

EXHIBIT #1  
ENGINEERING STATEMENT

Concerning the Application of  
Vermont Public Radio  
To Construct a New FM Translator  
For Barre, Vermont – Facility ID 154466  
Long Form – BNPFT20030317HHV  
Application ID 647686

August 2013

**Channel 250D**

**0.01 kW ERP Omni**

This engineering statement supports the application filed by Vermont Public Radio to construct a new FM translator to serve Barre, Vermont on Channel 250.

Under the instant proposal, the off-air audio signal of primary station WVPS, [HD-2] channel 300 [NCE], Burlington, will be delivered to a type-approved transmitter. This unit will deliver 0.0217 kW to the input of a 1-bay Shively 6812. The antenna has a power gain of 0.46 (-3.4dB), and the transmission line has an efficiency of 80% (-1.0dB), resulting in a TPO of 0.0275kW (27.5 watts) for an effective radiated power of 0.01 kW, polarized circularly.

A total of 12 evenly spaced radials were used to determine the antenna height above average terrain. The highest radial of the 12 was used to determine the maximum effective radiated power. The USGS/NGDC 30 arc-second terrain elevation database was employed to determine the elevations along the radials that were averaged using the required four-point interpolation method. The resulting averaged radial antenna heights were employed using the Commission's own TVFMINT algorithm to project the distances to signal contours. A tabular listing of the distance to the 1 mV/m contour can be found in Exhibit #E1 on page #3.

A 60dbu coverage map can be found in Exhibit #E1 on page #4.

**LPFM Non-Preclusion Study** - This application proposes no technical changes from the original Short Form 349 filing application ID # 647686 tech box entries, and is outside the 39km buffer zone of any Appendix A or Appendix B market. Therefore, no further LPFM non-preclusion exhibits are required for this application. [See map in Exhibit #E1, page #5 showing facility coordinates in relation to the Burlington-Plattsburg Grid and Buffer Zone]

Page #6 of Exhibit #E1 is a statement of the qualifications of the preparer.

**Exhibit #12** is an Allocation Study showing that no interference will be caused to any existing licenses, construction permits or allocations. The first page is a computer channel study of all stations having a frequency and distance relationship. The exhibit gives current operating powers, HAAT's bearings and distances. (All distances were computed according to the method described under Section 73.208 of the Commission's Rules.)

Page #2 of that exhibit is an explanation of the methods used. Pages 3-16 are maps and FMOver tables, depicting the relationship between the proposed translator and first adjacent stations WJJR, Rutland and WGMT, Lyndon.

Although the FMOver study shows predicted incoming interference to the proposed facility from both WJJR and WGMT, the nature of the terrain dictates that there would be no real interference or reception of those stations within the proposed coverage area and city to be served, which is in a deep valley.

However, should there be any reports of any actual listener interference to either WJJR or WGMT, the applicant will take steps to address and resolve the complaints, up to and including cessation of operation if required.

The proposed station is within 320 kilometers of the US border with Canada, however there are no pertinent Canadian relationships. The 34 dBu interference contour does not extend beyond 60 kilometers (see Ex #12, Pg #17).

The Mexican border is more than 320 kilometers in distance. The proposed facility is okay with respect to AM stations, FCC monitoring stations, Table Mountain and the West Virginia Quiet Zone. (see Ex #12, Pg #18)

Exhibit #17 is an RF hazard compliance statement.

## Distance to Contour Report

Type of contour: FCC  
 Location Variability: 50.0 %  
 Time Variability: 50.0 %  
 # of Radials Calculated: 12  
 FCC Matching HAAT Calculation Used  
 Field Strength: 60.00 dBuV/m

Primary Terrain: FCC 30 Second US Database

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 Transmitter Information:

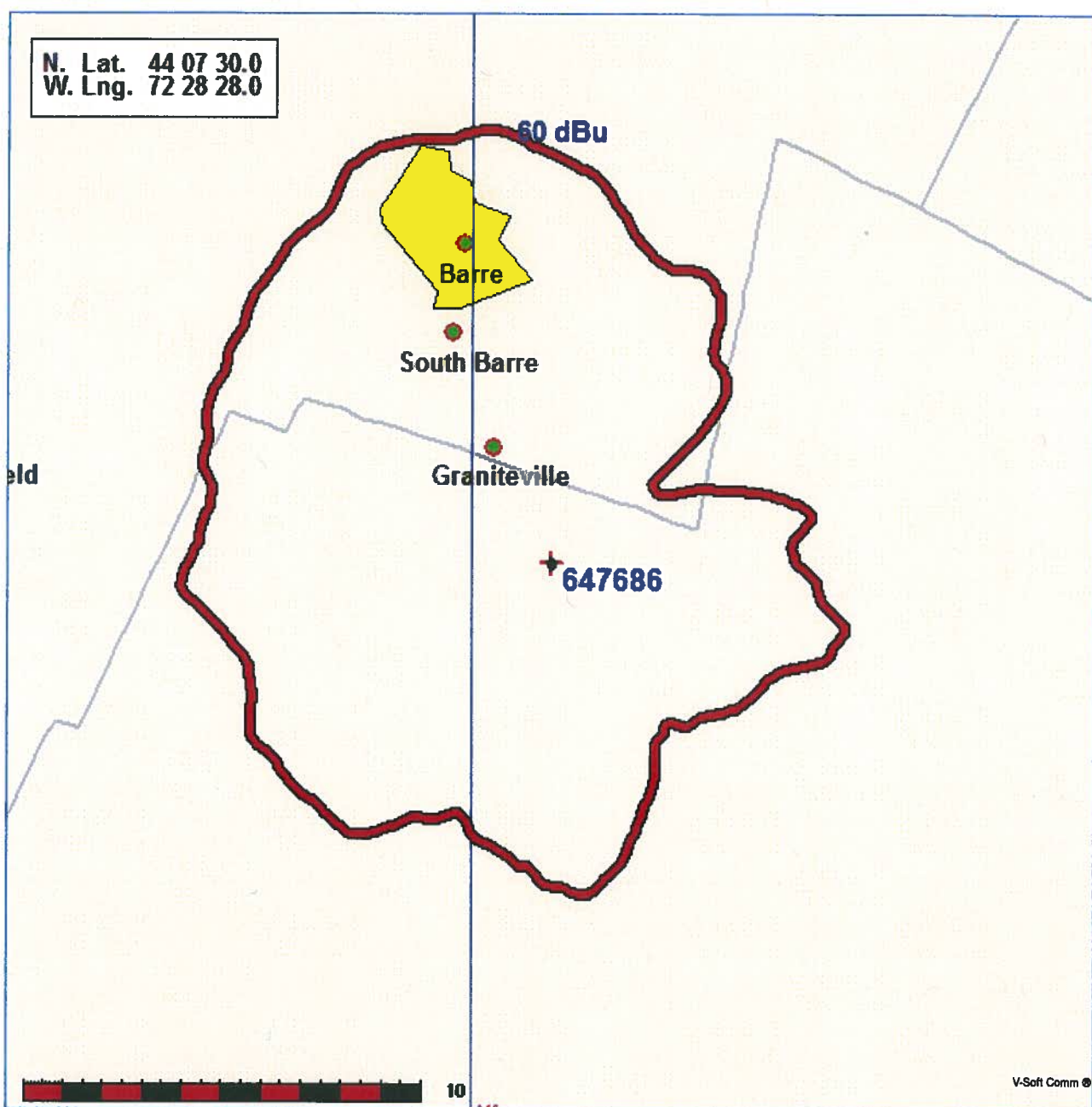
Call Letters: 647686-Barre  
 Latitude: 44-07-30 N  
 Longitude: 072-28-28 W  
 ERP: 0.01 kW  
 Channel: 250  
 Frequency: 97.9 MHz  
 AMSL Height: 630.0 m  
 Elevation: 600.0 m  
 Horiz. Antenna Pattern: Omni  
 Vert. Elevation Pattern: No  
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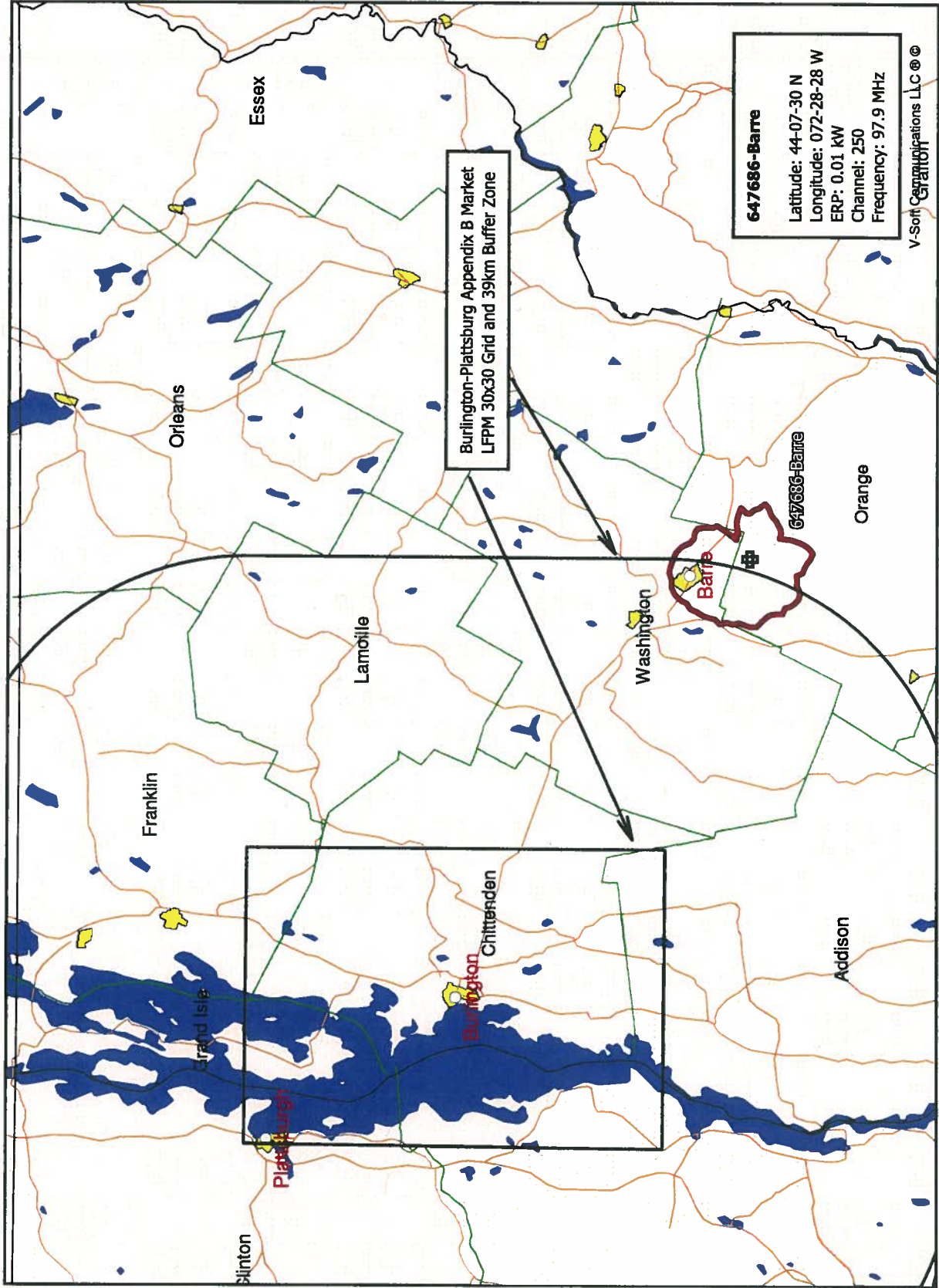
Azimuth (deg)	Distance (km)	HAAT (m)
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0.0	10.22	306.1
30.0	8.11	194.5
60.0	3.73	41.9
90.0	6.09	108.0
120.0	6.26	114.4
150.0	5.28	82.3
180.0	7.99	189.3
210.0	7.13	151.3
240.0	8.55	215.0
270.0	9.13	244.2
300.0	9.33	254.6
330.0	10.85	346.3

Average HAAT for radials shown: 187.3 m

Coverage Study - NGDC 30 SEC  
08-26-2013

647686 CH250 D , 0.01 kW, 190.3M HAAT, 630.0M COR AMSL  
Service Contour = 60 dBu. Population = 20,168





Declaration

I declare, that I am the Senior Broadcast Strategist and Engineer for Vermont Public Radio, that I have over 25 years of experience as a broadcast engineer, that I am familiar with the Federal Communications Rules found in the Code of Federal Regulations Title 47, that I have participated in training sessions under Doug Vernier and Kate English (V-Soft Communications) related to the use of V-Soft Tools for analysis and preparation of data supporting FCC applications, that I am a member of the Society of Broadcast Engineers, and that I have prepared the attached Exhibit 1, Engineering Statement, and other related Exhibits for Vermont Public Radio. I hereby certify under penalty of perjury, that the statements herein are true and correct of my own knowledge, except such statements made on information and belief, and as to these statements I believe them to be true and correct.

By: 

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