

# Comprehensive Engineering Exhibit

## Minor Modification of BNPFT-20130830AQA

### Facility ID No. 156380

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This exhibit is for the Minor Modification of translator permit BNPFT-20130830AQA to change transmitter location, power, and antenna orientation.

#### Antenna Location

The proposed antenna location is 160 meters above ground level upon an existing tower identified by structure registration number 1050337, utilizing the antenna pattern depicted in **Figure 1**, with an effective radiated power of 99 watts.

Below as **Figure 2** is an overlap and spacing study, incorporating the antenna pattern, from which it can be determined that this proposal is within the protected contour of **second** adjacent channel station WBPT and thus the potential for interference exists.

It is noted that because of the proximity of WBHJ operating on intermediate frequency channel 239 this proposal is limited to 99 watts.

Concerning potential interference created: 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", 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 than they present in the location of the proposed antenna location.

In **Figure 3** is a map showing the predicted 103.9 dBu signal contour of the protected facility at the proposed translator antenna location. This proposal is only predicted to cause predicted interference to the protected facility by having a signal exceeding 143.9 dBu in a habitable area. Utilizing the line of sight equation shown in **Figure 4** it has been determined that a 143.9 dBu signal developed by 99 watts, as proposed, emitted by the proposed antenna mounted 160 meters above ground, will not reach ground level or any habitable space. With examination of the images in **Figure 5** it can be determined that no habitable space extends above this height within the confines of this 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.

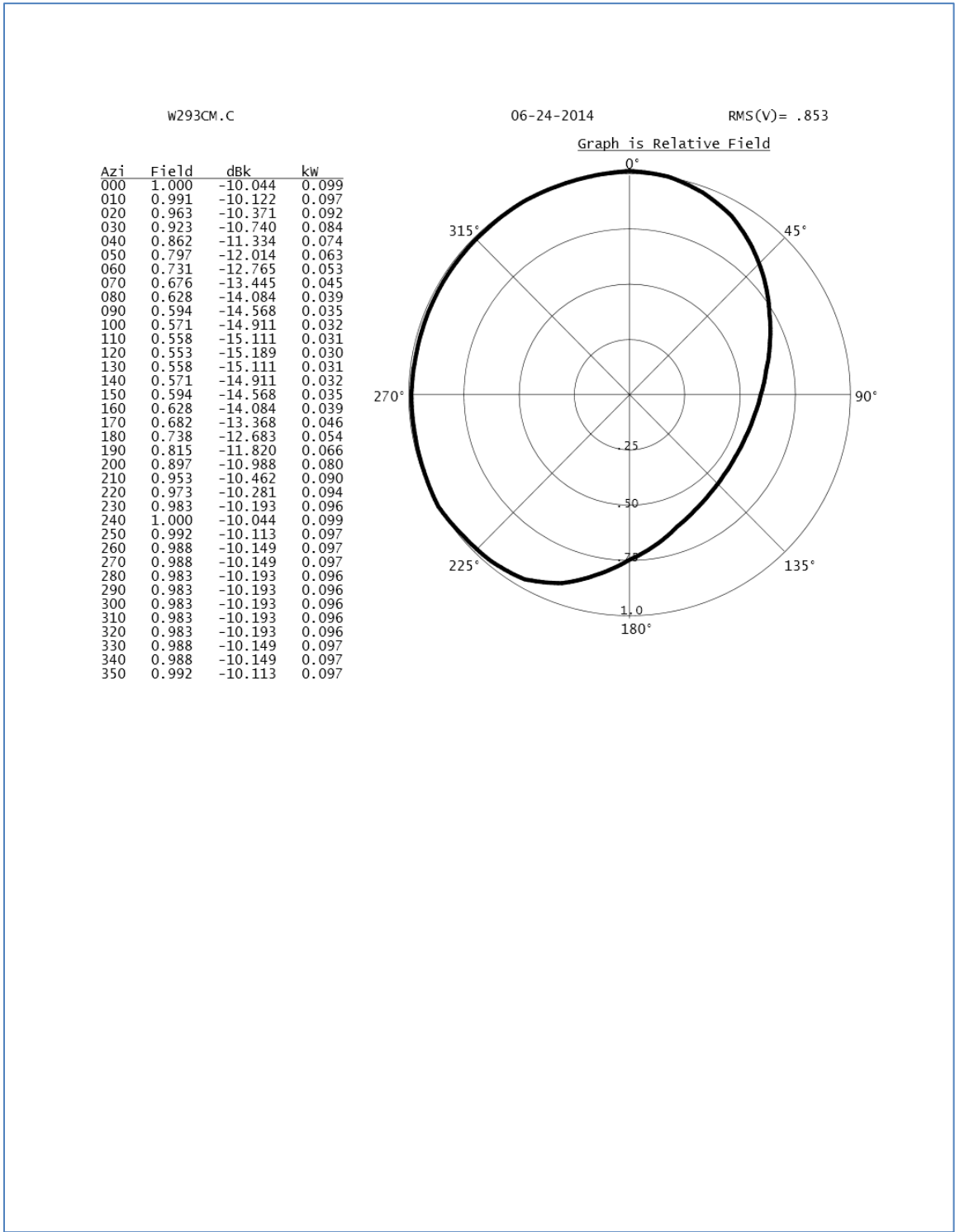
### **Minor Change Status and Primary Station Fill-In**

Attached as **Figure 6** is a contour map depicting the 60 dBu contours of the existing permit, the proposed facility, as well as that of primary station WQEN, demonstrating compliance with the rules for minor change, and contour overlap.

### **RF Statement**

In accordance with 47 C.F.R. 1.1307(b)(1) Table 1, only “Part 74 – Subpart L” facility with an ERP greater than 100 watts, is subject to routine environmental evaluation. Since the facility proposed in this application will operate with an ERP of less than 100 watts, it is “categorically excluded from making such studies or preparing an EA” [1.1307(b)(1)] the licensee will fully cooperate with other site users to temporarily reduce power or cease broadcasting, as necessary, to protect workers and others having access to the site from excessive levels of RF Radiation.

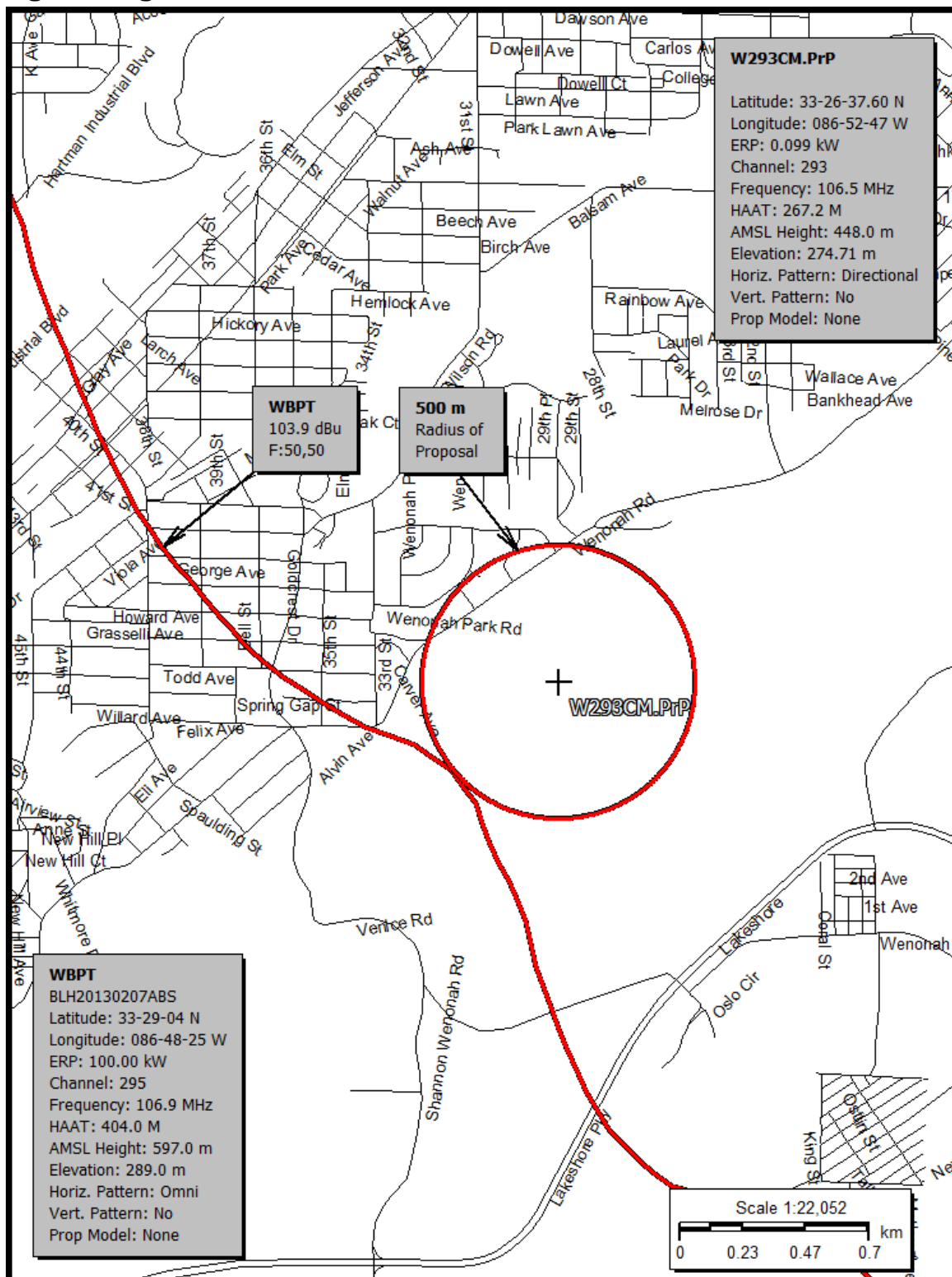
Figure 1. Antenna Pattern



**Figure 2. Overlap and Spacing Study**

w293CM Proposed Educational Media Foundation											
REFERENCE		CH#	293D	-	106.5 MHz, Pwr= 0.099 kw DA, HAAT= 267.2 M, COR= 448 M	Average Protected F(50-50)= 16.88 km			DISPLAY DATES		
33 26 37.6 N. 86 52 47.0 W.								DATA 06-24-14 SEARCH 06-24-14			
Standard Directional											
CH CITY	CALL	TYPE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT* (Overlap in km)
295CO WBPT Homewood		LIC	NCY AL	56.2 236.2	8.13 BLH20130207ABS	33 29 04.0 86 48 25.0	100.000 404	11.4 597	78.7 Sm-wbpt, Llc	-15.4*<	-71.1*<
293D w293CM Graysville		CP	DC_ AL	56.2 236.2	8.13 BNPFT20130830AQA	33 29 04.0 86 48 25.0	0.022 346	36.1 533	10.8 Educational Media Foundat	-40.2*	-43.0*
290D w290CN Birmingham		CP	_C_ AL	44.8 224.9	10.95 BNPFT20130816AAJ	33 30 49.0 86 47 47.0	0.038 28	0.4 220	4.4 Radio Assist Ministry, Inc	-4.8*<	6.0
293D w292EH Sylacauga		CP	DC_ AL	122.2 302.5	65.24 BMPFT20140402AQF	33 07 47.1 86 17 14.6	0.250	49.4 340	15.1 Marble City Media, Llc	3.4	8.7
292D w292EI warrrior		APP	DC_ AL	34.8 214.9	44.86 BMPFT20140611ACV	33 46 31.0 86 36 10.0	0.250	22.6 523	15.1 way Media , Inc.	6.0	5.5
293C3 WZNJ Demopolis		LIC	_CX AL	220.2 39.7	136.40 BMLH20100205ABH	32 30 08.0 87 49 07.0	25.000 93	113.8 130	39.3 westburg Broadcasting Alab	6.3	44.2
293A WJEC vernon		LIC	_C_ AL	293.5 112.8	116.17 BMLH20001026AAB	33 51 15.0 88 01 55.0	6.000 100	86.3 240	28.0 Lamar County Broadcasting	13.0	33.8
292D w292EI warrrior		CP	_C_ AL	5.5 185.5	45.88 BNPFT20130325AKF	33 51 20.0 86 49 56.0	0.010 135	10.0 295	7.1 way Media , Inc.	18.6	13.1
292D w292DU Tuscaloosa		LIC	DC_ AL	242.1 61.7	67.01 BLFT20140529AGY	33 09 36.0 87 30 54.0	0.200 174	22.6 248	15.0 Tti, Inc.	26.6	25.7
290C3 AL4924 Brookwood		RSV-A	____ AL	242.4 62.1	55.85 RM10114	33 12 36.0 87 24 40.0	25.000 100	2.9 203	28.4	35.2	26.8
290C3 WRTR Brookwood		LIC	ZCX AL	248.0 67.7	60.79 BLH20050829ACW	33 14 17.0 87 29 06.0	25.000 82	3.4 178	32.7 Capstar Tx Llc	39.7	27.4
292D w292EH Sylacauga		LIC	DC_ AL	122.2 302.5	65.24 BLFT20140121ABF	33 07 47.1 86 17 14.6	0.200 133	21.0 340	13.9 Marble City Media, Llc	31.9	33.0
292A WLGD Maplesville		LIC	NCX AL	180.1 0.1	81.80 BLH20121220ACE	32 42 22.0 86 52 51.0	6.000 51	34.3 175	22.8 valleydale Broadcasting, L	33.3	37.7
291D w291CG Odenville		LIC	DC_ AL	65.6 245.8	48.85 BLFT20090508AAT	33 37 28.0 86 24 00.0	0.010 226	0.1 436	6.1 Glen Iris Baptist School	35.7	42.3
291D w291BT Jasper		LIC	_C_ AL	318.0 137.8	59.55 BLFT20050428ABS	33 50 29.0 87 18 40.0	0.055 53	0.5 186	7.4 Glen Iris Baptist School	42.4	51.5
293C WSKZ Chattanooga		LIC	_CN TN	36.5 217.3	238.68 BLH7303	35 09 42.0 85 19 06.0	100.000 329	178.1 721	76.1 Radio License Holding Cbc,	44.5	110.1
290D w290CQ Talladega		CP	_C_ AL	90.5 270.9	74.60 BNPFT20130830ALY	33 26 08.0 86 04 39.0	0.027 38	0.4 246	5.8 Glen Iris Baptist School	62.2	68.4
290A WKLS Southside		LIC	NCX AL	54.2 234.6	90.72 BLH20130729AOE	33 55 07.0 86 04 59.0	0.630 196	1.6 380	21.1 williams Communications, I	76.2	69.0
292L1 1581182 Anniston		APP	____ AL	73.6 254.2	95.62 BNPL20131114AUL	33 40 54.5 85 53 23.6	0.022 63			75.7	71.5
291C3 WTAK-FM Hartselle		LIC	NCN AL	10.8 191.0	115.08 BLH19931026KB	34 27 45.0 86 38 36.0	5.400 221	3.7 460	39.7 Capstar Tx Llc	94.2	74.7
Terrain database is USGS 03 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. 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 3. Signal Contours**



**Figure 4. Interference Signal Distance Calculations**

ERP	0.099	kw		
Calculated IX contour	143.9	dbu		
			Distance to interfering contour	Height of IX
Relative Field	Downward ERP		meters (hypot)	meters
1	0.0990		4.4547	155.545



**Figure 5. View of Instant Proposal Location**



**Figure 6. Minor Change and Fill-In Contours**

