

TECHNICAL EXHIBIT
MINOR CHANGE APPLICATION
FOR CONSTRUCTION PERMIT
STATION WFND-LP (FACILITY ID 21475)
FINDLAY, OHIO

NOVEMBER 22, 2004

CH 22(0) 55 KW-DA

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Technical Narrative

This technical exhibit supports a minor change application from low power television (LPTV) station WFND-LP at Findlay, Ohio (Facility ID 21475).

According to the Federal Communications Commission (FCC) database, station WFND-LP is licensed to operate on channel 22 with a minus (-) carrier offset and a directional antenna (DA) system (BLTTL-20030721ACB). The maximum visual effective radiated power (ERP) is 18 kilowatts (kW). The antenna center of radiation is 86 meters above ground level (AGL) and 331.3 meters above mean sea level (AMSL). The transmitter site coordinates are 41-06-40, 83-38-54 (NAD-27). The FCC antenna structure registration number is 1047246.

Station WFND-LP proposes to relocate its transmitter site, change the carrier offset, and increase ERP. It is proposed to relocate the WFND-LP directional antenna system to an existing tower near Bluffton, Ohio. The antenna structure registration number for the tower is 1230766 and the site coordinates are 40-56-26, 83-52-43 (NAD-27). The proposed site is approximately 27.1 kilometers southwest from the present site. It is proposed to mount the present Andrew model ALP12L2-HSMR antenna system with the center of radiation at 85.6 meters AGL, and 330.7 meters AMSL (see Figure 1). The major lobe of the antenna pattern will be oriented toward 315 degrees True (see Figure 2). The proposed maximum visual ERP is 55 kW. It is proposed to employ a zero (0) carrier offset. There is no proposed change in the channel number (22) or city of assignment (Findlay, OH).

The peak gain for the Andrew ALP12L2-HSMR directional antenna system is 35.64 (15.52 dB). The antenna will be coupled to the transmitter through 100.6 meters (330 feet) of Andrew LDF7-50A 1-5/8 inch foam dielectric coaxial transmission line. The manufacturer's average and peak power handling capability of the line on channel 22 are 6.4 kW and 9.2 kW respectively. The efficiency of the line on channel 22 is 67.4%. The transmitter power output (TPO) will be 2.3 kW. This combination results in the proposed maximum visual ERP of 55 kW.

There are no other known broadcast stations at the proposed WFND-LP site.

NTSC Allocation Considerations

A study has been conducted using the provisions of Sections 74.705, 74.707 and 74.709 of the FCC rules to assure that the proposal will not create prohibited interference with other authorized or pending analog (NTSC) full-power TV, LPTV and Class A TV stations. The proposed WFND-LP channel 22(0) operation complies with the FCC's allocation standards with respect to other analog assignments, except for stations WBKA-CA on channel 22(0) at Bucyrus, Ohio, WKEF(TV) on channel 22(+) at Dayton, Ohio, and WSBT-TV on channel 22(0) at South Bend, Indiana. The applicant proposes use of the interference procedures outlined in the FCC's OET-69 Bulletin and a 1 kilometer grid with respect to stations WBKA-CA, WKEF(TV), and WSBT-TV. The proposed WFND-LP operation complies with the FCC's 0.5% "de minimis" interference policy. A waiver of the FCC rules is requested based on use of the OET-69 procedures.

The proposed WFND-LP site is 122 kilometers from the nearest point of the US/Canada border. Hence, consideration has been given to Canadian TV and DTV assignments. The only Canadian allotment on channel 22 within 400 kilometers of the proposed WFND-LP site is station CIII-TV on channel 22(-) at Stevenson, Ontario. For purposes of the US/Canada TV agreement station CIII-TV is considered a Class C allotment. According to the Canada TV database, station CIII-TV operates with a directional antenna system. The maximum visual ERP is 1022 kW and the antenna height above average terrain

(HAAT) is 110 meters. The CIII-TV antenna center of radiation is 290 meters AMSL. The site coordinates are 42-03-41, 82-29-05. Station CIII-TV is located 170.4 kilometers at a bearing of 42.5 degrees True (northeast) from the proposed WFND-LP site. Stations WFND-LP will use a zero (0) carrier offset and station CIII-TV uses a minus (-) carrier offset. Since the stations use different offsets, a co-channel desired-to-undesired (D/U) interference ratio of 28 dB is applicable. Figure 3 is a map showing the predicted 36 dBu F(50,10) contour for the proposed WFND-LP operation. As shown, the proposed WFND-LP 36 dBu F(50,10) interfering contour does not overlap the Canadian border.

It is believed the proposed WFND-LP operation complies with the US/Canada TV Agreement. The applicant recognizes that it is a secondary service and must protect full service TV and DTV facilities if it should cause prohibited interference. If necessary, it is respectfully requested that the WFND-LP proposal be forwarded to Canada for its consideration and consent.

The closest point of the Mexican border is more than 2000 kilometers to the southwest. The closest FCC monitoring station is at Allegan, Michigan, approximately 253 kilometers to the northwest. The closest point of the National Radio Quiet Zone (VA/WV) is more than 340 kilometers to the southeast. The Table Mountain Radio Quiet Zone (CO) is more than 1800 kilometers to the west. The closest radio astronomy site using channel 37 is at Green Bank, West Virginia, approximately 443 kilometers to the southeast. These separations are considered sufficient to not be a coordination concern.

DTV Allocation Considerations

Pertinent US and Canadian DTV allotments and assignments on channels 21, 22 and 23 have been examined. There are no Canadian DTV allotments on channels 21 through 23 that are close enough for concern. Domestic (US) DTV allotments and assignments have been examined using the procedures outlined in the FCC's OET-69

Bulletin.¹ The proposed WFND-LP operation complies with the FCC's "de minimis" (0.5%) interference policy.

The applicant recognizes the proposal is secondary to authorized full-service analog and DTV operations. The applicant understands that it must correct and/or eliminate prohibited interference that may result from its proposed operation. If necessary, a waiver of the FCC rules is respectfully requested based on use of the procedures outlined in the FCC's OET-69 Bulletin.

Radiofrequency Electromagnetic Field Exposure

The proposed WFND-LP facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. A visual ERP of 55 kW with 10% aural power was assumed. A relative field value of 0.35 was assumed for the Andrew 12-bay antenna's downward radiation (see Figure 2). The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0161 mW/cm². This is less than 5% of the FCC's recommended limit of 0.35 mW/cm² for channel 22 for an "uncontrolled" environment. It is less than 1% of the FCC's recommended limit for a "controlled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, 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.

¹ The duTreil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 1 km was employed. A Sun based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

Figure 4 is a map showing the predicted 74 dBu F(50,50) contours for the present WFND-LP operation (18 kW-DA) and the proposed WFND-LP operation (55 kW-DA). As shown, there is overlap between the present and proposed 74 dBu contours. The WFND-LP proposal should be considered a minor change application.

If there are questions concerning this technical statement or the technical portion of this application, please communicate with the office of the undersigned.

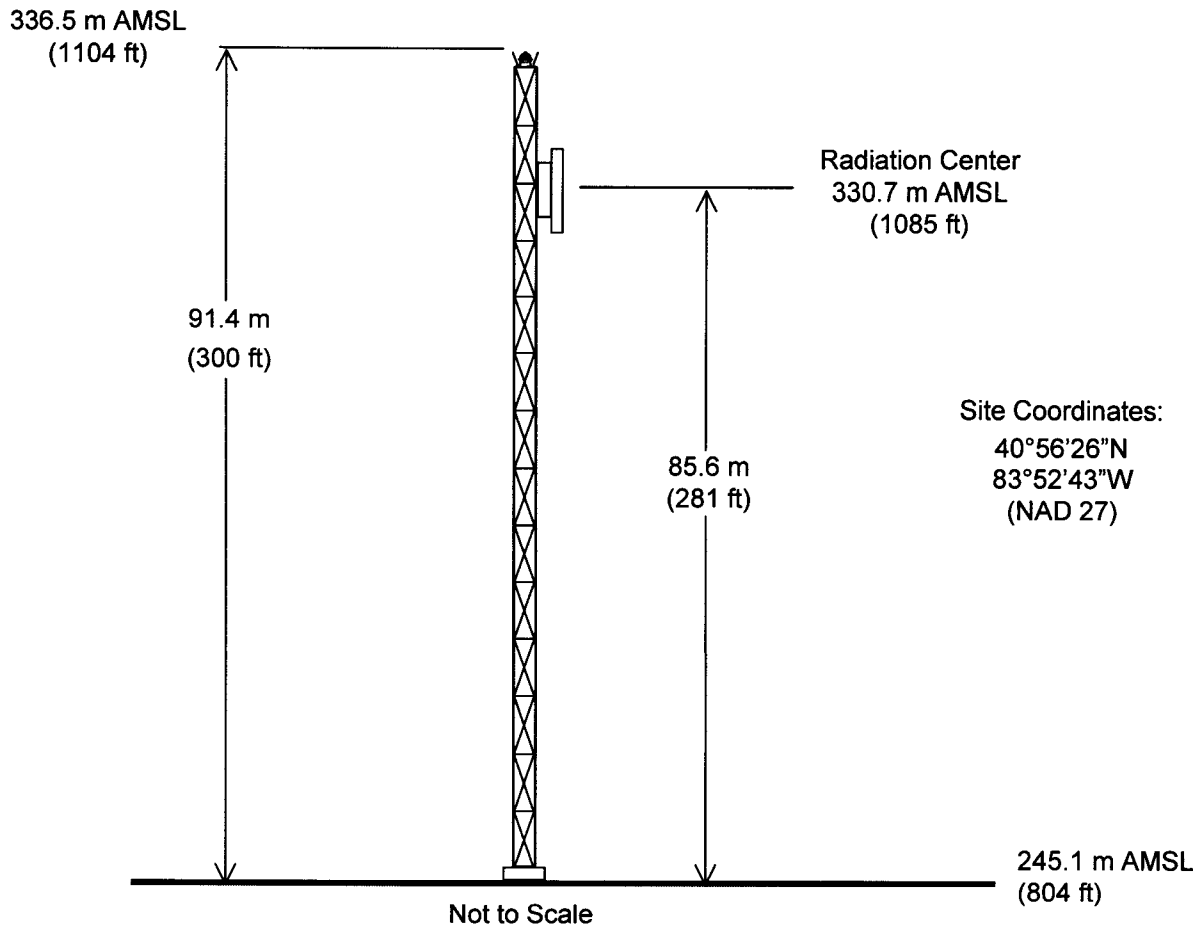
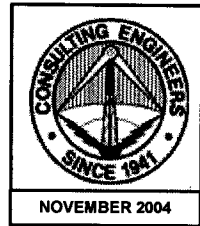
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November 22, 2004

Figure 1

FCC Tower ID: 1230766



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION WFND-LP
FINDLAY, OHIO
CH 22(0) 55 KW-DA

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



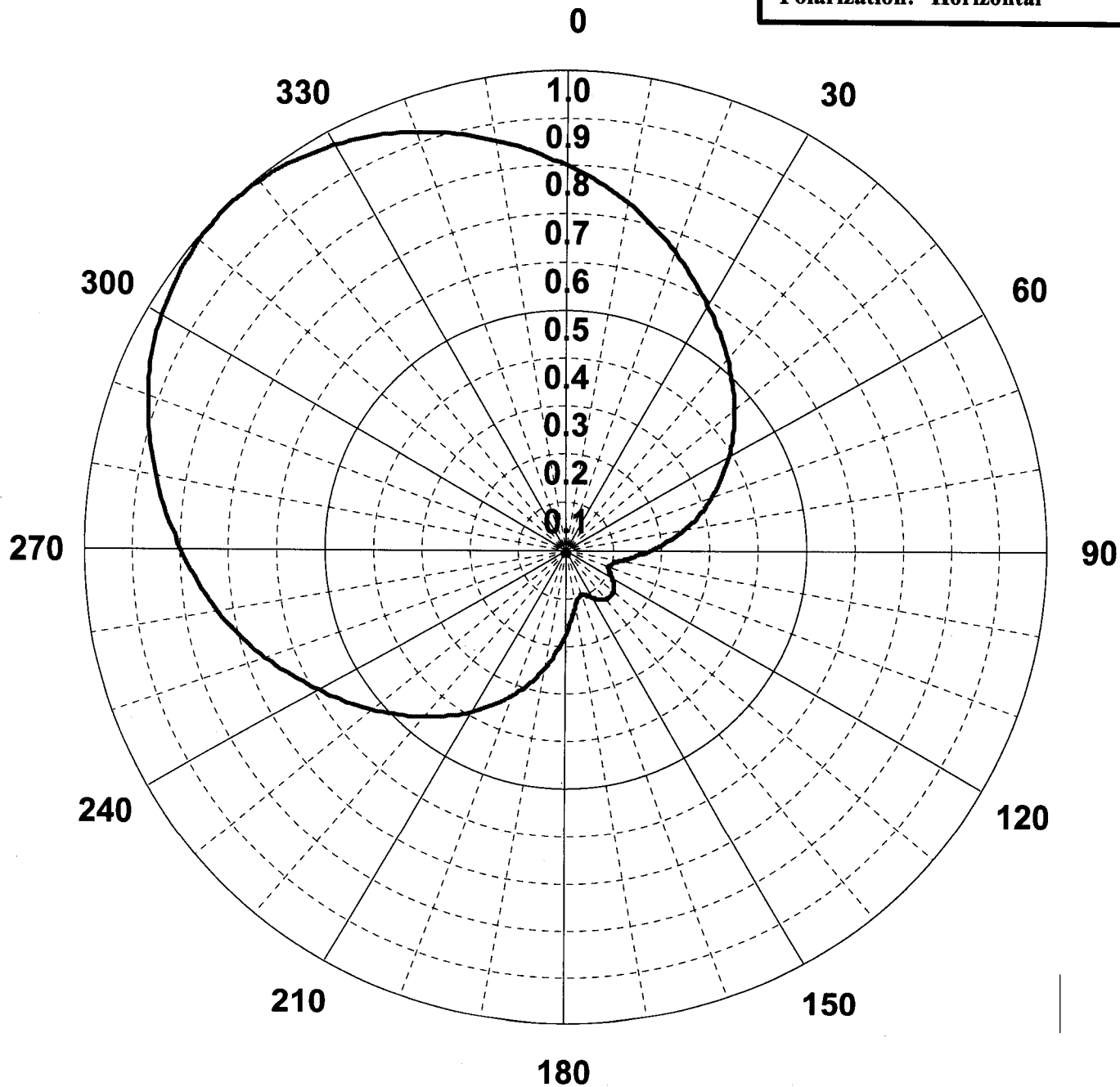
ANDREW

Channel: 22

Type: ALP-MR

Gain: 2.82 (4.5 dB)

Polarization: Horizontal



ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A. 60462

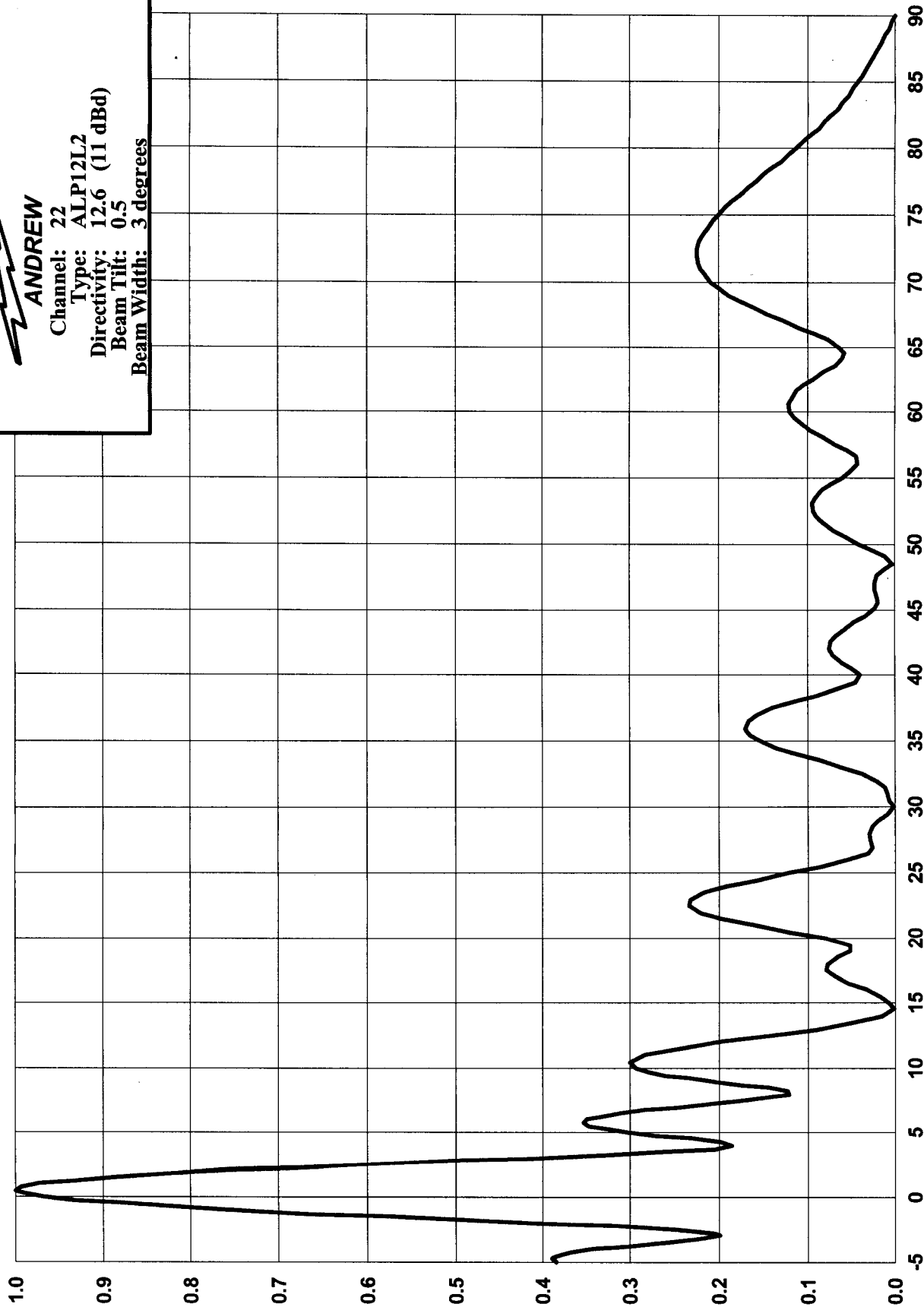
Company:
Site:
Proposal Number:

Date: 11/22/2004
Author:



ANDREW

Channel: 22
Type: ALP12L2
Directivity: 12.6 (11 dBd)
Beam Tilt: 0.5
Beam Width: 3 degrees



Date: 11/22/2004

Author:

Company:
Site:

Proposal Number:

ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A. 60462

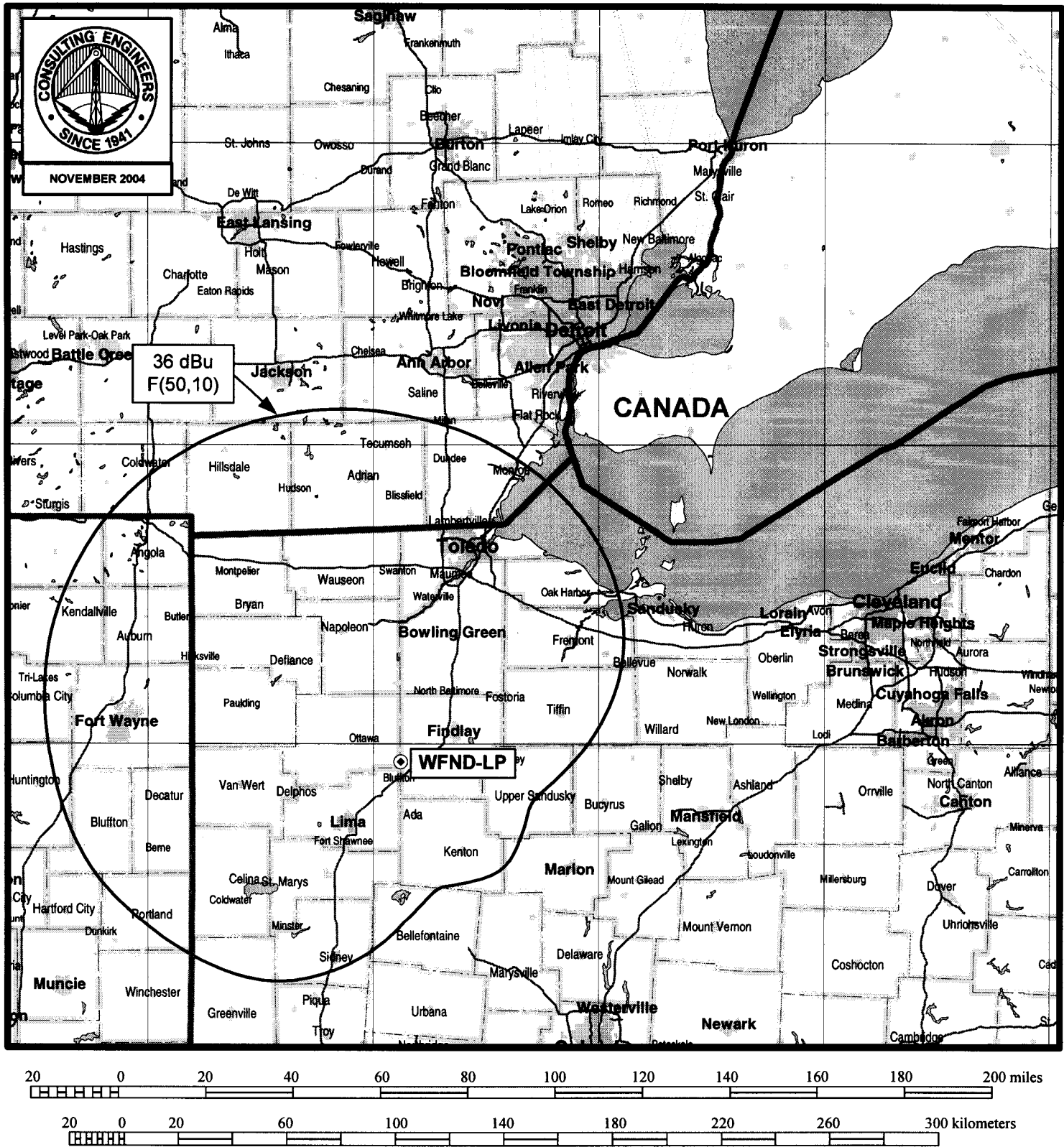
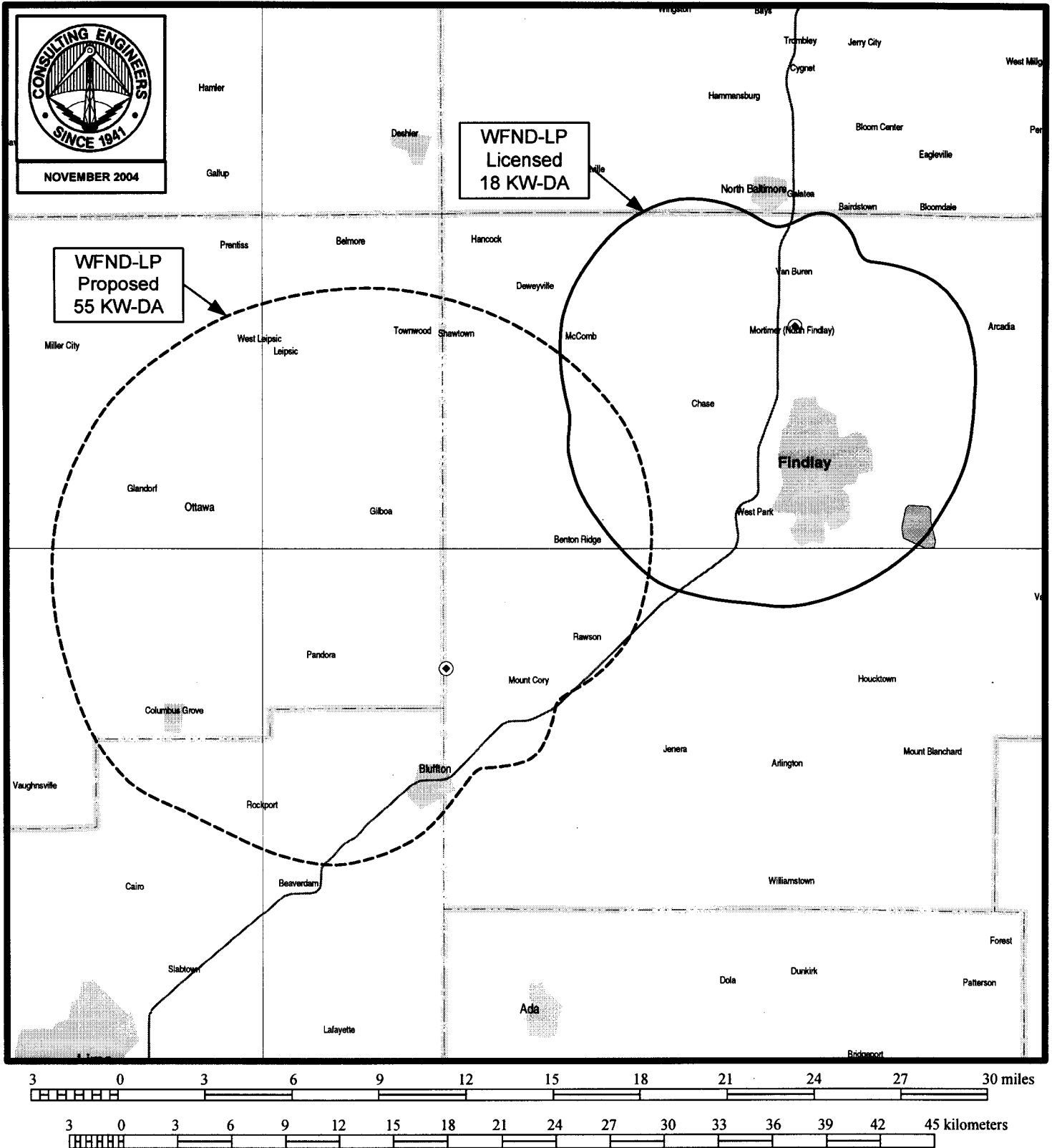


Figure 4



PREDICTED 74 dBu COVERAGE CONTOURS

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du Treil, Lundin & Rackley, Inc. Sarasota, Florida