

Comprehensive Engineering Statement

prepared for

Polnet Communications, Ltd.

W254BP(FX) Deerfield, IL

Facility ID 155076

Channel 256D 0.08 kW 48 meters AGL

Polnet Communications, Ltd. (“*Polnet*”), permittee of FM Translator W254BP, currently licensed in Wisconsin Rapids, WI (180.92 miles distant) seeks to relocate this FM Translator for use with Class B AM station WEEF(AM) in compliance with the recent “250-mile Window Waiver” under the FCC’s *AM Revitalization Order*. The instant application seeks to change the location, ERP and height of the proposed translator. *Polnet* proposes to move the station to Tower #4 of the WEEF(AM) antenna system, which is Antenna Structure Registration Number 1253380 located at 42-08-20.1 N, 87-53-07.2 W (NAD 27). The proposed antenna will be an RFS CPF500-1 omnidirectional, single-bay antenna, circularly polarized, mounted at 48 meters AGL with 80 Watts ERP.

Allocation Considerations

The location of the 60 dBμ coverage contour of the proposed translator is shown in the map provided as **Figure 1**. As shown in **Figure 2**, the proposed translator coverage contour remains completely within the 2 mV/m WEEF(AM) coverage contour and the 25 mile radius from WEEF(AM), thus complying with §74.1201(j).

A study of nearby FM facilities on co-channel, adjacent-channel, and intermediate frequencies was conducted to identify which stations require further study to demonstrate compliance under §74.1204. The contour protection for pertinent co-channel and first adjacent channel stations is demonstrated in **Figure 3**.

Pertinent data for determining the distances to the contour included the antenna elevation above mean sea level, geographic coordinates, effective radiated power, and, where appropriate, directional antenna patterns were retrieved from the FCC’s CDBS database system. The contour locations were determined using digitized 3 arc-second U.S.G.S. terrain data along radials spaced every degree from the transmitter site and an implementation of the Commission's TVFMFS computer program which simulates the FM propagation curves.

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Protection of second-adjacent stations WFMT(FM) and WUSN(FM) is achieved pursuant to §74.1204(d) by demonstrating that the proposed translator's interfering contour does not reach populated areas. The WFMT(FM) contour-method field strength is at least 68.82 dBμ at the proposed translator site, and the WUSN(FM) contour-method field strength is at least 69.00 dBμ at the proposed translator site. Thus, based on the -40 dB desired-to-undesired ratio specified in §74.1204(a)(3), the appropriate second-adjacent interfering signal level at this location is 108.82 dBμ. Using the distance from the proposed antenna and the proposed antenna vertical plane (elevation) pattern, predicted field strengths were calculated and plotted in **Figure 4**. As shown, a maximum field strength of no more than 106.49 dBμ is predicted at the ground level at any distance from the tower base. The nearest possible population is at least 90 meters from the tower base. Thus, considering the antenna height and elevation pattern, the proposed translator signal does not reach the level of 108.82 dBμ that would be considered interference to surrounding population.

The proposed site is located 390.36 km from the Canadian border, and more than 1835 km from the Mexican border, beyond the coordination distances with either country. The nearest FCC monitoring station is 167.17 km distant at Allegan, MI. This distance exceeds the threshold minimum distance specified in §73.1030 that would suggest consideration of the monitoring station. The Green Bank NRAO Quiet Zone is 701.87 km distant. The nearest airport is 3.11 km distant. There are no AM stations other than co-owned WEEF and WKTA within 3 km.

It is therefore believed that the proposed facility satisfies all of the pertinent Commission Rules and Policies now in effect regarding allocation matters.

Environmental Considerations

The proposed facility will operate with a circularly-polarized ERP of 0.08 kW utilizing an RFS CPF500-1 antenna system on existing tower structure ASRN 1253376. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. Because no change in structure height is proposed, no change in current structure marking and lighting requirements is

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anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

Polnet is proposing to locate this facility on an existing tower which is part of the antenna system for two diplexed AM stations: WKTA(AM), 1330 kHz, Evanston, IL, (Facility ID 52909); and WEEF(AM), 1430 kHz, Deerfield, IL, (Facility ID 72957). Pursuant to §74.1237 of the FCC Rules, Polnet will comply with §1.30003 to ensure that the AM arrays are not adversely affected.

Human Exposure to Radiofrequency Radiation

The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility meets the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

The general population/uncontrolled maximum permitted exposure ("MPE") limit specified in §1.1310 for the entire FM broadcast band is $200 \mu\text{W}/\text{cm}^2$. For the purpose of this study, "public access" will be considered at the base of the tower at a location two-meters above ground.

Using the FCC's FM Model program and a worst-case EPA Type 1 antenna it was determined that the proposed facility would contribute a worst-case RF power density of $1.7 \mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure, or 0.9 percent of the general population/uncontrolled limit.

§1.1307(b)(3) states that facilities at locations with multiple emitters are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent of the pertinent MPE limit. Since the instant situation meets the five percent exclusion test at all ground level areas, the impact of any other facilities near this

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site may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor at ground level as defined under §1.1307(b).

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy will not be caused by the proposal at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower access will continue to be restricted and controlled through the use of a locked fence. According to information provided by the applicant, appropriate RF exposure warning signs are posted.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will be employed protecting maintenance workers from excessive exposure when work must be performed on the tower in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines would otherwise be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations. Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under §1.1306 of the Rules, hence preparation of an Environmental Assessment is not required.

Conclusion

It is therefore believed that the proposed facility satisfies all of the pertinent Commission Rules and Policies now in effect.

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W254BP As Proposed
60 dB μ F(50,50) Contour

Scale 1:200,000



EXHIBIT 13 - FIGURE 2
PROPOSED FM TRANSLATOR
SECTION 74.1201(J) COMPLIANCE

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Cavell, Mertz & Associates, Inc.
Manassas, Virginia

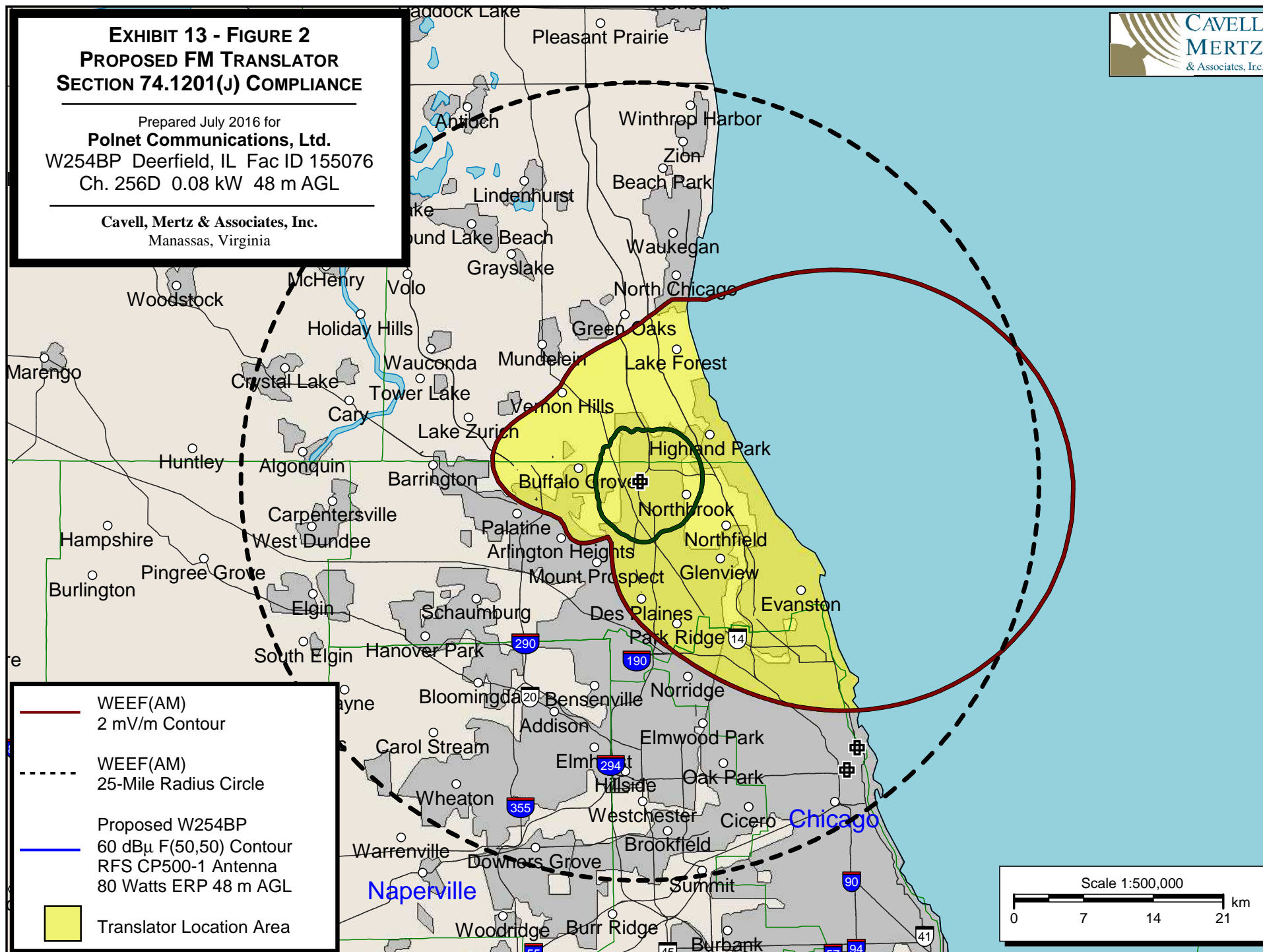


EXHIBIT 13 - FIGURE 3
PROTECTED AND INTERFERING CONTOURS
CO-CHANNEL FACILITIES

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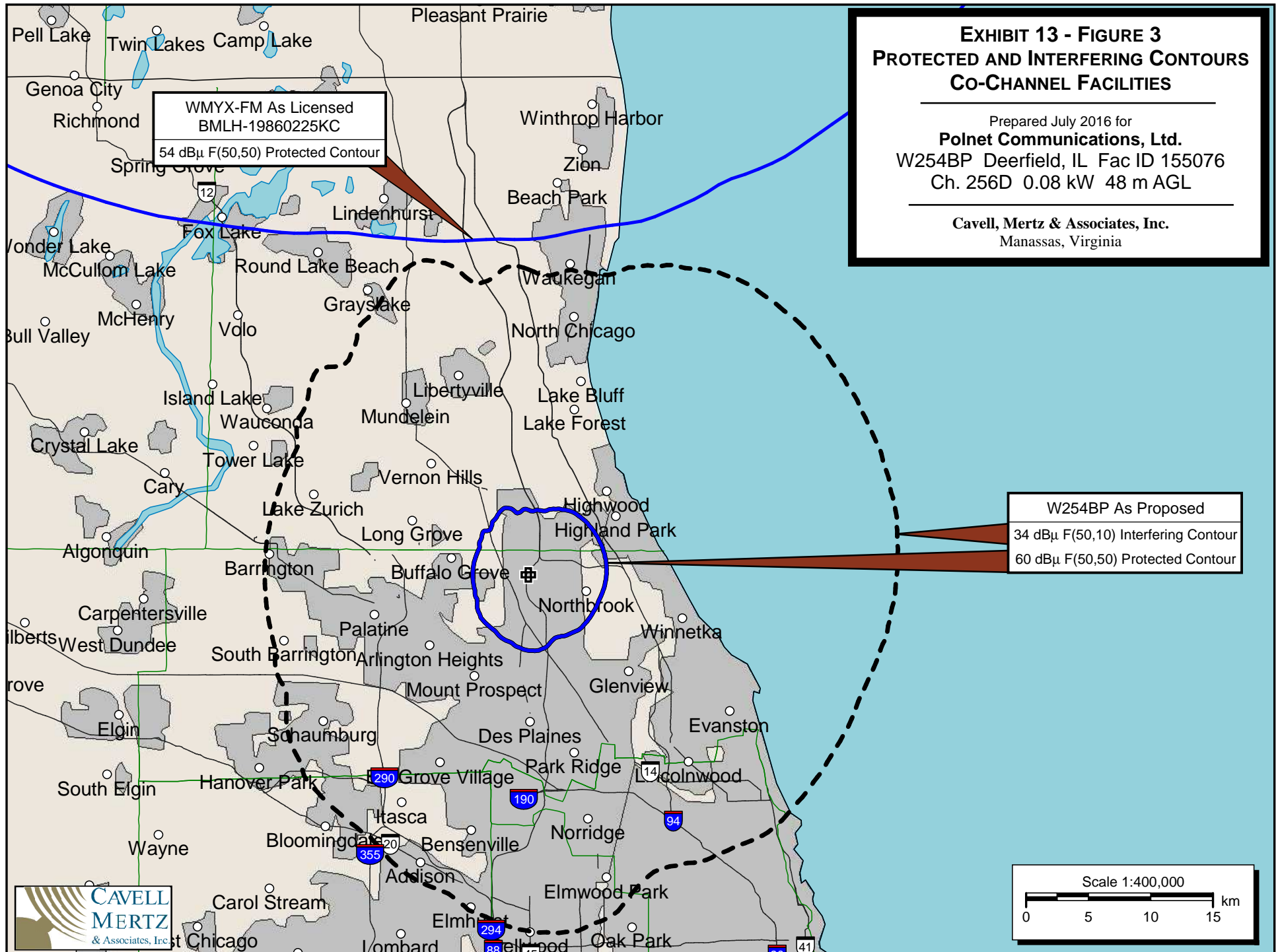


EXHIBIT 13 - FIGURE 4
PREDICTED GROUND LEVEL
FIELD STRENGTHS

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