

Rose Hill, North Carolina  
Long Form Application for New FM Translator  
BNPFT-20030317LTZ  
On Channel 224  
by  
Conner Media Corporation

Exhibit 13  
Interference Analysis

March 2013

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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.....	5
FM Directional Antenna on Proposed Tower.....	6
Source of Data.....	6
Tech Box and Proposed Contours.....	Figure 1
Vertical Plot of 102.8 dBu Contour .....	Figure 2

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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### Narrative

This Exhibit supports a long form application in response to a filing window<sup>1</sup> for FM translator file number BNPFT-20030317LTZ, CDBS application ID 651148, on Channel 224 in Rose Hill, North Carolina. Allocation details are provided in this exhibit. The application proposes minor modification changes from the tech box filing. Specific changes are a change to fill-in status, a change of the primary station to be rebroadcast, a change of site, a change of frequency to the third adjacent frequency, an increase in height, and a decrease in Effective Radiated Power.

This proposal complies fully with the requirements of 74 C.F.R. §74.1204(a). The proposed modified facilities create no mutual exclusivities as shown in the allocation table in this exhibit. This proposal creates no new mutual exclusivities with any Auction 83 Tech Box filings.

Figure 1 shows the tech box 60 dBu F(50,50) coverage area, and the proposed 60 dBu F(50,50) coverage area.

### Allocations

This application proposes service to Rose Hill, North Carolina, on channel 224. 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 which are listed in Table 2 below. Those facilities are protected by the Desired to Undesired (D/U) Ratio method which is described below.

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<sup>1</sup> *Public Notice, Media Bureau Announces FM Translator Auction 83 Filing Window and Filing Procedures*, DA13-283, released February 26, 2013. (Singleton Notice)

Table 1: Allocations

Allocation Study Conner Media Corporation											
REFERENCE		CH# 224D - 92.7 MHz, Pwr= 0.02 kW DA, HAAT= 117.1 M, COR= 133 M							DISPLAY DATES		
34 46 17.0 N.		Average Protected F(50-50)= 7.5 km							DATA 03-13-13		
77 56 35.0 W.		Standard Directional							SEARCH 03-13-13		
CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
224C2 WBNK Pine Knoll Shores One Step Application		RSV-A	NC	91.7 272.5	128.78	34 43 45.0 76 32 15.0	50.000 150	137.7 151	52.2 Tower Investment Trust, In	-16.4*	51.3
227C WERO Washington		LIC	NC	37.0 217.3	82.76 BLH19791206AF	35 21 55.0 77 23 38.0	100.000 543	13.0 554	89.3 Nm Licensing LLC	62.2	-6.9*
Protected by D/U Ratio, as described.											
224C2 WBNK Pine Knoll Shores One Step Application		APP	NCX	84.2 265.0	132.05 BPH20090626ACC	34 53 00.4 76 30 21.3	21.900 228	128.7 228	52.0 Tower Investment Trust, In	-4.3	54.7
225C WEGX Dillon		LIC	CX SC	250.8 70.0	134.27 BMLH20070316ACC	34 22 04.0 79 19 21.0	100.000 493	128.3 521	86.0 Quantum Of Florence License	-1.4	37.6
222C2 WQSL Jacksonville		LIC	CN NC	121.6 301.9	53.32 BLH19950612KD	34 31 10.0 77 26 52.0	22.500 221	5.6 226	51.0 Nm Licensing LLC	40.1	2.0
221D 651148 Rose Hill		APP	C NC	319.8 139.7	13.38 BNPFT20030317LTZ	34 51 48.0 78 02 16.0	0.038 71	0.4 94	7.0 Conner Media Corporation	5.7	6.1
Tech box filing for this application.											
224C2 WBNK Pine Knoll Shores		LIC	NCX NC	84.2 265.0	132.05 BLH20090102AAD	34 53 00.4 76 30 21.3	11.500 228	115.1 228	46.2 Tower Investment Trust, In	9.4	60.5
223C0 WYFL Henderson		LIC	DCX NC	351.8 171.7	162.76 BLED20040517AEA	36 13 23.0 78 12 07.0	100.000 311	106.1 406	73.2 Bible Broadcasting Network	49.4	79.4
221D 650357 Kinston		APP	C NC	29.2 209.4	62.05 BNPFT20030317JQD	35 15 31.0 77 36 33.0	0.038 70	0.4 90	6.6 Conner Media Corporation	54.1	55.1
222D W222AO South Goldsboro		LIC	C NC	356.7 176.7	70.87 BLFT20070504ACB	35 24 33.0 77 59 15.0	0.080 39	0.6 73	6.3 Radio Training Network, In	63.0	63.8

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.

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

Facility	WERO Washington, North Carolina
Relationship	227C, third adjacent
Distance (km)	82.76
Bearing (degrees)	37.0
ERP (kW, on azimuth)	100.0
HAAT (m, on azimuth)	544.0
Ratio	40
Signal Strength (dBu)	62.8
Translator Signal Strength	102.8
Translator distance (km)	.227

**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 WERO field strength calculated at ground level at the proposed 651148 site is 62.8 dBu, using the FM Curves calculator on the FCC web site. For the translator interference contour, free space calculations are used. The corresponding 102.8 dBu field strength distance is .227 kilometers in the horizontal plane. Figure 2 is a vertical plane plot of the 102.8 dBu contour, calculated using the vertical elevation pattern of the Shively 6812B-1 transmitting antenna. When the vertical elevation pattern is considered, the contour remains at least 4.8 meters above ground. 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.

#### **FM Directional Antenna on Proposed Tower**

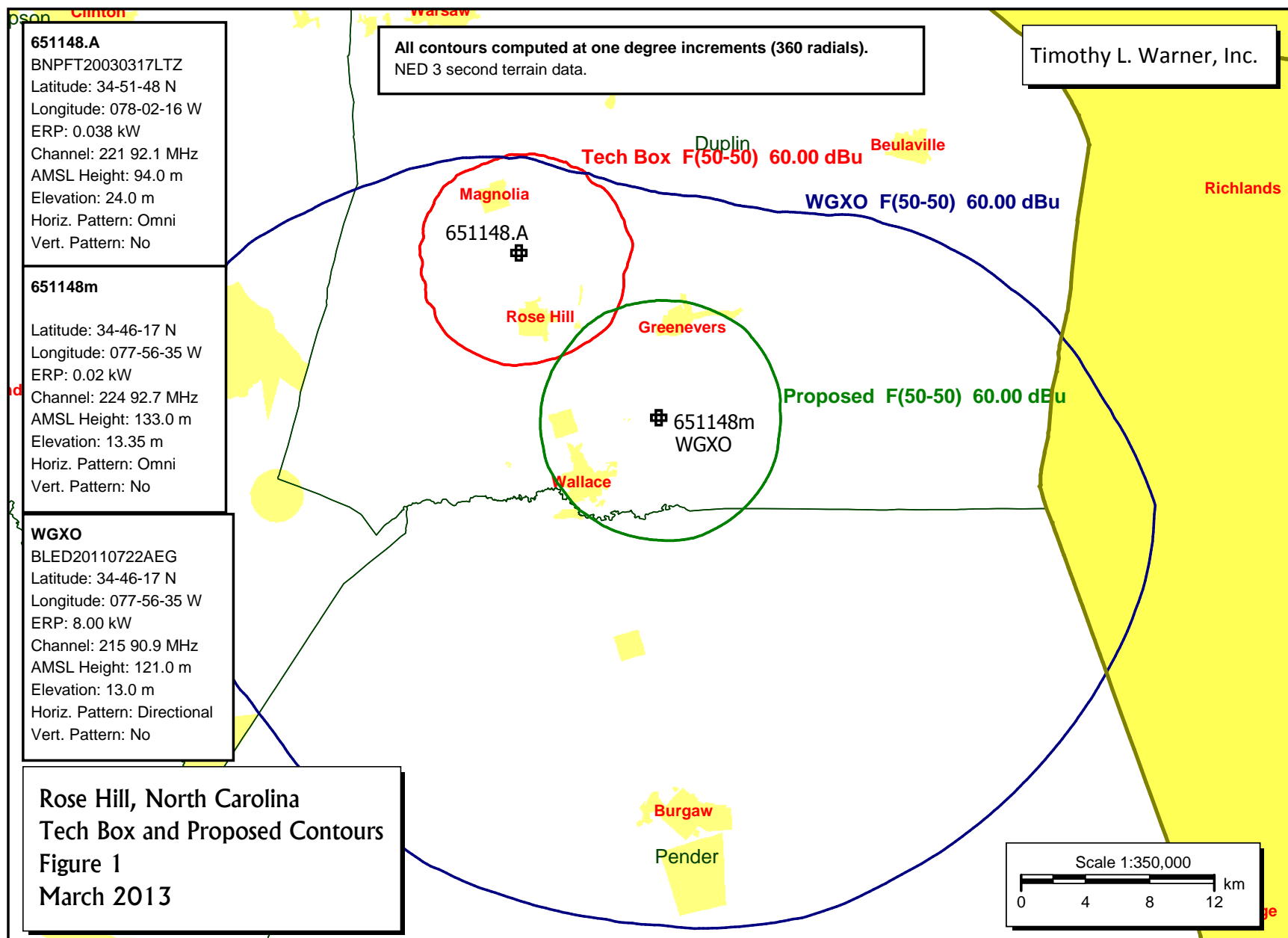
The tower proposed for this facility is also the tower which supports the antenna for station WG XO, Magnolia, North Carolina. The transmission line and antenna are already installed on the tower, previously used for an earlier translator, W276BR. Since no physical construction is required to install these facilities, there should be no impact on the pattern of WG XO.

#### **Source of Data**

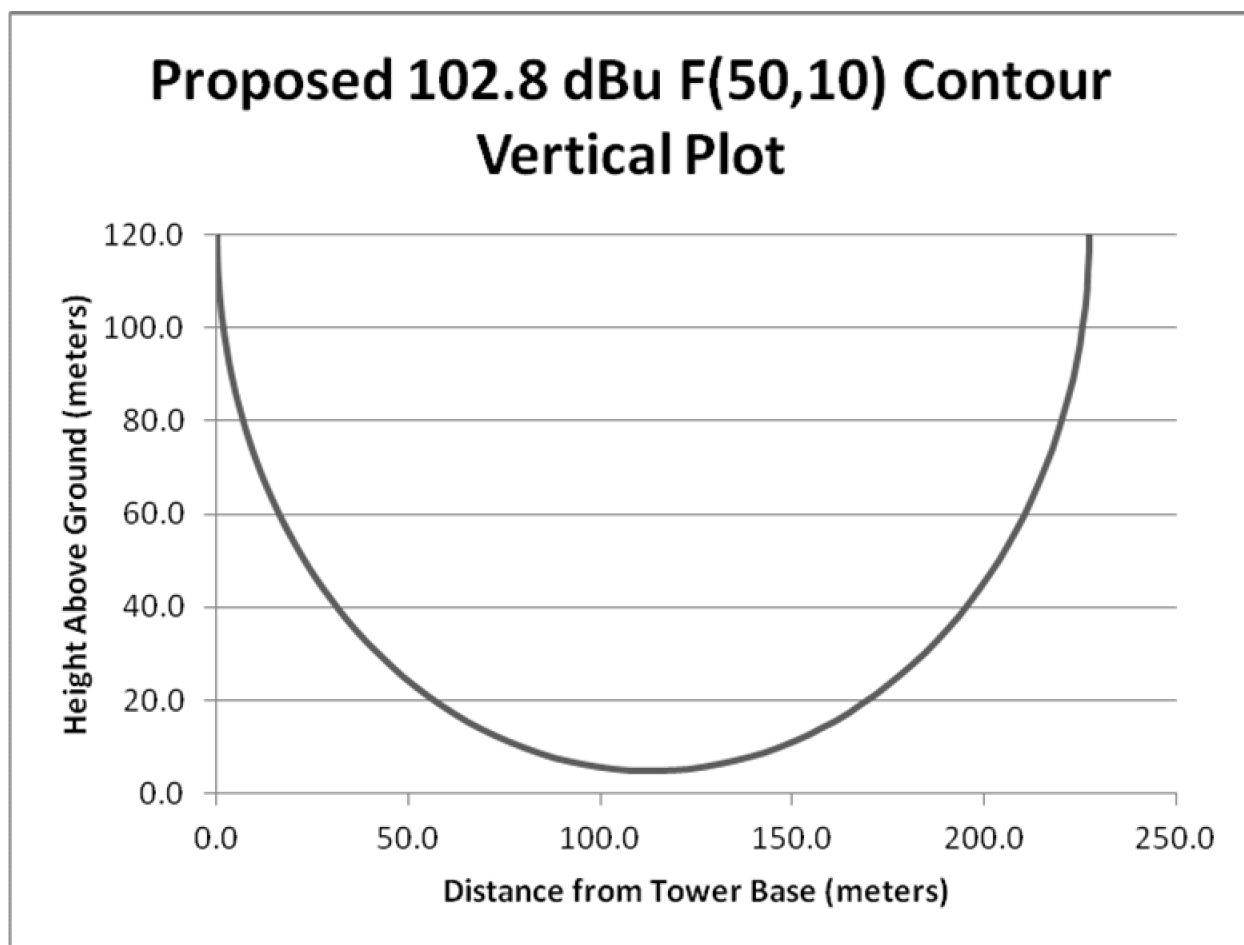
Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments.

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.

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.







Free space propagation  
Shively 6812B-1 antenna  
Center of Radiation 120 meters Above Ground Level  
ERP 20 Watts