

Comprehensive Engineering Statement

prepared for

Polnet Communications, Ltd.

W300CP Evanston, Illinois

Facility ID 147928

Channel 240D 0.08 kW

Polnet Communications, Ltd. (“Polnet”), proposed assignee of FM Translator Construction Permit W300CP, seeks to relocate this FM Translator for use with WKTA(AM), in compliance with the recent “250-Mile Window Waiver” under the AM Revitalization Program. The instant application proposes to re-locate the translator to Channel 240D at 0.08 kW and 248m AMSL to the tower with Antenna Registration Number 1253376 located at 42-08-20.4 N 87-53-08.7 W (NAD 27), 200 miles distant.

The location of the 60 dB μ coverage contour of the proposed translator is shown in the map provided as **Figure 1**. Polnet proposes to operate this facility as a fill-in translator for WKTA (Facility ID 52909, 1330 kHz Evanston, IL). As shown in **Figure 1**, the proposed translator coverage contour is completely within the 2 mV/m WKTA coverage contour and a 25-mile radius from the WKTA transmitter site, 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 2** and **Figure 3** respectively.

The protection of second-adjacent stations WEBG and WBBM-FM is achieved pursuant to §74.1204(d) by demonstrating that the proposed translator’s interfering contour does not reach populated areas. As shown in **Figure 4**, the WEBG FCC contour-method field strength is 67.0 dB μ at the proposed translator site and the WBBM-FM FCC contour-method field strength is 68.6 dB μ 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 contour at this location is 107.0 dB μ . Using the proposed antenna vertical plane (elevation) pattern, ground-level field strengths¹ were predicted. As shown in **Figure 5**, a maximum field strength of 106.5 dB μ is predicted at the ground level locations. Thus, considering the antenna height and elevation pattern, the interfering signal does not reach any population.

¹ Free-space-loss predicted field strengths considered the antenna elevation pattern provided by the manufacturer and slant distances to head-height locations two meters above ground level.

Comprehensive Engineering Statement

(page 2 of 4)

The proposed site is located more than 300 km from both the Canadian and Mexican borders, well beyond the coordination distances with either country. The nearest FCC monitoring station is 167 km distant at Allegan, MI. This distance exceeds by a great margin the threshold minimum distance specified in §73.1030 that would suggest consideration of the monitoring station.

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

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 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 supporting a two 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.

Comprehensive Engineering Statement

(page 3 of 4)

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.

The formula used for calculating FM signal density in this analysis is essentially the same as equation ten (10) in OET 65:

$$S = (33.4098) (F^2) (ERP) / D^2$$

Where:

- S = power density in microwatts/cm²
- F = relative field factor
- ERP = total (average ERP in Watts)
- D = distance in meters

Using the above formula, the antenna height of 47.8 m above ground, the facility ERP, and a maximum relative-field value of 100% in every direction, it was determined that the proposed facility would contribute a worst-case RF power density of $2.5 \mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure, or 1.3 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 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

Comprehensive Engineering Statement

(page 4 of 4)

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.

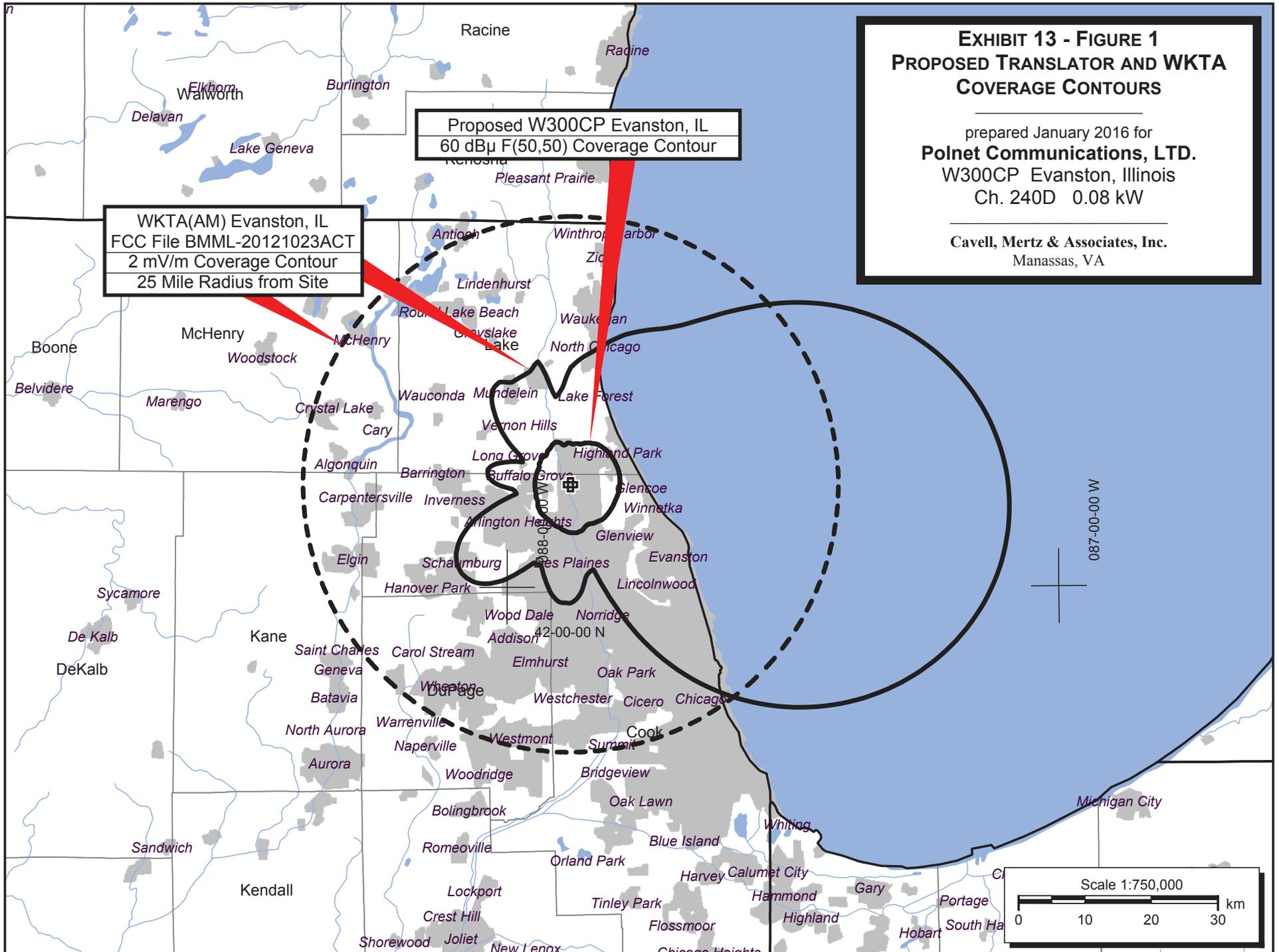
**EXHIBIT 13 - FIGURE 1
PROPOSED TRANSLATOR AND WKTA
COVERAGE CONTOURS**

prepared January 2016 for
Polnet Communications, LTD.
W300CP Evanston, Illinois
Ch. 240D 0.08 kW

Cavell, Mertz & Associates, Inc.
Manassas, VA

Proposed W300CP Evanston, IL
60 dBu F(50,50) Coverage Contour

WKTA(AM) Evanston, IL
FCC File BMMML-20121023ACT
2 mV/m Coverage Contour
25 Mile Radius from Site



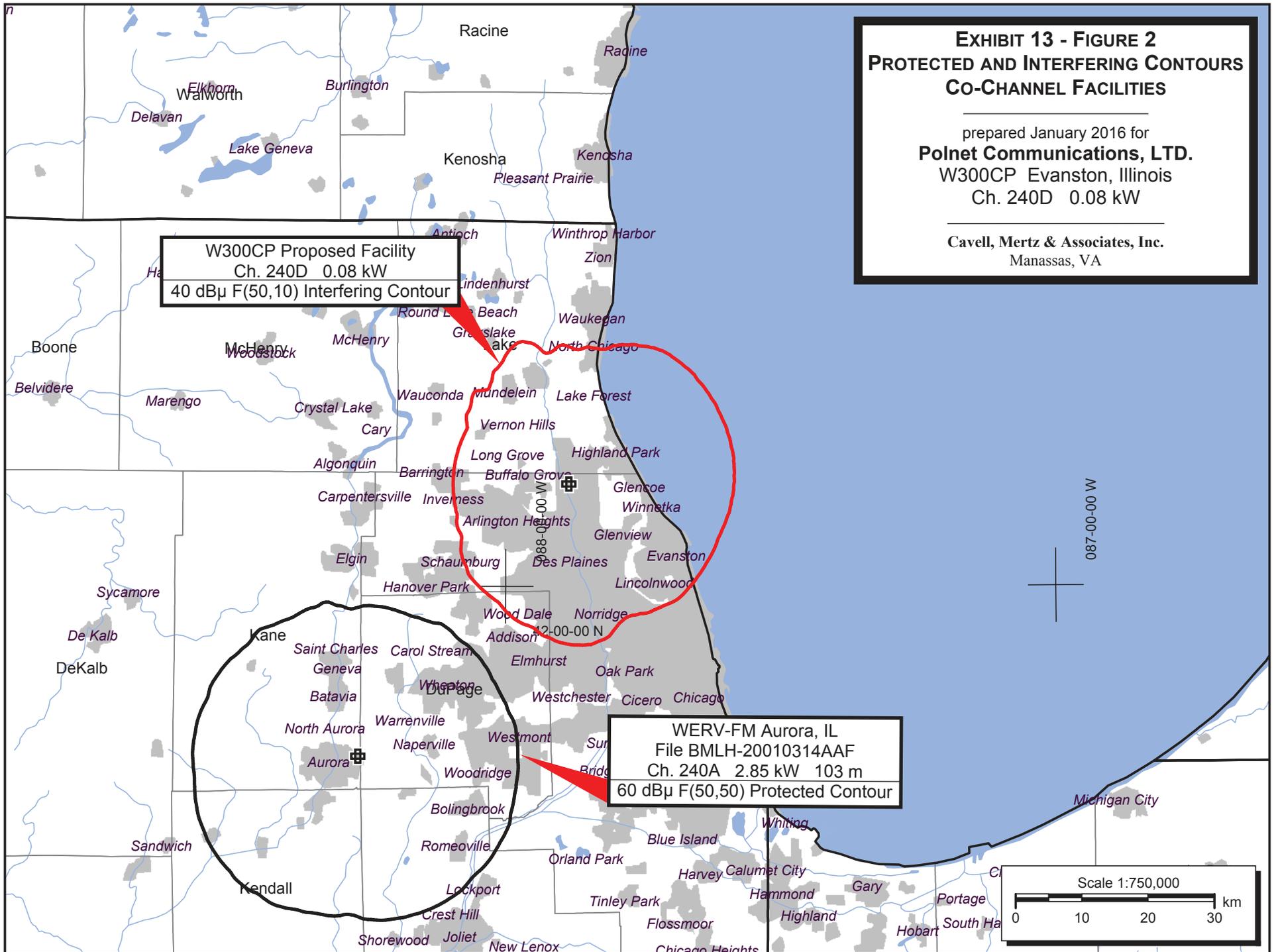
**EXHIBIT 13 - FIGURE 2
PROTECTED AND INTERFERING CONTOURS
CO-CHANNEL FACILITIES**

prepared January 2016 for
Polnet Communications, LTD.
W300CP Evanston, Illinois
Ch. 240D 0.08 kW

Cavell, Mertz & Associates, Inc.
Manassas, VA

W300CP Proposed Facility
Ch. 240D 0.08 kW
40 dBμ F(50,10) Interfering Contour

WERV-FM Aurora, IL
File BMLH-20010314AAF
Ch. 240A 2.85 kW 103 m
60 dBμ F(50,50) Protected Contour



**EXHIBIT 13 - FIGURE 3
PROTECTED AND INTERFERING CONTOURS
FIRST-ADJACENT CHANNEL FACILITIES**

prepared January 2016 for
Polnet Communications, LTD.
W300CP Evanston, Illinois
Ch. 240D 0.08 kW

Cavell, Mertz & Associates, Inc.
Manassas, VA

WLKG(FM) Lake Geneva, WI
File BLH-19940527KC
Ch. 241A 6 kW 100 m
60 dBμ F(50,50) Protected Contour

W300CP Proposed Facility
Ch. 240D 0.08 kW
48 dBμ F(50,10) Interfering Contour
54 dBμ F(50,10) Interfering Contour

WRIT-FM Milwaukee, WI
File BLH-20000606ACL
Ch. 239B 34 kW 186 m
54 dBμ F(50,50) Protected Contour

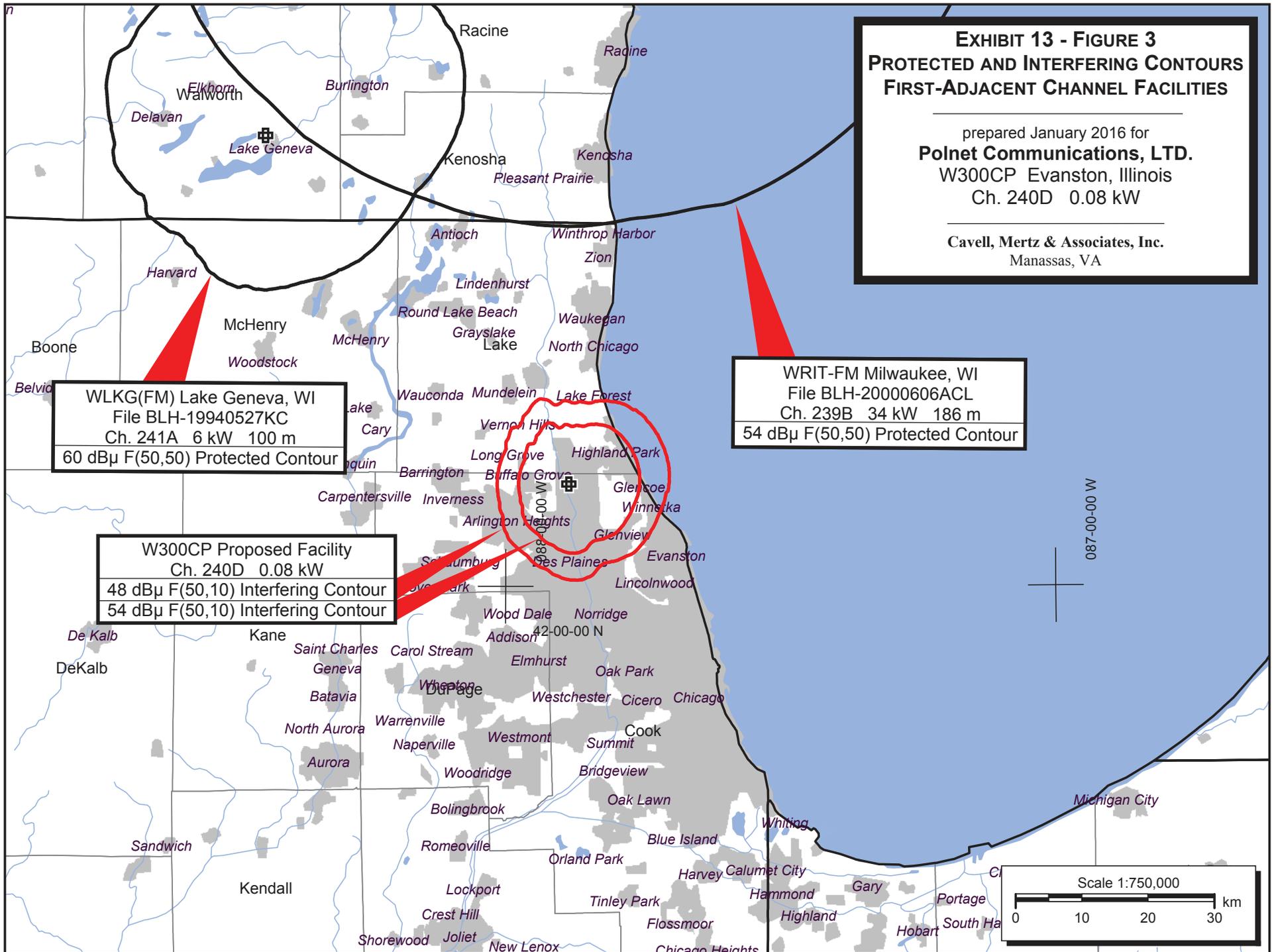


EXHIBIT 13 - FIGURE 4
PROTECTED AND INTERFERING CONTOURS
SECOND-ADJACENT CHANNEL FACILITIES

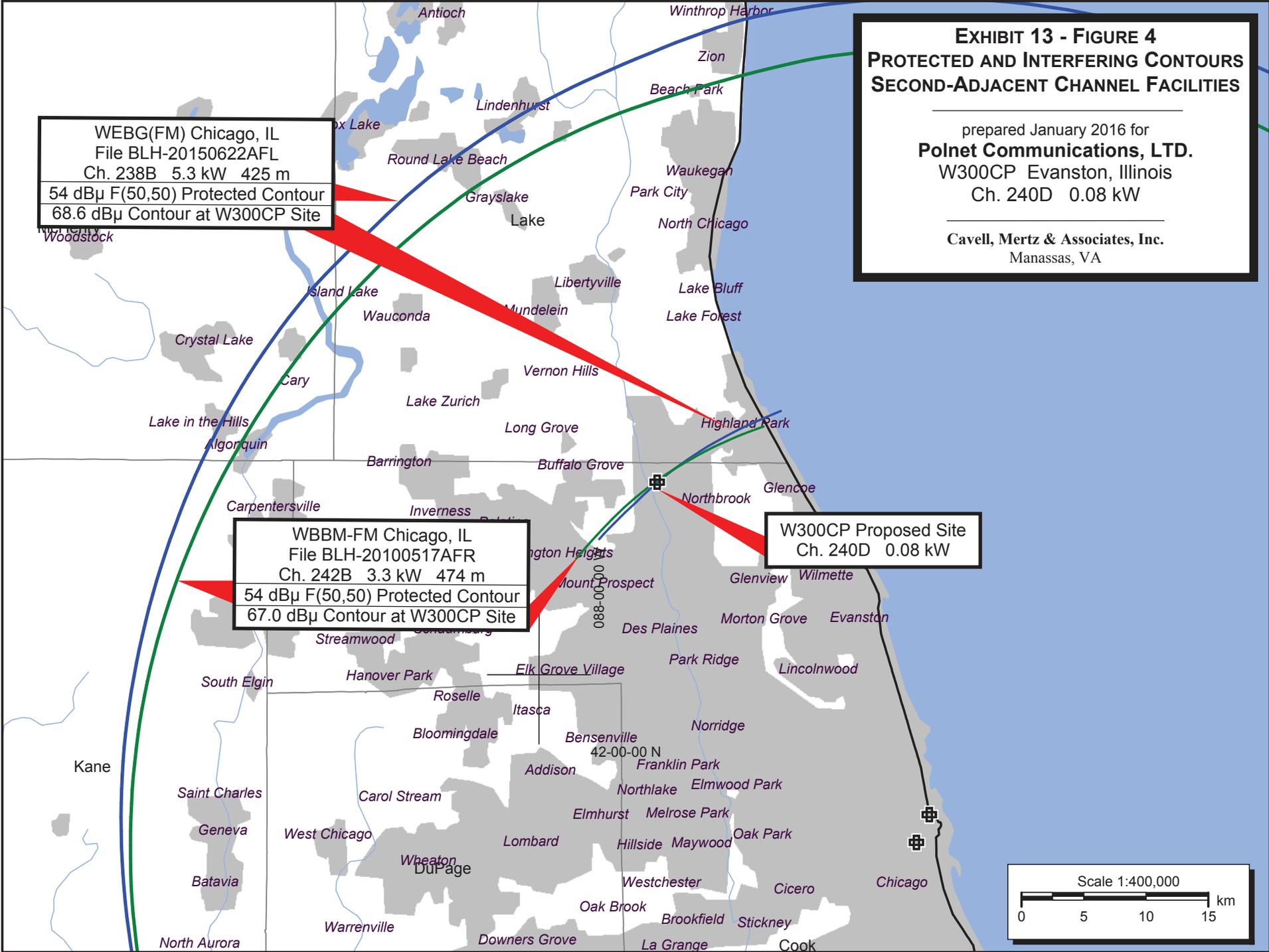
prepared January 2016 for
Polnet Communications, LTD.
 W300CP Evanston, Illinois
 Ch. 240D 0.08 kW

Cavell, Mertz & Associates, Inc.
 Manassas, VA

WEBG(FM) Chicago, IL
 File BLH-20150622AFL
 Ch. 238B 5.3 kW 425 m
 54 dBμ F(50,50) Protected Contour
 68.6 dBμ Contour at W300CP Site

WBBM-FM Chicago, IL
 File BLH-20100517AFR
 Ch. 242B 3.3 kW 474 m
 54 dBμ F(50,50) Protected Contour
 67.0 dBμ Contour at W300CP Site

W300CP Proposed Site
 Ch. 240D 0.08 kW



**EXHIBIT 13 - FIGURE 5
PREDICTED GROUND LEVEL
FIELD STRENGTHS**

prepared January 2016 for
Polnet Communications, LTD.
W300CP Evanston, Illinois
Ch. 240D 0.08 kW

Cavell, Mertz & Associates, Inc.
Manassas, VA

