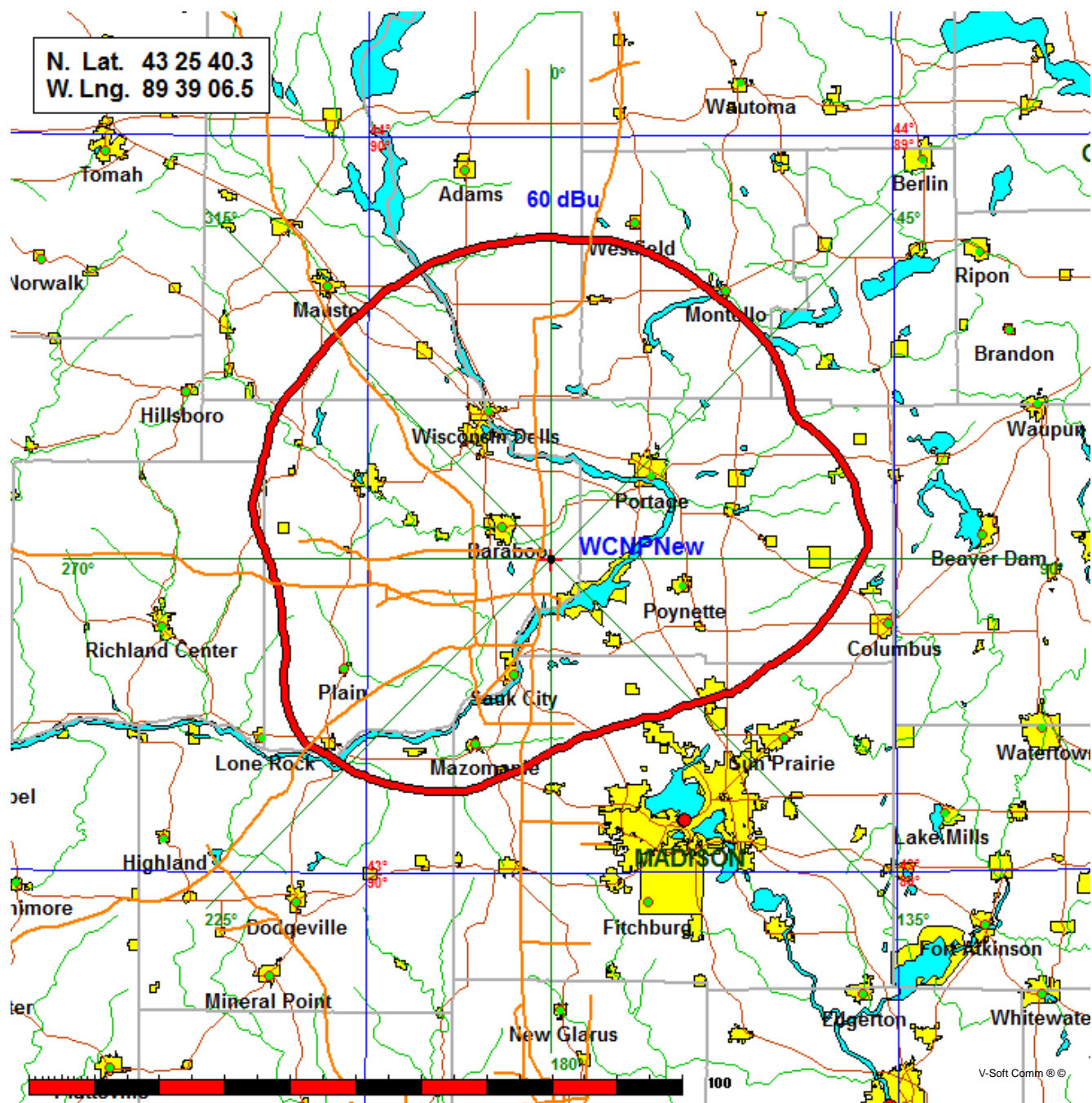


WCNP(New) - Community Coverage  
Liberty And Freedom Inc.

Coverage Study - FCC NGDC 30 Sec  
05-26-2011

WUWM CH208 B , 13.5 kW, 289.0M HAAT, 484.0M COR AMSL  
Service Contour = 60 dBu. Population = 143,597



N. Lat. = 432540.3 W. Lng. = 893906.5

HAAT and Distance to Contour,

FCC, FM 2-10 Mi, 51 pts Method - FCC 30 SEC

WCNP (New) - Distance to 60 dBu Community Coverage Contour

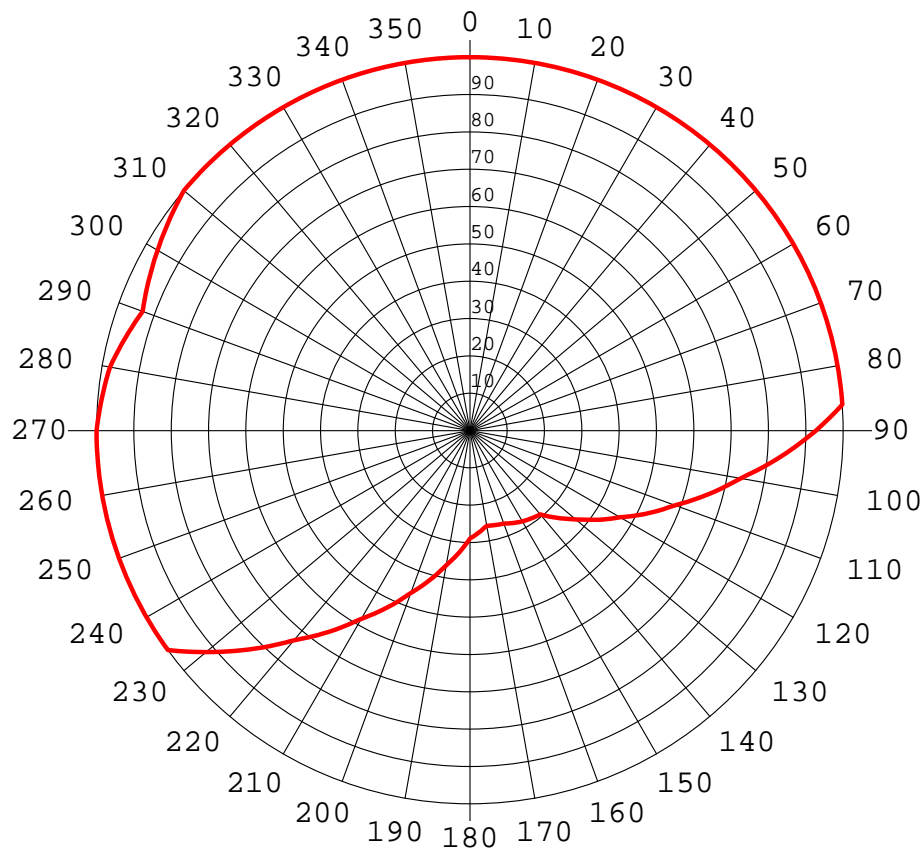
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	274.6	335.6	6.5000	8.13	1.000	48.42
010	268.7	341.5	6.5000	8.13	1.000	48.80
020	276.6	333.6	6.5000	8.13	1.000	48.30
030	292.2	318.0	6.5000	8.13	1.000	47.30
040	300.9	309.3	6.5000	8.13	1.000	46.75
050	320.2	290.0	6.5000	8.13	1.000	45.54
060	358.3	251.9	6.5000	8.13	1.000	43.09
070	307.7	302.5	6.5000	8.13	1.000	46.33
080	286.6	323.6	6.5000	8.13	1.000	47.65
090	268.3	341.9	5.5802	7.47	0.927	47.41
100	262.5	347.7	3.5209	5.47	0.736	43.74
110	264.0	346.2	2.2215	3.47	0.585	39.91
120	271.0	339.2	1.4017	1.47	0.464	35.93
130	265.5	344.7	0.8844	-0.53	0.369	32.63
140	255.6	354.6	0.5580	-2.53	0.293	29.65
150	281.0	329.2	0.5132	-2.90	0.281	27.96
160	280.9	329.3	0.4565	-3.41	0.265	27.20
170	271.6	338.6	0.4360	-3.60	0.259	27.29
180	263.0	347.2	0.5429	-2.65	0.289	29.13
190	261.9	348.3	0.8707	-0.60	0.366	32.70
200	243.2	367.0	1.3901	1.43	0.462	37.24
210	252.6	357.6	2.2032	3.43	0.582	40.43
220	270.9	339.3	3.4919	5.43	0.733	43.20
230	298.1	312.1	5.5342	7.43	0.923	45.51
240	308.1	302.1	6.5000	8.13	1.000	46.30
250	359.4	250.8	6.5000	8.13	1.000	43.02
260	377.9	232.3	6.5000	8.13	1.000	41.83
270	355.6	254.6	6.5000	8.13	1.000	43.27
280	301.4	308.8	6.2299	7.94	0.979	46.34
290	285.6	324.6	5.6582	7.53	0.933	46.47
300	281.4	328.8	6.0655	7.83	0.966	47.35
310	297.1	313.1	6.5000	8.13	1.000	46.98
320	294.7	315.5	6.5000	8.13	1.000	47.14
330	286.8	323.4	6.5000	8.13	1.000	47.64
340	278.4	331.8	6.5000	8.13	1.000	48.18
350	277.4	332.8	6.5000	8.13	1.000	48.24

Additional Radials: (Not Considered in Average):

086	270.6	339.6	6.5000	8.13	1.000	48.68
234	298.6	311.6	6.5000	8.13	1.000	46.89

Ave El= 288.89 M HAAT= 321.31 M AMSL= 610.2

# WCNP Proposed Pattern



Azi	Rel	dBk	kW	dB
0	1.000	8.13	6.50	-0.00
10	1.000	8.13	6.50	-0.00
20	1.000	8.13	6.50	-0.00
30	1.000	8.13	6.50	-0.00
40	1.000	8.13	6.50	-0.00
50	1.000	8.13	6.50	-0.00
60	1.000	8.13	6.50	-0.00
70	1.000	8.13	6.50	-0.00
80	1.000	8.13	6.50	-0.00
90	0.927	7.47	5.58	-0.66
100	0.736	5.47	3.52	-2.66
110	0.585	3.47	2.22	-4.66
120	0.464	1.47	1.40	-6.66
130	0.369	-0.53	0.88	-8.66
140	0.293	-2.53	0.56	-10.66
150	0.281	-2.90	0.51	-11.03
160	0.265	-3.41	0.46	-11.54
170	0.259	-3.60	0.44	-11.73

Azi	Rel	dBk	kW	dB
180	0.289	-2.65	0.54	-10.78
190	0.366	-0.60	0.87	-8.73
200	0.462	1.43	1.39	-6.70
210	0.582	3.43	2.20	-4.70
220	0.733	5.43	3.49	-2.70
230	0.923	7.43	5.53	-0.70
240	1.000	8.13	6.50	-0.00
250	1.000	8.13	6.50	-0.00
260	1.000	8.13	6.50	-0.00
270	1.000	8.13	6.50	-0.00
280	0.979	7.94	6.23	-0.18
290	0.933	7.53	5.66	-0.60
300	0.966	7.83	6.07	-0.30
310	1.000	8.13	6.50	-0.00
320	1.000	8.13	6.50	-0.00
330	1.000	8.13	6.50	-0.00
340	1.000	8.13	6.50	-0.00
350	1.000	8.13	6.50	-0.00

## Additional Points

Azi	Rel	dBk	kW	dB
86	1.000	8.13	6.50	0.00

Azi	Rel	dBk	kW	dB
234	1.000	8.13	6.50	0.00



FIELD ELEVATION PATTERN

ANT. NO. 1: 501V-1985

Field Elevation Pattern - 4 bay

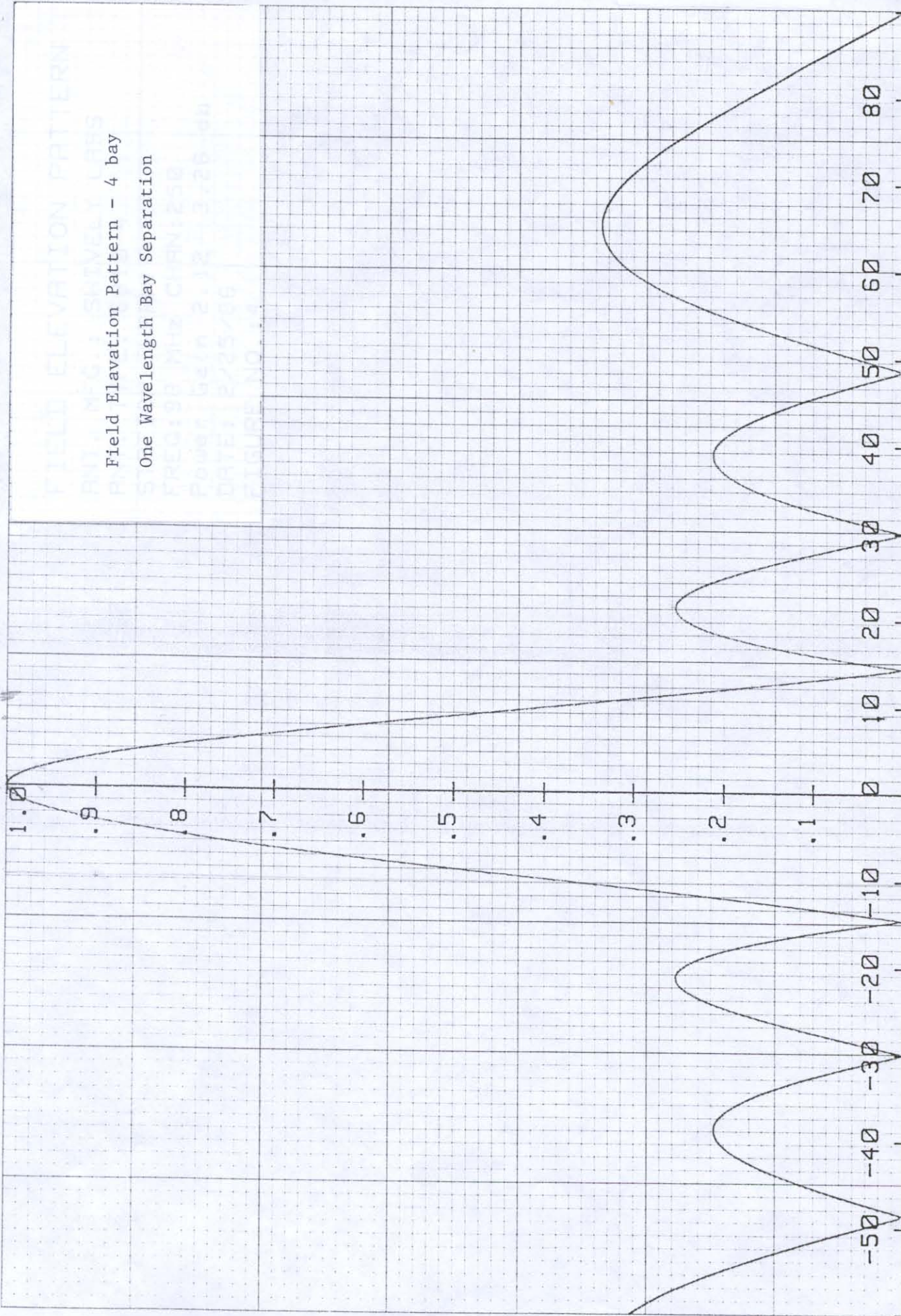
One Wavelength Bay Separation

FREQ: 98 MHz CHN: 25B

Power: 50W 2.12 3.26 db

DATE: 2/25/66

PT. CLIP: NO. 14



## **Directional Antenna**

The proposed custom directional antenna pattern meets the Commission's rules in that the radio frequency radiation does not change more than two dB for each ten degrees of azimuthal variation. Also, the maximum pattern attenuation in the deepest null is less than 15 dB. The pattern shown is a composite of the maximum field values in the horizontal and vertical planes.

The proposed antenna will be mounted on the leg of a tower that has been specified by the antenna manufacturer in accordance with the instructions provided by the manufacturer. The antenna will not be mounted on the top of a tower that includes a top mounted platform larger than the nominal cross-sectional area of the tower in the horizontal plane. No other antennas of any type will be mounted at the same tower level as the directional antenna nor within the horizontal or vertical distance specified by the manufacturer as being necessary to maintain proper directional operation. The antenna will be designed and tested by a major manufacturer of broadcast antennas known to the Commission. The pattern will be achieved through traditional methods including power-splitting, resonators and phasing.