

# Exhibit 13.1 - Copy of Existing Antenna Structure Registration



## Registration Detail

Reg Number	1219887	Status	Constructed
File Number	A0659845	Constructed	07/15/1938
EMI	No	Dismantled	
NEPA	No		

## Antenna Structure

Structure Type 3TA3 - Antenna Tower Array - 1st N = # towers 2nd N =

### Location (in NAD83 Coordinates)

Lat/Long	43-41-26.4 N 070-19-03.0 W	Address	Lane Avenue, 0.12 mi SE of Pankin Rd & I-95
City, State	Portland , ME		
Zip	04103	County	CUMBERLAND
Center of AM Array	43-41-24.3 N 070-19-03.2 W	Position of Tower in Array	

## Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
21.6	109.7
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
131.3	108.8

## Painting and Lighting Specifications

FCC Paragraphs 1, 3, 12, 21

## FAA Notification

FAA Study	2005-ANE-172-OE	FAA Issue Date	03/11/2005
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## Owner & Contact Information

FRN	0009269424	Owner Entity Type	
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### Owner

Saga Communications of New England, LLC  
Attention To: Gregory Urbiel  
73 Kercheval Avenue, Suite 201  
Grosse Pointe Farms , MI 48236

P: (313)886-7070  
F:  
E: gurbiel@sagacom.com

### Contact

Smithwick , Gary S Esq  
5028 Wisconsin Avenue NW, Suite 301  
Washington , DC 20016

P: (202)363-4050  
F:  
E: gsmithwick@fccworld.com

## Last Action Status

Status	Constructed	Received	12/14/2009
Purpose	Notification	Entered	12/14/2009
Mode	Interactive		

## Related Applications

12/14/2009 A0659845 - Notification (NT)  
09/05/2008 A0608453 - Modification (MD)  
06/22/2005 A0452809 - Admin Update (AU)

Related applications (8)

## Comments

### Comments

None

## History

Date	Event
09/17/2011	Registration Printed
09/16/2011	Duplicate Registration Request Received
09/16/2011	Supersede - Internal Correction Applied

All History (22)

## Automated Letters

09/17/2011 Authorization, Reference  
09/09/2009 Construction Reminder, Reference 633381  
09/06/2008 Authorization, Reference

All letters (9)

## Exhibit 13.2

### Vertical Plan of Antenna System

The site is located on Lane Ave, 0.12 miles southeast of Pankin Road and I-95; the city of Portland, Cumberland County, Maine.

#### Site Location (NAD 27)

NL: 43° 41' 26"

WL: 70° 19' 05"

(43-41-26.4NL; 70-19-03.0WL NAD1983)

#### NOTE: Existing Tower Construction

Antenna Structure Registration No.

**1219887**

#### WYNZ(FM) Antenna

126 meters AMSL

104 meters AGL

#### WQAH638/WQAF915

STL Antenna

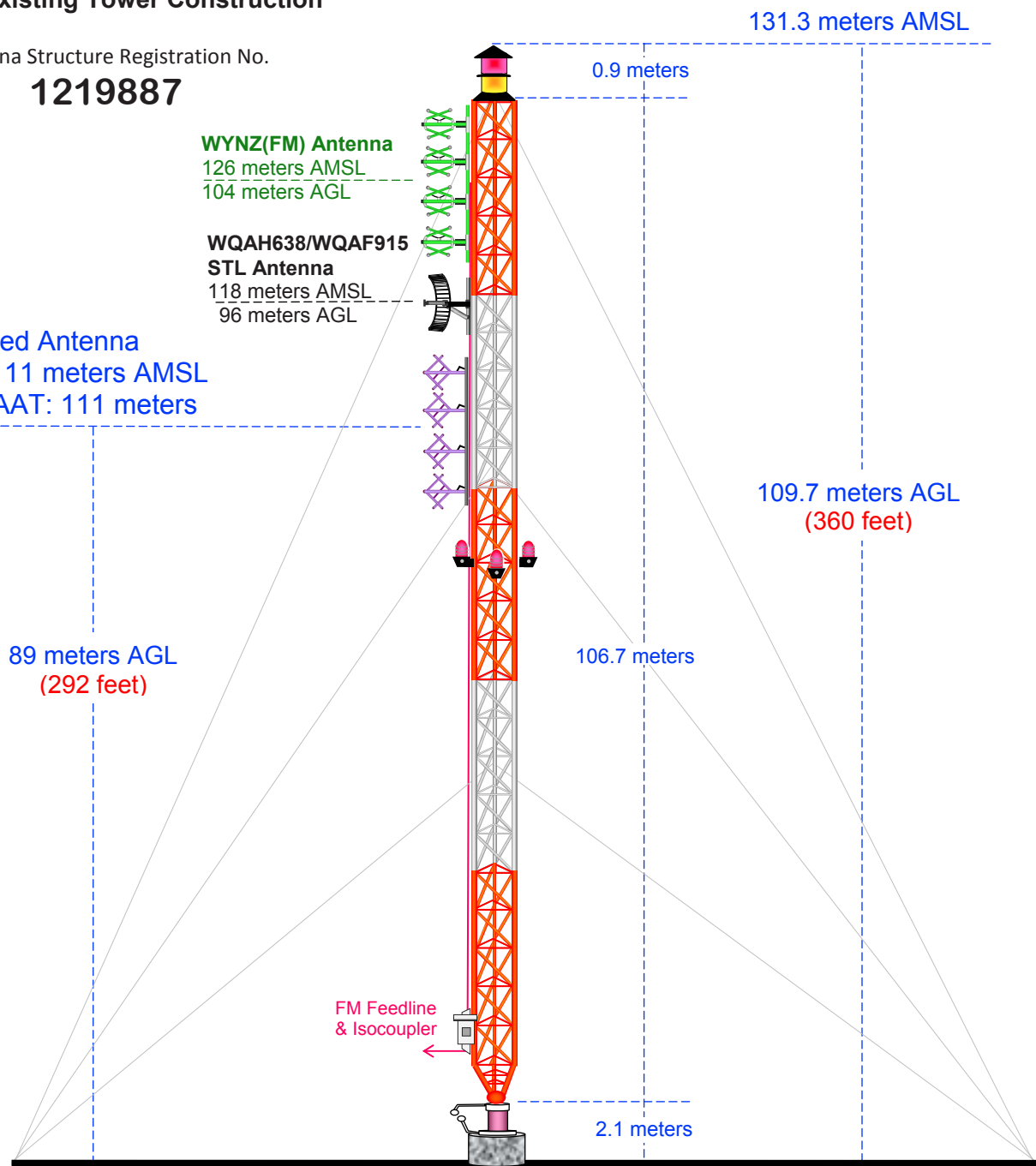
118 meters AMSL

96 meters AGL

#### Proposed Antenna

COR: 111 meters AMSL

max HAAT: 111 meters



Ground Elevation = 21.6 m AMSL

Drawing is not to Scale

**MUNN-REESE, INC.**

Broadcast Engineering Consultants  
Coldwater, MI 49036

Terrain  
-2 178 m

NGDC 30 SEC Terrain Database  
U.S. Census 2010 PL Database

## Exhibit 13.3 Present vs. Proposed Service Contour Study

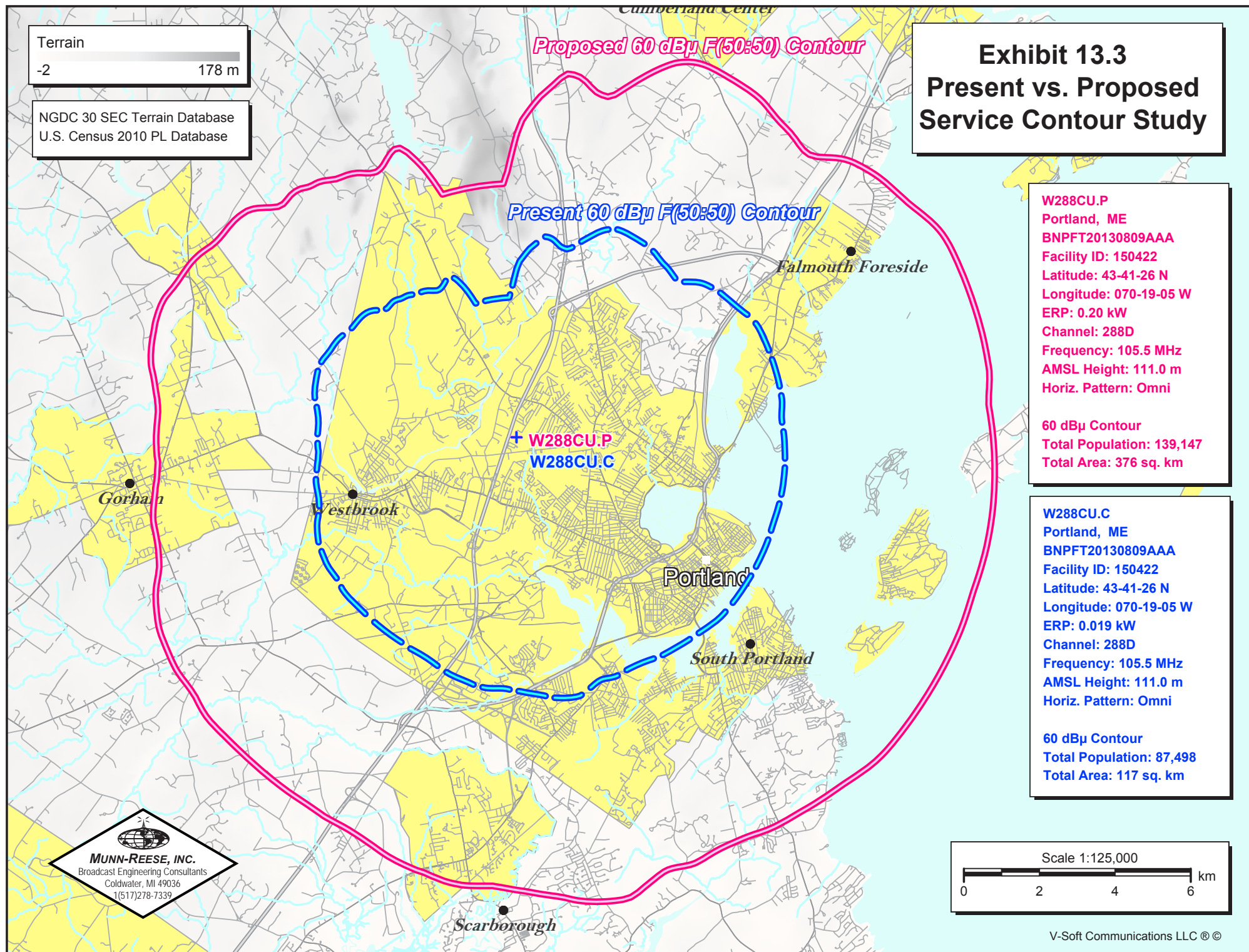
**W288CU.P**  
Portland, ME  
BNPFT20130809AAA  
Facility ID: 150422  
Latitude: 43-41-26 N  
Longitude: 070-19-05 W  
ERP: 0.20 kW  
Channel: 288D  
Frequency: 105.5 MHz  
AMSL Height: 111.0 m  
Horiz. Pattern: Omni

**60 dBμ Contour**  
Total Population: 139,147  
Total Area: 376 sq. km

**W288CU.C**  
Portland, ME  
BNPFT20130809AAA  
Facility ID: 150422  
Latitude: 43-41-26 N  
Longitude: 070-19-05 W  
ERP: 0.019 kW  
Channel: 288D  
Frequency: 105.5 MHz  
AMSL Height: 111.0 m  
Horiz. Pattern: Omni

**60 dBμ Contour**  
Total Population: 87,498  
Total Area: 117 sq. km

Scale 1:125,000  
0 2 4 6 km



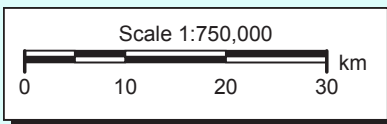
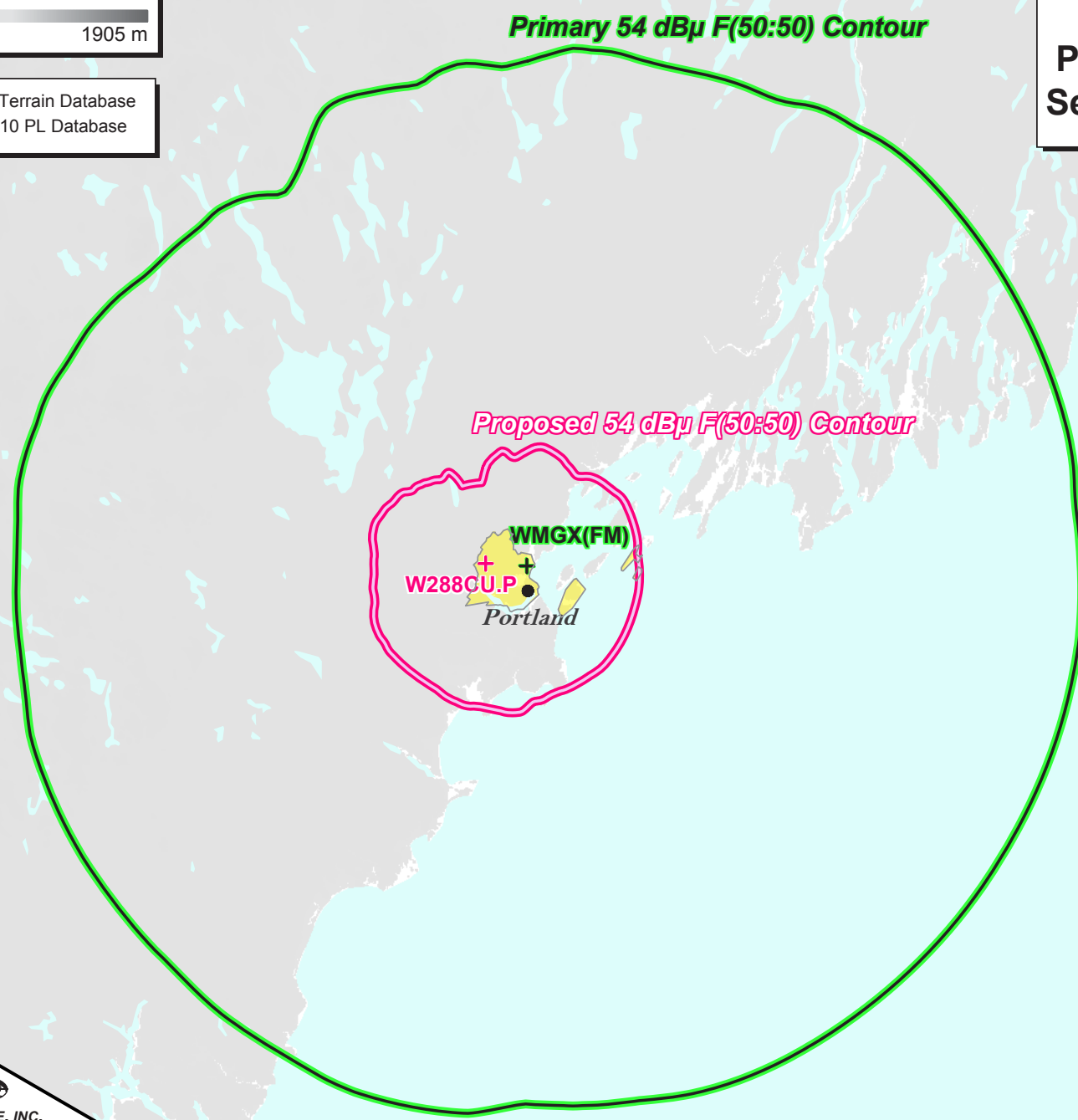


NGDC 30 SEC Terrain Database  
U.S. Census 2010 PL Database

# Exhibit 13.4 Proposed vs Primary Service Contour Study

**W288CU.P**  
Portland, ME  
BNPFT20130809AAA  
Facility ID: 150422  
Latitude: 43-41-26 N  
Longitude: 070-19-05 W  
ERP: 0.20 kW  
Channel: 288D  
Frequency: 105.5 MHz  
AMSL Height: 111.0 m  
Horiz. Pattern: Omni

**WMGX(FM)**  
Portland, ME  
BLH20050428AAH  
Facility ID: 58548  
Latitude: 43-41-17 N  
Longitude: 070-15-27 W  
ERP: 50.00 kW  
Channel: 226B  
Frequency: 93.1 MHz  
AMSL Height: 158.0 m  
Horiz. Pattern: Omni





# Exhibit 13.5

## Tabulation of Proposed Translator Allocation

Radio Assist Ministry, Inc.																	
REFERENCE		CH#	288D	-	105.5	MHz,	Pwr=	0.2	kW,	HAAT=	80.0	M,	COR=	111	M	DI SPLAY DATES	
43 41 26.0 N.		Average Protected F(50-50)= 10.97 km												DATA		12-23-13	
70 19 05.0 W.		Omni -directional												SEARCH		12-23-13	
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)							
288D	W288CU	CP	C	0.0	0.00	43 41 26.0	0.019	14.0	4.4	-22.0*	-31.1*						
Portland	ME			0.0	BNPFT20130809AAA	70 19 05.0	80	111	Radio Assist Ministry, Inc								
290B	WBCI	LIC	CN	36.7	52.60	44 04 09.0	50.000	6.0	65.5	35.6	-14.5*<						
Bath	ME			217.0	BLH7422	69 55 28.0	152	213	Blount Communications, Inc								
Grandfathered 50.0 kw @ 152 m																	
288D	W288CW	CP	C	6.8	47.52	44 06 54.0	0.250	41.6	12.1	-3.6<	3.9						
Lewiston	ME			186.8	BNPFT20130814ADL	70 14 52.0	58	162	Edgewater Broadcasting, Inc								
286D	1561506	APP	DC	203.1	17.72	43 32 38.0	0.013	0.1	4.1	6.3	12.6						
Saco	ME			23.1	BNPFT20030313AFV	70 24 16.0	106	127	Bible Broadcasting Networ								
286D	1566718	APP	DC	203.1	17.72	43 32 38.0	0.013	0.1	4.1	6.3	12.6						
Saco	ME			23.1	BNPFT20130802ABQ	70 24 16.0	106	127	Bible Broadcasting Networ								
288B1	WBYA	LIC	ZCN	56.7	128.29	44 18 58.0	25.000	102.8	31.3	13.5	48.4						
Islesboro	ME			237.6	BLH19990202KB	68 58 12.0	93	142	Wbin Media Co., Inc.								
287A	WSHK	LIC	CN	213.2	68.46	43 10 28.0	2.200	30.6	20.8	26.7	31.7						
Kittery	ME			32.9	BLH19921030KC	70 46 50.0	113	142	Townsquare Media Portsmout								
288A	WJYY	LIC	CN	244.9	106.03	43 16 46.0	1.550	68.5	22.0	27.0	48.5						
Concord	NH			64.1	BLH19871005KD	71 30 15.0	139	298	Wbin Media Co., Inc.								
289A	WLKC	LIC	ZCX	274.7	107.31	43 45 45.0	4.100	47.1	31.2	50.7	62.9						
Campton	NH			93.8	BLH20061012ABU	71 39 00.0	119	412	Devon Broadcasting Company								
285A	WLKZ	LIC	CX	259.7	86.85	43 32 45.3	0.560	1.5	31.1	75.6	54.8						
Wolfeboro	NH			79.0	BLH20110228ABN	71 22 42.8	325	560	Great Eastern Radio, Lic								
286C	WTOS-FM	LIC	CX	0.1	149.10	45 01 54.0	57.000	11.9	88.4	129.2	59.7						
Skowhegan	ME			180.1	BLH20020905AAI	70 18 50.0	747	1324	Blueberry Broadcasting, LI								
288A	WKXH	LIC	C	301.8	154.39	44 24 38.0	1.250	77.7	26.6	67.2	96.2						
St. Johnsbury	VT			120.7	BLH20031205ACR	71 58 13.0	217	552	Vermont Broadcast Associat								

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.  
 < = Contour Overlap  
 Reference station has protected zone issue:

Green Text denotes the W288CU.C - Portland, ME facility to be modified by this Form 349 filing. This facility need not be protected.

Blue Highlighted Text denotes supplemental contour protection studies toward select facilities as included in **Exhibit(s) 13.6**.

Yellow Highlighted text denotes a §74.1204(d) waiver request for Second Adjacent Channel Given Interference toward WBCI(FM) - Bath, ME (CH290B). The portion of the §74.1204(d) WBCI(FM) - Bath, ME (CH290B) protection from 145 meters to the extent of the calculated 100.0 dBμ F(50:10) interference contour have been demonstrated through a downward radiation study as included in **Exhibit 13.7a**. Full protection will be afforded WBCI(FM) from 145 meters to the extent of the calculated 100.0 dBμ F(50:10) interference contour as this area will not reach the ground nor a two meter artificial plane representing a standard human at ground level when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications has been included in **Exhibit 13.8**. The portion of the §74.1204(d) WBCI(FM) protection within 145 meters of the site are currently void of population, buildings (with the exception of the dedicated transmitter building) or major roads as noted in **Exhibit 13.7b**.

## Exhibit 13.6

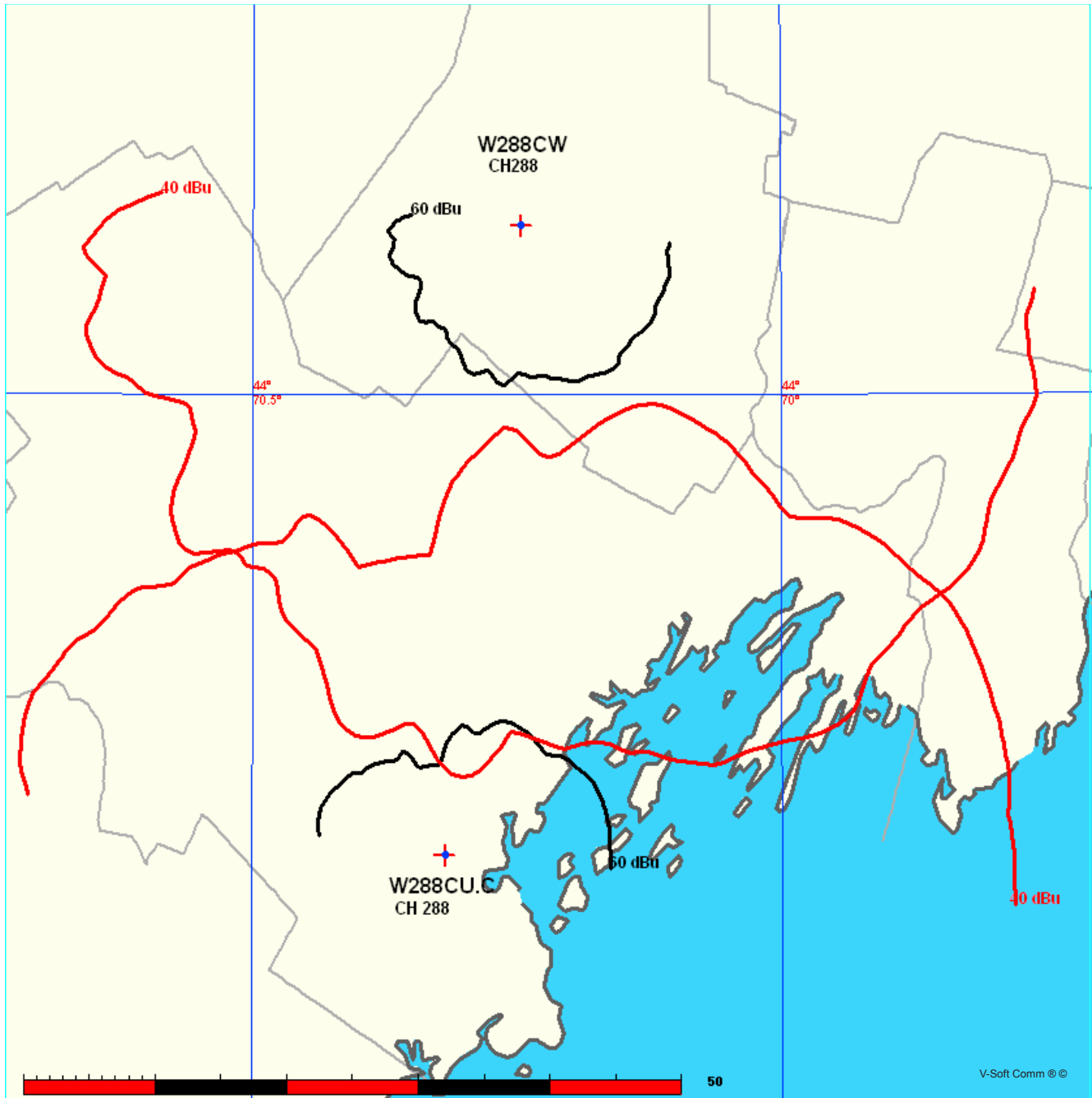
### Contour Protection Studies Toward W288CW.C Lewiston, ME

Radio Assist Ministry, Inc.

FMCommander Single Allocation Study - 12-23-2013 - NGDC 30 SEC  
W288CU.C's Overlaps (In= -3.63 km, Out= 3.88 km)

W288CU.C CH 288 D  
Lat= 43 41 26.0, Lng= 70 19 05.0  
0.2 kW 80 M HAAT, 111 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

W288CW CH 288 D BNPFT20130814ADL  
Lat= 44 06 54.0, Lng= 70 14 52.0  
0.25 kW 58.2 M HAAT, 162 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



# Exhibit 13.6

## Contour Protection Studies Toward W288CW.C Lewiston, ME

01-02-2014

Terrain Data: NGDC 30 SEC

FMOver Analysis

W288CU.P

W288CW BNPFT20130814ADL

Channel = 288D  
Max ERP = 0.2 kW  
RCAMSL = 111 M  
N. Lat. 43 41 26.0  
W. Lng. 70 19 05.0  
Protected  
60 dBu

Channel = 288D  
Max ERP = 0.25 kW  
RCAMSL = 162 M  
N. Lat. 44 06 54.0  
W. Lng. 70 14 52.0  
Interfering  
40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
323.0	000.2000	0047.5	008.5	194.9	000.2500	0079.3	041.8	39.06	
324.0	000.2000	0046.7	008.4	194.7	000.2500	0078.8	041.8	39.04	
325.0	000.2000	0046.0	008.3	194.5	000.2500	0078.4	041.7	39.02	
326.0	000.2000	0045.6	008.3	194.3	000.2500	0078.0	041.6	39.01	
327.0	000.2000	0045.4	008.3	194.1	000.2500	0077.6	041.5	39.01	
328.0	000.2000	0044.9	008.2	194.0	000.2500	0077.2	041.4	39.00	
329.0	000.2000	0044.3	008.1	193.7	000.2500	0076.8	041.4	38.97	
330.0	000.2000	0043.5	008.0	193.5	000.2500	0076.3	041.4	38.93	
331.0	000.2000	0042.7	008.0	193.3	000.2500	0075.9	041.3	38.90	
332.0	000.2000	0042.3	007.9	193.1	000.2500	0075.6	041.3	38.89	
333.0	000.2000	0042.5	007.9	193.0	000.2500	0075.4	041.2	38.91	
334.0	000.2000	0043.1	008.0	192.9	000.2500	0075.2	041.0	38.95	
335.0	000.2000	0044.0	008.1	192.8	000.2500	0075.1	040.9	39.01	
336.0	000.2000	0044.9	008.2	192.7	000.2500	0075.1	040.7	39.06	
337.0	000.2000	0045.5	008.3	192.6	000.2500	0075.0	040.6	39.11	
338.0	000.2000	0045.2	008.2	192.4	000.2500	0074.8	040.5	39.12	
339.0	000.2000	0043.5	008.1	192.1	000.2500	0074.8	040.6	39.08	
340.0	000.2000	0040.9	007.8	191.8	000.2500	0075.0	040.7	39.05	
341.0	000.2000	0038.0	007.5	191.4	000.2500	0075.6	040.9	39.03	
342.0	000.2000	0034.2	007.1	191.0	000.2500	0076.6	041.2	39.03	
343.0	000.2000	0028.9	006.7	190.6	000.2500	0077.8	041.5	39.04	
344.0	000.2000	0023.8	006.7	190.4	000.2500	0078.3	041.4	39.11	
345.0	000.2000	0020.5	006.7	190.3	000.2500	0078.8	041.4	39.18	
346.0	000.2000	0018.0	006.7	190.1	000.2500	0079.3	041.3	39.25	
347.0	000.2000	0014.6	006.7	190.0	000.2500	0079.8	041.3	39.33	
348.0	000.2000	0011.9	006.7	189.8	000.2500	0080.4	041.2	39.40	
349.0	000.2000	0009.9	006.7	189.7	000.2500	0081.0	041.2	39.48	
350.0	000.2000	0008.4	006.7	189.5	000.2500	0081.6	041.1	39.56	
351.0	000.2000	0008.3	006.7	189.4	000.2500	0082.2	041.1	39.63	
352.0	000.2000	0009.5	006.7	189.2	000.2500	0082.7	041.1	39.70	
353.0	000.2000	0011.6	006.7	189.1	000.2500	0083.3	041.0	39.77	
354.0	000.2000	0014.4	006.7	188.9	000.2500	0083.8	041.0	39.83	
355.0	000.2000	0018.3	006.7	188.7	000.2500	0084.2	041.0	39.88	
356.0	000.2000	0021.9	006.7	188.6	000.2500	0084.6	041.0	39.93	
357.0	000.2000	0027.1	006.7	188.4	000.2500	0084.9	040.9	39.98	

**MUNN-REESE, INC.**

Broadcast Engineering Consultants  
COLDWATER, MI 49036

# Exhibit 13.6

## Contour Protection Studies Toward W288CW.C Lewiston, ME

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
358.0	000.2000	0033.3	007.0	188.3	000.2500	0085.1	040.6	40.13*
359.0	000.2000	0038.2	007.5	188.3	000.2500	0085.2	040.1	40.34*
000.0	000.2000	0043.0	008.0	188.2	000.2500	0085.4	039.6	40.57*
001.0	000.2000	0046.5	008.4	188.1	000.2500	0085.7	039.2	40.76*
002.0	000.2000	0048.7	008.6	187.9	000.2500	0086.1	039.0	40.90*
003.0	000.2000	0050.8	008.8	187.7	000.2500	0086.5	038.7	41.04*
004.0	000.2000	0053.0	009.0	187.5	000.2500	0087.0	038.5	41.18*
005.0	000.2000	0054.7	009.2	187.3	000.2500	0087.5	038.3	41.30*
006.0	000.2000	0056.7	009.4	187.0	000.2500	0087.9	038.2	41.41*
007.0	000.2000	0059.1	009.6	186.8	000.2500	0088.2	038.0	41.53*
008.0	000.2000	0061.0	009.7	186.5	000.2500	0088.4	037.8	41.60*
009.0	000.2000	0061.0	009.7	186.3	000.2500	0088.4	037.8	41.61*
010.0	000.2000	0060.5	009.7	186.0	000.2500	0088.4	037.9	41.58*
011.0	000.2000	0059.4	009.6	185.8	000.2500	0088.3	038.0	41.53*
012.0	000.2000	0057.9	009.5	185.5	000.2500	0088.2	038.1	41.46*
013.0	000.2000	0056.7	009.4	185.3	000.2500	0087.9	038.2	41.39*
014.0	000.2000	0056.2	009.3	185.1	000.2500	0087.6	038.3	41.33*
015.0	000.2000	0056.2	009.3	184.8	000.2500	0087.2	038.3	41.28*
016.0	000.2000	0057.3	009.4	184.6	000.2500	0086.7	038.3	41.25*
017.0	000.2000	0059.7	009.6	184.3	000.2500	0086.0	038.1	41.25*
018.0	000.2000	0062.6	009.8	183.9	000.2500	0085.0	038.0	41.22*
019.0	000.2000	0065.4	010.0	183.6	000.2500	0083.9	037.8	41.17*
020.0	000.2000	0068.3	010.2	183.3	000.2500	0082.8	037.7	41.12*
021.0	000.2000	0071.3	010.4	182.9	000.2500	0081.6	037.5	41.05*
022.0	000.2000	0074.0	010.6	182.6	000.2500	0080.2	037.4	40.95*
023.0	000.2000	0076.4	010.7	182.2	000.2500	0078.9	037.3	40.85*
024.0	000.2000	0078.2	010.9	181.9	000.2500	0077.7	037.3	40.73*
025.0	000.2000	0079.4	010.9	181.6	000.2500	0076.5	037.3	40.60*
026.0	000.2000	0080.4	011.0	181.3	000.2500	0075.1	037.3	40.45*
027.0	000.2000	0080.9	011.0	181.0	000.2500	0073.9	037.4	40.28*
028.0	000.2000	0081.0	011.0	180.7	000.2500	0073.5	037.5	40.21*
029.0	000.2000	0081.0	011.0	180.4	000.2500	0073.8	037.5	40.20*
030.0	000.2000	0081.0	011.0	180.2	000.2500	0074.0	037.6	40.19*
031.0	000.2000	0081.0	011.0	179.9	000.2500	0074.3	037.7	40.18*
032.0	000.2000	0081.0	011.0	179.7	000.2500	0074.5	037.8	40.16*
033.0	000.2000	0081.0	011.0	179.4	000.2500	0074.7	037.9	40.14*
034.0	000.2000	0081.0	011.0	179.2	000.2500	0075.0	038.0	40.12*
035.0	000.2000	0080.9	011.0	179.0	000.2500	0075.2	038.2	40.10*
036.0	000.2000	0080.5	011.0	178.8	000.2500	0075.4	038.3	40.07*
037.0	000.2000	0079.9	011.0	178.6	000.2500	0075.6	038.4	40.03*
038.0	000.2000	0079.2	010.9	178.4	000.2500	0075.8	038.6	39.98
039.0	000.2000	0078.5	010.9	178.2	000.2500	0075.9	038.8	39.94
040.0	000.2000	0078.1	010.9	178.0	000.2500	0076.1	038.9	39.89
041.0	000.2000	0077.9	010.8	177.8	000.2500	0076.2	039.0	39.85
042.0	000.2000	0077.6	010.8	177.7	000.2500	0076.4	039.2	39.81
043.0	000.2000	0077.1	010.8	177.5	000.2500	0076.6	039.3	39.77
044.0	000.2000	0076.5	010.8	177.4	000.2500	0076.7	039.5	39.71
045.0	000.2000	0076.2	010.7	177.2	000.2500	0076.8	039.7	39.66



# Exhibit 13.6

## Contour Protection Studies Toward W288CW.C Lewiston, ME

01-02-2014

Terrain Data: NGDC 30 SEC

FMOver Analysis

W288CW BNPFT20130814ADL

W288CU.P

Channel = 288D

Max ERP = 0.25 kW

RCAMSL = 162 M

N. Lat. 44 06 54.0

W. Lng. 70 14 52.0

Protected

60 dBu

Channel = 288D

Max ERP = 0.2 kW

RCAMSL = 111 M

N. Lat. 43 41 26.0

W. Lng. 70 19 05.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
142.0	000.2500	0093.6	012.5	019.6	000.2000	0067.1	039.7	37.62	
143.0	000.2500	0096.3	012.6	019.6	000.2000	0067.2	039.4	37.74	
144.0	000.2500	0099.0	012.8	019.6	000.2000	0067.3	039.1	37.86	
145.0	000.2500	0100.8	012.9	019.6	000.2000	0067.1	038.9	37.95	
146.0	000.2500	0101.7	013.0	019.4	000.2000	0066.7	038.7	37.99	
147.0	000.2500	0101.9	013.0	019.3	000.2000	0066.2	038.5	38.00	
148.0	000.2500	0101.7	013.0	019.0	000.2000	0065.5	038.3	37.99	
149.0	000.2500	0101.2	012.9	018.8	000.2000	0064.8	038.1	37.97	
150.0	000.2500	0100.4	012.9	018.5	000.2000	0064.0	038.0	37.94	
151.0	000.2500	0099.4	012.8	018.2	000.2000	0063.2	037.9	37.89	
152.0	000.2500	0098.0	012.7	017.9	000.2000	0062.2	037.8	37.82	
153.0	000.2500	0096.8	012.7	017.6	000.2000	0061.3	037.7	37.75	
154.0	000.2500	0096.2	012.6	017.3	000.2000	0060.5	037.5	37.70	
155.0	000.2500	0095.6	012.6	017.0	000.2000	0059.7	037.4	37.65	
156.0	000.2500	0095.0	012.5	016.7	000.2000	0058.9	037.3	37.59	
157.0	000.2500	0094.8	012.5	016.4	000.2000	0058.2	037.2	37.56	
158.0	000.2500	0095.2	012.6	016.2	000.2000	0057.7	037.0	37.55	
159.0	000.2500	0095.4	012.6	015.9	000.2000	0057.2	036.9	37.54	
160.0	000.2500	0094.7	012.5	015.6	000.2000	0056.7	036.8	37.51	
161.0	000.2500	0093.3	012.4	015.3	000.2000	0056.3	036.7	37.48	
162.0	000.2500	0091.7	012.3	014.9	000.2000	0056.1	036.7	37.47	
163.0	000.2500	0090.3	012.2	014.5	000.2000	0056.1	036.7	37.48	
164.0	000.2500	0088.5	012.1	014.2	000.2000	0056.2	036.6	37.49	
165.0	000.2500	0086.4	012.0	013.8	000.2000	0056.3	036.7	37.50	
166.0	000.2500	0084.5	011.9	013.4	000.2000	0056.4	036.7	37.52	
167.0	000.2500	0084.0	011.8	013.1	000.2000	0056.6	036.6	37.57	
168.0	000.2500	0083.6	011.8	012.8	000.2000	0056.9	036.5	37.64	
169.0	000.2500	0081.9	011.7	012.4	000.2000	0057.4	036.6	37.69	
170.0	000.2500	0079.6	011.5	012.0	000.2000	0057.9	036.6	37.73	
171.0	000.2500	0078.6	011.5	011.7	000.2000	0058.3	036.6	37.80	
172.0	000.2500	0078.5	011.5	011.4	000.2000	0058.7	036.6	37.88	
173.0	000.2500	0078.5	011.5	011.1	000.2000	0059.2	036.5	37.97	
174.0	000.2500	0079.0	011.5	010.8	000.2000	0059.7	036.4	38.07	

## Exhibit 13.6

### Contour Protection Studies Toward W288CW.C Lewiston, ME

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
175.0	000.2500	0079.4	011.5	010.5	000.2000	0060.1	036.3	38.16
176.0	000.2500	0078.5	011.5	010.2	000.2000	0060.4	036.3	38.19
177.0	000.2500	0076.9	011.4	009.8	000.2000	0060.6	036.4	38.19
178.0	000.2500	0076.1	011.3	009.5	000.2000	0060.7	036.4	38.20
179.0	000.2500	0075.2	011.2	009.2	000.2000	0060.9	036.4	38.21
180.0	000.2500	0074.2	011.2	008.9	000.2000	0061.1	036.4	38.22
181.0	000.2500	0074.0	011.2	008.6	000.2000	0061.3	036.4	38.24
182.0	000.2500	0078.1	011.4	008.3	000.2000	0061.2	036.1	38.36
183.0	000.2500	0081.9	011.7	008.0	000.2000	0061.0	035.9	38.45
184.0	000.2500	0085.2	011.9	007.7	000.2000	0060.6	035.6	38.50
185.0	000.2500	0087.5	012.1	007.4	000.2000	0060.0	035.5	38.49
186.0	000.2500	0088.4	012.1	007.1	000.2000	0059.3	035.4	38.42
187.0	000.2500	0087.9	012.1	006.7	000.2000	0058.5	035.4	38.31
188.0	000.2500	0085.8	012.0	006.4	000.2000	0057.7	035.6	38.15
189.0	000.2500	0083.4	011.8	006.1	000.2000	0056.9	035.7	37.96
190.0	000.2500	0079.8	011.6	005.8	000.2000	0056.1	036.0	37.75
191.0	000.2500	0076.5	011.3	005.5	000.2000	0055.5	036.2	37.56
192.0	000.2500	0074.8	011.2	005.2	000.2000	0055.0	036.4	37.43
193.0	000.2500	0075.4	011.3	004.9	000.2000	0054.5	036.3	37.37
194.0	000.2500	0077.3	011.4	004.5	000.2000	0054.0	036.2	37.33
195.0	000.2500	0079.5	011.5	004.2	000.2000	0053.3	036.1	37.27
196.0	000.2500	0081.3	011.7	003.8	000.2000	0052.7	036.1	37.20
197.0	000.2500	0082.3	011.7	003.5	000.2000	0051.9	036.0	37.10
198.0	000.2500	0082.5	011.7	003.2	000.2000	0051.2	036.1	36.96
199.0	000.2500	0082.0	011.7	002.9	000.2000	0050.5	036.2	36.81
200.0	000.2500	0080.8	011.6	002.6	000.2000	0049.9	036.3	36.66
201.0	000.2500	0078.3	011.5	002.4	000.2000	0049.4	036.5	36.49
202.0	000.2500	0075.0	011.2	002.2	000.2000	0049.1	036.8	36.32
203.0	000.2500	0071.8	011.0	002.0	000.2000	0048.7	037.1	36.16
204.0	000.2500	0068.9	010.8	001.9	000.2000	0048.4	037.3	36.01
205.0	000.2500	0066.2	010.6	001.7	000.2000	0048.1	037.6	35.86
206.0	000.2500	0064.2	010.5	001.6	000.2000	0047.7	037.8	35.72
207.0	000.2500	0063.3	010.4	001.3	000.2000	0047.2	037.9	35.59
208.0	000.2500	0062.9	010.4	001.1	000.2000	0046.7	038.0	35.46
209.0	000.2500	0062.4	010.4	000.9	000.2000	0046.3	038.1	35.34
210.0	000.2500	0061.8	010.3	000.7	000.2000	0046.0	038.3	35.25
211.0	000.2500	0061.1	010.3	000.5	000.2000	0045.4	038.4	35.09
212.0	000.2500	0060.0	010.2	000.3	000.2000	0044.6	038.6	34.89
213.0	000.2500	0058.1	010.0	000.2	000.2000	0044.1	038.8	34.72
214.0	000.2500	0056.1	009.9	000.2	000.2000	0043.8	039.0	34.57
215.0	000.2500	0054.6	009.7	000.1	000.2000	0043.3	039.2	34.41
216.0	000.2500	0054.1	009.7	359.9	000.2000	0042.5	039.4	34.22
217.0	000.2500	0054.5	009.7	359.7	000.2000	0041.4	039.4	33.99
218.0	000.2500	0055.4	009.8	359.4	000.2000	0040.1	039.5	33.73
219.0	000.2500	0056.0	009.8	359.2	000.2000	0038.9	039.5	33.48
220.0	000.2500	0055.7	009.8	359.0	000.2000	0038.1	039.7	33.28
221.0	000.2500	0055.3	009.8	358.8	000.2000	0037.4	039.8	33.09

# Exhibit 13.7

## §74.1204(d) 2nd Adjacent Channel Given Interference Waiver Request Study Toward WBCI(FM)

Terrain  
-2 280 m

NGDC 30 SEC Terrain Database  
U.S. Census 2010 PL Database

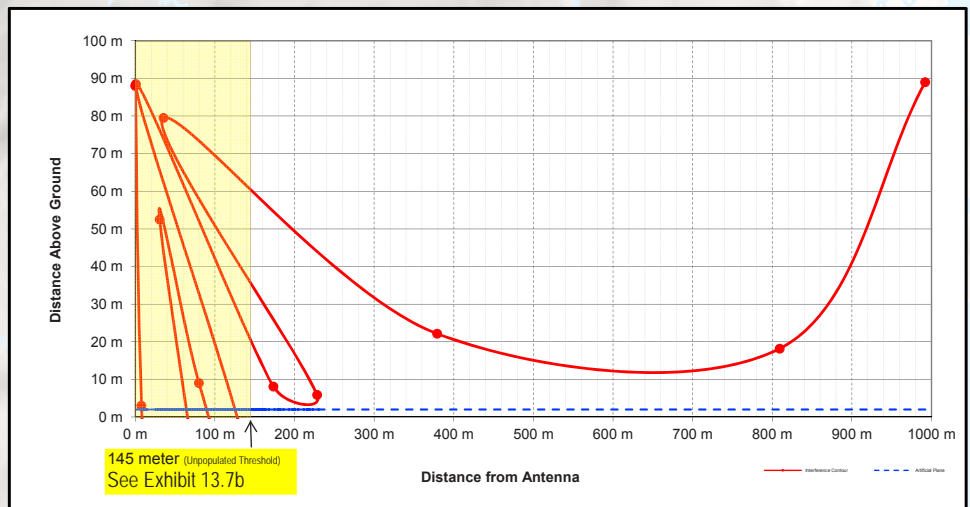
WBCI(FM)  
+

The portion of the §74.1204(d) WBCI(FM) - Bath, ME (CH290B) protection from 145 meters to the extent of the calculated 100.0 dBμ F(50:10) interference contour have been demonstrated through a downward radiation study as included in **Exhibit 13.7a**. Full protection will be afforded WBCI(FM) from 145 meters to the extent of the calculated 100.0 dBμ F(50:10) interference contour as this area will not reach the ground nor a two meter artificial plane representing a standard human at ground level when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications has been included in **Exhibit 13.8**.

The portion of the §74.1204(d) WBCI(FM) protection within 145 meters of the site are currently void of population, buildings (with the exception of the dedicated transmitter building) or major roads as noted in **Exhibit 13.7b**.

WBCI(FM)  
Bath, ME  
BLH7422  
Facility ID: 33288  
Latitude: 44-04-09 N  
Longitude: 069-55-28 W  
ERP: 50.00 kW  
Channel: 290B  
Frequency: 105.9 MHz  
AMSL Height: 213.0 m  
Horiz. Pattern: Omni

W288CU.P  
Portland, ME  
Proposed Operation  
Facility ID: 150422  
Latitude: 43-41-26 N  
Longitude: 070-19-05 W  
ERP: 0.20 kW  
Channel: 288D  
Frequency: 105.5 MHz  
AMSL Height: 111.0 m  
Horiz. Pattern: Omni

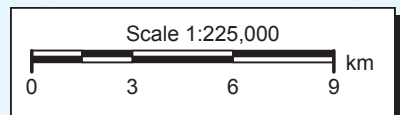


Proposed Antenna: PSIFML-4A (Four Bay Fully Spaced)								
Proposed Power:		0.2 kW						
Antenna Height AGL:		89 meters						
Interference Contour:		100 dBu f(50:10)						
Artificial Ground Plane Height:		2 meters						
Distance (Free Space) Equation: =(10^((106.92-[desired dBu]+[ERP in dBk])/20))*1000								
Field Strength (dBu) Equation "=106.92-(20*(LOG10[DistMeters]/1000))]+[ERPin dBk]								
Depression Angle	Antenna			Distance		Field Strength		Field Strength
Below	Relative	ERP	ERP	to Interference	from Ant. to	in dBu @	Distance	in dBu @
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	to Ground Level	Ground Level
0°	1.000	0.200	-6.99	992.01 m	infinite	---	---	---
-5°	0.819	0.134	-8.72	812.45 m	998.21 m	98.21 dBu	1021.16 m	98.01 dBu
-10°	0.388	0.030	-15.21	384.90 m	501.01 m	97.71 dBu	512.53 m	97.51 dBu
-15°	0.037	0.000	-35.63	36.70 m	336.14 m	80.76 dBu	343.87 m	80.57 dBu
-20°	0.245	0.012	-19.21	243.04 m	254.37 m	99.60 dBu	260.22 m	99.41 dBu
-25°	0.193	0.007	-21.28	191.46 m	205.86 m	99.37 dBu	210.59 m	99.17 dBu
-30°	0.001	0.000	-66.99	0.99 m	174.00 m	55.12 dBu	178.00 m	54.92 dBu
-35°	0.168	0.006	-22.48	166.66 m	151.68 m	100.82 dBu	155.17 m	100.62 dBu
-40°	0.207	0.009	-20.67	205.35 m	135.35 m	103.62 dBu	138.46 m	103.42 dBu
-45°	0.114	0.003	-25.85	113.09 m	123.04 m	99.27 dBu	125.87 m	99.07 dBu
-50°	0.048	0.000	-33.36	47.62 m	113.57 m	92.45 dBu	116.18 m	92.25 dBu
-55°	0.204	0.008	-20.80	202.37 m	106.21 m	105.60 dBu	108.65 m	105.40 dBu
-60°	0.304	0.018	-17.33	301.57 m	100.46 m	109.55 dBu	102.77 m	109.35 dBu
-65°	0.337	0.023	-16.44	334.31 m	95.99 m	110.84 dBu	98.20 m	110.64 dBu
-70°	0.312	0.019	-17.11	309.51 m	92.58 m	110.48 dBu	94.71 m	110.29 dBu
-75°	0.252	0.013	-18.96	249.99 m	90.07 m	108.87 dBu	92.14 m	108.67 dBu
-80°	0.173	0.006	-22.23	171.62 m	88.34 m	105.77 dBu	90.37 m	105.57 dBu
-85°	0.087	0.002	-28.20	86.30 m	87.33 m	99.90 dBu	89.34 m	99.70 dBu
-90°	0.001	0.000	-66.99	0.99 m	87.00 m	61.14 dBu	89.00 m	60.94 dBu

W288CU.P



WBCI(FM) - 60.0 dBμ F(50:50)



V-Soft Communications LLC ©



**Exhibit 13.7b - Copy of USGS Aerial  
Photograph of Existing Site &  
§74.1204(d) Second Adjacent Channel  
Given Interference Waiver Request with  
WBCI(FM) - Bath, ME (CH290B)**

**Proposed Site  
43° 41' 26" NL  
70° 19' 05" WL  
NAD 1927**

(43-41-26.4 NL; 70-19-03.0 WL NAD83)

**145 meter Radius**

The portion of the §74.1204(d) WBCI(FM) - Bath, ME (CH290B) protection from 145 meters to the extent of the calculated 100.0 dBμ F(50:10) interference contour have been demonstrated through a downward radiation study as included in **Exhibit 13.7a**. Full protection will be afforded WBCI(FM) from 145 meters to the extent of the calculated 100.0 dBμ F(50:10) interference contour as this area will not reach the ground nor a two meter artificial plane representing a standard human at ground level when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications has been included in **Exhibit 13.8**.

The portion of the §74.1204(d) WBCI(FM) protection within 145 meters of the site are currently void of population, buildings (with the exception of the dedicated transmitter building) or major roads as noted in **Exhibit 13.7b**.

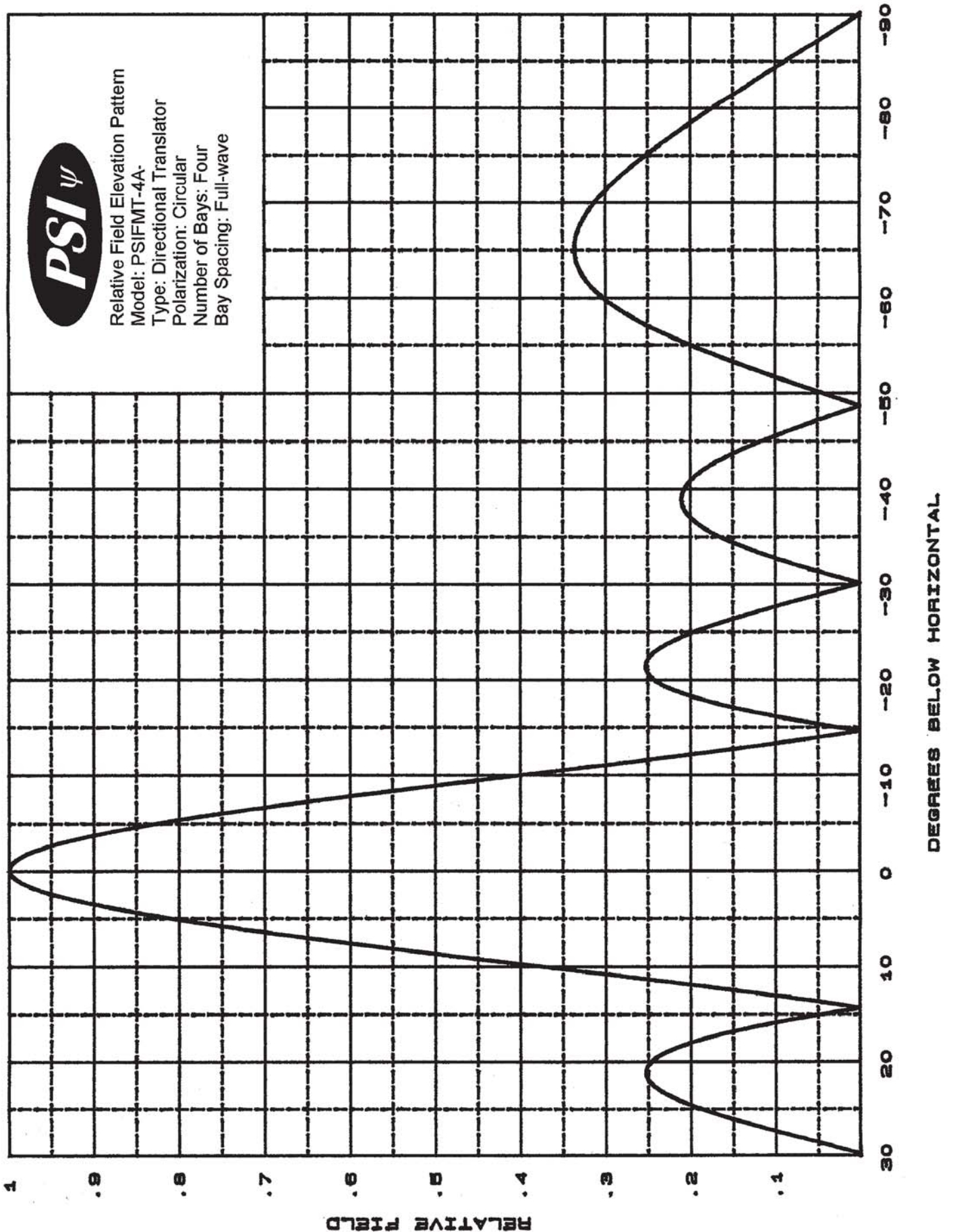


0 300 600ft

USGS  
The National Map



# Exhibit 13.8 - Copy of Manufacturer's Vertical Radiation Data





# Exhibit 13.8 - Copy of Manufacturer's Vertical Radiation Data



**Propagation Systems Inc.**  
Elevation Pattern Tabulation  
Antenna Model: PSIFMT-4A  
Bay spacing: Fullwave

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.000	-50.0	0.048	-26.315	-10.0	0.388	-8.216
-89.0	0.017	-35.177	-49.0	0.014	-36.928	-9.0	0.483	-6.326
-88.0	0.035	-29.156	-48.0	0.020	-34.179	-8.0	0.575	-4.804
-87.0	0.052	-25.634	-47.0	0.053	-25.584	-7.0	0.663	-3.563
-86.0	0.070	-23.136	-46.0	0.084	-21.489	-6.0	0.745	-2.553
-85.0	0.087	-21.198	-45.0	0.114	-18.890	-5.0	0.819	-1.738
-84.0	0.104	-19.626	-44.0	0.140	-17.049	-4.0	0.882	-1.095
-83.0	0.122	-18.297	-43.0	0.164	-15.714	-3.0	0.932	-0.609
-82.0	0.139	-17.153	-42.0	0.183	-14.750	-2.0	0.970	-0.269
-81.0	0.156	-16.151	-41.0	0.198	-14.085	-1.0	0.992	-0.067
-80.0	0.173	-15.260	-40.0	0.207	-13.676	0.0	1.000	0.000
-79.0	0.189	-14.460	-39.0	0.211	-13.512	1.0	0.992	-0.067
-78.0	0.205	-13.746	-38.0	0.209	-13.587	2.0	0.970	-0.269
-77.0	0.221	-13.104	-37.0	0.202	-13.914	3.0	0.932	-0.609
-76.0	0.237	-12.517	-36.0	0.188	-14.529	4.0	0.882	-1.094
-75.0	0.252	-11.989	-35.0	0.168	-15.492	5.0	0.819	-1.737
-74.0	0.266	-11.515	-34.0	0.143	-16.901	6.0	0.745	-2.552
-73.0	0.279	-11.095	-33.0	0.113	-18.959	7.0	0.664	-3.561
-72.0	0.291	-10.720	-32.0	0.078	-22.121	8.0	0.575	-4.802
-71.0	0.302	-10.392	-31.0	0.040	-27.861	9.0	0.483	-6.323
-70.0	0.312	-10.114	-30.0	0.001	-60.000	10.0	0.388	-8.213
-69.0	0.321	-9.881	-29.0	0.041	-27.700	11.0	0.294	-10.621
-68.0	0.327	-9.698	-28.0	0.083	-21.647	12.0	0.203	-13.855
-67.0	0.332	-9.566	-27.0	0.123	-18.221	13.0	0.116	-18.718
-66.0	0.336	-9.483	-26.0	0.160	-15.926	14.0	0.035	-29.007
-65.0	0.337	-9.460	-25.0	0.193	-14.301	15.0	0.037	-28.679
-64.0	0.335	-9.495	-24.0	0.220	-13.164	16.0	0.100	-20.013
-63.0	0.331	-9.594	-23.0	0.240	-12.412	17.0	0.153	-16.322
-62.0	0.325	-9.758	-22.0	0.251	-12.010	18.0	0.195	-14.220
-61.0	0.316	-10.005	-21.0	0.253	-11.942	19.0	0.225	-12.951
-60.0	0.304	-10.336	-20.0	0.245	-12.233	20.0	0.245	-12.233
-59.0	0.290	-10.761	-19.0	0.225	-12.951	21.0	0.253	-11.942
-58.0	0.272	-11.300	-18.0	0.195	-14.213	22.0	0.251	-12.010
-57.0	0.252	-11.968	-17.0	0.153	-16.313	23.0	0.240	-12.412
-56.0	0.229	-12.794	-16.0	0.100	-20.000	24.0	0.220	-13.164
-55.0	0.204	-13.816	-15.0	0.037	-28.643	25.0	0.193	-14.301
-54.0	0.176	-15.087	-14.0	0.035	-29.044	26.0	0.160	-15.918
-53.0	0.146	-16.691	-13.0	0.116	-18.729	27.0	0.123	-18.221
-52.0	0.115	-18.797	-12.0	0.203	-13.862	28.0	0.083	-21.647
-51.0	0.082	-21.727	-11.0	0.294	-10.626	29.0	0.041	-27.700