File Number BNPFT-20030317FQW

Boone, North Carolina

Application for a new FM Translator

On Channel 243

by

Wake Forest University

Exhibit 1

Grid Preclusion Showing

July 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 1, Grid Preclusion Showing, for Wake Forest University, 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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19 July 2013

Narrative

This Exhibit supports an amendment to an Auction 83 construction permit application for a new FM translator on Channel 243 in Boone, North Carolina, file number BNPFT-20030317FQW. The tech box proposal (short form application) was filed in a filing window for Auction 83. This Exhibit provides a preclusion showing required in a Public Notice[1] of a window to file long form applications for further processing.

This application proposes a minor modification from the original short form application. Specifically, a new site is proposed, power is increased, and elevation is decreased, a new primary station is selected, and fill-in status is proposed. The minor modification creates no conflicts with any other Auction 83 tech box proposals, as will be shown in the Allocations Exhibit.

This facility protects WXBQ-FM, Bristol, Tennessee, channel 245C, second adjacent channel, and an Auction 83 application, file number BNPFT-20030310ADG, filed by Positive Alternative Radio, Inc., for Boone, North Carolina on third adjacent channel 240, by Undesired to Desired Ratio protection. A waiver request will be included in the long form application for this facility. The interference contour for WXBQ-FM remains at least 20 meters above ground at all points, and more than 40 meters above ground beyond 55 meters. The interference contour for BNPFT-20030310ADG extends only 25 meters, and so remains 80 meters above ground, and does not extend beyond the guy wires for the proposed site. The corresponding interference contour toward this facility extends only 6 meters, and so can not

[1] *Public Notice Media Bureau Announces FM Translator Auction 83 Filing Window and Filing Procedures*, DA 13-283, released February 26, 2013. (Singleton PN)

reach the ground or any occupied area. This proposal has been coordinated with Positive Alternative Radio, Inc.

Required Showings

This facility is located outside the Market Grid of the Johnson City (Tennessee) Market, but within 39 kilometers of the Johnson City Grid. The Johnson City market is listed as a Spectrum Available Market using a 30 minute grid in Appendix B of the Fourth Report and Order.[2] The required showing is identified as Test C, in Attachment B to the Singleton Window PN.

This facility is in not with 39 kilometers of any other Appendix A Market. It is not within any out-of-grid Top 50 Spectrum Limited Market.

Translator Height Above Average Terrain and Distance to Contour

The proposed translator facilities Height Above Average Terrain for the 12 radials used for translators is 131.2 meters. The corresponding distance to the 60 dBu F(50,50) contour is 9.661 kilometers, using the FM Curves utility on the Audio Division website. This translator falls in the middle classification for separation requirements in 47 C.F.R. §73.807(d)(1). The required separation for co-channel operation is 32 kilometers. The required separation for first adjacent channels is 21 kilometers, and the required separation distance for second adjacent channels is 14 kilometers.

[2] *In the Matter of Creation of a Low Power Radio Service, Amendment of Service and Eligibility Rules for FM Broadcast Translator Stations, Fourth Report and Order and Third Order on Reconsideration*, FCC 12-19, released March 19, 2012.

Preclusion Study Description

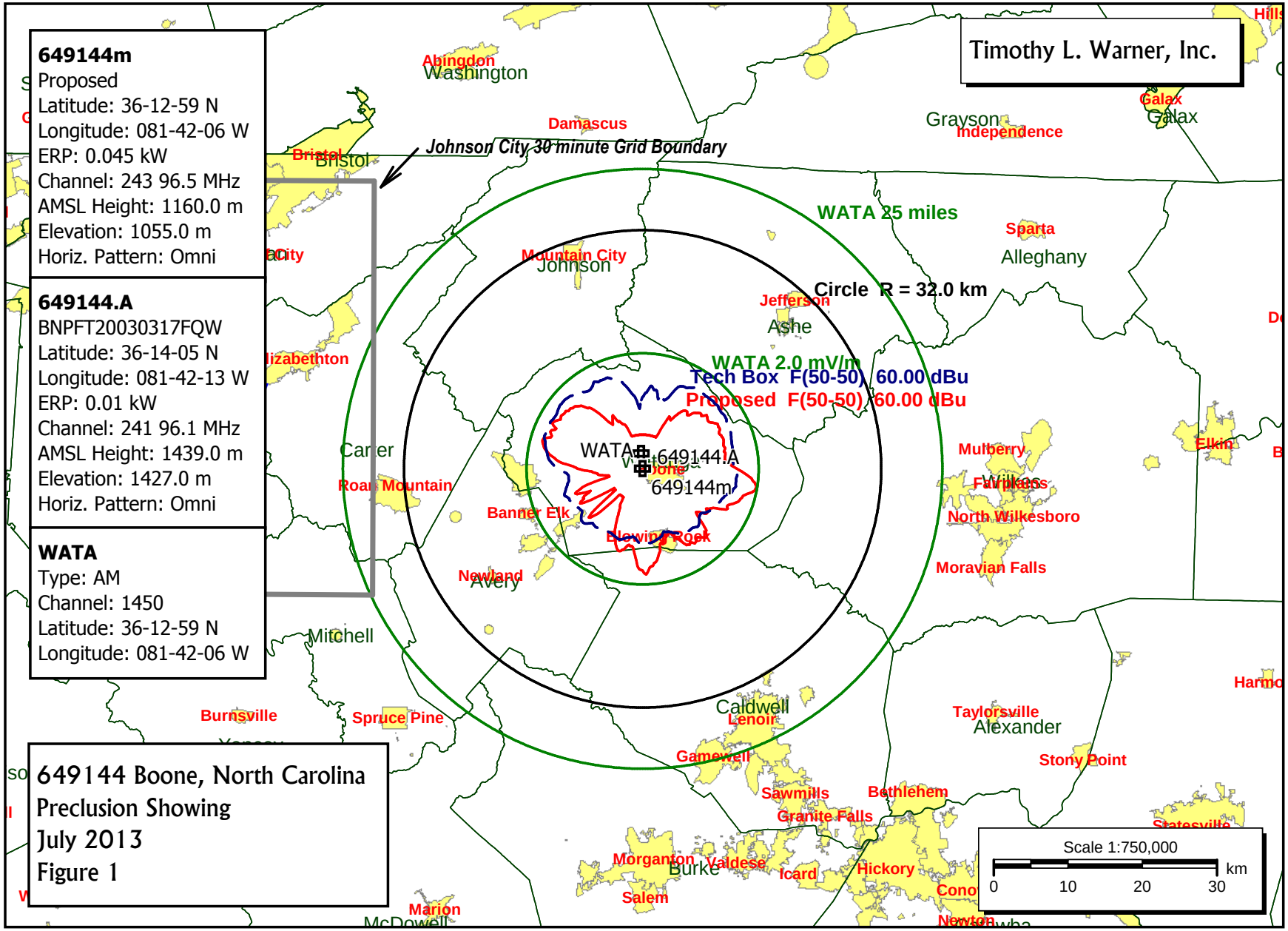
Figure 1 shows the relationship of the proposed facilities to the Johnson City market grid. This facility as proposed in the short form filing is plotted with its Application ID, 649144.A. The Tech Box 60 dBu F(50,50) contour (dashed blue line) is shown. The proposed modified facilities are identified as 649144m. The proposed 60 dBu F(50,50) contour is shown as a solid red line.

A black line shows the 32 kilometer radius circle where the proposed translator facilities could preclude a co-channel LPFM opportunity. The 39 kilometer co-channel preclusion circle does not reach the market grid. The proposed facility does not preclude any identified points in the Johnson City market.

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 V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS National Elevation Data 30 meter terrain database.


649144m
Proposed
Latitude: 36-12-59 N
Longitude: 081-42-06 W
ERP: 0.045 kW
Channel: 243 96.5 MHz
AMSL Height: 1160.0 m
Elevation: 1055.0 m
Horiz. Pattern: Omni
649144.A
BNPFT20030317FQW
Latitude: 36-14-05 N
Longitude: 081-42-13 W
ERP: 0.01 kW
Channel: 241 96.1 MHz
AMSL Height: 1439.0 m
Elevation: 1427.0 m
Horiz. Pattern: Omni
WATA
Type: AM
Channel: 1450
Latitude: 36-12-59 N
Longitude: 081-42-06 W
649144 Boone, North Carolina
Preclusion Showing
July 2013
Figure 1
Timothy L. Warner, Inc.
Johnson City 30 minute Grid Boundary
WATA 25 miles
Circle R = 32.0 km
WATA 2.0 mV/m
Tech Box F(50-50) 60.00 dBu
Proposed F(50-50) 60.00 dBu
WATA
649144.A
649144m
Abingdon
Washington
Damascus
Bristol
Grayson
Galax
Independence
Sparta
Alleghany
Mountain City
Johnson
Jefferson
Ashe
Elizabethton
Carter
Roan Mountain
Banner Elk
Boone
Blowing Rock
Newland
Avery
Mulberry
Elkin
Wilkesboro
Fairplains
North Wilkesboro
Moravian Falls
Mitchell
Burnsville
Spruce Pine
Caldwell
Lenoir
Gamewell
Taylorsville
Alexander
Stony Point
Sawmills
Bethlehem
Granite Falls
Morganton
Valdese
Icard
Hickory
Burke
Salem
Marion
McDowell
Scale 1:750,000
km
0
10
20
30