

File Number BNPFT-20030317JVW

Fayetteville, North Carolina

Application for a new FM Translator

On Channel 272

by

Shaw 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 Shaw 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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22 July 2013

Narrative

This Exhibit supports an amendment to an Auction 83 construction permit application for a new FM translator on Channel 272 in Fayetteville, North Carolina, file number BNPFT-20030317JVW. 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 Notice¹ 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 primary station is provided, commercial AM station WFNC, Fayetteville, North Carolina, status is changed to fill-in, the site is changed, height above mean sea level is reduced, and the antenna is changed. 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 a third adjacent filed by Educational Media Foundation, file number BNPFT-20030317FXO, by Undesired to Desired Signal Ratio. Both facilities are proposed at the same tower site. It is well established that in collocated facilities, neither can exceed the required 40 dB ratio required for interference. Details will be provided in a long form application.

Required Showings

This facility is located inside the Market Grid of the Fayetteville (North Carolina) Market. The Fayetteville market is listed as a Spectrum Available Market using a 30 minute

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

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.

Fayetteville Market Study

The Fayetteville market protected channel/point combinations were generated using the Commissions LPFM grid tool. A portion of the printout from the LPFM grid tool follows. The preliminary section confirms the parameters studied and provides a summary of the channels. There are no protected points on channel 272, proposed in this application. There are protected points on lower first and second adjacent channels 231 and 232. There are no protected points on upper first or second adjacent channels 234 or 235. No I.F. channel protection is required.

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.

Fayetteville LPFM Grid Study Parameters and Overall Results

Fayetteville, NC
 Latitude 35-03-09
 Longitude 078-52-43
 Grid Size 21 x 21
 Micro FM 100 Watts at 30m HAAT
 Co-Channel and 1st Adjacent Protected
 2nd Adjacent Channel Protected
 3rd Adjacent Channel Not Protected
 I.F. Not Protected
 TV Channel 6 Protected
 CP Records Protected
 APP Records Protected
 FM Translators Protected
 TV Channel 6 Translators/LP Protected
 Auc83 FX App Records Protected

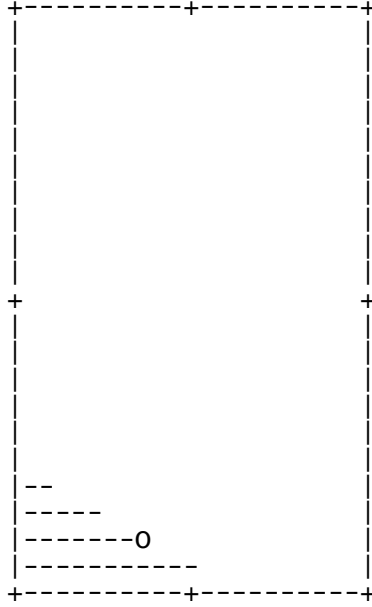
Chan	Avail	Chan	Avail	Chan	Avail	Chan	Avail	Chan	Avail
200	0	220	0	240	0	260	43	280	0
201	0	221	0	241	0	261	179	281	0
202	0	222	0	242	0	262	261	282	0
203	0	223	100	243	0	263	70	283	0
204	0	224	0	244	0	264	0	284	0
205	0	225	0	245	0	265	0	285	0
206	0	226	0	246	0	266	0	286	0
207	0	227	0	247	0	267	0	287	0
208	0	228	2	248	61	268	0	288	0
209	0	229	0	249	0	269	0	289	0
210	0	230	0	250	0	270	26	290	0
211	0	231	0	251	0	271	20	291	0
212	0	232	0	252	0	272	0	292	0
213	0	233	0	253	0	273	10	293	0
214	0	234	0	254	0	274	139	294	0
215	0	235	0	255	0	275	7	295	0
216	0	236	9	256	0	276	0	296	0
217	0	237	0	257	0	277	0	297	0
218	0	238	0	258	0	278	0	298	0
219	0	239	0	259	165	279	0	299	0
-----									300
Total									1092

Total allotments, least preclusive spacing: 22
 Total allotments, most preclusive spacing: 19

Note: Co-channel through second adjacent channel points shown highlighted above.

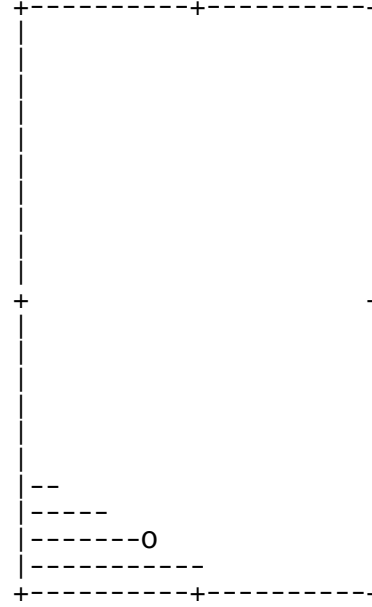
Fayetteville LPFM Grid Study Specific Channel Points

Fayetteville, NC
Latitude 35-03-09
Longitude 078-52-43
Least preclusive siting
Availability of Channel 270 (X)



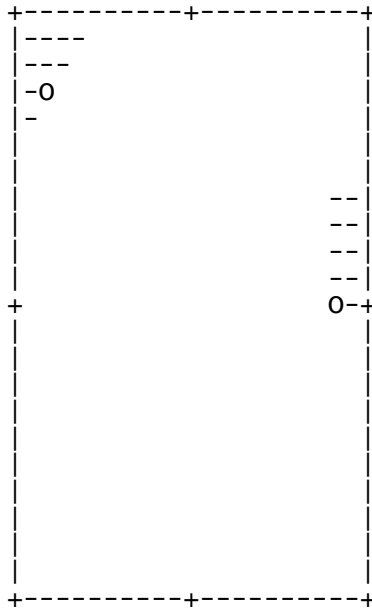
Point #275 at 34-54-09 078-55-43

Fayetteville, NC
Latitude 35-03-09
Longitude 078-52-43
Most preclusive siting
Availability of Channel 270 (X)

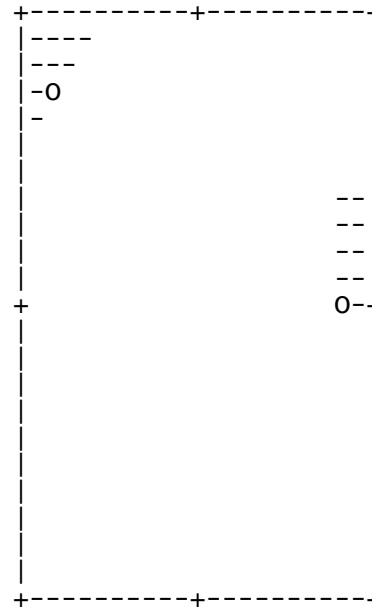


Point #275 at 34-54-09 078-55-43

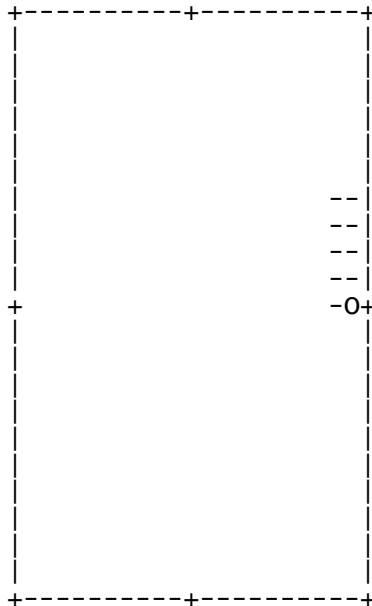
Fayetteville, NC
Latitude 35-03-09
Longitude 078-52-43
Least preclusive siting
Availability of Channel 271 (X)



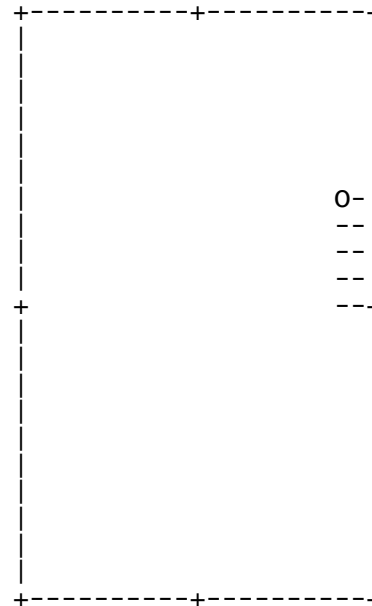
Fayetteville, NC
Latitude 35-03-09
Longitude 078-52-43
Most preclusive siting
Availability of Channel 271 (X)



Point #032 at 35-03-09 078-43-43
Point #418 at 35-11-09 079-01-43
Fayetteville, NC
Latitude 35-03-09
Longitude 078-52-43
Least preclusive siting
Availability of Channel 273 (X)



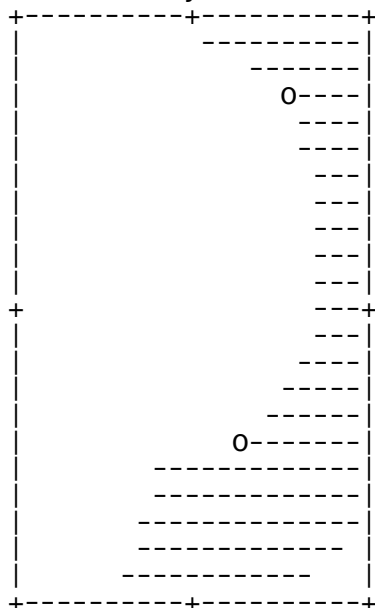
Point #032 at 35-03-09 078-43-43
Point #418 at 35-11-09 079-01-43
Fayetteville, NC
Latitude 35-03-09
Longitude 078-52-43
Most preclusive siting
Availability of Channel 273 (X)



Point #011 at 35-03-09 078-42-43

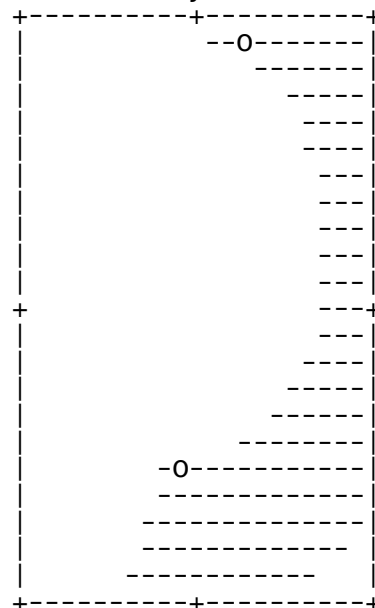
Point #036 at 35-07-09 078-43-43

Fayetteville, NC
 Latitude 35-03-09
 Longitude 078-52-43
 Least preclusive siting
 Availability of Channel 274 (X)



Point #103 at 35-11-09 078-46-43
 Point #153 at 34-58-09 078-49-43

Fayetteville, NC
 Latitude 35-03-09
 Longitude 078-52-43
 Most preclusive siting
 Availability of Channel 274 (X)



Point #236 at 34-57-09 078-53-43
 Point #168 at 35-13-09 078-49-43

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 41.1 meters. The corresponding distance to the 60 dBu F(50,50) contour is 5.167 kilometers, using the FM Curves utility on the Audio Division website. This translator falls in the smallest classification for separation requirements in 47 C.F.R. §73.807(d)(1). The required separation for co-channel operation is 26 kilometers. The required separation for first adjacent channels is 15 kilometers, and the required separation distance for second adjacent channels is 8 kilometers.

Preclusion Study Description

Figure 1 shows the relationship of the proposed facilities to the Fayetteville market grid. This facility as proposed in the short form filing is plotted with its Application ID, 650058.A. The Tech Box 60 dBu F(50,50) contour (dashed blue line) is shown. The proposed modified facilities are identified as 650058m. The proposed 60 dBu F(50,50) contour is shown as a solid red line. The protected contour for primary station WFNC is shown as a solid green line.

The nearest first adjacent protected points are plotted in blue. Note that upper and lower first adjacent channels share the points on the East side of the grid. The nearest second adjacent channel points are plotted in purple.

A black line shows the 26 kilometer radius circle where the proposed translator facilities could preclude a co-channel LPFM opportunity, mostly beyond the borders of the map. A blue line shows the 14.51 kilometer first adjacent preclusion radius, with allowable rounding, and a purple line shows the 8 kilometer second adjacent preclusion radius. There are no co-channel points requiring protection in the Fayetteville market grid. The 14.51 kilometer first adjacent channel preclusion circle does not reach any of the protected points within the market grid, nor does the 8 kilometer second adjacent channel preclusion circle reach any of the second adjacent channel protected points. The proposed facility does not preclude any identified points in the Fayetteville 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.

650058m

Proposed

Latitude: 35-05-21 N

Longitude: 078-54-36 W

ERP: 0.038 kW

Channel: 272 102.3 MHz

AMSL Height: 95.0 m

Elevation: 62.0 m

Horiz. Pattern: Omni

650058.A

BNPFT20030317JVW

Latitude: 35-06-13 N

Longitude: 078-53-44 W

ERP: 0.038 kW

Channel: 272 102.3 MHz

AMSL Height: 97.0 m

Elevation: 46.0 m

Horiz. Pattern: Omni

WFNC

Type: AM

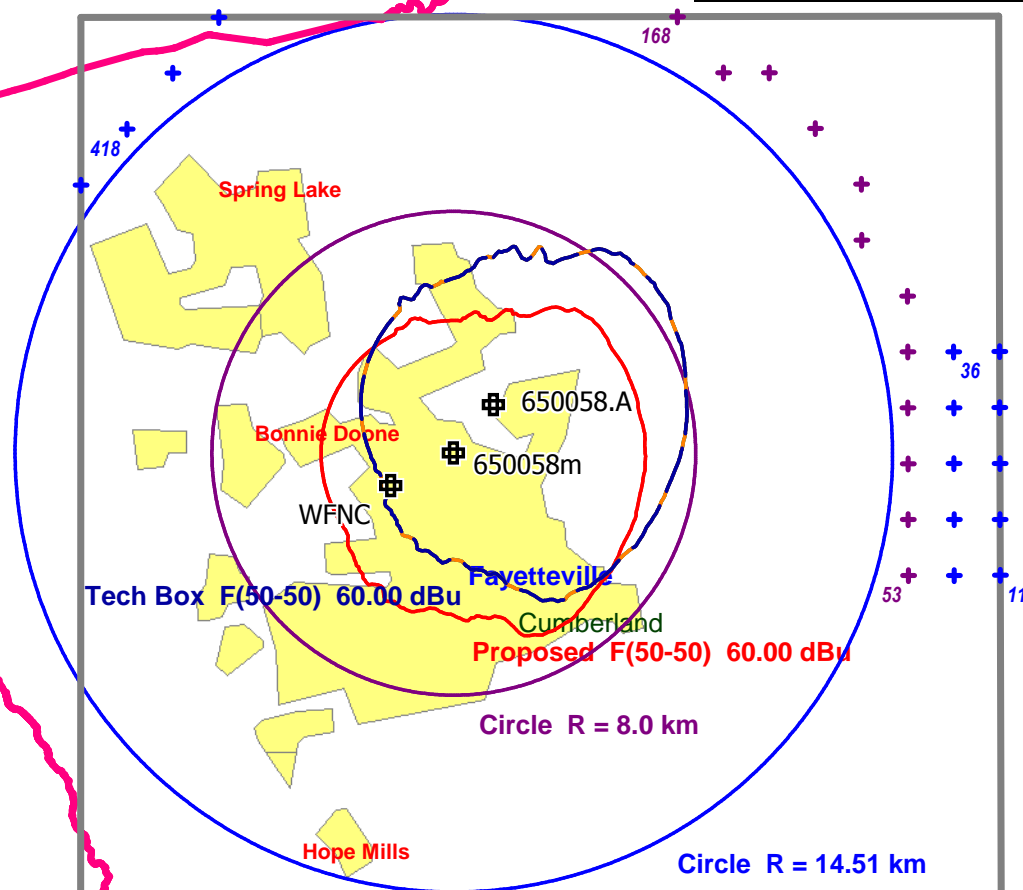
Channel: 640

Latitude: 35-04-46 N

Longitude: 078-55-58 W

650058 Fayetteville, North Carolina**Preclusion Showing****July 2013****Figure 1**

Timothy L. Warner, Inc.



Scale 1:250,000

0 3 6 9 km