

# Exhibit 13.1 Copy of USGS Topographic Photo-Map

**Proposed Site**  
**42° 53' 45" NL**  
**72° 39' 49" WL**  
**NAD 1927**

(42-53-45.3NL; 72-39-47.3WL NAD83)

▲ 1496 ft/456 m



0 200 400ft



**USGS**  
The National Map

## Exhibit 13.2

### Vertical Plan of Antenna System

The site is located 0.4 km southwest of the "J" intersection of Sunset Lake Road and Hescoc Road; Brattleboro Township, Windham County, Vermont.

#### Site Location (NAD 27)

NL: 42° 53' 45"

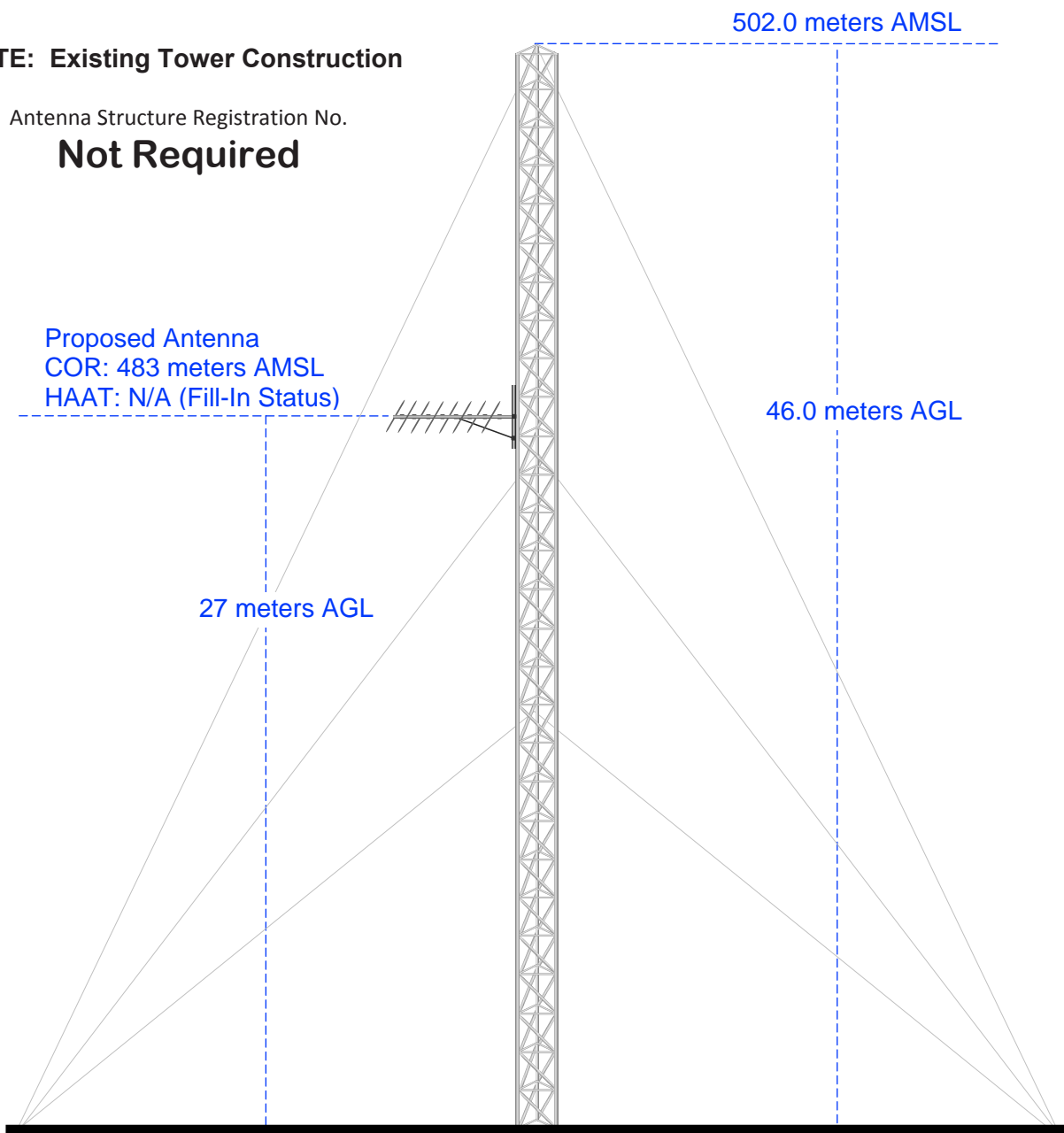
WL: 72° 39' 49"

(42-53-45.3NL; 72-39-47.3WL NAD1983)

#### NOTE: Existing Tower Construction

Antenna Structure Registration No.

**Not Required**



Ground Elevation = 456.0 m AMSL  
Drawing is not to Scale

**MUNN-REESE, INC.**

Broadcast Engineering Consultants  
Coldwater, MI 49036



Terrain  
53 617 m

U.S. Census 2010 PL Database

## Exhibit 13.3 Present vs. Proposed Service Contour Study

+  
CH262D.long-form

West Brattleboro

+  
CH262D.short-form

Brattleboro

Short-Form 60 dBμ F(50:50) Contour

Long-Form 60 dBμ F(50:50) Contour

CH262D.long-form  
Brattleboro, VT  
Proposed Operation  
Facility ID: 140890  
Latitude: 42-53-45 N  
Longitude: 072-39-49 W  
ERP: 0.105 kW  
Channel: 262D  
Frequency: 100.3 MHz  
AMSL Height: 483.0 m  
Horiz. Pattern: Directional

60 dBμ Contour  
Total Population: 17,624  
Total Area: 215 sq. km

CH262D.short-form  
Brattleboro, VT  
BNPFT20030317AHP  
Facility ID: 140890  
Latitude: 42-50-51 N  
Longitude: 072-34-56 W  
ERP: 0.25 kW  
Channel: 262D  
Frequency: 100.3 MHz  
AMSL Height: 152.0 m  
Horiz. Pattern: Directional

60 dBμ Contour  
Total Population: 11,991  
Total Area: 78 sq. km

Scale 1:100,000  
0 1 2 3 km

Terrain  
29 1201 m

U.S. Census 2010 PL Database

25 mile AM Site Radius

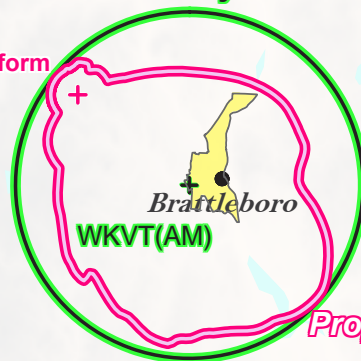
## Exhibit 13.4 Proposed vs. Primary Service Contour Study

Call: WKVT(AM)  
BRATTLEBORO, VT, US  
BL-  
Facility ID: 57781  
Freq: 1490 kHz  
Hours: U  
Lat: 42-50-51 N  
Lng: 072-34-56 W  
Power: 1.0 kW  
Theo RMS: 300.95 mV/m  
@ 1km @ 1kW

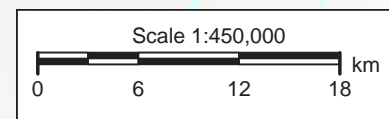
CH262D.long-form  
Brattleboro, VT  
Proposed Operation  
Facility ID: 140890  
Latitude: 42-53-45 N  
Longitude: 072-39-49 W  
ERP: 0.105 kW  
Channel: 262D  
Frequency: 100.3 MHz  
AMSL Height: 483.0 m  
Horiz. Pattern: Directional

CH262D.long-form

Daytime 2 mV/m AM Contour



Proposed 60 dBµ F(50:50) Contour



# Exhibit 13.5

## Tabulation of Proposed Allocation

Saga Communications Of New England, Inc.											
REFERENCE		CH# 262D - 100.3 MHz, Pwr= 0.105 kW DA, HAAT= 145.6 M, COR= 483 M								DISPLAY DATES	
42 53 45.0 N.		Average Protected F(50-50)= 12.51 km								DATA 08-02-13	
72 39 49.0 W.		Standard Directional								SEARCH 08-02-13	
CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(Overlap	in km)
262D	632359	APP	DH_	129.0	8.53	42 50 51.0	0.250	16.4	5.1	-26.6*<	-56.4<
Brattleboro		VT		309.0	BNPFT20030317AHP	72 34 56.0	-111	152	Saga Communications Of New		
262B1	WKBE	LIC	_CN	303.6	106.37	43 25 12.0	1.450	113.9	50.9	-9.1*<	51.0
Warrensburg		NY		122.8	BLH19950606KC	73 45 39.0	400	680	6 Johnson Road Licenses, I		
Notified to Canada 960805											
264A	WTHK	LIC	_C_	288.5	22.24	42 57 33.0	0.130	0.8	26.4	19.8	-4.2*<
Wilmington		VT		108.4	BLH19991215ABK	72 55 22.0	452	1107	Great Eastern Radio, LLC		
259D	W259AB	LIC	_HN	246.1	11.65	42 51 12.0	0.006	0.2	8.5	9.9	3.1
Marlboro, Etc.		VT		66.0	BLFT19930126TE	72 47 40.0	187	687	Friends Of Whaz		
Translator for WWAY, Willmington, VT-Horizontal Polarization Only											
261A	WUPE-FM	LIC	NCX	236.1	39.44	42 41 51.0	1.300	27.1	18.5	10.7	19.4
North Adams		MA		55.9	BMLH20091119ADB	73 03 52.0	153	662	Berkshire Broadcasting Co.		
262B	WHEB	LIC	_CN	82.9	155.20	43 03 11.0	50.000	135.3	62.5	10.8	49.8
Portsmouth		NH		264.2	BLH19910307KE	70 46 04.0	140	151	Capstar Tx LLC		
263C3	WXXK	LIC	NCN	19.3	89.52	43 39 18.0	22.000	70.9	48.0	16.7	38.3
Lebanon		NH		199.6	BLH19970307KF	72 17 42.0	99	375	Great Eastern Radio, LLC		
261L1	WOOL-LP	LIC	___	34.9	32.73	43 08 14.0	0.006	7.9	5.7	23.0	24.1
Bellows Falls		VT		215.0	BLL20050802ADL	72 25 59.0	118	361	Falls Area Community Telev		
260A	WFNX	LIC	_CN	131.4	50.54	42 35 39.0	1.850	2.2	25.0	29.7	24.9
Athol		MA		311.7	BLH19891204KC	72 12 02.0	124	396	County Broadcasting Compan		
265A	WRNX	LIC	ZEX	178.8	71.60	42 15 07.0	0.870	1.9	30.6	58.7	40.4
Amherst		MA		358.8	BLH20120110ADN	72 38 41.0	262	364	Cc Licenses, LLC		
263B	WRCH	LIC	_CX	186.0	133.27	41 42 13.0	7.500	80.6	67.7	44.4	48.5
New Britain		CT		5.9	BMLH20090430AAN	72 49 57.0	381	475	Cbs Radio Stations Inc.		
208B	WVPR	LIC	_CX	15.8	62.61	43 26 15.0	1.700	13.7	92.0	14.5R	48.1M
Windsor		VT		196.0	BMLED20120821ABT	72 27 08.0	694	975	Vermont Public Radio		
259A	WNTK-FM	LIC	ZCX	39.5	79.80	43 26 52.0	1.450	2.3	30.8	75.6	49.0
New London		NH		220.0	BLH20011114ABD	72 02 04.0	206	582	Sheila E. Vinikoor		
265D	W265AT	LIC	DC_	28.2	63.14	43 23 45.0	0.013	0.2	10.3	61.3	52.9
Claremont		NH		208.4	BLFT20091013ADK	72 17 40.0	316	632	Great Eastern Radio, LLC		
259D	WNTK-FM1	LIC	_V_	27.3	59.26	43 22 08.0	0.055	0.5	4.8	57.1	54.4
Claremont		NH		207.6	BLFTB20090320AAJ	72 19 37.0		170	Sheila E. Vinikoor		

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
 Contour distances are on direct line to and from reference station. Reference zone= East Zone, Co to 3rd adjacent.  
 All separation margins (if shown) include rounding  
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
 "\*"affixed to 'IN' or 'OUT' values = site inside protected contour.  
 < = Station meets FCC minimum distance spacing for its class.  
 < = Contour Overlap

Green Text denotes the Auction 83 Application facility to be modified by this Form 349 Long-Form filing. This facility need not be protected.

Yellow highlighted text denotes a §74.1204(d) Second Adjacent Channel Given Interference Waiver Request toward WTHK(FM) - Wilmington, VT (CH264D) as included in **Exhibit(s) 13.6**. Full protection will be afforded the facility as the proposed interference area has been shown to be void of all population, housing, buildings, or major roads based on current USGS Aerial Photography.



The Interference Contour corresponding to the WTHK(FM) - Wilmington, VT Protected Contour at the proposed Translator site has been calculated to be no less than the 103.0 dBμ F(50:10) Interference Contour corresponding to the worst case WTHK(FM) 63.0 dBμ F(50:50) Protected Contour. This represents the proposed interference contour which falls wholly within the 40:1 dBu ratio. As seen on the map, there is a lack of population, housing, buildings or major roads within this 103.0 dBμ F(50:10) interference area. The applicant would like to note the existence of the dedicated transmitter building located at the proposed transmitter site. However, transmitter buildings of this nature have been exempt as a matter of FCC Policy.

## Exhibit 13.6

### §74.1204(d) Second Adjacent Channel Given Interference Waiver Request with WTHK(FM) - Wilmington, VT (CH264A)

103.0 dBμ F(50:10) Interference Contour

**Proposed Site**  
**42° 53' 45" NL**  
**72° 39' 49" WL**  
**NAD 1927**

(42-53-45.3NL; 72-39-47.3WL NAD83)



0 300 600ft



# Exhibit 13.7

## Proposed Directional Antenna Information

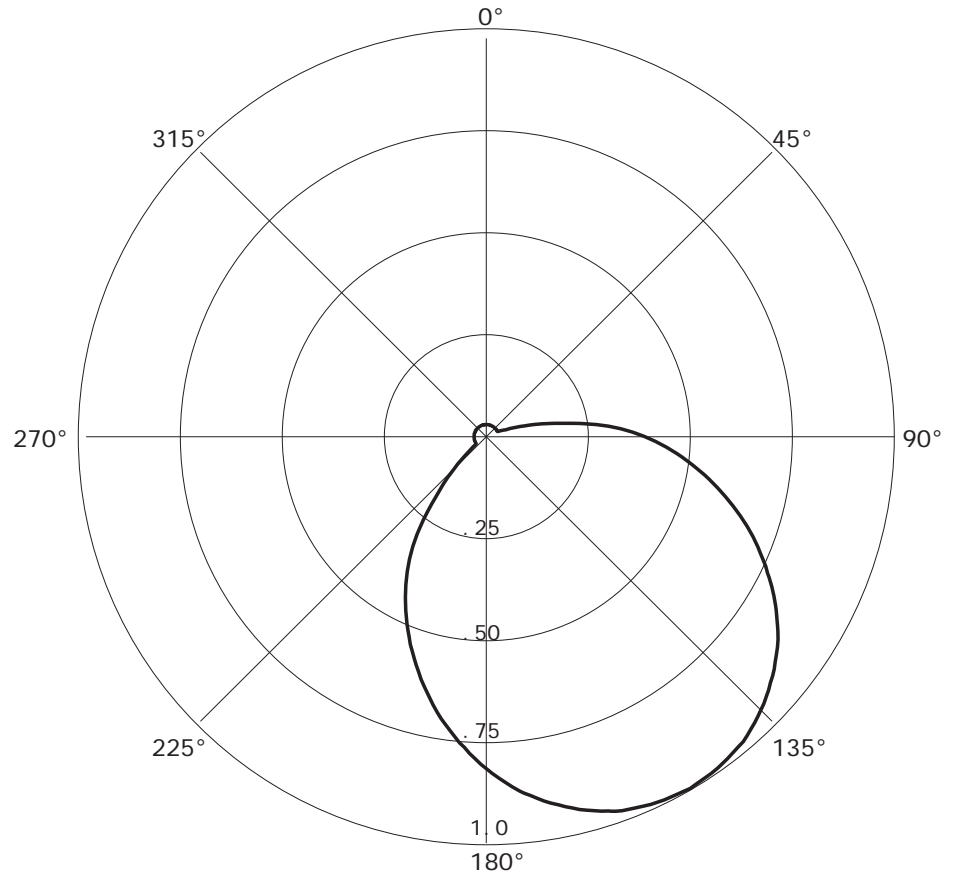
CH262D. P

08-02-2013

RMS(V) = .467

Graph is Relative Field

Azi	Field	dBk	kW
000	0.030	-40.246	0.000
010	0.030	-40.246	0.000
020	0.030	-40.246	0.000
030	0.030	-40.246	0.000
040	0.030	-40.246	0.000
050	0.030	-40.246	0.000
060	0.030	-40.246	0.000
070	0.050	-35.809	0.000
080	0.190	-24.213	0.004
090	0.390	-17.967	0.016
100	0.544	-15.076	0.031
110	0.690	-13.011	0.050
120	0.817	-11.544	0.070
130	0.916	-10.550	0.088
140	0.980	-09.964	0.101
150	1.000	-09.788	0.105
160	0.980	-09.964	0.101
170	0.916	-10.550	0.088
180	0.817	-11.544	0.070
190	0.690	-13.011	0.050
200	0.544	-15.076	0.031
210	0.390	-17.967	0.016
220	0.190	-24.213	0.004
230	0.050	-35.809	0.000
240	0.030	-40.246	0.000
250	0.030	-40.246	0.000
260	0.030	-40.246	0.000
270	0.030	-40.246	0.000
280	0.030	-40.246	0.000
290	0.030	-40.246	0.000
300	0.030	-40.246	0.000
310	0.030	-40.246	0.000
320	0.030	-40.246	0.000
330	0.030	-40.246	0.000
340	0.030	-40.246	0.000
350	0.030	-40.246	0.000



The antenna proposed in this application will be mounted in accordance with specific instructions provided by the antenna manufacturer. The antenna will be tested by the manufacturer using the type of mounting which will be employed in the field.

No other antennas of any type are or will be mounted on the same tower level as the directional antenna.

No antenna is or will be mounted within any vertical or horizontal distance specified by the antenna manufacturer as being necessary for proper operation of the directional antenna. In addition, the antenna will be assembled under the supervision of a qualified engineer and installed pursuant to the manufacturer's instructions and manufacturer specified antenna orientation.

The directional antenna will be a stock Scala CL-FM Log Periodic Antenna mounted at a 45 degree slant angle to achieve both vertical and horizontal polarization. Therefore the attached directional Antenna Pattern is a composite of both the Scala CL-FM (H) and Scala CL-FM(V) Stock Patterns.

# Exhibit 13.8 - Copy of GLOBE Terrain HAAT Calculation (from FCC.GOV)



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## Audio Division

(202)-418-2700

## Antenna Height Above Average Terrain (HAAT) / Contour Calculations

[FCC](#) > [MB](#) > [Audio Division](#) > [HAAT/Contour Calculations](#)

[FCC site map](#)

## Antenna Height Above Average Terrain Calculations -- Input

Latitude **42 53 45.0 North**  
Longitude **72 39 49.0 West** (NAD 27)

Height of antenna radiation center above mean sea level [RCAMSL] = **483.0** meters

Number of Evenly Spaced Radials = 12      0° is referenced to True North

## Results:

**Calculated HAAT= 133. meters**

(Antenna Height Above Average Terrain)  
using 1 km GLOBE terrain data)

## Antenna Radiation Center Heights Above Individual Radials:

0.0°	206.1 meters
30.0°	120.1 meters
60.0°	297.6 meters
90.0°	304.0 meters
120.0°	298.3 meters
150.0°	232.6 meters
180.0°	124.6 meters
210.0°	13.9 meters
240.0°	-58.4 meters
270.0°	-9.0 meters
300.0°	-0.9 meters
330.0°	68.1 meters

**New Antenna Height Above Average Terrain (HAAT) calculation?**