Educational Media Foundation
5700 West Oaks Boulevard
Rocklin, CA 95765

Channel Study

REFERENCE CH# 257D - 99.3 MHz, Pwr= 0.085 kW DA, HAAT= 241.9 M, COR= 479.2 M DISPLAY DATES
39 56 14.0 N. Average Protected F(50-50)= 15.3 km DATA 03-10-14
83 01 16.0 W. Standard Directional SEARCH 03-12-14

CH CALL	TYPE ANT	AZI. DIST	LAT.	Pwr(kW)	INT(km)	PRO(km)	*IN*	*OUT*
CITY	STATE	<-- FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
259B WRKZ	LIC CN	351.4 3.80	39 58 16.0	20.000	6.0	67.5	-17.3*<	-64.9*<
Columbus	OH	171.4 BLH19881128KA	83 01 40.0	239	484	North American Broadcastin		
257D W257CU	LIC C	0.0 0.00	39 56 14.0	0.043	43.5	13.0	-58.8*	-63.3*
Columbus	OH	0.0 BLFT20130725AFL	83 01 16.0	242	477	Educational Media Foundati		
255A WTOH	LIC ZCN	351.4 3.80	39 58 16.0	2.600	2.4	28.6	-13.7*<	-25.4*<
Upper Arlington	OH	171.4 BLH19970501KB	83 01 40.0	154	396	Salem Media Of Ohio, Inc.		
256B WHKO	LIC C	258.2 107.42	39 44 02.0	50.000	97.7	81.1	-2.6<	0.2
Dayton	OH	77.4 BMLH20010810AAV	84 14 53.0	325	588	Cox Radio, Inc.		
257D W257EQ	LIC DC	132.9 66.49	39 31 44.0	0.250	2.5	1.1	48.0	13.0
Logan	OH	313.3 BLFT20110408AAB	82 27 13.0	25	301	Wloh Radio Company		
257D W257AB	LIC CN	352.9 72.18	40 34 56.0	0.050	21.8	6.5	35.3	15.8
Marion	OH	172.8 BLFT19951017TC	83 07 36.0	56	338	Educational Media Foundati		
257A WTNS-FM	LIC CN	69.3 108.50	40 16 30.0	1.200	66.5	21.5	26.8	36.8
Coshocton	OH	250.1 BLH4024	81 49 37.0	134	413	Coshocton Broadcasting Co.		
257A WNXT-FM	LIC CN	179.2 134.84	38 43 22.0	2.550	90.8	33.7	28.9	51.3
Portsmouth	OH	359.2 BLH19940111KE	82 59 56.0	156	378	Hometown Broadcasting Of P		
257D W257CV	LIC DC	20.3 97.98	40 45 50.0	0.250	49.1	14.6	34.1	34.3
Butler	OH	200.5 BLFT20120709AFZ	82 37 04.0	157	537	Gsm Media Corporation		
260B WCHD	LIC CX	257.1 104.47	39 43 19.0	28.000	5.6	63.3	86.5	40.3
Kettering	OH	76.3 BMLH20120315ACW	84 12 33.0	200	467	Citicasters Licenses, Inc.		
257A WVLO	CP ZCX	308.0 127.18	40 38 03.0	0.730	70.1	23.5	44.1	60.5
Cridersville	OH	127.2 BPED20130531AFK	84 12 29.0	256	522	Educational Media Foundati		
254D W254BJ	LIC C	271.7 72.45	39 57 11.0	0.012	0.2	5.2	60.0	66.8
Springfield	OH	91.1 BLFT20061218ACO	83 52 07.0	75	384	Spirit Communications, Inc		
257A WVLO	LIC NCX	308.0 127.18	40 38 03.0	0.115	53.3	16.4	61.0	67.6
Cridersville	OH	127.2 BMLED20130710AAC	84 12 29.0	256	522	Educational Media Foundati		
254A WYRO	LIC CX	157.2 94.18	39 09 18.0	5.400	2.7	27.8	75.6	65.7
Mcarthur	OH	337.4 BLH20120308AAT	82 35 49.0	105	349	Davis Broadcasting Media,		
256B1 WGGE	LIC CN	121.3 137.57	39 17 15.0	11.500	55.8	42.6	65.8	66.7
Parkersburg	WV	302.2 BLH19901023KE	81 39 25.0	148	373	Burbach Of De, Llc		

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.
< = Contour Overlap
Reference station has protected zone issue:

Educational Media Foundation

FMCommander Single Allocation Study - 03-13-2014 - NGDC 30 SEC
W257CU's Overlaps (In= -2.6 km, Out= 0.25 km)

W257CU CH 257 D DA
Lat= 39 56 14.0, Lng= 83 01 16.0
0.085 kW 241.9 M HAAT, 479.2 M COR
Prot.= 60 dBu, Intef.= 48 dBu

WHKO CH 256 B BMLH20010810AAV
Lat= 39 44 02.0, Lng= 84 14 53.0
50.0 kW 325 M HAAT, 588 M COR
Prot.= 54 dBu, Intef.= 54 dBu

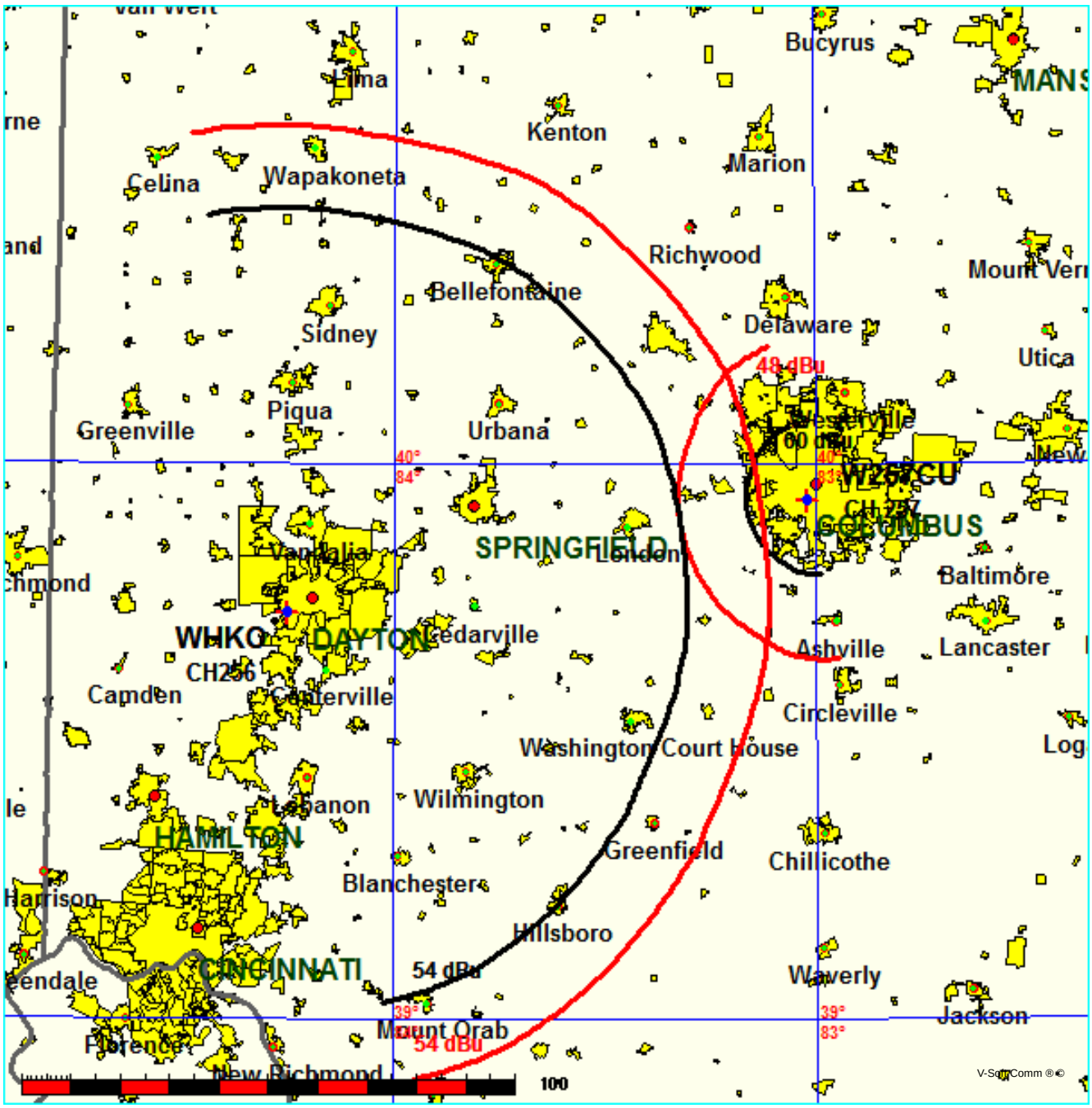
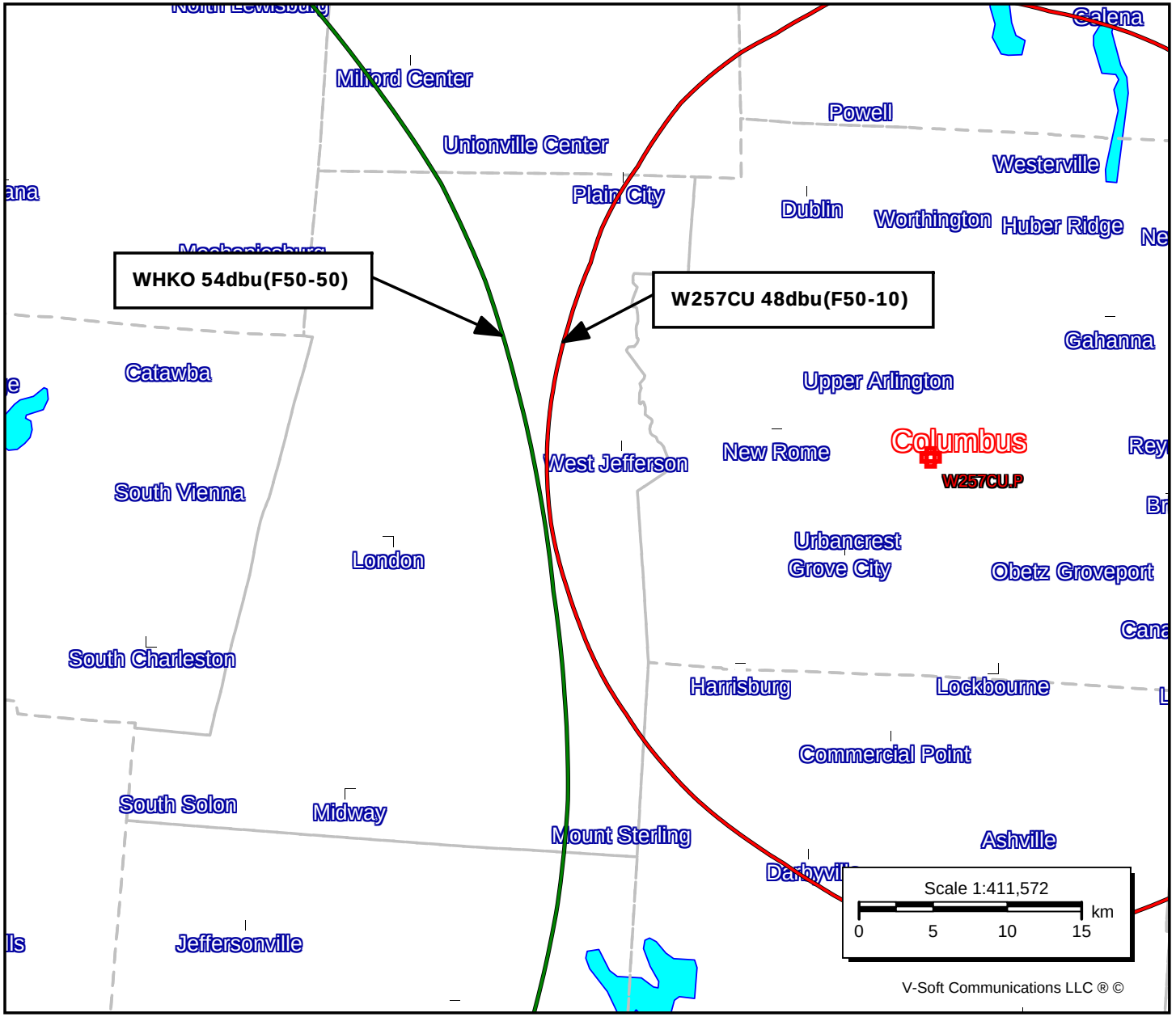


Exhibit 13-A
Interference Contour Detail

W257CU.P
BLFT20130725AFL
Latitude: 39-56-14 N
Longitude: 083-01-16 W
ERP: 0.085 kW
Channel: 257
Frequency: 99.3 MHz
AMSL Height: 477.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

WHKO
BMLH20010810AAV
Latitude: 39-44-02 N
Longitude: 084-14-53 W
ERP: 50.00 kW
Channel: 256
Frequency: 99.1 MHz
AMSL Height: 588.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None



Educational Media Foundation
5700 West Oaks Boulevard
Rocklin, CA 95765

Exhibit 13-B
Columbus, OH

WHKO vs. W257CU.P

03-13-2014 Terrain Data: NGDC 30 SEC FMOver Analysis

WHKO BMLH20010810AAV	W257CU.P
Channel = 256B	Channel = 257D
Max ERP = 50 kW	Max ERP = 0.085 kW
RCAMSL = 588 M	RCAMSL = 479.2 M
N. Lat. 39 44 02.0	N. Lat. 39 56 14.0
W. Lng. 84 14 53.0	W. Lng. 83 01 16.0
Protected	Interfering
54dBu	48dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
017.0	050.0000	0321.4	081.0	304.6	000.0478	0221.7	097.5	20.69	
018.0	050.0000	0323.1	081.1	304.9	000.0480	0221.9	096.2	21.12	
019.0	050.0000	0324.2	081.2	305.1	000.0481	0222.1	094.8	21.55	
020.0	050.0000	0324.7	081.2	305.4	000.0483	0222.3	093.4	21.98	
021.0	050.0000	0325.4	081.3	305.6	000.0484	0222.5	092.1	22.42	
022.0	050.0000	0326.7	081.4	305.9	000.0485	0222.6	090.7	22.86	
023.0	050.0000	0328.5	081.5	306.2	000.0487	0222.8	089.4	23.31	
024.0	050.0000	0330.6	081.6	306.5	000.0488	0222.9	088.0	23.75	
025.0	050.0000	0332.7	081.8	306.8	000.0490	0223.0	086.6	24.21	
026.0	050.0000	0334.8	081.9	307.0	000.0491	0223.1	085.2	24.66	
027.0	050.0000	0336.7	082.1	307.3	000.0492	0223.2	083.9	25.12	
028.0	050.0000	0338.5	082.2	307.5	000.0494	0223.3	082.5	25.58	
029.0	050.0000	0340.0	082.3	307.8	000.0495	0223.4	081.0	26.05	
030.0	050.0000	0341.2	082.4	308.0	000.0496	0223.4	079.6	26.52	
031.0	050.0000	0341.8	082.5	308.1	000.0497	0223.5	078.2	26.99	
032.0	050.0000	0342.0	082.5	308.2	000.0497	0223.5	076.8	27.46	
033.0	050.0000	0342.0	082.5	308.3	000.0498	0223.5	075.3	27.94	
034.0	050.0000	0342.1	082.5	308.4	000.0498	0223.5	073.9	28.42	
035.0	050.0000	0342.2	082.5	308.5	000.0499	0223.6	072.5	28.90	
036.0	050.0000	0342.3	082.5	308.5	000.0499	0223.6	071.0	29.38	
037.0	050.0000	0342.3	082.5	308.5	000.0499	0223.6	069.6	29.86	
038.0	050.0000	0342.2	082.5	308.5	000.0499	0223.6	068.1	30.35	
039.0	050.0000	0342.0	082.5	308.5	000.0499	0223.6	066.7	30.84	
040.0	050.0000	0341.8	082.5	308.5	000.0499	0223.6	065.3	31.33	
041.0	050.0000	0341.6	082.4	308.4	000.0498	0223.5	063.8	31.82	
042.0	050.0000	0341.3	082.4	308.3	000.0498	0223.5	062.4	32.33	
043.0	050.0000	0340.9	082.4	308.1	000.0497	0223.5	061.0	32.84	
044.0	050.0000	0340.6	082.4	308.0	000.0496	0223.4	059.5	33.37	
045.0	050.0000	0340.5	082.4	307.8	000.0495	0223.4	058.1	33.91	
046.0	050.0000	0340.8	082.4	307.6	000.0494	0223.3	056.7	34.45	
047.0	050.0000	0341.3	082.4	307.4	000.0493	0223.3	055.2	35.00	
048.0	050.0000	0341.8	082.5	307.1	000.0492	0223.2	053.8	35.56	
049.0	050.0000	0342.2	082.5	306.8	000.0490	0223.1	052.4	36.10	
050.0	050.0000	0342.5	082.5	306.5	000.0488	0222.9	051.0	36.65	
051.0	050.0000	0342.8	082.5	306.1	000.0486	0222.7	049.6	37.18	
052.0	050.0000	0343.2	082.6	305.6	000.0484	0222.4	048.2	37.70	
053.0	050.0000	0343.5	082.6	305.1	000.0481	0222.1	046.8	38.22	
054.0	050.0000	0343.7	082.6	304.5	000.0478	0221.7	045.5	38.75	
055.0	050.0000	0343.8	082.6	303.9	000.0475	0221.2	044.1	39.26	
056.0	050.0000	0343.9	082.6	303.1	000.0471	0220.6	042.8	39.78	
057.0	050.0000	0344.3	082.6	302.4	000.0467	0219.9	041.5	40.31	
058.0	050.0000	0345.1	082.7	301.5	000.0463	0219.1	040.2	40.84	

059.0	050.0000	0346.0	082.8	300.6	000.0459	0218.3	038.9	41.37
060.0	050.0000	0346.7	082.8	299.6	000.0454	0217.5	037.6	41.89
061.0	050.0000	0346.9	082.8	298.4	000.0452	0216.8	036.4	42.43
062.0	050.0000	0346.4	082.8	297.1	000.0448	0216.6	035.2	42.97
063.0	050.0000	0345.4	082.7	295.5	000.0444	0216.8	034.1	43.49
064.0	050.0000	0344.0	082.6	293.8	000.0440	0216.7	033.0	43.98
065.0	050.0000	0342.6	082.5	292.0	000.0436	0216.5	032.0	44.44
066.0	050.0000	0341.1	082.4	290.0	000.0431	0216.4	031.1	44.89
067.0	050.0000	0339.2	082.3	287.8	000.0428	0216.2	030.3	45.33
068.0	050.0000	0337.1	082.1	285.4	000.0425	0216.4	029.5	45.77
069.0	050.0000	0335.2	082.0	283.0	000.0422	0216.8	028.8	46.19
070.0	050.0000	0333.9	081.9	280.4	000.0419	0217.1	028.1	46.58
071.0	050.0000	0332.7	081.8	277.7	000.0419	0217.1	027.5	46.96
072.0	050.0000	0331.3	081.7	274.9	000.0419	0217.0	027.0	47.28
073.0	050.0000	0329.7	081.6	271.9	000.0419	0217.1	026.7	47.54
074.0	050.0000	0328.1	081.5	268.9	000.0419	0217.3	026.4	47.74
075.0	050.0000	0326.4	081.3	265.8	000.0419	0217.8	026.2	47.88
076.0	050.0000	0324.8	081.2	262.7	000.0419	0218.5	026.1	47.97
077.0	050.0000	0323.4	081.1	259.6	000.0419	0219.2	026.1	47.99
078.0	050.0000	0322.1	081.0	256.4	000.0419	0219.5	026.2	47.93
079.0	050.0000	0320.9	080.9	253.4	000.0419	0219.9	026.4	47.81
080.0	050.0000	0319.9	080.9	250.4	000.0419	0220.4	026.7	47.64
081.0	050.0000	0319.1	080.8	247.5	000.0419	0221.6	027.0	47.45
082.0	050.0000	0318.6	080.8	244.6	000.0419	0223.2	027.5	47.23
083.0	050.0000	0318.3	080.7	241.9	000.0419	0225.4	028.0	46.99
084.0	050.0000	0318.3	080.7	239.3	000.0420	0227.4	028.5	46.71
085.0	050.0000	0318.4	080.7	236.8	000.0422	0228.8	029.2	46.40
086.0	050.0000	0318.5	080.7	234.4	000.0424	0229.7	029.9	46.03
087.0	050.0000	0318.5	080.8	232.2	000.0426	0230.6	030.7	45.64
088.0	050.0000	0318.4	080.7	230.2	000.0428	0231.7	031.5	45.24
089.0	050.0000	0318.3	080.7	228.2	000.0433	0232.7	032.4	44.85
090.0	050.0000	0318.1	080.7	226.4	000.0438	0233.7	033.4	44.45
091.0	050.0000	0317.7	080.7	224.8	000.0442	0234.5	034.4	44.02
092.0	050.0000	0316.8	080.6	223.4	000.0446	0235.1	035.5	43.54
093.0	050.0000	0315.9	080.6	222.0	000.0450	0235.6	036.6	43.06
094.0	050.0000	0315.0	080.5	220.8	000.0453	0236.3	037.8	42.56
095.0	050.0000	0313.9	080.4	219.7	000.0457	0236.9	039.0	42.06
096.0	050.0000	0312.6	080.3	218.7	000.0460	0237.3	040.2	41.55
097.0	050.0000	0311.4	080.2	217.8	000.0464	0237.7	041.5	41.03
098.0	050.0000	0310.0	080.1	217.0	000.0467	0238.1	042.7	40.51
099.0	050.0000	0308.6	080.0	216.3	000.0469	0238.4	044.0	39.99
100.0	050.0000	0307.3	079.9	215.6	000.0472	0238.7	045.3	39.47
101.0	050.0000	0306.1	079.8	215.0	000.0474	0238.9	046.6	38.95
102.0	050.0000	0305.0	079.8	214.5	000.0476	0239.1	047.9	38.44
103.0	050.0000	0304.0	079.7	214.0	000.0478	0239.3	049.3	37.93
104.0	050.0000	0302.7	079.6	213.5	000.0480	0239.4	050.6	37.41
105.0	050.0000	0301.0	079.5	213.2	000.0481	0239.5	052.0	36.87
106.0	050.0000	0299.4	079.3	212.9	000.0482	0239.6	053.3	36.33
107.0	050.0000	0297.9	079.2	212.6	000.0483	0239.6	054.7	35.79
108.0	050.0000	0296.7	079.1	212.3	000.0484	0239.7	056.1	35.25
109.0	050.0000	0295.9	079.0	212.1	000.0485	0239.8	057.4	34.72
110.0	050.0000	0295.2	079.0	211.9	000.0486	0239.8	058.8	34.20
111.0	050.0000	0294.7	079.0	211.7	000.0487	0239.9	060.1	33.69
112.0	050.0000	0294.5	078.9	211.5	000.0488	0239.9	061.5	33.18
113.0	050.0000	0294.6	078.9	211.3	000.0489	0240.0	062.9	32.69
114.0	050.0000	0294.8	079.0	211.1	000.0489	0240.0	064.2	32.21
115.0	050.0000	0295.3	079.0	211.0	000.0490	0240.1	065.6	31.75
116.0	050.0000	0295.9	079.0	210.8	000.0490	0240.1	067.0	31.28
117.0	050.0000	0296.8	079.1	210.7	000.0491	0240.1	068.3	30.82
118.0	050.0000	0297.9	079.2	210.6	000.0491	0240.2	069.7	30.35
119.0	050.0000	0299.2	079.3	210.5	000.0492	0240.2	071.1	29.89
120.0	050.0000	0300.2	079.4	210.4	000.0492	0240.2	072.5	29.43

Educational Media Foundation
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Exhibit 13-A
Columbus, OH

Compliance with C.F.R. 74.1204

The proposed FM Translator is located within the protected 54dBu contour of second adjacent channel station WRKZ, channel 259B, Columbus, 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 W257CU.P:	85 watts
The proposed COR for W257CU.P:	259 meters
WRKZ F(50/50) contour at proposed site:	105.8dBu
The F(50/10) contour of proposed W257CU.P:	145.8dBu

The predicted distance to the 145.8dbu interfering contour is 3.3 meters. Taking into account the vertical elevation pattern of the Jampro JLCP single bay antenna and the height above ground of 259M, it has been determined that the interfering contour of 145.8dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 257.535M above ground.

As can be seen in Exhibit 13–A2 there are no surrounding structures which are tall enough to enter the 257.535 meter aperture within the 3.3 meter radius from the base of the tower.

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
W257CU
Columbus, OH

ERP (kw): 0.085
Height of Antenna above Ground (m): 259
Translator's IX Contour: 145.8
Antenna Type: JLCP-1

Depression Angle from Horizon	Antenna Relative Field	ERP (kw) from the Antenna RF	Dist. To IX Contour (m)	Height IX Contour Above Ground (m)
0	1.000	0.0850	3.3167	259.000
5	0.994	0.0840	3.2968	258.713
10	0.975	0.0808	3.2338	258.438
15	0.940	0.0751	3.1177	258.193
20	0.910	0.0704	3.0182	257.968
25	0.880	0.0658	2.9187	257.766
30	0.840	0.0600	2.7860	257.607
35	0.770	0.0504	2.5539	257.535
40	0.710	0.0428	2.3549	257.486
45	0.650	0.0359	2.1559	257.476
50	0.600	0.0306	1.9900	257.476
55	0.520	0.0230	1.7247	257.587
60	0.450	0.0172	1.4925	257.707
65	0.380	0.0123	1.2604	257.858
70	0.320	0.0087	1.0614	258.003
75	0.250	0.0053	0.8292	258.199
80	0.180	0.0028	0.5970	258.412
85	0.140	0.0017	0.4643	258.537
90	0.010	0.0000	0.0332	258.967

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Exhibit 13-A
Columbus, OH

Compliance with C.F.R. 74.1204

The proposed FM Translator is located within the protected 60dBu contour of second adjacent channel station WTOH, channel 255A, Upper Arlington, 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 W257CU.P:	85 watts
The proposed COR for W257CU.P:	259 meters
WTOH F(50/50) contour at proposed site:	94.1dBu
The F(50/10) contour of proposed W257CU.P:	134.1dBu

The predicted distance to the 134.1dbu interfering contour is 12.76 meters. Taking into account the vertical elevation pattern of the Jampro JLCP single bay antenna and the height above ground of 259M, it has been determined that the interfering contour of 134.1dbu does not reach the ground. As seen in Exhibit 13-A1, the lowest elevation for this interfering contour is 253.137M above ground.

As can be seen in Exhibit 13–A2 there are no surrounding structures which are tall enough to enter the 253.137 meter aperture within the 12.76 meter radius from the base of the tower.

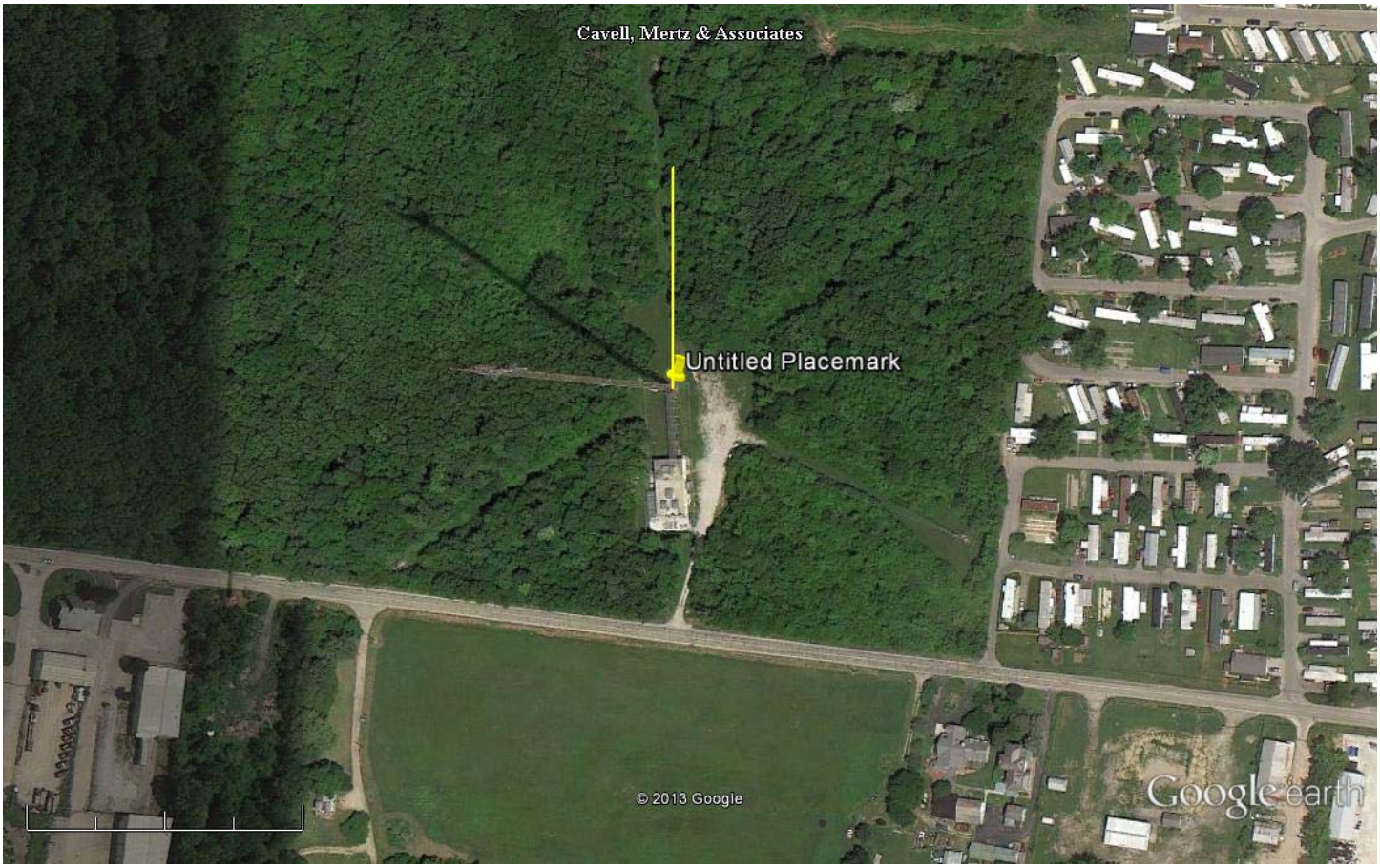
Therefore, EMF respectfully requests a waiver of C.F.R. 74.1204 based on no population within the area of predicted interference.

EXHIBIT 13 - A1
74.1204(d) Showing
W257CU
Columbus, OH

ERP (kw): 0.085
Height of Antenna above Ground (m): 259
Translator's IX Contour: 134.1
Antenna Type: JLCP-1

Depression Angle from Horizon	Antenna Relative Field	ERP (kw) from the Antenna RF	Dist. To IX Contour (m)	Height IX Contour Above Ground (m)
0	1.000	0.0850	12.7559	259.000
5	0.994	0.0840	12.6793	257.895
10	0.975	0.0808	12.4370	256.840
15	0.940	0.0751	11.9905	255.897
20	0.910	0.0704	11.6078	255.030
25	0.880	0.0658	11.2251	254.256
30	0.840	0.0600	10.7149	253.643
35	0.770	0.0504	9.8220	253.366
40	0.710	0.0428	9.0567	253.178
45	0.650	0.0359	8.2913	253.137
50	0.600	0.0306	7.6535	253.137
55	0.520	0.0230	6.6330	253.567
60	0.450	0.0172	5.7401	254.029
65	0.380	0.0123	4.8472	254.607
70	0.320	0.0087	4.0819	255.164
75	0.250	0.0053	3.1890	255.920
80	0.180	0.0028	2.2961	256.739
85	0.140	0.0017	1.7858	257.221
90	0.010	0.0000	0.1276	258.872

Exhibit 13-A2



Google earth

feet 1000
meters 300

Yellow Pin
NAD 27
39 56' 14.0" N
83 01' 16.0" W
Yellow Marker: 100m at zero degrees true north