

Wake Forest, North Carolina  
Application for Minor Modification of  
FM Translator W293DV  
On Channel 293  
by  
Truth Broadcasting Corporation

Exhibit 13  
Interference Analysis

August 2019

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Timothy L. Warner, Inc.  
Post Office Box 8045  
Asheville, North Carolina 28814-8045  
(828) 258-1238  
twarner@tlwinc.net

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 13, Interference Analysis, for Truth Broadcasting Corporation, and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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Timothy L. Warner, P.E.  
Post Office Box 8045  
Asheville, North Carolina 28801  
(828) 258-1238  
[twarner@tlwinc.net](mailto:twarner@tlwinc.net)  
5 August 2019

### Narrative

This Exhibit supports a minor modification application for FM translator W293DV, on Channel 293 in Wake Forest, North Carolina. Allocation details are provided in this exhibit. This proposal complies fully with the requirements of 74 C.F.R. §74.1204(a), with the exception of facilities protected under 47 C.F.R. §74.1204(d) by the Undesired to Desired (U/D) method described below. The proposed modified facilities create no mutual exclusivities with any licensed facilities, construction permits, or applications as shown in the allocation table in this exhibit.

Figure 1 shows the proposed 60 dBu F(50,50) coverage area and the authorized coverage area. Figure 1 shows fill-in status confirmation. Figure 1 shows that the proposed facility is a minor modification of the authorized facility.

The changes are a change in site, a change to an omnidirectional antenna, a decrease in elevation, and a decrease in power. The underlying construction permit, file number BPFT-20160129AIY, was filed during a window permitting minor modifications of authorized translators at distance up to 250 miles, for fill-in use for AM stations. The site proposed in this application is 151 miles (243 kilometers) from the licensed site of W243CT. The site proposed in this application is the same site as that authorized in BPFT-20160129AIY, though with different power, height and frequency.

### Allocations

This application proposes service to Wake Forest, North Carolina, on channel 293. An updated Table 1: Allocations is included in this exhibit with a list of the stations, construction

permits, allocations, and applications studied. All are protected under §74.1204(a) contour protection by this application, with the exception of facilities protected by the Undesired to Desired (U/D) method. Facilities protected by the U/D method are listed in Table 2. The allocations table was prepared using the GLOBE 30 terrain database which is described below.

Table 1: Allocations

Timothy L. Warner, Inc.  
Asheville, North Carolina

Allocation Study  
Truth Broadcasting Corporation  
CH# 293D - 106.5 MHz, Pwr= 0.05 kw, HAAT= 85.9 M, COR= 201 M  
Average Protected F(50-50)= 8.0 km  
Omni-directional

DISPLAY DATES  
DATA 08-05-19  
SEARCH 08-05-19

REFERENCE  
36 00 47.0 N.  
78 31 12.0 W.

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*
293D Wake Forest	W243CT	CP	DC NC	155.5 335.6	8.87 BMPFT20190110AAH	35 56 25.5 78 28 45.0	0.250	41.4 217	12.0 Truth Broadcasting Corporation	-47.1*	-31.2*
Facility being modified.											
291C1 Knightdale	WTKK	LIC	C NC	181.1 1.1	37.65 BLH20090601APS	35 40 28.0 78 31 40.0	27.500 489	8.4 567	72.9 Capstar Tx, LLC	19.9	-35.7*
Protected by Undesired to Desires Signal Ratio Studies, see text and figures.											
293C1 New Bern	WSFL-FM	LIC	CN NC	135.3 316.0	151.10 BLH19860127KC	35 02 27.0 77 21 11.0	100.000 279	170.1 292	70.8 CMG Coastal Carolina, LLC	-27.0*	53.6
296C3 Durham	WFXC	LIC	NCX NC	261.6 81.5	26.92 BLH20180212ABG	35 58 39.0 78 48 58.0	13.000 141	4.1 248	40.8 Radio One Licenses, LLC	14.2	-14.4*
Protected by Undesired to Desires Signal Ratio Studies, see text and figures.											
294C2 Semora	WKVK	LIC	CX NC	306.8 126.4	75.63 BMLE20150130ADO	36 25 07.0 79 11 49.0	50.000 150	77.4 315	51.5 Educational Media Foundation	-9.7*	12.9
294L1 Wendell	WEAD-LP	LIC	NC	150.4 330.5	24.76 BLL20161121ADY	35 49 09.5 78 23 03.8	0.100 29	117	8.3 Asociacion Dominicana De R	7.6	
293C1 Salisbury	WEND	LIC	CN NC	256.8 75.6	195.82 BLH19990302KD	35 35 32.0 80 37 44.0	84.000 319	169.0 552	71.6 Capstar Tx, LLC	18.2	96.4
294L1 Raleigh	WSMU-LP	LIC	NC	180.2 0.2	43.35 BLL20151119CIK	35 37 23.1 78 31 18.6	0.089 33	118	26.2 Centro Cristiano El Sermon	24.8	
294L1 Rocky Mount	WDBP-LP	LIC	NC	99.4 279.8	62.73 BLL20160331ABK	35 55 07.7 77 49 57.3	0.100 22	61	46.9 North Carolina Humane Soci	45.9	
292C3 Halifax	WMNA-FM	CP	NCN VA	334.6 154.2	118.32 BPH20190211ACD	36 58 22.0 79 05 32.0	18.500 117	61.6 286	40.9 3 Daughters Media, Inc.	49.3	66.6
293D Fayetteville	W293DD	LIC	C NC	202.0 21.7	114.20 BMLFT20180320ABT	35 03 35.0 78 59 24.0	0.250	53.0 240	16.5 Colonial Media And Enterta	51.8	67.0
293B Richmond	WBTJ	LIC	DCX VA	25.9 206.4	185.69 BLH20101005ACH	37 30 45.0 77 36 05.7	14.500 280	125.6 346	65.0 Entercom License, Llc	52.5	84.4
292D Burlington	W292FF	CP	DV NC	279.4 98.8	91.33 BNPFT20171201AMX	36 08 36.5 79 31 25.0	0.220	22.4 335	14.7 Truth Broadcasting Corporation	60.6	64.6
290D Burlington	W290CX	LIC	C NC	277.9 97.3	84.34 BLFT20160727ADJ	36 06 48.0 79 27 01.0	0.250	1.1 260	11.3 Gray Broadcasting, LLC	74.8	72.3

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 adj.  
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), Beamtlt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

**Table 2: Facilities Protected by U/D Method**

Facility	WTKK Knightdale, North Carolina	WFXC Durham, North Carolina
Relationship	291C1, second adjacent	296C3, third adjacent
Distance (km)	37.65	26.93
Bearing (degrees)	181.1	261.6
ERP (kW, on azimuth)	27.5	13.0
HAAT (m, on azimuth)	496.1	153.2
Ratio	40	40
Signal Strength (dBu)	75.65	67.91
Translator Signal Strength	115.65	107.91
Translator distance (km)	.082	.199

**Undesired to Desired Method under §74.1204(d)**

A waiver of §74.1204(d) is requested to show protection to some facilities through the use of Undesired to Desired Signal Strength Ratio (U/D) calculations. Table 2 lists the parameters studied. The antenna is a Nicom BKG77-1 omnidirectional antenna. The elevation pattern is shown in Figure 2.

The WTKK field strength calculated at the site (ground level) is 75.65 dBu, using the FM Curves calculator on the FCC web site. For the translator interference contour, free space calculations are used. The corresponding 115.65 dBu field strength distance is .082 kilometers (82 meters) in the horizontal plane. The proposed antenna location is 78 meters above ground. Figure 3 is the vertical elevation of the 115.65 dBu interference contour. Figure 4 is a topographic map of the site. Figure 5 is an aerial photograph of the site with the interference contour plotted.

The WFXC field strength calculated at the site (ground level) is 67.91 dBu, using the FM Curves calculator on the FCC web site. For the translator interference contour, free space calculations are used. The corresponding 107.91 dBu field strength distance is .199 kilometers (199 meters) in the horizontal plane. The proposed antenna location is 78 meters above

ground. Figure 3 is the vertical elevation of the 107.91 dBu interference contour. Figure 4 is a topographic map of the site. Figure 5 is an aerial photograph of the site with the interference contour plotted.

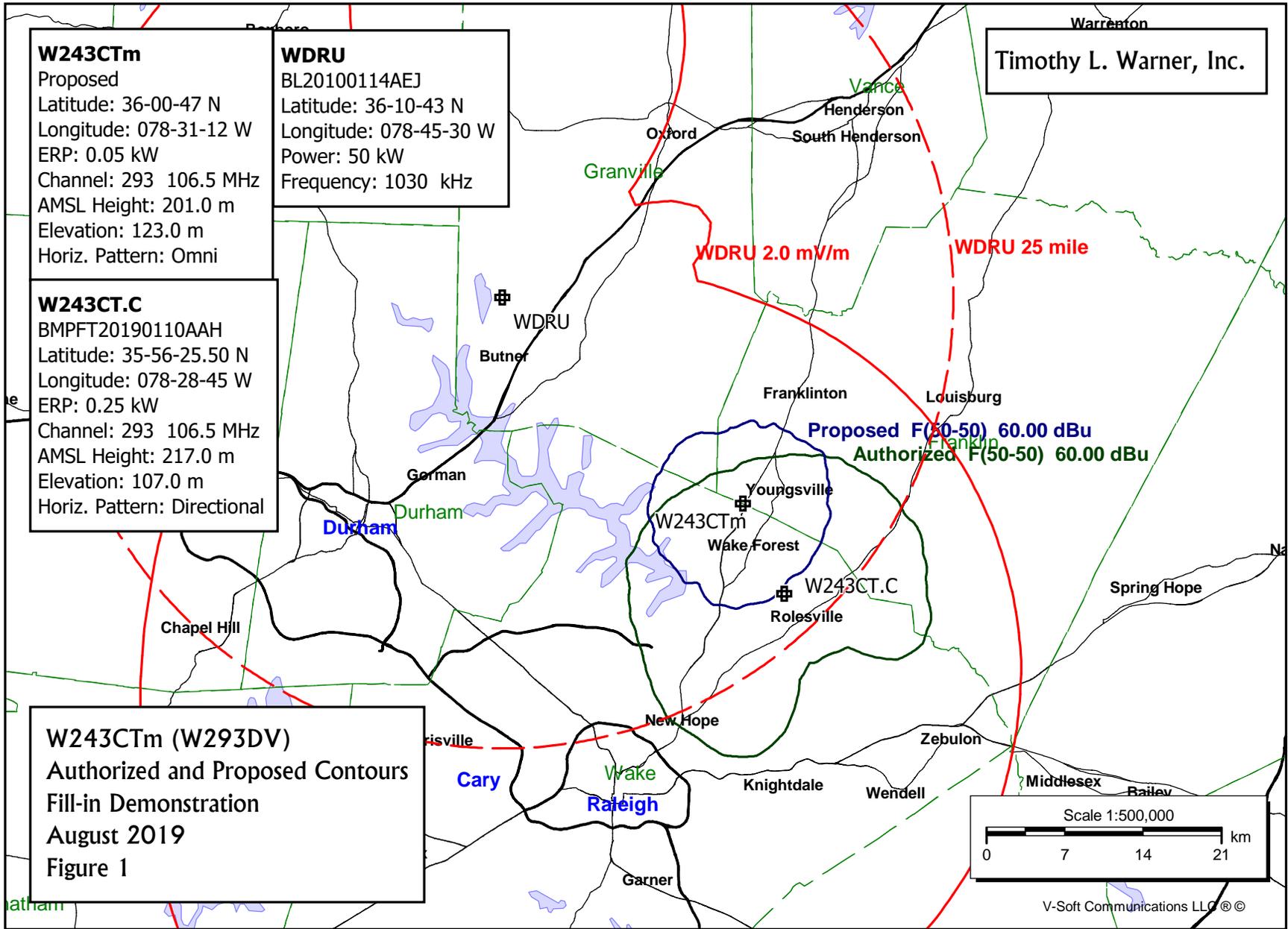
All of the area within the interference contour is unoccupied. The predicted interference signal toward WTKK does not reach the ground. The predicted interference signal toward WFXC is more than 10 meters above ground level for all distances beyond 166 meters. There are no buildings or major roadways in any areas predicted to receive an interfering signal toward WFXC. There are no tall buildings in the area. There is no population within the predicted interference area and therefore this facility is permitted under §74.1204(d).

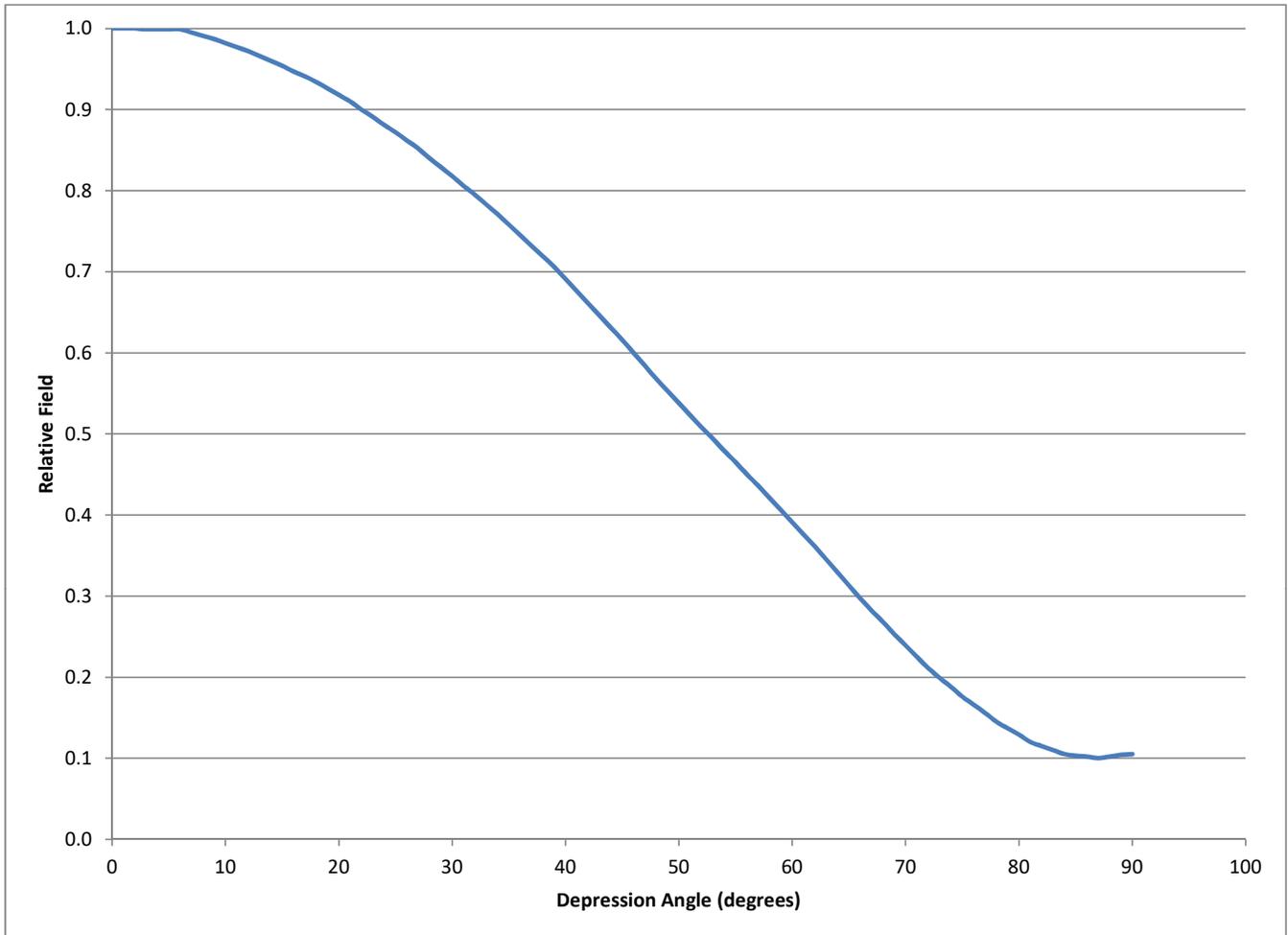
The applicant recognizes that the U/D method is only a tool for predicting likely interference. Should any actual interference be experienced, the applicant will cooperate fully in correcting the interference. Corrective steps may require changes in the transmitting antenna or other steps which would require Commission authorization, may require that the translator cease operation except for brief equipment tests, or may require filtering at the receivers which report interference.

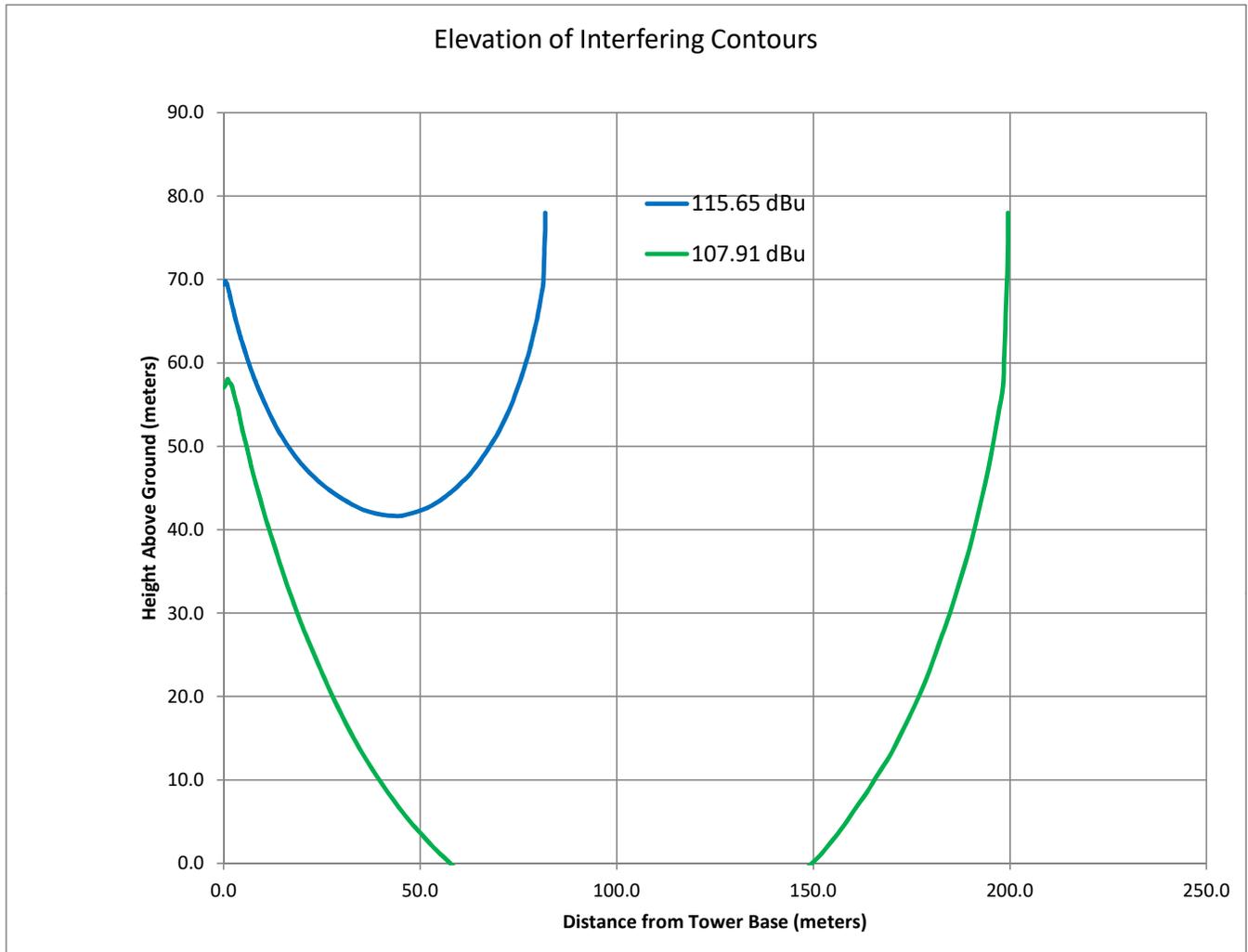
### Source of Data

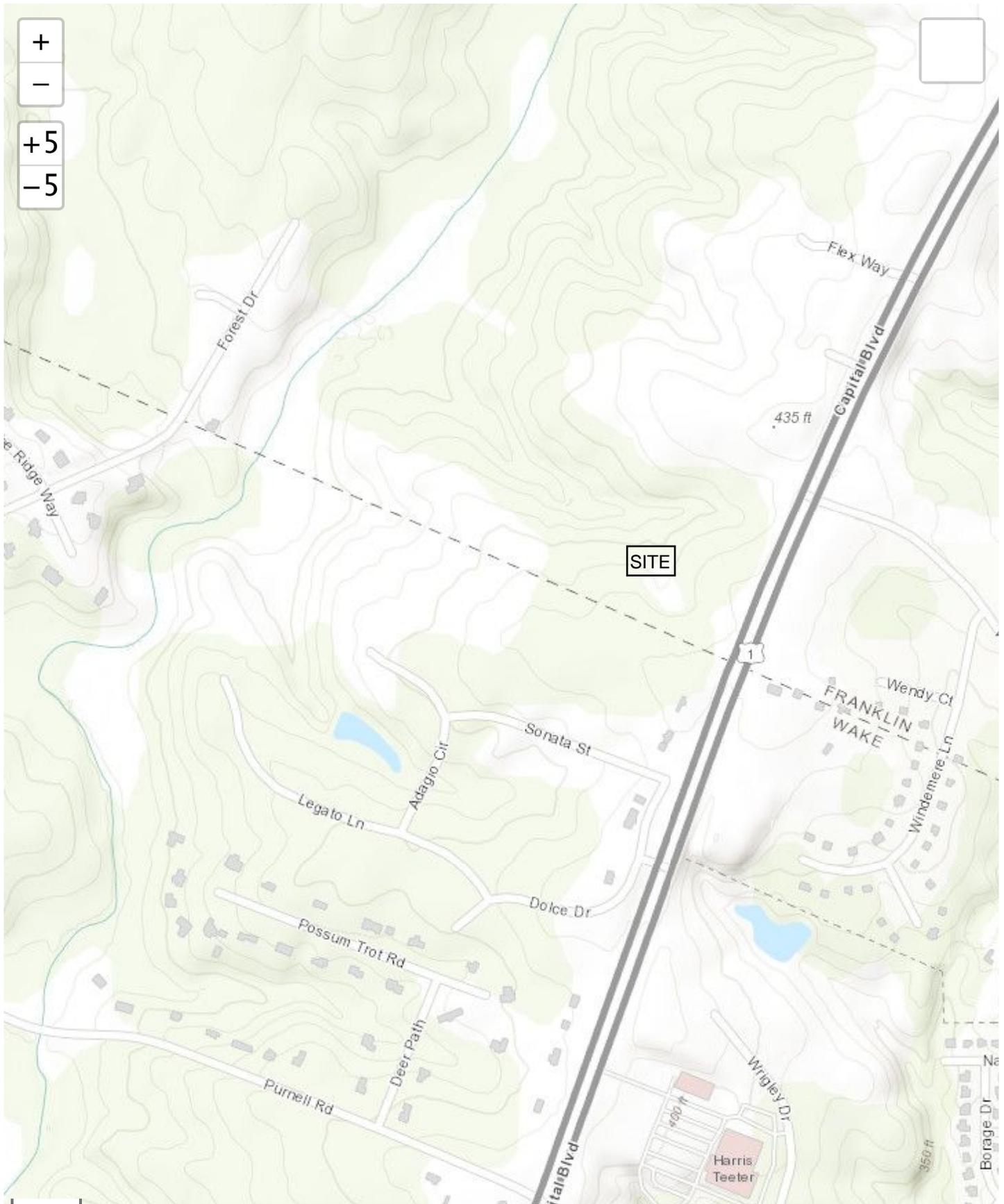
Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments.

The contours were evaluated using terrain extracted from the GLOBE 30 arcsecond terrain database, formatted by V-Soft Communications to work with its allocation and mapping programs.









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# W243CTm (W293DV)

Aerial Photograph  
With Interference Contours  
And Radius for 10 m height  
August 2019  
Figure 5

## Legend

-  W243CTm (293)
-  W243CTm (293) - 50 10 Field Strength: 107.91 dBu FCC [GLOBE 30]
-  W243CTm (293) - 50 10 Field Strength: 115.65 dBu FCC [GLOBE 30]
-  W243CTm (293) - Circle: Radius = 0.166 km

