

## **Non-Interference Compliance**

Regarding Facility id 141545

Channel 296

### **Description of Exhibit 13 Contents**

This exhibit demonstrates that the proposed facility complies with contour overlap and interference protection provisions in all of the applicable rule sections and that this application for a construction permit is in full compliance with 47 C.F.R. § 74.1204.

**Let it be noted that should any actual real world interference occur, the applicant acknowledges that it will promptly suspend operation of this translator in accordance with 47 C.F.R. § 74.1203.**

Page 2 of this exhibit is an explanation of the method used to demonstrate compliance with contour overlap and interference provisions based on 47 C.F.R. § 74.1204(d), which states:

*[A]n application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.*

Page 3 contains a tabulation of the vertical radiation pattern of the proposed antenna and the minimum ground clearance of the interfering contour based on this pattern.

Pages 4 through 5 include a tabulation of the vertical radiation pattern for the proposed antenna provided by the antenna manufacturer.

Page 6 of this exhibit contains the tabulated data from the interference analysis, which shows all stations whose protected contours come within 50 km of the 34 dBμ F(50,10) contour of the proposed translator. These tabulated values were calculated using data from the FCC's CDBS files and 30 arc second terrain data. The column labeled "Adj" shows the number of channels difference between the entry and the proposed translator. The column labeled "Dist" shows the distance in km. The column labeled "Overlap" shows the area of contour overlap in square kilometers.

Page 7 of this exhibit is a portion of a USGS 1:24,000 scale 7.5 minute quadrangle at full scale with the calculated area of interference overlaid. The sheet includes the quadrangle name and measurement scale at the bottom-left corner (note: "Mt" refers to meters). The area of interference was calculated using the free space equation and 120 radials.

Page 8 of this exhibit is an aerial photo of the vicinity surrounding the proposed translator's tower site.

### Compliance with 47 C.F.R. § 74.1204(d)

All authorized second and third adjacent stations with which the proposed translator has contour overlap are tabulated below. Column four show the station's signal level at the proposed translator's tower site, and column five gives the minimum value within the entire standard interfering contour of the proposed translator (100 dBμ for most classes, 94 for class B, 97 for class B1). The minimum second or third adjacent F(50,50) contour within the proposed translator's standard interfering contour was used to calculate the proposed translator's actual "worst-case" interfering contour.

Application_id	File Number	Callsign	Contour at Tower	Min. Contour
287983	BLH19990818KA	WPPN	98.7	98.7
560514	BLH20010413AAL	WGCI-FM	64.9	64.9
Minimum F(50,50) Contour of Adjacent Station within Proposed Translator's Standard Interfering Contour				<b>64.9</b>

FCC 02-244 at Section II.A.5 states that "when demonstrating that 'no actual interference will occur due to . . . other factors,' pursuant to Section 74.1204(d), an applicant may use the undesired-to-desired signal ratio method." The undesired-to-desired ratio for second and third adjacent stations required by § 74.1204(a) is 40 dB. Since the minimum protected contour strength within the proposed translator's standard interference contour is **64.9 dBμ**, this makes the proposed translator's worst-case interfering contour **104.9 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **630.9 m** from the transmit antenna.

The maximum horizontal plane of the interfering contour was calculated for 120 radials and plotted on the pertinent portion of a USGS quadrangle (page 7 of this exhibit). However, the field strength of the proposed translator's antenna varies with angle of depression from horizontal. The antenna relative fields are tabulated on the following page at 5 degree increments, starting at 5 degrees below horizontal. Antenna relative field strength data was provided and certified by the manufacturer of the proposed antenna. Using a free-space calculation that neglects any loss due to reflection, the vertical ground clearance of the proposed translator's interference contour has been tabulated. As shown on the following page, the area of interference clears the tower ground level (TGL) by **13.8 m** at the lowest point. The applicant has taken into account USGS quadrangles and relevant aerial photography in stating that no structures, except possibly tower support structures, puncture the area of interference.

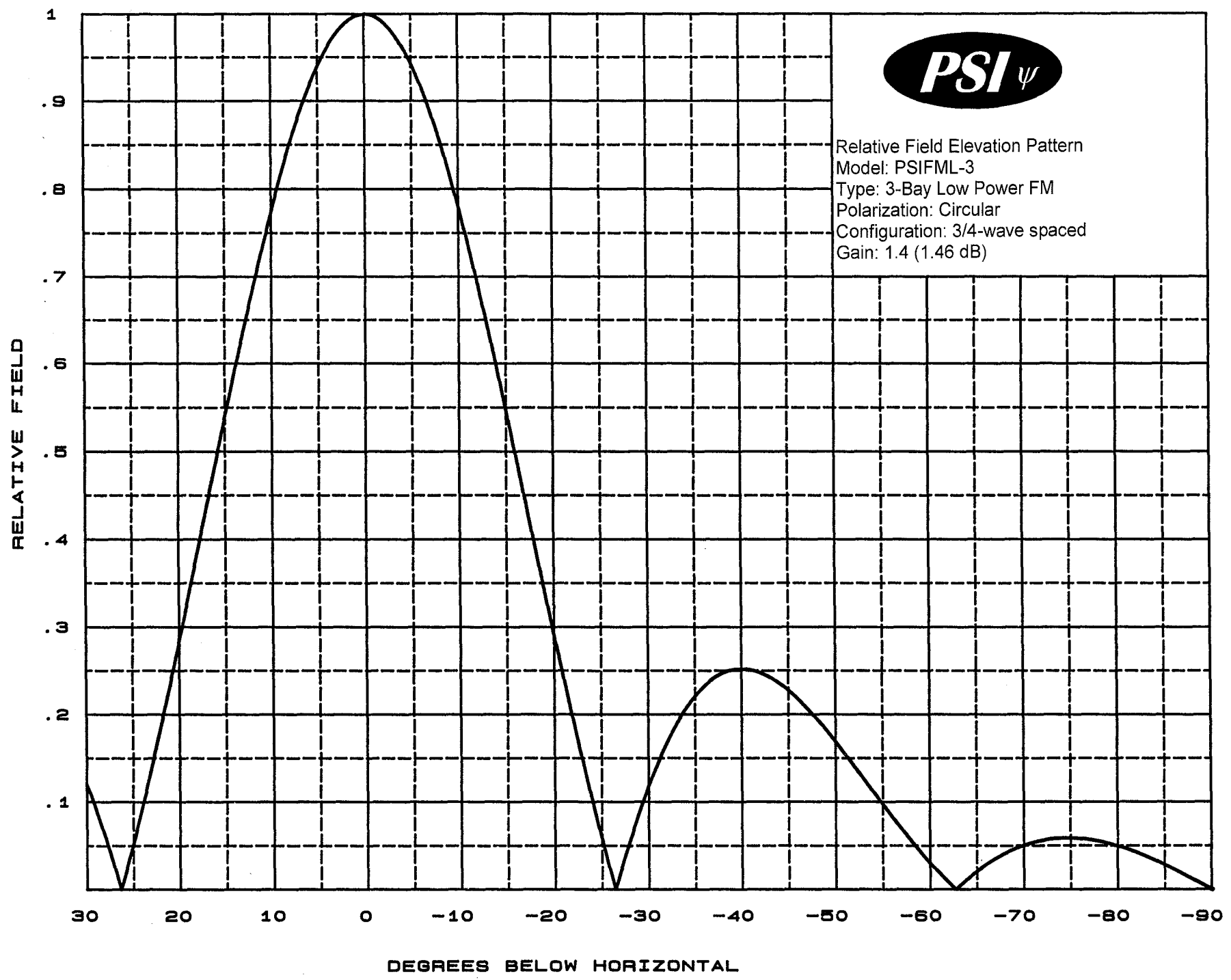
**Note: The tallest building within the zone of predicted interference is 40ft (12.2m) in height. This application provides 13.8m (45.3ft) ground clearance so a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 74.1204.**

Antenna Manufacturer:	PSI
Antenna Model:	FML-3-.75-DA
CORAGL:	116 m
Maximum ERP:	0.25 kW
Interfering Contour:	104.9 dBμ
Max Int. Contour Distance:	630.9 m
Min Ground Clearance:	13.8 m

Depression Angle Below Horizontal	Antenna Relative Field	ERP (watts)	Distance to Interfering Contour from Antenna (m)	Horizontal Distance of Interfering Contour from Tower (m)	Vertical Clearance of Interfering Contour above TGL (m)
5	.941	221.4	593.7	591.4	64.3
10	.777	150.9	490.2	482.8	30.9
15	.543	73.7	342.6	330.9	27.3
20	.287	20.6	181.1	170.2	54.1
25	.055	0.8	34.7	31.4	101.3
30	.120	3.6	75.7	65.6	78.1
35	.222	12.3	140.1	114.7	35.7
40	.252	15.9	159.0	121.8	13.8
45	.227	12.9	143.2	101.3	14.7
50	.168	7.1	106.0	68.1	34.8
55	.096	2.3	60.6	34.7	66.4
60	.030	0.2	18.9	9.5	99.6
65	.021	0.1	13.2	5.6	104.0
70	.050	0.6	31.5	10.8	86.4
75	.059	0.9	37.2	9.6	80.0
80	.050	0.6	31.5	5.5	84.9
85	.028	0.2	17.7	1.5	98.4
90	.001	0.0	0.6	0.0	115.4
Minimum Clearance above TGL:					<b>13.8 m</b>



Relative Field Elevation Pattern  
Model: PSIFML-3  
Type: 3-Bay Low Power FM  
Polarization: Circular  
Configuration: 3/4-wave spaced  
Gain: 1.4 (1.46 dB)





# **Propagation Systems Inc.**

Elevation Pattern Tabulation

Antenna: PSIFML-3 Special

Bay spacing: 3/4 wave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.000	-50.0	0.168	-15.500	-10.0	0.777	-2.194
-89.0	0.006	-44.795	-49.0	0.181	-14.829	-9.0	0.817	-1.761
-88.0	0.012	-38.775	-48.0	0.194	-14.240	-8.0	0.853	-1.379
-87.0	0.017	-35.329	-47.0	0.206	-13.714	-7.0	0.886	-1.049
-86.0	0.023	-32.869	-46.0	0.217	-13.266	-6.0	0.916	-0.766
-85.0	0.028	-31.047	-45.0	0.227	-12.881	-5.0	0.941	-0.529
-84.0	0.033	-29.622	-44.0	0.235	-12.562	-4.0	0.962	-0.338
-83.0	0.038	-28.467	-43.0	0.242	-12.308	-3.0	0.978	-0.190
-82.0	0.042	-27.510	-42.0	0.248	-12.126	-2.0	0.990	-0.085
-81.0	0.046	-26.705	-41.0	0.251	-12.010	-1.0	0.998	-0.021
-80.0	0.050	-26.073	-40.0	0.252	-11.968	0.0	1.000	0.000
-79.0	0.053	-25.559	-39.0	0.251	-12.004	1.0	0.998	-0.021
-78.0	0.055	-25.169	-38.0	0.248	-12.126	2.0	0.990	-0.085
-77.0	0.057	-24.887	-37.0	0.242	-12.336	3.0	0.978	-0.190
-76.0	0.058	-24.682	-36.0	0.233	-12.657	4.0	0.962	-0.338
-75.0	0.059	-24.614	-35.0	0.222	-13.092	5.0	0.941	-0.529
-74.0	0.059	-24.637	-34.0	0.207	-13.676	6.0	0.916	-0.766
-73.0	0.058	-24.772	-33.0	0.190	-14.432	7.0	0.886	-1.049
-72.0	0.056	-25.027	-32.0	0.170	-15.414	8.0	0.853	-1.379
-71.0	0.054	-25.411	-31.0	0.146	-16.700	9.0	0.817	-1.759
-70.0	0.050	-25.968	-30.0	0.120	-18.427	10.0	0.777	-2.194
-69.0	0.046	-26.733	-29.0	0.090	-20.871	11.0	0.734	-2.683
-68.0	0.041	-27.731	-28.0	0.058	-24.704	12.0	0.689	-3.233
-67.0	0.035	-29.081	-27.0	0.023	-32.754	13.0	0.642	-3.848
-66.0	0.028	-30.954	-26.0	0.015	-36.745	14.0	0.593	-4.534
-65.0	0.021	-33.656	-25.0	0.055	-25.217	15.0	0.543	-5.301
-64.0	0.012	-38.221	-24.0	0.098	-20.213	16.0	0.492	-6.156
-63.0	0.003	-50.816	-23.0	0.142	-16.928	17.0	0.441	-7.116
-62.0	0.007	-42.949	-22.0	0.189	-14.460	18.0	0.389	-8.196
-61.0	0.018	-34.880	-21.0	0.238	-12.484	19.0	0.338	-9.425
-60.0	0.030	-30.546	-20.0	0.287	-10.839	20.0	0.287	-10.834
-59.0	0.042	-27.541	-19.0	0.338	-9.425	21.0	0.238	-12.484
-58.0	0.055	-25.217	-18.0	0.389	-8.199	22.0	0.189	-14.460
-57.0	0.068	-23.307	-17.0	0.441	-7.116	23.0	0.143	-16.919
-56.0	0.082	-21.711	-16.0	0.492	-6.159	24.0	0.098	-20.200
-55.0	0.096	-20.335	-15.0	0.543	-5.301	25.0	0.055	-25.193
-54.0	0.111	-19.124	-14.0	0.593	-4.536	26.0	0.015	-36.745
-53.0	0.125	-18.051	-13.0	0.642	-3.850	27.0	0.023	-32.754
-52.0	0.140	-17.106	-12.0	0.689	-3.234	28.0	0.058	-24.704
-51.0	0.154	-16.253	-11.0	0.734	-2.683	29.0	0.090	-20.871
						30.0	0.120	-18.438

file: FML 3-bay elevation tabulation

revision: A

Date: 1/28/08

# **Adjacent Channel Study** **For Station W292DJ, Facility\_id: 141545**

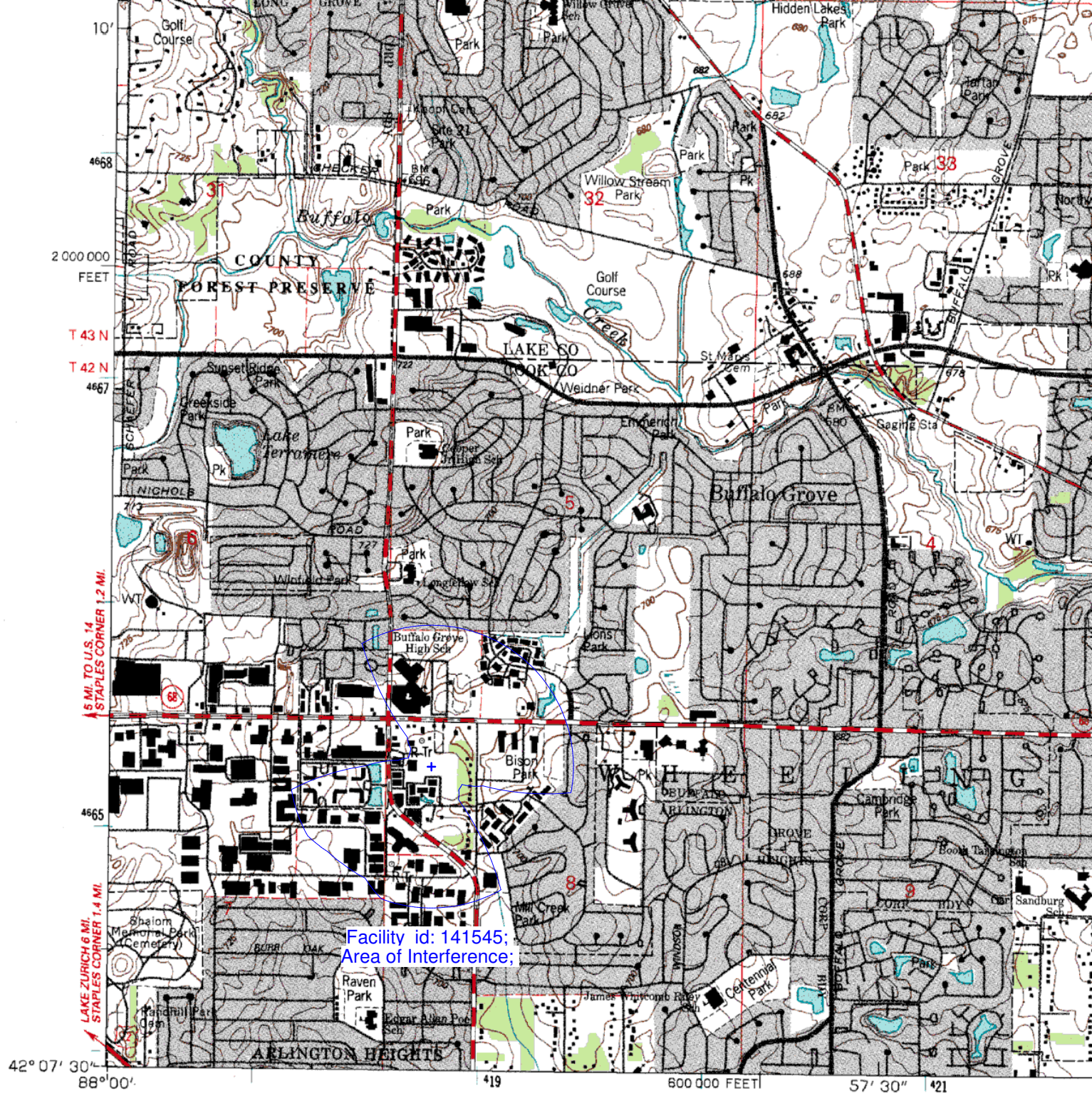
## **Co-channel through third adjacent:**

App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Char	Adj	Dist	Overlap
287983	25053	BLH-19990818KA	WPPN	UNIVISION RADIO LICENSE CORP	B	DES PLAINES	IL	LIC	50	347	294	2	0	2.5726
560514	51165	BLH-20010413AAL	WGCI-FM	AMFM BROADCASTING LICENSE	B	CHICAGO	IL	LIC	3.7	653	298	2	40.6	2.5726
1734135	157668	BMPFT-20160621AAI	W300CQ	POLNET COMMUNICATIONS, LLC	D	VERNON HILLS	IL	APP	0.07	362	296	0	28	0
1681514	192383	BMPL-20150630ABC	WCXP-LP	CHICAGO INDEPENDENT RADIO	L1	CHICAGO	IL	CP MOD	0	227	296	0	31.7	0
1722563	157668	BPFT-20160129AXY	W300CQ	POLNET COMMUNICATIONS, LLC	D	VERNON HILLS	IL	CP	0.07	307	296	0	36.4	0
1621395	48247	BLH-20140122ABB	WSPY-FM	NELSON ENTERPRISES, INC.	A	PLANO	IL	LIC	3.1	348	296	0	71.9	0
1734930	150179	BPFT-20160729AHP	W270CT	EDUCATIONAL MEDIA FOUNDAT	D	FRANKLIN	WI	APP	0.25	370	297	1	74.4	0
1069887	73059	BMLED-20050623AA	WVCY-FM	VCY AMERICA, INC.	B	MILWAUKEE	WI	LIC	43	403	299	3	92.1	0
1202447	67484	BLH-20070830ACR	WNRG-FM	SAGA COMMUNICATIONS OF MIL	A	BROOKFIELD	WI	LIC	4.4	335	295	1	101.2	0
1730107	155072	BPFT-20160603ADJ	W250AV	COURIER COMMUNICATIONS CC	D	MILWAUKEE	WI	CP	0.099	293	293	3	104	0
1484733	24727	BLH-20120130AAZ	WZVN	ADAMS RADIO OF NORTHERN IN	A	LOWELL	IN	LIC	2.65	361.5	296	0	104.4	0
1155736	59406	BLH-20061025ABF	WKCH	NRG LICENSE SUB, LLC	A	WHITEWATER	WI	LIC	6	317	293	3	106.2	0
1157290	143860	BLFT-20061030APY	W294BA	FRIENDS OF CHRISTIAN RADIO,	D	VALPARAISO	IN	LIC	0.055	272	294	2	106.6	0
252268	85655	BLFT-19970819TA	W295AF	FAMILY STATIONS, INC.	D	LA PORTE	IN	LIC	0.013	290	295	1	110.4	0
151684	24442	BLH-19900817KC	WSJY	NRG LICENSE SUB, LLC	B	FORT ATKINSON	WI	LIC	26	474	297	1	114.8	0
1128248	164267	BLH-20060502AEB	WXNU	STARADIO CORP.	A	ST. ANNE	IL	LIC	1.95	335.9	293	3	128.1	0
1640169	185080	BLED-20140606AAD	WWQC	THE POWER FOUNDATION	A	CLIFTON	IL	LIC	6	300	297	1	132.9	0
153437	74005	BLH-19901010KE	WIRX	WSJM, INC.	A	ST. JOSEPH	MI	LIC	1.2	359	296	0	133.1	0

## **Intermediate Frequencies (53 and 54 channels difference):**

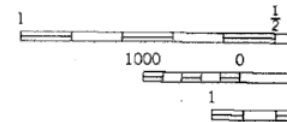
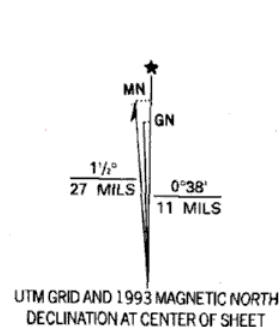
App_id	Fac_id	File_Number	Call	Licensee	Class	City	State	Status	ERP	RCAMSL	Channel	Adj	Dist	Clr
1369537	9613	BLH-20100517AFR	WBBM-FM	CBS RADIO EAST INC.	B	CHICAGO	IL	LIC	3.3	655	242	54	40.6	25.6





(PALATINE)  
3968 II SE

Produced by the United States Geological Survey  
Control by USGS, NOS/NOAA, and Cook County Highway Department  
Planimetry by photogrammetric methods from aerial photographs taken 1962. Topography by planetable surveys 1926. Revised from aerial photographs taken 1988. Field checked 1992. Map edited 1993  
Universal Transverse Mercator projection  
10,000-foot grid ticks: Illinois coordinate system, east zone  
1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue  
1927 North American Datum (NAD 27)  
North American Datum of 1983 (NAD 83) is shown by dashed corner ticks  
The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are given in USGS Bulletin 1875  
There may be private inholdings within the boundaries of the National or State reservations shown on this map  
Gray tint indicates areas in which only landmark buildings are shown  
Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked



COMPLIES WITH U.S. GEOLOGICAL SURVEY  
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AND ILLINOIS  
A FOLDER DESCRIPTION



