

Technical Report W297BE.CP Minor Modification

This technical report is submitted for a minor modification to W297BE.CP, FCC file no. BMPFT-20110228ABL. The W297BE.CP facility at channel 243 has been built, and a form 350 license application has been filed. Changes in tower site and antenna are requested. The translator will continue to serve as a fill-in to rebroadcast the primary WSON(AM) 860 kHz facility at Henderson, KY, FCC facility I.D. 26946.

The following exhibits are provided for the FCC form 349 application:

- E-1 W297BE.CP Mod. Overlap Study
- E-2 W297BE.CP Mod. Interference Plot within WSTO(FM) 241C
- E-3 Interference Contour Aerial Photo
- E-4 60 dBu Plot within WSON(AM) and Overlap to W297BE.CP
- E-5 ASR 1030890

W297BE.CP Modification Analysis:

An overlap study (exhibit E-1) shows the W297BE.CP modification has two interference issues:

1.) The W297BE.CP Mod. will be located within the second adjacent protected contour of WSTO(FM) 241C at Owensboro, KY. As a result, the interference ratio is utilized to determine the interference contour, in accordance with FCC-02-244, paragraph 12.

WSTO(FM) places a 87.457 dBu F(50-50) contour to the W297BE.CP Mod. tower site. Adding +40 dBu to the 2nd adjacent facility results in a 127.457 dBu F(50-10) interfering contour (exhibits E-2 and E-3). The distance to the interfering contour is

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calculated to be 47 meters using the CONTOUR program. At a COR AGL of 237 meters, the interfering signal will not reach any population, roads or buildings.

2.) The interference overlap to the 243D application at Carmi, IL, FCC file no. BNPFT-20030317FFC, is to be dismissed, and may be ignored.

Antenna System:

The W297BE.CP modification will be relocated to an existing tower (ASR 1030890) at coordinates:

37-53-17N 87-32-37W NAD27.

The translator will operate at 0.250 kW ERP at a COR AGL of 237 meters, 248 meter HAAT, using a RVR ACP-1 three bay, half wavelength-spaced, nondirectional antenna. The 60 dBu F(50-50) contour is completely contained within both the primary WSON(AM) 2.0 mV/m daytime contour, the maximum 25 mile/40 km radius contour, and overlaps the current W297BE.CP facility (Exhibit E-4).

RF Exposure Calculation:

The RF contribution was calculated using the formula from the OET Bulletin 65:

$$S \text{ (RF in microwatts/cm}^2\text{)} = \frac{33.4 \times F^2 \times (H \text{ ERP} + V \text{ ERP in watts})}{R^2 \text{ (distance to radiation center in meters -2m)}}$$

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Using a worst-case vertical (F) factor of 1.0, the resulting RF value is $0.302 \mu\text{W}/\text{cm}^2$ to the ground, which is well below the $200 \mu\text{W}/\text{cm}^2$ maximum permissible for general public exposure.

Conclusion:

It is concluded that the modification of W297BE.CP complies with all Commission rules and policies.



Christopher Anderson May 19, 2011
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E-1 W297BE.CP Mod. Overlap Study

REFERENCE CH# 243D - 96.5 MHz, Pwr= 0.25 kW, HAAT= 248.0 M, COR= 363 M DISPLAY DATES
 37 53 17.0 N. Average Protected F(50-50)= 20.6 km DATA 05-19-11
 87 32 37.0 W. Omni-directional SEARCH 05-19-11

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*
243D Madisonville	W297BE	CP	C KY	174.4 354.4	21.7 BMPFT20110228ABL	37 41 37.0 87 31 10.0	0.250	23.8 145	7.1 Henson Media	-22.2*	-47.4 Of Henderson
297D Madisonville	W297BE<	LIC	C KY	163.0 343.1	42.3 BLFT20110216ABJ	37 31 26.0 87 24 11.0	0.250	14.4 253	14.4 Henson Media	9.5R	32.8M Of Henderson
241C Owensboro	WSTO	LIC	CN KY	128.2 308.3	20.8 BLH19820601AO	37 46 20.0 87 21 27.0	100.000 305	10.1 427	72.4 South Central Communicatio	-9.3<	-52.7*< (1)
243D Carmi	639425	APP	C IL	290.7 110.3	61.6 BNPFT20030317FFC	38 04 53.8 88 12 03.9	0.010 307	34.7 427	10.4 Radio Assist Ministry, Inc	6.0	-12.5< (2)
243D Ireland	W243AU	LIC	C IN	37.8 218.1	75.3 BLFT20090914AAI	38 25 19.5 87 00 52.7	0.250 21	23.8 167	7.1 The Original Company, Inc.	30.9	5.1
296A Boonville	WEJK<	LIC	ZC IN	65.3 245.5	26.5 BLH20010329AAS	37 59 13.0 87 16 11.0	1.600 195	31.2 318	28.9 Boonville Broadcasting Co.	9.5R	17.0M
246A Whitesville	WXCM	LIC	ZC KY	113.4 293.8	53.1 BLH19991112ABS	37 41 50.0 86 59 28.0	4.000 123	2.7 260	29.5 Wlme, Inc.	30.1	22.3
244A Vincennes	WFML	LIC	CX IN	3.9 183.9	85.0 BLH20020724AAN	38 39 06.0 87 28 37.0	2.150 118	37.3 259	24.7 The Vincennes University F	27.1	29.6
243A Lanesville	AL9800	RSV-A	IN	74.3 255.3	138.8 RM11069	38 12 52.0 86 01 00.0	6.000 100	89.6 314	30.5	28.0	44.2
243C2 Anna	WKIB	LIC	ZCY IL	252.4 71.2	184.6 BLH19940223KB	37 22 16.0 89 31 52.0	22.500 227	132.0 359	54.0 W. Russell Withers, Jr.	31.1	66.0
243D Hopkinsville	W243CH	LIC	C KY	177.0 357.1	114.2 BLFT20080321ACN	36 51 38.0 87 28 36.0	0.250 55	24.6 230	7.3 Ham Broadcasting Company,	69.5	44.9
243A Lanesville	WGZB-FM	LIC	CX IN	77.0 258.0	146.6 BLH20050927ACD	38 10 25.0 85 54 50.0	1.600 194	76.9 378	26.0 Mlb-louisville Iv, Llc	48.5	56.5
246D Algiers	W243AU	CP	C IN	27.3 207.5	74.3 BPFT20110307AAC	38 28 53.0 87 09 06.7	0.250 18	1.1 162	7.1 The Original Company, Inc.	52.6	66.1
245C1 Paducah	WDDJ	LIC	CN KY	225.7 45.0	132.8 BLH19980325KF	37 02 56.0 88 36 52.0	100.000 237	9.1 346	67.7 Bristol Broadcasting Compa	102.8	64.0
244C2 Auburn	WBVR-FM	LIC	NCX KY	135.3 316.0	162.5 BLH20030325AAH	36 50 35.0 86 15 30.0	45.000 129	75.1 317	49.9 Forever Communications, In	67.4	83.0
240D Washington	W240CE	LIC	C IN	19.9 200.1	89.7 BLFT20090609ABH	38 38 49.0 87 11 30.0	0.099 115	0.7 256	11.3 Dlc Media, Inc.	68.4	77.4
245A Hardinsburg	WKLO	LIC	CX IN	56.4 237.1	118.6 BLH20020605AAB	38 28 21.0 86 24 39.0	3.500 132	2.8 352	30.9 Hembree Communications, In	94.7	86.4

(1) The W297BE.CP modification within the second adjacent WSTO(FM) 241C protected contour will not cause any interference issue, which is detailed in the technical report.

(2) The 243D application at Carmi, IL, FCC file no. BNPFT-20030317FFC is to be dismissed, and may be ignored.

Terrain database is FCC 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 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.
 < = Station meets FCC minimum distance spacing for its class.
 < = Contour Overlap

E-2 W297BE.CP Mod. at Ch. 243 Interference Plot

W297BE.CP Mod.
BMPFT-20110228ABL
Latitude: 37-53-17 N
Longitude: 087-32-37 W
ERP: 0.25 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 363.0 m
Elevation: 126.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

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WSTO(FM) 241C
87.457 dBu F(50-50) contour

W297BE.CP Mod. at Ch. 243
127.457 dBu +40 F(50-10) contour within
2nd adjacent WSTO(FM) 241C

The distance to the interfering contour = 47 meters
will not reach any population, roads or buildings
at the COR AGL = 237 meters.



W297BE.CP Mod.

Wolf Hills Rd

Mathen Ln

John James Audubon State Park

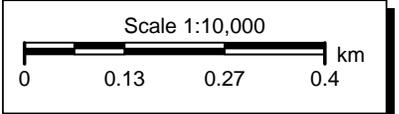
Warbler Rd

Parkside Dr

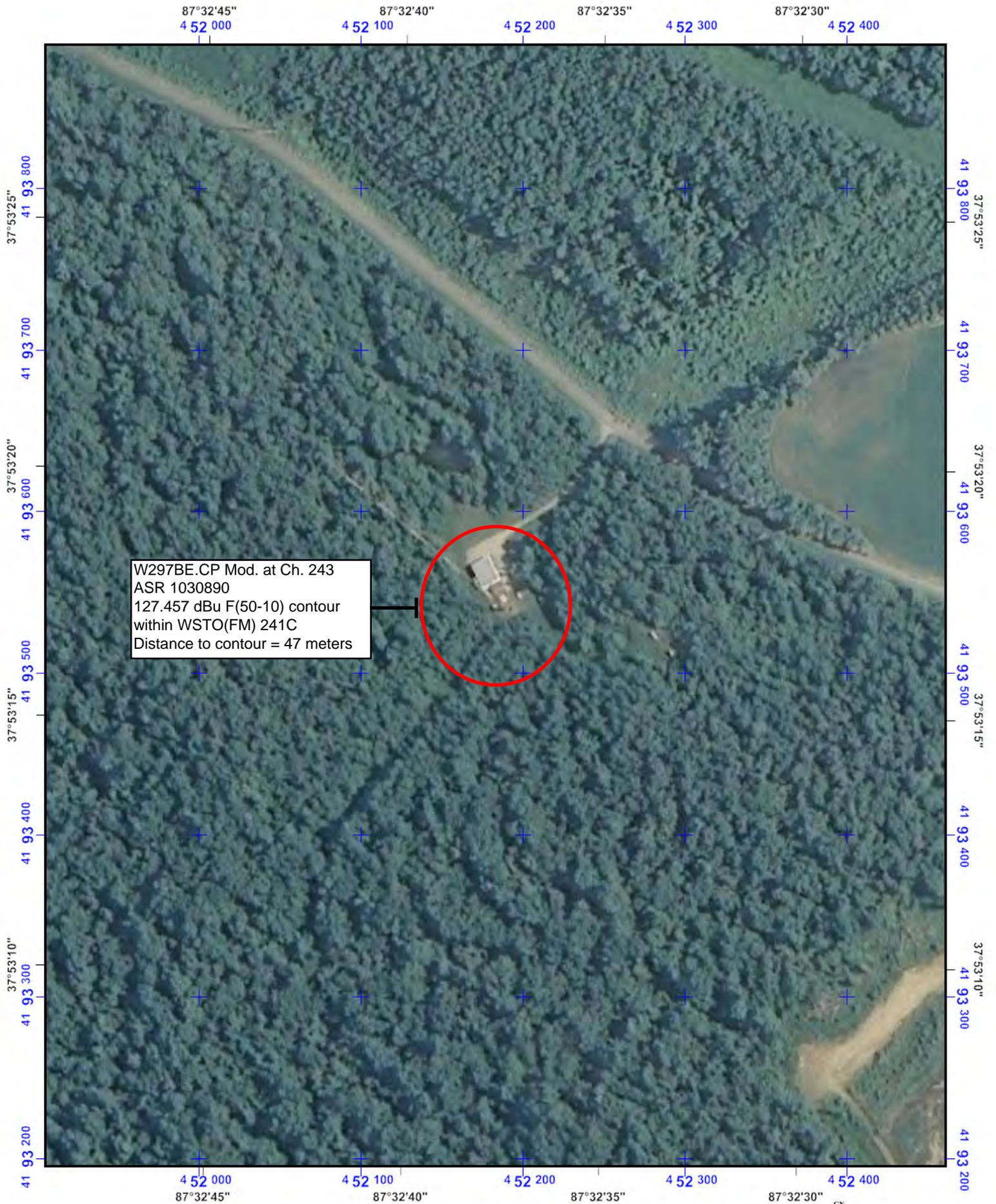
Parkside

Morningside Dr

Woods

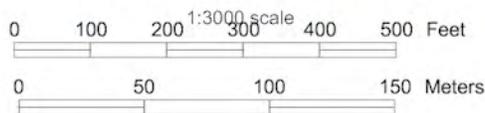


E-3 W297BE.CP Mod. Aerial Photo Interference Plot



W297BE.CP Mod. at Ch. 243
ASR 1030890
127.457 dBu F(50-10) contour
within WSTO(FM) 241C
Distance to contour = 47 meters

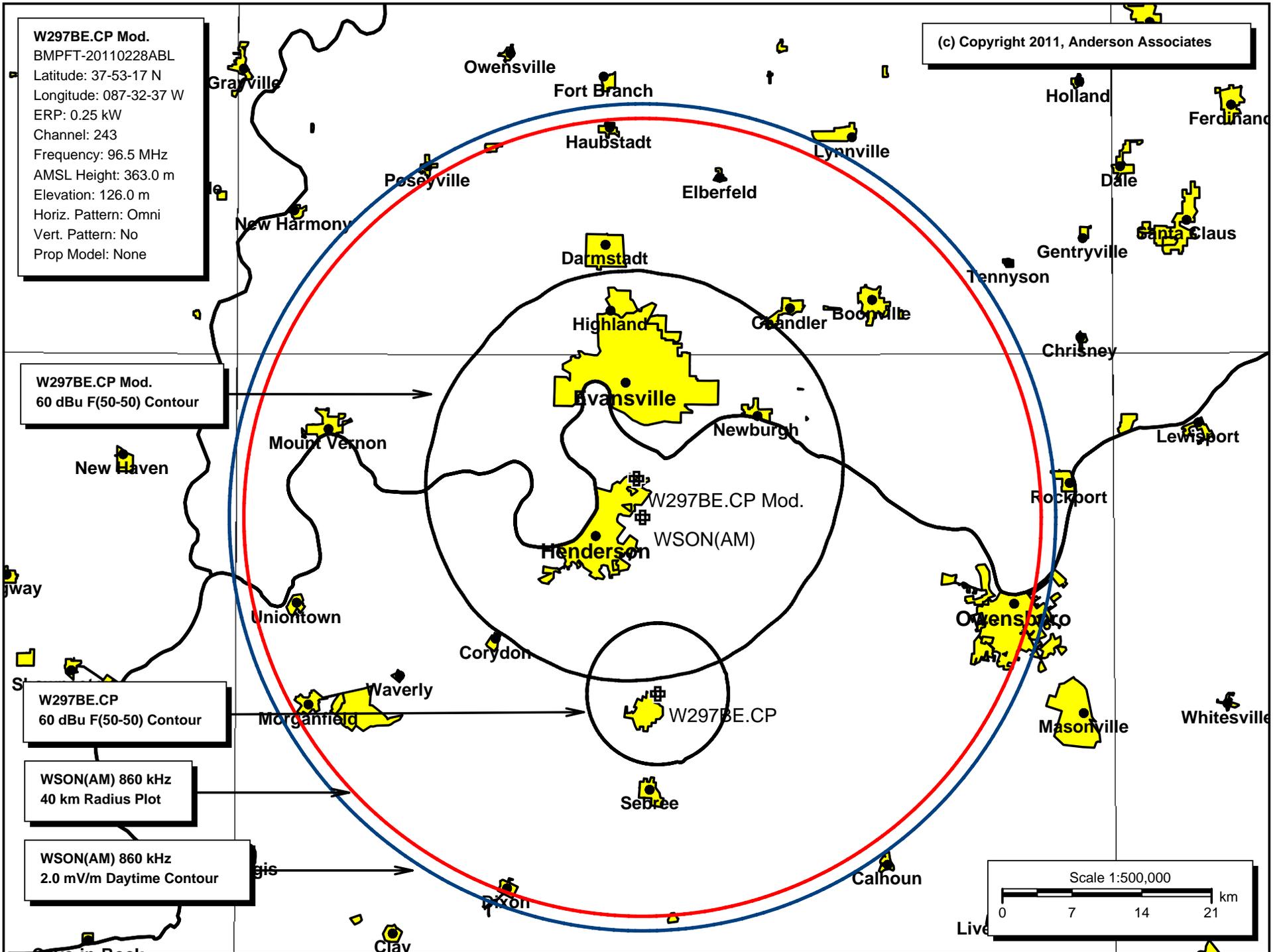
Universal Transverse Mercator (UTM) Projection Zone 16
North American Datum of 1983
100 meter UTM / USNG / MGRS
Grid Zone Designation: 16S
100,000-m Squares: DG



MN 2° GN

Magnetic declination of 2W at center of map
on March 17, 2011

E-4 W297BE.CP Mod 60 dBu Contour Plot



E-5 W297BE.CP Mod. ASR

ASR Registration Search

Registration 1030890

[Map Registration](#)

Registration Detail

Reg Number	1030890	Status	Constructed
File Number	A0617767	Constructed	11/08/1993
FAA Study	2008-ASO-1595-OE	EMI	No
FAA Issue Date	10/10/2008	NEPA	No

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Communications Purposes

Location (in NAD83 Coordinates)

Lat/Long 37-53-17.2 N 087-32-37.0 W SR 414 E OF US 41

City, State HENDERSON , KY

Center of
AM Array

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
125.9	309.7
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
435.6	295.0

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 12

Paint and Light in Accordance with FAA Circular Number 70/7460-1K

Owner & Contact Information

FRN	0006156111	Licensee ID	L00132131
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Owner

Pinnacle Towers LLC
Attention To: Regulatory Department
2000 Corporate Drive
Canonsburg , PA 15317

P: (724)416-2000
E: Regulatory.Department@Crowncastle.com

Contact

Verre , Christine A
2000 Corporate Drive
Canonsburg , PA 15317

P: (336)643-2524
E: Christine.Verre@Crowncastle.com

Last Action Status

Status	Constructed	Received	01/07/2009
Purpose	Notification	Entered	01/07/2009
Mode	Interactive		

Related Applications