	048.6	182.8	001.0000	0172.5	031.0	56.66
100.0	006.0000	0350.8	048.6	182.9	001.0000	0172.5	031.8	56.19
101.0	006.0000	0351.2	048.7	183.1	001.0000	0172.5	032.7	55.74
102.0	006.0000	0351.6	048.7	183.3	001.0000	0172.4	033.5	55.30
103.0	006.0000	0351.9	048.7	183.5	001.0000	0172.4	034.4	54.86
104.0	006.0000	0352.1	048.7	183.7	001.0000	0172.4	035.2	54.43
105.0	006.0000	0352.3	048.7	183.9	001.0000	0172.4	036.0	54.00
106.0	006.0000	0352.6	048.7	184.2	001.0000	0172.4	036.9	53.58
107.0	006.0000	0352.8	048.8	184.5	001.0000	0172.4	037.7	53.17
108.0	006.0000	0353.1	048.8	184.7	001.0000	0172.4	038.6	52.76
109.0	006.0000	0353.3	048.8	185.0	001.0000	0172.4	039.4	52.36
110.0	006.0000	0353.5	048.8	185.3	001.0000	0172.4	040.2	51.97
111.0	006.0000	0353.6	048.8	185.6	001.0000	0172.3	041.0	51.58
112.0	006.0000	0353.7	048.8	185.9	001.0000	0172.3	041.9	51.21
113.0	006.0000	0353.9	048.8	186.2	001.0000	0172.3	042.7	50.84
114.0	006.0000	0353.9	048.8	186.6	001.0000	0172.3	043.5	50.47
115.0	006.0000	0353.9	048.8	186.9	001.0000	0172.2	044.3	50.12
116.0	006.0000	0353.9	048.8	187.3	001.0000	0172.2	045.1	49.77
117.0	006.0000	0353.9	048.8	187.6	001.0000	0172.2	045.9	49.44
118.0	006.0000	0353.9	048.8	188.0	001.0000	0172.2	046.7	49.11
119.0	006.0000	0354.0	048.8	188.3	001.0000	0172.1	047.5	48.79
120.0	006.0000	0354.0	048.8	188.7	001.0000	0172.1	048.3	48.47
121.0	006.0000	0354.0	048.8	189.1	001.0000	0172.0	049.1	48.17
122.0	006.0000	0354.0	048.8	189.5	001.0000	0172.0	049.9	47.86
123.0	006.0000	0354.0	048.8	189.8	001.0000	0171.9	050.7	47.55
124.0	006.0000	0354.0	048.8	190.2	001.0000	0171.9	051.5	47.25

**FIGURE 6.2 INTERFERENCE STUDY WLUC-TV**

NEW CH 202 A  
1.0 kW 355.9 M COR  
Intef. = 50.8 dBu

WLUC-TV CH 06- 2C BLCT2255  
100.0 kW, 740 M COR  
Prot. = 47 dBu





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**Figure 6.2 Interference Study WLUC-TV (Continued)**

WLUCTV      BLCT2255  
Channel = 06-2C  
Max ERP = 100 kW  
RCAMSL = 740 M  
N. Lat. 46 20 11.0  
W. Lng. 87 50 55.0  
Protected  
47 dBu

new  
Channel = 202A  
Max ERP = 1 kW  
RCAMSL = 357 M  
N. Lat. 47 58 40.0  
W. Lng. 89 41 05.0  
Interfering  
50.8 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
263.0	100.0000	0276.5	101.5	168.7	001.0000	0174.0	198.6	12.71
264.0	100.0000	0277.4	101.6	168.6	001.0000	0174.0	196.9	13.03
265.0	100.0000	0277.8	101.6	168.6	001.0000	0174.0	195.1	13.35
266.0	100.0000	0277.6	101.6	168.5	001.0000	0174.0	193.3	13.67
267.0	100.0000	0278.6	101.7	168.5	001.0000	0174.0	191.6	14.00
268.0	100.0000	0279.7	101.8	168.4	001.0000	0174.0	189.8	14.33
269.0	100.0000	0280.5	101.9	168.4	001.0000	0174.0	188.0	14.65
270.0	100.0000	0280.5	101.9	168.3	001.0000	0174.0	186.3	14.98
271.0	100.0000	0279.9	101.8	168.1	001.0000	0174.0	184.5	15.30
272.0	100.0000	0278.6	101.7	168.0	001.0000	0174.0	182.8	15.62
273.0	100.0000	0278.2	101.6	167.8	001.0000	0174.0	181.1	15.93
274.0	100.0000	0277.9	101.6	167.7	001.0000	0174.0	179.4	16.25
275.0	100.0000	0278.0	101.6	167.5	001.0000	0174.0	177.7	16.56
276.0	100.0000	0280.1	101.8	167.4	001.0000	0174.0	176.0	16.89
277.0	100.0000	0278.7	101.7	167.2	001.0000	0174.0	174.3	17.19
278.0	100.0000	0279.2	101.7	167.0	001.0000	0174.0	172.6	17.49
279.0	100.0000	0279.4	101.8	166.8	001.0000	0174.0	171.0	17.80
280.0	100.0000	0278.7	101.7	166.6	001.0000	0174.0	169.4	18.09
281.0	100.0000	0278.4	101.7	166.3	001.0000	0174.0	167.7	18.38
282.0	100.0000	0279.5	101.8	166.1	001.0000	0174.0	166.1	18.68
283.0	100.0000	0279.4	101.7	165.8	001.0000	0174.0	164.5	18.96
284.0	100.0000	0279.0	101.7	165.5	001.0000	0174.0	162.9	19.24
285.0	100.0000	0280.1	101.8	165.3	001.0000	0174.0	161.3	19.53
286.0	100.0000	0280.0	101.8	165.0	001.0000	0174.0	159.8	19.80
287.0	100.0000	0280.5	101.9	164.6	001.0000	0174.0	158.2	20.06
288.0	100.0000	0281.6	102.0	164.3	001.0000	0174.0	156.7	20.32
289.0	100.0000	0281.3	101.9	164.0	001.0000	0174.0	155.2	20.55
290.0	100.0000	0280.7	101.9	163.6	001.0000	0174.0	153.8	20.78
291.0	100.0000	0281.2	101.9	163.2	001.0000	0174.0	152.4	21.01
292.0	100.0000	0280.0	101.8	162.7	001.0000	0174.0	151.0	21.23
293.0	100.0000	0279.6	101.8	162.3	001.0000	0174.0	149.7	21.44
294.0	100.0000	0280.0	101.8	161.9	001.0000	0174.0	148.3	21.67
295.0	100.0000	0279.4	101.8	161.4	001.0000	0174.0	147.0	21.89
296.0	100.0000	0279.3	101.7	160.9	001.0000	0174.0	145.8	22.11



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**Figure 6.2 Interference Study WLUC-TV (Continued)**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
297.0	100.0000	0279.9	101.8	160.4	001.0000	0174.0	144.5	22.35
298.0	100.0000	0279.9	101.8	159.9	001.0000	0174.0	143.3	22.57
299.0	100.0000	0279.9	101.8	159.4	001.0000	0174.0	142.1	22.79
300.0	100.0000	0278.7	101.7	158.8	001.0000	0174.0	141.0	22.99
301.0	100.0000	0275.9	101.4	158.2	001.0000	0174.0	140.1	23.17
302.0	100.0000	0274.7	101.3	157.6	001.0000	0174.0	139.2	23.35
303.0	100.0000	0274.3	101.3	156.9	001.0000	0174.0	138.2	23.54
304.0	100.0000	0274.3	101.3	156.3	001.0000	0173.9	137.2	23.73
305.0	100.0000	0272.9	101.2	155.7	001.0000	0173.9	136.4	23.90
306.0	100.0000	0276.6	101.5	155.1	001.0000	0173.9	135.2	24.13
307.0	100.0000	0278.0	101.6	154.5	001.0000	0173.9	134.2	24.32
308.0	100.0000	0278.4	101.7	153.8	001.0000	0173.8	133.4	24.48
309.0	100.0000	0275.9	101.4	153.1	001.0000	0173.8	132.8	24.59
310.0	100.0000	0273.3	101.2	152.3	001.0000	0173.7	132.3	24.68
311.0	100.0000	0271.7	101.0	151.6	001.0000	0173.6	131.8	24.78
312.0	100.0000	0271.3	101.0	150.9	001.0000	0173.5	131.2	24.89
313.0	100.0000	0273.2	101.2	150.2	001.0000	0173.4	130.5	25.03
314.0	100.0000	0276.4	101.5	149.5	001.0000	0173.4	129.7	25.19
315.0	100.0000	0275.5	101.4	148.7	001.0000	0173.3	129.3	25.26
316.0	100.0000	0275.4	101.4	147.9	001.0000	0173.2	128.9	25.33
317.0	100.0000	0274.6	101.3	147.2	001.0000	0173.1	128.6	25.39
318.0	100.0000	0274.2	101.3	146.4	001.0000	0173.1	128.4	25.44
319.0	100.0000	0274.9	101.3	145.6	001.0000	0173.1	128.1	25.50
320.0	100.0000	0276.0	101.4	144.8	001.0000	0173.1	127.8	25.55
321.0	100.0000	0276.5	101.5	144.0	001.0000	0173.1	127.6	25.59
322.0	100.0000	0275.7	101.4	143.2	001.0000	0173.2	127.6	25.60
323.0	100.0000	0276.3	101.5	142.4	001.0000	0173.4	127.5	25.62
324.0	100.0000	0276.6	101.5	141.6	001.0000	0173.5	127.5	25.62
325.0	100.0000	0277.4	101.6	140.8	001.0000	0173.4	127.5	25.61
326.0	100.0000	0276.5	101.5	140.0	001.0000	0173.4	127.7	25.57
327.0	100.0000	0277.1	101.5	139.2	001.0000	0173.4	127.9	25.54
328.0	100.0000	0278.3	101.6	138.4	001.0000	0173.4	128.0	25.51
329.0	100.0000	0277.6	101.6	137.7	001.0000	0173.4	128.4	25.44
330.0	100.0000	0277.6	101.6	136.9	001.0000	0173.3	128.7	25.37
331.0	100.0000	0276.8	101.5	136.1	001.0000	0173.3	129.2	25.28
332.0	100.0000	0276.3	101.5	135.4	001.0000	0173.3	129.7	25.18
333.0	100.0000	0276.0	101.4	134.6	001.0000	0173.3	130.3	25.07
334.0	100.0000	0276.6	101.5	133.9	001.0000	0173.3	130.8	24.97
335.0	100.0000	0276.8	101.5	133.1	001.0000	0173.3	131.4	24.86
336.0	100.0000	0277.7	101.6	132.4	001.0000	0173.2	132.0	24.74
337.0	100.0000	0278.4	101.7	131.7	001.0000	0173.2	132.6	24.61
338.0	100.0000	0278.7	101.7	131.0	001.0000	0173.2	133.4	24.47
339.0	100.0000	0279.2	101.7	130.3	001.0000	0173.2	134.1	24.31
340.0	100.0000	0279.4	101.7	129.6	001.0000	0173.2	135.0	24.15



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**Figure 6.2 Interference Study WLUC-TV (Continued)**

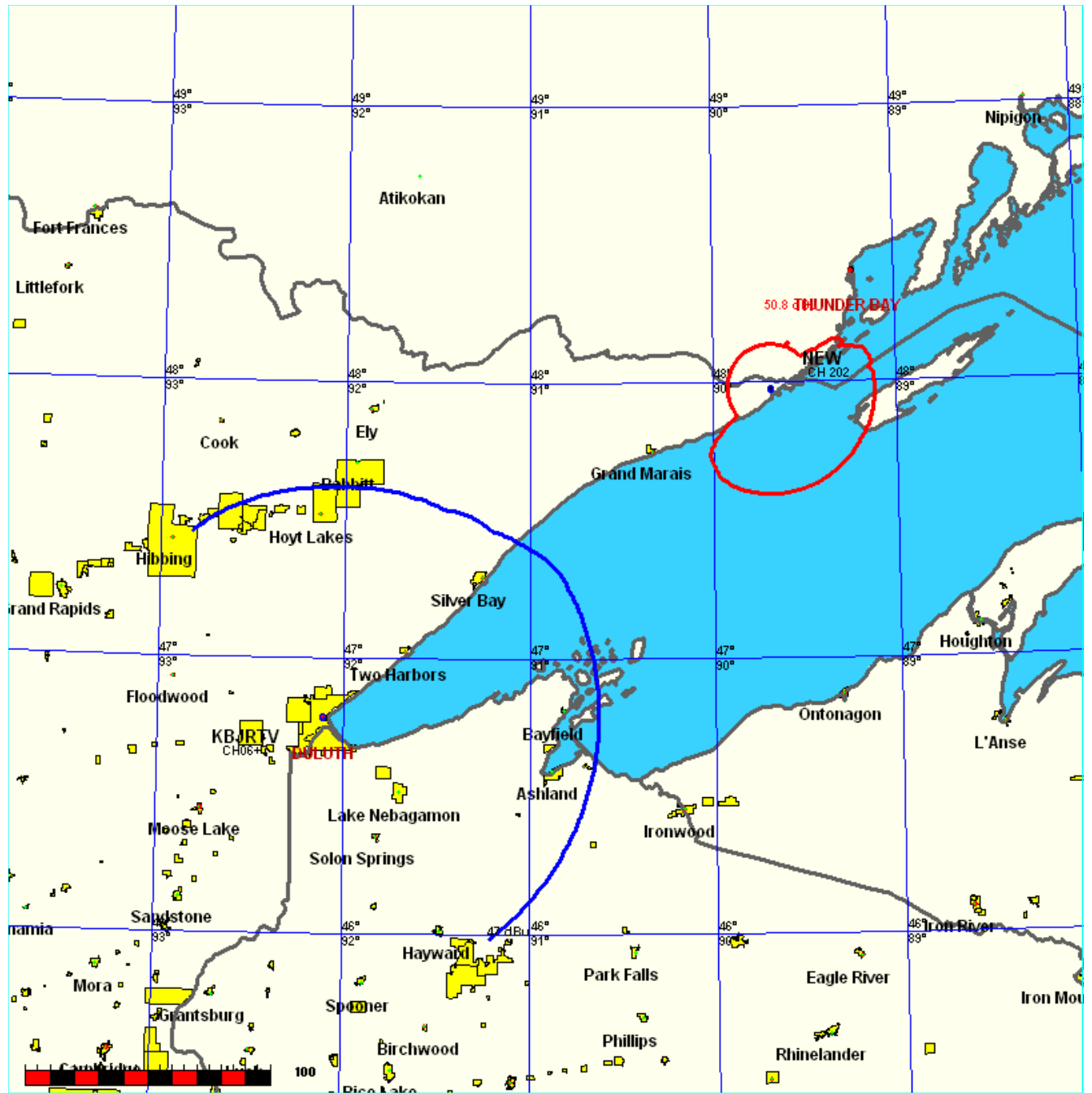
Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
341.0	100.0000	0279.1	101.7	129.0	001.0000	0173.0	135.9	23.96
342.0	100.0000	0278.7	101.7	128.4	001.0000	0172.8	136.9	23.76
343.0	100.0000	0279.2	101.7	127.7	001.0000	0172.5	137.8	23.57
344.0	100.0000	0279.2	101.7	127.1	001.0000	0172.2	138.9	23.36
345.0	100.0000	0279.0	101.7	126.5	001.0000	0171.9	140.0	23.15
346.0	100.0000	0278.9	101.7	126.0	001.0000	0171.7	141.1	22.93
347.0	100.0000	0279.3	101.7	125.4	001.0000	0171.5	142.2	22.71
348.0	100.0000	0279.5	101.8	124.9	001.0000	0171.3	143.4	22.49
349.0	100.0000	0279.7	101.8	124.3	001.0000	0171.1	144.6	22.26
350.0	100.0000	0280.7	101.9	123.8	001.0000	0170.8	145.7	22.03
351.0	100.0000	0280.2	101.8	123.3	001.0000	0170.6	147.1	21.80
352.0	100.0000	0279.7	101.8	122.9	001.0000	0170.4	148.4	21.57
353.0	100.0000	0279.8	101.8	122.4	001.0000	0170.3	149.7	21.34
354.0	100.0000	0279.7	101.8	122.0	001.0000	0170.1	151.1	21.11
355.0	100.0000	0279.0	101.7	121.6	001.0000	0170.0	152.6	20.88
356.0	100.0000	0279.2	101.7	121.2	001.0000	0170.0	154.0	20.66
357.0	100.0000	0280.1	101.8	120.8	001.0000	0169.9	155.4	20.43
358.0	100.0000	0279.5	101.8	120.4	001.0000	0169.8	156.9	20.19
359.0	100.0000	0281.8	102.0	120.0	001.0000	0169.8	158.3	19.95
000.0	100.0000	0284.5	102.2	119.6	001.0000	0169.8	159.7	19.72
001.0	100.0000	0283.6	102.1	119.3	001.0000	0169.8	161.3	19.44
002.0	100.0000	0282.5	102.0	119.0	001.0000	0169.8	162.9	19.15
003.0	100.0000	0282.9	102.1	118.7	001.0000	0169.8	164.5	18.87
004.0	100.0000	0283.4	102.1	118.4	001.0000	0169.9	166.1	18.58
005.0	100.0000	0283.2	102.1	118.2	001.0000	0169.9	167.7	18.29
006.0	100.0000	0283.4	102.1	117.9	001.0000	0169.9	169.3	18.00
007.0	100.0000	0284.4	102.2	117.6	001.0000	0170.0	170.9	17.70
008.0	100.0000	0285.2	102.3	117.4	001.0000	0170.0	172.6	17.41
009.0	100.0000	0285.1	102.3	117.2	001.0000	0170.0	174.3	17.10
010.0	100.0000	0285.2	102.3	117.0	001.0000	0170.0	176.0	16.79
011.0	100.0000	0285.3	102.3	116.8	001.0000	0170.1	177.7	16.48
012.0	100.0000	0283.9	102.2	116.7	001.0000	0170.1	179.4	16.15
013.0	100.0000	0283.7	102.1	116.5	001.0000	0170.1	181.2	15.83
014.0	100.0000	0283.6	102.1	116.4	001.0000	0170.2	182.9	15.51
015.0	100.0000	0285.2	102.3	116.2	001.0000	0170.2	184.6	15.20
016.0	100.0000	0286.5	102.4	116.1	001.0000	0170.2	186.3	14.88
017.0	100.0000	0287.3	102.5	115.9	001.0000	0170.3	188.1	14.56
018.0	100.0000	0288.2	102.5	115.8	001.0000	0170.3	189.9	14.23
019.0	100.0000	0288.2	102.5	115.7	001.0000	0170.4	191.6	13.91
020.0	100.0000	0288.6	102.6	115.7	001.0000	0170.4	193.4	13.58
021.0	100.0000	0288.0	102.5	115.6	001.0000	0170.4	195.2	13.25
022.0	100.0000	0288.5	102.6	115.5	001.0000	0170.4	197.0	12.93
023.0	100.0000	0289.4	102.6	115.5	001.0000	0170.5	198.8	12.61



**FIGURE 6.3 INTERFERENCE STUDY KBJR-TV**

NEW CH 202 A  
1.0 kW 355.9 M COR  
Intef. = 50.8 dBu

KBJRTV CH 06+ 2C BLCT20000517AEX  
100.0 kW, 603.8 M COR  
Prot. = 47 dBu





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**Figure 6.3 Interference Study KBJR-TV (Continued)**

KBJRTV				BLCT20000517AEX				NEW									
Channel = 06+2C								Channel = 202A									
Max ERP = 100 kW								Max ERP = 1 kW									
RCAMSL = 603.8 M								RCAMSL = 357 M									
N. Lat. 46 47 21.0								N. Lat. 47 58 40.0									
W. Lng. 92 06 51.0								W. Lng. 89 41 05.0									
Protected								Interfering									
47 dBu								50.8 dBu									
Azimuth		ERP	HAAT	Dist	Azimuth		ERP	HAAT	Dist	Azimuth		ERP	HAAT	Dist	Actual		
(degrees)		(kW)	(m)	(km)	(degrees)		(kW)	(m)	(km)	(degrees)		(kW)	(m)	(km)	(dBu)		
<hr/>																	
353.0	100.0000	0180.0	092.0		259.0	001.0000	-0107.4	197.4	07.73								
354.0	100.0000	0180.7	092.1		259.0	001.0000	-0107.5	195.9	07.98								
355.0	100.0000	0180.8	092.1		258.9	001.0000	-0107.7	194.3	08.26								
356.0	100.0000	0180.9	092.1		258.8	001.0000	-0107.9	192.7	08.55								
357.0	100.0000	0181.5	092.2		258.8	001.0000	-0108.0	191.1	08.85								
358.0	100.0000	0181.6	092.2		258.7	001.0000	-0108.2	189.5	09.15								
359.0	100.0000	0182.0	092.3		258.6	001.0000	-0108.3	187.9	09.44								
000.0	100.0000	0182.1	092.3		258.5	001.0000	-0108.3	186.3	09.74								
001.0	100.0000	0181.9	092.3		258.4	001.0000	-0108.3	184.8	10.03								
002.0	100.0000	0182.1	092.3		258.3	001.0000	-0108.2	183.2	10.32								
003.0	100.0000	0183.1	092.4		258.1	001.0000	-0108.0	181.6	10.62								
004.0	100.0000	0184.8	092.6		258.0	001.0000	-0107.8	180.0	10.91								
005.0	100.0000	0187.3	092.8		258.0	001.0000	-0107.5	178.4	11.22								
006.0	100.0000	0189.2	093.0		257.8	001.0000	-0106.9	176.8	11.51								
007.0	100.0000	0190.3	093.1		257.7	001.0000	-0106.0	175.2	11.81								
008.0	100.0000	0191.0	093.2		257.5	001.0000	-0105.1	173.7	12.09								
009.0	100.0000	0191.3	093.2		257.3	001.0000	-0104.1	172.2	12.38								
010.0	100.0000	0192.4	093.3		257.1	001.0000	-0103.6	170.6	12.66								
011.0	100.0000	0195.1	093.6		257.0	001.0000	-0103.2	169.0	12.96								
012.0	100.0000	0197.9	093.9		256.8	001.0000	-0102.8	167.4	13.26								
013.0	100.0000	0200.1	094.1		256.6	001.0000	-0102.3	165.9	13.55								
014.0	100.0000	0202.0	094.3		256.4	001.0000	-0101.8	164.3	13.84								
015.0	100.0000	0203.9	094.5		256.2	001.0000	-0101.1	162.8	14.12								
016.0	100.0000	0205.7	094.7		255.9	001.0000	-0100.7	161.3	14.41								
017.0	100.0000	0207.5	094.8		255.7	001.0000	-0100.2	159.8	14.68								
018.0	100.0000	0209.3	095.0		255.4	001.0000	-0099.0	158.3	14.96								
019.0	100.0000	0211.6	095.2		255.1	001.0000	-0097.8	156.8	15.23								
020.0	100.0000	0213.3	095.4		254.8	001.0000	-0096.9	155.3	15.49								
021.0	100.0000	0214.6	095.5		254.5	001.0000	-0095.8	153.9	15.74								
022.0	100.0000	0215.2	095.6		254.1	001.0000	-0093.5	152.6	15.98								
023.0	100.0000	0216.5	095.7		253.7	001.0000	-0091.2	151.2	16.22								
024.0	100.0000	0219.9	096.0		253.4	001.0000	-0089.6	149.8	16.48								



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**Figure 6.3 Interference Study KBJR-TV (Continued)**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
025.0	100.0000	0223.7	096.4	253.1	001.0000	-0087.6	148.3	16.75
026.0	100.0000	0224.8	096.5	252.6	001.0000	-0085.3	147.0	16.98
027.0	100.0000	0225.6	096.6	252.2	001.0000	-0083.5	145.7	17.21
028.0	100.0000	0227.0	096.7	251.7	001.0000	-0082.9	144.5	17.44
029.0	100.0000	0228.9	096.9	251.3	001.0000	-0081.8	143.2	17.67
030.0	100.0000	0228.8	096.9	250.8	001.0000	-0079.0	142.1	17.87
031.0	100.0000	0229.4	097.0	250.2	001.0000	-0077.5	141.0	18.07
032.0	100.0000	0234.8	097.5	249.8	001.0000	-0077.2	139.6	18.34
033.0	100.0000	0244.8	098.5	249.5	001.0000	-0077.2	137.8	18.68
034.0	100.0000	0252.7	099.2	249.1	001.0000	-0077.8	136.1	18.98
035.0	100.0000	0258.0	099.7	248.6	001.0000	-0076.2	134.8	19.24
036.0	100.0000	0261.5	100.1	248.0	001.0000	-0072.8	133.6	19.46
037.0	100.0000	0265.5	100.5	247.4	001.0000	-0069.8	132.4	19.69
038.0	100.0000	0269.5	100.8	246.8	001.0000	-0066.6	131.2	19.91
039.0	100.0000	0273.8	101.2	246.2	001.0000	-0065.1	130.0	20.13
040.0	100.0000	0276.2	101.5	245.6	001.0000	-0062.4	129.1	20.31
041.0	100.0000	0276.7	101.5	244.8	001.0000	-0058.6	128.3	20.45
042.0	100.0000	0279.3	101.7	244.1	001.0000	-0053.2	127.4	20.62
043.0	100.0000	0282.1	102.0	243.4	001.0000	-0048.9	126.6	20.79
044.0	100.0000	0288.3	102.5	242.7	001.0000	-0043.1	125.5	20.99
045.0	100.0000	0297.7	103.4	242.1	001.0000	-0037.3	124.2	21.24
046.0	100.0000	0308.5	104.3	241.4	001.0000	-0031.7	122.8	21.50
047.0	100.0000	0317.1	104.9	240.6	001.0000	-0027.4	121.7	21.71
048.0	100.0000	0324.6	105.5	239.8	001.0000	-0023.8	120.8	21.88
049.0	100.0000	0334.6	106.2	239.0	001.0000	-0016.7	119.8	22.08
050.0	100.0000	0345.5	107.0	238.2	001.0000	-0007.5	118.8	22.28
051.0	100.0000	0355.4	107.7	237.3	001.0000	-0002.5	117.8	22.46
052.0	100.0000	0364.3	108.4	236.4	001.0000	-0000.3	117.0	22.62
053.0	100.0000	0374.0	109.1	235.5	001.0000	0002.1	116.2	22.79
054.0	100.0000	0383.4	109.9	234.5	001.0000	0010.0	115.3	22.95
055.0	100.0000	0392.6	110.7	233.6	001.0000	0016.7	114.6	23.10
056.0	100.0000	0401.2	111.5	232.6	001.0000	0020.1	113.9	23.22
057.0	100.0000	0406.8	112.0	231.6	001.0000	0028.1	113.6	23.28
058.0	100.0000	0410.5	112.3	230.6	001.0000	0031.8	113.5	23.40
059.0	100.0000	0413.2	112.5	229.6	001.0000	0041.5	113.6	23.88
060.0	100.0000	0414.7	112.7	228.6	001.0000	0053.2	113.9	24.38
061.0	100.0000	0415.9	112.8	227.6	001.0000	0065.0	114.2	24.75
062.0	100.0000	0416.9	112.9	226.7	001.0000	0079.6	114.7	25.17
063.0	100.0000	0417.7	112.9	225.7	001.0000	0091.8	115.2	25.48
064.0	100.0000	0418.5	113.0	224.8	001.0000	0099.8	115.8	25.63
065.0	100.0000	0419.1	113.1	223.9	001.0000	0107.3	116.4	25.76
066.0	100.0000	0419.7	113.1	223.0	001.0000	0114.0	117.1	25.84
067.0	100.0000	0420.1	113.2	222.1	001.0000	0118.9	117.9	25.85
068.0	100.0000	0420.5	113.2	221.2	001.0000	0122.9	118.8	25.82



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**Figure 6.3 Interference Study KBJR-TV (Continued)**

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
069.0	100.0000	0420.7	113.2	220.4	001.0000	0126.9	119.7	25.77
070.0	100.0000	0420.8	113.2	219.6	001.0000	0129.7	120.7	25.68
071.0	100.0000	0420.8	113.2	218.8	001.0000	0132.9	121.8	25.58
072.0	100.0000	0420.8	113.2	218.0	001.0000	0135.2	122.9	25.45
073.0	100.0000	0420.8	113.2	217.3	001.0000	0136.8	124.0	25.28
074.0	100.0000	0420.8	113.2	216.6	001.0000	0138.7	125.2	25.12
075.0	100.0000	0420.8	113.2	215.9	001.0000	0140.6	126.5	24.94
076.0	100.0000	0420.8	113.2	215.2	001.0000	0142.7	127.8	24.75
077.0	100.0000	0420.8	113.2	214.6	001.0000	0144.7	129.1	24.56
078.0	100.0000	0420.8	113.2	213.9	001.0000	0146.6	130.5	24.34
079.0	100.0000	0420.8	113.2	213.3	001.0000	0148.3	131.9	24.11
080.0	100.0000	0420.8	113.2	212.8	001.0000	0149.9	133.4	23.87
081.0	100.0000	0420.8	113.2	212.2	001.0000	0151.6	134.8	23.62
082.0	100.0000	0420.8	113.2	211.7	001.0000	0153.1	136.4	23.36
083.0	100.0000	0420.8	113.2	211.2	001.0000	0154.3	137.9	23.08
084.0	100.0000	0420.8	113.2	210.7	001.0000	0155.3	139.5	22.80
085.0	100.0000	0420.8	113.2	210.2	001.0000	0156.4	141.1	22.51
086.0	100.0000	0420.8	113.2	209.8	001.0000	0157.3	142.8	22.23
087.0	100.0000	0420.8	113.2	209.4	001.0000	0158.2	144.5	21.94
088.0	100.0000	0420.8	113.2	209.0	001.0000	0158.9	146.2	21.65
089.0	100.0000	0420.8	113.2	208.6	001.0000	0159.6	147.9	21.37
090.0	100.0000	0420.8	113.2	208.3	001.0000	0160.2	149.6	21.10
091.0	100.0000	0420.8	113.2	207.9	001.0000	0160.8	151.4	20.83
092.0	100.0000	0420.8	113.2	207.6	001.0000	0161.4	153.2	20.56
093.0	100.0000	0420.8	113.2	207.3	001.0000	0162.0	155.0	20.29
094.0	100.0000	0420.8	113.2	207.0	001.0000	0162.5	156.8	20.01
095.0	100.0000	0420.8	113.2	206.8	001.0000	0163.0	158.7	19.72
096.0	100.0000	0420.8	113.2	206.5	001.0000	0163.5	160.5	19.41
097.0	100.0000	0420.8	113.2	206.3	001.0000	0164.0	162.4	19.09
098.0	100.0000	0420.8	113.2	206.1	001.0000	0164.4	164.3	18.76
099.0	100.0000	0420.8	113.2	205.9	001.0000	0164.7	166.2	18.43
100.0	100.0000	0420.8	113.2	205.7	001.0000	0165.0	168.1	18.09
101.0	100.0000	0420.8	113.2	205.6	001.0000	0165.3	170.0	17.75
102.0	100.0000	0420.8	113.2	205.4	001.0000	0165.5	172.0	17.40
103.0	100.0000	0420.8	113.2	205.3	001.0000	0165.7	173.9	17.05
104.0	100.0000	0420.8	113.2	205.2	001.0000	0165.9	175.9	16.70
105.0	100.0000	0420.7	113.2	205.1	001.0000	0166.0	177.8	16.35
106.0	100.0000	0420.7	113.2	205.0	001.0000	0166.1	179.8	15.99
107.0	100.0000	0420.8	113.2	204.9	001.0000	0166.2	181.8	15.63
108.0	100.0000	0420.8	113.2	204.8	001.0000	0166.3	183.7	15.27
109.0	100.0000	0420.7	113.2	204.8	001.0000	0166.3	185.7	14.90
110.0	100.0000	0420.6	113.2	204.8	001.0000	0166.4	187.7	14.54
111.0	100.0000	0420.6	113.2	204.7	001.0000	0166.4	189.7	14.18
112.0	100.0000	0420.7	113.2	204.7	001.0000	0166.4	191.7	13.81
113.0	100.0000	0420.8	113.2	204.7	001.0000	0166.4	193.6	13.45