

***APPLICATION FOR MODIFICATION  
OF CONSTRUCTION PERMIT***

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**W250CQ - IRON RIVER, MICHIGAN  
FACILITY ID: 200556 / BNPFT-20171207ABI  
97.9 MHz / 250 W ERP ND**

**IRON RIVER COMMUNITY BROADCASTING  
CORPORATION**

**FEBRUARY, 2018**

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**JEREMY RUCK & ASSOCIATES, INC.**

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**2.27.2018**

## **APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT**

The following engineering statement and attached exhibits have been prepared for **Iron River Community Broadcasting Corporation** ("Iron River"), permittee of FM translator station W250CQ at Iron River, Michigan, and are in support of their application for modification of construction permit.<sup>1</sup> This application is being filed to modify the existing construction permit for the facility by changing the channel of operation, transmitter site location, and antenna elevation data.

The existing construction permit authorizes operation on FM channel 250 with an effective radiated power of 250 Watts at a center of radiation of 540 meters above mean sea level utilizing a non-directional antenna. The proposed facility would operate on FM channel 249 with an effective radiated power of 250 Watts at a center of radiation of 604 meters above mean sea level, also utilizing a non-directional antenna. Exhibit E-1 provides a comparison between the authorized and proposed 60 dBu service contours. This map demonstrates a large are of overlap between the authorized and proposed contours confirming a minor change to the construction permit.

The proposed W250CQ facility would continue to utilize WFER as its primary facility. Exhibit E-2 illustrates the proposed 60 dBu service contour along with the WFER 2 mV/m service contour along with a twenty-five mile radius centered on the WFER transmitter site. As this map demonstrates, the proposed 60 dBu service contour is fully contained within the WFER 25 mile site radius.

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<sup>1</sup> The Facility ID for W250CQ at Iron River, Michigan is 200556.

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The proposed facility complies with the provisions of Section 74.1204 of the Commission's Rules. Due to the channel of operation, Section 74.1205 is not applicable. Exhibit E-3 is a tabular interference study for the proposed facility. This study demonstrates that the contour overlap provisions of Section 74.1204 would be met by the proposed W250CQ facility to all relevant authorizations. This tabular study is graphically illustrated in Exhibit E-4.

The proposed facility is located in the upper peninsula of Michigan. As a result of this location, the translator is proximally located to the border between the United States and Canada. Exhibit E-5 illustrates the predicted 34 dBu F(50,10) contour of the proposed facility. This map demonstrates that the 34 dBu F(50,10) contour is confined to land area of the State of Michigan. As a result, it is respectfully submitted that the proposed power and height are in compliance with Section 74.1235 of the Commission's Rules, and in compliance with appropriate international agreements.

The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The translator antenna would utilize an existing tower that is registered with the Commission. The addition of the translator antenna to this tower would not increase the existing environmental impact already present from the structure.

Additionally, the proposed facility would not constitute a radiofrequency radiation hazard to persons at the site. The Commission's on-line *FM Model* utility calculates a maximum power density of  $0.720 \mu\text{W}/\text{cm}^2$  at a distance of 37 meters from the tower. This value complies with the uncontrolled environment condition of the Commission's safety standard, and is sufficiently low to

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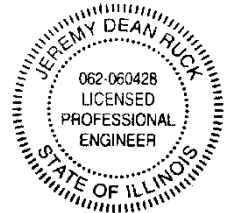
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categorically exclude the facility. The Nicom BKG77/2 model antenna is considered a "type-2" antenna, and was analyzed as such.

Iron River certifies that it will coordinate with all other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Coordination activities will include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature  
License Expires November 30, 2019

Jeremy D. Ruck, PE  
February 27, 2018

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**W250CQ.X**

BNPFT20171207ABI  
Latitude: 46-06-03.20 N  
Longitude: 088-32-22.50 W  
ERP: 0.25 kW  
Channel: 249  
Frequency: 97.7 MHz  
AMSL Height: 604.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

**W250CQ.C**

BNPFT20171207ABI  
Latitude: 46-03-55 N  
Longitude: 088-38-17 W  
ERP: 0.25 kW  
Channel: 250  
Frequency: 97.9 MHz  
AMSL Height: 540.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

*Jeremy Ruck & Associates, Inc.*

- Proposed W250CQ 60 dBu Service Contour
- Authorized W250CQ 60 dBu Service Contour
- Area of Contour Overlap

Authorized W250CQ  
Transmitter Site

Proposed W250CQ  
Transmitter Site

W250CQ.X

W250CQ.C

Exhibit E-1  
Service Contour Comparison  
W250CQ - Iron River, Michigan  
Iron River Community Broadcasting Corp.  
February, 2018

Scale 1:200,000

0 2 4 6 km

**W250CQ.X**

BNPFT20171207ABI  
Latitude: 46-06-03.20 N  
Longitude: 088-32-22.50 W  
ERP: 0.25 kW  
Channel: 250  
Frequency: 97.9 MHz  
AMSL Height: 604.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

WFER Transmitter  
Site Location

*Jeremy Ruck & Associates, Inc.*

- W250CQ Proposed 60 dBu Service Contour
- WFER 2 mV/m Service Contour
- WFER 25 mile Site Radius

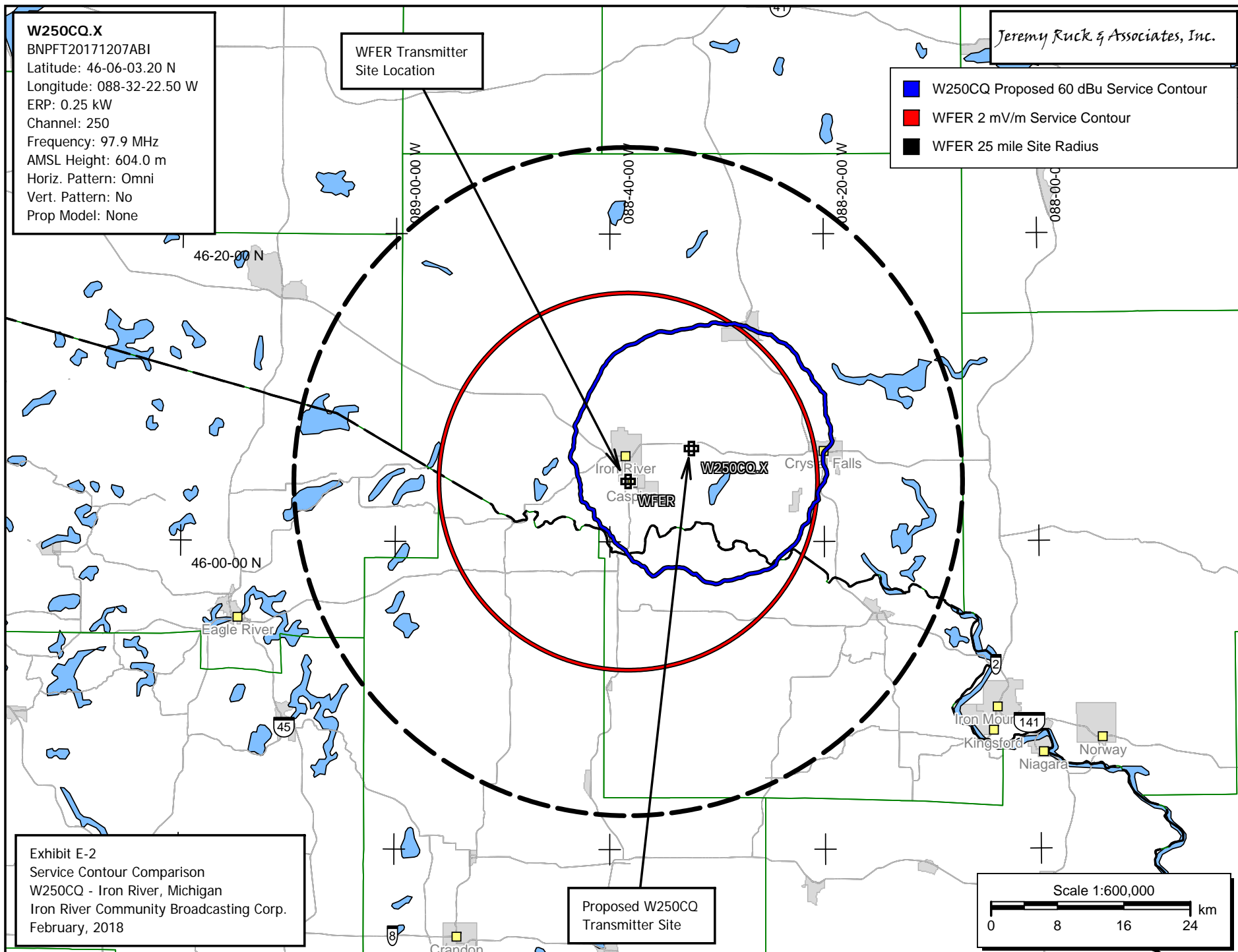
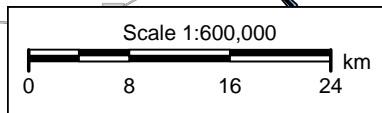


Exhibit E-2  
Service Contour Comparison  
W250CQ - Iron River, Michigan  
Iron River Community Broadcasting Corp.  
February, 2018

Proposed W250CQ  
Transmitter Site



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Consulting Engineers - Canton, Illinois

Exhibit E-3 - Tabular Interference Study  
W250CQ - Iron River, Michigan  
CH# 249D - 97.7 MHz, Pwr= 0.25 kW, HAAT= 140.9 M, COR= 604 M  
Average Protected F(50-50)= 15.31 km  
Omni-directional

DISPLAY DATES  
DATA 02-27-18  
SEARCH 02-27-18

REFERENCE  
46 06 03.2 N.  
88 32 22.5 W.

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
250D Iron River	W250CQ	CP _C_ MI	242.5 62.4	8.56 BNPFT20171207ABI	46 03 55.0 88 38 17.0	0.250	15.2 540	10.8 Iron River Community Broad	-21.0*	-23.8*
249C3 Houghton	WOLV	LIC _C_ MI	359.1 179.0	114.98 BLH20020523AAK	47 08 06.0 88 33 53.0	6.500 180	100.6 448	38.1 Houghton Community Broadca	-0.5	25.4
251A Kingsford	WEUL	LIC _CX MI	130.2 310.5	45.80 BLED20180110AAB	45 50 02.3 88 05 17.0	1.000 135	1.7 492	19.8 Gospel Opportunities, Inc.	27.2	24.8
247C1 Rhinelander	WHDG	LIC NCX WI	212.4 32.0	94.63 BLH20090720AAZ	45 22 50.0 89 11 22.0	100.000 168	7.9 664	62.2 Raven License Sub, Lic	71.3	31.2
248D Ishpeming	W248BU	LIC _C_ MI	51.2 231.9	89.98 BLFT20141001CJB	46 36 14.0 87 37 15.0	0.250	31.0 695	20.9 Great Lakes Radio, Inc.	42.1	44.1
246C0 Escanaba	WGLQ	LIC _CN MI	87.7 268.8	122.73 BLH19820713AB	46 08 04.0 86 56 52.0	100.000 326	10.1 577	72.2 Amc Partners Escanaba, Lic	95.6	49.4

Terrain database is NED 03 SEC, R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone= East Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
Reference station has protected zone issue: Canada

**W250CQ.X**

BNPFT20171207ABI

Latitude: 46-06-03.20 N

Longitude: 088-32-22.50 W

ERP: 0.25 kW

Channel: 249

Frequency: 97.7 MHz

AMSL Height: 604.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

*Jeremy Ruck & Associates, Inc.*

- 60 dBu F(50,50) Service Contour
- 40 dBu F(50,10) Interference Contour
- 54 dBu F(50,10) Interference Contour
- 100 dBu F(50,10) Interference Contour

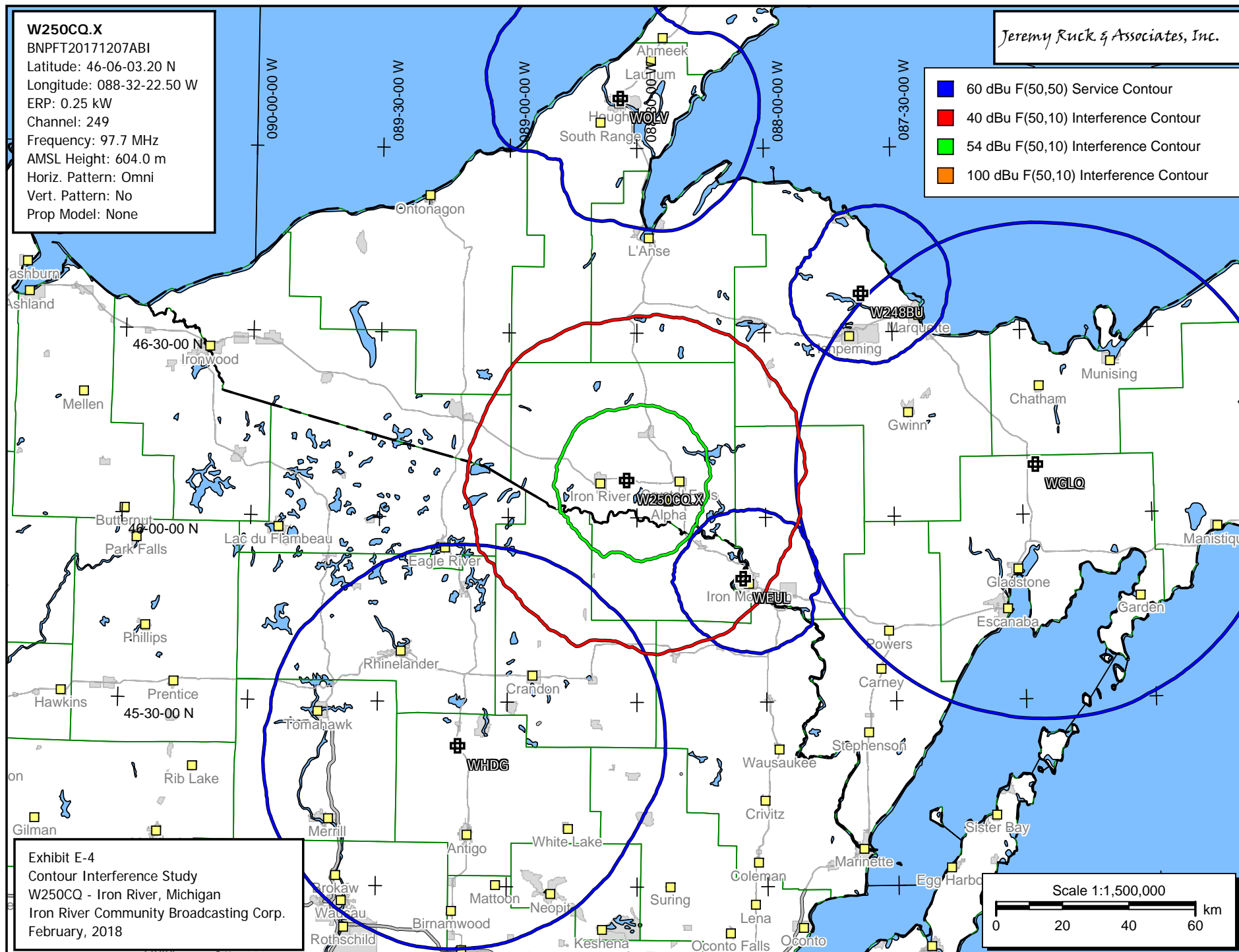


Exhibit E-4  
Contour Interference Study  
W250CQ - Iron River, Michigan  
Iron River Community Broadcasting Corp.  
February, 2018

Scale 1:1,500,000  
0 20 40 60 km



**W250CQ.X**

BNPFT20171207ABI

Latitude: 46-06-03.20 N

Longitude: 088-32-22.50 W

ERP: 0.25 kW

Channel: 249

Frequency: 97.7 MHz

AMSL Height: 604.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

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34 dBu F(50,10) Interference Contour

