

File Number BNPFT-20030317IFV

Charlotte, North Carolina

Application for New FM Translator

On Channel 268

by

Isothermal Community College

Exhibit 1

Grid Preclusion Showing

March 2013

© 2013 Isothermal Community College

Timothy L. Warner, Inc.
Post Office Box 8045
Asheville, North Carolina 28814-8045
(828) 258-1238
twarner@tlwinc.net

Table of Contents

Description	Page
Declaration	2
Narrative.....	3
Required Showings	3
LPFM Grid Study Parameters and Overall Results.....	5
LPFM Grid Study Specific Channel Points	6
Translator Height Above Average Terrain and Distance to Contour	6
Preclusion Study Description	7
Source of Data.....	7
Charlotte, North Carolina Preclusion Showing.....	Figure 1

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 Isothermal Community College, 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.



Timothy L. Warner, P.E.
Post Office Box 8045
Asheville, North Carolina 28801
(828) 258-1238
twarner@tlwinc.net
25 March 2013

Narrative

This Exhibit supports a long form Auction 83 construction permit application for an FM translator on Channel 268 in Charlotte, North Carolina, file number BNPFT-20030317IFV. 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. Specific changes are a change of site, a change to a first adjacent frequency, a decrease in height, and an increase in power. The minor modification creates no conflicts with any other Auction 83 tech box proposals, as shown in the Allocations Exhibit.

Required Showings

This facility is located inside the Market Grid of the Charlotte (North Carolina) market, and inside the Charlotte market. The Charlotte 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 the Charlotte (North Carolina) market, and within the Charlotte Appendix A Market grid. It is not within 39 kilometers of any other Appendix A Market grid. It is not within any out-of-grid Top 50 Spectrum Limited Market.

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

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.

The Charlotte 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 268, proposed in this application. There are protected points on lower first adjacent channel 267. There are no other points on any other first or second adjacent channels. No I.F. channel protection is required.

LPFM Grid Study Parameters and Overall Results

Charlotte, NC
 Latitude 35-12-26
 Longitude 080-49-45
 Grid Size 31 x 31
 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	0	280	0	
201	0	221	0	241	0	261	0	281	0	
202	2	222	1	242	0	262	60	282	0	
203	0	223	0	243	0	263	96	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	75	287	0	
208	0	228	0	248	0	268	0	288	0	
209	0	229	18	249	0	269	0	289	0	
210	0	230	0	250	0	270	0	290	0	
211	0	231	0	251	0	271	0	291	0	
212	0	232	0	252	0	272	0	292	0	
213	0	233	47	253	99	273	0	293	0	
214	0	234	0	254	131	274	0	294	0	
215	0	235	0	255	139	275	0	295	0	
216	0	236	0	256	13	276	0	296	15	
217	0	237	0	257	0	277	0	297	149	
218	0	238	0	258	0	278	0	298	0	
219	0	239	0	259	0	279	0	299	0	
									300	0

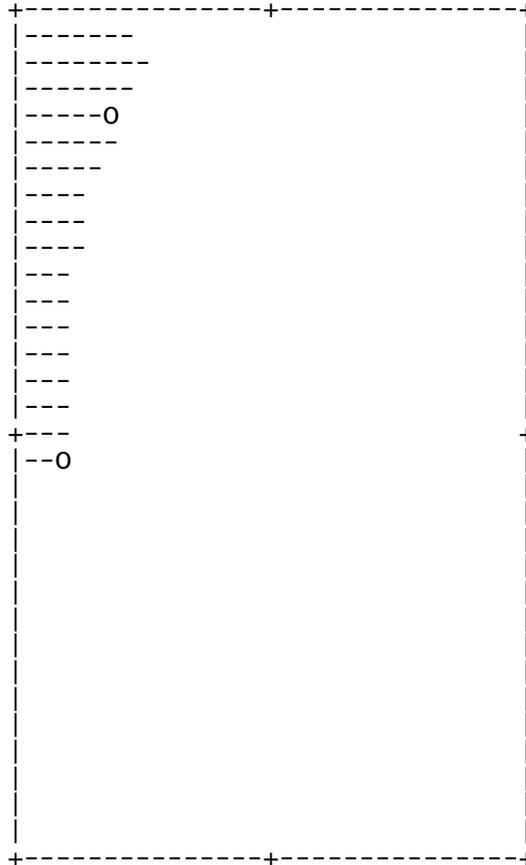
Total	845									

Total allotments, least preclusive spacing: 23
 Total allotments, most preclusive spacing: 16

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

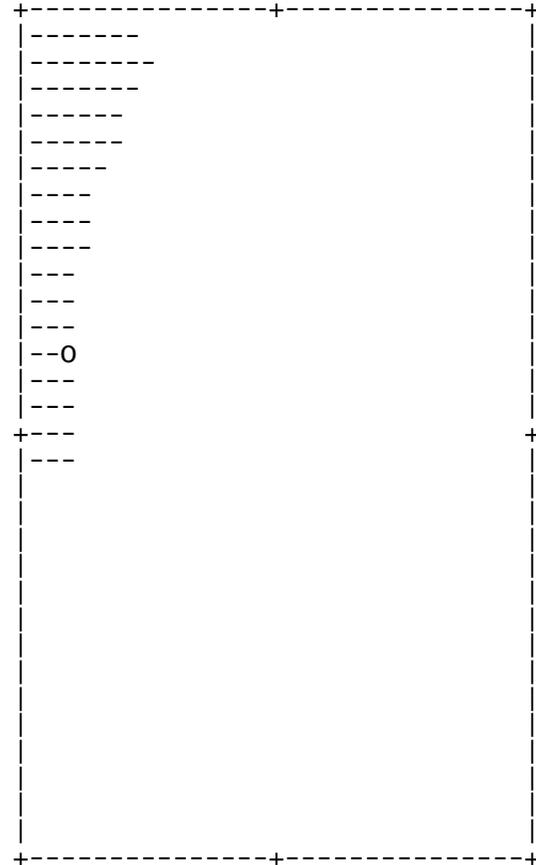
LPFM Grid Study Specific Channel Points

Charlotte, NC
Latitude 35-12-26
Longitude 080-49-45
Least preclusive siting
Availability of Channel 267 (X)



Point #883 at 35-11-26 081-02-45
Point #803 at 35-24-26 080-59-45

Charlotte, NC
Latitude 35-12-26
Longitude 080-49-45
Most preclusive siting
Availability of Channel 267 (X)



Point #887 at 35-15-26 081-02-45

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 81.5 meters. The corresponding distance to the 60 dBu F(50,50) contour is 6.143 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. For first adjacent channel, the required separation is 15 kilometers. For second adjacent channel, the required separation is 8 kilometers.

Preclusion Study Description

Figure 1 shows the relationship of the proposed facilities to the Charlotte market. This facility as proposed in the short form filing is plotted with its Application ID, 649890. The 60 dBu F(50,50) contour (dashed colored line) is shown. The proposed modified facilities are identified as 649890m. The proposed 60 dBu F(50,50) contour is shown as a solid colored line. The lower first adjacent channel protected points are plotted in outline, with the eastern or southern points plotted for each latitude or longitude line. Point numbers are shown for the “o” points in the LPFM program printout, and at the ends of the groups. The 15 kilometer first adjacent channel protection contour is plotted. There are no protected co-channel points. There are no other points on upper first adjacent or either second adjacent channels to plot. The proposed facilities cause no preclusion in the Charlotte market grid.

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.

649890.A
 BNPFT20030317IHB
 Latitude: 35-15-05 N
 Longitude: 080-41-12 W
 ERP: 0.01 kW
 Channel: 267 101.3 MHz
 AMSL Height: 360.0 m
 Elevation: 197.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: No

649890m
 Long Form App
 Latitude: 35-10-51 N
 Longitude: 080-46-32 W
 ERP: 0.019 kW
 Channel: 268 101.5 MHz
 AMSL Height: 295.0 m
 Elevation: 216.0 m
 Horiz. Pattern: Omni
 Vert. Pattern: No

Charlotte, North Carolina
 BNPFT-20030317IHB
 Preclusion Showing
 March 2013
 Figure 1

Timothy L. Warner, Inc.

