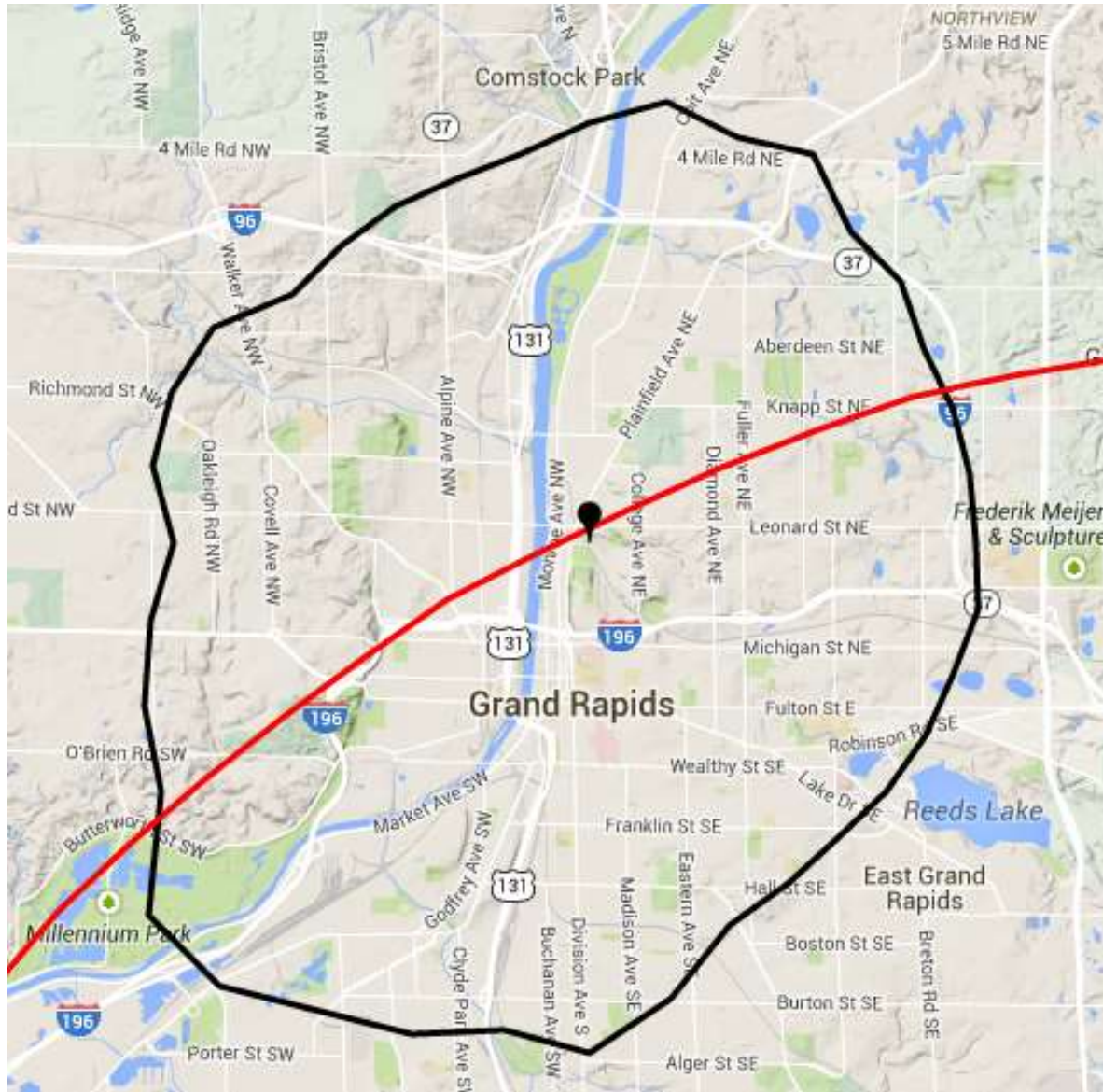




REC Networks
11541 Riverton Wharf Rd.
Mardela Springs, MD 21837
844.REC.LPFM/202.621.2355
recnet.com

Amendment for NEW-LP
GRAND RAPIDS, MI
IGLESIA SANANDO LAS NACIONES
BNPL-20131022AGL

PROPOSED 60dBu F(50,50) SERVICE CONTOUR



GRAND RAPIDS, MI – Chan 279L1 (103.7 MHz) ~ ERP 0.064 kW
Elev: 195 meters ~ RCAGL: 60 meters ~ RCAMSL: 255 meters ~ HAAT: 38 meters
Overall tower height: 82 meters – ASR: 1060519
NAD27 Latitude: 42° 58' 57.4" NL – Longitude: 85° 39' 54.5" WL

R E C NETWORKS
CHANNEL REPORT

NAD27 LATITUDE: 42 - 58' 57.4" - LONGITUDE: 85 - 39' 54.5"
CHANNEL: 279 - CLASS: LPFM(LP-100)

CHAN	FREQ	CALL	LOCATION	CLS	DIST	REQ	CLEAR	BEAR
277	103.3	WKFR-FM : TOWNSQUARE MEDIA	BATTLE CREEK KALAMAZOO LICENSE, LLC	MI B	74.5	67.0	7.5	159.1
278	103.5	WTCM-FM : WTCM RADIO, INC.	TRAVERSE CITY	MI C0	164.1	111.0	53.1	359.0
279	103.7	WXSS : ENTERCOM LICENSE, LLC	WAUWATOSA	WI B	183.0	112.0	71.0	274.7
279	103.7	NEW : HUBBARDSTON COMMUNITY RADIO	HUBBARDSTON	MI A	72.4	67.0	5.4	87.9
279	103.7	WCZE : JENNIFER & EDWARD	HARBOR BEACH CZELADA	MI C2	230.3	91.0	139.3	69.2
279	103.7	WCSY-FM : WSJM INC	SOUTH HAVEN	MI A	89.7	67.0	22.7	212.4
279	103.7	 : WSJM, INC.		A	89.7	67.0	22.7	212.4
280	103.9	NEW : MAX HENRY & ASSOCIATES	HARRISON	MI A	80.5	56.0	24.5	16.5
280	103.9	NEW : MAX HENRY & ASSOCIATES	HARRISON	MI A	80.5	56.0	24.5	16.4
281	104.1	WVGR : REGENTS OF THE UNIVERSITY OF MICHIGAN	GRAND RAPIDS	MI B	38.1	67.0	-28.9	162.8
282	104.3	WCZY-FM : LATITUDE MEDIA, LLC	MOUNT PLEASANT	MI A	96.3	0.0	96.3	44.7

Second adjacent channel directional short-spaced station WVGR, Grand Rapids, MI.

ERP	Bearing towards LPFM	Field	Effective ERP	Effective HAAT	Distance	Curve F(50,50)
96.0 kW	343	0.976	91.35 kW	217.5	38.1	72.9 dBu

LPFM SECOND ADJACENT CHANNEL WAIVER STUDY

Grand Rapids, MI
Channel 279L1 (103.7 MHz)

Based on a study performed by Michelle Bradley of REC Networks, it has been determined that this proposed site qualifies for a second adjacent waiver as specified in Section 73.807(e) of the Commission's Rules.

Station WVGR, Grand Rapids, MI (Facility ID # 66309) operates on Channel 281B and is located 38.1 km from the proposed LPFM site. WVGR operates a 96 kW into a directional antenna with a 0.976 field value towards the proposed LPFM station therefore, 91.35 kW is radiated towards the proposed LPFM station. The height above average terrain in the direction of the proposed LPFM is 217.5 meters. As a result, WVGR places a 72.9 dBu F(50, 50) service contour at the proposed LPFM site.

The proposed LPFM station will operate from a radiation center of 60 meters above ground level which places the radiation center at 38 meters above average terrain. In order to meet the maximum service requirements of §73.811(a) of the Commission's rules, the applicant is proposing to operate 0.064 kW ERP.

Using the U/D method¹, we have determined that the prohibited overlap goes as far as the 112.9 dBu F(50, 10) interference contour of the proposed LPFM station. Using the free-space method and with an ERP of 64 watts, the contour is measured at 127 meters from the radiation center of the antenna. The proposed LPFM station will utilize a 1-bay Nicom BKG-77 circularly polarized antenna. Based on manufacturer's data using the depression angle method, a 64-watt signal would produce a 112.82 dBu contour at 40 degrees below the horizon at an artificial point of 3 meters above ground level. There are no tall buildings immediately adjacent to the tower.

Therefore, based on the information presented, REC submits that the proposed LPFM station will not create any interference to existing or potential listeners of second adjacent channel stations WVGR. The applicant requests a waiver of §73.807(c) in respect to WVGR.

Report completed by
Michelle Bradley
Founder, REC Networks
November 29, 2014

¹ - See *Living Way Ministries, Inc.* Memorandum Opinion and Order, 17 FCC Rcd 17054, 17056 (2002) at 5. *Recon denied* 23 FCC Rcd 15070 (2008).

APPENDIX A

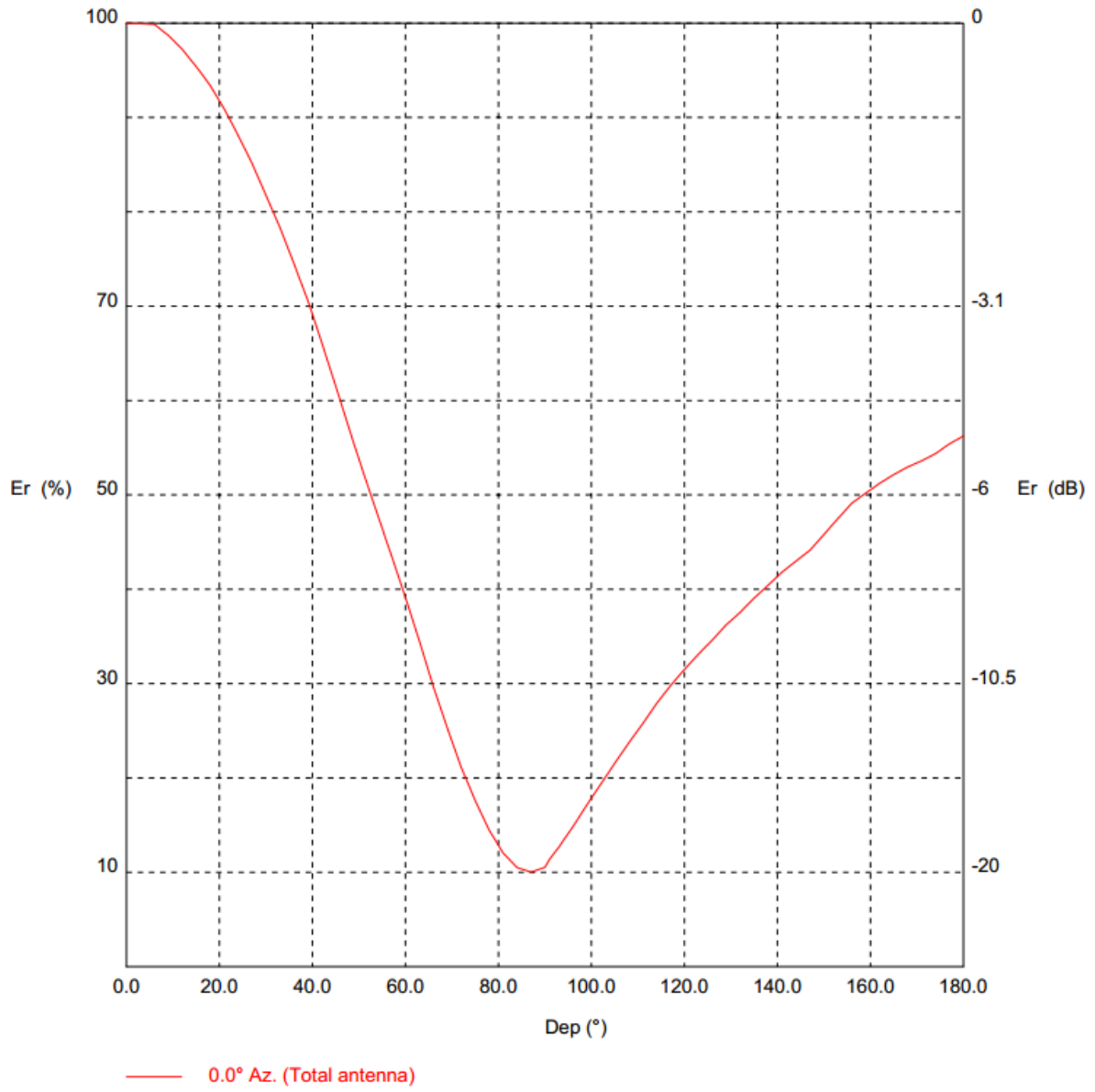
PROPOSED TOWER SITE



APPENDIX B

Proposed Power:				0.064 kW				
Antenna Height AGL:				60 m				
Interference Contour:				112.9 dBu				
Artificial RX Antenna Height:				3 m				
Antenna Type:				Nicom BKG77 - 1 bay				
Angle Below Horizon	Antenna Relative Field	ERP in kW	ERP in dBk	Distance from Ant to Interference Contour	Distance from Ant to Artificial Plane	Field Strength in dBu @ Artificial Plane	Distance from Ant to Ground Level	Field Strength in dBu @ Ground Level
5	0.999	0.064	-11.95	126.96	654.00	98.66	688.42	98.22
10	0.982	0.062	-12.10	124.80	328.25	104.50	345.53	104.05
15	0.954	0.058	-12.35	121.24	220.23	107.72	231.82	107.27
20	0.918	0.054	-12.68	116.66	166.66	109.80	175.43	109.36
25	0.872	0.049	-13.13	110.82	134.87	111.19	141.97	110.75
30	0.818	0.043	-13.68	103.95	114.00	112.10	120.00	111.65
35	0.758	0.037	-14.34	96.33	99.38	112.63	104.61	112.18
40	0.691	0.031	-15.15	87.81	88.68	112.82	93.34	112.37
45	0.616	0.024	-16.15	78.28	80.61	112.65	84.85	112.20
50	0.538	0.019	-17.32	68.37	74.41	112.17	78.32	111.72
55	0.465	0.014	-18.59	59.09	69.58	111.48	73.25	111.04
60	0.391	0.010	-20.09	49.69	65.82	110.46	69.28	110.01
65	0.313	0.006	-22.03	39.78	62.89	108.92	66.20	108.48
70	0.239	0.004	-24.37	30.37	60.66	106.89	63.85	106.45
75	0.176	0.002	-27.03	22.37	59.01	104.47	62.12	104.03
80	0.129	0.001	-29.73	16.39	57.88	101.94	60.93	101.50
85	0.103	0.001	-31.68	13.09	57.22	100.09	60.23	99.64
90	0.105	0.001	-31.51	13.34	57.00	100.29	60.00	99.84

Vertical diagram



Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	373.6	60.0	39.1	57.2	120.0	31.5	37.0
1.0	100.0	373.5	61.0	37.6	52.8	121.0	32.0	38.3
2.0	100.0	373.4	62.0	36.1	48.6	122.0	32.6	39.6
3.0	99.9	373.3	63.0	34.5	44.6	123.0	33.1	41.0
4.0	99.9	373.1	64.0	32.9	40.5	124.0	33.6	42.2
5.0	99.9	372.9	65.0	31.3	36.6	125.0	34.1	43.5
6.0	99.9	372.8	66.0	29.7	33.0	126.0	34.6	44.7
7.0	99.5	369.9	67.0	28.2	29.8	127.0	35.2	46.2
8.0	99.1	367.0	68.0	26.8	26.8	128.0	35.7	47.6
9.0	98.7	364.1	69.0	25.3	23.9	129.0	36.2	49.1
10.0	98.2	360.5	70.0	23.9	21.3	130.0	36.7	50.3
11.0	97.7	356.9	71.0	22.5	18.9	131.0	37.1	51.5
12.0	97.2	353.3	72.0	21.1	16.6	132.0	37.6	52.7
13.0	96.6	348.9	73.0	19.9	14.8	133.0	38.1	54.1
14.0	96.0	344.5	74.0	18.8	13.2	134.0	38.6	55.6
15.0	95.4	340.1	75.0	17.6	11.6	135.0	39.1	57.0
16.0	94.7	335.4	76.0	16.6	10.2	136.0	39.5	58.4
17.0	94.1	330.8	77.0	15.5	9.0	137.0	40.0	59.7
18.0	93.4	326.1	78.0	14.5	7.8	138.0	40.4	61.1
19.0	92.6	320.4	79.0	13.7	7.0	139.0	40.9	62.5
20.0	91.8	314.7	80.0	12.9	6.2	140.0	41.4	63.9
21.0	91.0	309.1	81.0	12.0	5.4	141.0	41.8	65.3
22.0	90.0	302.7	82.0	11.5	5.0	142.0	42.2	66.5
23.0	89.1	296.5	83.0	11.0	4.5	143.0	42.6	67.8
24.0	88.1	290.3	84.0	10.5	4.1	144.0	43.0	69.0
25.0	87.2	283.8	85.0	10.3	4.0	145.0	43.4	70.3
26.0	86.2	277.4	86.0	10.2	3.9	146.0	43.8	71.6
27.0	85.2	271.1	87.0	10.0	3.7	147.0	44.1	72.8
28.0	84.0	263.9	88.0	10.2	3.9	148.0	44.7	74.7
29.0	82.9	256.8	89.0	10.4	4.0	149.0	45.3	76.5
30.0	81.8	249.8	90.0	10.5	4.1	150.0	45.8	78.4
31.0	80.6	242.9	91.0	11.4	4.8	151.0	46.4	80.3
32.0	79.5	236.1	92.0	12.0	5.4	152.0	46.9	82.3
33.0	78.3	229.3	93.0	12.7	6.0	153.0	47.5	84.3
34.0	77.1	222.0	94.0	13.4	6.7	154.0	48.0	86.2
35.0	75.8	214.7	95.0	14.1	7.4	155.0	48.6	88.2
36.0	74.5	207.6	96.0	14.8	8.2	156.0	49.1	90.2
37.0	73.2	200.4	97.0	15.6	9.1	157.0	49.5	91.5
38.0	71.9	193.3	98.0	16.4	10.0	158.0	49.8	92.8
39.0	70.6	186.3	99.0	17.1	11.0	159.0	50.2	94.1
40.0	69.1	178.6	100.0	17.9	11.9	160.0	50.5	95.4
41.0	67.6	170.9	101.0	18.6	12.9	161.0	50.9	96.8
42.0	66.1	163.5	102.0	19.3	13.9	162.0	51.2	98.1
43.0	64.6	156.0	103.0	20.1	15.0	163.0	51.5	99.2
44.0	63.1	148.7	104.0	20.8	16.2	164.0	51.8	100.4
45.0	61.6	141.6	105.0	21.5	17.3	165.0	52.1	101.6
46.0	60.0	134.4	106.0	22.3	18.5	166.0	52.4	102.7
47.0	58.4	127.5	107.0	23.0	19.7	167.0	52.7	103.7
48.0	56.8	120.7	108.0	23.7	21.0	168.0	53.0	104.8
49.0	55.3	114.4	109.0	24.4	22.2	169.0	53.2	105.7
50.0	53.8	108.2	110.0	25.1	23.5	170.0	53.4	106.5
51.0	52.3	102.2	111.0	25.7	24.8	171.0	53.6	107.4
52.0	50.8	96.6	112.0	26.5	26.2	172.0	53.9	108.4
53.0	49.4	91.1	113.0	27.2	27.6	173.0	54.1	109.4
54.0	47.9	85.8	114.0	27.9	29.0	174.0	54.4	110.5
55.0	46.5	80.7	115.0	28.5	30.4	175.0	54.7	111.9
56.0	45.0	75.7	116.0	29.2	31.8	176.0	55.1	113.3
57.0	43.6	71.0	117.0	29.8	33.1	177.0	55.4	114.7
58.0	42.1	66.2	118.0	30.4	34.4	178.0	55.7	115.9
59.0	40.6	61.6	119.0	30.9	35.7	179.0	56.0	117.0

NicomUsa, Inc