

ENGINEERING STATEMENT  
RE UPDATE FCC TRANSMITTER COORDINATES  
ON BEHALF OF  
VERMONT BROADCAST ASSOCIATES, INC.  
WMTK(FM), LITTLETON, NEW HAMPSHIRE  
CHANNEL 292A 0.39 KW ERP 372.3 METERS HAAT

APRIL 2021

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

Introduction

This engineering statement has been prepared on behalf of Vermont Broadcast Associates, Inc., licensee of FM radio station WMTK(FM) to provide updated transmitter coordinates.

The current license site coordinates are as follows:

North Latitude: 44° 21' 14.0"

West Longitude: 71° 44' 23.0"

NAD-27

North Latitude: 44° 21' 14.2"

West Longitude: 71° 44' 21.3"

NAD-83

The actual coordinates based on the antenna site registration number (1034698) are as follows:

North Latitude: 44° 21' 10.7"

West Longitude: 71° 44' 16.6"

NAD-27

North Latitude: 44° 21' 10.9"

West Longitude: 71° 44' 14.9"

NAD-83

Exhibit E-1 provides the antenna manufacturer's pattern data. There is no change proposed for the existing non-directional antenna.

Exhibit E-2 provides the existing specially negotiated agreement with Canada.

The transmitter coordinate update repositions the site 0.175 km to the southeast. The transmitter site elevation changes 9.8 meters lower. The antenna center of radiation changes accordingly. There are no other changes.

Table I provides the computed 3 to 16 km height above average terrain for the existing licensed site and the existing actual site. The height above average terrain values for the eight cardinal radials is based on TVStudy one-second terrain data.

Table II provides the computed allocation distances based on the redetermined transmitter site coordinates.

Table III provides computed contour data for the 70 dBu and 60 dBu contours along the eight cardinal radials for the updated transmitter site coordinates.

Exhibit E-3 provides a plot of that coverage data.

The existing tower is described in ASRN 1034698.

Overall Height Above Ground of Existing Tower	136.2 meters (446.9 feet)
Center of Radiation of FM Antenna Above Ground	119 meters (390.4 feet)
Elevation of Site Above Mean Sea Level	606.2 meters (1988.8 feet)
Center of Radiation of FM Antenna AMSL	725.2 meters (2379.3 feet)
Overall Height of Existing Tower AMSL	742.4 meters (2435.7 feet)
Antenna Height Above Average 8 cardinal radials	372.3 meters (1221.5 feet)

#### Radio Frequency Field Level

There are 3 licensed FM stations<sup>1</sup> within 0.1 km, one TV or TV translator station and no AM stations within 5 km.

The WMTK(FM) antenna is side-mounted on the existing tower with a radiation center of 119 meters above ground level.

---

<sup>1</sup>There is listed one FM translator, W217BH, which should not be of radio frequency significance. The following is abstracted from its filing in FCC File No. BPFT-20120209AAU, "The antenna structure is enclosed within a fence to prevent unauthorized access. The proposed operating parameters were entered into the FCC OET FM/FM Model Computer Model, FM Model predicts a maximum field density of 64 uw/cm<sup>2</sup> at a distance of 0.7 meters from the base of the mounting pole."

<u>Station</u>	<u>Status</u>	<u>Channel</u>
WMTK(FM)	Licensed	292A

The RFF contribution of this station will be calculated using the following formula:

$$S = \frac{33.4(F^2) \text{ Total ERP}}{R^2}$$

where:

S = power density in  $\mu\text{W}/\text{cm}^2$

F = relative field factor

Total ERP = ERP Horizontal Polarization + ERP Vertical Polarization

R = RCAGL - 2 meters

ERP = RMS ERP in watts for FM Stations

The tower site is located inside a chain link fence with a locked gate to prevent unauthorized access to the tower.

Finally, provisions will be made to reduce power or to terminate the transmitter emissions as appropriate when it is necessary for authorized personnel to climb the tower. WMTK(FM) will coordinate to ensure that workers will not be subjected to radio frequency field levels in excess of the current FCC guidelines listed in OET Bulletin No. 65, dated August 1997 and Supplement A.

#### WMTK(FM) FM Facility

Channel 292	Freq:	106.3 MHz
	ERP =	390 watts
	Polarization =	Horizontal + Vertical
	RCAGL -2 meters =	117 meters

WMTK(FM) is using a Harris, Type FML-2E antenna. The manufacturer's vertical plane pattern for this antenna (see Exhibit E-2) indicates that the field factor will be less than 0.53 at any angle greater than 20 degrees below the horizon. A value of 0.53 will be used in the calculation.

$$S = \frac{33.4(F^2) \text{ Tot ERP}}{R^2}$$

Tot ERP = 780 watts (Horizontal + Vertical)  
R = 117 meters  
F = 0.53 (field factor)

$$S = 0.5 \mu\text{W}/\text{cm}^2$$

WMTK(FM) contributes  $0.5 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment is  $200 \mu\text{W}/\text{cm}^2$  for a station broadcasting in the 30-300 MHz range.

Therefore:

WMTK(FM) facility contributes less than 0.3% RFF for an uncontrolled environment two meters above ground at the WMTK(FM) tower site.

WNYN-FM FM Facility

Channel 256	Freq:	99.1 MHz
	ERP =	450 watts
	Polarization =	Horizontal + Vertical
	RCAGL -2 meters =	83 meters

WNYN-FM is using a Shively, Type 6810-1D-DA, 1 section antenna. The manufacturer's vertical plane pattern for this antenna indicates that the field factor will be less than 0.52 at any angle greater than 60 degrees below the horizon. A value of 0.52 will be used in the calculation.

$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2}$	Tot ERP = 900 watts (Horizontal + Vertical)
	R = 83 meters
	F = 0.52 (field factor)

$S = <0.2 \mu\text{W}/\text{cm}^2$

WNYN-FM contributes  $<0.2 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment is  $200 \mu\text{W}/\text{cm}^2$  for a station broadcasting in the 30-300 MHz range.

Therefore:

WNYN-FM facility contributes less than 1% (one percent) RFF for an uncontrolled environment two meters above ground at the WNYN-FM tower site.

WEVQ(FM) FM Facility

Channel 220	Freq:	91.9 MHz
	ERP =	560 watts
	Polarization =	Horizontal + Vertical
	RCAGL -2 meters =	59 meters

WNYN-FM is using a Shively, Type 6810-2R-SS-DA, 2 bays, 0.5 wavelength spaced. The manufacturer's vertical plane pattern for this antenna indicates that the field factor will be less than 0.26 at any angle greater than 50 degrees below the horizon. A value of 0.26 will be used in the calculation.

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2}$$

Tot ERP = 1120 watts (Horizontal + Vertical)  
R = 59 meters  
F = 0.26 (field factor)

$$S = <1 \mu\text{W}/\text{cm}^2$$

WEVQ(FM) contributes  $<1 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment is  $200 \mu\text{W}/\text{cm}^2$  for a station broadcasting in the 30-300 MHz range.

Therefore:

WEVQ(FM) facility contributes less than  $<1\%$  (one percent) RFF for an uncontrolled environment two meters above ground at the WEVQ(FM) tower site.

- - - - -

TV station WLED-TV in the filing entitled, "Minor Modification to a Construction Permit, Broadcast Television Station" on Page 3, the following has been extracted, "The resulting RFR study in Appendix D demonstrates that the peak exposure is 0.16% of the most restrictive permissible exposure threshold."

---

Total RFF at Site

Therefore, all facilities contribute less than 5% RFF for an uncontrolled environment 2 meters above the ground in the vicinity of the WMTK(FM) tower site.

COHEN, DIPPELL AND EVERIST, P.C.

**EXHIBIT E-1**

ANTENNA MANUFACTURER DATA



Electronics Research, Inc.  
7777 Gardner Road  
Chandler, In. 47610

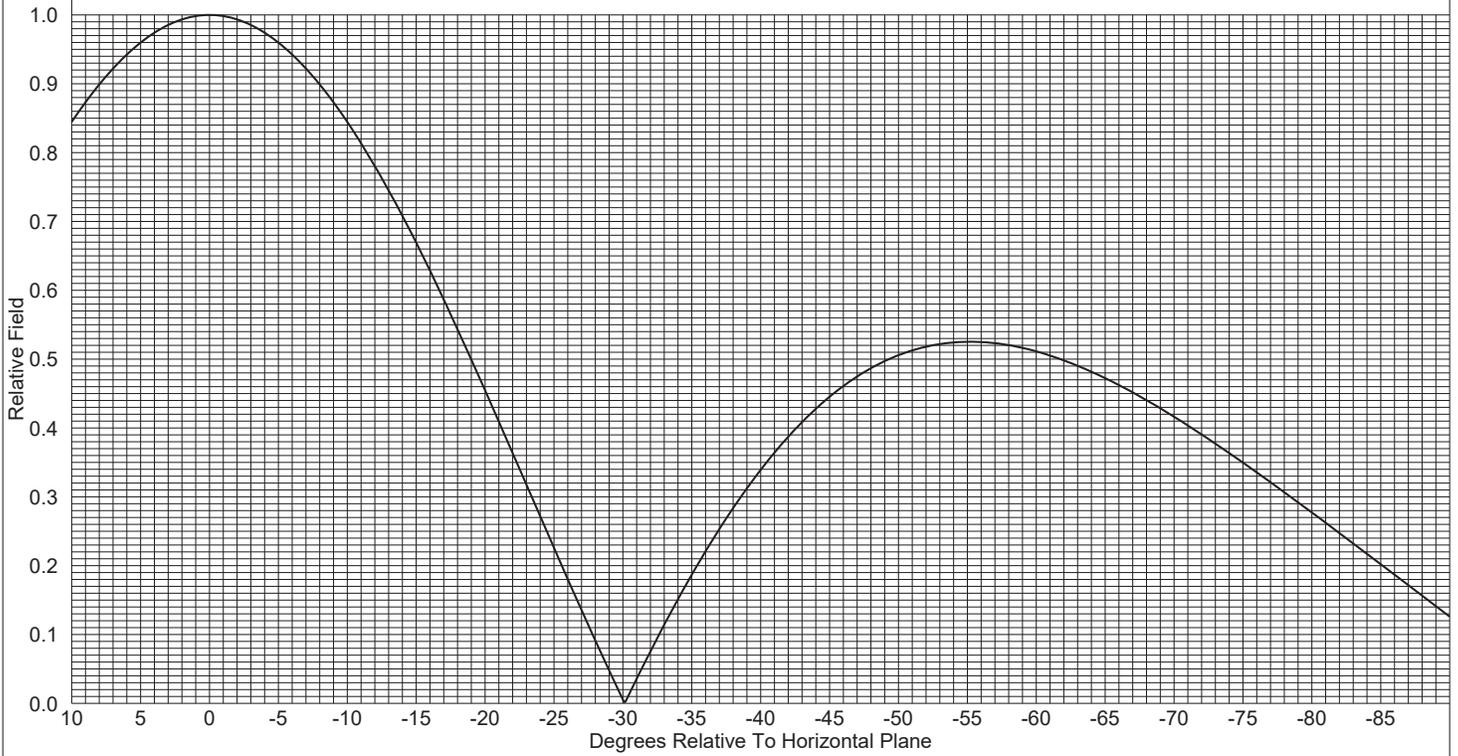
Figure 1

---Theoretical---

8/7/2020 3:01:40 PM

Vertical Plane Relative Field  
2 ERI Type FML End Fed Elements  
0.00 Degree(s) Electrical Beam Tilt  
0.0 Percent First Null Fill  
0.0 Percent Second Null Fill  
Power Gain is 0.997 In The Horizontal Plane(0.997 In The Max.)

Element Spacing:  
One Lambda





# ELEVATION TABULATED DATA

Type: FML-2E  
Polarization: Circular

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
90.00	0.126	-17.99	44.00	0.428	-7.37	-2.00	0.994	-0.06	-48.00	0.487	-6.25
89.00	0.141	-17.00	43.00	0.409	-7.78	-3.00	0.985	-0.13	-49.00	0.497	-6.07
88.00	0.156	-16.11	42.00	0.387	-8.24	-4.00	0.974	-0.23	-50.00	0.506	-5.92
87.00	0.172	-15.30	41.00	0.364	-8.77	-5.00	0.960	-0.36	-51.00	0.513	-5.80
86.00	0.187	-14.57	40.00	0.339	-9.39	-6.00	0.942	-0.51	-52.00	0.518	-5.71
85.00	0.202	-13.89	39.00	0.312	-10.11	-7.00	0.922	-0.70	-53.00	0.522	-5.65
84.00	0.217	-13.26	38.00	0.284	-10.94	-8.00	0.899	-0.93	-54.00	0.524	-5.61
83.00	0.232	-12.68	37.00	0.253	-11.93	-9.00	0.873	-1.18	-55.00	0.525	-5.59
82.00	0.247	-12.13	36.00	0.221	-13.12	-10.00	0.845	-1.47	-56.00	0.525	-5.60
81.00	0.262	-11.62	35.00	0.187	-14.56	-11.00	0.814	-1.79	-57.00	0.523	-5.63
80.00	0.277	-11.14	34.00	0.151	-16.40	-12.00	0.781	-2.15	-58.00	0.520	-5.67
79.00	0.292	-10.69	33.00	0.114	-18.84	-13.00	0.745	-2.55	-59.00	0.516	-5.74
78.00	0.307	-10.27	32.00	0.076	-22.42	-14.00	0.708	-3.00	-60.00	0.511	-5.83
77.00	0.321	-9.86	31.00	0.036	-28.95	-15.00	0.669	-3.49	-61.00	0.505	-5.93
76.00	0.336	-9.48	30.00	0.006	-45.12	-16.00	0.629	-4.03	-62.00	0.498	-6.05
75.00	0.350	-9.13	29.00	0.048	-26.39	-17.00	0.587	-4.63	-63.00	0.490	-6.19
74.00	0.364	-8.79	28.00	0.091	-20.80	-18.00	0.544	-5.30	-64.00	0.482	-6.34
73.00	0.377	-8.47	27.00	0.135	-17.37	-19.00	0.499	-6.03	-65.00	0.472	-6.51
72.00	0.391	-8.16	26.00	0.180	-14.88	-20.00	0.455	-6.85	-66.00	0.462	-6.70
71.00	0.404	-7.88	25.00	0.226	-12.93	-21.00	0.409	-7.76	-67.00	0.452	-6.90
70.00	0.416	-7.61	24.00	0.272	-11.32	-22.00	0.363	-8.79	-68.00	0.440	-7.12
69.00	0.429	-7.36	23.00	0.317	-9.97	-23.00	0.317	-9.97	-69.00	0.429	-7.36
68.00	0.440	-7.12	22.00	0.363	-8.79	-24.00	0.272	-11.32	-70.00	0.416	-7.61
67.00	0.452	-6.90	21.00	0.409	-7.76	-25.00	0.226	-12.93	-71.00	0.404	-7.88
66.00	0.462	-6.70	20.00	0.455	-6.85	-26.00	0.180	-14.88	-72.00	0.391	-8.16
65.00	0.472	-6.51	19.00	0.499	-6.03	-27.00	0.135	-17.37	-73.00	0.377	-8.47
64.00	0.482	-6.34	18.00	0.544	-5.30	-28.00	0.091	-20.80	-74.00	0.364	-8.79
63.00	0.490	-6.19	17.00	0.587	-4.63	-29.00	0.048	-26.39	-75.00	0.350	-9.13
62.00	0.498	-6.05	16.00	0.629	-4.03	-30.00	0.006	-45.12	-76.00	0.336	-9.48
61.00	0.505	-5.93	15.00	0.669	-3.49	-31.00	0.036	-28.95	-77.00	0.321	-9.86
60.00	0.511	-5.83	14.00	0.708	-3.00	-32.00	0.076	-22.42	-78.00	0.307	-10.27
59.00	0.516	-5.74	13.00	0.745	-2.55	-33.00	0.114	-18.84	-79.00	0.292	-10.69
58.00	0.520	-5.67	12.00	0.781	-2.15	-34.00	0.151	-16.40	-80.00	0.277	-11.14
57.00	0.523	-5.63	11.00	0.814	-1.79	-35.00	0.187	-14.56	-81.00	0.262	-11.62
56.00	0.525	-5.60	10.00	0.845	-1.47	-36.00	0.221	-13.12	-82.00	0.247	-12.13
55.00	0.525	-5.59	9.00	0.873	-1.18	-37.00	0.253	-11.93	-83.00	0.232	-12.68
54.00	0.524	-5.61	8.00	0.899	-0.93	-38.00	0.284	-10.94	-84.00	0.217	-13.26
53.00	0.522	-5.65	7.00	0.922	-0.70	-39.00	0.312	-10.11	-85.00	0.202	-13.89
52.00	0.518	-5.71	6.00	0.942	-0.51	-40.00	0.339	-9.39	-86.00	0.187	-14.57
51.00	0.513	-5.80	5.00	0.960	-0.36	-41.00	0.364	-8.77	-87.00	0.172	-15.30
50.00	0.506	-5.92	4.00	0.974	-0.23	-42.00	0.387	-8.24	-88.00	0.156	-16.11
49.00	0.497	-6.07	3.00	0.985	-0.13	-43.00	0.409	-7.78	-89.00	0.141	-17.00
48.00	0.487	-6.25	2.00	0.994	-0.06	-44.00	0.428	-7.37	-90.00	0.126	-17.99
47.00	0.475	-6.47	1.00	0.998	-0.01	-45.00	0.445	-7.03			
46.00	0.461	-6.73	0.00	1.000	0.00	-46.00	0.461	-6.73			
45.00	0.445	-7.03	-1.00	0.998	-0.01	-47.00	0.475	-6.47			



Electronics Research, Inc.  
7777 Gardner Road  
Chandler, In. 47610

End Fed Full Wavelength Spaced Array

8/7/2020 3:03:24 PM

COHEN, DIPPELL AND EVERIST, P.C.

**EXHIBIT E-2**

SPECIALLY NEGOTIATED AGREEMENT



Industry Canada Industrie Canada

Ottawa, Canada  
K1A 0C8

RECEIVED

FEB 07 1994

POLICY & RULES DIVISION

Your file Votre référence

Our file Notre référence

6116-2 (DBC-E)

REGISTERED - AIR MAIL

January 19, 1993

Mr. Douglas W. Webbink  
Chief, Policy and Rules Division  
Mass Media Bureau  
Federal Communications Commission  
2025 M Street, N.W.  
Washington, D.C. 20554, U.S.A.

Dear Mr. Webbink:

This is in reply to your letter dated November 4, 1993, file 8119-JKM, requesting comments on the following proposed amendments to Table B of the Working Arrangement pursuant to the Canada-U.S.A. FM Broadcasting Agreement:

<u>Location</u>	<u>Channel Number</u>	
	<u>Delete</u>	<u>Add</u>
Greenfield, MA 42-41-50NL, 72-36-20WL	237A	237B1
Adrian, MI 41-48-15NL, 84-05-25WL	237A	237B1
Battle Creek, MI 42-17-31NL, 85-10-59WL	237A	237B1
Benton Harbor, MI 42-04-19NL, 86-22-14WL	235A	235B1
Saginaw, MI 43-28-38NL, 83-57-00WL	292A	292B1*
Whitehall, MI 43-21-14NL, 86-19-38WL	237A	237B1
Littleton, NH 44-21-14NL, 71-44-23WL	292B1*(L)	292B1*(L1)
Elmira, NY 42-07-49NL, 76-47-23WL	232A	232B1
Kingston, NY 41-53-44NL, 73-59-32WL	232A	232B1

.../2



Lake Luzerne, NY	234A	234B1
43-17-22NL, 73-44-35WL		
Rochester, NY	290A	290B1*
43-09-35NL, 77-34-44WL		
Ada, OH	235A	235B1
40-45-58NL, 83-50-14WL		
Celina, OH	232A	232B1
40-33-08NL, 84-30-46WL		
Kenton, OH	237A	237B1
40-38-41NL, 83-33-59WL		
Millersburg, OH	237A	237B1
40-29-07NL, 81-50-40WL		
Bellefonte, PA	237A	237B1
40-53-32NL, 77-51-49WL		
Bradford, PA	261A	261B1*
41-58-12NL, 78-42-03WL		
Cresson, PA	232A	232B1
40-27-55NL, 78-31-17WL		
Olyphant, PA	239A	239B1
41-26-10NL, 75-43-45WL		
Patton, PA	234A	234B1
40-42-03NL, 78-37-26WL		
Port Allegany, PA	235A	235B1
41-48-36NL, 78-23-10WL		
Shamokin, PA	237A	237B1
40-45-36NL, 76-32-19WL		
State College, PA	233A	233B1
40-54-04NL, 77-50-20WL		
Tioga, PA	234A	234B1
41-54-36NL, 77-00-40WL		
Barre, VT	296A	296B1*
44-09-30NL, 72-28-46WL		
Bennington, VT	232A	232B1
42-56-52NL, 73-10-36WL		
St. Johnsbury, VT	288A	288B1*(L2)
44-24-38NL, 71-58-13WL		

\* Specially-negotiated, short-spaced allotment.

(L1) Limited to 17.8 kw ERP and 100m HAAT or the equivalent along the 339.8 degree azimuth towards channel 291B\* in Magog, QU.

(L2) Limited to 8.1 kw ERP and 100m HAAT or the equivalent along the 8 degree azimuth towards channel 288B\*(L) in Thetford Mines, QU.

This Administration has no objection to the above proposals and Table B will be amended accordingly.

Please note that no limits are required for the St. Johnsbury, VT channel 288B1\* since the channel 288 in Thetford Mines is now a class A allotment.

Sincerely,



W.R. Dormer  
A/Director  
Broadcast Applications Engineering  
Broadcasting Regulation Branch

c.c. Jim Ballis

TABLE I  
SITE INFORMATION FOR THE CURRENT  
LICENSE SITE AND THE ACTUAL TRANSMITTER SITE  
AND THE EIGHT CARDINAL RADIALS  
APRIL 2021

<u>WMTK License</u>		<u>WMTK New Site</u>	
735 Meters R/C AMSL		725.2 Meters R/C AMSL	
North Latitude: 44° 21' 14.0"		North Latitude: 44° 21' 10.7"	
West Longitude: 71° 44' 23.0"		West Longitude: 71° 44' 16.6"	
NAD-27		NAD-27	
North Latitude: 44° 21' 14.2"		North Latitude: 44° 21' 10.9"	
West Longitude: 71° 44' 21.3"		West Longitude: 71° 44' 14.9"	
NAD-83		NAD-83	
(Licensed)		(New Coordinates)	
<u>Azimuth</u>	<u>HAAT</u>	<u>Azimuth</u>	<u>HAAT</u>
N ° E, T	meters	N ° E, T	meters
0	362.1	0	351.7
45	337.5	45	330.5
90	382.9	90	372.6
135	368.3	135	356.3
180	373.5	180	361.3
225	407.0	225	411.4
270	431.9	270	425.8
315	382.3	315	366.9
Average	380.7 <sup>1</sup>	Average	372.3

Based on TVStudy one-second terrain data.

<sup>1</sup>License specifies 383 meters.

COHEN, DIPPELL AND EVERIST, P.C.

TABLE II  
COMPUTED DISTANCE SEPARATION STUDY  
OCTOBER 2020

<u>Call Sign</u>	<u>State</u>	<u>City</u>	<u>Freq</u>	<u>ERP</u> watts	<u>Class</u>	<u>Status</u>	<u>Distance</u> km	<u>Sep</u>	<u>Clr</u>
CIMOFM	QC	MAGOG	106.1	1600	B	CP	113.64	132	-18.4
WHDQ	NH	CLAREMONT	106.1	1600	B	LIC	116.81	113	3.8
WNBZ-FM	NY	SARANAC	106.3	1470	C2	LIC	174.59	166	8.6
WDOT	VT	DANVILLE	95.7	3800	A	LIC	26.36	10	16.4
WVTI	VT	BRIGHTON	106.9	1420	A	LIC	49.19	31	18.2
WMTK-FM1	VT	ST. JOHNSBURY	106.3	99	D	CP MOD	21.36	0	21.4
MM-FM325-A	VT	HARDWICK	105.9	0	A		53.21	31	22.2
WHXR	ME	SCARBOROUGH	106.3	3000	A	LIC	138.75	115	23.8
WLKC	NH	CAMPTON	105.7	4100	A	LIC	66.1	31	35.1

TABLE III  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED FM OPERATION OF  
WMTK(FM), LITTLETON, NEW HAMPSHIRE  
CHANNEL 292A 0.39 KW ERP 372.3 METERS HAAT  
APRIL 2021

<u>Radial</u> <u>Bearing</u> (N ° E, T)	<u>Average*</u>	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u> degrees	<u>ERP At</u> <u>Radio</u> <u>Horizon</u> kW	<u>Distance to Contour</u>	
	<u>Elevation</u> <u>3.2 to 16.1 km</u> meters				<u>70 dBu</u> km	<u>60 dBu</u> km
0	373.3	351.9	0.520	0.39	15.3	27.1
10	378.0	347.2	0.516	0.39	15.2	26.9
20	382.7	342.5	0.513	0.39	15.1	26.7
30	387.4	337.8	0.509	0.39	15.0	26.5
40	392.1	333.1	0.506	0.39	14.9	26.4
50	389.8	335.4	0.507	0.39	14.9	26.5
60	380.5	344.7	0.514	0.39	15.2	26.8
70	371.1	354.1	0.521	0.39	15.4	27.2
80	361.8	363.4	0.528	0.39	15.6	27.5
90	352.4	372.8	0.535	0.39	15.8	27.9
100	356.0	369.2	0.532	0.39	15.7	27.7
110	359.6	365.6	0.530	0.39	15.6	27.6
120	363.3	361.9	0.527	0.39	15.5	27.5
130	366.9	358.3	0.524	0.39	15.5	27.3
140	368.1	357.1	0.523	0.39	15.4	27.3
150	367.0	358.2	0.524	0.39	15.4	27.3
160	365.9	359.3	0.525	0.39	15.5	27.4
170	364.8	360.4	0.526	0.39	15.5	27.4
180	363.7	361.5	0.527	0.39	15.5	27.5
190	352.5	372.7	0.535	0.39	15.8	27.9
200	341.4	383.8	0.543	0.39	16.0	28.2
210	330.3	394.9	0.550	0.39	16.2	28.6
220	319.1	406.1	0.558	0.39	16.4	29.0
230	312.0	413.2	0.563	0.39	16.6	29.2
240	308.8	416.4	0.565	0.39	16.6	29.3
250	305.6	419.6	0.567	0.39	16.7	29.4
260	302.4	422.8	0.570	0.39	16.8	29.5
270	299.2	426.0	0.572	0.39	16.8	29.7
280	312.3	412.9	0.563	0.39	16.6	29.2

\*Based on one-second terrain database from TVStudy.

TABLE III  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED FM OPERATION OF  
WMTK(FM), LITTLETON, NEW HAMPSHIRE  
CHANNEL 292A 0.39 KW ERP 372.3 METERS HAAT  
APRIL 2021

<u>Radial</u> <u>Bearing</u> (N ° E, T)	<u>Average*</u> <u>Elevation</u> <u>3.2 to 16.1 km</u>	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u> degrees	<u>ERP At</u> <u>Radio</u> <u>Horizon</u> kW	<u>Distance to Contour</u>	
	meters				<u>70 dBu</u> km	<u>60 dBu</u> km
290	325.4	399.8	0.554	0.39	16.3	28.8
300	338.5	386.8	0.545	0.39	16.0	28.3
310	351.5	373.7	0.535	0.39	15.8	27.9
320	359.8	365.4	0.530	0.39	15.6	27.6
330	363.1	362.1	0.527	0.39	15.5	27.5
340	366.5	358.7	0.525	0.39	15.5	27.4
350	369.9	355.3	0.522	0.39	15.4	27.2

\*Based on one-second terrain database from TVStudy.

COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS Washington DC

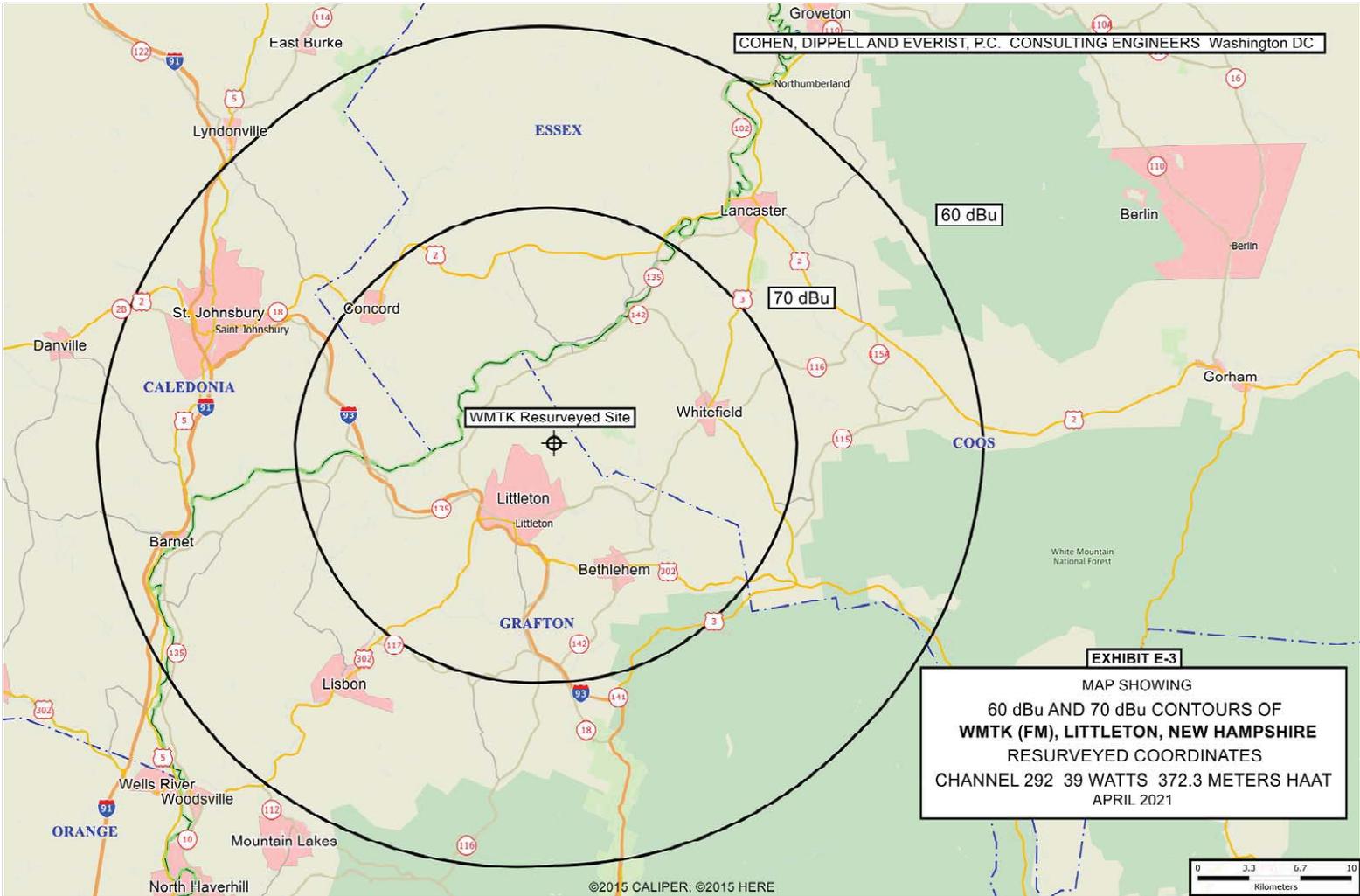


EXHIBIT E-3  
MAP SHOWING  
60 dBu AND 70 dBu CONTOURS OF  
WMTK (FM), LITTLETON, NEW HAMPSHIRE  
RESURVEYED COORDINATES  
CHANNEL 292 39 WATTS 372.3 METERS HAAT  
APRIL 2021