

New Bern, North Carolina  
Application for Minor Modification of FM Translator W239BC  
On Channel 239  
by  
Conner Media Corporation

Exhibit 13  
Interference Analysis

June 2013

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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 Conner Media 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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25 June 2013

Narrative

This Exhibit supports a minor modification application for FM translator W239BC, to Channel 239 in New Bern, North Carolina. W239BC is licensed, file number BLFT-20070920ACT. 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.

This application is for the modification of a translator first licensed in 2007. Therefore, the requirements of Public Notice DA-03-2095, FM Translator Auction No. 83 Non-Mutually Exclusive Applications dated June 30, 2003, Footnote 8, are not applicable. The proposed modified facilities create no mutual exclusivities as shown in the allocation table in this exhibit.

This application proposes a move between Pamlico County, North Carolina, and Craven County, North Carolina. Both counties is in the Greenville-New Bern-Jacksonville (North Carolina) Arbitron Metro Market area. The proposed site and the licensed site are both outside the any urbanized area as defined by the U.S. Census. In addition, all metro counties in North Carolina have been identified as having adequate available frequencies for Low Power FM facilities where translator applications are available for processing.<sup>1</sup>

Figure 1 shows the licensed 60 dBu F(50,50) coverage area, and the proposed 60 dBu F(50,50) coverage area. Figure 1 shows the present and proposed contours, fill-in status confirmation, and mutual exclusivity with the licensed and construction permit facilities.

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<sup>1</sup> *In the Matter of Creation of A Low Power Radio Service, and Amendment of Service and Eligibility Rules for FM Broadcast Translator Stations*, Third Further Notice of Proposed Rule Making, FCC 11-105, July 12, 2011.

This application proposes a change to fill-in status for FM station WMGV, Newport, North Carolina, rebroadcasting an HD2 signal. This translator was first authorized in File Number BNPFT-20030317KZY, granted 16 September 2004, and licensed in BLFT-20070920ACT, granted 20 September 2007. The WMGV 60 dBu F(50,50) is shown on Figure 1.

While this application does not qualify as a minor change under Section 74.1233(a)(1), which requires that the 60 dBu contours of W250BP's existing and proposed facilities overlap, Conner respectfully requests waiver of Section 74.1233(a)(1) in accordance with the factors recently set forth by the Media Bureau in connection with a similar waiver granted to The Cromwell Group, Inc. with respect to W263AQ, Mattoon, IL, in FCC File No. BPFT-20101025ABR. (the "Cromwell Waiver")<sup>2</sup>

#### Request for Waiver of Section 74.1233(a)(1)

In accordance with Section 1.3 of the Commission's Rules, "[a] waiver is appropriate when special circumstances warrant a deviation from the general rule and such deviation will serve the public interest." *Northwest Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990). As with the recently granted Cromwell Waiver, Conner submits that such special circumstances are similarly present here.

The Media Bureau found that the Cromwell Waiver was in the public interest because (1) the license did not have a history of filing serial minor modification application; (2) the proposed site was mutually exclusive to the licensed facility; (3) the proposed moved did not

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<sup>2</sup> See letter to John F. Garziglia, Esq., *In re: W263AQ, Mattoon, IL.*, DA 11-1495, September 2, 2011.

implicate the concerns raised by the Commission in the low-power FM proceeding; and (4) W263AQ would be rebroadcasting an AM station.

First, as with the Cromwell Waiver and as supported by the Commission's CDBS Media Bureau records, Conner does not have a history of filing multiple or "serial" modification applications and is not attempting to relocate W239BC to New Bern via "hops." Rather, the direct result of the move proposed herein will be to provide service to New Bern and no further moves are contemplated.

Second, the instant application proposes facilities that are mutually exclusive with W239BC's licensed facilities. That is, W239BC's licensed 60 dBu F(50,50) primary service area lies within the proposed 40 dBu F(50,10) interference area. See Table 1: Allocations, and Figure 1. Note that the proposed facilities lack overlap with the licensed facilities by approximately 1.5 kilometers. As noted in the Cromwell Waiver, the translator modification rule is more restrictive than the general full-power minor change rule such that the instant proposal would be a minor modification if the facilities were full service FM facilities processed under Part 73 of the Commission's Rules. In addition, the proposed change will not foreclose competing applicants nor deprive potential applicants of opportunities for comparative consideration, since they are already precluded by mutual exclusivity with the existing licensed facilities of W239BC. Accordingly, as a practical matter, such mutual exclusivity alleviates any *Ashbacker* concerns.

Third, the instant application proposes a site in an area where the Commission has identified adequate frequencies available for Low Power FM stations. The proposed transmitter site is within the Greenville-New Bern-Jacksonville Arbitron Metro area which the

Commission identified as Spectrum Available using a 20 second market grid.<sup>3</sup> Moreover, the proposed transmitter site is not in any urbanized area. Accordingly, as with the Cromwell Waiver, the proposed move for W239BC to New Bern would not have significant impact on further licensing opportunities in the Low Power FM service.

Fourth, the instant application proposes to change W239BC to be a fill-in for station the HD2 service of station WMGV, Newport, North Carolina. The Commission has recognized that HD Radio is not yet reaching a significant number of HD Radio capable receivers, and so waivers of this type have been granted to provide fill-in service for HD2 and other digital channels that can not readily be received by the public. As such, the proposed use with WMGV is permissible and consistent with the Commission's efforts to promote digital radio service, provide additional programming service to the public, and make the most efficient use of limited spectrum.

For the foregoing reasons, Conner respectfully submits that the instant request satisfies the Commission's waiver standard and is consistent with the factors in the Cromwell Waiver. Based on the four Cromwell Waiver factors, the instant application presents special circumstances that warrant deviation from 74.1233(a)(1), and such deviation will serve the public interest by permitting W239BC to provide improved service to the public. Since the circumstances presented herein are comparable to those upon which relief was granted in the Cromwell case, the Commission is bound to extend comparable relief here. *Melody Music, Inc. v. FCC*, 345 F. 2d 730, 733 (DC Cir 1965). Accordingly, Conner respectfully requests

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<sup>3</sup> See *FCC-11-10542*, the Greenville-New Bern Jacksonville Arbitron Metro is Market 82, with 26 locations and 22 frequencies identified as available for LPFM, with 1 currently licensed LPFM stations and 15 licensed noncommercial stations.

that the Commission waive Section 74.1233(a)(1) and permit the instant application to be process as a minor change application.

### Allocations

This application proposes service to New Bern, North Carolina, on channel 239. 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 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 NED 03 arcsecond terrain database which is described below.

### Television Channel 6 Protection

There are no television channel 6 stations requiring protection. This application proposes a channel which is not subject to television channel 6 separation requirements.



Table 1: Allocations

Allocation Study Conner Media Corporation												
REFERENCE		CH# 239D - 95.7 MHz, Pwr= 0.25 kw, HAAT= 201.0 M, COR= 207 M							DISPLAY DATES			
35 08 21.0 N.		Average Protected F(50-50)= 18.6 km							DATA 06-25-13			
77 04 42.0 W.		Omni-directional							SEARCH 06-25-13			
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap	*OUT* in km)	
236C Kinston	WRNS-FM	LIC	C NC	260.7 80.5	23.86 BLH20000531AED	35 06 15.0 77 20 12.0	100.000 459	12.2 472	84.2 Nm Licensing Llc	-6.8	-61.4*	
Protected by U/D ratio study, see text and figures.												
239D Arapahoe	W239BC	LIC	C NC	124.5 304.7	27.16 BLFT20070911ACT	35 00 02.0 76 49 58.0	0.055 57	23.3 64	6.9 Conner Media Corporation	-14.9	-38.5	
Facility being modified.												
242C1 Morehead City	WRHT	LIC	NCX NC	157.4 337.5	46.53 BMLH20020910ABD	34 45 07.0 76 52 57.0	100.000 150	7.0 152	57.9 Inner Banks Media, Llc	20.9	-12.4*	
Protected by U/D ratio study, see text and figures.												
240A Plymouth	WPNC-FM	LIC	CN NC	20.3 200.4	83.76 BLH19810914AU	35 50 48.0 76 45 22.0	2.600 101	70.9 470	46.7 Durlyn Broadcasting, Co.	-5.7	9.5	
239C0 Lumberton	WKML	LIC	DCX NC	258.0 76.9	184.05 BMLH20120425ADL	34 46 49.0 79 02 45.0	100.000 318	170.2 368	72.3 Wkml License Limited Partn	-4.5	53.9	
240D Kinston	W240AW	LIC	CN NC	281.7 101.5	39.62 BLFT19951207TJ	35 12 39.0 77 30 16.0	0.055 60	9.9 77	6.9 Bible Broadcasting Network	11.2	5.3	
Translator For WYFL, Henderson, NC												
293C1 New Bern	WSFL-FM«	LIC	CN NC	246.5 66.3	27.32 BLH19860127KC	35 02 27.0 77 21 11.0	100.000 279	33.7 292	105.0 Wsfl License Limited Partn	21.5R	5.8M	
238D Jacksonville	W238CF	LIC	C NC	215.3 35.1	53.06 BLFT20121205AEF	34 44 56.0 77 24 51.0	0.250	15.3 81	10.8 Cdv Broadcasting, Llc	19.1	14.5	
240D Kinston	W240AW	APP	C NC	285.5 105.2	50.12 BPFT20130531AVR	35 15 31.0 77 36 33.0	0.038	10.1 90	7.1 Bible Broadcasting Network	21.5	15.6	
240D Greenville	W240AZ	LIC	C NC	325.6 145.3	58.90 BLFT20001213AFG	35 34 33.0 77 26 49.0	0.050 42	7.4 55	5.2 Radio Training Network, In	32.7	25.8	
238C3 Pinetops	WPWZ	LIC	NCN NC	329.8 149.4	103.89 BLH19961231KB	35 56 45.0 77 39 37.0	12.500 140	57.2 163	38.0 First Media Radio, Llc	27.9	37.9	
239B Norfolk	WVKL	LIC	CN VA	16.3 196.6	194.01 BMLH19920706KA	36 48 56.0 76 28 00.0	40.000 268	146.1 269	73.8 Entercom Norfolk License,	29.3	44.7	
GRANDFATHERED AT 40KW @ 268M HAAT.												

Terrain database is NED 03 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), Beamtilt(Y,N,X)

"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.

« = Station meets FCC minimum distance spacing for its class.

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

Facility	WRNS-FM Kinston, North Carolina	WRHT Morehead City, North Carolina
Channel and Relationship	236C, third adjacent	242C1, third adjacent
Distance (km)	23.87	46.53
Bearing (degrees)	261	157
ERP (kW, on azimuth)	100	100
HAAT (m, on azimuth)	460.4	145.5
Ratio	40	40
Signal Strength (dBu)	88.6	65.5
Translator Signal Strength	128.6	105.5
Translator distance (km)	.041	.589

**Undesired to Desired Method**

Protection to some facilities is provided through the use of Undesired to Desired Signal Strength Ratio (U/D) calculations. Table 2 lists the parameters studied. The WRNS-FM field strength calculated at ground level at the proposed W239BC site is 88.6 dBu, using the FM Curves calculator on the FCC web site. For the translator interference contour, free space calculations are used. The corresponding 128.6 dBu field strength distance is .041 kilometers in the horizontal plane. As the proposed antenna location is 204 meters above ground, the interfering signal level will never reach ground, nor will it be present at any other location on the ground. There is no population within the predicted interference area and therefore this facility is permitted under §74.1204(d).

The WRHT field strength calculated at ground level at the proposed W239BC site is 65.5 dBu, using the FM Curves calculator on the FCC web site. For the translator interference contour, free space calculations are used. The corresponding 105.5 dBu field strength distance is .589 kilometers in the horizontal plane. The proposed antenna location is 204 meters above

ground. Using the manufacturer's vertical elevation pattern for the proposed ERI LPX-2E-HW antenna, the interfering signal level will never reach ground. Figure 2 is a vertical elevation plot of the 105.5 dBu contour. The 128.6 dBu interference contour for protection of WRNS-FM is also shown. The minimum elevation of the 105.5 dBu contour is 38 meters (125 feet) above ground. There is no population within the predicted interference area and therefore this facility is permitted under §74.1204(d). Figure 3 is a topographic map of the tower area, showing that there are no significant elevation increases in the area. Figure 4 is an aerial photograph, showing the nature of the built environment in the area. There are no tall buildings in the area of interest.

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 also evaluated using terrain extracted from the V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS

National Elevation Data 30 meter terrain database. The USGS National Elevation Dataset has been developed by merging the highest-resolution, best-quality elevation data available across the United States into a seamless raster format. NED is the result of the maturation of the USGS effort to provide 1:24,000-scale Digital Elevation Model (DEM) data for the conterminous US and 1:63,360-scale DEM data for Alaska.

All population data is from 2010 U.S. Census PL data files. Population is counted by considering the location of the centroid of each census block. The data for each block is counted if it falls within the area being counted.

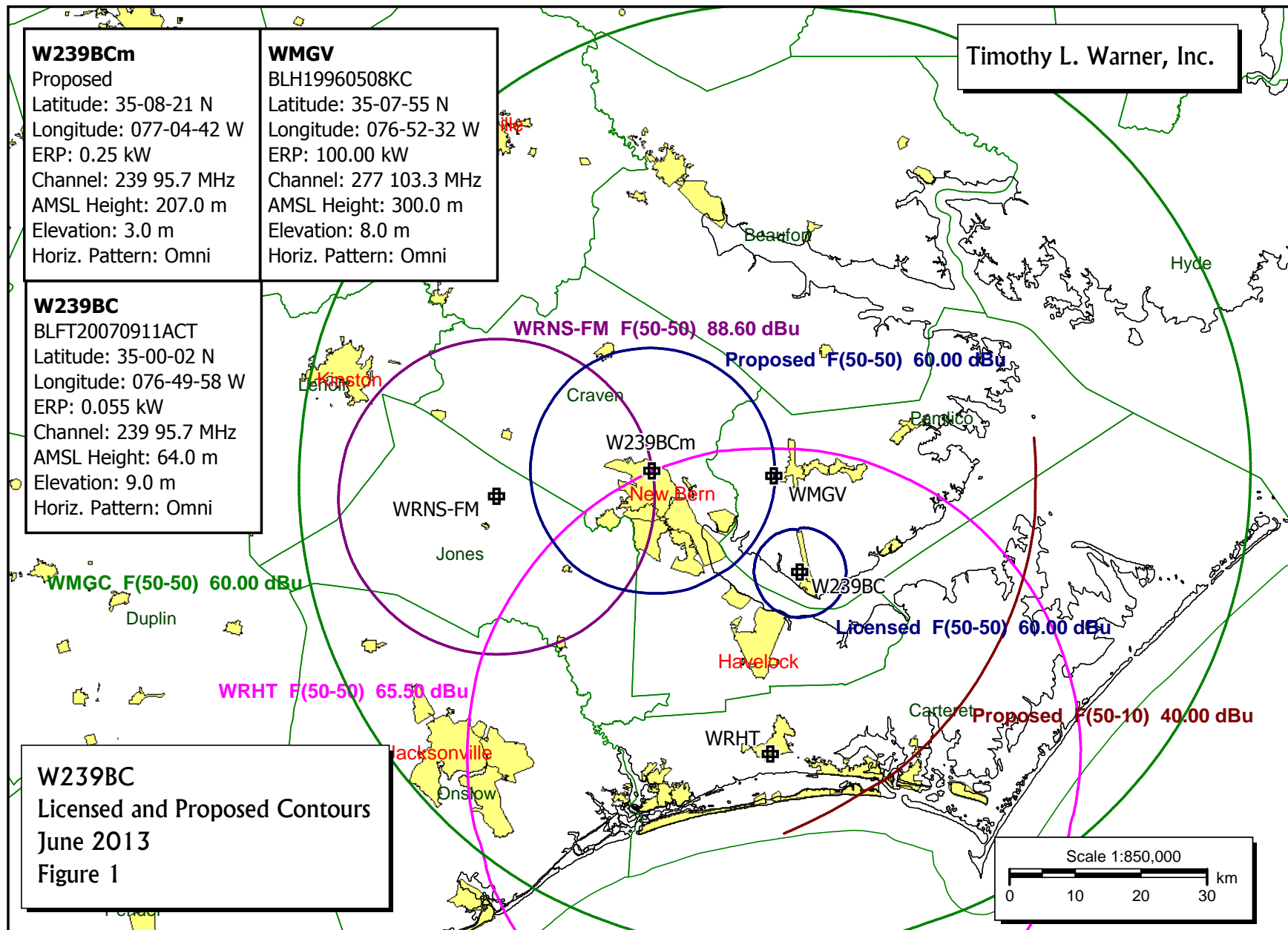
Timothy L. Warner, Inc.

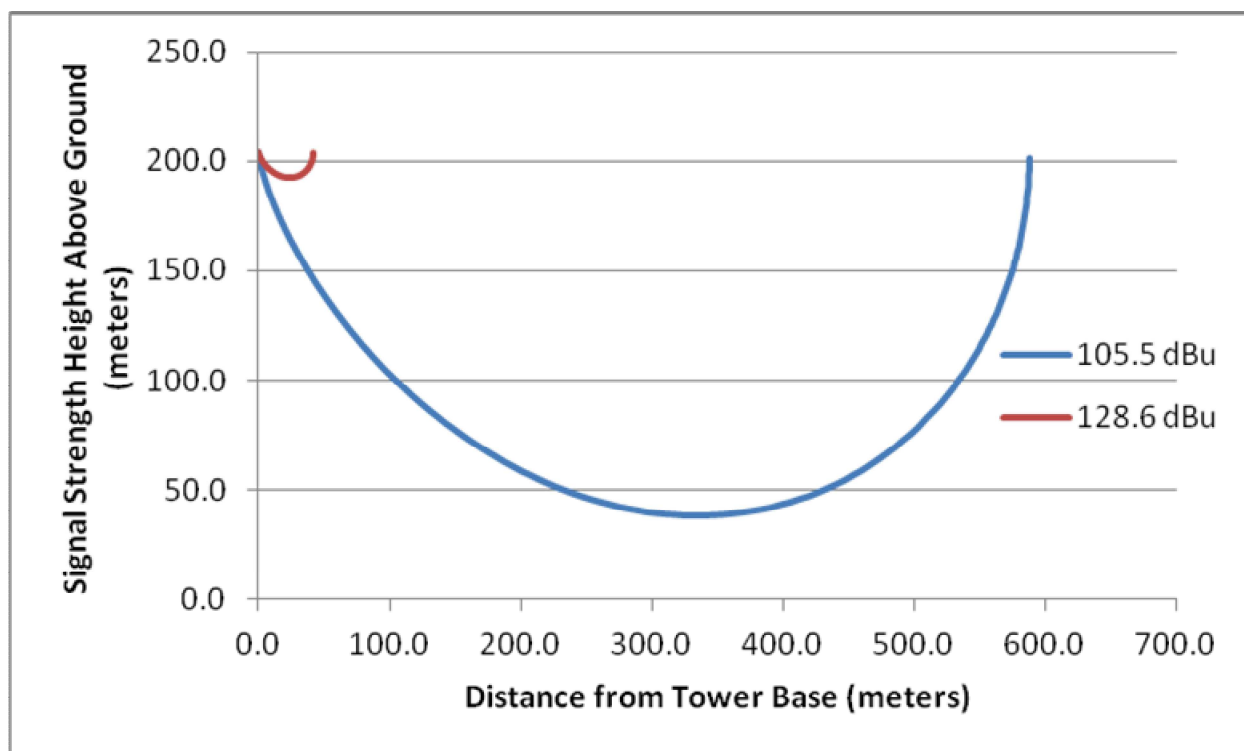
Proposed  
Latitude: 35-08-21 N  
Longitude: 077-04-42 W  
ERP: 0.25 kW  
Channel: 239 95.7 MHz  
AMSL Height: 207.0 m  
Elevation: 3.0 m  
Horiz. Pattern: Omni

BLH19960508KC  
Latitude: 35-07-55 N  
Longitude: 076-52-32 W  
ERP: 100.00 kW  
Channel: 277 103.3 MHz  
AMSL Height: 300.0 m  
Elevation: 8.0 m  
Horiz. Pattern: Omni

BLFT20070911ACT  
Latitude: 35-00-02 N  
Longitude: 076-49-58 W  
ERP: 0.055 kW  
Channel: 239 95.7 MHz  
AMSL Height: 64.0 m  
Elevation: 9.0 m  
Horiz. Pattern: Omni

Licensed and Proposed Contours  
June 2013  
Figure 1





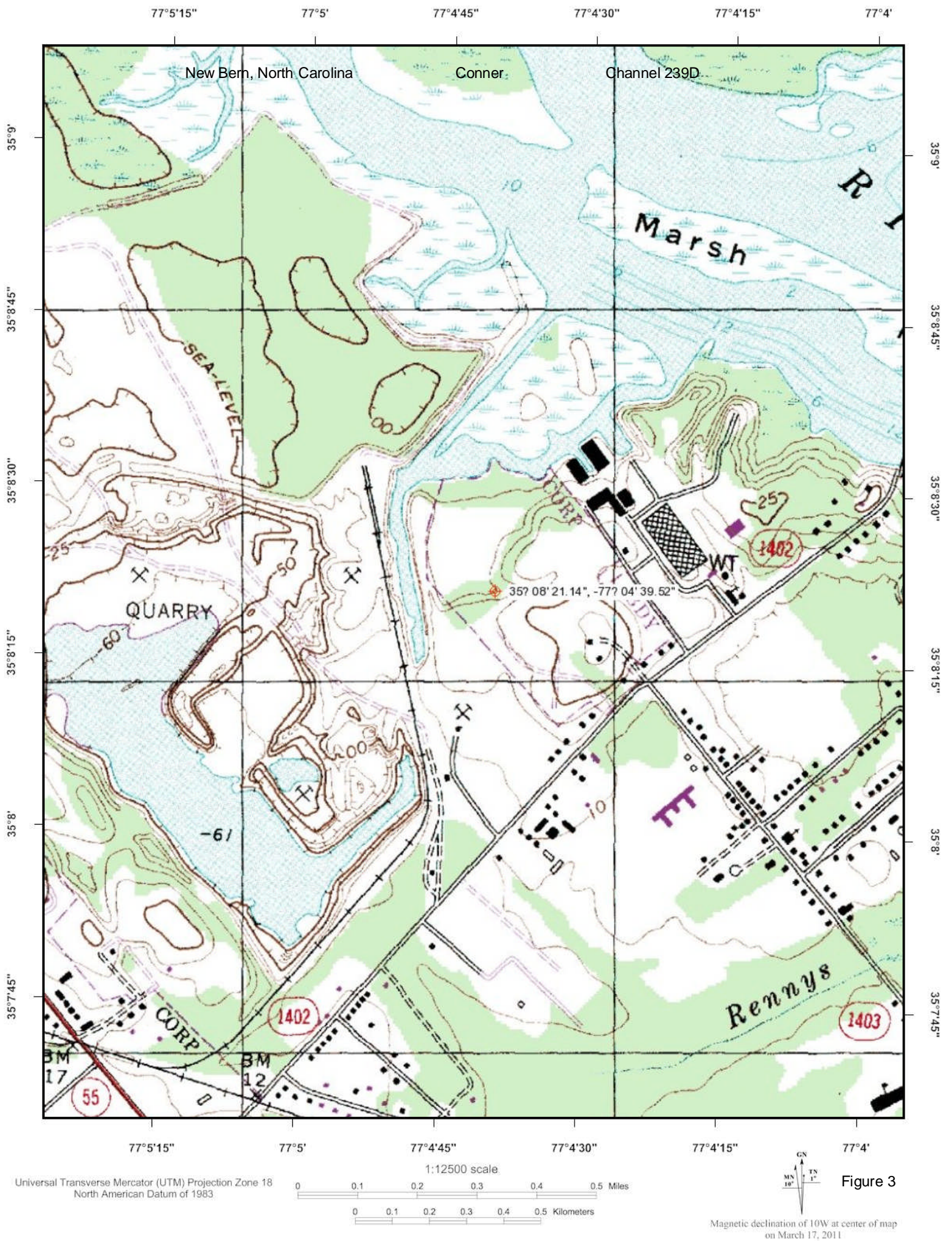
Free space propagation

ERI LPX-2E-HW

Center of Radiation 204 meters Above Ground Level

ERP 250 Watts







77°5'

77°4'45"

77°4'30"

New Bern, North Carolina

Conner

Channel 239D

35°8'30"

35°8'15"

35°8'

35°8'30"

35°8'15"

35°8'

77°5'

77°4'45"

77°4'30"

Universal Transverse Mercator (UTM) Projection Zone 18  
North American Datum of 1983

1:6000 scale



Magnetic declination of 10W at center of map  
on March 17, 2011

Figure 4