

# Engineers Statement and Exhibits

FCC FORM 340

APPLICATION FOR CONSTRUCTION PERMIT FOR RESERVED CHANNEL  
NONCOMMERCIAL EDUCATIONAL BROADCAST STATION

(For a Minor Change in Licensed facility)

WHDD-FM, Facility ID 173310

## **Introduction:**

This is an application for a minor change by Tri-State Public Communications, Inc. (the Applicant) to WHDD-FM, Facility ID 173310, serving the community of Sharon Connecticut.

This application proposes to change the ERP, antenna type, pattern and height.

- The existing treated wooden pole will be replaced with a 21.33 meter self-supporting steel tower.
- The existing Scala CA5-FM/CP antenna will be replaced with an ERI LP-2E-DA-HW.
- The antenna radiation center will be reduced from 21 meters AGL to 17 meters AGL.
- The directional pattern will be changed and the ERP will be increased.

This application supersedes BPED-20080717APP. The Applicant withdraws the earlier application.

## Section VII Engineering Data:

### Tech Box Data:

- 1) Channel 220
- 2) Class A
- 3) Antenna Location Coordinates
  - 41° 53' 32" N
  - 73° 27' 16" W
- 4) Proposed Assignment Coordinates, Not Applicable
- 5) Antenna Structure Registration, Not Applicable
- 6) Overall Tower Height, 21 meters AGL
- 7) Radiation Center Height, 279 meters (H)                      279 meters (V) AMSL
- 8) Radiation Center Height, 17 meters (H)   17 meters (V) AGL
- 9) Radiation Center Height, -19 meters (H) -19 meters (V) HAAT
- 10) ERP, 0.84 kW (H)                      0.84 kW (V)
- 11) Maximum ERP if beamtilt used, Not Applicable
- 12) Directional Antenna, Yes, See Exhibit 1
- 13) Main Studio Location, Yes, Inside city limits of community of license.
- 14) Community Coverage, Yes, See Exhibit 14.
- 15) Interference, Yes.
  - a) Section 73.509, Checked. See Exhibits 16, Stations and Authorizations requiring investigation.
  - b) Section 73.207, Checked. Clear of all International stations and authorizations.
  - c) Section 73.213, Not Checked. Not Applicable.
  - d) Section 73.215, Checked. See Exhibits 16.
  - e) Section 73.525, Not Checked.
- 16) Reserved Channel above 220, Not Applicable
- 17) International Border, No, Canada, 291 km. See Exhibit 21.
- 18) NEPA, Yes. Operation of this facility will not have a significant environmental impact. To the best knowledge of the Applicant:

The proposed structure is not located in an officially designated wilderness area or wildlife preserve.

The proposed structure does not threaten the existence or habitat of endangered species.

The proposed structure will not involve high intensity white lighting in a residential neighborhood.

The structure will not affect districts, sites, buildings, structures or objects significant in American history, architecture, engineering or culture that are listed in the National Register of Historic Places, or are eligible for listing.

The existing structure does not affect Indian religious sites.

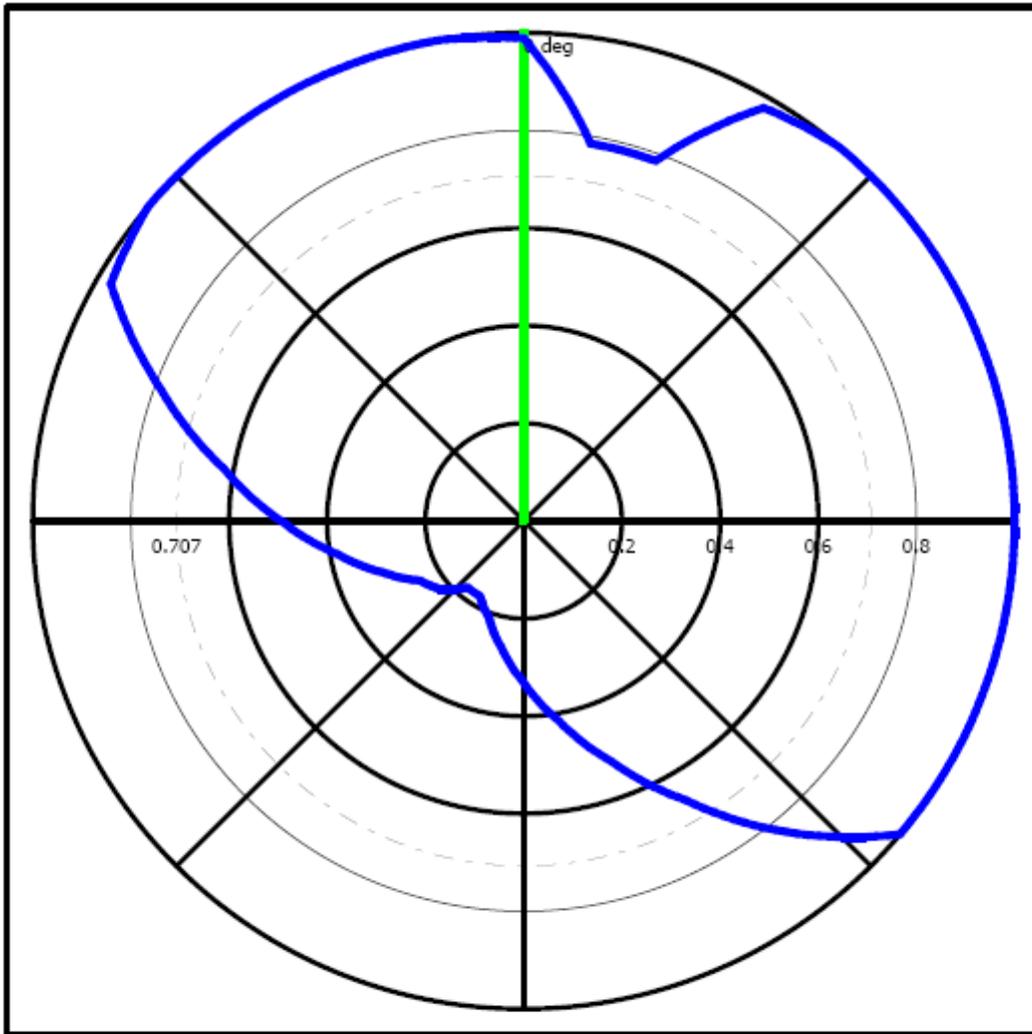
The site is not located in a flood plain.

Nothing is proposed that would require significant changes in surface features such as wetland fill, deforestation or water diversion.

This proposal complies with the FCC established guidelines regarding exposure to RF electromagnetic fields, See Exhibit 22.
- 19) Community of License Change, Not Applicable.

# Exhibit 1

## Directional Antenna Pattern



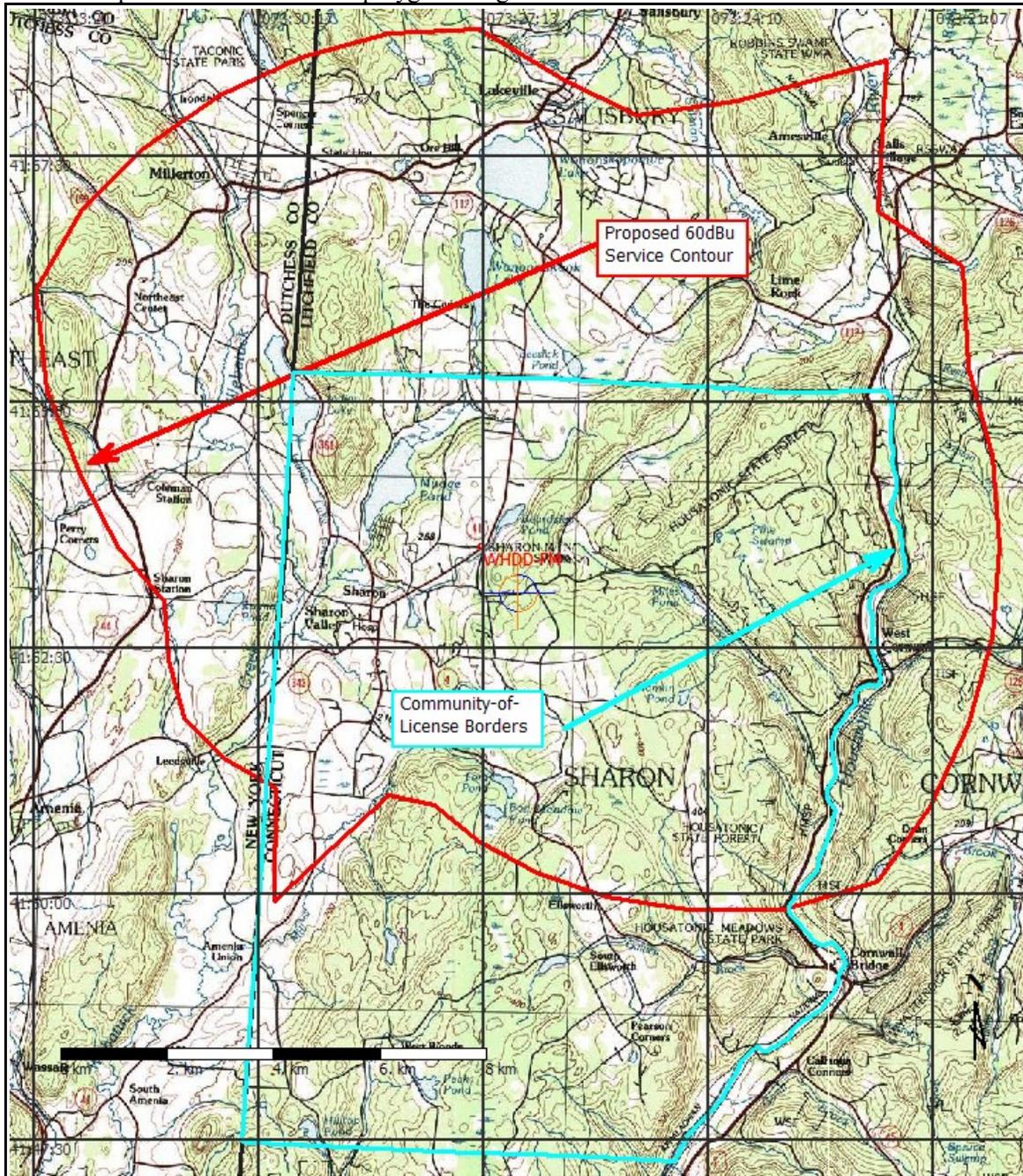
Degree	Field										
000	0.989	060	1.000	120	1.000	180	0.331	240	0.244	300	0.971
010	0.785	070	1.000	130	1.000	190	0.263	250	0.307	310	1.000
020	0.785	080	1.000	140	0.832	200	0.209	260	0.387	320	1.000
030	0.977	090	1.000	150	0.661	210	0.178	270	0.494	330	1.000
040	1.000	100	1.000	160	0.525	220	0.178	280	0.621	340	1.000
050	1.000	110	1.000	170	0.417	230	0.219	290	0.786	350	1.000

# Exhibit 13

## 60dBu Contour Area and Population. Community of License Coverage.

The proposed facility's 60 dBu service contour encompasses a total land area of 234.9 km<sup>2</sup> and contains 7,591 persons based on the US Census year 2000 block level data. The service contour contains 2520, or 84.9%, of the 2968 persons in the Community-of-License.

The contour was created using the methods and procedures described in 47 C.F.R. Section 73.313(c). The area was calculated using a spline integration in one-degree increments. The population was calculated by testing each US Census defined population point in the region with a point-in-polygon method. The population was summed for each point within the 60dBu polygon using data from the 2000 US Census.



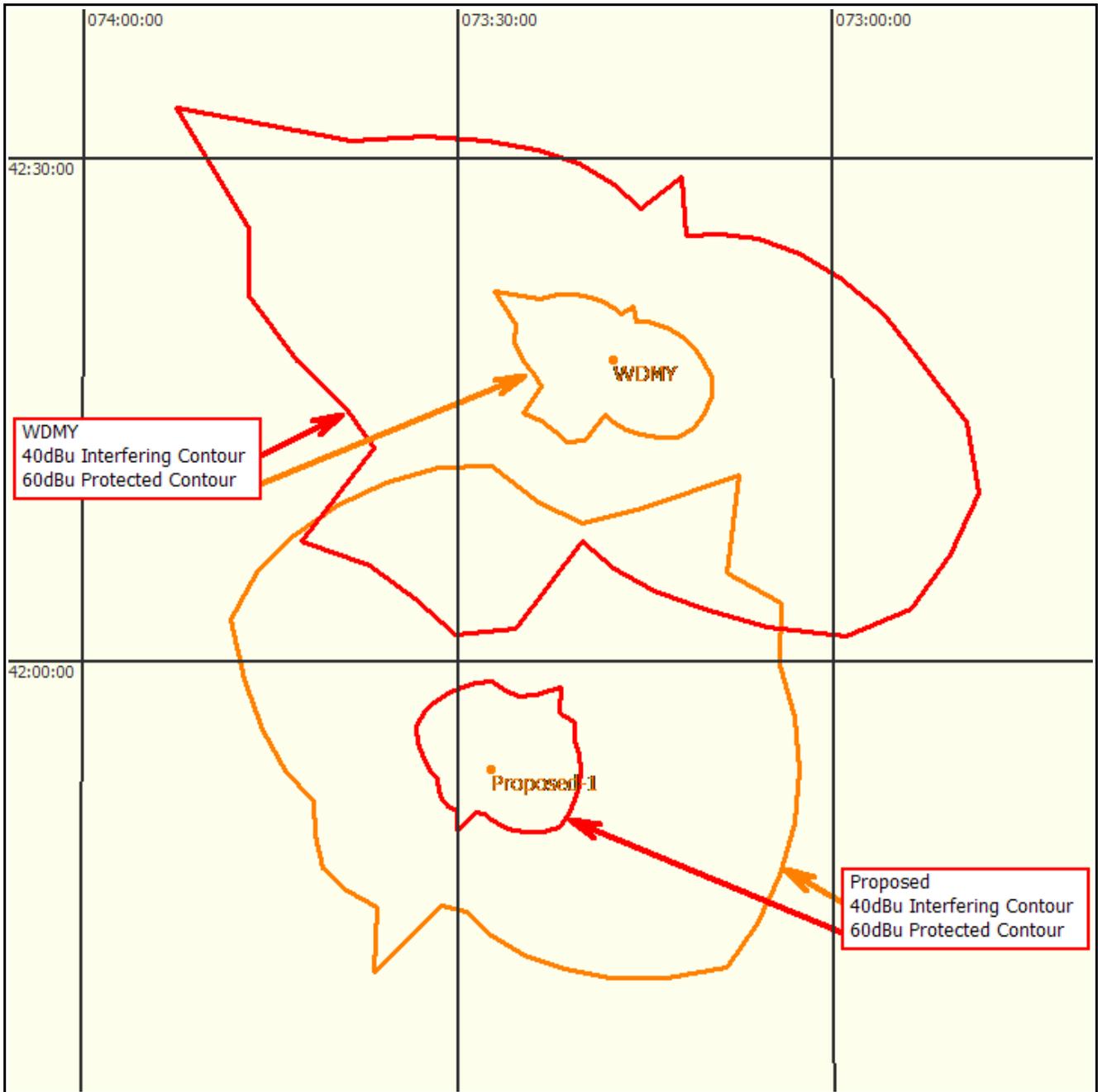
## Exhibit 16a

### Stations and Authorizations Requiring Investigation

<b>ID</b>	<b>City</b>	<b>St</b>	<b>Chan</b>	<b>CL</b>	<b>Stat</b>	<b>Prefix</b>	<b>ARN</b>	<b>Dist</b>	<b>Min 207</b>	<b>Clear 207</b>	<b>Clear 215</b>
WDMY	STOCKBRIDGE	MA	220	A	CP	BNPED	20071022BGZ	47.12	N/A	N/A	N/A
WBSL-FM	SHEFFIELD	MA	219	A	LIC	BLEDD	19820819AF	25.03	N/A	N/A	N/A
WRNQ	POUGHKEEPSIE	NY	221	A	LIC	BLH	20000501AAA	48.97	72	-23.03	-0.03
WWYZ	WATERBURY	CT	223	B	LIC	BLH	19940916KD	62.52	69	-6.48	-0.48

# Exhibit 16b

## Contour Protection

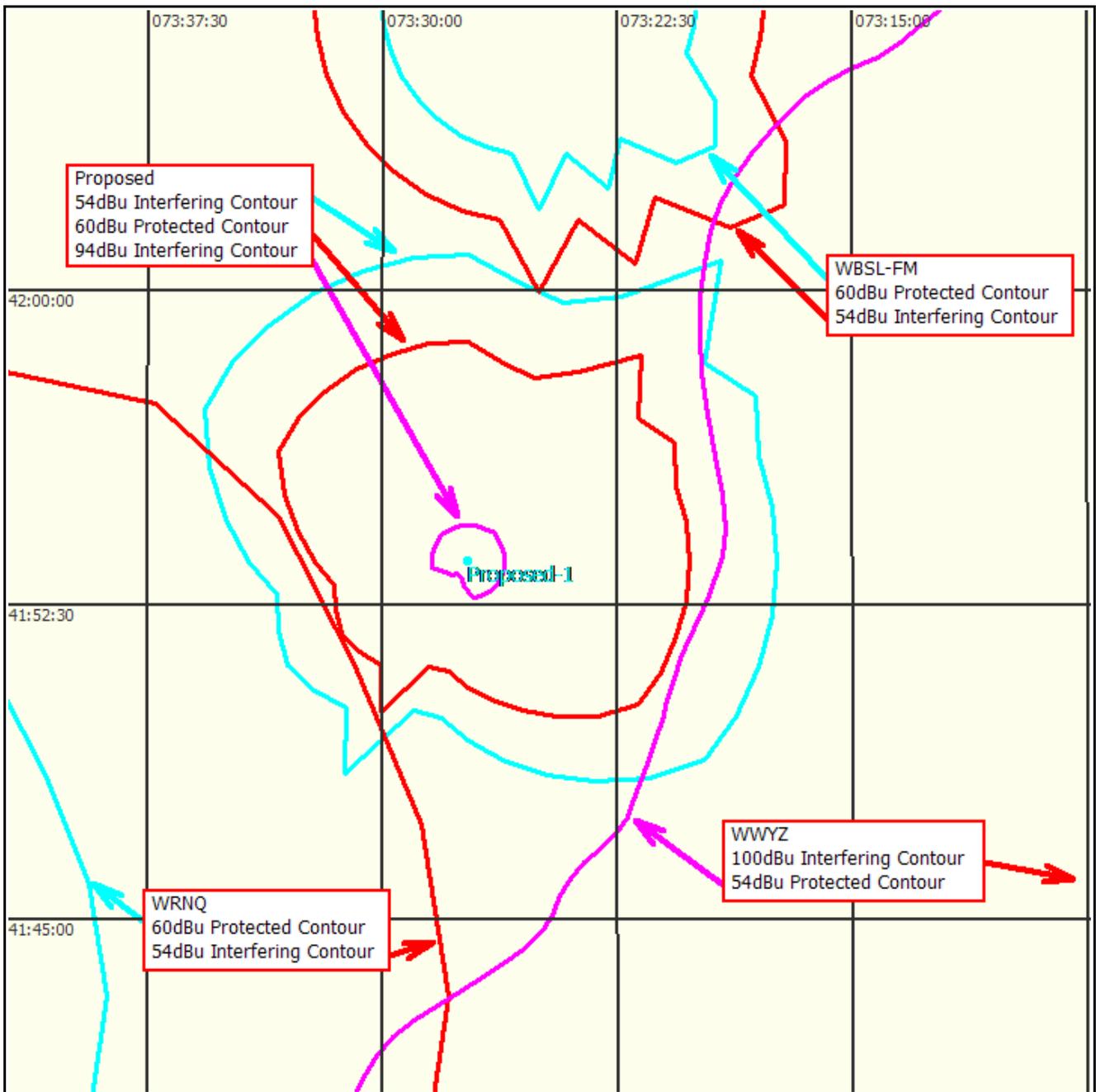


*Co-Channel Protected and Interfering Contours*

Contours are color-coded so that prohibited overlap is indicated by LIKE color contours overlapping.

# Exhibit 16c

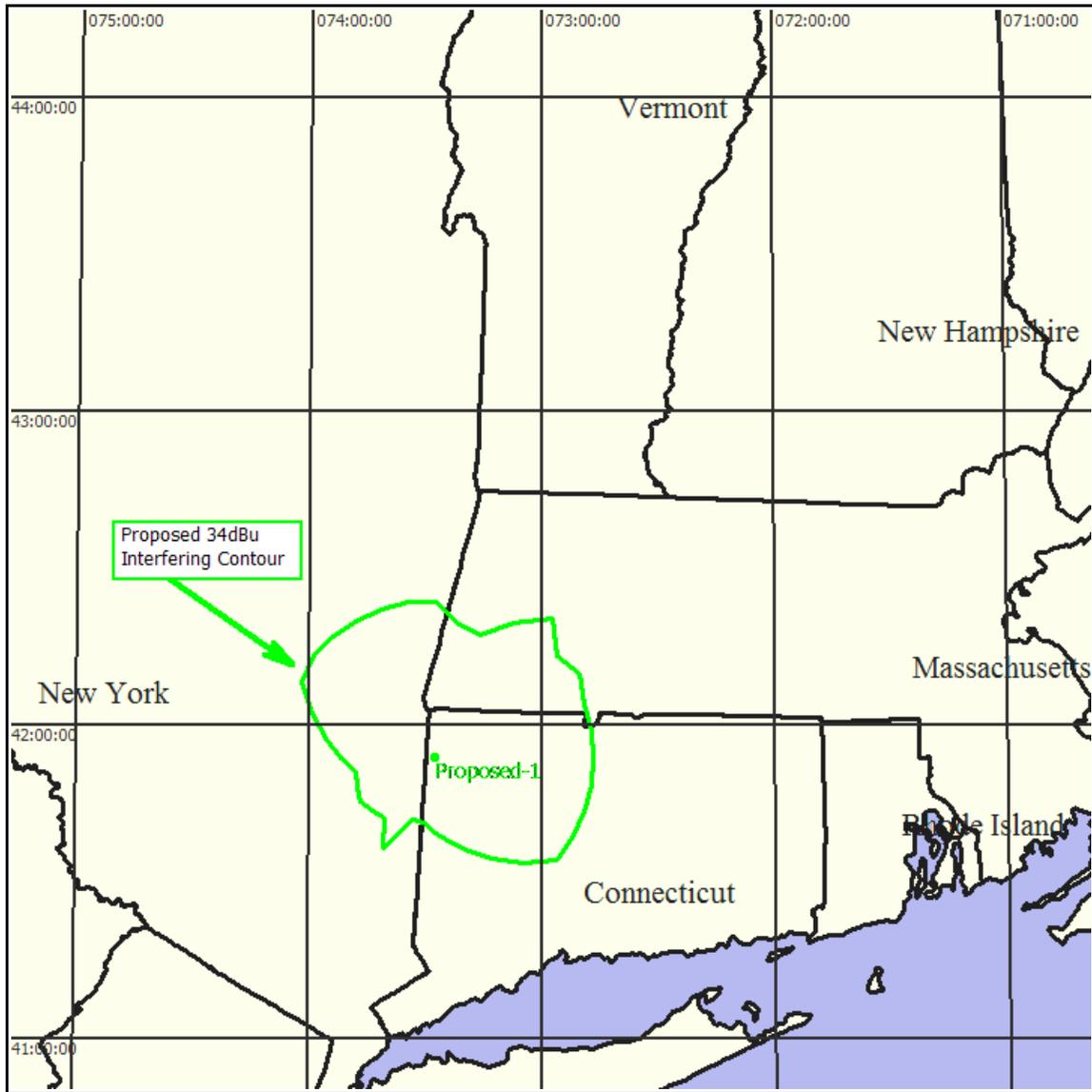
## Contour Protection



*Adjacent-Channel Protected and Interfering Contours*

Contours are color-coded so that prohibited overlap is indicated by LIKE color contours overlapping.

Exhibit 21  
International Borders



There is no interference with Canada, as the proposed site's 34 dB contour does not cross the International Border.

## Exhibit 22a

### RF Exposure Statement

The Applicant will cooperate with all site users, managers and owners with regard to the cessation of operation or the reduction of operating power, whenever it is necessary to comply with the FCC Regulations and Guidelines on Human Exposure to Non-Ionizing RF Radiation.

The modeled contribution to the RF environment, 2-meters above the ground, by the proposed facility is less than 22.2 uW/cm<sup>2</sup>, or 11.1%, of the maximum permitted value for general public exposure. This result was obtained using the FCC's FM Model Program.

The following parameters were used to calculate the exposure level:

Horizontal ERP 0.84 kW  
Vertical ERP 0.84 kW  
Antenna Radiation Center Height AGL 17 meters  
Test Point Height, 2 meters AGL  
Antenna Type: Rototiller, 2-bay, 1/2 wave spaced.

Based on OET Bulletin 65 and using the parameters listed above, the public exposure level falls below 100% at any distance greater than 17 meters from the RF source.

There are three structures closer than 17 meters from the proposed facility. These structures are labeled "Farm Bldg 1," "Barn," and "Garage" on the site plan (Exhibit 22b). The Barn has the highest roof and is the closest building to the proposed antenna pole. Therefore if the Barn roof is within the RF Exposure guidelines then all of the other buildings will be in compliance.

A profile view of the barn roof with 2-meter tall stick figures is shown in Exhibit 22c. The slant distances to the evaluation points in this figure are both 14.9 meters. Using the FCC's FM Model Program, the antenna and power data listed above and the heights and distances derived from Exhibit 22c, the predicted RF levels on the barn roof are less than 41% of the maximum permitted value for public exposure.

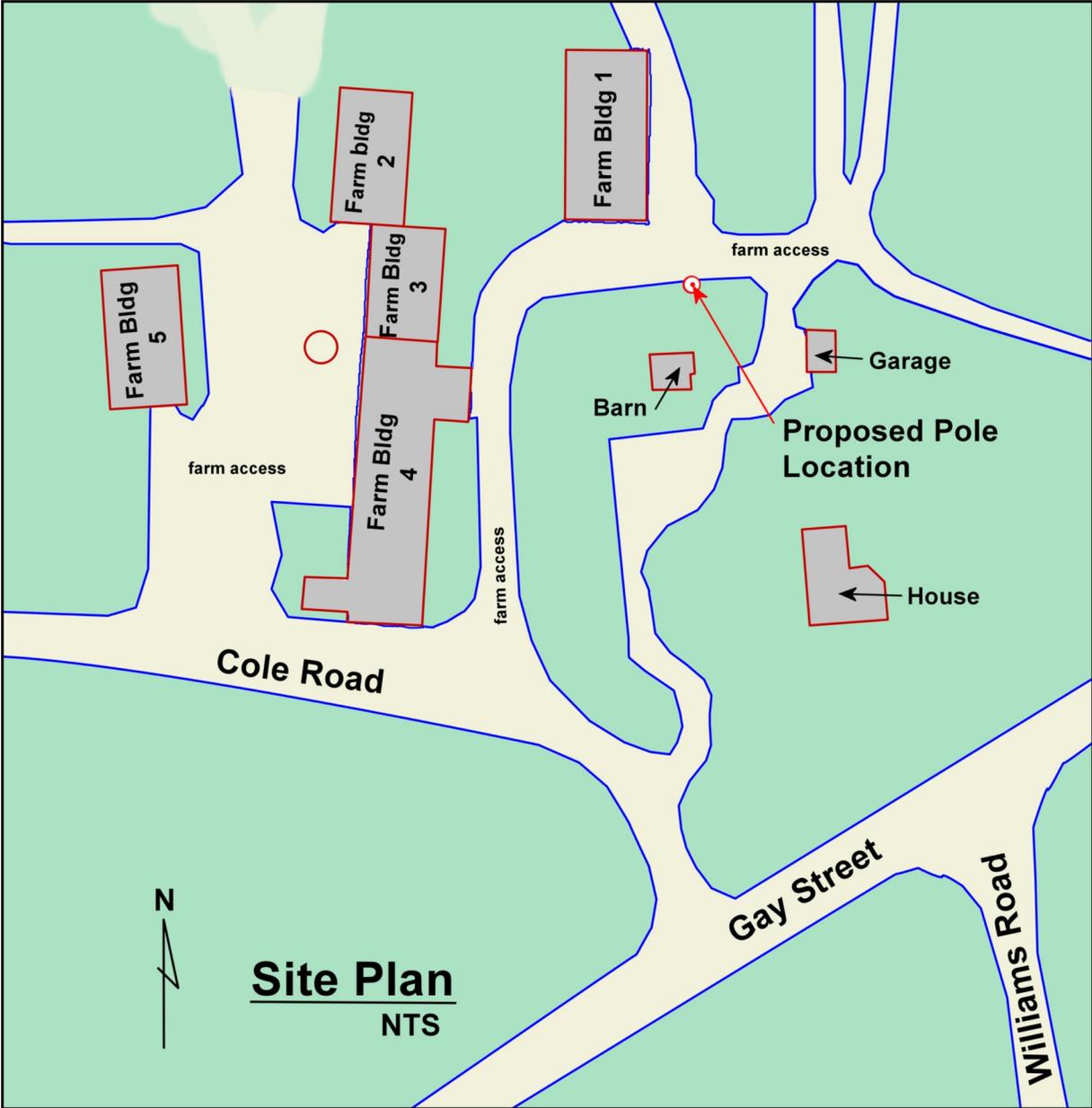
The ground does not rise around the tower. There are no other RF sources within 315 meters of the site. The measured levels should be significantly less than this model due to antenna directivity.

**Based on this information the proposed facility is in compliance with 47 C.F.R. Section 1.1306 with regards to radio-frequency electromagnetic exposure.**

Joseph DiPietro, P.E.  
March 8, 2010

# Exhibit 22b

## Site Plan



# Exhibit 22c Site Profile

