

Technical Report W295CC Minor Modification

This technical report is submitted for a minor modification to W295CC, FCC file no. BLFT-20160819ABE. A change in the antenna is requested. The translator is to serve as a fill-in facility to rebroadcast WFTG(AM) 1400 kHz at London, KY, FCC facility I.D. 20412.

W295CC Modification Analysis:

An overlap study (exhibit E-1) shows the W295CC modification is within the WCTT-FM 297C2 third-adjacent protected contour. A tabulation of the +40 dBu F(50-10) contour (exhibit E-2) using the vertical elevation pattern of the ERI 100A, two bay, 0.625 wavelength-spaced antenna (exhibit E-3) shows the interfering contour will not reach the ground to affect any population, roads or buildings (exhibit E-4). The 60 dBu contour is contained within the primary WFTG(AM) 2.0 mV/m daytime contour (exhibit E-5).

Antenna System:

The W295CC modification is to be relocated to an existing tower, ASR #1232293, at coordinates:

37 08 30N 084 04 45W NAD 27.

An ERI 100A two bay, 0.625 wavelength-spaced, nondirectional antenna will be mounted at a COR AGL of 91 meters, 457 meters AMSL and operate at 0.160 kW ERP.

RF Exposure Calculation:

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

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

Using a worst case vertical (F) factor of 1.0, the RF is calculated to be $1.35 \mu\text{W}/\text{cm}^2$ to the ground, which is well 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 W295CC 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 August 23, 2016
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E-1 W295CC Mod. Overlap Study

REFERENCE 37 08 30.0 N. 84 04 45.0 W.		CH# 295D - 106.9 MHz, Pwr= 0.16 kW, HAAT= 101.0 M, COR= 457 M Average Protected F(50-50)= 11.61 km Omni-directional								DISPLAY DATES DATA 08-23-16 SEARCH 08-23-16	
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*
295D W295CC London		CP _C_ KY		0.0 0.0	0.00 BMPFT20160620AAB	37 08 30.0 84 04 45.0	0.160 457	40.4 457	11.8 F.t.g. Broadcasting, Inc.	-52.1*	-52.1*
297C2 WCTT-FM Corbin		LIC _CN KY		180.5 0.5	26.59 BLH19870629KD	36 54 09.0 84 04 55.0	50.000 150	6.1 510	53.4 Encore Communications, Inc	8.6	-27.7*(1)
294C3 WLFX Berea		CP ZCX KY		353.8 173.8	57.96 BPH20160523ABP	37 39 36.0 84 09 00.0	14.500 133	51.5 409	28.3 Wallingford Communications	-4.2	7.8
294A WLFX Berea		LIC DCX KY		354.0 173.9	58.07 BMLH20140624AAQ	37 39 40.0 84 08 55.0	3.700 128	35.5 403	19.7 Wallingford Communications	12.1	17.0
295C2 WKXD-FM Monterey		LIC ZCX TN		222.9 42.2	153.92 BLH20131115AKU	36 07 20.6 85 14 48.5	23.000 220	128.4 723	50.2 Stonecom Cookeville, Lic	15.6	61.4
292A WRIL Pineville		LIC _CX KY		142.1 322.3	54.48 BLH20081222ABG	36 45 16.0 83 42 12.0	1.150 228	2.2 680	34.9 Pine Hills Broadcasting, I	40.8	18.7
241C3 WKKQ Barbourville		LIC NCX KY		152.5 332.6	34.46 BLH20100617AHU	36 51 59.0 83 54 00.0	25.000 100	0.4 458	5.9 Choice Radio Corporation	11.5R	23.0M
295C WMIT Black Mountain		LIC _C_ NC		133.7 314.8	223.99 BMLH19960327KD	35 44 06.0 82 17 10.0	36.000 942	183.3 2056	86.5 Blue Ridge Broadcasting Co	29.6	98.3
294D W294BF Harlan		LIC _C_ KY		121.0 301.4	72.95 BLFT20160219ABQ	36 48 05.0 83 22 37.0	0.010 1055	20.3 1055	13.1 Christ's Hands, Inc.	41.3	43.1
296A WLAI Wilmore		LIC ZCX KY		335.9 155.6	99.84 BLED20100317AAX	37 57 37.0 84 32 42.0	3.600 128	46.1 412	30.0 Educational Media Foundati	41.7	52.9
296A WKCB-FM Hindman		LIC _CN KY		77.7 258.4	102.36 BMLH19900302KB	37 19 56.0 82 56 52.0	1.550 198	44.4 617	29.4 Hindman Broadcasting Corpo	46.6	54.0
295B AL9833 St. Matthews		RSV-A KY		312.2 131.2	205.61 RM11334	38 22 19.0 85 49 33.0	50.000 150	144.5 337	70.6 48.8		77.9

Terrain database is FCC NGDC 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. 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.
Reference station has protected zone issue: AM tower

(1) The W295CC modification is within the second-adjacent WCTT-FM 297C2 protected contour. The +40dBu F(50-10) contour tabulation in exhibit E-2 shows no interference signal will be produced to reach any buildings, roads or population.

E-2 W295CC Mod. +40 dBu Tabulation Within WCTT-FM 297C2

W295CC London, KY
74.1204(d) Showing
Translator or LPFM Maximum Licensed ERP = 0.16
Translator or LPFM Antenna Height AG = 91 Meters
W295CC Antenna Model = ERI 100A-2-0.625

Protected Station's Contour = 74.34521 dBu
Translator's or LPFM's full Interference contour 114.34521

Review Azimuth = 0 Degrees True
Relative Field on the horizon at Review Azimuth = 1.000
Translator/LPFM ERP on the horizon at Review Azimuth = 0.16 kW
Distance between stations = 26.6 km
Protected Station= WCTT-FM, 50 kW, 510 M Meters COR AMSL

Depression Angle From Horizon(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	1.000	1.0	0.1600	170.1373	170.1373	091.000
01.00	0.996	1.0	0.1587	169.4567	169.4309	088.043
02.00	0.992	1.0	0.1575	168.7762	168.6734	085.110
03.00	0.988	1.0	0.1562	168.0956	167.8653	082.203
04.00	0.984	1.0	0.1549	167.4151	167.0073	079.322
05.00	0.98	1.0	0.1537	166.7345	166.1001	076.468
06.00	0.97	1.0	0.1505	165.0332	164.1291	073.749
07.00	0.96	1.0	0.1475	163.3318	162.1143	071.095
08.00	0.95	1.0	0.1444	161.6304	160.0574	068.505
09.00	0.94	1.0	0.1414	159.9290	157.9601	065.982
10.00	0.93	1.0	0.1384	158.2277	155.8238	063.524
11.00	0.914	1.0	0.1337	155.5055	152.6484	061.328
12.00	0.898	1.0	0.1290	152.7833	149.4446	059.235
13.00	0.882	1.0	0.1245	150.0611	146.2150	057.244
14.00	0.866	1.0	0.1200	147.3389	142.9623	055.355
15.00	0.85	1.0	0.1156	144.6167	139.6890	053.570
16.00	0.829	1.0	0.1100	141.0438	135.5800	052.123
17.00	0.808	1.0	0.1045	137.4709	131.4641	050.807
18.00	0.787	1.0	0.0991	133.8980	127.3446	049.623
19.00	0.766	1.0	0.0939	130.3252	123.2249	048.570
20.00	0.745	1.0	0.0888	126.7523	119.1082	047.648
21.00	0.72	1.0	0.0829	122.4988	114.3625	047.100
22.00	0.695	1.0	0.0773	118.2454	109.6352	046.704
23.00	0.67	1.0	0.0718	113.9920	104.9302	046.460
24.00	0.645	1.0	0.0666	109.7385	100.2511	046.365 (1)
25.00	0.62	1.0	0.0615	105.4851	095.6020	046.420
26.00	0.595	1.0	0.0566	101.2317	090.9864	046.623
27.00	0.57	1.0	0.0520	096.9782	086.4083	046.973
28.00	0.545	1.0	0.0475	092.7248	081.8712	047.468
29.00	0.52	1.0	0.0433	088.4714	077.3788	048.108
30.00	0.495	1.0	0.0392	084.2180	072.9349	048.891
31.00	0.469	1.0	0.0352	079.7944	068.3971	049.903
32.00	0.443	1.0	0.0314	075.3708	063.9181	051.060
33.00	0.417	1.0	0.0278	070.9472	059.5014	052.359
34.00	0.391	1.0	0.0245	066.5237	055.1506	053.800
35.00	0.365	1.0	0.0213	062.1001	050.8694	055.381
36.00	0.341	1.0	0.0186	058.0168	046.9366	056.899
37.00	0.317	1.0	0.0161	053.9335	043.0732	058.542
38.00	0.293	1.0	0.0137	049.8502	039.2825	060.309
39.00	0.269	1.0	0.0116	045.7669	035.5676	062.198
40.00	0.245	1.0	0.0096	041.6836	031.9315	064.206
41.00	0.224	1.0	0.0080	038.0257	028.6983	066.053
42.00	0.202	1.0	0.0065	034.3677	025.5402	068.003
43.00	0.181	1.0	0.0052	030.7098	022.4597	070.056
44.00	0.159	1.0	0.0040	027.0518	019.4595	072.208
45.00	0.138	1.0	0.0030	023.3939	016.5420	074.458
46.00	0.12	1.0	0.0023	020.4165	014.1825	076.314
47.00	0.103	1.0	0.0017	017.4391	011.8934	078.246
48.00	0.085	1.0	0.0012	014.4617	009.6767	080.253
49.00	0.068	1.0	0.0007	011.4843	007.5344	082.333
50.00	0.05	1.0	0.0004	008.5069	005.4681	084.483
51.00	0.044	1.0	0.0003	007.4860	004.7111	085.182
52.00	0.038	1.0	0.0002	006.4652	003.9804	085.905
53.00	0.032	1.0	0.0002	005.4444	003.2765	086.652
54.00	0.026	1.0	0.0001	004.4236	002.6001	087.421
55.00	0.02	1.0	0.0001	003.4027	001.9517	088.213
56.00	0.03	1.0	0.0001	005.0190	002.8066	086.839
57.00	0.039	1.0	0.0002	006.6354	003.6139	085.435
58.00	0.049	1.0	0.0004	008.2517	004.3727	084.002
59.00	0.058	1.0	0.0005	009.8680	005.0824	082.542
60.00	0.068	1.0	0.0007	011.4843	005.7421	081.054
61.00	0.074	1.0	0.0009	012.5902	006.1038	079.988

Depression Angle From Horizon(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)
62.00	0.081	1.0	0.0010	013.6961	006.4299	078.907
63.00	0.087	1.0	0.0012	014.8019	006.7199	077.811
64.00	0.094	1.0	0.0014	015.9078	006.9735	076.702
65.00	0.1	1.0	0.0016	017.0137	007.1903	075.580
66.00	0.102	1.0	0.0017	017.4221	007.0862	075.084
67.00	0.105	1.0	0.0018	017.8304	006.9669	074.587
68.00	0.107	1.0	0.0018	018.2387	006.8323	074.089
69.00	0.11	1.0	0.0019	018.6470	006.6825	073.591
70.00	0.112	1.0	0.0020	019.0554	006.5173	073.094
71.00	0.112	1.0	0.0020	018.9873	006.1817	073.047
72.00	0.111	1.0	0.0020	018.9193	005.8464	073.007
73.00	0.111	1.0	0.0020	018.8512	005.5116	072.972
74.00	0.11	1.0	0.0020	018.7832	005.1773	072.944
75.00	0.11	1.0	0.0019	018.7151	004.8438	072.923
76.00	0.107	1.0	0.0018	018.2727	004.4206	073.270
77.00	0.105	1.0	0.0018	017.8304	004.0110	073.627
78.00	0.102	1.0	0.0017	017.3880	003.6152	073.992
79.00	0.1	1.0	0.0016	016.9457	003.2334	074.366
80.00	0.097	1.0	0.0015	016.5033	002.8658	074.747
81.00	0.093	1.0	0.0014	015.7547	002.4646	075.439
82.00	0.088	1.0	0.0012	015.0061	002.0884	076.140
83.00	0.084	1.0	0.0011	014.2575	001.7376	076.849
84.00	0.079	1.0	0.0010	013.5089	001.4121	077.565
85.00	0.075	1.0	0.0009	012.7603	001.1121	078.288
86.00	0.07	1.0	0.0008	011.8416	000.8260	079.187
87.00	0.064	1.0	0.0007	010.9228	000.5717	080.092
88.00	0.059	1.0	0.0006	010.0041	000.3491	081.002
89.00	0.053	1.0	0.0005	009.0853	000.1586	081.916
90.00	0.048	1.0	0.0004	008.1666	000.0000	082.833

(1) The 114.35 F(50-10) dBu contour lowest point above the site elevation = 46.37 meters, which will not reach any population, roads or buildings.

E-3 W295CC Mod. Antenna Vertical Elevation Pattern

ELECTRONICS RESEARCH, INC.
7777 GARDNER ROAD
CHANDLER, IN. 47610

FIGURE 1

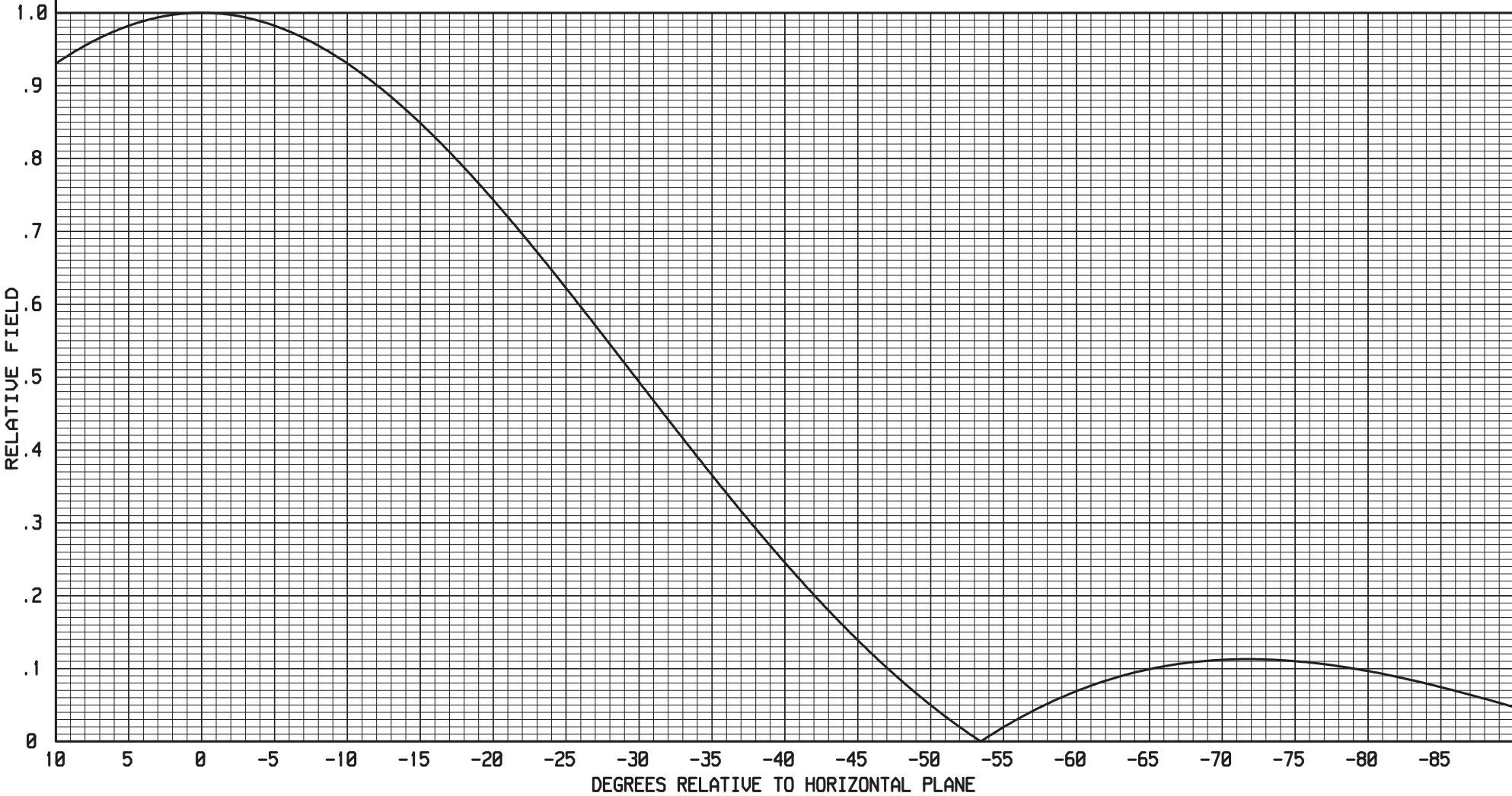
-----THEORETICAL-----
VERTICAL PLANE RELATIVE FIELD

APRIL 14, 2016

2 ERI SERIES 100A ANTENNA ELEMENTS
0 DEGREE(S) ELECTRICAL BEAM TILT
0 PERCENT FIRST NULL FILL
0 PERCENT SECOND NULL FILL

ELEMENT SPACING:
0.625 WAVELENGTH

POWER GAIN IS .746 IN THE HORIZONTAL PLANE(.746 IN THE MAX.)



E-4 W295CC Mod. +40 dBu F(50-10) Contour Aerial Photo

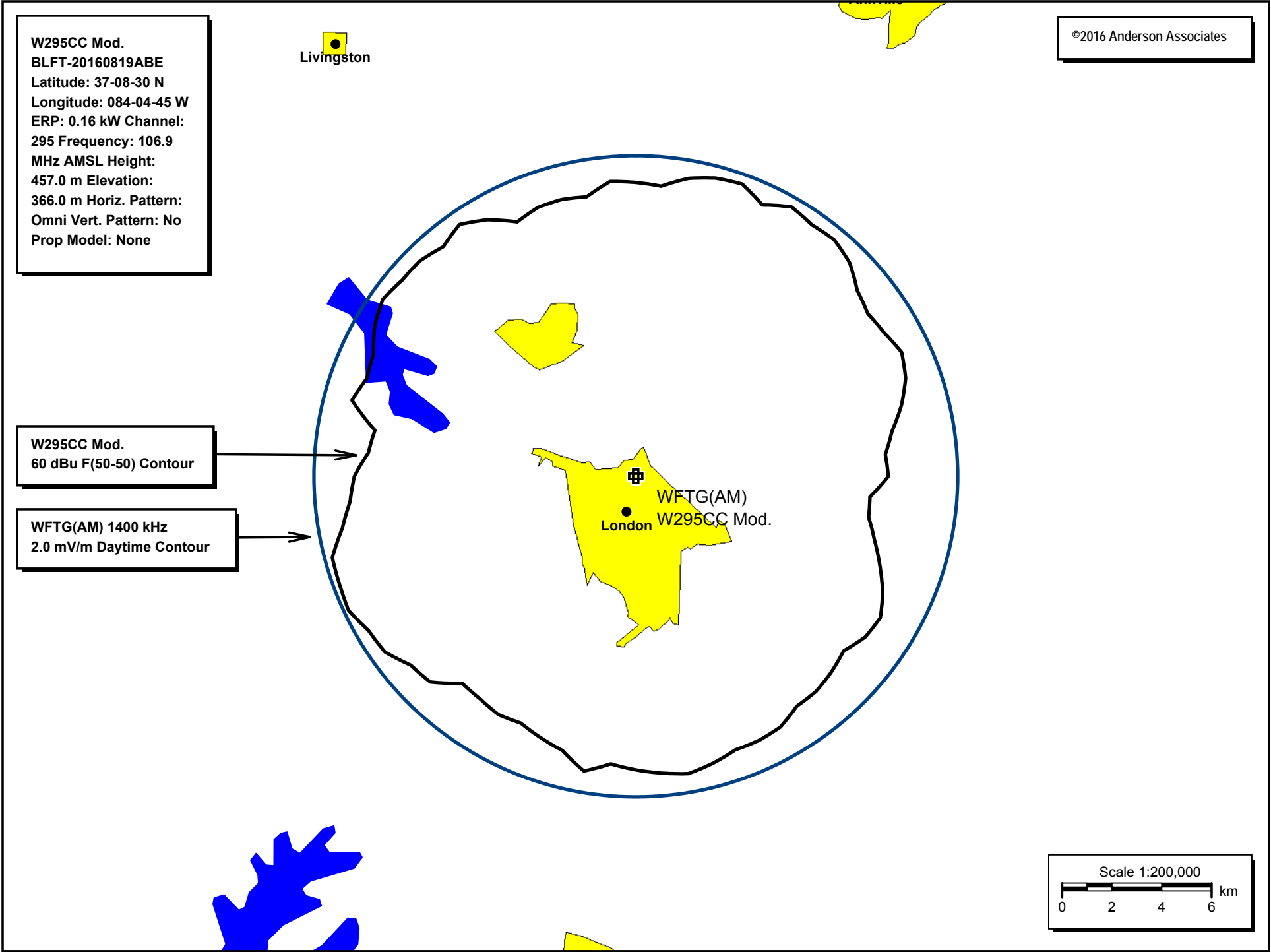


Google earth

feet 1000
meters 300



E-5 W295CC Mod. 60 dBu Contour Plot



Registration 1232293

Registration Detail

Reg Number	1232293	Status	Constructed
File Number	A0312652	Constructed	10/18/2002
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Communication

Location (in NAD83 Coordinates)

Lat/Long	37-08-30.3 N 084-04-44.8 W	Address	1.3 miles east of Hwy. 25 and Hwy. 80 on Tobacco Road
City, State	London , KY		
Zip	40741	County	LAUREL
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
365.7	106.4
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
472.1	105.5

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 12

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

FAA Notification

FAA Study	02-ASO-0211-OE	FAA Issue Date	01/09/2002
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Owner & Contact Information

FRN	0001785492	Owner Entity Type	
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Owner

Key Broadcasting	P: (606)864-2148
Attention To: Dennis Cupp	F:
P.O. Box 1227	E:
Corbin , KY 40702	

Contact

Matheny , Marilyn	P: (912)638-8028
10 Sylvan Drive, Suite 26	F:
P.O. Box 24466	E: marilyn@grahambrock.com
St. Simons Island , GA 31522	

Last Action Status

Status	Constructed	Received	02/17/2003
Purpose	Notification	Entered	02/17/2003