

**Comprehensive Engineering Exhibit  
Minor Change of BLFT-20160322ADH  
Facility ID No. 150854, W258AY  
January 2017**

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This exhibit is for a Minor Change of translator W258AY, BLFT-200708ABH. The modification is seeking to modify the translator antenna type only, from directional to non-directional.

**Antenna Location**

The proposed antenna is to be mounted on ASR 1035830 at 159 meters above ground. Below as **Figure 1** is an overlap and spacing study, that takes into account the proposed non-directional directional antenna, from which it can be determined that this proposal is within the protected contour of **second** adjacent channel station WMXC and WKNN-FM. 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"<sup>1</sup>, allows for the use of U/D Analysis, also known as "signal strength ratio methodology" to be utilized. In this instant case the facilities to be protected are second adjacent and are to be afforded protection from signals 40 dB stronger<sup>2</sup> than they present in the location of the proposed antenna location.

**Figure 2** is a map from which it can be determined that at the proposed translator location WMXC has a signal of 87.3 dBu and WKNN-FM a 61.4 dBu signal. Thus protection of WKNN-FM is the "controlling" limit as protection of its 60.4 dBu signal will afford the required protection to the 87.3 dBu signal of WMXC by a +40 dB ratio.

Utilizing the line of sight equation<sup>3</sup> it has been determined that a 101.4 dBu signal is developed by 250 watts, as proposed, emitted by the proposed antenna mounted 159 meters above ground, will not reach within 8 meters above ground level, as demonstrated in **Figure 3** and with examination of the image in **Figures 4** it can be determined that no habitable space extends above this height. 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.

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<sup>1</sup> As recently described in FCC 08-242 in connection with BPFT-19981001TA

<sup>2</sup> See 74.1204(a)(3)

<sup>3</sup>  $\text{ReachDistMeters} = 106.92 - (20 * (\text{LOG10}[\text{DistMeters}/1000])) + [\text{ERP in dBk}]$

### **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 **Dielectric DCR-T4E** 4- element antenna mounted 159 meters above ground. As this element type is not modeled in any current computer program, for purposes of this analysis the FM Model program has been set to calculate values for a "worst case" type of antenna element array of "Ring Stub", operated with an effective radiated power of 0.25 Kilowatts in vertical and horizontal. At 2 meters above the surface, at 28.8 meters from the base of the tower, this proposal will contribute worst case, 0.4 microwatts per square centimeter, or 0.04 percent of the allowable ANSI limit for controlled exposure, and 0.20 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.

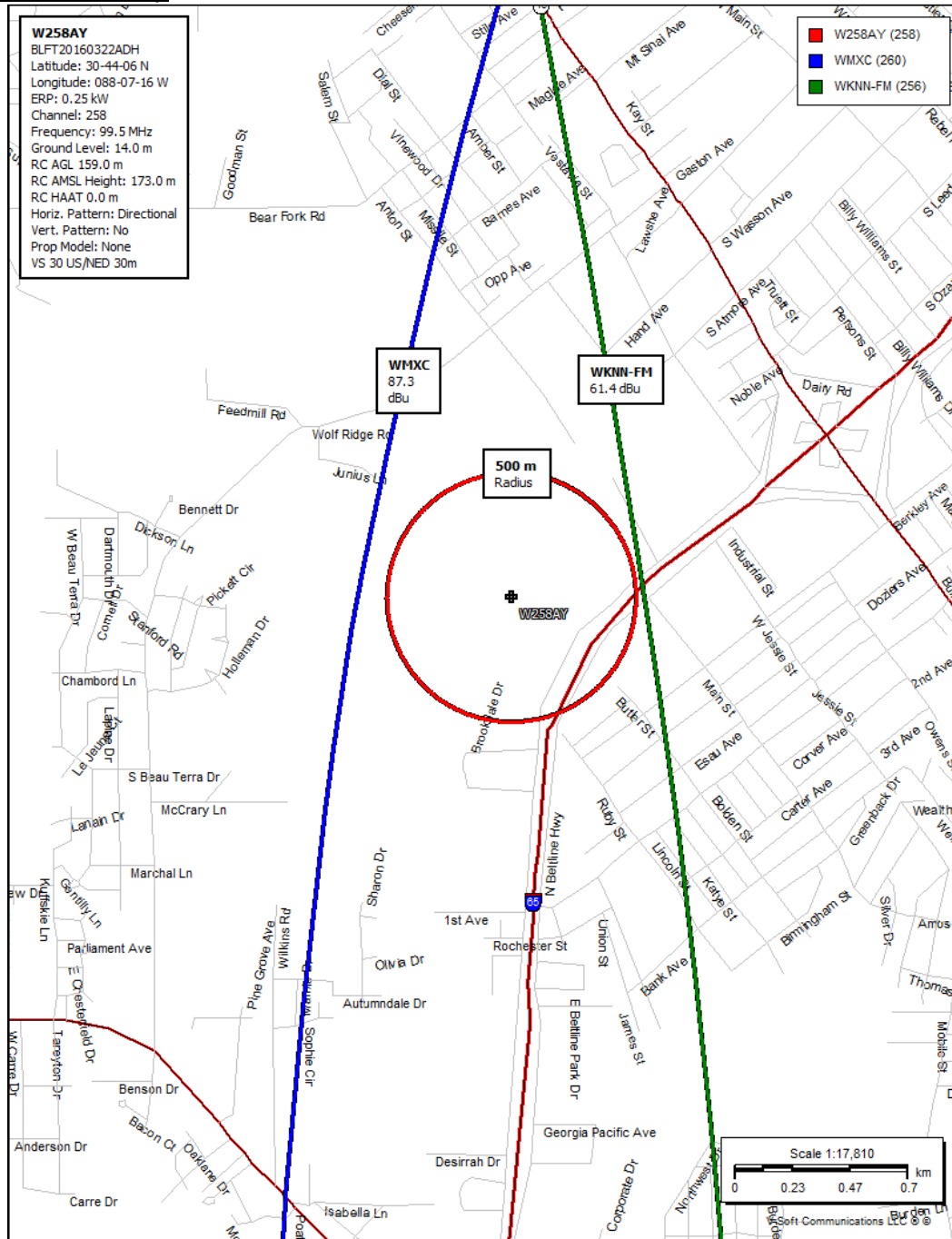
Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, 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.

**Figure 1. Overlap and Spacing Study**

W258AY Non D at 1035830 Edgewater Broadcasting, Inc. CH# 258D - 99.5 MHz, Pwr= 0.25 kW, HAAT= 0.0 M, COR= 173 M Average Protected F(50-50)= 7.09 km Omni-directional												
REFERENCE											DISPLAY DATES	
30 44 06.0 N.											DATA 12-30-16	
88 07 16.0 W.											SEARCH 12-30-16	
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)	
260C	WMXC	LIC _C_		100.4	28.26	30 41 20.0	100.000	13.2	90.3	-2.2	-63.1*	
Mobile		AL		280.5	BMLH20130123AEM	87 49 49.0	535	569	Cc Licenses, LLC			
258D	W258AY	LIC DC_		0.0	0.00	30 44 06.0	0.250	38.0	11.3	-53.7*	-62.8*	
Mobile		AL		0.0	BLFT20160322ADH	88 07 16.0		173	Edgewater Broadcasting, Inc			
258C2	WKSM	LIC _CX		103.6	147.33	30 24 50.0	50.000	135.6	50.1	-5.5	42.5	
Fort Walton Beach		FL		284.4	BLH20030304AAE	86 37 40.0	134	140	Cumulus Licensing LLC			
256C1	WKNN-FM	LIC DEX		244.2	63.19	30 29 09.0	99.000	8.8	67.1	40.4	-5.0*	
Pascagoula		MS		63.9	BLH20020226ACB	88 42 53.0	300	308	Cc Licenses, LLC			
258C0	WRNO-FM	LIC _CX		245.0	194.59	29 58 57.0	100.000	172.6	72.8	8.0	74.2	
New Orleans		LA		64.1	BMLH20090406AGA	89 57 09.0	306	306	Clear Channel Broadcasting			
257C2	WMFC	LIC _CN		41.9	116.75	31 30 51.0	30.000	56.2	34.9	43.3	56.2	
Monroeville		AL		222.3	BLH19940613KJ	87 17 55.0	94	195	Monroe Broadcasting Compan			

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 adjacer  
 All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.  
 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 restricted contour.

### Figure 2. Contour Map



**Figure 3. Distance to Signal**

<b>Proposed Antenna:</b> DCR-T4E <b>Proposed Power:</b> 0.25 kW <b>Antenna Height AGL:</b> 159 meters <b>Interference Contour:</b> 101.4 dBu <b>Artificial Rcv Antenna Height:</b> 8 meters <b>Distance (Free Space) Equation:</b> $= (10^{((106.92 - [\text{desired dBu}] + [\text{ERP in dBk}]) / 20)}) * 1000$ <b>Field Strength (dBu) Equation:</b> $= 106.92 - (20 * (\text{LOG10}[\text{DistMeters} / 1000])) + [\text{ERP in dBk}]$								
<div>Fill in "yellow" cells</div>								
Depression				Distance				
Angle	Antenna			from Ant.	Distance	Field Stren	Distance	Field Strength
Below	Relative	ERP	ERP	to Interf	rom 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	944.00 m	infinite	---	infinite	---
-5°	0.950	0.226	-6.47	896.80 m	1732.53 m	95.68 dBu	1824.32 m	95.23 dBu
-10°	0.809	0.164	-7.86	763.69 m	869.57 m	100.27 dBu	915.64 m	99.82 dBu
-15°	0.607	0.092	-10.36	573.01 m	583.42 m	101.24 dBu	614.33 m	100.80 dBu
-20°	0.381	0.036	-14.40	359.66 m	441.49 m	99.62 dBu	464.88 m	99.17 dBu
-25°	0.170	0.007	-21.41	160.48 m	357.30 m	94.45 dBu	376.23 m	94.00 dBu
-30°	0.001	0.000	-66.02	0.94 m	302.00 m	51.30 dBu	318.00 m	50.85 dBu
-35°	0.122	0.004	-24.29	115.17 m	263.26 m	94.22 dBu	277.21 m	93.77 dBu
-40°	0.171	0.007	-21.36	161.42 m	234.91 m	98.14 dBu	247.36 m	97.69 dBu
-45°	0.183	0.008	-20.77	172.75 m	213.55 m	99.56 dBu	224.86 m	99.11 dBu
-50°	0.164	0.007	-21.72	154.82 m	197.12 m	99.30 dBu	207.56 m	98.85 dBu
-55°	0.129	0.004	-23.81	121.78 m	184.34 m	97.80 dBu	194.10 m	97.35 dBu
-60°	0.091	0.002	-26.84	85.90 m	174.36 m	95.25 dBu	183.60 m	94.80 dBu
-65°	0.057	0.001	-30.90	53.81 m	166.61 m	91.58 dBu	175.44 m	91.13 dBu
-70°	0.031	0.000	-36.19	29.26 m	160.69 m	86.61 dBu	169.20 m	86.16 dBu
-75°	0.014	0.000	-43.10	13.22 m	156.33 m	79.94 dBu	164.61 m	79.49 dBu
-80°	0.005	0.000	-52.04	4.72 m	153.33 m	71.17 dBu	161.45 m	70.72 dBu
-85°	0.001	0.000	-66.02	0.94 m	151.58 m	57.29 dBu	159.61 m	56.84 dBu
-90°	0.001	0.000	-66.02	0.94 m	151.00 m	57.32 dBu	159.00 m	56.87 dBu

**Figure 4. Aerial View of Antenna Location.**

