

Technical Report W297CI.CP Minor Modification

This technical report is submitted for a minor modification to W297CI.CP, FCC file no. BNPFT-20171219ADZ. Changes in tower site, COR AGL, antenna and ERP are submitted. The facility will continue to serve as a fill-in facility for WKJW(AM) 1010 kHz at Black Mountain, NC, facility I.D. 5972.

W297CI.CP Modification Analysis:

An overlap study in exhibit E-1 shows the W297CI.CP modification is within the WMIT(FM) 295C and W300CR second and third-adjacent protected contours. A tabulation of the +40 dBu F(50-10) contours (exhibits E-2 and E-3) show the interfering contours will not encompass any buildings, roads or population (exhibit E-4). Based on this showing, a waiver of Section 74.1204 is requested, in accordance with *Living Way Ministries, Inc.* (FCC 08-242). The 60 dBu contour overlaps the current W297CI.CP 60 dBu contour and is contained within the WKJW(AM) 2.0 mV/m daytime contour (exhibit E-5).

Antenna System:

The W297CI.CP modification will be located on a 9 meter tower at coordinates:

35 38 04.65N 082 35 36.46W NAD 83.

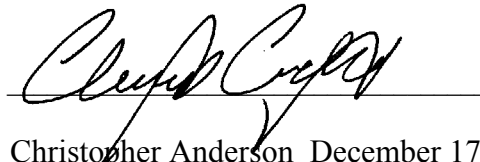
A TOWAIR determination (exhibit E-6) shows the tower does not require registration. A Shively 6812 single bay, nondirectional antenna will be mounted at a COR AGL of 9 meters, 645.4 meters AMSL, 30 meters default HAAT and will operate at 0.001 kW ERP.

RF Exposure Calculation:

The RF contribution was calculated using FM Model (exhibit E-7). The RF is calculated to be $0.82 \mu\text{W}/\text{cm}^2$ at a distance of 1.9 meters from the base of the tower, which is below 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 W297CI.CP modification 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 December 17, 2020
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E-1 W297CI.CP Mod. Overlap Study

REFERENCE 35 38 04.65 N. 82 35 36.46 W.		CH# 297D - 107.3 MHz, Pwr= 0.001 kW, HAAT= 30.0 M, COR= 645.4 M Average Protected F(50-50)= 1.82 km Omni-directional								DISPLAY DATES DATA 12-17-20 SEARCH 12-17-20	
CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
297CO Anderson	WJMZ-FM	LIC _CN SC		180.6 0.6	103.68 BMLH20010628AAA	34 42 07.40 82 36 18.50	100.000 308	166.9 544	67.9 Sm-Wj mz, LLC	-65.0*	30.1
295C Black Mountain	WMIT	LIC _CN NC		68.0 248.2	29.93 BMLD20161027AAG	35 44 06.40 82 17 09.40	36.000 942	10.1 2056	84.2 Blue Ridge Broadcasting Co	18.0	-54.4*(1)
297D Asheville	W297CI	CP _CN NC		177.8 357.8	3.25 BNPFT20171219ADZ	35 36 19.30 82 35 31.40	0.099	722	---Reference---	International Baptist Outr	
300D Asheville	W300CR	LIC DCN NC		140.1 320.1	5.44 BLFT20161021ABO	35 35 49.40 82 33 17.40	0.250	0.6 706	9.0 Western North Carolina Pub	2.9	-3.6*(2)
299C Knoxville	WVK-FM	LIC _CN TN		281.8 101.1	99.07 BLH20081017ABY	35 48 41.30 83 40 09.60	91.000 633	13.9 1014	93.1 Radio License Holding Cbc,	83.3	5.9
297D Knoxville	W297AX	LIC DCN TN		281.8 101.1	99.03 BLFT20180412AAJ	35 48 41.30 83 40 07.60	0.250	89.5 951	30.5 Midwest Communications, In	7.7	61.8
298D Black Mountain	W298AY	LIC _CN NC		91.5 271.7	22.37 BLFT20070808ACI	35 37 44.40 82 20 45.40	0.010 77	11.3 1010	8.0 Western North Carolina Pub	9.2	10.9
299D Hendersonville	W299BZ	LIC DCN NC		163.2 343.2	34.39 BLFT20170515ACI	35 20 18.40 82 29 01.40	0.250	0.9 751	11.3 Radio Hendersonville, Inc.	31.7	22.7
297D Valdese	W297CX	LIC DCN NC		83.4 264.0	89.56 BLFT20130426ABN	35 43 22.00 81 36 27.50	0.250 311	50.2 691	15.1 Radio Training Network, In	37.6	68.8
300C Charlotte	WLNK	LIC _CN NC		102.9 283.7	130.82 BMLH20140722AEM	35 21 51.50 81 11 12.30	100.000 516	12.6 763	86.6 Entercom License, LLC	116.5	44.2

Terrain database is GLOBE 30 Sec , 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.
Reference station has protected zone issue: AM tower

- (1) The +40 123.97 F(50-10) dbu contour within the WMIT(FM) 295C second-adjacent protected contour (exhibit E-2) does not encompass any population, roads or buildings (exhibit E-4).
- (2) The +40 108.71 F(50-10) dbu contour within the W300CR third-adjacent protected contour (exhibit E-3) does not encompass any population, roads or buildings (exhibit E-4).

E-2 W297CI.CP Mod. +40 F(50-10) dBu Calculation Within WMIT(FM) 295C

W297CI.CP Mod. Asheville, NC, Showing Protection to WMIT(FM), Channel: 295
Geographic Coordinates: N. 353804.65 W. 823536.46
74.1204(d) Study - Using GLOBE 30 SEC Terrain Database
Translator or LPFM Maximum Licensed ERP = 0.001 kW, Channel: 297
Translator or LPFM Antenna Height AG = 9 meters
W297CI.CP Mod. Antenna Model = SHI-6812-1

Protected Station's Contour = 83.96594 dBu
Translator's or LPFM's full Interference contour 123.96594

Review Azimuth = 0 Degrees True
Horizontal Relative Field at Review Azimuth = 1.000
Translator/LPFM ERP on the horizontal at Review Azimuth = 0.001 kW
Distance between stations = 29.9 km
Protected Station= WMIT, 36 kW, 2056 M meters COR AMSL

Depression Angle From Degree(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.0010	004.4433	004.4433	009.000
05.00	0.996	1.0	0.0010	004.4255	004.4087	008.614
10.00	0.985	1.0	0.0010	004.3766	004.3101	008.240
15.00	0.967	1.0	0.0009	004.2966	004.1502	007.888
20.00	0.942	1.0	0.0009	004.1856	003.9331	007.568
25.00	0.91	1.0	0.0008	004.0434	003.6645	007.291
30.00	0.871	1.0	0.0008	003.8701	003.3516	007.065
35.00	0.826	1.0	0.0007	003.6701	003.0064	006.895
40.00	0.774	1.0	0.0006	003.4391	002.6345	006.789
45.00	0.717	1.0	0.0005	003.1858	002.2527	006.747
50.00	0.654	1.0	0.0004	002.9059	001.8679	006.774
55.00	0.586	1.0	0.0003	002.6038	001.4935	006.867
60.00	0.514	1.0	0.0003	002.2838	001.1419	007.022
65.00	0.437	1.0	0.0002	001.9417	000.8206	007.240
70.00	0.357	1.0	0.0001	001.5862	000.5425	007.509
75.00	0.273	1.0	0.0001	001.2130	000.3140	007.828
80.00	0.186	1.0	0.0000	000.8264	000.1435	008.186
85.00	0.096	1.0	0.0000	000.4266	000.0372	008.575
90.00	0.0	1.0	0.0000	000.0004	000.0000	009.000

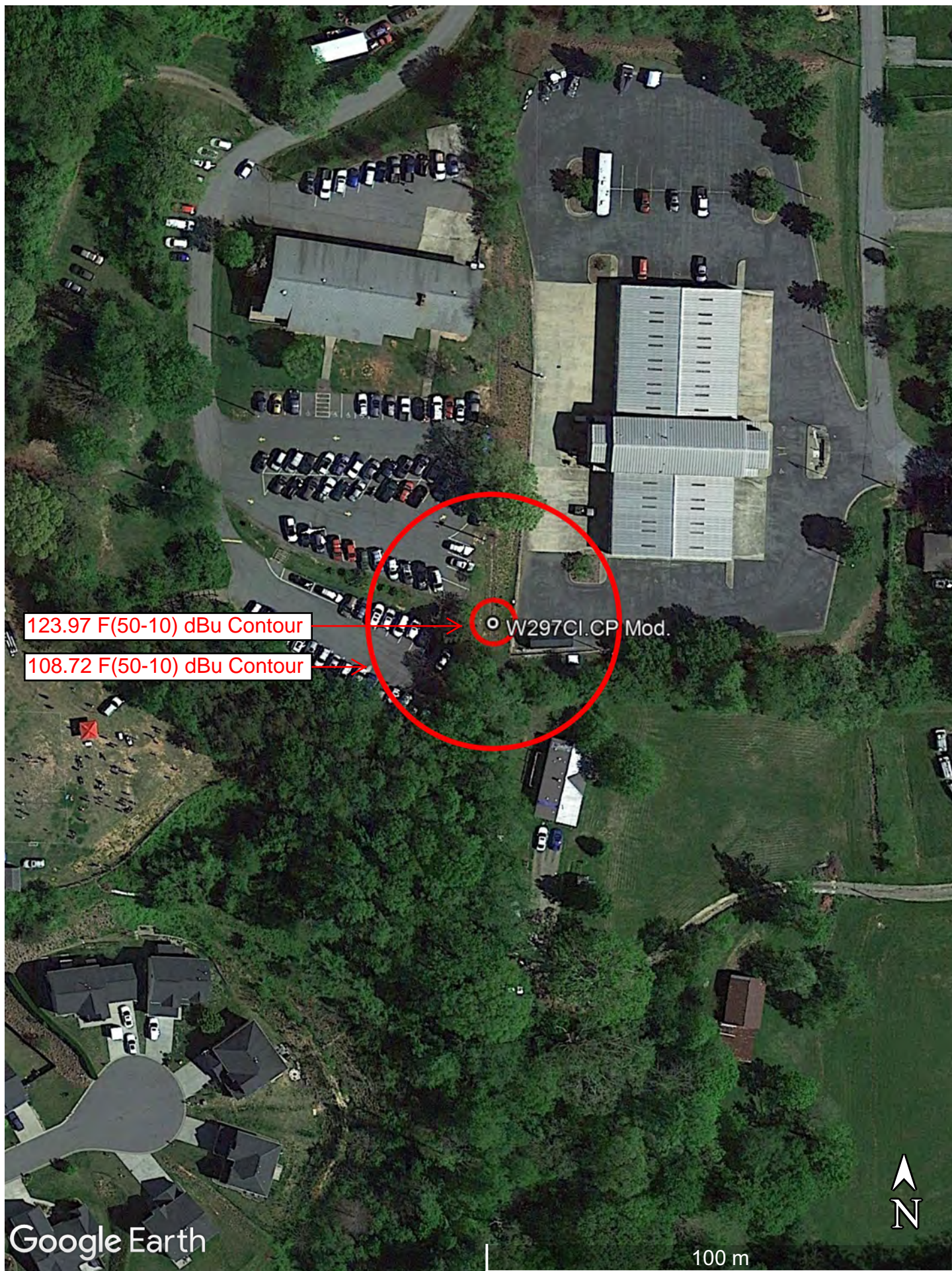
E-3 W297CI.CP Mod. +40 F(50-10) dBu Calculation Within W300CR

W297CI.CP Mod. Asheville, NC, Showing Protection to W300CR, Channel: 300
Geographic Coordinates: N. 353804.65 W. 823536.46
74.1204(d) Study - Using GLOBE 30 SEC Terrain Database
Translator or LPFM Maximum Licensed ERP = 0.001 kW, Channel: 297
Translator or LPFM Antenna Height AG = 9 meters
W297CI.CP Mod. Antenna Model = SHI-6812-1

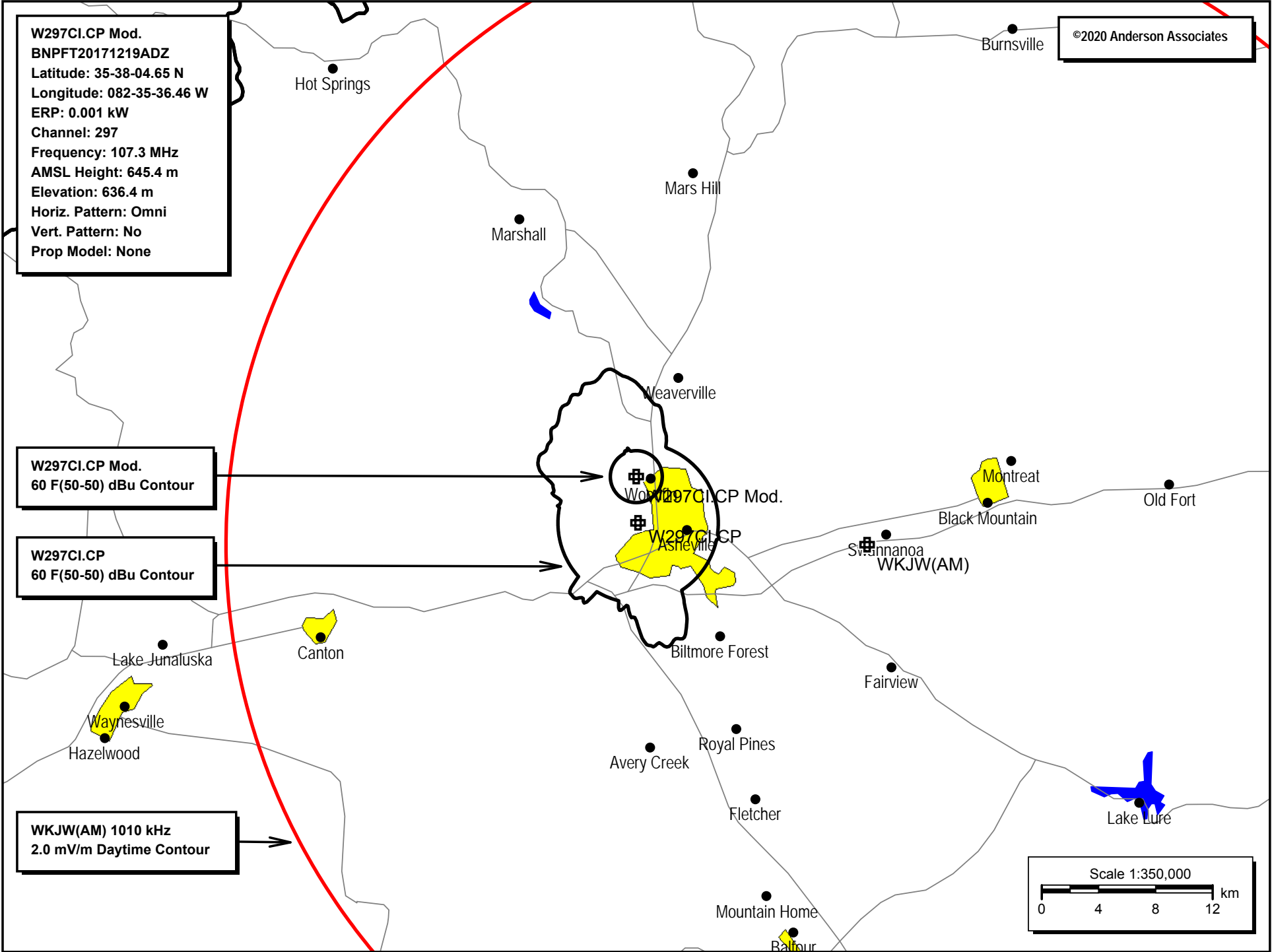
Protected Station's Contour = 68.71535 dBu
Translator's or LPFM's full Interference contour 108.71535

Review Azimuth = 0 Degrees True
Horizontal Relative Field at Review Azimuth = 1.000
Translator/LPFM ERP on the horizontal at Review Azimuth = 0.001 kW
Distance between stations = 5.4 km
Protected Station= W300CR, .25 kW, 706 M meters COR AMSL

Depression Angle From Degree(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.0010	025.7177	025.7177	009.000
05.00	0.996	1.0	0.0010	025.6149	025.5174	006.768
10.00	0.985	1.0	0.0010	025.3320	024.9471	004.601
15.00	0.967	1.0	0.0009	024.8690	024.0216	002.563
20.00	0.942	1.0	0.0009	024.2261	022.7651	000.714
25.00	0.91	1.0	0.0008	023.4031	021.2104	-000.891
30.00	0.871	1.0	0.0008	022.4001	019.3991	-002.200
35.00	0.826	1.0	0.0007	021.2428	017.4011	-003.184
40.00	0.774	1.0	0.0006	019.9055	015.2485	-003.795
45.00	0.717	1.0	0.0005	018.4396	013.0388	-004.039
50.00	0.654	1.0	0.0004	016.8194	010.8113	-003.884
55.00	0.586	1.0	0.0003	015.0706	008.6441	-003.345
60.00	0.514	1.0	0.0003	013.2189	006.6095	-002.448
65.00	0.437	1.0	0.0002	011.2386	004.7497	-001.186
70.00	0.357	1.0	0.0001	009.1812	003.1402	000.372
75.00	0.273	1.0	0.0001	007.0209	001.8172	002.218
80.00	0.186	1.0	0.0000	004.7835	000.8306	004.289
85.00	0.096	1.0	0.0000	002.4689	000.2152	006.540
90.00	0.0	1.0	0.0000	000.0026	000.0000	008.997



E-5 W297CI.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	35-38-04.6 north
Longitude	082-35-36.5 west

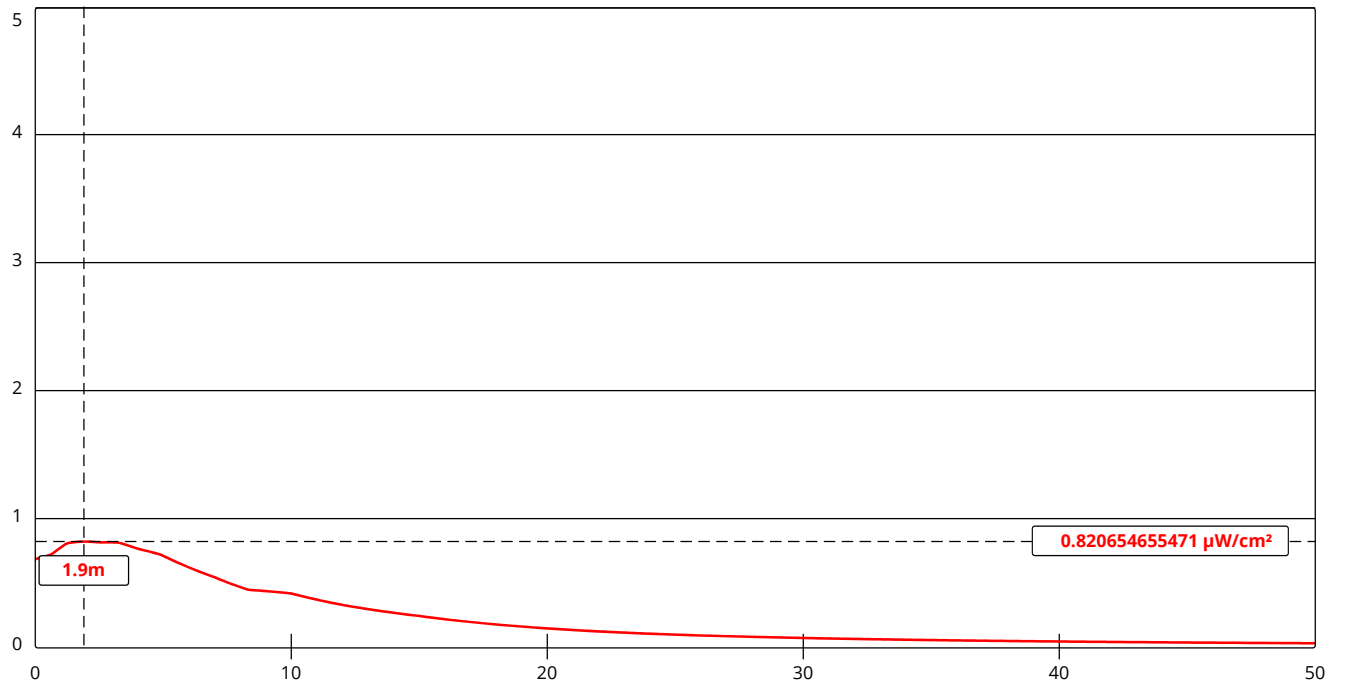
Measurements (Meters)

Overall Structure Height (AGL)	9
Support Structure Height (AGL)	0
Site Elevation (AMSL)	636.4

Structure Type

POLE - Any type of Pole

FM Model



Channel Selection	Channel 297 (107.3 MHz)		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	9	Distance (m)	50
ERP-H (W)	1	ERP-V (W)	1
Num of Elements	1	Element Spacing (λ)	1
Num of Points	500		