

**Exhibit 11 Page 1**  
**Multicultural Professional Counseling Services**  
**Second-Adjacent Waiver Request**  
**Kansas City, MO**

The proposed LPFM station will broadcast on channel 213, which is within the 73 kilometers second-adjacent minimum distance separation of station KKFI on channel 211 and the 73 kilometers second-adjacent minimum distance separation of station KTBG on channel 215. The KKFI interfering contour at the LPFM tower site is 83.0 dB $\mu$  F(50,50) and the KTBG interfering contour at the LPFM tower site is 70.6 dB $\mu$  F(50,50). Using the ratio of 100:1 (LPFM to KKFI and KTBG) on the second-adjacent channel, the population within the proposed LPFM 123.0 dB $\mu$  and 110.6 dB $\mu$  contour is zero. Applying the antenna manufacturer's vertical radiation pattern the area of interference can be more accurately calculated geometrically, rather than just by using the free space equation alone. This particular antenna is a two bay 3/4 wave spaced Nicom BKG77 antenna. It was determined from the manufacturer's vertical plan that at 10 degrees below horizontal the interference area would extend 25.5 meters toward the ground and 144.8 meters horizontally. We have proposed the antenna radiation center will be 29 meters above ground with an Effective Radiated Power of 88 watts, thus the interference area will not reach the ground. Further, there are no occupied structures or elevated roadways within the interference area. Therefore, the application is in compliance with §73.807(e)(1) *Waiver of the second-adjacent channel separations.*

## Exhibit 11 Figure 1 Minimum Ground Clearance

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	0.935	76.9	182	181.3	13.1
10	0.759	50.7	147	144.8	3.5
15	0.506	22.5	98	91.8	4.4
20	0.268	6.3	52	48.9	11.2
25	0.096	0.8	19	17.2	21.0
30	0.013	0.0	0	0.0	29.0
35	0.004	0.0	0	0.0	29.0
40	0.039	0.1	7	5.4	24.5
45	0.083	0.6	16	11.3	17.7
50	0.113	1.1	22	14.1	12.1
55	0.122	1.3	24	13.8	9.3
60	0.110	1.1	22	11.0	9.9
65	0.087	0.7	17	7.2	13.6
70	0.061	0.3	11	3.8	18.7
75	0.039	0.1	7	1.8	22.2
80	0.023	0.0	0	0.0	29.0
85	0.015	0.0	0	0.0	29.0
90	0.014	0.0	0	0.0	29.0
Minimum Clearance above TGL:					3.5 m

## Antenna Height Above Average Terrain Calculations -- Results

### Input Data

Latitude **38° 56' 38"** North  
Longitude **94° 28' 9"** West (NAD 27)

These coordinates convert to NAD 83 coordinates of  
38° 56' 38.02", North, 94° 28' 09.83" West (NAD 83).

Height of antenna radiation center above mean sea level: **315** meters AMSL

Number of Evenly Spaced Radials = **8**      0° is referenced to True North

### Results

Calculated HAAT = **32 meters**

Antenna Height Above Average Terrain calculated  
using 1 km [GLOBE terrain data](#)

#### Individual "Radial HAAT" Values, in meters

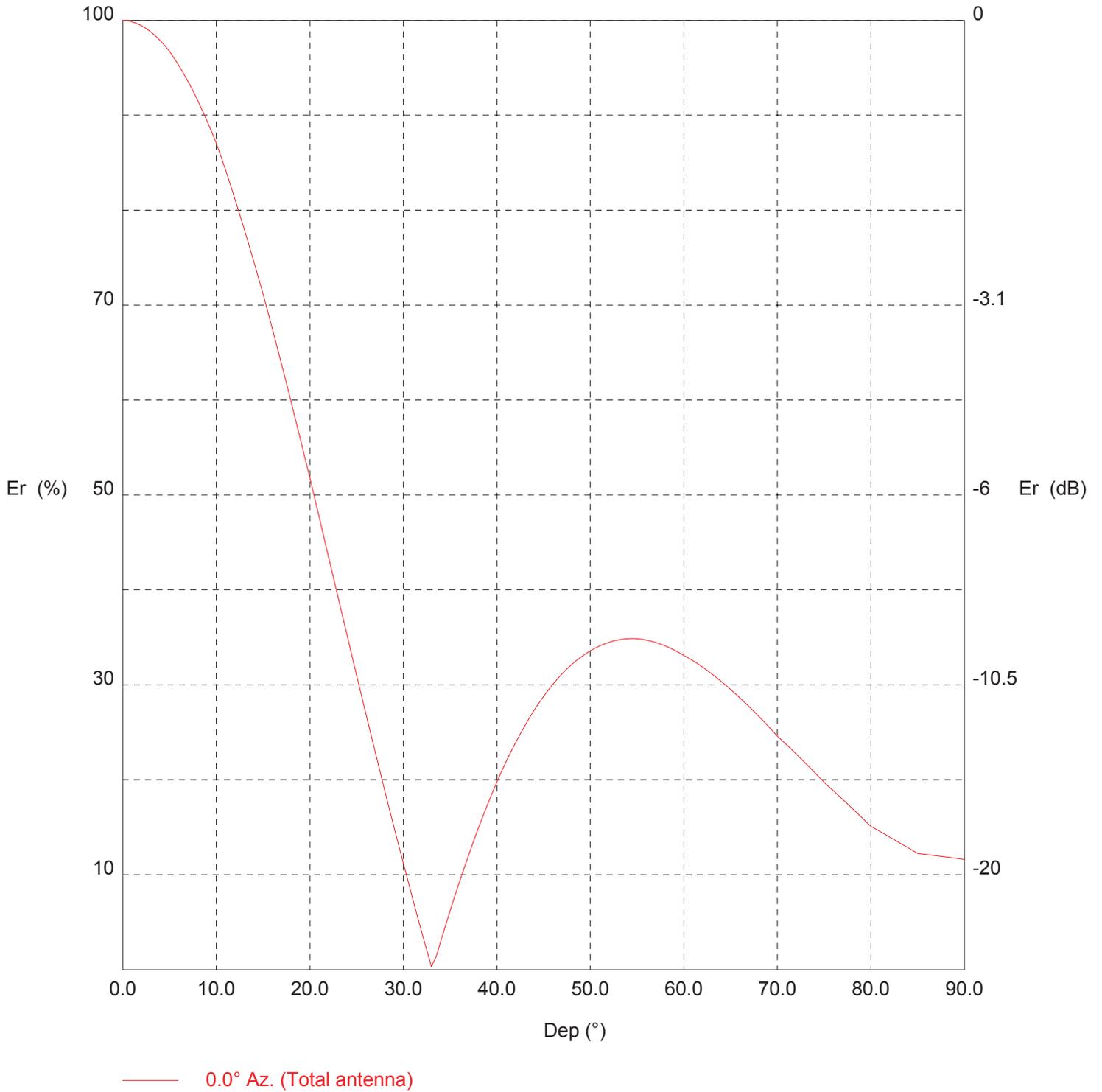
0°	25.8 m
45°	61.2 m
90°	32.0 m
135°	21.5 m
180°	21.4 m
225°	10.8 m
270°	42.9 m
315°	42.2 m

TX station: BKG77/2 GENERIC

Site name: 3/4 WAVE SEPARATION

Frequency: 98.10 MHz

### Vertical diagram



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**Vertical diagram at an azimuth of 0° degrees**

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	914.2	30.0	11.2	11.5	60.0	33.1	100.1
0.5	100.0	913.3	30.5	9.3	7.9	60.5	32.8	98.4
1.0	99.8	911.3	31.0	7.5	5.1	61.0	32.5	96.7
1.5	99.7	908.1	31.5	5.6	2.9	61.5	32.2	94.8
2.0	99.4	903.9	32.0	3.8	1.3	62.0	31.9	92.8
2.5	99.1	898.4	32.5	2.1	0.4	62.5	31.5	90.8
3.0	98.8	891.9	33.0	0.3	0.0	63.0	31.1	88.7
3.5	98.4	884.3	33.5	1.4	0.2	63.5	30.8	86.5
4.0	97.9	875.7	34.0	3.0	0.8	64.0	30.4	84.2
4.5	97.3	865.9	34.5	4.6	2.0	64.5	29.9	81.9
5.0	96.7	855.2	35.0	6.2	3.5	65.0	29.5	79.5
5.5	96.0	842.7	35.5	7.8	5.5	65.5	29.1	77.2
6.0	95.2	829.2	36.0	9.3	7.9	66.0	28.6	74.8
6.5	94.4	814.9	36.5	10.7	10.5	66.5	28.2	72.5
7.0	93.5	799.7	37.0	12.1	13.5	67.0	27.7	70.0
7.5	92.6	783.6	37.5	13.5	16.7	67.5	27.2	67.6
8.0	91.6	766.9	38.0	14.9	20.2	68.0	26.7	65.1
8.5	90.5	749.4	38.5	16.1	23.8	68.5	26.2	62.7
9.0	89.4	731.2	39.0	17.4	27.7	69.0	25.7	60.2
9.5	88.3	712.5	39.5	18.6	31.6	69.5	25.1	57.8
10.0	87.1	693.1	40.0	19.8	35.7	70.0	24.6	55.3
10.5	85.7	670.8	40.5	20.9	39.8	70.5	24.1	53.3
11.0	84.2	648.2	41.0	21.9	43.9	71.0	23.7	51.2
11.5	82.7	625.3	41.5	22.9	48.1	71.5	23.2	49.2
12.0	81.2	602.3	42.0	23.9	52.2	72.0	22.7	47.2
12.5	79.6	579.0	42.5	24.8	56.4	72.5	22.2	45.2
13.0	78.0	555.7	43.0	25.7	60.4	73.0	21.7	43.2
13.5	76.3	532.4	43.5	26.5	64.4	73.5	21.2	41.3
14.0	74.6	509.1	44.0	27.3	68.3	74.0	20.7	39.3
14.5	72.9	485.8	44.5	28.1	72.1	74.5	20.2	37.4
15.0	71.1	462.7	45.0	28.8	75.8	75.0	19.7	35.5
15.5	69.3	439.1	45.5	29.5	79.3	75.5	19.3	33.9
16.0	67.4	415.8	46.0	30.1	82.7	76.0	18.8	32.4
16.5	65.6	392.9	46.5	30.7	85.9	76.5	18.4	30.8
17.0	63.6	370.3	47.0	31.2	88.9	77.0	17.9	29.3
17.5	61.7	348.1	47.5	31.7	91.8	77.5	17.4	27.8
18.0	59.8	326.5	48.0	32.1	94.4	78.0	17.0	26.4
18.5	57.8	305.3	48.5	32.6	96.9	78.5	16.5	24.9
19.0	55.8	284.7	49.0	32.9	99.2	79.0	16.0	23.5
19.5	53.8	264.7	49.5	33.3	101.2	79.5	15.6	22.1
20.0	51.8	245.3	50.0	33.6	103.1	80.0	15.1	20.8
20.5	49.7	226.1	50.5	33.9	104.8	80.5	14.8	20.0
21.0	47.6	207.5	51.0	34.1	106.3	81.0	14.5	19.3
21.5	45.6	189.8	51.5	34.3	107.6	81.5	14.3	18.6
22.0	43.5	172.8	52.0	34.5	108.7	82.0	14.0	17.8
22.5	41.4	156.7	52.5	34.6	109.6	82.5	13.7	17.1
23.0	39.3	141.3	53.0	34.7	110.3	83.0	13.4	16.4
23.5	37.2	126.8	53.5	34.8	110.8	83.5	13.1	15.7
24.0	35.2	113.0	54.0	34.9	111.1	84.0	12.8	15.0
24.5	33.1	100.1	54.5	34.9	111.2	84.5	12.5	14.4
25.0	31.0	88.1	55.0	34.9	111.1	85.0	12.2	13.7
25.5	29.0	76.8	55.5	34.8	110.7	85.5	12.2	13.6
26.0	26.9	66.3	56.0	34.7	110.2	86.0	12.1	13.4
26.5	24.9	56.7	56.5	34.6	109.4	86.5	12.1	13.3
27.0	22.9	47.9	57.0	34.5	108.5	87.0	12.0	13.2
27.5	20.9	39.9	57.5	34.3	107.5	87.5	11.9	13.0
28.0	18.9	32.7	58.0	34.1	106.3	88.0	11.9	12.9
28.5	17.0	26.3	58.5	33.9	104.9	88.5	11.8	12.8
29.0	15.0	20.6	59.0	33.6	103.5	89.0	11.7	12.6
29.5	13.1	15.7	59.5	33.4	101.8	89.5	11.7	12.5

**Exhibit 11 Figure 4**  
**Aerial Photo of the 144.8 meter Vicinity Surrounding the Proposed Tower Site**

