

Comprehensive Engineering Statement

prepared for

Polnet Communications, Ltd.

W284DA(FX) Chicago, IL

Facility ID 155174

Channel 284D 0.05 kW 360 meters AGL

Polnet Communications, Ltd. ("Polnet"), Licensee of FM Translator W284DA, seeks to modify the License BLFT-20170118ABH to change the antenna orientation of the translator. The proposed antenna is a Scala CL-FM directional, single-bay antenna, vertically polarized, mounted at 360 meters AGL and oriented 2 degrees True North with 50 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 WRDZ(AM) coverage contour, 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.

Second-adjacent WBMX(FM) and WOJO(FM) contour protection is achieved pursuant to §74.1204(d) by demonstrating that the proposed translator's interfering contour does not reach populated areas. The WBMX(FM) contour-method field strength is at least 110.15 dBμ at the proposed translator site and the WOJO(FM) contour-method field strength is at least 113.22 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 150.15 dBμ. Using the distance from the proposed antenna and the proposed antenna vertical plane

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(elevation) pattern, predicted field strengths were calculated and plotted in **Figure 4**. As shown, a maximum field strength of no more than 120.6 dBμ is predicted at the roof of the building, which is 15 meters below the proposed antenna, and the site of the nearest possible population. Thus, considering the antenna height and elevation pattern, the proposed translator signal does not reach the level of 150.15 dBμ that would be considered interference to surrounding population.

The proposed site is located 370 km from the Canadian border, and more than 1800 km from the Mexican border, which is beyond the coordination distances with either country. The nearest FCC monitoring station is 159.23 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 670.9 km distant. There are no airports within 15 km. There are no AM stations 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 vertically-polarized ERP of 50 Watts with a single bay non-directional antenna at 360 meters on the Trump Chicago Tower, which is ASRN 1279395. This structure also hosts the WPVN-CD transmit antenna. 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 anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

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

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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 on the roof top area at a location two-meters above the floor.

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 $9.4 \mu\text{W}/\text{cm}^2$ at two meters above roof level near the antenna support structure, or 4.7 percent of the general population/uncontrolled limit.

The co-located Class A television station has an ERP of 15 kW and contributes a power density of less than $139.21 \mu\text{W}/\text{cm}^2$ or 49 percent of the general population/uncontrolled limit at channel 20. Total power density is 53.7 percent of the general population/uncontrolled limit.

It should be noted that there is no public access allowed on the roof deck directly under the antenna support structure. Further, the proposed antenna is mounted at the edge of the parapet wall of the building. The roof area is secured behind locked doors. In the event that maintenance workers such as window washers, etc., must be allowed on the roof deck, the power output of the translator and television station will be decreased or shut off as appropriate in order to protect these employees and comply with the building RF Exposure program.

Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor in areas of public access 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,

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members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Accordingly, broadcast spire access will continue to be restricted and controlled through the use of locked access doors. 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 will not occur at the base of the broadcast spire. 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.

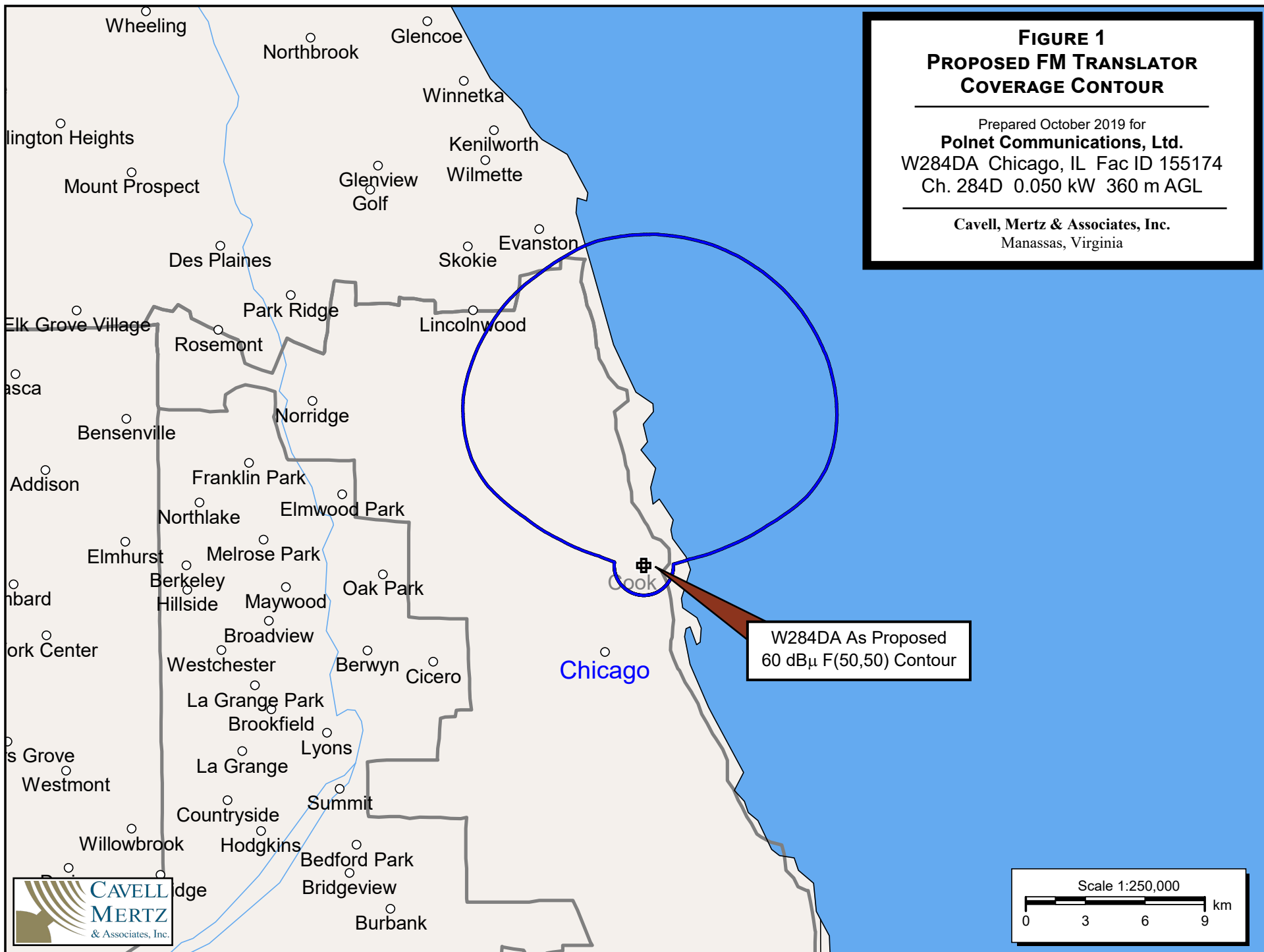


FIGURE 2
PROPOSED FM TRANSLATOR
SECTION 74.1201(J) COMPLIANCE

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Cavell, Mertz & Associates, Inc.
Manassas, Virginia

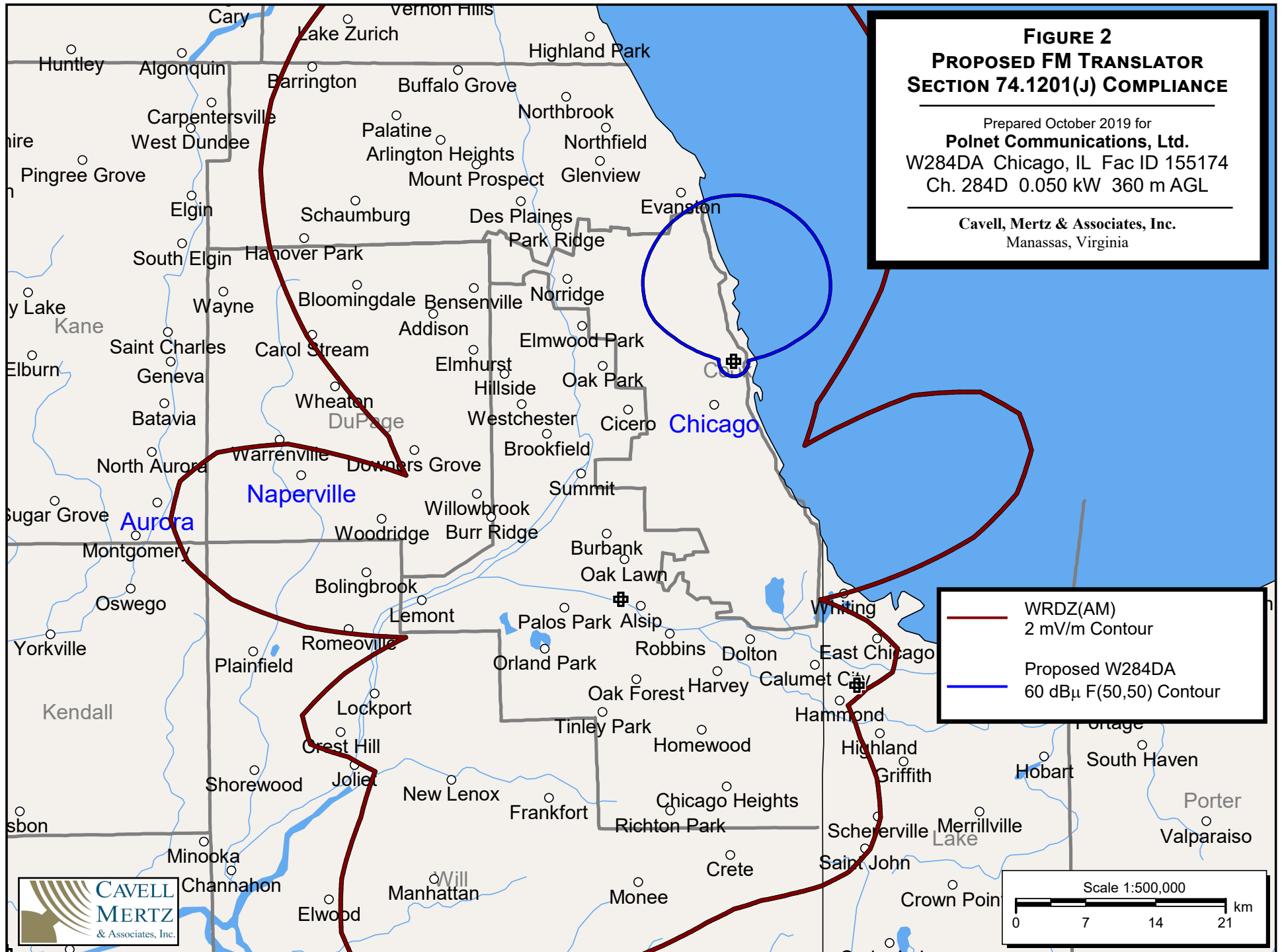


FIGURE 3
PROTECTED AND INTERFERING CONTOURS
CO-CHANNEL FACILITIES

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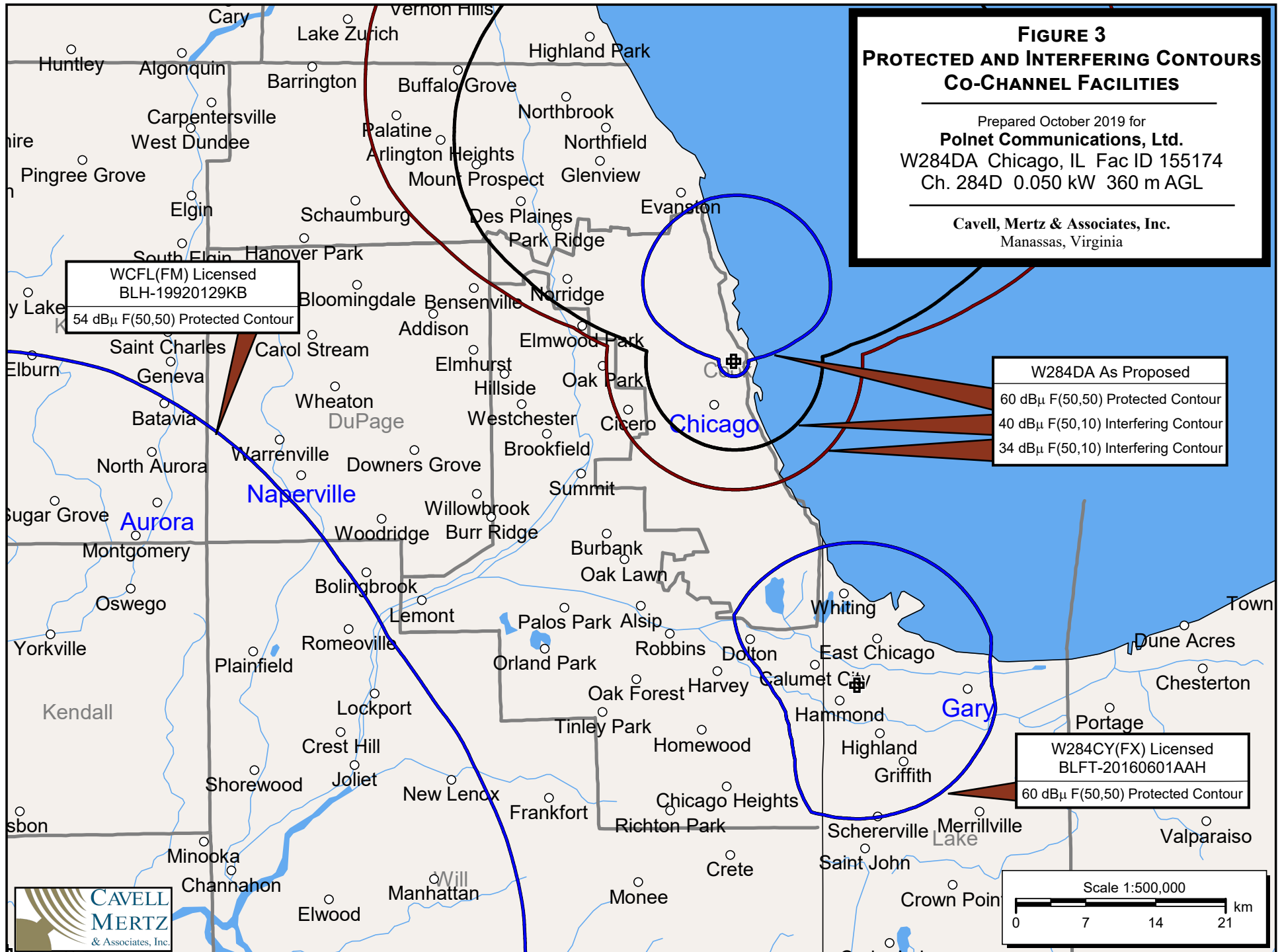


FIGURE 4
PREDICTED ROOFTOP LEVEL
FIELD STRENGTHS

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