

## **Technical Report W284DR.CP Minor Modification**

This technical report is submitted for a minor modification to W284DR.CP, FCC facility ID 85927. Changes in the directional antenna and COR AGL are submitted for the translator to serve as a fill-in to rebroadcast the primary WKXD-FM 295C2 HD3 facility at Monterey, TN, FCC facility ID 31387.

### **W284DR.CP Modification Analysis:**

An overlap study in exhibit E-1 shows the W284DR.CP modification does not produce any outgoing interference overlaps to other facilities. The 60 F(50-50) dBu contour overlaps the original W282AG 60 dBu contour and is contained within the WKXD-FM 295C2 HD3 analog equivalent 60 dBu contour (exhibit E-2).

### **Antenna System:**

The W284DR.CP modification will be located on the existing 61 meter tower at coordinates:

**36 11 03.2N 085 24 39.9W NAD 83**

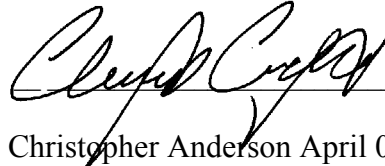
A TOWAIR determination is included in exhibit E-3. A Nicom BKG77, two bay, 0.5 wavelength-spaced, nondirectional antenna will be mounted at a COR AGL of 25.9 meters, 543.9 meters AMSL, 176.4 meter HAAT (exhibit E-4) and operate at 0.250 kW ERP.

### **RF Exposure Calculation:**

The RF contribution was calculated using FMModel (exhibit E-5). The RF is calculated to be  $3.1 \mu\text{W}/\text{cm}^2$  at a distance of 44.4 meters from the base of the tower, which is less than 5% of the  $200 \mu\text{W}/\text{cm}^2$  maximum permissible for general public exposure allowing exclusion from consideration.

**Conclusion:**

It is concluded that the minor modification application for W284DR.CP complies with all Commission rules and policies.

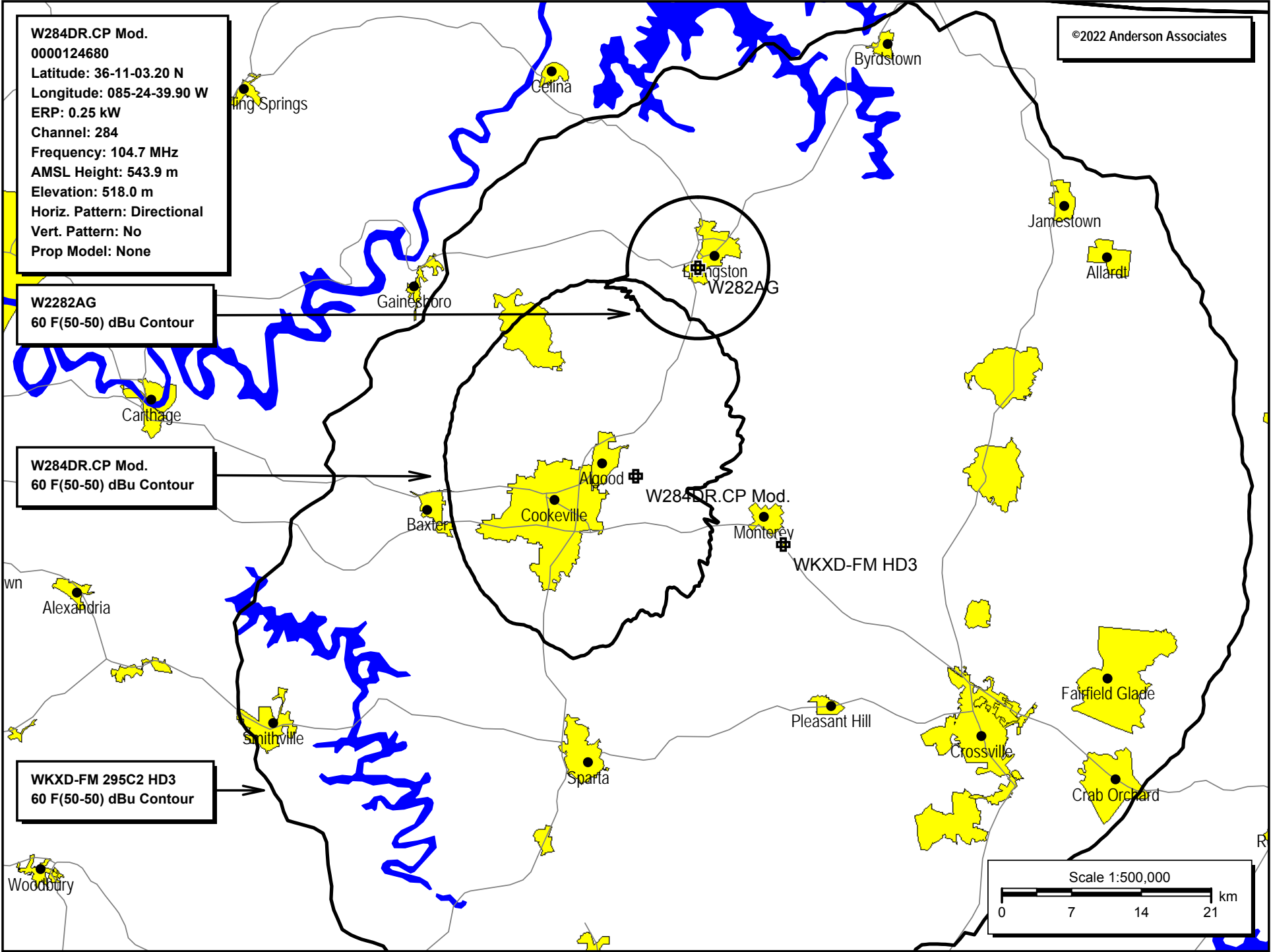
A handwritten signature in black ink, appearing to read "Christopher Anderson", is written over a horizontal line.

Christopher Anderson April 05, 2022  
andersce@bham.rr.com

REFERENCE	CH#	284D	-	104.7	MHz	Pwr=	0.25	kW,	HAAT=	176.4	M,	COR=	543.9	M	DI SPLAY DATES
36 11 03.20 N.						Average Protected F(50-50)=	17.45	km							DATA 04-05-22
85 24 39.90 W.						Omni -di rectional									SEARCH 04-05-22
CH CITY	CALL	TYPE ANT STATE	AZI <--	DI ST FILE #	LAT LNG	PWR(KW) HAAT(M)	INT(km) COR(M)	PRO(km) LI CENSEE	*IN* (Overlap in km)	*OUT*					
284D Cookeville	W284DR/W2	CP _CN TN	0.0 90.0	0.00 0000124680	36 11 03.20 85 24 40.60	0.250 68	41.4 552	12.0 Stonecom	-61.8*	-74.7*					
283C1 Gallatin	WGFY	LIC ZCN TN	274.7 93.9	124.54 BLH20020909ABA	36 16 05.20 86 47 45.00	58.000 368	108.8 552	73.9 Radio Li cense	-3.7	21.8					
282D Livingston	W282AG	LIC _CN TN	16.5 196.6	21.84 BLFT19971201TF	36 22 21.20 85 20 29.80	0.250 68	1.1 311	7.1 Stonecom	1.4	13.6					
286A Jamestown	WCLC-FM	LIC _CN TN	71.3 251.6	44.84 BLH20030106ABA	36 18 45.30 84 56 12.80	6.000 100	2.7 576	29.9 New Life	26.4	13.0					
281A Carthage	WUCZ	LIC _CN TN	286.5 106.2	50.55 BMLH19920817KD	36 18 43.10 85 57 07.90	4.900 110	3.1 340	33.9 Wood Broadcasting,	27.8	15.4					
285A Woodbury	WBOZ	LIC NCN TN	239.5 59.1	78.08 BLH19970214KB	35 49 33.20 86 09 28.00	6.000 100	32.5 352	17.4 Reach Satellite	28.5	25.0					
284A Coal mont	WSGM	LIC DCN TN	196.2 16.0	104.77 BLH19931201KA	35 16 44.20 85 44 01.90	1.000 167	60.0 677	18.6 Cumberland	25.3	26.0					
284D Glasgow	W284DH	LIC _CN KY	328.7 148.3	101.07 BLFT20190920ABN	36 57 34.20 86 00 07.90	0.250	47.0 323	13.2 Newberry	35.4	26.3					
285A Jamestown	WJRS	LIC DCN KY	17.8 198.0	98.26 0000106919	37 01 31.20 85 04 22.80	5.000 110	46.3 387	28.9 Lake Cumberland	32.6	39.5					

Terrain database is FCC 30 meter , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. 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 restricted contour.

E-2 W284DR.CP Mod. 60 F(50-50) dBu Contour Plot



## TOWAIR Determination Results

### \*\*\* NOTICE \*\*\*

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

#### DETERMINATION Results

**Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.**

#### Your Specifications

##### NAD83 Coordinates

Latitude	36-11-03.2 north
Longitude	085-24-39.9 west

##### Measurements (Meters)

Overall Structure Height (AGL)	61
Support Structure Height (AGL)	0
Site Elevation (AMSL)	518

##### Structure Type

GTOWER - Guyed Structure Used for Communication Purposes

#### E-4 W284DR.CP Mod. HAAT Calculation

N. Lat. = 361103.2 W. Lng. = 852439.9

HAAT and Distance to Contour,

FCC, FM 2-10 Mi, 51 pts Method - FCC 30 Meter

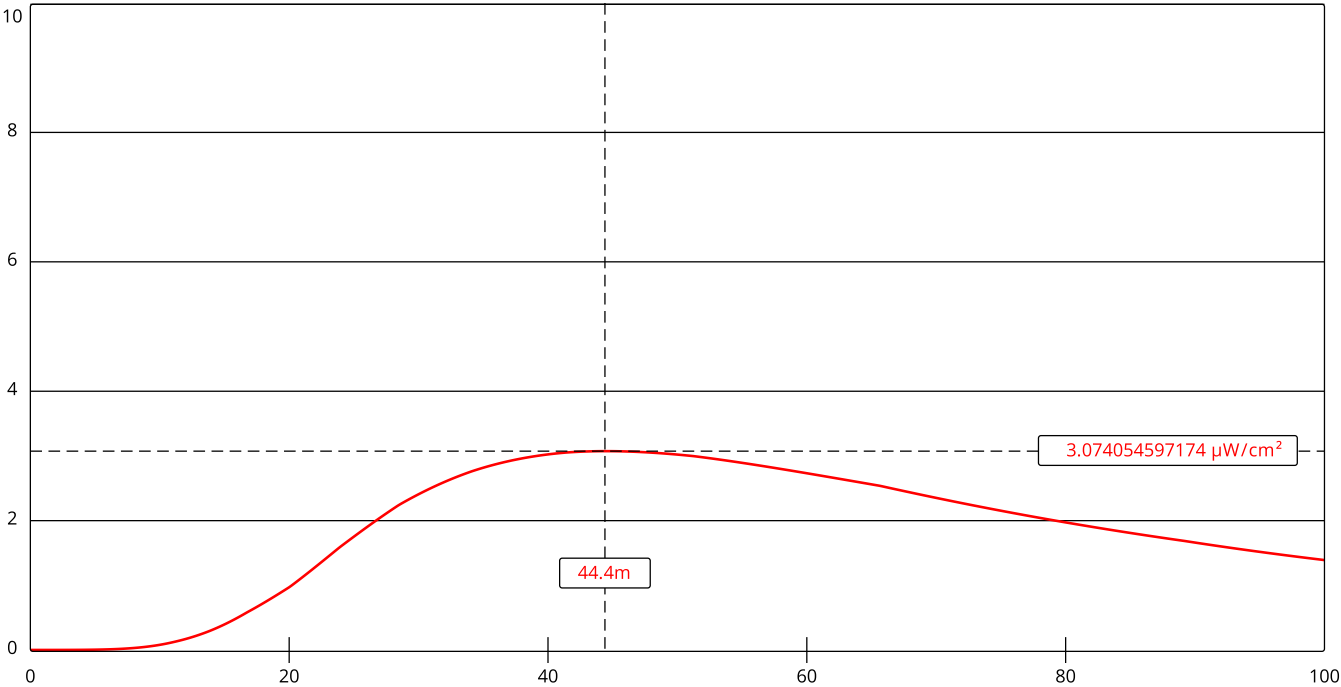
W284DR.CP, Stonecom Cookeville, LLC, 0000124680

Azi. AV EL HAAT ERP kW 60-F(50-50)

000	300.0	243.9	0.2130	19.63
030	332.3	211.6	0.1336	16.14
060	398.5	145.4	0.0882	11.99
090	465.1	078.8	0.0765	08.55
120	456.0	087.9	0.0882	09.39
150	411.1	132.8	0.1362	12.71
180	414.7	129.2	0.2271	14.23
210	339.3	204.6	0.2500	18.74
240	328.5	215.4	0.2440	19.10
270	329.4	214.5	0.2416	19.01
300	322.4	221.5	0.2440	19.36
330	313.3	230.6	0.2500	19.87

Ave El= 367.54 M HAAT= 176.36 M AMSL= 543.9

E-5 W284DR.CP Mod. RF Calculation



Channel Selection	Channel 284 (104.7 MHz) ▾		
Antenna Type +	EPA Type 2: Opposed V Dipole ▾		
Height (m)	<input type="text" value="25.9"/>	Distance (m)	<input type="text" value="100"/>
ERP-H (W)	<input type="text" value="250"/>	ERP-V (W)	<input type="text" value="250"/>
Num of Elements	<input type="text" value="2"/>	Element Spacing (?)	<input type="text" value="0.5"/>
Num of Points	<input type="text" value="500"/>		