

Comprehensive Engineering Exhibit

Minor Modification of BNPFT-20130823ABA

W268CC, Facility ID No. 140101

This exhibit is in support of a minor modification to specify a new transmitter location for W268CC.

Antenna Location

The proposed facility antenna is to be mounted on ASR 1023126, at 86 meters above ground level. Below as **Figure 1** is an overlap and spacing study from which it can be determined that this proposal is within the permitted protected contour of **second** adjacent channel stations W266CN channel 266, Hillsboro.

Concerning W266CN, Section 74.1204(d) states that *“The provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.”*

We will demonstrate that a lack of population and/or other factors allow this proposal to be compliant with 74.1204. The process commonly called “Living Way”¹, which allows for the use of U/D Analysis, also known as “signal strength ratio methodology” is to be utilized. In this instant case the facilities of to be protected are second adjacent and are to be afforded protection from signals 40 dB stronger² than they present in the location of the proposed antenna location.

Figure 2 is a map showing the predicted 66 dBu signal contour of W266CN at the proposed translator antenna location utilizing the FCC F50:50 curves. Thus only a signal exceeding 106 dBu (66 + 40) in a habitable area is predicted to cause interference to W266CN from this instant proposal. Utilizing the line of sight equation³ and proposed antenna pattern it has been determined that a 106 dBu signal developed by 250 watts, as proposed, emitted by the proposed antenna mounted 86 meters above ground will not reach habitable space as demonstrated in **Figures 3, 4, and 4a**. With examination of the images in **Figures 4 and 4a** it can be determined that no habitable space is within the confines of the interference contour. Thus the provisions of the rules section concerning prohibited overlap will not apply as it has been demonstrated that no actual interference will occur due to a lack of population and other factors as applied in this instant proposal.

¹ As recently described in FCC 08-242 in connection with BPFT-19981001TA

² See §74.1204(a)(3)

³ $\text{ReachDistMeters} = 106.92 - (20 * (\text{LOG}_{10}[\text{DistMeters}] / 1000)) + [\text{ERP in dBk}]$

Minor Change Status

This modification qualifies as a minor change⁴ as there is contour overlap as shown in **Figure 2** by the proposed site being within the 76 dBu of the permitted facility, with no change in channel.

RF Radiation Statement

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation."

The proposed antenna system is a Scale "FMVMP-3", 3- element vertical polarity antenna mounted 86 meters above ground. As this element type is not modeled in the FM Model program, a worst-case "Ring-Stub" type of antenna element array was used in the program, with an effective radiated power of 0.250 Kilowatts in the vertical plane. At 2 meters above the surface, at 15 meters from the base of the tower, this proposal will contribute worst case, 0.1 microwatts per square centimeter, or 0.01 percent of the allowable ANSI limit for controlled exposure, and 0.05 percent of the allowable limit for uncontrolled exposure. This figure is less than 5% of the applicable FCC exposure limit at all locations extending out from the base of the tower. Section 1.1307(b)(3) excludes applications when the calculated level is predicted to be less than 5% of the applicable exposure limit. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission.

Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.

⁴ See §74.1233

Figure 1. Overlap and Spacing Study

w268CC @ ASR 1023126 Citicasters Licenses, L.p. Average Protected F(50-50)= 11.06 km Omni-directional											
CH	CALL	TYPE	ANT STATE	AZI <-	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km)	*IN* LICENSEE	*OUT* (overlap in km)
268D	w268CC	CP	_C_	342.7	5.75	39 12 56.0	0.250	40.2	11.7	-46.2*<	-46.0*<
	Hillsboro	OH		162.7	BNPFT20130823ABW	83 37 37.0	73	387		Citicasters Licenses, L.p.	
268B	wxrw	LIC	_CN	108.1	126.13	38 48 19.0	50.000	137.6	64.9	-24.2*<	1.2
	Gallipolis	OH		289.0	BLH19870923KB	82 13 36.0	150	360		Fifth Avenue Broadcasting	
268A	wCLI-FM	LIC	ZCX	333.6	89.13	39 53 02.0	6.000	89.1	30.1	-11.0*<	21.2
	Enon	OH		153.3	BLH20110223AB5	84 04 17.0	100	376		Alpha Media Licensee Lic	
266D	w266CN	CP	_C_	353.1	4.00	39 12 06.8	0.038	0.4	6.4	-8.0*<	-3.5*<
	Hillsboro	OH		173.1	BNPFT20130830ACL	83 36 45.3	54	366		World Evangelistic Enterpr	
270B	wKRO	LIC	_C_	266.2	77.56	39 06 59.0	16.000	6.0	69.0	59.8	7.1
	Cincinnati	OH		85.6	BLH19991004ABU	84 30 07.0	264	483		Cincinnati Fcc License Sub	
267A	wAGX	LIC	_CN	185.2	63.00	38 36 03.0	3.000	32.4	21.8	18.2	22.9
	Manchester	OH		5.2	BLH19921027KA	83 40 22.0	91	328		Jewell Schaeffer Broadcast	
268L1	1592306	APP	_	259.3	79.21	39 01 48.2	0.012			49.6	33.6
	Covington	KY		78.7	BNPL20131112AWI	84 30 21.2	84	293		24-7 Broadcasting, Inc.	
268L1	1583546	APP	_	266.8	81.47	39 07 19.0	0.008			49.2	34.6
	Covington	KY		86.2	BNPL20131112AMA	84 32 52.0	100	309		South Cincinnati Community	
265A	wXIZ	LIC	_CN	83.2	53.44	39 13 17.0	0.920	1.5	17.2	37.5	35.1
	Waverly	OH		263.6	BLH5076	82 59 33.0	152	393		Crystal Communications Cor	
	Accepted by Canada on 940413										
268D	wCLI-FM1	LIC	DV_	320.2	80.91	39 43 26.0	0.440	24.6	7.3	45.2	35.7
	Moraine	OH		139.9	BLFTB20120217AAF	84 12 43.0		239		Alpha Media Licensee Lic	
268D	wxBw-FM1	LIC	DV_	132.6	123.93	38 24 25.0	3.500	74.5	23.8	36.0	54.1
	Huntington	WV		313.3	BLFTB20061116ADN	82 33 40.0		278		Fifth Avenue Broadcasting	
270D	w270CG	CP	_C_	66.3	54.11	39 21 35.0	0.013	0.3	5.5	40.2	47.5
	Chillicothe	OH		246.7	BNPFT20130328ANS	83 01 54.0	91	331		Spirit Communications, Inc	
268C3	wVLK-FM	LIC	NCN	203.8	155.99	37 52 45.0	9.000	100.2	36.8	44.4	80.1
	Richmond	KY		23.4	BLH19970224KA	84 19 33.0	165	426		Cumulus Licensing Lic	
266A	wIZF	LIC	_CX	265.6	82.41	39 06 18.0	2.500	2.8	32.6	67.8	48.7
	Erlanger	KY		85.0	BLH20060721AAQ	84 33 25.0	155	379		Blue Chip Broadcasting Lic	
268B	wKKG	LIC	_CN	271.4	202.47	39 11 12.0	50.000	139.6	66.8	51.0	78.4
	Columbus	IN		89.9	BLH19890619KA	85 57 00.0	150	354		White River Broadcasting C	
266A	wOSA	LIC	ZCX	33.1	86.18	39 48 52.0	6.000	2.3	24.3	70.9	60.7
	Grove City	OH		213.4	BMLED20100716ABW	83 03 22.0	100	333		The Ohio State University	
215B	wGUC	LIC	_CX	266.9	77.24	39 07 29.9	18.500	0.0	0.0	14.5R	62.7M
	Cincinnati	OH		86.3	BLEED20101221ABF	84 29 56.2	209	419		Cincinnati Public Radio, I	
269B1	wNKO	LIC	ZC_	37.0	136.71	40 08 38.0	22.000	58.8	43.8	65.0	69.7
	New Albany	OH		217.6	BLH20110330AAG	82 38 20.0	107	448		Runnymede, Inc.	
267B1	wFMG	LIC	NCX	303.3	135.65	39 49 41.0	20.500	52.6	38.5	71.3	76.5
	Richmond	IN		122.5	BLH20060613ACE	84 55 57.0	83	397		Rodgers Broadcasting Corpo	
266D	w266BG	LIC	DV_	319.1	83.77	39 44 02.0	0.099	0.2	9.9	72.4	72.8
	Dayton	OH		138.7	BLFT20140404ABJ	84 14 53.0		538		Bradlee J Beer	

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= , 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

Figure 2. Contour Map

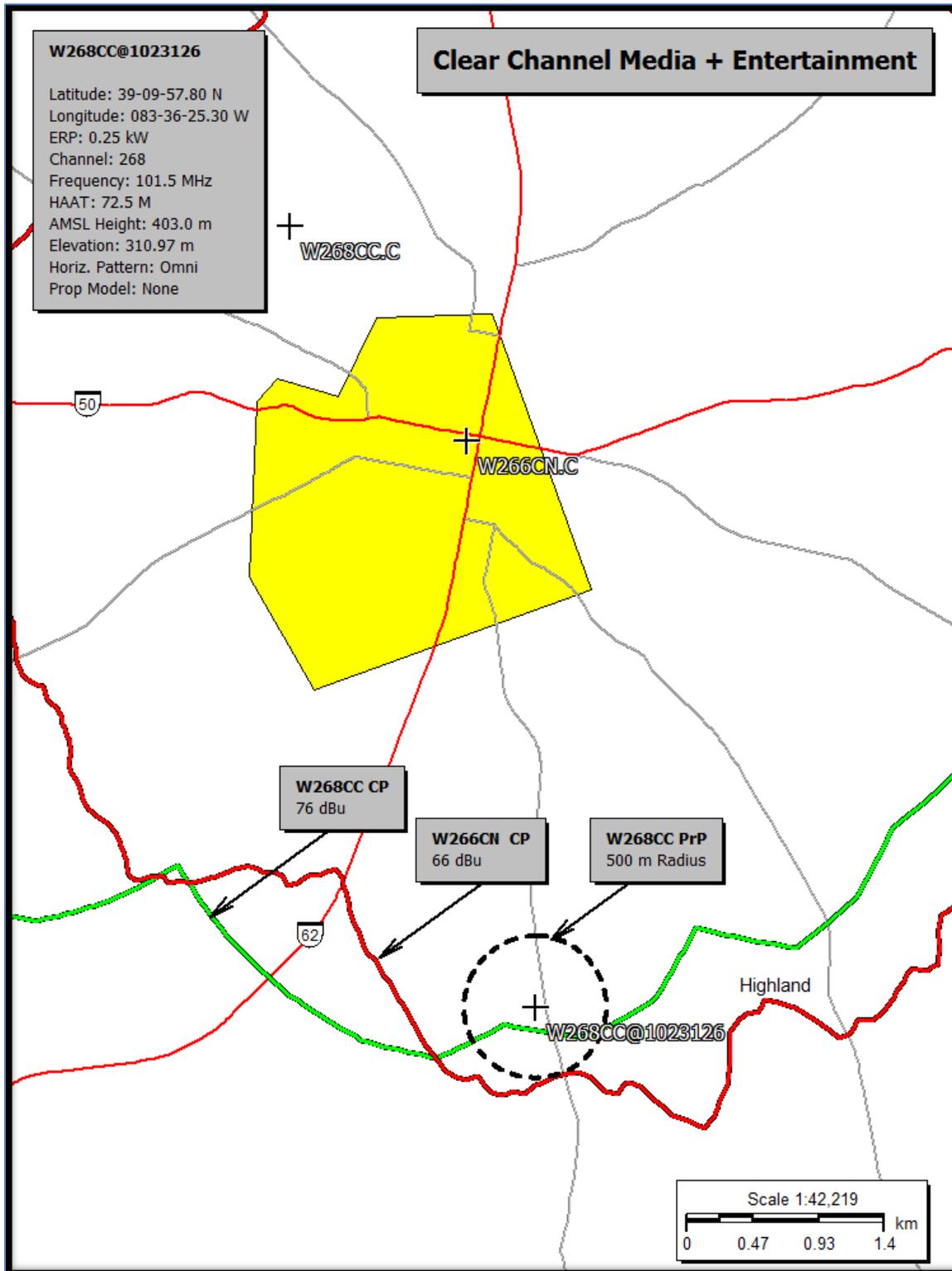


Figure 3. Distance to Signal Contour

<p>Proposed Antenna: Scala FM/MMP-3</p> <p>Proposed Power: 0.25 kW</p> <p>Antenna Height AGL: 86 meters</p> <p>Interference Contour: 106 dBu f(50:10)</p> <p>Artificial Rcv Antenna Height: 2 meters</p> <p>Distance (Free Space) Equation: $= (10^{((106.92 - [\text{desired dBu}] + [\text{ERP in dBk}]) / 20)}) * 1000$</p> <p>Field Strength (dBu) Equation: $= 106.92 - (20 * (\text{LOG10}[\text{DistMeters} / 1000])) + [\text{ERP in dBk}]$</p>								
Depression				Distance				
Angle	Antenna			from Ant.	Distance	Field Strength	Distance	Field Strength
Below	Relative	ERP	ERP	to Interf	from Ant. to	in dBu @	from Ant.	in dBu @
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	to Ground Level	Ground Level
0°	1.000	0.250	-6.02	555.87 m	infinite	---	infinite	---
-5°	0.921	0.212	-6.74	511.95 m	963.79 m	100.50 dBu	986.74 m	100.30 dBu
-10°	0.708	0.125	-9.02	393.78 m	483.74 m	104.21 dBu	495.25 m	104.01 dBu
-15°	0.418	0.044	-13.61	232.07 m	324.55 m	103.09 dBu	332.28 m	102.88 dBu
-20°	0.126	0.004	-24.02	69.98 m	245.60 m	95.10 dBu	251.45 m	94.89 dBu
-25°	0.100	0.003	-25.99	55.81 m	198.76 m	94.97 dBu	203.49 m	94.76 dBu
-30°	0.224	0.012	-19.04	124.24 m	168.00 m	103.38 dBu	172.00 m	103.17 dBu
-35°	0.242	0.015	-18.33	134.74 m	146.45 m	105.28 dBu	149.94 m	105.07 dBu
-40°	0.186	0.009	-20.65	103.17 m	130.68 m	103.95 dBu	133.79 m	103.74 dBu
-45°	0.093	0.002	-26.67	51.58 m	118.79 m	98.75 dBu	121.62 m	98.55 dBu
-50°	0.001	0.000	-66.02	0.56 m	109.65 m	60.10 dBu	112.27 m	59.89 dBu
-55°	0.069	0.001	-29.22	38.47 m	102.55 m	97.48 dBu	104.99 m	97.28 dBu
-60°	0.108	0.003	-25.36	59.98 m	96.99 m	101.82 dBu	99.30 m	101.62 dBu
-65°	0.118	0.003	-24.56	65.76 m	92.68 m	103.02 dBu	94.89 m	102.81 dBu
-70°	0.107	0.003	-25.42	59.53 m	89.39 m	102.47 dBu	91.52 m	102.26 dBu
-75°	0.082	0.002	-27.71	45.75 m	86.96 m	100.42 dBu	89.03 m	100.22 dBu
-80°	0.050	0.001	-32.04	27.79 m	85.30 m	96.26 dBu	87.33 m	96.06 dBu
-85°	0.015	0.000	-42.50	8.34 m	84.32 m	85.90 dBu	86.33 m	85.70 dBu
-90°	0.020	0.000	-39.96	11.17 m	84.00 m	88.48 dBu	86.00 m	88.27 dBu

Figure 4. Aerial View.



Figure 4a. Road View.

