

TECHNICAL EXHIBIT
MINOR MODIFICATION APPLICATION
FM STATION WTCK (FACILITY ID 121256)
CHARLEVOIX, MICHIGAN
CH 215A 1.0 KW (MAX-DA) V-POL ONLY 185 M

Technical Narrative

This Technical Exhibit supports a minor modification application to the construction permit for non-commercial educational (NCE) FM station WTCK, at Charlevoix, Michigan. The current authorization specifies a non-directional effective radiated power (ERP) of 6 kilowatts (kW) (vertical polarization only) and antenna height above average terrain (HAAT) of 13 meters.¹ This application proposes to change transmitter site, reduce the effective radiated power and increase antenna height above average terrain.

Proposed Facilities

The proposed transmitter site is 19.3 kilometers south-east of the authorized transmitter site (NAD27 coordinates: 45-11-04 N, 85-05-33 W). The FCC antenna structure registration number is 1000383 (see Figure 1). It is proposed to operate with a maximum antenna effective radiated power of 1 kilowatt (vertical polarization only) and an antenna HAAT of 185 meters.

The 115 dBu predicted “blanketing” contour of the proposed station would extend radially less than 0.5 kilometer from the transmitting site. No interference problems are expected; however the applicant recognizes its responsibility to resolve complaints of

¹ See BNPED-19991028ACT

blanketing interference as required by Section 73.318, and any electromagnetic problems, which may result from its proposed operation in accordance with the applicable rules.

Coverage Contours

The FCC predicted coverage contour for the propose operation was calculated in accordance with Section 73.313. No consideration was given to terrain roughness correction factors. The 60 dBu coverage contour shown in Figure 2 encompasses all of the city limits of Charlevoix (2000 U.S. Census).

Allocation Considerations

As can be seen from the allocation map shown in Figure 3, the proposed facility satisfies the contour overlap provisions of Section 73.509 of the Commission's Rules for all facilities except for the application for construction permit to modify the WJOG(FM) facilities at Good Hart, Michigan.

Station WJOG is authorized to operate on channel 217C3 with a directional antenna maximum ERP of 7.2 kilowatts (BNPED-19991104AAP). This authorized operation is not involved in any prohibited contour overlap with either the currently authorized or proposed WTCK operation.

Station WJOG filed an application (BMPED-20040310ACR) to eliminate its directional antenna along with some other technical changes to the power/height and transmitter site. The proposed, non-directional WJOG operation does not provide contour protection to either the presently authorized WTCK facility nor its herein proposed facility. Furthermore, it was noted that that this WJOG application was dismissed by the Commission on March 9, 2005. A subsequent *Petition for Reconsideration* was filed by WJOG on April 13, 2005 and was then denied by the Commission on August 24, 2005. Therefore, it is not believed that this WJOG application requires protection by the herein WTCK proposal.

Channel 6 Protection

Station WCML(TV) on channel 6 (Alpena, MI) is located 73 kilometers east of the proposed site. The proposed FM interfering contour is located entirely within the Grade B contour for WCML(TV). Figure 4 is a map showing the predicted interference area from the proposed FM operation, as specified in Section 73.525. The map also shows the minor civil divisions (MCD) for the adjacent counties.

The population within the predicted interference area was determined by a uniform distribution method throughout the affected minor civil divisions (MCDs), per Section 73.525(e)(2). Below is a table showing the breakdown of the population per MCD.

MCD/Place	Total Population Within MCD/Place	Land Area Encompassed By Proposed WTCK Interference Area Within MCD/Place	Total Land Area of MCD/Place	Percentage of MCD/Place	Resulting Interference Population
East Jordan MCD	2,507	4.3 km ²	7.9 km ²	54.4%	1,365
South Arm MCD	1,844	18.2 km ²	80.0 km ²	22.8%	420
Wilson MCD	1,560	16.6 km ²	88.1 km ²	18.8%	294
Eveline MCD	2,022	14.1 km ²	68.4 km ²	20.6%	417
TOTAL	N/A	N/A	N/A	N/A	2,496

The uniform population within the predicted interference area, based on 2000 U.S. Census is 2,496 persons (less than the limit of 3000 per Section 73.525(c)). No population adjustments were claimed.

There are no other channel 6 TV stations located within the 180 kilometer search distance as specified in Section 73.525(a).

Canadian Allocation Study

The proposed site is located 129 kilometers from the nearest point of the Canadian border. There appears to be one Canadian allotment of concern: the allotment for Channel 215 at Sault Ste Marie, Ontario, a Class B allotment that has a protected contour extending radially 65 kilometers. The map in Figure 5 indicates that there is no contour overlap between WTCK and the Canadian allotment. Furthermore, the proposed WTCK “worst-case” 34 dBu interfering contour does not overlap any Canadian Territory.

Radiofrequency Electromagnetic Field Exposure

The proposed facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. Using an assumed “worst-case” downward relative field value of 0.5, a radiation center of 91 meters above ground level, and a maximum effective radiated power of 1.0 kilowatts, vertically-only polarized, predicted ground level power density would be less than 0.001 mW/cm^2 . This is also less than five percent of the Commission’s guideline in an uncontrolled environment for an FM radio station.²

Access to the transmitting site is restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower or any nearby adjacent towers, 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.

² The FCC maximum guideline for a FM broadcast station in an uncontrolled environment is 0.2 mW/cm^2 .

It is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be provided to the FCC by the tower owner as part of the tower registration process.

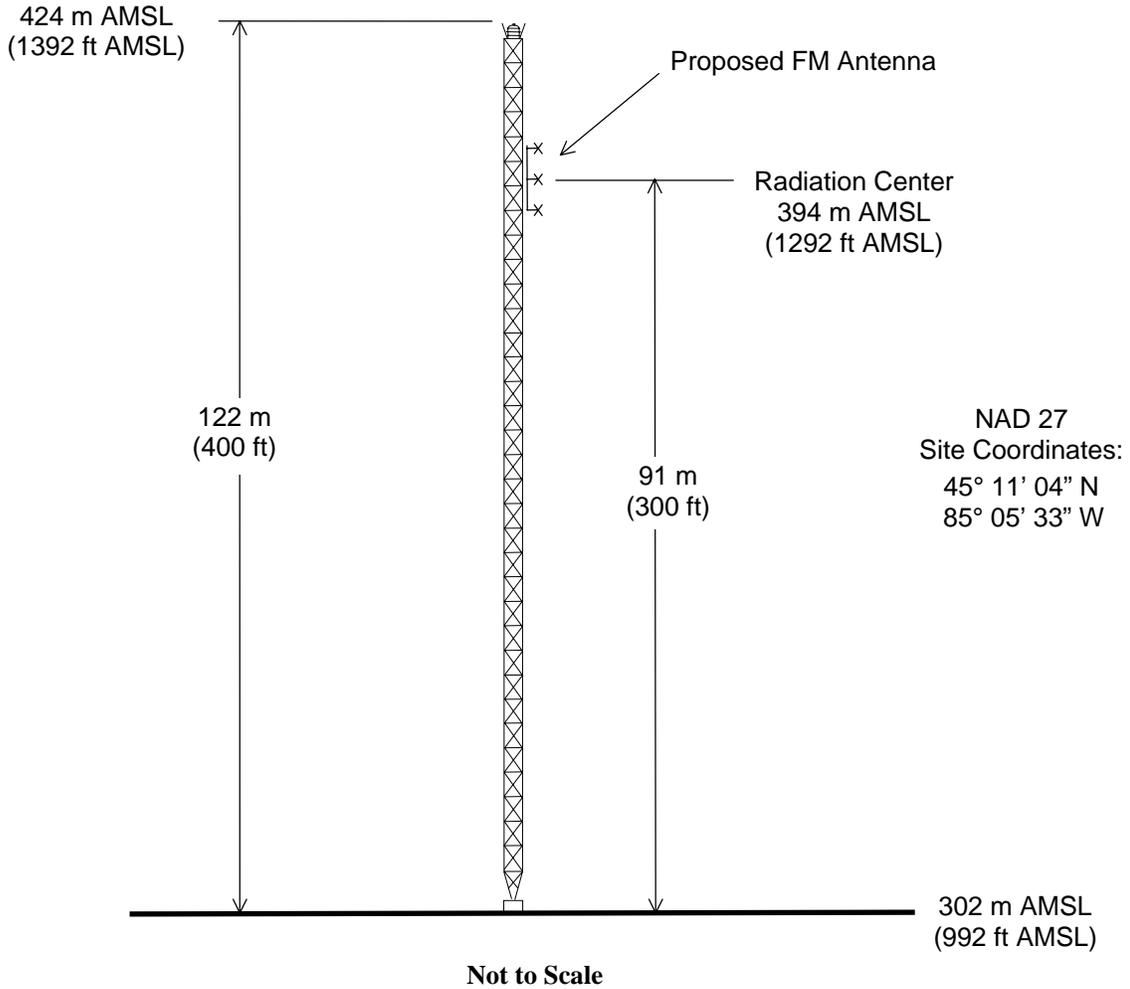
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January 25, 2006



Registration No. 1000383



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

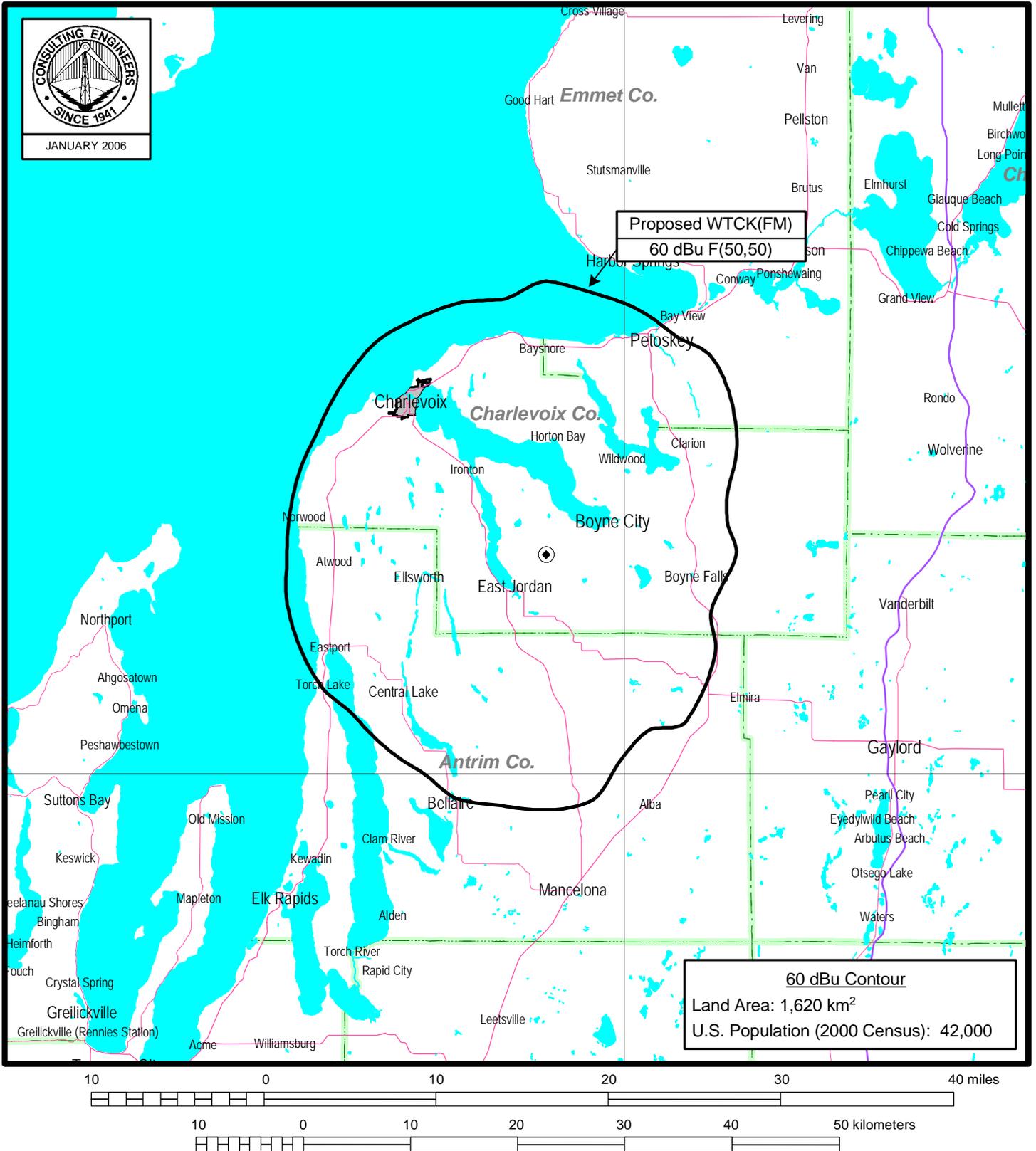
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Figure 2



PREDICTED COVERAGE CONTOUR

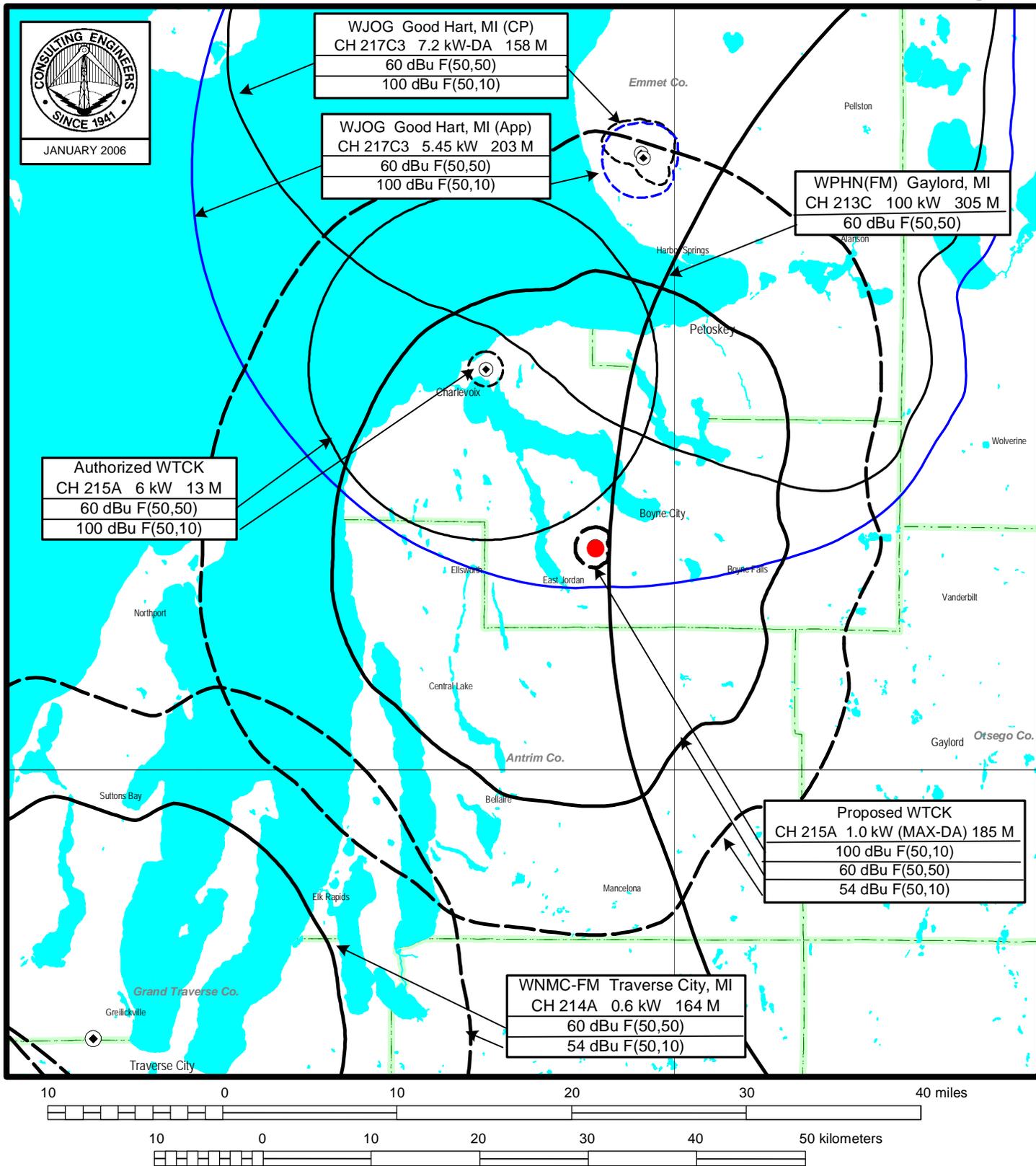
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Figure 3



CONTOUR OVERLAP MAP

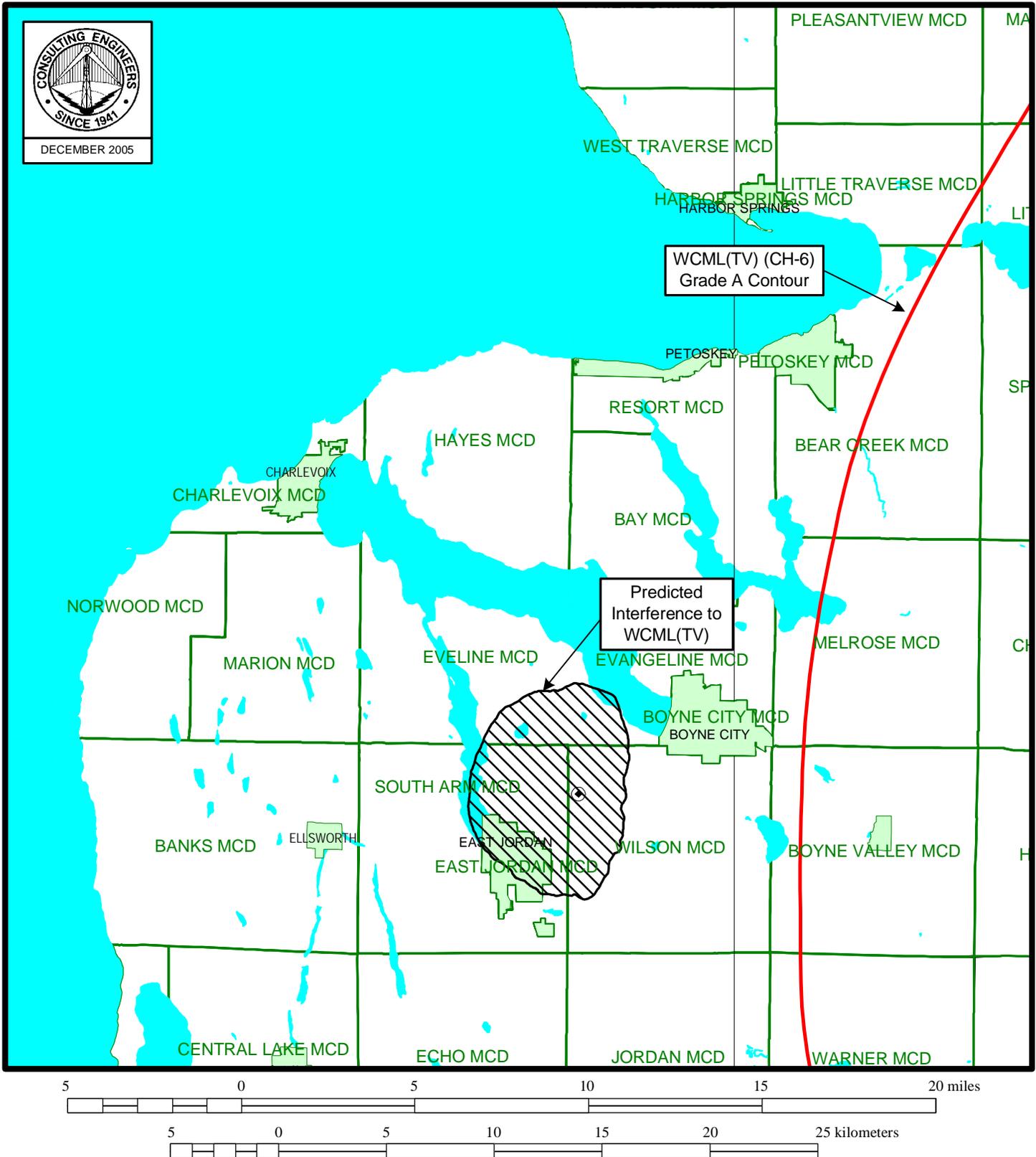
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Figure 4



**CH 6 INTERFERENCE MAP WITH U.S.
CENSUS MINOR CIVIL DIVISIONS (MCD)**

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