

Lumberton, North Carolina
Application for Minor Modification of
FM Translator W246DR
On Channel 246
by
WAGR Broadcasting, Inc.

Technical Exhibit

March 2021

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Table of Contents

Description	Page
Declaration	2
Narrative.....	3
Allocations	3
Table 1: Allocations	4
Table 2: Facilities Protected by U/D Method.....	5
Undesired to Desired Method under §74.1204(d).....	5
Source of Data.....	6
Authorized and Proposed Contours, Fill-In Demonstration.....	Figure 1
Antenna Vertical Elevation Pattern	Figure 2
Interference Contour Elevation Pattern	Figure 3
Topographic Map	Figure 4
Aerial Photograph with Interference Contour.....	Figure 5

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 Technical Exhibit for WAGR Broadcasting, Inc., 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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31 March 2021

Narrative

This Exhibit supports a minor modification application for FM translator W246DR, on Channel 246 in Lumberton, North Carolina. Allocation details are provided in this exhibit. This proposal complies fully with the requirements of 47 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.

The changes are a change of site, change of elevation, and a new antenna.

The minor modification complies with the requirements of Sections 74.1204, 74.1205, 74.1232, and 74.1234.

Allocations

This application proposes service to Lumberton, North Carolina, on channel 246. 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

Allocation Study
WAGR Broadcasting, Inc.

REFERENCE CH# 246D - 97.1 MHz, Pwr= 0.25 kw, HAAT= 140.8 M, COR= 188.2 M DISPLAY DATES
34 42 02.0 N. Average Protected F(50-50)= 15.3 km DATA 03-31-21
79 06 31.0 W. Omni-directional SEARCH 03-31-21

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*
243C NC	WFLB 213.0	LIC	NCN ADF	32.9 79 02	10.58 44.10	34 46 368 49.60	100.000	10.4	73.9 Beasley Media Group Licens	-15.0*	-64.4*
Protected by Undesired to Desired Signal Ratio Studies, see text and figures.											
246D Lumberton	W246DR!	CP	CN NC	112.7 292.8	9.69 BNPFT20180314ABQ	34 40 79 00 00.60 39.10	0.250	160	---Reference--- WAGR Broadcasting, Inc.		
246C0 Greensboro	WQMG	LIC	DCN NC	333.9 153.5	154.33 BLH20031112AID	35 56 79 51 42.50 44.10	100.000 327	177.0 565	75.4 Entercom License, LLC	-37.4*	29.3
248D Fairmont	W248DC	CP	CN NC	112.7 292.8	9.69 BNPFT20180323AAZ	34 40 79 00 00.60 39.10	0.250	1.1 160	13.7 Truth Broadcasting Corpora	-7.1*	-5.1*
Protected by Undesired to Desired Signal Ratio Studies, see text and figures. This second adjacent channel translator is authorized using the same antenna as W246DR. Both are being modified to use a common antenna.											
245C0 Goldsboro	WWPL	LIC	CN NC	48.5 229.1	117.74 BMLH20090708AEX	35 23 78 08 52.60 06.00	100.000 300	104.6 337	72.0 New Age Communications, Lt	-2.1	22.8
247C1 Wilmington	WMNX	LIC	CN NC	127.2 307.7	118.62 BLH20090109AVP	34 03 78 04 06.60 56.00	100.000 269	101.0 276	69.0 Cumulus Licensing LLC	1.9	26.0
299C3 St. Pauls	WUKS	LIC	NCN NC	349.6 169.6	19.28 BLH19981020KB	34 52 79 08 17.60 48.10	5.200 200	261	11.5R Beasley Media Group Licens		7.8M
247D Hope Mills	W247BS	LIC	DVN NC	20.8 200.9	45.09 BLFT20160425AAH	35 04 78 55 46.60 57.10	0.250	11.0 248	7.7 Educational Media Foundati	19.0	14.6
246D Florence	W246AW	LIC	CN SC	231.6 51.2	88.61 BLFT20071015AIX	34 12 79 51 12.60 51.20	0.250 137	50.3 176	15.2 Community Broadcasters, LL	23.0	22.8
247D Southern Pines	W247CE	LIC	DCN NC	333.4 153.2	61.68 BLFT20161011AEN	35 11 79 24 46.60 45.10	0.250	17.3 220	11.3 Eastern Airwaves, LLC	29.9	26.9
249D Southern Pines	W249BX	LIC	CN NC	341.1 161.0	59.93 BLFT20070917AAG	35 12 79 19 37.60 20.10	0.013 100	0.3 210	6.3 Educational Media Foundati	44.8	52.5

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. Call signs with exclamation marks need not be protected.
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.
« = Station meets FCC minimum distance spacing for its class.

Table 2: Facilities Protected by U/D Method

Facility	WFLB Laurinburg, North Carolina	W248DC Fairmont, North Carolina
Relationship	243C, third adjacent	248D, second adjacent
Distance (km)	10.59	0
Bearing (degrees)	32.9	0.0
ERP (kW, on azimuth)	100.0	0.185
HAAT (m, on azimuth)	319.9	*
Ratio	40	40
Signal Strength (dBu)	99.76	*
Translator Signal Strength	139.96	*
Translator distance (km)	.011	.001

*W248DC is filing a coordinated application to use a common antenna.

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 BKG-77 circularly polarized two level omnidirectional antenna. The elevation pattern is shown in Figure 2.

The WFLB field strength calculated at the site is 99.76 dBu, using the FM Curves calculator on the FCC web site. For the translator interference contour, free space calculations are used. The corresponding 139.96 dBu field strength distance is .011 kilometers (11 meters) in the horizontal plane. The proposed antenna location is 140 meters above ground. The interference contour does not reach ground at any point.

W248DC is authorized using a shared antenna with W246DR. A coordinated application is being prepared for simultaneous filing with this application. This will place both facilities operating with the same antenna, at the same elevation, and with the same pattern. With second adjacent channel facilities operating with an ERP difference of 1.3 dB, it is mathematically impossible for either facility to exceed the required 40 dB ratio for predicted interference.

Figure 3 is the vertical elevation of the 139.96 dBu interference contour. Figure 4 is a topographic map of the site. Figure 4 is an aerial photograph of the site with the 139.96 dBu interference contour plotted.

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 (converted to NAD 83) or LMS. 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.

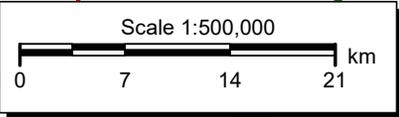
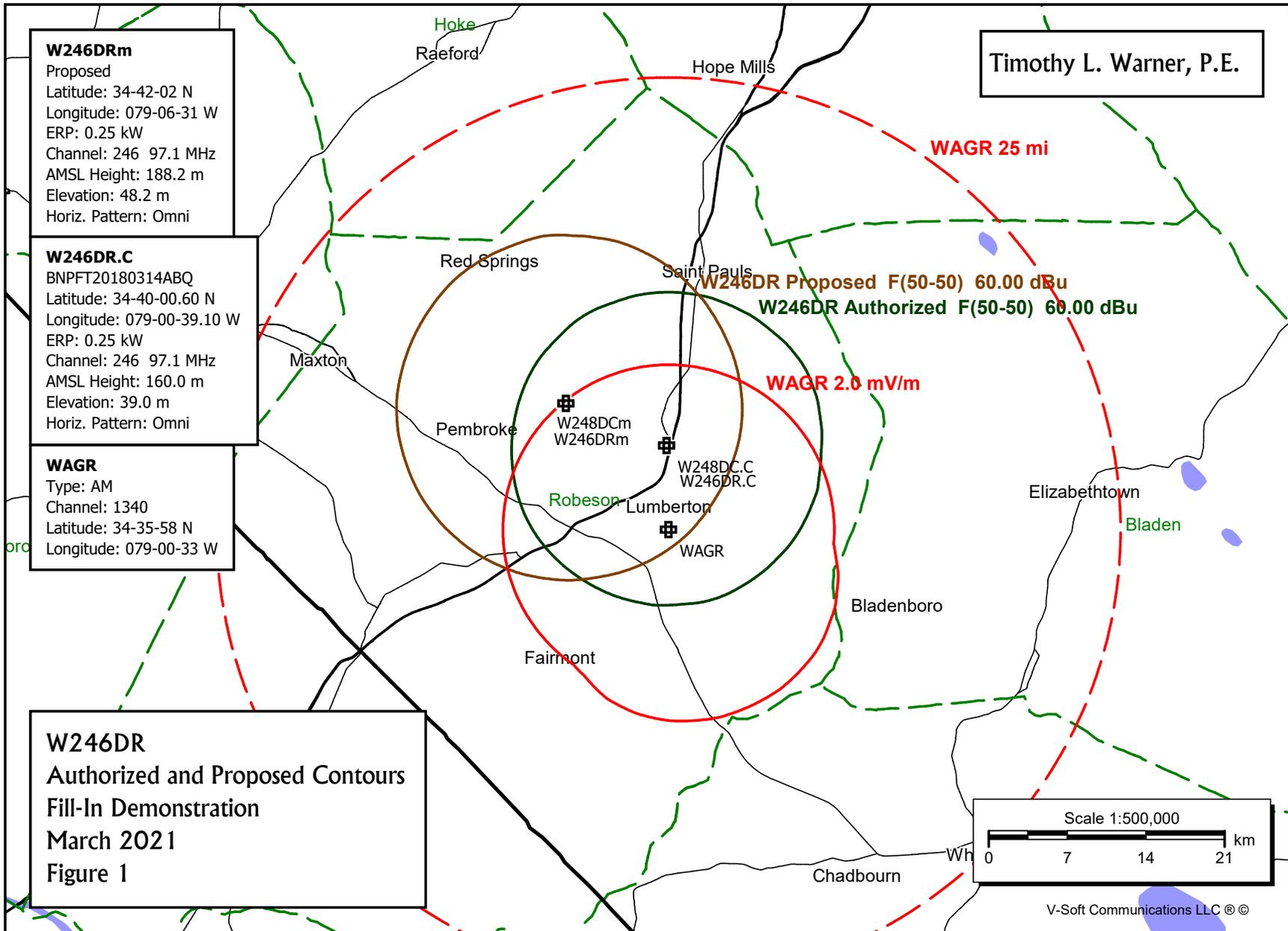
Timothy L. Warner, P.E.

W246DRm
Proposed
Latitude: 34-42-02 N
Longitude: 079-06-31 W
ERP: 0.25 kW
Channel: 246 97.1 MHz
AMSL Height: 188.2 m
Elevation: 48.2 m
Horiz. Pattern: Omni

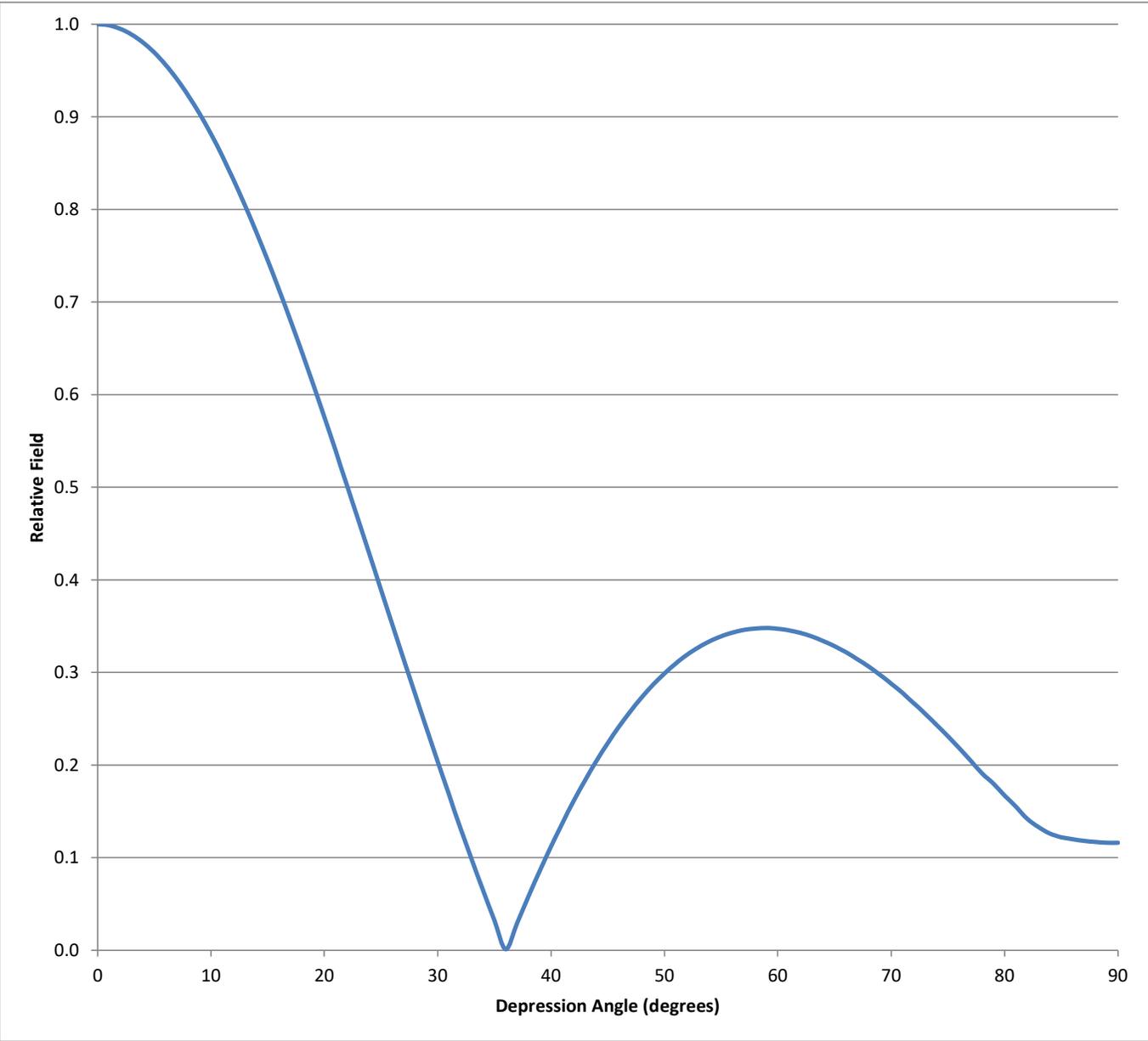
W246DR.C
BNPFT20180314ABQ
Latitude: 34-40-00.60 N
Longitude: 079-00-39.10 W
ERP: 0.25 kW
Channel: 246 97.1 MHz
AMSL Height: 160.0 m
Elevation: 39.0 m
Horiz. Pattern: Omni

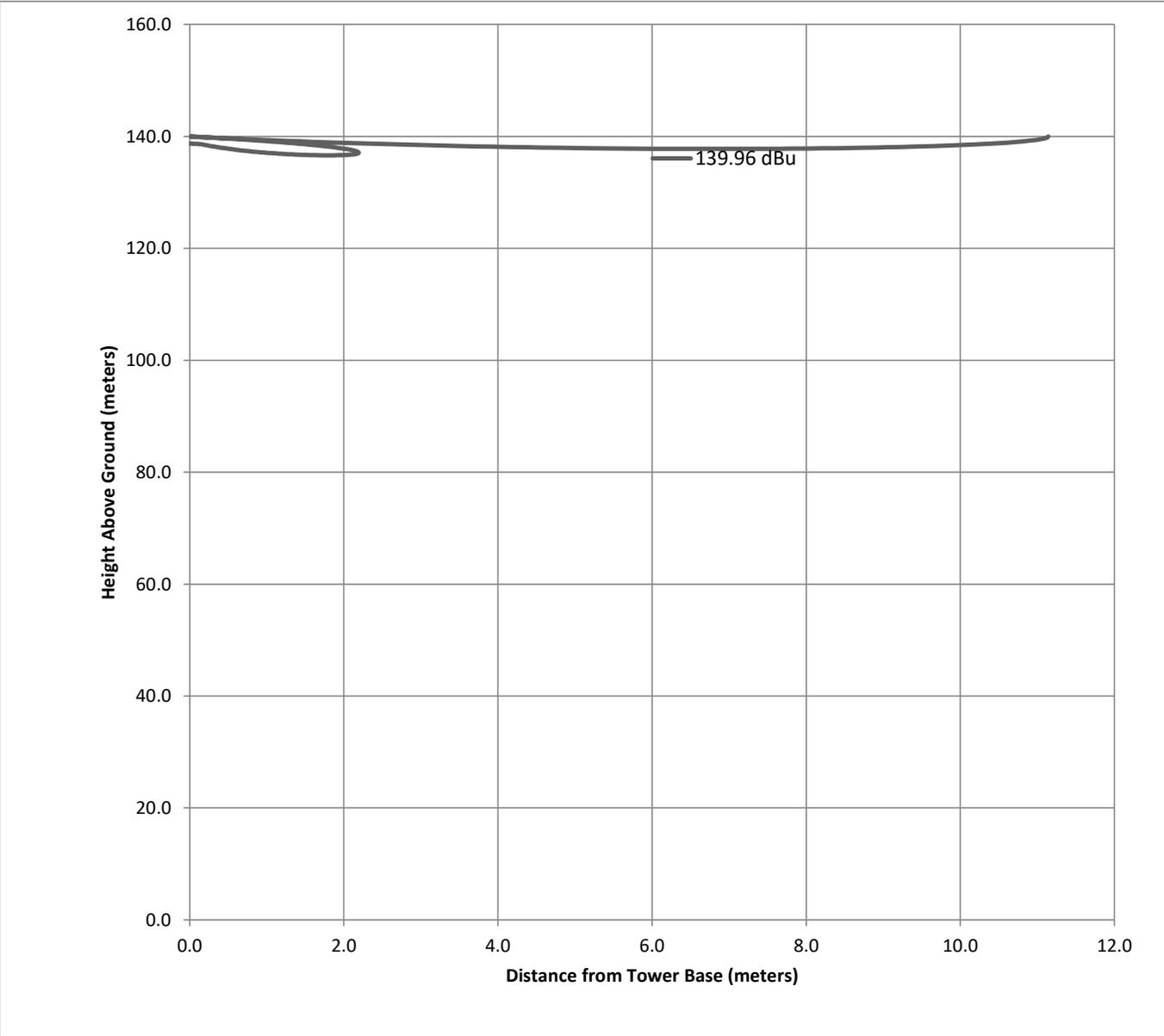
WAGR
Type: AM
Channel: 1340
Latitude: 34-35-58 N
Longitude: 079-00-33 W

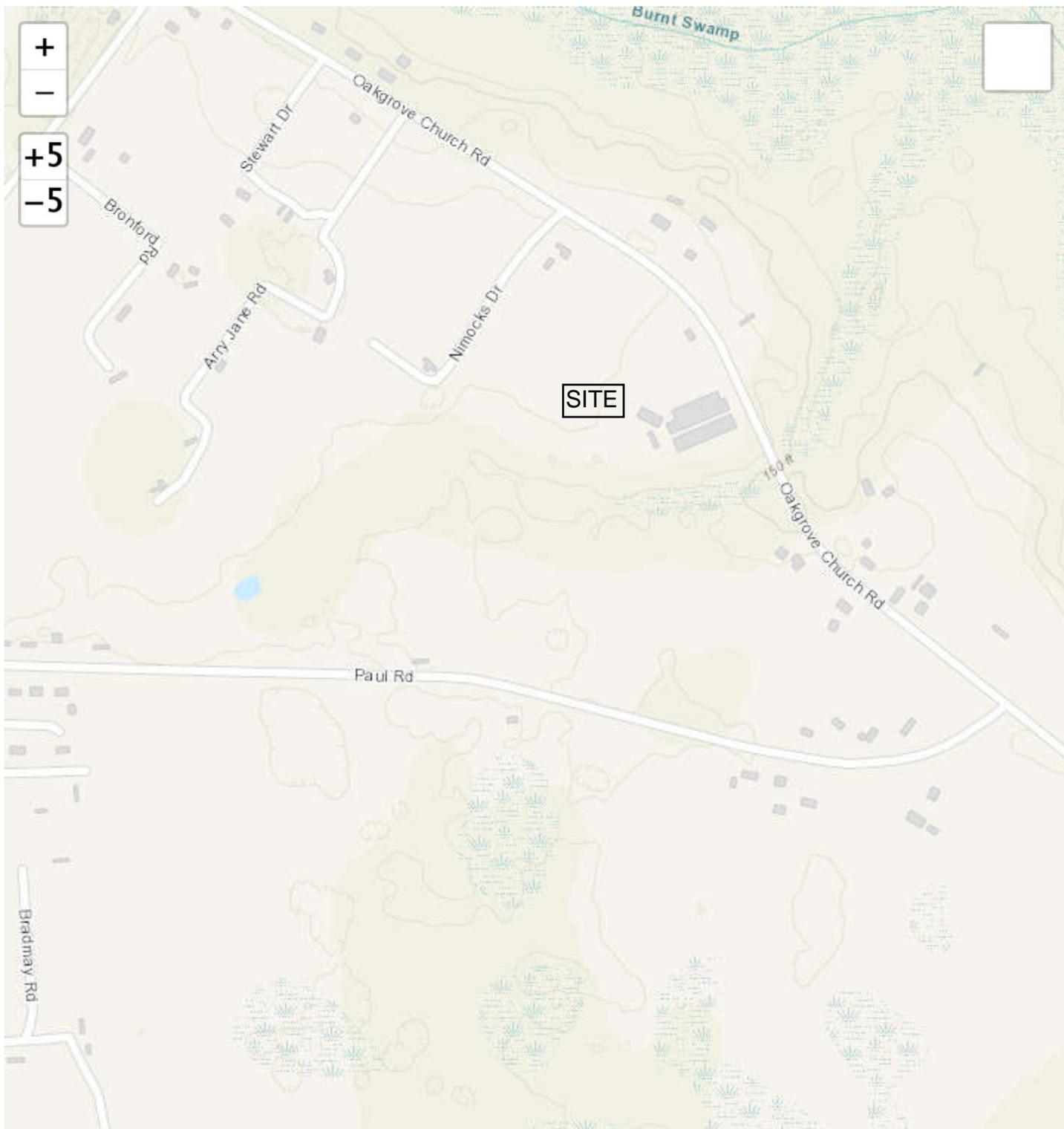
W246DR
Authorized and Proposed Contours
Fill-In Demonstration
March 2021
Figure 1



V-Soft Communications LLC ©







W246DR

Aerial Photograph with
Interference Contours
March 2021
Figure 5

Legend

-  W246DRm
-  W246DRm (246) - 50 10 Field Strength: 139.76 dBu FCC [GLOBE 30]

