

Exhibit 13.1 - Copy of Existing Antenna Structure Registration



Registration Detail

Reg Number	1219697	Status	Constructed
File Number	A0358262	Constructed	01/03/2001
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	43-32-38.1 N 070-24-14.3 W	Address	955 US Route One
City, State	Saco , ME		
Zip	04072	County	YORK
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
23.1	121.9
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
145.0	121.9

Painting and Lighting Specifications

None

FAA Notification

FAA Study	2003-ANE-1012-OE	FAA Issue Date	12/10/2003
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Owner & Contact Information

FRN	0006523005	Owner Entity Type	
Owner			
Saco Tower Operators, Inc. 9 Inverness Rd. Falmouth , ME 04105		P: (207)878-0100 F: E: bhamlin1@maine.rr.com	
Contact			
Hamlin , Bruce Mr. 9 Inverness Rd. Falmouth , ME 04105		P: (207)878-0100 F: E: bhamlin1@maine.rr.com	

Last Action Status

Status	Constructed	Received	12/17/2003
Purpose	Notification	Entered	12/17/2003
Mode	Interactive		

Related Applications

12/17/2003	A0358261	- Modification (MD)
12/17/2003	A0358262	- Notification (NT)
12/01/2003	A0356231	- Modification (MD)

Related applications (8)

Comments

Comments

None

History

Date	Event
12/18/2003	Registration Printed
12/17/2003	Construction Notification Received
12/17/2003	Modification Received

All History (12)

Automated Letters

12/18/2003	Authorization, Reference 315211
12/02/2003	Authorization, Reference 313182
01/05/2001	Authorization, Reference 91030

All letters (4)

Exhibit 13.2

Vertical Plan of Antenna System

The site is located at 955 US Route One;
the city of Saco, York County, Maine.

Site Location (NAD 27)

NL: 43° 32' 38"

WL: 70° 24' 16"

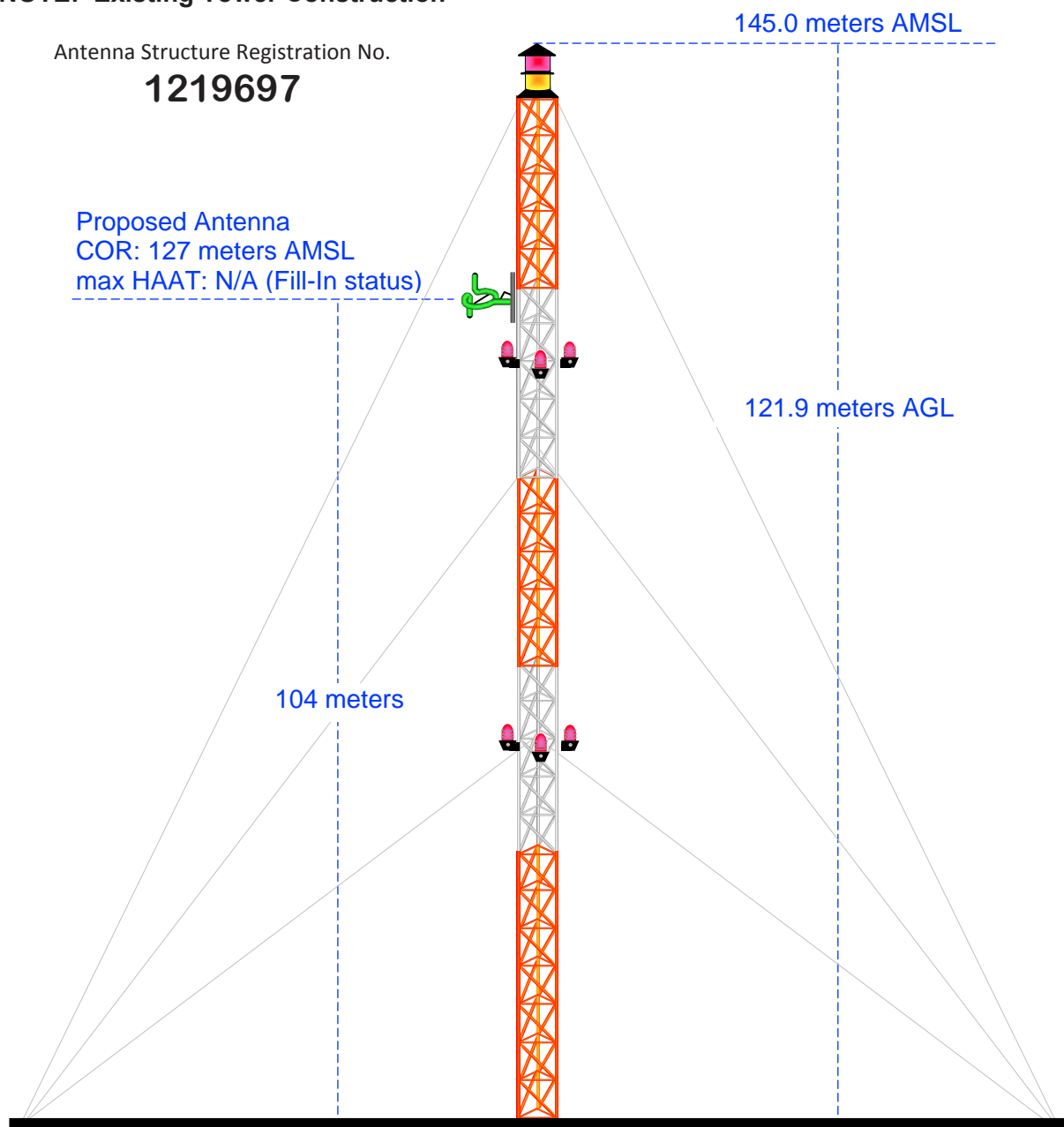
(43-32-38.1NL; 70-24-14.3WL NAD1983)

NOTE: Existing Tower Construction

Antenna Structure Registration No.

1219697

Proposed Antenna
COR: 127 meters AMSL
max HAAT: N/A (Fill-In status)



Ground Elevation = 23.1 m AMSL

Drawing is not to Scale

MUNN-REESE, INC.

Broadcast Engineering Consultants
Coldwater, MI 49036

Exhibit 13.3 Present vs Proposed Service Contour Study

Terrain

-2

178 m

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

W277AM.P
Biddeford, ME
Proposed Operation
Facility ID: 149580
Latitude: 43-32-38 N
Longitude: 070-24-16 W
ERP: 0.16 kW
Channel: 277D
Frequency: 103.3 MHz
AMSL Height: 127.0 m
Horiz. Pattern: Omni

60 dBµ Contour
Total Population: 71,645
Total Area: 439 sq. km

W277AM.L
Biddeford, ME
BLFT20070103AEP
Facility ID: 149580
Latitude: 43-32-38 N
Longitude: 070-24-16 W
ERP: 0.013 kW
Channel: 277D
Frequency: 103.3 MHz
AMSL Height: 127.0 m
Horiz. Pattern: Omni

60 dBµ Contour
Total Population: 27,804
Total Area: 128 sq. km

Proposed 60 dBµ F(50:50) Contour

Present 60 dBµ F(50:50) Contour

+ W277AM.P
W277AM.L

Old Orchard Beach

Saco
Biddeford

Scarborough

Portland

South Portland

Cumberland Center

Yarmouth

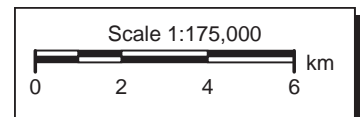


Exhibit 13.4

Proposed vs Primary Service Contour Study

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

WMGX(FM) - HD3
Portland, ME
BLH20050428AAH
BDNH-20121217ADD
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

W277AM.P
Biddeford, ME
Proposed Operation
Facility ID: 149580
Latitude: 43-32-38 N
Longitude: 070-24-16 W
ERP: 0.16 kW
Channel: 277D
Frequency: 103.3 MHz
AMSL Height: 127.0 m
Horiz. Pattern: Omni



Primary 54 dBμ F(50:50) Contour

Proposed 54 dBμ F(50:50) Contour

+ WMGX(FM) - HD3

+ W277AM.P

Biddeford

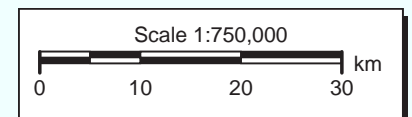


Exhibit 13.5

Tabulation of Proposed Translator Allocation

Bible Broadcasting Network, Inc.											
REFERENCE		CH#	277D	-	103.3	MHZ,	Pwr= 0.16 kw,	HAAT= 105.4 M,	COR= 127 M	DISPLAY DATES	
43 32 38.0 N.		Average Protected F(50-50)= 11.84 km								DATA 06-24-14	
70 24 16.0 W.		Omni-directional								SEARCH 06-24-14	
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)
277D	W277AM	LIC _C_		0.0	0.00	43 32 38.0	0.013	20.3	6.1	-31.7*	-45.1*
Biddeford		ME		0.0	BLFT20070103AEP	70 24 16.0	106	127	Bible Broadcasting Network		
275C0	WBLM	LIC _CX		350.7	42.91	43 55 29.0	100.000	12.3	84.6	19.7	-42.6*<
Portland		ME		170.6	BLH20030224ABB	70 29 29.0	435	551	Townsquare Media Portland		
277B	WMCM	LIC _C_		57.0	120.43	44 07 35.0	16.000	123.6	63.1	-15.4*<	0.1
Rockland		ME		237.9	BLH20011121AAR	69 08 18.0	235	274	Blueberry Broadcasting, L		
277B	WODS	CP _CX		202.8	144.06	42 20 49.6	21.000	130.1	66.1	2.2	22.3
Boston		MA		22.3	BPH20130528ABR	71 04 58.8	235	259	Cbs Radio East Inc.		
223D	W223BH	LIC _C_		41.6	17.11	43 39 32.0	0.250	17.1	5.2	10.0R	7.1M
Portland		ME		221.7	BLFT20070222ANU	70 15 47.0	5	22	Light Of Life Ministries,		
279C	RS8423	RSV-A _N		318.6	108.26	44 16 14.0	100.000	16.4	99.9	81.5	7.5
North Conway		NH		138.0		71 18 15.0	600	1360			
279C	AL0145	RSV-A _N		318.6	108.26	44 16 14.0	100.000	16.4	99.9	81.5	7.5
North Conway		NH		138.0	RM9153	71 18 15.0	600	1360			
Canadian Concurrence Required											
279C	WPKQ	LIC DC_		318.5	108.26	44 16 13.0	22.500	9.6	94.9	88.3	12.5
North Conway		NH		137.9	BLH20080822ABO	71 18 17.0	1159	1942	Townsquare Media Portsmout		
277B	WODS	LIC _CX		206.2	152.78	42 18 27.4	8.700	128.3	66.8	12.8	30.7
Boston		MA		25.6	BLH20101105AAI	71 13 26.7	351	392	Cbs Radio East Inc.		
278L1	WXGR-LP	LIC _		216.6	51.08	43 10 27.0	0.013			33.7	30.4
Dover		NH		36.3	BLL20130926ANK	70 46 47.0	84	111	Gritty		
280D	W280DG	LIC _C_		208.4	59.72	43 04 15.0	0.170	0.9	6.4	47.1	52.4
Portsmouth		NH		28.2	BLFT20061219ACQ	70 45 15.0	23	33	New Hampshire Public Radio		
276D	W276BJ	LIC DC_		243.4	103.94	43 07 09.0	0.250	25.0	16.7	67.7	70.8
Concord		NH		62.6	BLFT20081231AAZ	71 32 58.0	139	275	Saga Communications Of New		

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.
 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

Yellow highlighted Text denotes a §74.1204(d) Waiver Request for given second adjacent channel interference toward WBLM(FM) - Portland, ME (CH275C0) as included in **Exhibit 13.7**. Full protection will be afforded the facility as the calculated interference area will not reach the ground nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications have been included in **Exhibit 13.8**.

Blue Highlighted Text denotes Supplemental Contour Protection Studies toward WMCM(FM) - Rockland, ME (CH277B) as included in **Exhibit(s) 13.6**.

Green Highlighted Text denotes the W277AM - Biddeford, ME facility to be modified by this proposal. This facility need not be protected.

Exhibit 13.6

Contour Protection Studies Toward WMCM(FM) - Rockland, ME

Bible Broadcasting Network, Inc.

FMCommander Single Allocation Study - 06-25-2014 - NGDC 30 SEC
W277AM.P's Overlaps (In= -15.43 km, Out= 0.1 km)

W277AM.P CH 277 D
Lat= 43 32 38.0, Lng= 70 24 16.0
0.16 kW 105.4 M HAAT, 127 M COR
Prot.= 60 dBu, Intef.= 34 dBu

WMCM CH 277 B BLH20011121AAR
Lat= 44 07 35.0, Lng= 69 08 18.0
16.0 kW 235 M HAAT, 274 M COR
Prot.= 54 dBu, Intef.= 40 dBu

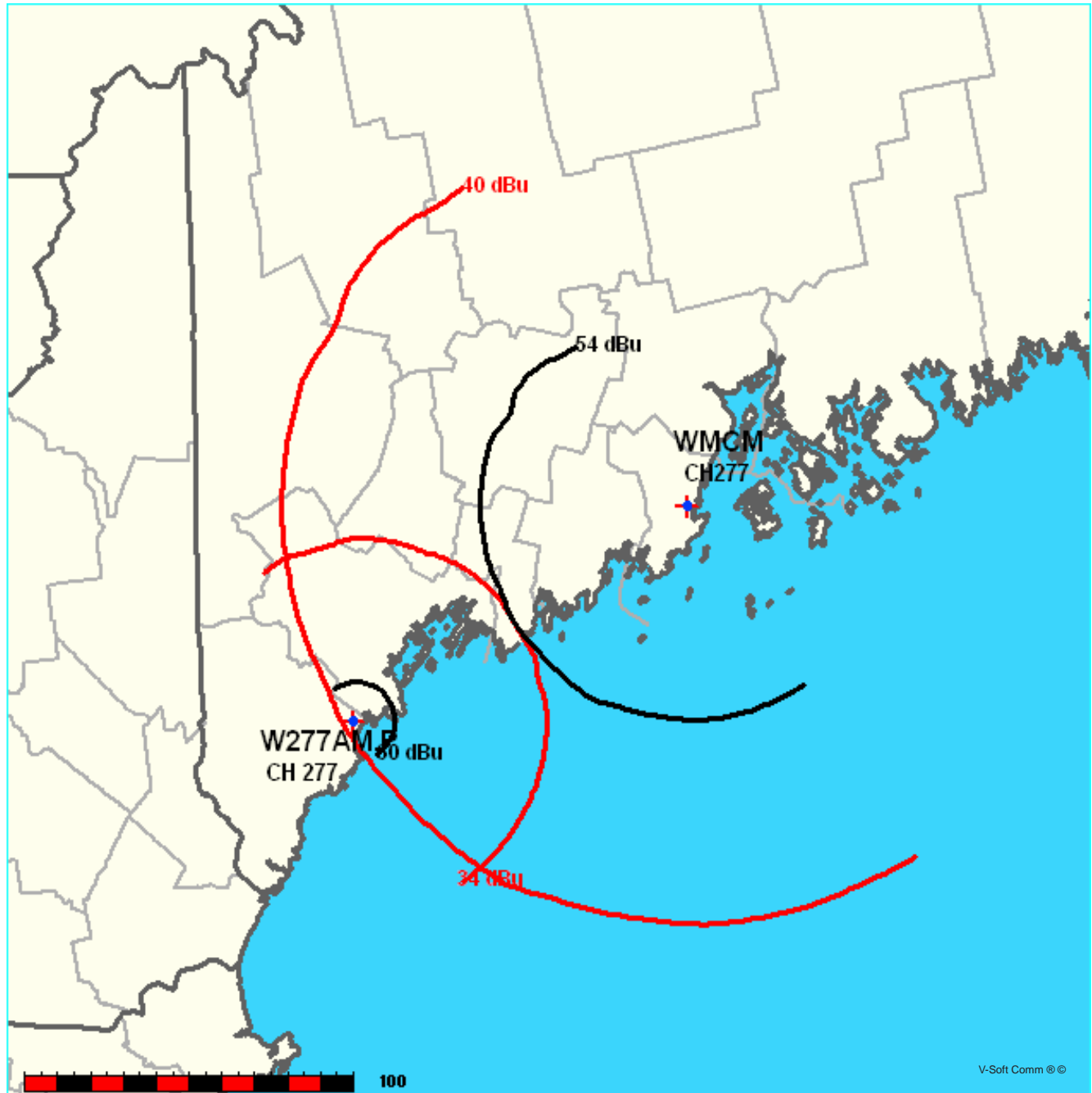


Exhibit 13.6

Contour Protection Studies Toward WMCM(FM) - Rockland, ME

06-25-2014

Terrain Data: NGDC 30 SEC

FMOver Analysis

W277AM.P

WMCM BLH20011121AAR

Channel = 277D

Max ERP = 0.16 kW

RCAMSL = 127 M

N. Lat. 43 32 38.0

W. Lng. 70 24 16.0

Protected

60 dBu

Channel = 277B

Max ERP = 16 kW

RCAMSL = 274 M

N. Lat. 44 07 35.0

W. Lng. 69 08 18.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
015.0	000.1600	0100.1	011.6	241.9	016.0000	0234.5	112.1	42.32*	10.73
016.0	000.1600	0100.0	011.6	241.8	016.0000	0234.7	112.0	42.36*	10.88
017.0	000.1600	0099.9	011.5	241.7	016.0000	0234.8	111.8	42.39*	11.04
018.0	000.1600	0099.7	011.5	241.6	016.0000	0235.0	111.7	42.43*	11.19
019.0	000.1600	0099.5	011.5	241.6	016.0000	0235.1	111.6	42.46*	11.33
020.0	000.1600	0099.3	011.5	241.5	016.0000	0235.3	111.5	42.50*	11.47
021.0	000.1600	0099.3	011.5	241.4	016.0000	0235.4	111.3	42.53*	11.62
022.0	000.1600	0099.4	011.5	241.3	016.0000	0235.6	111.2	42.57*	11.77
023.0	000.1600	0099.9	011.5	241.2	016.0000	0235.7	111.1	42.61*	11.93
024.0	000.1600	0100.6	011.6	241.2	016.0000	0235.9	110.9	42.65*	12.10
025.0	000.1600	0101.6	011.6	241.1	016.0000	0236.0	110.7	42.69*	12.28
026.0	000.1600	0102.6	011.7	241.0	016.0000	0236.2	110.6	42.74*	12.45
027.0	000.1600	0103.4	011.7	241.0	016.0000	0236.3	110.4	42.78*	12.62
028.0	000.1600	0104.2	011.8	240.9	016.0000	0236.5	110.3	42.82*	12.78
029.0	000.1600	0104.8	011.8	240.8	016.0000	0236.6	110.1	42.86*	12.94
030.0	000.1600	0105.6	011.9	240.7	016.0000	0236.8	110.0	42.90*	13.10
031.0	000.1600	0106.4	011.9	240.6	016.0000	0237.0	109.9	42.93*	13.26
032.0	000.1600	0107.3	011.9	240.5	016.0000	0237.1	109.7	42.97*	13.42
033.0	000.1600	0108.0	012.0	240.5	016.0000	0237.3	109.6	43.01*	13.56
034.0	000.1600	0109.0	012.0	240.4	016.0000	0237.5	109.5	43.05*	13.72
035.0	000.1600	0110.0	012.1	240.3	016.0000	0237.6	109.3	43.09*	13.88
036.0	000.1600	0111.0	012.1	240.2	016.0000	0237.8	109.2	43.13*	14.03
037.0	000.1600	0111.7	012.2	240.1	016.0000	0238.0	109.1	43.16*	14.17
038.0	000.1600	0112.2	012.2	240.0	016.0000	0238.2	109.0	43.19*	14.29
039.0	000.1600	0112.2	012.2	239.9	016.0000	0238.4	108.9	43.22*	14.39
040.0	000.1600	0112.1	012.2	239.8	016.0000	0238.5	108.8	43.24*	14.48
041.0	000.1600	0112.2	012.2	239.7	016.0000	0238.7	108.8	43.27*	14.57
042.0	000.1600	0112.6	012.2	239.6	016.0000	0238.9	108.7	43.29*	14.67
043.0	000.1600	0113.0	012.2	239.5	016.0000	0239.1	108.6	43.32*	14.77
044.0	000.1600	0113.4	012.3	239.4	016.0000	0239.2	108.5	43.34*	14.87
045.0	000.1600	0113.8	012.3	239.3	016.0000	0239.4	108.4	43.36*	14.96
046.0	000.1600	0114.3	012.3	239.2	016.0000	0239.5	108.4	43.39*	15.04
047.0	000.1600	0114.9	012.3	239.0	016.0000	0239.7	108.3	43.41*	15.13

MUNN-REESE, INC.

Broadcast Engineering Consultants

COLDWATER, MI 49036

Exhibit 13.6

Contour Protection Studies Toward WMCM(FM) - Rockland, ME

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	
048.0	000.1600	0115.3	012.4	238.9	016.0000	0239.8	108.2	43.43*	15.21
049.0	000.1600	0115.6	012.4	238.8	016.0000	0240.0	108.2	43.45*	15.28
050.0	000.1600	0115.7	012.4	238.7	016.0000	0240.1	108.2	43.46*	15.33
051.0	000.1600	0115.8	012.4	238.6	016.0000	0240.3	108.1	43.47*	15.38
052.0	000.1600	0115.8	012.4	238.5	016.0000	0240.4	108.1	43.48*	15.41
053.0	000.1600	0115.5	012.4	238.4	016.0000	0240.5	108.1	43.49*	15.44
054.0	000.1600	0115.1	012.3	238.3	016.0000	0240.6	108.1	43.49*	15.44
055.0	000.1600	0114.6	012.3	238.1	016.0000	0240.7	108.1	43.49*	15.44
056.0	000.1600	0114.1	012.3	238.0	016.0000	0240.8	108.1	43.49*	15.43
057.0	000.1600	0113.6	012.3	237.9	016.0000	0240.9	108.2	43.48*	15.43
058.0	000.1600	0113.4	012.3	237.8	016.0000	0241.0	108.2	43.48*	15.42
059.0	000.1600	0113.2	012.3	237.7	016.0000	0241.1	108.2	43.48*	15.42
060.0	000.1600	0113.2	012.3	237.6	016.0000	0241.2	108.2	43.48*	15.41
061.0	000.1600	0113.3	012.3	237.5	016.0000	0241.2	108.2	43.48*	15.41
062.0	000.1600	0113.5	012.3	237.3	016.0000	0241.3	108.2	43.48*	15.41
063.0	000.1600	0114.1	012.3	237.2	016.0000	0241.4	108.2	43.48*	15.43
064.0	000.1600	0115.2	012.4	237.1	016.0000	0241.4	108.2	43.49*	15.46
065.0	000.1600	0116.7	012.4	237.0	016.0000	0241.5	108.1	43.50*	15.51
066.0	000.1600	0118.2	012.5	236.9	016.0000	0241.6	108.1	43.52*	15.55
067.0	000.1600	0119.5	012.6	236.8	016.0000	0241.6	108.1	43.52*	15.58
068.0	000.1600	0120.7	012.6	236.6	016.0000	0241.7	108.1	43.53*	15.60
069.0	000.1600	0121.5	012.7	236.5	016.0000	0241.7	108.1	43.53*	15.59
070.0	000.1600	0121.9	012.7	236.4	016.0000	0241.7	108.1	43.52*	15.56
071.0	000.1600	0121.8	012.7	236.3	016.0000	0241.8	108.2	43.50*	15.51
072.0	000.1600	0121.5	012.7	236.2	016.0000	0241.8	108.3	43.48*	15.43
073.0	000.1600	0120.8	012.6	236.1	016.0000	0241.8	108.3	43.46*	15.34
074.0	000.1600	0119.7	012.6	236.0	016.0000	0241.8	108.5	43.43*	15.22
075.0	000.1600	0118.6	012.5	235.9	016.0000	0241.9	108.6	43.40*	15.10
076.0	000.1600	0117.7	012.5	235.8	016.0000	0241.9	108.7	43.37*	14.98
077.0	000.1600	0117.2	012.4	235.7	016.0000	0241.9	108.8	43.34*	14.88
078.0	000.1600	0117.3	012.5	235.6	016.0000	0241.9	108.9	43.32*	14.80
079.0	000.1600	0118.3	012.5	235.4	016.0000	0241.9	108.9	43.31*	14.76
080.0	000.1600	0119.5	012.6	235.3	016.0000	0241.9	109.0	43.30*	14.72
081.0	000.1600	0120.6	012.6	235.2	016.0000	0241.9	109.0	43.29*	14.68
082.0	000.1600	0121.7	012.7	235.1	016.0000	0241.9	109.1	43.27*	14.62
083.0	000.1600	0122.8	012.7	235.0	016.0000	0241.9	109.1	43.26*	14.56
084.0	000.1600	0123.6	012.8	234.9	016.0000	0241.9	109.2	43.24*	14.49
085.0	000.1600	0124.4	012.8	234.8	016.0000	0241.9	109.3	43.21*	14.40
086.0	000.1600	0125.1	012.8	234.7	016.0000	0241.9	109.4	43.19*	14.31
087.0	000.1600	0125.6	012.9	234.5	016.0000	0241.8	109.5	43.17*	14.21
088.0	000.1600	0125.7	012.9	234.4	016.0000	0241.8	109.6	43.13*	14.09
089.0	000.1600	0125.8	012.9	234.4	016.0000	0241.8	109.7	43.10*	13.96
090.0	000.1600	0125.9	012.9	234.3	016.0000	0241.8	109.9	43.07*	13.82
091.0	000.1600	0125.9	012.9	234.2	016.0000	0241.7	110.0	43.03*	13.69
092.0	000.1600	0126.0	012.9	234.1	016.0000	0241.7	110.1	43.00*	13.55
093.0	000.1600	0126.1	012.9	234.0	016.0000	0241.7	110.3	42.96*	13.41

Exhibit 13.6

Contour Protection Studies Toward WMCM(FM) - Rockland, ME

06-25-2014

Terrain Data: NGDC 30 SEC

FMOver Analysis

WMCM BLH20011121AAR

W277AM.P

Channel = 277B

Max ERP = 16 kW

RCAMSL = 274 M

N. Lat. 44 07 35.0

W. Lng. 69 08 18.0

Protected

54 dBu

Channel = 277D

Max ERP = 0.16 kW

RCAMSL = 127 M

N. Lat. 43 32 38.0

W. Lng. 70 24 16.0

Interfering

34 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
193.0	016.0000	0255.0	064.2	088.2	000.1600	0125.7	087.6	25.15	
194.0	016.0000	0254.8	064.2	088.0	000.1600	0125.7	086.5	25.46	
195.0	016.0000	0255.3	064.3	087.8	000.1600	0125.7	085.4	25.78	
196.0	016.0000	0256.1	064.3	087.7	000.1600	0125.7	084.3	26.09	
197.0	016.0000	0256.4	064.4	087.4	000.1600	0125.7	083.3	26.40	
198.0	016.0000	0256.4	064.4	087.2	000.1600	0125.7	082.2	26.71	
199.0	016.0000	0256.4	064.4	086.9	000.1600	0125.6	081.1	27.02	
200.0	016.0000	0256.6	064.4	086.6	000.1600	0125.6	080.1	27.32	
201.0	016.0000	0257.3	064.4	086.3	000.1600	0125.4	079.0	27.62	
202.0	016.0000	0259.2	064.6	086.1	000.1600	0125.2	077.9	27.94	
203.0	016.0000	0262.0	064.8	085.9	000.1600	0125.0	076.8	28.26	
204.0	016.0000	0264.5	065.0	085.6	000.1600	0124.9	075.7	28.58	
205.0	016.0000	0266.3	065.1	085.3	000.1600	0124.6	074.7	28.89	
206.0	016.0000	0267.3	065.2	085.0	000.1600	0124.3	073.6	29.18	
207.0	016.0000	0267.1	065.2	084.5	000.1600	0124.0	072.7	29.46	
208.0	016.0000	0265.6	065.1	083.9	000.1600	0123.5	071.8	29.71	
209.0	016.0000	0263.3	064.9	083.3	000.1600	0123.0	070.9	29.94	
210.0	016.0000	0261.0	064.7	082.6	000.1600	0122.4	070.1	30.15	
211.0	016.0000	0259.1	064.6	082.0	000.1600	0121.7	069.3	30.37	
212.0	016.0000	0257.9	064.5	081.3	000.1600	0120.9	068.5	30.58	
213.0	016.0000	0256.9	064.4	080.6	000.1600	0120.2	067.7	30.79	
214.0	016.0000	0255.7	064.3	079.9	000.1600	0119.4	066.9	30.99	
215.0	016.0000	0253.9	064.1	079.2	000.1600	0118.5	066.2	31.16	
216.0	016.0000	0251.6	064.0	078.4	000.1600	0117.7	065.6	31.32	
217.0	016.0000	0249.4	063.8	077.6	000.1600	0117.1	065.0	31.49	
218.0	016.0000	0248.0	063.7	076.7	000.1600	0117.2	064.3	31.70	
219.0	016.0000	0247.5	063.6	075.9	000.1600	0117.7	063.7	31.94	
220.0	016.0000	0247.7	063.7	075.1	000.1600	0118.4	063.0	32.21	
221.0	016.0000	0247.4	063.6	074.3	000.1600	0119.4	062.4	32.47	

Exhibit 13.6

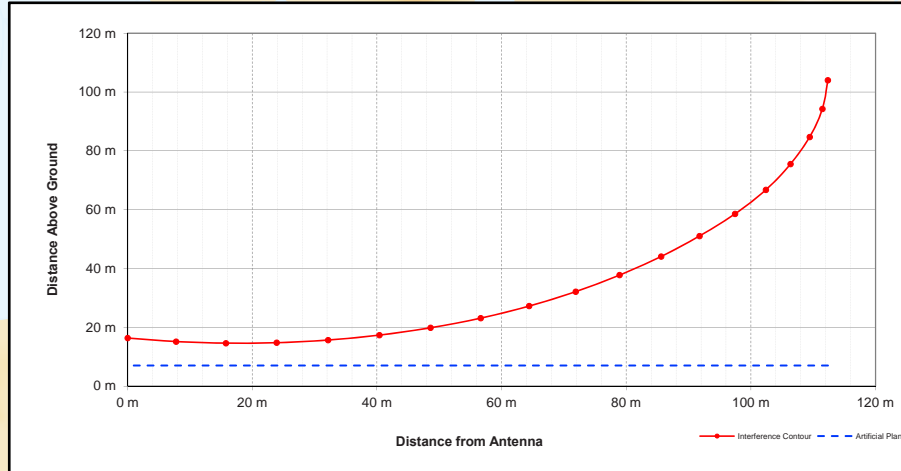
Contour Protection Studies Toward WMCM(FM) - Rockland, ME

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
222.0	016.0000	0246.2	063.5	073.4	000.1600	0120.4	061.8	32.71
223.0	016.0000	0244.4	063.4	072.4	000.1600	0121.3	061.4	32.92
224.0	016.0000	0242.6	063.3	071.5	000.1600	0121.7	061.0	33.09
225.0	016.0000	0240.9	063.1	070.5	000.1600	0121.9	060.6	33.24
226.0	016.0000	0239.4	063.0	069.5	000.1600	0121.8	060.2	33.36
227.0	016.0000	0238.5	062.9	068.5	000.1600	0121.1	059.8	33.46
228.0	016.0000	0238.1	062.9	067.5	000.1600	0120.1	059.5	33.54
229.0	016.0000	0238.5	062.9	066.5	000.1600	0118.9	059.1	33.61
230.0	016.0000	0239.3	063.0	065.5	000.1600	0117.5	058.7	33.67
231.0	016.0000	0240.2	063.1	064.5	000.1600	0115.9	058.3	33.72
232.0	016.0000	0240.8	063.1	063.5	000.1600	0114.6	058.0	33.75
233.0	016.0000	0241.3	063.2	062.4	000.1600	0113.7	057.8	33.79
234.0	016.0000	0241.7	063.2	061.3	000.1600	0113.3	057.6	33.85
235.0	016.0000	0241.9	063.2	060.2	000.1600	0113.2	057.4	33.91
236.0	016.0000	0241.8	063.2	059.1	000.1600	0113.2	057.3	33.94
237.0	016.0000	0241.5	063.2	058.0	000.1600	0113.3	057.3	33.96
238.0	016.0000	0240.9	063.1	056.9	000.1600	0113.7	057.3	33.96
239.0	016.0000	0239.7	063.0	055.8	000.1600	0114.1	057.4	33.95
240.0	016.0000	0238.2	062.9	054.8	000.1600	0114.7	057.6	33.91
241.0	016.0000	0236.2	062.7	053.7	000.1600	0115.2	057.9	33.84
242.0	016.0000	0234.3	062.6	052.6	000.1600	0115.6	058.2	33.75
243.0	016.0000	0232.5	062.4	051.6	000.1600	0115.8	058.5	33.64
244.0	016.0000	0231.1	062.3	050.6	000.1600	0115.8	058.8	33.52
245.0	016.0000	0230.3	062.2	049.6	000.1600	0115.7	059.2	33.39
246.0	016.0000	0229.8	062.2	048.6	000.1600	0115.5	059.5	33.26
247.0	016.0000	0230.4	062.2	047.6	000.1600	0115.1	059.8	33.14
248.0	016.0000	0231.8	062.4	046.5	000.1600	0114.6	060.0	33.02
249.0	016.0000	0233.4	062.5	045.5	000.1600	0114.1	060.3	32.89
250.0	016.0000	0234.4	062.6	044.6	000.1600	0113.6	060.7	32.73
251.0	016.0000	0234.4	062.6	043.6	000.1600	0113.3	061.1	32.55
252.0	016.0000	0234.2	062.6	042.7	000.1600	0112.9	061.7	32.34
253.0	016.0000	0234.7	062.6	041.8	000.1600	0112.5	062.2	32.15
254.0	016.0000	0235.4	062.7	040.9	000.1600	0112.2	062.7	31.96
255.0	016.0000	0236.0	062.7	040.1	000.1600	0112.1	063.2	31.77
256.0	016.0000	0235.9	062.7	039.3	000.1600	0112.2	063.9	31.56
257.0	016.0000	0235.2	062.6	038.5	000.1600	0112.2	064.6	31.34
258.0	016.0000	0234.8	062.6	037.8	000.1600	0112.1	065.3	31.11
259.0	016.0000	0234.3	062.6	037.1	000.1600	0111.8	066.0	30.86
260.0	016.0000	0234.2	062.6	036.4	000.1600	0111.3	066.7	30.60
261.0	016.0000	0234.0	062.6	035.7	000.1600	0110.7	067.5	30.34
262.0	016.0000	0233.8	062.5	035.1	000.1600	0110.1	068.3	30.06
263.0	016.0000	0234.3	062.6	034.4	000.1600	0109.4	069.1	29.79
264.0	016.0000	0235.2	062.7	033.8	000.1600	0108.8	069.8	29.52
265.0	016.0000	0235.9	062.7	033.2	000.1600	0108.2	070.6	29.25
266.0	016.0000	0236.5	062.8	032.6	000.1600	0107.7	071.5	28.98
267.0	016.0000	0237.3	062.8	032.0	000.1600	0107.3	072.3	28.70

Exhibit 13.7

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

WBLM(FM)
+



Terrain

-2

310 m

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

WBLM(FM)
Portland, ME
BLH20030224ABB
Facility ID: 22878
Latitude: 43-55-29 N
Longitude: 070-29-29 W
ERP: 100.00 kW
Channel: 275C0
Frequency: 102.9 MHz
AMSL Height: 551.0 m
Horiz. Pattern: Omni

Proposed Antenna: BEXT TFC1K 1-Bay (Fully Spaced)									
Proposed Power:		0.16 kW							
Antenna Height AGL:		104 meters							
Interference Contour:		117.95 dBu f(50:10)							
Artificial Ground Plane Height:		7 meters							
Distance (Free Space) Equation: $= (10^{((106.92 - \{\text{desired dBu}\} + \{\text{ERP in dBk}\}) / 20)) \times 1000$									
Field Strength (dBu) Equation: $= 106.92 - (20 \times (\text{LOG10}(\text{DistMeters} / 1000))) + \{\text{ERP in dBk}\}$									
Depression					Distance				
Angle	Antenna				from Ant.	Distance	Field Strength	Distance	Field Strength
Below	Relative	ERP	ERP	to Interference	from Ant.	in dBu @		from Ant.	in dBu @
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	Artificial Plane	to Ground Level	Ground Level
0°	1.000	0.160	-7.96	112.35 m	infinite	---	---	---	---
-5°	0.996	0.159	-7.99	111.90 m	1112.95 m	98.00 dBu	1193.27 m	97.39 dBu	
-10°	0.989	0.156	-8.05	111.11 m	558.60 m	103.92 dBu	598.91 m	103.32 dBu	
-15°	0.980	0.154	-8.13	110.10 m	374.78 m	107.31 dBu	401.83 m	106.70 dBu	
-20°	0.970	0.151	-8.22	108.98 m	283.61 m	109.64 dBu	304.08 m	109.04 dBu	
-25°	0.957	0.147	-8.34	107.52 m	229.52 m	111.36 dBu	246.08 m	110.76 dBu	
-30°	0.943	0.142	-8.47	105.94 m	194.00 m	112.70 dBu	208.00 m	112.09 dBu	
-35°	0.930	0.138	-8.59	104.48 m	169.11 m	113.77 dBu	181.32 m	113.16 dBu	
-40°	0.917	0.135	-8.71	103.02 m	150.91 m	114.63 dBu	161.80 m	114.03 dBu	
-45°	0.905	0.131	-8.83	101.67 m	137.18 m	115.35 dBu	147.08 m	114.74 dBu	
-50°	0.892	0.127	-8.95	100.21 m	126.62 m	115.92 dBu	135.76 m	115.31 dBu	
-55°	0.879	0.124	-9.08	98.75 m	118.42 m	116.37 dBu	126.96 m	115.77 dBu	
-60°	0.865	0.120	-9.22	97.18 m	112.01 m	116.72 dBu	120.09 m	116.11 dBu	
-65°	0.851	0.116	-9.36	95.61 m	107.03 m	116.97 dBu	114.75 m	116.36 dBu	
-70°	0.837	0.112	-9.50	94.03 m	103.23 m	117.14 dBu	110.67 m	116.53 dBu	
-75°	0.822	0.108	-9.66	92.35 m	100.42 m	117.22 dBu	107.67 m	116.62 dBu	
-80°	0.808	0.104	-9.81	90.78 m	98.50 m	117.24 dBu	105.60 m	116.64 dBu	
-85°	0.794	0.101	-9.96	89.20 m	97.37 m	117.19 dBu	104.40 m	116.58 dBu	
-90°	0.780	0.097	-10.12	87.63 m	97.00 m	117.07 dBu	104.00 m	116.46 dBu	

W277AM.P
Biddeford, ME
Proposed Operation
Facility ID: 149580
Latitude: 43-32-38 N
Longitude: 070-24-16 W
ERP: 0.16 kW
Channel: 277D
Frequency: 103.3 MHz
AMSL Height: 127.0 m
Horiz. Pattern: Omni

The Interference Contour corresponding to the WBLM(FM) - Portland, ME Protected Contour at the proposed Translator site has been calculated to be no less than the 117.95 dBu F(50:10) Interference Contour corresponding to the worst case WBLM(FM) 77.95 dBu 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 and associated vertical protection study, full protection will be afforded the WBLM(FM) facility as the calculated interference area will not reach the ground nor a 7 meter artificial plane representing a standard two story building when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's vertical radiation pattern has been included in **Exhibit 13.8**.



W277AM.P

WBLM(FM) - 77.95 dBu F(50:50)

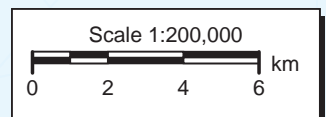


Exhibit 13.8 - Copy of Manufacturer's Vertical Radiation Data



Telecom
RADIO ANTENNAS

TFC1K

*Circularly Polarized
Omni-directional,
Stainless Steel, Tuned
FM Antenna 87.5 - 108 MHz*

Lightning Protection – All metal parts DC grounded

No pressurization needed

Null fill, beam tilt & custom applications upon request

Impedance: 50 Ohm • VSWR: < 1.1: 1 within 500 kHz

Input connector: (each bay) "N" Type fem or 7/16" fem

Typical ctr. to ctr. distance: (multi-bays) 8 ½ ft (2.6 m.)

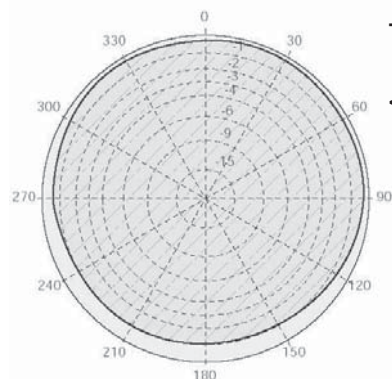
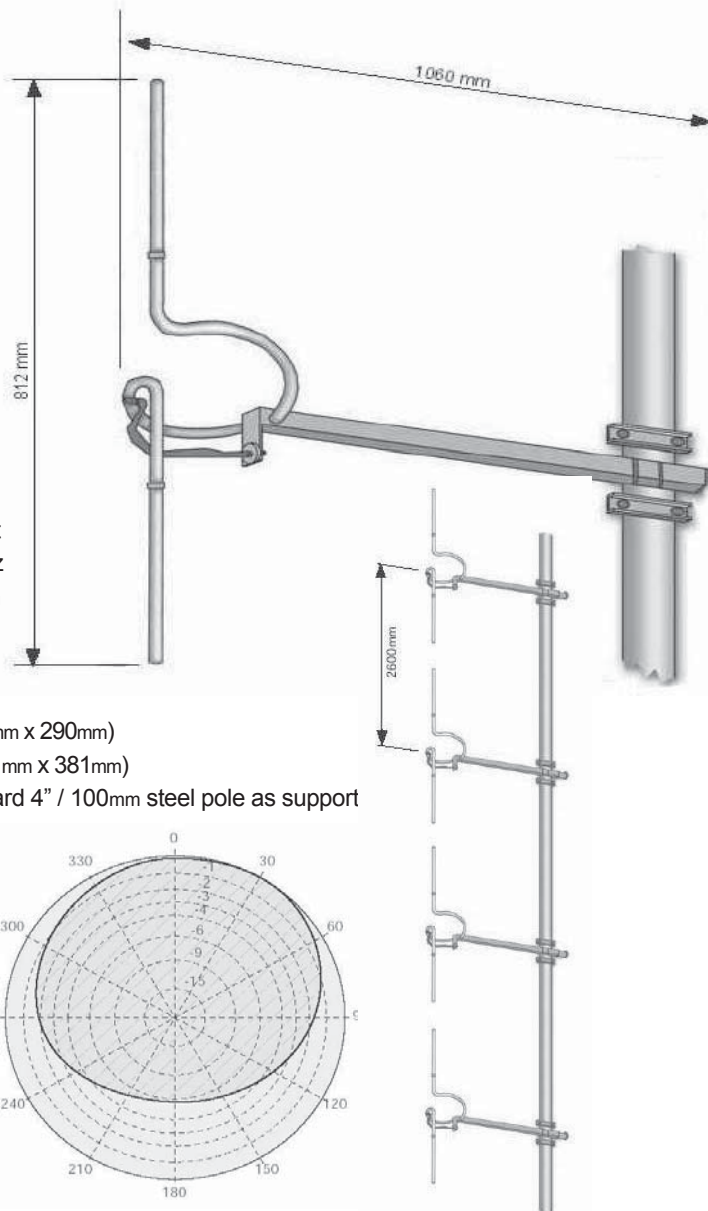
Bracket: can clamp on 1" to 4 3/16" (25mm to 110mm) dia.

Typical weight: (1 bay) 14.3 Lbs / 6.5 Kg (boxed)

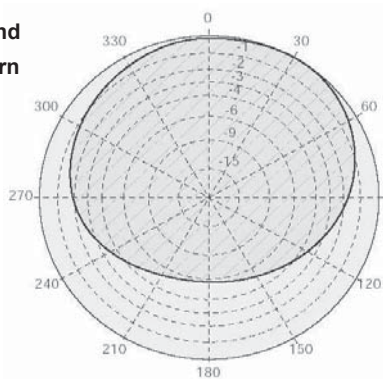
Approx size: (1 bay) 41¾" x 32" x 11½" (1060mm x 812mm x 290mm)

Typical boxed size: (1 bay) 48"x 15"x 15" (1219mm x 321mm x 381mm)

Pattern: Omni-directional +/- 3 dB typical on a standard 4" / 100mm steel pole as support



**Typical mid-band
radiation pattern
< Horizontal
Vertical >
(each bay)**



Number of Bays	Gain (dBd)	Power Gain	Gain (dbi)	Pwr Rating "N" type	Pwr Rating 7/16"	Vertical Height ft. / m.	Req. (*) Vertical Tower Space ft/ m	Est. Wind Load lbs/Kg
1	-3.4	0.46	-1.2	800 W	1.2 kW	2' 8" / 0.81	12' 6" / 3.81	13.2 / 6
2	0.0	0.99	2.1	1.5 kW	2 kW	11' 2" / 3.41	21' / 6.41	26.4 / 12
3	1.9	1.55	4.0	2.2 kW	3 kW	19' 9" / 6.01	29' 7" / 9.01	39.6 / 18
4	3.2	2.12	5.3	2.8 kW	4 kW	28' 3" / 8.61	38' / 11.61	52.8 / 24
5	4.3	2.70	6.4	3.5 kW	5 kW	36' 9" / 11.21	46' 7" / 14.21	66 / 30
6	5.2	3.28	7.3	4 kW	6 kW	45' 4" / 13.81	55' 2" / 16.81	79.2 / 36
8	6.5	4.40	8.6	5.5 kW	7.5 kW	62' 4" / 19.01	72' 3" / 22.01	105.6 / 48
12	8.4	6.85	10.5	7.5 kW	10 kW	96' 6" / 29.41	106' 4" / 32.41	158.4 / 72

Values shown are typical. Actual values may vary with each specific installation. Attenuation of connecting cables not taken into account. Gain will be affected if null fill, beam tilt, special H / V ratio or special wavelength spacing is required. Gain is provided for one polarization and is equal in circularly polarized antennas for both horizontal and vertical components. If antenna is side mounted, the supporting structure will have a slight effect on radiation pattern and on VSWR. Contact us with details of your installation for customized data. (*)Total tower space recommended allows 5 ft (1.5 m) of clear tower space above and below the mounting area to protect from pattern interference by other antennas. On multi-bay arrays, we suggest extending support pipe min. 5 ft (1.5 m) above the top bay and below the bottom bay. Estimated wind loads are calculated w/o radome per EIA Standard RS-222-C for 100 mph (160 kph)

For more information contact **BEXT Inc San Diego CA USA** • Tel 619 2398462 Fax 619 2398474 • www.bext.com • e-mail: sales@bext.com

Exhibit 13.8 - Copy of Manufacturer's Vertical Radiation Data



Vertical diagram at an azimuth of 0.0°

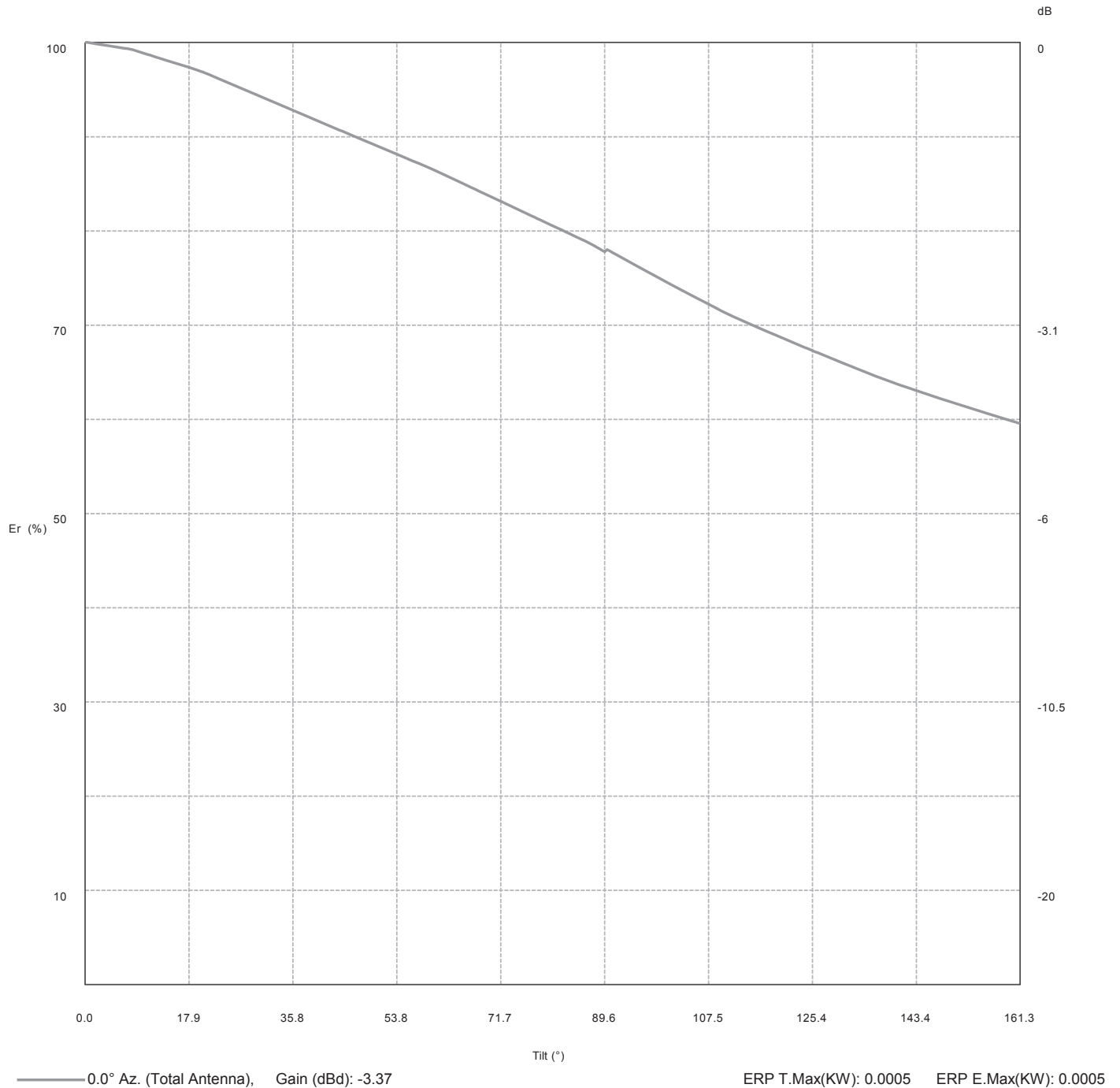


Exhibit 13.8 - Copy of Manufacturer's Vertical Radiation Data



Vertical diagram at an azimuth of 0.0°

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	0.5	26.9	95.2	0.4	53.8	88.1	0.4
0.4	100.0	0.5	27.3	95.0	0.4	54.2	88.0	0.4
0.9	100.0	0.5	27.8	94.9	0.4	54.7	87.9	0.4
1.3	99.9	0.5	28.2	94.8	0.4	55.1	87.8	0.4
1.8	99.9	0.5	28.7	94.7	0.4	55.6	87.7	0.4
2.2	99.8	0.5	29.1	94.6	0.4	56.0	87.6	0.4
2.7	99.8	0.5	29.6	94.4	0.4	56.4	87.4	0.4
3.1	99.7	0.5	30.0	94.3	0.4	56.9	87.3	0.4
3.6	99.7	0.5	30.5	94.2	0.4	57.3	87.2	0.3
4.0	99.7	0.5	30.9	94.1	0.4	57.8	87.1	0.3
4.5	99.6	0.5	31.4	94.0	0.4	58.2	87.0	0.3
4.9	99.6	0.5	31.8	93.9	0.4	58.7	86.9	0.3
5.4	99.5	0.5	32.3	93.7	0.4	59.1	86.7	0.3
5.8	99.5	0.5	32.7	93.6	0.4	59.6	86.6	0.3
6.3	99.4	0.5	33.2	93.5	0.4	60.0	86.5	0.3
6.7	99.4	0.5	33.6	93.4	0.4	60.5	86.4	0.3
7.2	99.4	0.5	34.0	93.3	0.4	60.9	86.3	0.3
7.6	99.3	0.5	34.5	93.2	0.4	61.4	86.1	0.3
8.1	99.3	0.5	34.9	93.0	0.4	61.8	86.0	0.3
8.5	99.2	0.5	35.4	92.9	0.4	62.3	85.9	0.3
9.0	99.1	0.5	35.8	92.8	0.4	62.7	85.7	0.3
9.4	99.0	0.5	36.3	92.7	0.4	63.2	85.6	0.3
9.9	98.9	0.5	36.7	92.6	0.4	63.6	85.5	0.3
10.3	98.8	0.4	37.2	92.4	0.4	64.1	85.3	0.3
10.8	98.7	0.4	37.6	92.3	0.4	64.5	85.2	0.3
11.2	98.7	0.4	38.1	92.2	0.4	65.0	85.1	0.3
11.6	98.6	0.4	38.5	92.1	0.4	65.4	85.0	0.3
12.1	98.5	0.4	39.0	92.0	0.4	65.9	84.8	0.3
12.5	98.4	0.4	39.4	91.9	0.4	66.3	84.7	0.3
13.0	98.3	0.4	39.9	91.7	0.4	66.8	84.6	0.3
13.4	98.2	0.4	40.3	91.6	0.4	67.2	84.4	0.3
13.9	98.1	0.4	40.8	91.5	0.4	67.6	84.3	0.3
14.3	98.0	0.4	41.2	91.4	0.4	68.1	84.2	0.3
14.8	98.0	0.4	41.7	91.3	0.4	68.5	84.1	0.3
15.2	97.9	0.4	42.1	91.2	0.4	69.0	83.9	0.3
15.7	97.8	0.4	42.6	91.0	0.4	69.4	83.8	0.3
16.1	97.7	0.4	43.0	90.9	0.4	69.9	83.7	0.3
16.6	97.6	0.4	43.5	90.8	0.4	70.3	83.5	0.3
17.0	97.5	0.4	43.9	90.7	0.4	70.8	83.4	0.3
17.5	97.4	0.4	44.4	90.6	0.4	71.2	83.3	0.3
17.9	97.4	0.4	44.8	90.5	0.4	71.7	83.1	0.3
18.4	97.3	0.4	45.2	90.3	0.4	72.1	83.0	0.3
18.8	97.2	0.4	45.7	90.2	0.4	72.6	82.9	0.3
19.3	97.1	0.4	46.1	90.1	0.4	73.0	82.8	0.3
19.7	97.0	0.4	46.6	90.0	0.4	73.5	82.6	0.3
20.2	96.9	0.4	47.0	89.9	0.4	73.9	82.5	0.3
20.6	96.8	0.4	47.5	89.8	0.4	74.4	82.4	0.3
21.1	96.7	0.4	47.9	89.7	0.4	74.8	82.2	0.3
21.5	96.6	0.4	48.4	89.5	0.4	75.3	82.1	0.3
22.0	96.4	0.4	48.8	89.4	0.4	75.7	82.0	0.3
22.4	96.3	0.4	49.3	89.3	0.4	76.2	81.8	0.3
22.8	96.2	0.4	49.7	89.2	0.4	76.6	81.7	0.3
23.3	96.1	0.4	50.2	89.1	0.4	77.1	81.6	0.3
23.7	96.0	0.4	50.6	89.0	0.4	77.5	81.5	0.3
24.2	95.9	0.4	51.1	88.8	0.4	78.0	81.3	0.3
24.6	95.7	0.4	51.5	88.7	0.4	78.4	81.2	0.3
25.1	95.6	0.4	52.0	88.6	0.4	78.8	81.1	0.3
25.5	95.5	0.4	52.4	88.5	0.4	79.3	80.9	0.3
26.0	95.4	0.4	52.9	88.4	0.4	79.7	80.8	0.3
26.4	95.3	0.4	53.3	88.3	0.4	80.2	80.7	0.3

Exhibit 13.8 - Copy of Manufacturer's Vertical Radiation Data



Vertical diagram at an azimuth of 0.0°

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
80.6	80.5	0.3	107.5	72.2	0.2	134.4	65.1	0.2
81.1	80.4	0.3	108.0	72.1	0.2	134.8	65.0	0.2
81.5	80.3	0.3	108.4	71.9	0.2	135.3	64.8	0.2
82.0	80.2	0.3	108.9	71.8	0.2	135.7	64.7	0.2
82.4	80.0	0.3	109.3	71.7	0.2	136.2	64.6	0.2
82.9	79.9	0.3	109.8	71.5	0.2	136.6	64.5	0.2
83.3	79.8	0.3	110.2	71.4	0.2	137.1	64.4	0.2
83.8	79.6	0.3	110.7	71.2	0.2	137.5	64.3	0.2
84.2	79.5	0.3	111.1	71.1	0.2	138.0	64.2	0.2
84.7	79.4	0.3	111.6	71.0	0.2	138.4	64.1	0.2
85.1	79.2	0.3	112.0	70.8	0.2	138.9	64.0	0.2
85.6	79.1	0.3	112.4	70.7	0.2	139.3	63.9	0.2
86.0	79.0	0.3	112.9	70.6	0.2	139.8	63.8	0.2
86.5	78.9	0.3	113.3	70.5	0.2	140.2	63.7	0.2
86.9	78.7	0.3	113.8	70.4	0.2	140.7	63.6	0.2
87.4	78.6	0.3	114.2	70.2	0.2	141.1	63.5	0.2
87.8	78.4	0.3	114.7	70.1	0.2	141.6	63.4	0.2
88.3	78.3	0.3	115.1	70.0	0.2	142.0	63.3	0.2
88.7	78.1	0.3	115.6	69.9	0.2	142.5	63.2	0.2
89.2	78.0	0.3	116.0	69.8	0.2	142.9	63.1	0.2
89.6	77.8	0.3	116.5	69.6	0.2	143.4	63.1	0.2
90.0	78.0	0.3	116.9	69.5	0.2	143.8	63.0	0.2
90.5	77.9	0.3	117.4	69.4	0.2	144.3	62.9	0.2
90.9	77.7	0.3	117.8	69.3	0.2	144.7	62.8	0.2
91.4	77.6	0.3	118.3	69.2	0.2	145.2	62.7	0.2
91.8	77.4	0.3	118.7	69.0	0.2	145.6	62.6	0.2
92.3	77.3	0.3	119.2	68.9	0.2	146.0	62.5	0.2
92.7	77.1	0.3	119.6	68.8	0.2	146.5	62.4	0.2
93.2	76.9	0.3	120.1	68.7	0.2	146.9	62.3	0.2
93.6	76.8	0.3	120.5	68.6	0.2	147.4	62.2	0.2
94.1	76.6	0.3	121.0	68.5	0.2	147.8	62.1	0.2
94.5	76.5	0.3	121.4	68.3	0.2	148.3	62.1	0.2
95.0	76.3	0.3	121.9	68.2	0.2	148.7	62.0	0.2
95.4	76.2	0.3	122.3	68.1	0.2	149.2	61.9	0.2
95.9	76.0	0.3	122.8	68.0	0.2	149.6	61.8	0.2
96.3	75.9	0.3	123.2	67.9	0.2	150.1	61.7	0.2
96.8	75.7	0.3	123.6	67.8	0.2	150.5	61.6	0.2
97.2	75.6	0.3	124.1	67.6	0.2	151.0	61.5	0.2
97.7	75.4	0.3	124.5	67.5	0.2	151.4	61.4	0.2
98.1	75.3	0.3	125.0	67.4	0.2	151.9	61.3	0.2
98.6	75.1	0.3	125.4	67.3	0.2	152.3	61.3	0.2
99.0	75.0	0.3	125.9	67.2	0.2	152.8	61.2	0.2
99.5	74.8	0.3	126.3	67.1	0.2	153.2	61.1	0.2
99.9	74.7	0.3	126.8	67.0	0.2	153.7	61.0	0.2
100.4	74.5	0.3	127.2	66.8	0.2	154.1	60.9	0.2
100.8	74.4	0.3	127.7	66.7	0.2	154.6	60.8	0.2
101.2	74.2	0.3	128.1	66.6	0.2	155.0	60.7	0.2
101.7	74.1	0.3	128.6	66.5	0.2	155.5	60.6	0.2
102.1	74.0	0.3	129.0	66.4	0.2	155.9	60.6	0.2
102.6	73.8	0.3	129.5	66.3	0.2	156.4	60.5	0.2
103.0	73.7	0.2	129.9	66.2	0.2	156.8	60.4	0.2
103.5	73.5	0.2	130.4	66.1	0.2	157.2	60.3	0.2
103.9	73.4	0.2	130.8	65.9	0.2	157.7	60.2	0.2
104.4	73.2	0.2	131.3	65.8	0.2	158.1	60.1	0.2
104.8	73.1	0.2	131.7	65.7	0.2	158.6	60.1	0.2
105.3	72.9	0.2	132.2	65.6	0.2	159.0	60.0	0.2
105.7	72.8	0.2	132.6	65.5	0.2	159.5	59.9	0.2
106.2	72.6	0.2	133.1	65.4	0.2	159.9	59.8	0.2
106.6	72.5	0.2	133.5	65.3	0.2	160.4	59.7	0.2
107.1	72.4	0.2	134.0	65.2	0.2	160.8	59.6	0.2