

# Channel Study

REFERENCE		CH# 221D - 92.1 MHz, Pwr= 0.055 kW, HAAT= 53.6 M, COR= 255 M								DISPLAY DATES		
41 20 57.0 N.		Average Protected F(50-50)= 6.5 km								DATA 12-26-12		
83 36 15.0 W.		Omni-directional								SEARCH 01-02-13		
CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*	
223B Toledo	WVKS	LIC	CN OH	2.5 182.5	20.31 BMLH19961008KA	41 31 55.0 83 35 37.0	50.000 146	5.9 340	64.4 Citicasters	7.6 Licenses, Inc.	-45.1*<	
221A Bellevue	WOHF	LIC	NCX OH	100.6 281.1	65.35 BLH20120913AAR	41 14 19.0 82 50 16.0	5.800 103	87.3 337	29.0 Bas Broadcasting, Inc.	-28.3*<	15.0	
221D Rudolph	W221BG	LIC	C OH	202.3 22.3	12.10 BLFT20070130AJR	41 14 54.0 83 39 33.0	0.038 62	22.4 272	6.7 Educational Media Foundati	-16.4*	-15.1	
221D Whiteford Township	651357	APP	C MI	7.9 187.9	34.10 BNPFT20030317LYU	41 39 12.0 83 32 52.0	0.010 143	23.0 323	6.8 Michigan Community Radio	4.3	4.3	
221A Wapakoneta	WFGF	LIC	CN OH	209.2 28.9	88.20 BLH19850510KC	40 39 20.0 84 06 54.0	3.000 100	76.8 378	24.8 Maverick Media Of Lima Lic	5.3	43.0	
221D Sylvania	629818	APP	C OH	344.7 164.6	38.90 BNPFT20030313BCR	41 41 13.0 83 43 40.0	0.019 94	23.2 290	6.9 Educational Media Foundati	8.9	9.2	
220A Defiance	WGDE	LIC	DCN OH	265.0 84.5	66.07 BLED19990305KB	41 17 41.0 84 23 24.0	6.000 93	43.0 308	27.8 Public Broadcasting Founda	16.7	29.1	
221A Hillsdale	WCSR-FM	LIC	CN MI	307.2 126.5	107.36 BLH19910918KB	41 55 41.0 84 38 10.0	6.000 74	83.0 411	25.4 Wcsr, Inc	17.6	59.5	
218D Findlay	W215BW	CP	C OH	183.6 3.5	31.12 BPFT20120502AAL	41 04 10.0 83 37 38.0	0.027	0.4 320	7.2 Educational Media Foundati	24.6	23.4	
222B Detroit	WMXD	LIC	ZCN MI	22.8 203.2	118.62 BLH19970303KA	42 19 55.0 83 02 42.0	45.000 146	77.0 331	64.4 Amfm Radio Licenses, L.l.c	34.8	40.5	
221D Archbold	DW221AF	LIC	DHN OH	287.8 107.4	61.36 BLFT19850802TA	41 30 57.0 84 18 15.0	0.005 32	8.6 256	2.7 Archbold Evangelical Menno	46.2	36.7	
218A Delphos	WBIE	LIC	CX OH	230.9 50.5	70.70 BLED20011116AAW	40 56 48.0 84 15 24.0	5.500 98	2.7 319	27.6 American Family Associatio	61.9	42.6	
220A Marion	WXMF	LIC	DCX OH	158.1 338.4	87.93 BLED20091007ACC	40 36 51.0 83 12 56.0	6.000 93	29.2 367	19.8 Kayser Broadcast Ministrie	52.6	59.2	
219B Ann Arbor	WUOM	LIC	CN MI	347.8 167.6	120.32 BLED19990204KA	42 24 27.0 83 54 50.0	93.000 237	9.0 513	67.2 Regents Of The University	104.5	52.6	
220B1 Leamington	CBEW-FM-1<	OP	DHN ON	42.3 222.9	115.32 9353	42 06 46.0 82 39 52.0	10.450 74	41.8 263	31.4 Cbew-fm-1	59.5R	55.8M	
224B1 Leamington	CJSP-FM<	OP	DHN ON	49.3 230.0	113.57 8700	42 00 35.0 82 33 45.0	4.000 145	0.5 324	12.2 Cjsp-fm	53.5R	60.1M	
224A Bucyrus	WQEL	LIC	CX OH	139.0 319.4	86.07 BLH20060303AAO	40 45 49.0 82 56 00.0	3.000 93	2.3 402	24.6 Franklin Communications, I	77.5	60.9	

Terrain database is NGDC 30 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM

Contour distances are on direct line to and from reference station. Reference Zone= East Zone, Co to 3rd adjacent.

All separation margins (if shown) include rounding

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

\*\*\*affixed to 'IN' or 'OUT' values = site inside protected contour.

< = Station meets FCC minimum distance spacing for its class.

< = Contour Overlap

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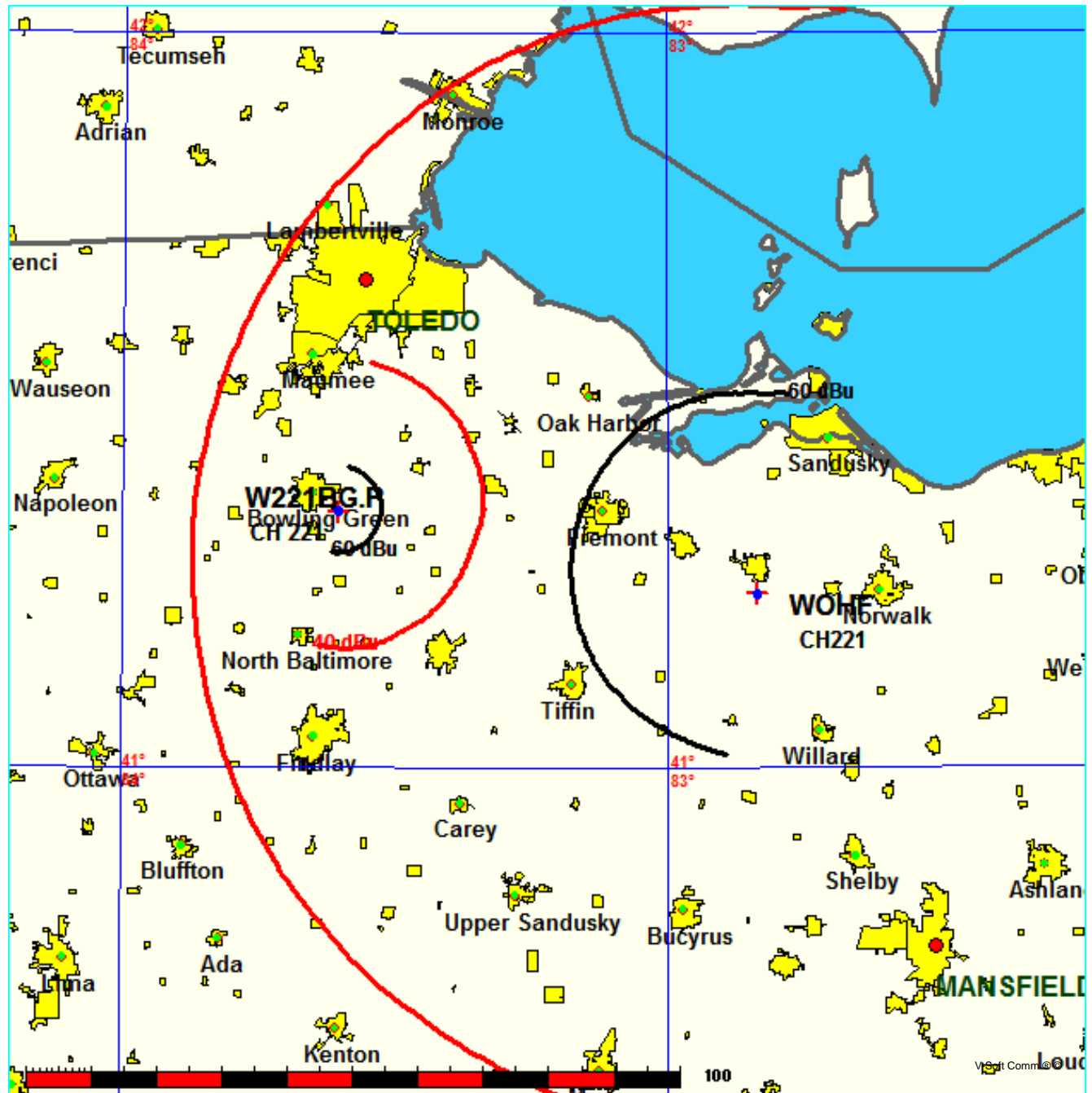
FMCommander Single Allocation Study - 01-02-2013 - NGDC 30 SEC  
W221BG.P's Overlaps (In= -28.31 km, Out= 14.99 km)

W221BG.P CH 221 D

Lat= 41 20 57.0, Lng= 83 36 15.0  
0.055 kW 53.6 M HAAT, 255 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

WOHF CH 221 A 73.215 N BLH20120913AAR

Lat= 41 14 19.0, Lng= 82 50 16.0  
5.8 kW 103 M HAAT, 337.4 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

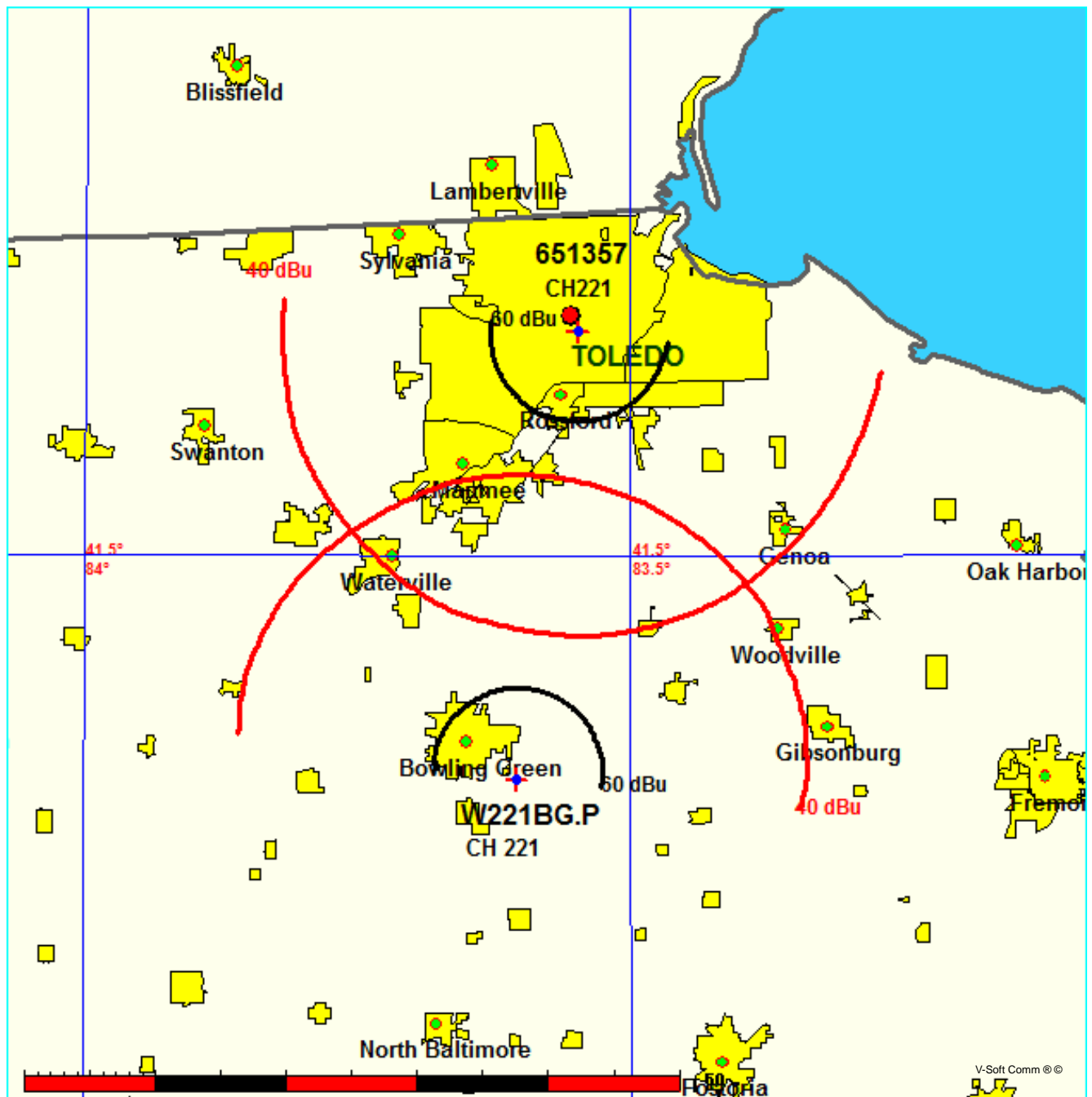


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FMCommander Single Allocation Study - 01-02-2013 - NGDC 30 SEC  
W221BG.P's Overlaps (In= 4.31 km, Out= 4.34 km)

W221BG.P CH 221 D  
Lat= 41 20 57.0, Lng= 83 36 15.0  
0.055 kW 53.6 M HAAT, 255 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

651357 CH 221 D BNPFT20030317LYU  
Lat= 41 39 12.0, Lng= 83 32 52.0  
0.01 kW 142.9 M HAAT, 323 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



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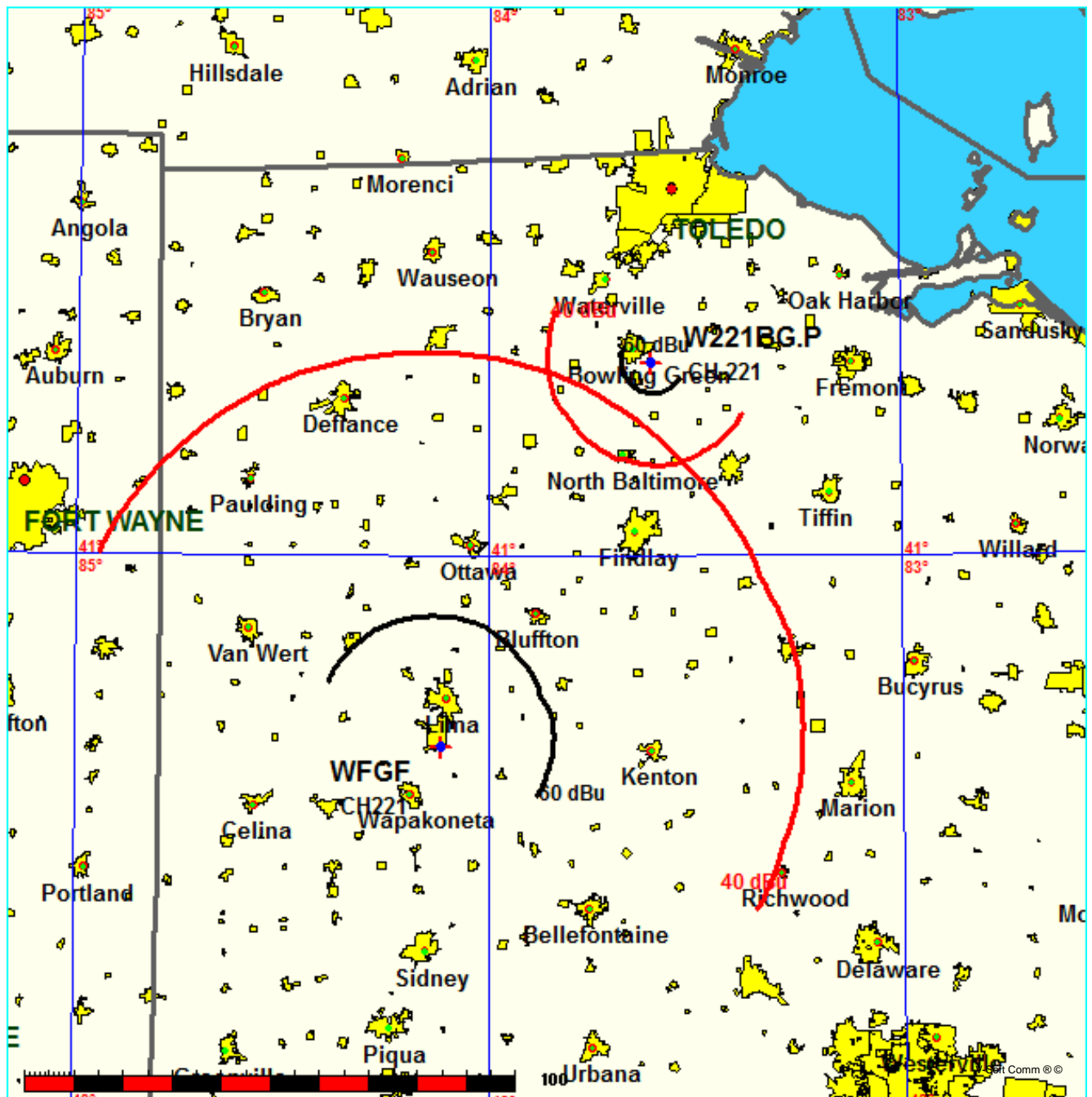
FMCommander Single Allocation Study - 01-02-2013 - NGDC 30 SEC  
W221BG.P's Overlaps (In= 5.29 km, Out= 43.04 km)

W221BG.P CH 221 D

Lat= 41 20 57.0, Lng= 83 36 15.0  
0.055 kW 53.6 M HAAT, 255 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

WFGF CH 221 A BLH19850510KC

Lat= 40 39 20.0, Lng= 84 06 54.0  
3.0 kW 100 M HAAT, 378 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



**Compliance with C.F.R. 74.1204**

The proposed FM Translator is also located within the protected 54dBu contour of second adjacent channel station WVKs, channel 223B, Toledo, OH. According to 74.1204(a)(3), in order to protect second and third adjacent facilities, the difference in dBu between the two facilities must not exceed 40dBu.

The proposed ERP for W221BG.P:	55 watts
The proposed COR for W221BG.P:	50 meters
WVKs F(50/50) contour at proposed site:	78.7dBu
The F(50/10) contour of proposed W221BG.P:	118.7dBu

The predicted distance to the 118.7dbu interfering contour is 60.42 meters. Taking into account the vertical elevation pattern for the RFS CPF500 single bay antenna and the height above ground of 50M, it has been determined that the interfering contour of 118.7dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 18.383M above ground.

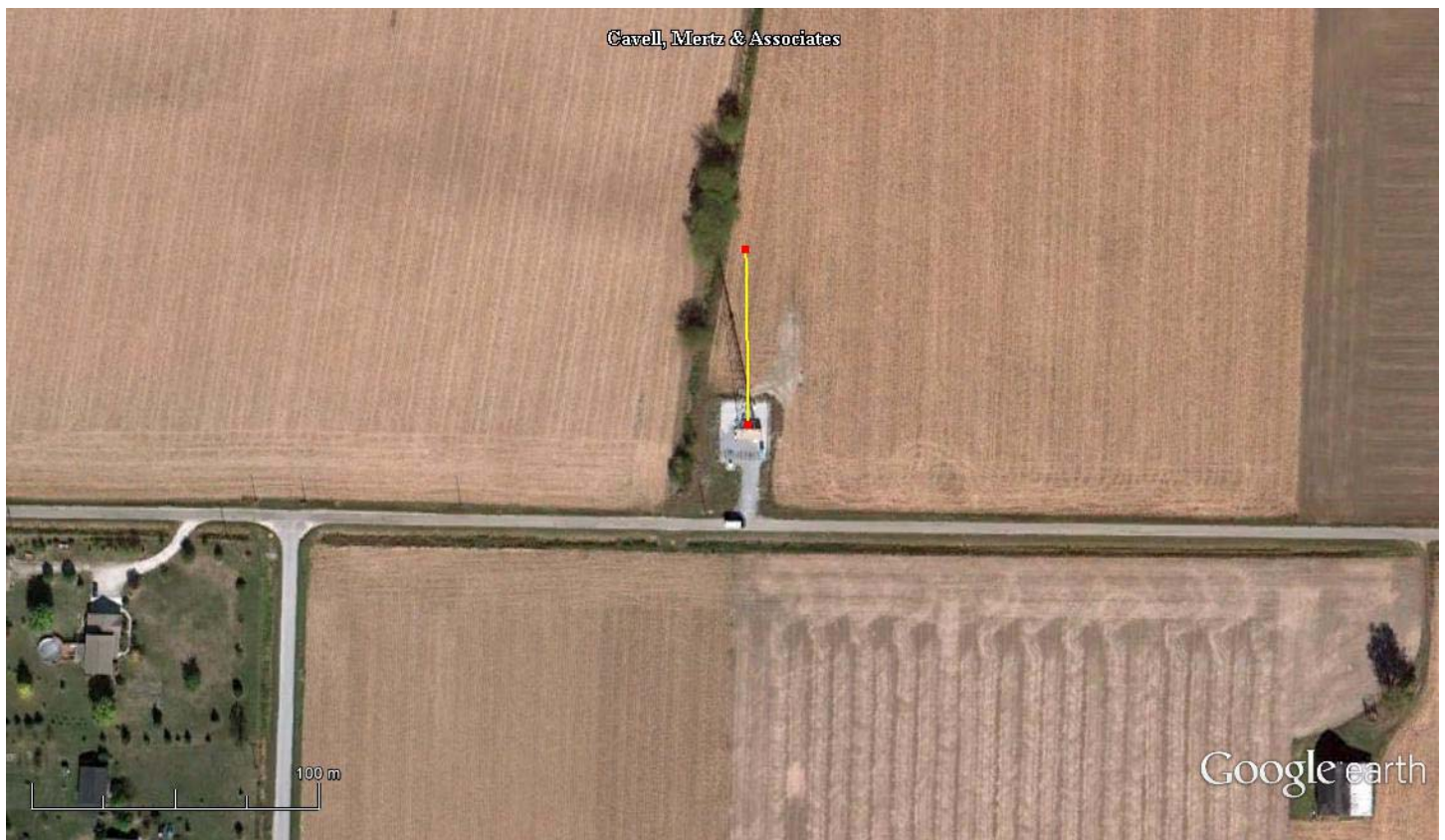
As can be seen in Exhibit 13–A2, there are no regularly occupied structures at the base of the tower and there are no structures which are tall enough to enter the 18.383 meter aperture.

Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1  
74.1204(d) Showing  
W221BG  
Rudolph, OH

ERP (kw): 0.055  
Height of Antenna above Ground (m): 50  
Translator's IX Contour: 118.7  
Antenna Type: RFS CPF-500

<b>Depression Angle from Horizon</b>	<b>Antenna Relative Field</b>	<b>ERP (kw) from the Antenna RF</b>	<b>Dist. To IX Contour (m)</b>	<b>Height IX Contour Above Ground (m)</b>
0	1.000	0.0550	60.4201	50.000
5	0.997	0.0546	60.2086	44.752
10	0.986	0.0535	59.5742	39.655
15	0.969	0.0516	58.5229	34.853
20	0.945	0.0491	57.0728	30.480
25	0.914	0.0460	55.2360	26.656
30	0.878	0.0424	53.0428	23.479
35	0.836	0.0384	50.5172	21.025
40	0.789	0.0343	47.6896	19.346
45	0.738	0.0300	44.5961	18.466
50	0.683	0.0257	41.2730	18.383
55	0.625	0.0215	37.7626	19.067
60	0.565	0.0175	34.1071	20.462
65	0.502	0.0139	30.3490	22.494
70	0.439	0.0106	26.5365	25.064
75	0.376	0.0078	22.7059	28.068
80	0.313	0.0054	18.9054	31.382
85	0.251	0.0035	15.1775	34.880
90	0.191	0.0020	11.5584	38.442



Google earth

feet 800  
meters 200



NAD 27

41 20' 57.0" N

83 36' 15.0" W

Marker: 60.4M at zero degrees true